CORONAVIRUS

NO VACCINE - NO TREATMENT - NO CURE

TRUTH / SYMPTOMS

HOPE!

INTERVENTION / PREVENTION

"UK can turn the tide of coronavirus in 12 weeks."
(Prime Minister, Boris Johnson 19 March 2020)

FRED HARDING

FRED HARDING

CORONAVIRUS

NO VACCINE - NO CURE - NO TREATMENT

TRUTH
SYMPTOMS

HOPE!

INTERVENTION
PREVENTION

"UK can turn the tide of coronavirus in 12 weeks."
PRIME MINISTER, BORIS JOHNSON
(19 March 2020)

COVID-19 IS SARS!

Tekline Publishing
Books that make you think

COPYRIGHT

COPYRIGHT AND DISCLAIMER

PICTURES

Unless stated otherwise, the photos and artwork in this book were created by the author, including some he himself has modelled. Such pictures belong to Fred Harding and are copyright.

Third Party Photos and Drawings are acknowledged, permissions obtained and credits referenced. Some pictures originate from public domain or out of copyright sources.

The cover picture is based on a public domain illustration that was created at the Centers for Disease Control and Prevention (CDC). It shows the ultrastructural morphology exhibited by coronaviruses. Note the spikes that adorn the outer surface of the virus, which impart the look of a corona surrounding the virion, when viewed electron microscopically.

A new coronavirus, named **Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2)**, was identified as the cause of an outbreak of respiratory illness first detected in Wuhan, China in Decembver 2019. The illness caused by this virus has been named coronavirus disease 2019 (COVID-19).

QUOTATIONS

Short quotations referred to in this book are permitted under copyright law and "Fair Use" for reviews, commentary and criticism. The "fair use" exemption to (U.S.) copyright law was created to allow things such as commentary, parody, news reporting, research and education about copyrighted works without the permission of the author.

In the UK, "fair use" is known as fair dealing and is governed by Sections 29 and 30 of the Copyright, Designs and Patents Act 1988, which outlines three instance where fair dealing is a legitimate defence:

- *If the use is for the purposes of research or private study;*
- *If it is used for the purposes of criticism, review or quotation*;
- *Where it is utilised for the purposes of reporting current events*

(this does not apply to photographs)

The Society of Authors advises that limited citations of a work are allowed if used solely for the purpose of critique or review under the following conditions:

- *Providing the work is publicly available*

The source of the work is acknowledged

- *The quoted material is supplemented by topical discussion or assessment*
- *The extent of material quoted is considered an acceptable amount for the purpose of review*

The author believes that he is adhering to what is deemed as fair dealing (UK) or fair use (USA) when citing published works which are supplemented by topical discussion or assessment, and that all source material has been acknowledged, even those deemed to be in the Public Domain.

DISCLAIMER

The content of this book as a whole has not been peer-reviewed, however many of the studies referenced have been. The views expressed in this book represent the views of the author and not necessarily those of the host institution, the NHS, the NIHR, or the Department of Health and Social Care. The views are not a substitute for professional medical advice.

I wish to acknowledge the important contributions by the following people and organizations in the making of this book.

Richard Palmer, a friend who lives in Norfolk who gave me a lead from a Sri Lankan friend of his that led me to the discovery of a successful treatment that is being carried out in all hospitals in Sri Lanka treating COVID-19 patients.

Dr. Charith Ishan Janendra Nanayakkara, Department of Surgery, Faculty of Medicine, Kotelawala Defence University, Sri Lanka. He is a leading doctor in Sri Lanka who helped design the device used in Sri Lankan hospitals which since its introduction, there have been no further deaths on that island.

Dr. Nanayakkara has given me permission to publish a brand new study of his before it is uploaded to academic websites and science journals on the link between COVID-19 and temperature. It is published in full in Appendix I of this book.

CONTENTS

PREFACE

At this time of writing it is 20 March 2020, barely 3 months since the first cases of the COVID-19 Coronavirus was reported in the Chinese city of Wuhan. So far, there have been 258,845 cases reported world-wide and 10,544 people have died from the virus. However, the good news is that 89,922 people have recovered. How come?

Was recovery due to the use of a Vaccine?

There is no vaccine available to prevent you getting the virus. Newspapers like BBC News says:

> *Coronavirus is spreading around the world, but there are still no drugs that can kill the virus or vaccines that can protect against it.... Remember there are four coronaviruses that already circulate in human beings. They cause the common cold, and we don't have vaccines for any of them.* [1]

Was recovery due to the treatment?

There is not treatment. The NHS website says, "*There is currently no specific treatment for coronavirus. Antibiotics do not help, as they do not work against viruses.*" [2]

Is there a cure for the virus?

There is no cure. The science journal *LiveScience* for example says:

> *Currently, however, there is no cure for this coronavirus, and treatments are based on the kind of care given for influenza (seasonal flu) and other severe respiratory illnesses, known as "supportive care" according to the Center for Disease Control and Prevention (CDC) in the USA. These treatments essentially treat the symptoms, which often in the case of COVID-19 involve fever, cough and shortness of breath. In mild cases, this might simply mean rest and fever-reducing medications such as acetaminophen (Tylenol) for comfort.* [3]

So if there is no vaccine, treatment or a cure, how is it that so many people who have had the disease are surviving? The answer to this question is the "solution" described in this book. What is so extraordinary about this is that this solution is in plain sight but so far, no government or medical agency have not told you about it even though they do often mention it when they talk to the media about the coronavirus without realizing it.

It is not their fault. They are overwhelmed as they struggle to contain the disease and stop it from spreading that they "can't see the wood for the trees". Here is an example of what I mean taken from the NHS website. See if you can spot the solution.

> **It is particularly important for people who:**
>
> - *are 70 or over*
> - *have a long-term condition*
> - are pregnant
> - *have a weakened immune system*

Have you spotted the solution? The clue is glaring right back at you. Let me show you. Take for example people who are 70 or over. From what is said, does that mean that if you are at this age, you are going to die of the disease. No. Not unless you have an underlying "long-term condition", and this does not just apply to the elderly. "*The latest deaths in England were people aged between 47 and 96 years old, and all had underlying health conditions.*" [4]

What is meant by "**a long-term condition?**" This is an underlying health condition where people have a long term chronic illnesses. These are usually illnesses such as heart disease, lung disease, diabetes, high-blood pressure and cancer. Now ask yourself this. What is it that all these conditions, including being pregnant, have in common? [5]

THEY ALL HAVE A WEAKENED IMMUNE SYSTEM

For example, "*During pregnancy, a mother's immune system has to work harder since it's supporting two. This makes her more susceptible to certain infections,*" says *Healthline Parenthood.* [6]

NOW DO YOU SEE IT?

If you have a weakened immune system then your chances of survival is greatly reduced and it does not matter how old you are. It is really as simple as that. It just so happens that people who are 70 or older are most likely to have an underlying health condition. Take cancer for example where most cases are to be found on older people. The *National Cancer Institute* says:

> *One-quarter of new cancer cases are diagnosed in people aged 65 to 74. A similar pattern is seen for many common cancer types. For example, the median age at diagnosis is 61 years for breast cancer, 68 years for colorectal cancer, 70 years for lung cancer, and 66 years for prostate cancer.* [7]

People with cancer usually have weakened immune systems, because their treatment involves chemotherapy, and "*Chemotherapy is the cancer treatment most likely to weaken the immune system.*" [8]

> *Treatment can last for anywhere from 3 to 6 months. During that time, you would be considered to be immunocompromised - not as able to fight infection. After finishing chemotherapy treatment, it can take anywhere from about 21 to 28 days for your immune system to recover.* [9]

Young people are just as much risk if their immune system is weak too. Take for example Francisco Garcia, a 21-year-old Spanish coach of Atletica Portada Alta's junior team in Malaga. Who would have thought that he would be victim of COVID-19 and die from it. However, according to the Spanish newspaper Malaga Hoy, Garcia sought medical attention when he began struggling to breathe, and he was found to have pneumonia and the virus. Unfortunately, the young man died on 17 March 2020 and everyone who knew him was shocked. Wouldn't you be?

How does one explain the contradiction of a man of 21 years of age, who for all intents and purposes is fit and well, dying from COVID-19 when we are told by the medical media that it is old people with an underlying health condition that are the most vulnerable to this coronavirus? It turns out that Francisco Garcia had an underlying pre-existing condition which he did not know he had. It was discovered at his post-mortem that he had Leukaemia (blood cancer) and it is a condition that plays havoc with the immune system. [10]

Leukaemia develops when the DNA of developing blood cells, mainly white cells, incurs damage. This causes the blood cells to grow and divide uncontrollably. Healthy blood cells die, and new cells replace them. These develop in the bone marrow. The abnormal blood cells do not die at a natural point in their life cycle. Instead, they build up and occupy more space. As the bone marrow produces more cancer cells, they begin to overcrowd the blood, preventing the healthy white blood cells from growing and functioning normally. [11]

White blood cells (WBCs), also called leukocytes or leucocytes, play a very important part of the immune system and are involved in protecting the body against both infectious disease and foreign invaders. Eventually, the cancerous cells outnumber healthy cells in the blood and as a consequence, the immune system has become greatly weakened. Furthermore, the number of healthy red blood cells, the cells that carry oxygen to other cells are reduced and this condition can keep your body from getting enough oxygen. Under such circumstances, Francisco Garcia had no chance of survival once he had been infected with the coronavirus.

Reports from all over the world say the same thing. Most of those who have died of COVID-19 have had underlying health conditions. Here are a few newspaper citations which demonstrate this all fundamental truth.

> *The coronavirus, previously unknown to science, causes severe acute respiratory infection with symptoms including a fever and cough. There is no specific cure or vaccine. Based on an earlier report of the fatalities, when just 17 were dead, most of the victims appeared to be older people, many with pre-existing medical conditions.* (BBC News, 25 January, 2020)

More than 99% of Italy's coronavirus fatalities were people who suffered from previous medical conditions, according to a study by the country's national health authority. (Bloomberg, 18 March 2020)

Another survey released Wednesday by the CDC shows that a substantial number of the victims of the coronavirus at a nursing home near Seattle had underlying conditions such as hypertension, cardiac disease, kidney disease or diabetes. Of the 129 people connected to the facility who contracted the virus, more than 40 percent had hypertension, nearly 40 percent also had cardiac disease, and more than a quarter had either kidney problems or diabetes. (The Hill, 18 March 2020)

Despite the current uncertainty, early research seems to show a persistent pattern about which group is most vulnerable: Older adults, particularly those with underlying medical conditions, are at much greater risk of dying from the coronavirus than younger, healthier people. (Los Angeles Times, 19 March 2020)

So the next time you read newspaper reports of reported deaths by the coronavirus, take a look at the content more closely. You might have missed the most important clue which tells you the solution to the COVID-19 problem.

WHAT THEN IS THE SOLUTION?

As government agencies and medical personnel struggle to contain the coronavirus from spreading through the population and its impact it has on society, there is a way in which many deaths can be avoided, besides isolating people from each other. They have forgotten the age-old rule, "**Prevention is Better that Cure**". In this case prevention is to help your body to fight the disease, and to do that, you need to build up the defences of your immune system. How can you do that? This is what this book is all about and the information it contains could be the only thing that stands between you and death. If you have an underlying health condition, it could save your life and that is no exaggeration.

In the UK and 12 weeks from now (July 2020), for reasons I shall explain in this book, cases of COVID-19 will drop dramatically and eventually cease altogether a month or two later. This is a scientific certainty. However, for people who are vulnerable to the disease, this is a three-month death sentence. But it need not be.

Don't be fooled. Sooner or later, no matter what the government does, you will get the COVID-19 coronavirus, just like each year millions of people around the world who get the coronavirus/rhinovirus that is the common cold. It only takes one person to travel from an infected area to spread the disease, so this could be a yearly event. However, if your immune system is functioning as it should, then not only will you survive from contracting the coronavirus, but the next time it arrives on the scene, you will be immune. That is how vaccines work, only it will be your immune system that will created that vaccine for you inside your body.

This book is published in e-book and paperback format for a few pennies above cost. The information contained within its pages is far too important to do otherwise. I am also making this book free online as a pdf document on my website "teklinepublishing.com/coronavirus" and I will upload this on Academia (academia.edu/) too. This is the platform for academics to share research papers and to accelerate the world's research. Research papers such as this one is made available for anyone to read for free and the website attracts over 75 million unique visitors a month.

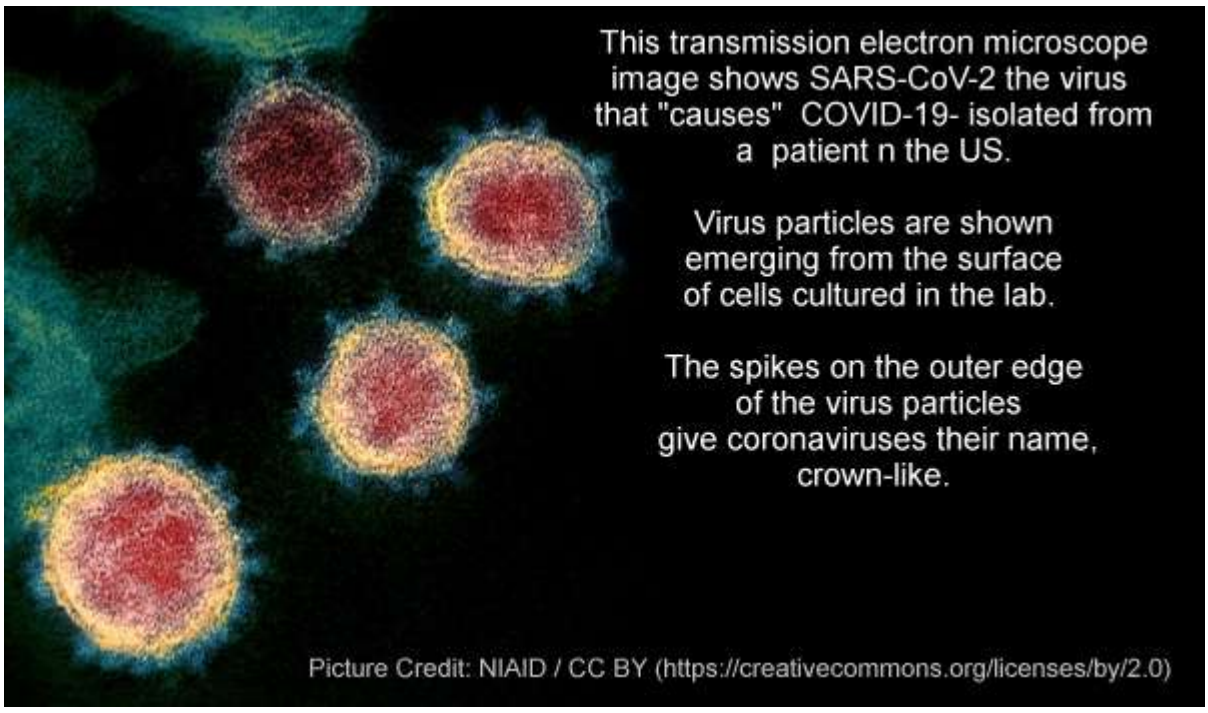
Furthermore, if you have a media outlet, I give you permission to copy the pdf book and publish it on any Internet, social media platform or traditional publishing outlet, as long as you do not charge for it and acknowledge that I am the author. The copyright remains mine. All I ask in return is that you tell everyone about this book and what it contains, through your social media contacts, mums net, friends, family, Internet media, newspapers, magazines and so on. Pass it around. Get people to read it free online or buy the book. By doing so you could be saving thousands, perhaps millions of lives and even your own. Although this book is geared to a UK audience, its vital contents can applied to any part of the world.

As I have said, in TWELVE WEEKS (3 MONTHS) time the number of COVID-ID cases will have dropped dramatically. Not only does this book substantiate this claim but it also describes ways on how you can build up your immune system to combat this dreadful disease. But first, the next chapter gives you more information about the coronavirus, because knowing your enemy is the key to defeating it.

Chapter 1
A STUDY OF THE COVID-19 CORONAVIRUS

Coronaviruses are a large group of related viruses that cause diseases in mammals and birds. They often circulate among birds, camels and bats, and can sometimes jump across the species barrier and infect people. In animals coronaviruses can cause diarrhoea in cows and pigs, and upper respiratory disease in chickens.

In humans, coronaviruses cause respiratory tract infections that can be mild, such as in some cases of the common cold (HCoV-OC43, HCoV-229E, HCoV-HKU1, HCoV-HKU1). Others however can be lethal. These are SARS (Severe Acute Respiratory Syndrome), MERS (Middle East Respiratory Syndrome) and now the new coronavirus which has suddenly emerged on the worlds stage, COVID-19 (Corona Virus Disease 2019) which seemed to have appeared out of nowhere.

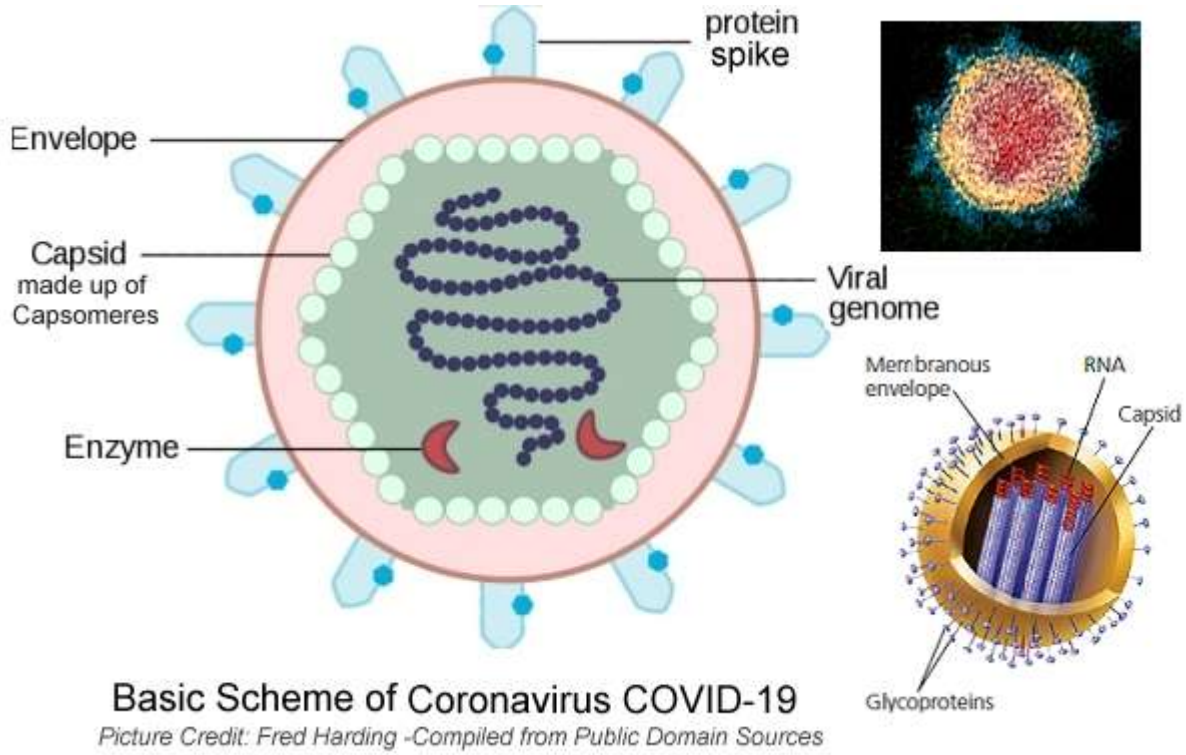


All these coronaviruses are seasonal respiratory pathogens and their activity increases at different times of the year, most at the same time as the influenza season in the autumn and winter months. [1]

With this in mind it is no coincidence that the COVID-19 coronavirus which is spreading across the world as I write began at the end of December 2019, during the winter experienced by the people of the city of Wuhan, in China.

THE STRUCTURE OF A CORONAVIRUS

Coronaviruses are made up of a core of genetic material (DNA or RNA), surrounded by a protective coating called a capsid which is made up of protein. The capsid is surrounded by an additional protective coat called the envelope and its surface by spiky proteins. Because of these spikes covering the surface of the virus, when it is looked at under a microscope it looks like that it has a crown and the term "corona" means crown.



Basic Scheme of Coronavirus COVID-19

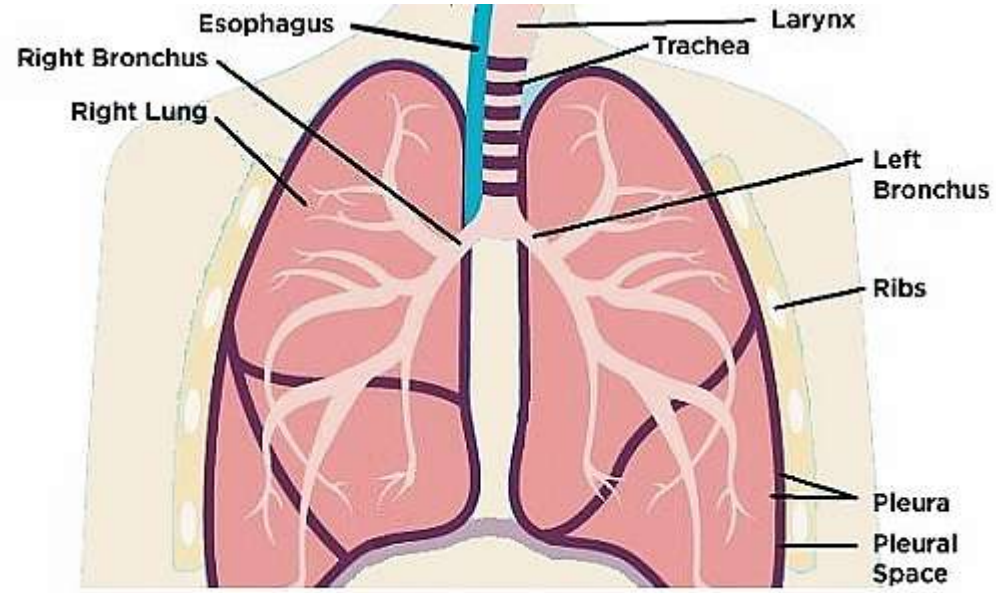
Picture Credit: Fred Harding -Compiled from Public Domain Sources

Normally, coronaviruses cannot hurt you because they cannot get through the protective barrier of your skin and unlike human cells or bacteria, viruses do not contain the chemical machinery (enzymes) needed to carry out the chemical reactions to replicate themselves. Therefore, on their own coronaviruses cannot replicate themselves. They need access to a target (host) which has the right biological structure that will enable them to replicate and multiply. Guess what? You are that perfect host because your lungs provide the ideal place for this coronavirus to replicate itself.

YOUR RESPIRATORY SYSTEM

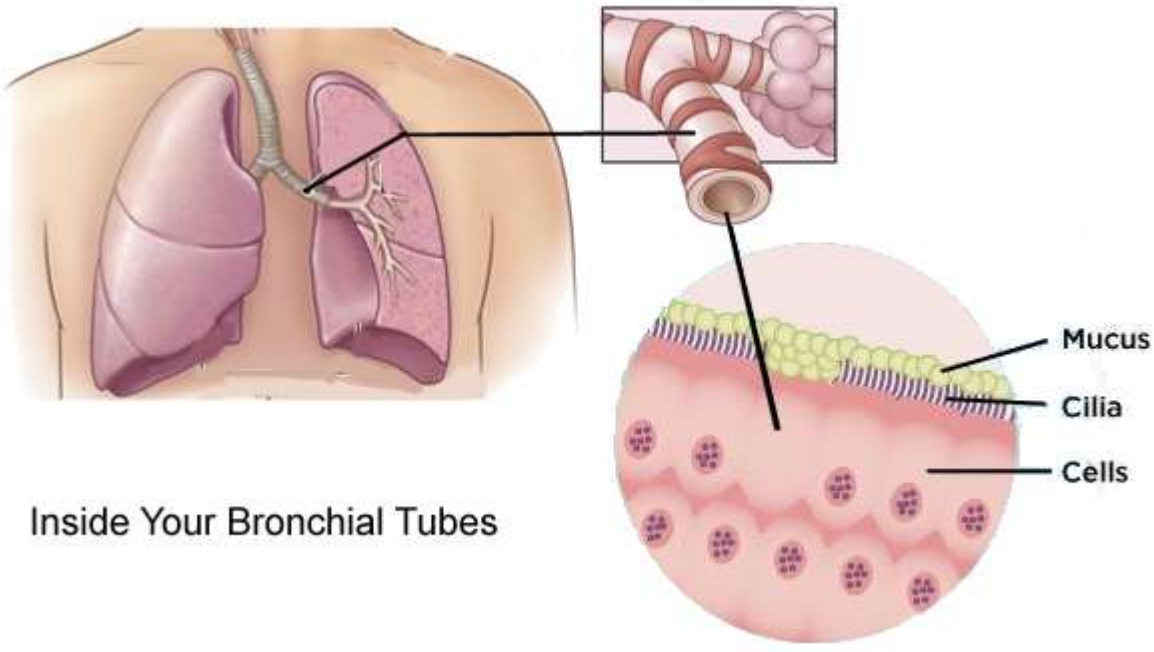
All living things need oxygen to live, and we are no exception. Each of us have a respiratory system built around two sac-like respiratory organs within our chest called lungs and these are protected by an external bony structured rib cage.

When we breathe in we suck in air through our nose (and mouth) and our lungs inflate accordingly. As the lungs inflate oxygen is removed from the air and is passed into our bloodstream through organic pipes called bronchial tubes, where it's carried off to the tissues and organs that allow us to walk, talk, and move. Our lungs also remove carbon dioxide from our blood and release it into the air when we breathe out.



Anatomy of the Lungs

The cells of the bronchial tubes are lined with CILIA (like very small hairs) that have a wave-like motion. This motion carries MUCUS (sticky phlegm or liquid) upward and out into the throat, where it is either coughed up or swallowed. The mucus catches and holds much of the dust, germs, and other unwanted matter that has invaded your lungs. Besides coughing, the mucus can also be expelled by blowing your nose and I don't need to tell you what that looks like, do I?



Inside Your Bronchial Tubes

Usually, a well-coordinated muscle interaction in your lower throat propels food into your food tube (esophagus) and protects your airways. This is aided by your vocal cords and the flap of cartilage that covers the windpipe (epiglottis) so that when you are swallowing help they keep your airways closed off from food, drink or saliva. However, under certain circumstances such as a sudden movement on your part and a lack of concentration, these safeguards fail.

As you know and no doubt experiences, sometimes you may drink something which, as we say, "goes down the wrong way". This is because some liquid has accidentally got sucked into your breathing pipe (trachea), instead of entering your food tube as it should. This is known as aspiration. When you aspirate, your body's responds by triggering an outpouring of adrenaline and boosts your heart rate and blood pressure. As a result, a gag or cough reflex will start automatically and this is normally brief as the body promptly expels the aspirated material from the lungs.

Your lungs are a marvel to behold but if a coronavirus manages to get into them, then you're amazing respiratory system will go into overdrive as your immune system will attempt to rid the intruder. Unfortunately, this can have deadly consequences, which I shall discuss shortly.

COUGHS AND SNEEZES SPREAD DISEASES?

Coronaviruses have no feet, wings or any other means of moving about and so, in a perfect world they would be impotent. However, this planet has over 7 billion people living on it, most of whom live in densely population areas, such as cities and towns. Added to this, people can easily travel to any part of the world and pass on an COVID-19 infection from person to person on the plane, or in the crowded departure or arrival lounges. Localized travel is also easy through the use of trains and buses and often these are crowded too, the perfect opportunity for the virus to spread. And, if that is not enough, there is always a visit to a restaurant, cafe, coffee shop, pub, shops or any public place that is frequented by groups of people. Such places will increase the chances for the coronavirus to spread throughout the population.

Unless, people are isolated from one other, there can be only one outcome, an epidemic that spreads across the world, a pandemic. Unfortunately, this is exactly what has happened. On 11 March 2020, a little over two months after the coronavirus appeared in China, the World Health Organization declared COVID-19 a pandemic. At that time, 118,000 people had been infected with the virus and killed more than 4,000 in 114 countries.

The World Health Organization explains the process how people become infected by the coronavirus which is important to keep in mind.

> *People can catch COVID-19 from others who have the virus. The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person with COVID-19 coughs or exhales. These*

droplets land on objects and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth. People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets. This is why it is important to stay more than 1 meter (3 feet) away from a person who is sick. [2]

It would have been worse if someone sneezes. If an infected person sneezes, he or she can spray droplets of mucous particles containing the virus through the air for a radius of as much as 5 to 30 feet. [3] However, fortunately, sneezing is not one of symptoms of a person infected with COVID-19 and this is a good indicator as to whether you are suffering from the Common Cold. (You don't sneeze when you have flu either).

The main way people become infected by the coronavirus is when a infected person coughs in close proximity to another person who inhale infected droplets from the cougher. But that is not all. As the WHO says, "droplets land on objects and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces." That is why it is important that coughing should be done in a controlled way as shown in a poster picture below published by the National Institute for Health and Welfare campaign in the context of the COVID-19 epidemic in Finland, March 2020 which shows how to cough (and sneeze) correctly.

Cough and sneeze correctly – Poster by The National Institute for Health and Welfare. Campaign in the context of the COVID-19 epidemic in Finland, March 2020.

For example, if you have coughed into your hands, which is quite a normal reflex action by many people, your hands will probably be infected. Unless you wash your hands immediately, you can easily infect any object you hold or touch and anybody touching them will have the virus passed on to them.

To recap then. The lungs are the main target for the coronavirus and it spreads their through droplets in the air when someone who is sick coughs or even talks in close proximity to one another. It also spreads by hand-to-hand contact with someone who has a cold or by sharing contaminated objects, such as utensils, towels, toys or telephones. So if you touch your eyes, nose or mouth after such contact or exposure, you're likely to catch the virus. Then what? The virus somehow finds its way to the lungs and it is here that the damage is done, damage that can lead to death.

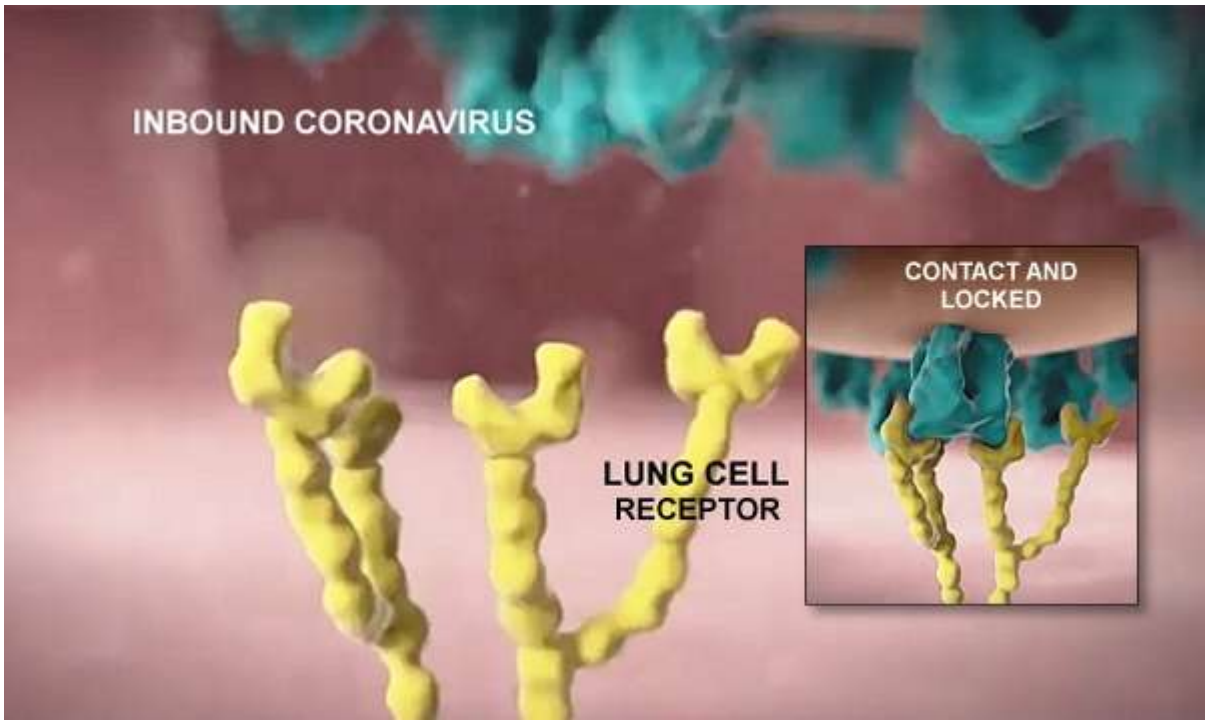
HOW THE CORONAVIRUS ATTACKS THE LUNGS

The COVID-16 coronavirus will invade two types of cells in the lungs - mucus and cilia cells. Normally, mucus keeps your lungs from drying out and protects them from pathogens. Cilia beat the mucus towards the exterior of your body, clearing debris - including viruses! - out of your lungs. However, a coronavirus is no ordinary virus. As I explained above, it is fitted with protein spikes sticking out of the envelope that forms the surface of a core of genetic material.

It just so happens that the cells of the lungs also have protein spikes called pulmonary C-fiber receptors coming out of them. These receptors detect changes in their environment and respond to events such as pulmonary edema (excess fluid in the lungs), pneumonia (inflammation of the lungs) and congestive heart failure and barotrauma (damage to body tissue caused by a difference in air pressure). Their stimulation causes a reflex reaction, such as increase in breathing rate, and is also thought to be involved in the sensation of dyspnoea, the subjective sensation of difficulty breathing.

As the coronavirus, slides down the mucus lined bronchial tubes by the force of gravity, it rubs against all kinds of receptors sticking out from the cells of the lungs. These lung receptors also have key like projections. Sooner or later, the coronavirus will find one which is compatible with its own and it will latch on. Contact will have been made and the coronavirus spike and lung receptor will now be locked together as one.

Once COVID-ID has latched on a compatible receptor, the cell will have been stimulated and an automatic reflex reaction takes place. The cell contracts and as it does so it drags the coronavirus within itself. Now inside the cell COVID-ID uses the cell's replication process to produce copies of itself. These copies spill out and spread to other cells and the process is repeated. Before long, the infection will have spread and it appears to be unstoppable.



Under such circumstances, the person who has had this happen to them would most certainly die if it was not for one thing. That person has a powerful immune system which has a whole range of weapons in its arsenal to deal with the intruder. However, speed is the essence for a successful immune system response against the coronavirus, but a weakened immune system will be too slow to react and is unable to keep up with the replication of the coronavirus cells and unfortunately, eventually a miserable death will result.

A STRONG IMMUNE SYSTEM IS THE ONLY KEY TO SURVIVAL

There is no cure, no treatment and no vaccine that can destroy a COVID-ID coronavirus infection. But a person's immune system is the only thing that can and does as the following example proves.

A 47-year-old woman from Wuhan, Hubei province, China, presented to an emergency department in Melbourne, Australia. She had no contact with the Huanan seafood market or with known COVID-19 cases. She was otherwise healthy and was a non-smoker taking no medications. The woman's condition was identified as COVID-19 and the infection evidently had begun four days earlier. Hers symptoms included lethargy, sore throat, dry cough, chest pain, shortness of breath and fever. Clinical examination revealed she had the following readings.

High Temperature: 38.5 C (normal is between 36.1-37.2 C)
High Pulse Rate: 120 beats per minute (normal is between 60-100)
High Blood Pressure: 140/80 mm Hg (normal is 90/60 mm Hg)
High Respiratory Rate: 22 breaths per minute (normal 12 to 20 breaths per minute adult at rest)
Normal Oxygen Saturation: 98% (Normal between 95-100%) [4]

Amazingly, this patient did not experience complications of respiratory failure or acute respiratory distress syndrome, nor did she require supplemental oxygenation. She did receive intravenous fluids to keep her hydrated but other than that she received no antibiotics, steroids or antiviral drugs. Her chest was clear 10 days after she was admitted to hospital. The patient was discharged on day 11, and all symptoms had disappeared by day 13. How then was she cured when he only treatment she had was simply intravenous fluids? It was her strong immune system that had made her recovery possible. How do we now this. Doctors observed increased immune activity.

> *Increased antibody-secreting cells (ASCs), follicular helper T cells (TFH cells), activated CD4+ T cells and CD8+ T cells and immunoglobulin M (IgM) and IgG antibodies that bound the COVID-19-causing coronavirus SARS-CoV-2 were detected in blood before symptomatic recovery. These immunological changes persisted for at least 7 days following full resolution of symptoms.* [5]

Katherine Kedzierska of the Department of Microbiology and Immunology, The University of Melbourne, at the Peter Doherty Institute for Infection and Immunity, Parkville, Australia, was one of the doctors who monitored the patient and observed the woman's amazing recovery. Her conclusion is important as far as this book is concerned.

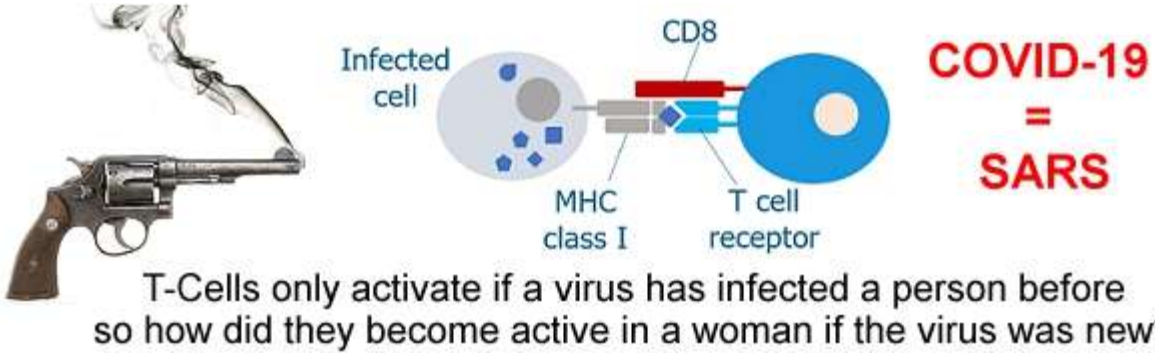
> *We showed that even though Covid-19 is caused by a new virus, in an otherwise healthy person a robust immune response across different cell types was associated with clinical recovery, similar to what we see in influenza.* [6]

SMOKING GUN! COVID-19 PROVEN TO BE SARS

When read my book you will know get to know T-cells only become active if a person has been infected before. But this patient was supposedly infected with COVID-19 (SARS-CoV-2) - a new coronavirus not seen before, according to the Chinese government and the World Health Organization.

> *At presentation on day 4, SARS-CoV-2 was detected in a nasopharyngeal swab specimen by real-time reverse-transcriptase PCR. SARS-CoV-2 was again detected at days 5-6 in nasopharyngeal, sputum and fecal samples, but was undetectable from day 7 (Fig. 1a).*

Something does not smell right with what transpired, because if the patient was suffering from the new "COVID-19 (SARS-CoV-2) then Natural Killer (NK) cells would have been activated instead. But NK cell activity is not mentioned in the study. This enigma can only be answered if the patient had been infected by SARS (SARS-CoV-1) in 2003 and had recovered. That would mean that the woman's immune system recognized the COVID-19 virus as SARS and that is why T-cells were activated. **The doctors were not treating COVID-19 but were treating SARS!**



T-Cells only activate if a virus has infected a person before so how did they become active in a woman if the virus was new?

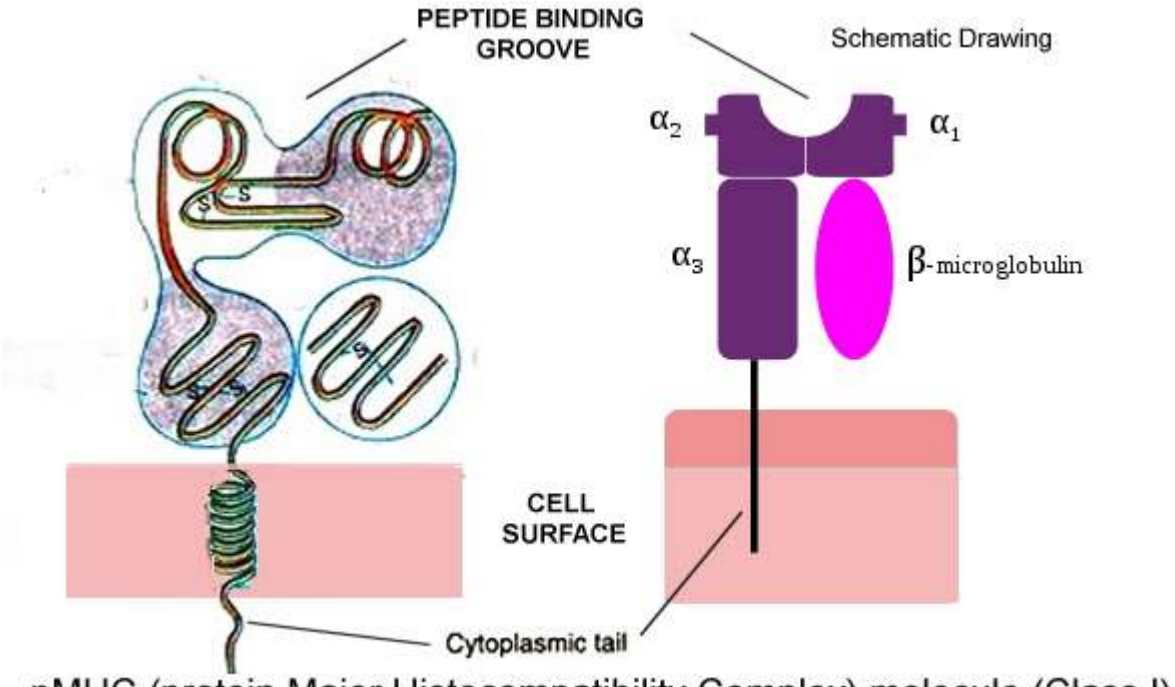
It is clearly evident that only a strong immune system is able to restore a COVID-ID infected person to health, that and one other factor which I shall disclose later. So how does our immune system work that enables this miracle to happen? Let's take a look shall we.

Chapter 2
YOUR IMMUNE SYSTEM TO THE RESCUE

Near the close of the previous chapter I described how once a COVID-ID coronavirus has latched on to a compatible receptor of a cell, that cell becomes stimulated and an automatic reflex reaction takes place. The cell contracts and as it does so it drags the coronavirus within itself and the coronavirus unravels its genetic material inside the cell. The cell, ignorant of what's happening, executes the new instructions, which are pretty simple: copy and reassemble. Thus, the virus uses the cell's replication process to produce copies of itself.

At this stage your immune system cannot "see" the coronavirus in the cell and therefore it does not know that the host cell is infected. Under such circumstances you might think your immune system is impotent, but do not be fooled. It has a number of weapons in its armoury which can reveal the virus hiding in the cell and implement counter measures to destroy it.

MCH MOLECULES AND CYTOXIC T-CELL LINKS



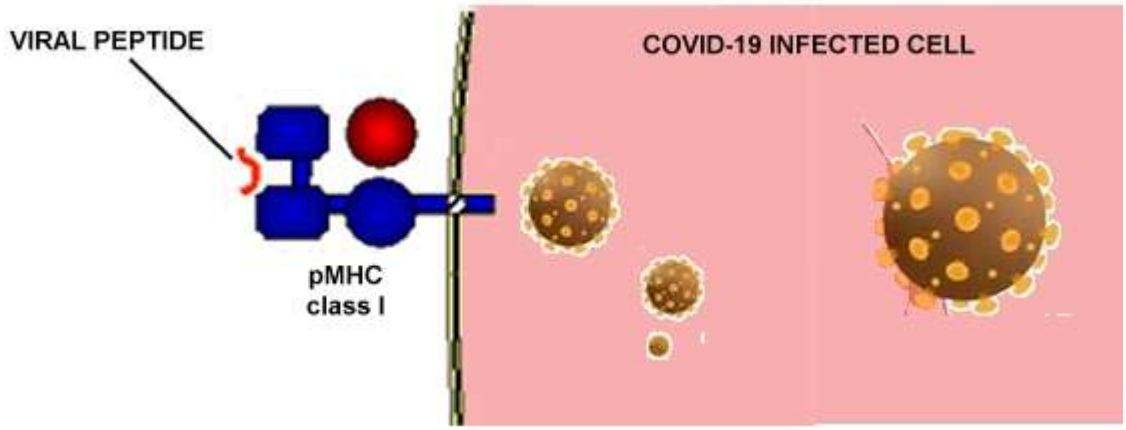
pMHC (protein Major Histocompatibility Complex) molecule (Class I)

Each cell of your body have what are known as PMH (Major Histocompatibility Complex) molecules covering its surface on which is a peptide binding groove (BPG). There are two types, class 1 and class 2, and it is the former which I shall speak about first.

> *Major histocompatibility complex (MHC), group of genes that code for proteins found on the surfaces of cells that help the immune system recognize foreign substances. MHC proteins are found in all higher vertebrates. In human beings the complex is also called the human leukocyte antigen (HLA) system.* [1]

On the BPG groove are fragments of proteins called peptides, also known as self-antigens, and these work like identification tags which are specific to each kind of cell. They tell the immune system that it is a normal cell.

Now we get to the clever part. When the COVID-19 coronavirus enters a cell it leaves behind on the peptide binding groove identification marker fragments of its own which we call viral peptides, also known as virus antigens. Some self-antigens are pushed aside and lost in the process and this means that the cell's identification signature is now missing. Hence, the coronavirus has left a trail behind its activities, the virus peptides (virus antigens), and these warn the immune system that the cell it has been compromised by an antigen, a foreign body like a pathogen.



The immune system has a number of potent weapons in its arsenal to deal with this situation. One weapon is to use T-cells (also called T lymphocytes), which play a major role in defence against intracellular pathogens such as viruses, protozoa and intracellular bacteria, and immunity by providing future antibody response. T-cells are made in the bone marrow, like all red and white blood cells. The name T-cell comes from the organ where they mature, the thymus, a ductless glandular organ at the base of the neck.

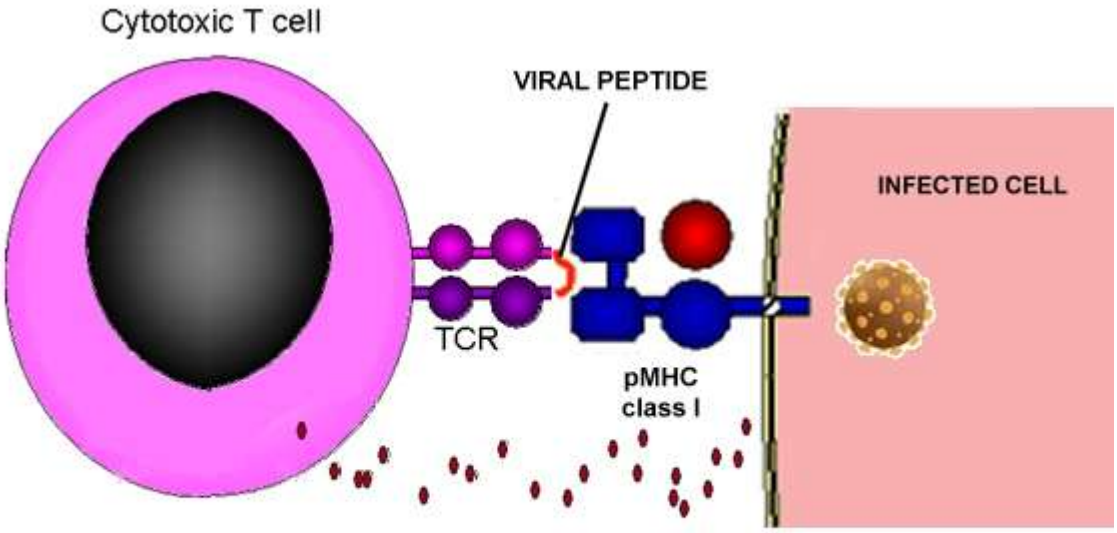
A chemical signal notifies the immune system that a cell has been infiltrated by a antigen, and T-cells which have been stored in the lymphatic system are activated. However, that depends on whether or not that antigen has been seen by the immune system before.

There are two types of T-cells. One is are called cytotoxic T-cells that will attack and destroy all cells carrying traces of a foreign pathogen, or they become helper T-cells cells that assist the immune system in identifying the antigen and acquiring "memory." The helper cells send messages to the immune system, passing on knowledge about the pathogen so that the immune system can recognize and remember it at it's next encounter.

There are 25 million to a billion different T-cells in your body. Each cell has a unique T-cell receptor that can fit with only one kind of antigen, like a lock that can fit with only one shape of key. Antigens and receptors work a lot like a lock and key. Most of these antigens will never get in your body, but the T-cells that patrol your body will recognize them if they do.

Furthermore, besides producing MHC class I peptides for T-cells to recognize, virally infected cells produce and release small proteins called interferons. They also act as signalling molecules that allow infected cells to warn nearby cells of a viral presence - this signal makes neighbouring cells increase the numbers of MHC class I molecules upon their surfaces, so that T-cells surveying the area can identify and eliminate the viral infection as described above.

Cytotoxic T-cells also newly synthesize and release tiny information proteins called cytokines which serve to regulate the immune system, after making contact with infected cells. Nearly every important immune reaction is controlled by them.



T Cell releases cytotoxic toxic substances which kill the cell and the coronavirus inside it

Now, let's get down to business. A cytotoxic T-cell has specialized proteins on its surface called T-cell receptors (TCR) that help them to recognize virally-infected cells from the viral peptide fragments on the peptide binding groove.

Each cytotoxic T-cell has a TCR that can specifically recognize a particular viral peptide bound to an MHC molecule. Once, a viral peptide has been identified, the T-cell releases substances that are toxic to the cell which kills it, and of course the coronavirus inside the cell is killed too.

Brilliant! Job done! Not so fast! A T-cell can only detect a viral peptide if a person has already had an infection from the same pathogen before and which the immune system has dealt with in the past. That is why when a person has had a particular infection, he or she will be immune from further infections from the same pathogen.

I am convinced that the reason why the Chinese woman who came from Wuhan and was treated in an Australian hospital recovered so rapidly from her COVID-19 infection was because she had been infected with SARS in the past. Therefore, because I maintain that COVID-19 and SARS are in fact the same coronavirus, the T-cells in her immune system were able to react quickly and destroy the virus very quickly.

Back in 2002 there were only 8,096 world-wide cases of SARS, those that were reported that is, mostly in China and 774 people died. There might have been many thousands more but people recovered so quickly due to them having good immune systems that these were not recorded. The woman was probably one of them.

In the UK there were only 4 identified cases of SARS and there were no deaths. This means that if, as I maintain that COVID-19 is in fact a re-emergence of SARS of 2003 which has probably been altered slight due to evolutionary factors, as far as immunity is concerned people in the UK will not have any immunity whatsoever. Thus, everyone would be precluded from the powerful immune response that T-cells can provide from being activated. Cytotoxic T-cell would only have been activated if you had the disease before and had recovered.

That is a bummer, but don't worry. Fortunately, for us, our immune system has another powerful weapon in its armoury which is as equally powerful as T-cells if not more so. Our immune system sends in the big boys, "**natural killer cells**" to do the job.

NATURAL KILLER (NK) CELLS

A natural killer cell or NK cell for short is a type of white blood cell that are found in the blood. They normally constitute 5-15% of peripheral blood lymphocytes (white blood cells) and they are also present in relative abundance in the bone marrow, liver, uterus, spleen, and lungs, as well as to a lesser extent in secondary lymphoid tissue (SLT), mucosa-associated lymphoid tissue, and the thymus. They are always circulating through the body looking for abnormal or infected cells to destroy.

Unlike a cytotoxic T cell, NK cells do not need an exact match to react to a cell that has been infected virus. As I have earlier said, each cell has its own unique identification signature by having non-viral MHC peptides on its surface (self-antigens). However, when a cell becomes infected, these self-antigens will have been reduced in number and so the identification signature of the cell cannot no longer be read. Hence, the NK cell knows that the cell has been compromised in some way and needs to be eliminated. So it releases toxic substances, similar to what cytotoxic T cells do, and the virally-infected cell is killed together with its contents. Don't you find that amazing?

The availability of NK cells to fight pathogen invaders depend on two factors, which will be discussed later in more detail, but these are how good your immune system is and how old you are. With regards the former, this is what *NKMax Health*, a leading innovator of Natural Killer (NK) cell products in the USA, says about NK cells and the immune system.

> *It is very important to maintain a healthy lifestyle to ensure a strong immune system and NK cell function. NK cell function has been shown to be decreased in people who are stressed, overweight, inactive, or not sleeping or eating well. NK function is also affected by illness, inflammation, cancer and other conditions. It is essential to do all that you can to support your NK cell function through lifestyle changes or immune boosting therapy. Optimizing your NK cell function can put you on the right track towards healthy living.* [2]

As I have previously noted, elderly people, especially those that have an underlying health problems, have the greatest risk of dying from COVID-19. This has been more than demonstrated by coronavirus government and NHS case statistics published in the media.

> *We are advising those who are at increased risk of severe illness from coronavirus (COVID-19) to be particularly stringent in following social distancing measures. This group includes those who are: aged 70 or older (regardless of medical conditions); under 70 with an underlying health condition.* [3]

While this warning is important, what is not said is why elderly people are so vulnerable. The answer to this riddle is probably due in part to decreased NK cell activity which is what happens when we age. The journal *Analytical Cellular Pathology* for example says:

> *In elderly subjects, decreased NK cell activity has been shown to be associated with an increased incidence and severity of many diseases such as coronary heart disease, liver fibrosis, infectious diseases, and cancer.* [4]

Other researchers say the same. Jon Hazeldine, from the M*RC-ARUK Centre for Musculoskeletal Ageing Research, School of Immunity and Infection,* University of Birmingham says that, "*several features of the ageing process such as the reduced efficacy of vaccination, the appearance of senescent cells and the higher rates of fungal infection may be attributable in part to the decline in NK cell function that accompanies human ageing.*" [5]

One does not need to be a rocket science to appreciate that if elderly people cannot produce the same number of NK cells than younger people, then they are going to be more vulnerable to COVID-ID, and the statistics prove this to be the case. Added to this is that many elderly people also have underlying health issues which have resulted in them having greatly weakened immune systems. This is another reason why their production of NK cells will be limited.

Moving on, you may be wondering how cytotoxic T cells and NK cells introduce toxic substances into the infected cell? After all these toxic substances cannot be allowed to exist on their outside cell walls cells otherwise they would kill healthy cells as they moved through the fluids of your body. The toxic substance are stored internally in the T and NK cells, which have what the medical world call "**preformed inflammatory mediators**." In plain English, these are substances which have inside them closed crystalline compartments called granules and these contain the toxic enzymes.

Once triggered the cytotoxic T-cell and NK cell granules swell and lose their crystalline nature as the mediator complex becomes more soluble and begin to dissolve. Before this happens, one of the mediators is made up of a protein called perforin, which has the ability to make holes in an infected cell membrane. Perforins therefore facilitate the entry of the toxic enzymes from the dissolving granules into cells through the holes that they have made. Once inside the target cell, toxic enzymes initiate a process known as programmed cell death or apoptosis, causing the infected cell to die.

In conclusion, we have two primary immune responses to infected cells. If you have had a coronavirus or any other virus infection before, cytotoxic T cells will recognize the virus signature in the viral peptide fragments on the surface of the infected cell and attack it immediately and quickly. If on the other hand, you have not had the virus before, which is probably the case with the COVID-19 coronavirus, then the immune system responds by producing natural killer (NK) cells in the blood.

As I have said, NK cells are highly active and unlike cytotoxic T cells, functioning NK cells are ALWAYS circulating through the body looking for abnormal or infected cells to destroy. How many though depends on how old you are and what shape your immune system is.

HELPER T-CELLS - THE DECISION MAKERS

An infected cell is either attacked by cytotoxic T-cells or by NK cells, that much is clear but how does the immune system know which one to use. The immune system cannot and does not allow both types of immune cells to target the infected cell at the same time in case they end up destroying each other, killing nearby healthy cells or invoke even more dangerous outcomes that could be deadly to the person.

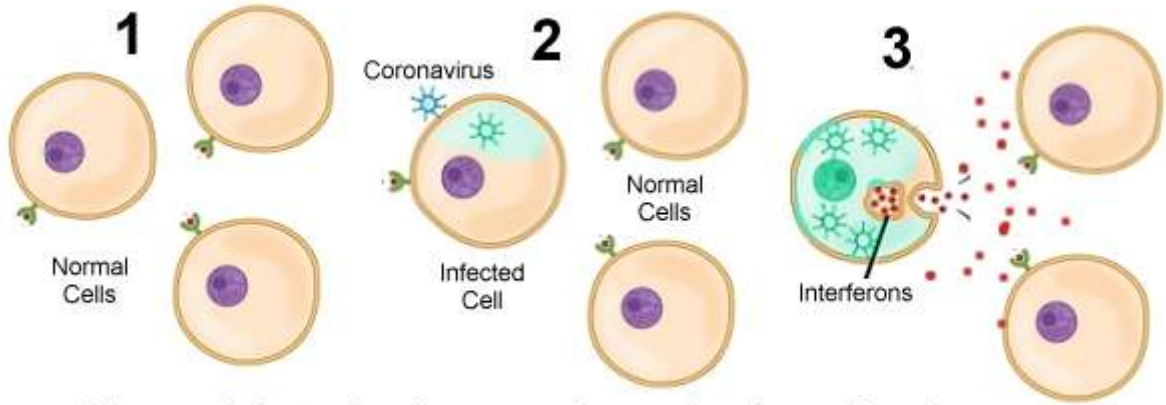
One cannot help but be amazed by the versatility of the immune system. There is another type of T-cell called a helper T- cell which decides the issue. These cells don't make toxins or fight invaders themselves but use chemical messages to give instructions to the other immune system cells as to what to do.

Helper T cells make decisions with the aid of another MHC molecule called class II. This process is rather complicated to describe and I do not want to fry your brain trying to explain it. I will simply say that helper T cells can identify whether a cytotoxic T cell can be used to destroy an infected cell and if not it sends out a chemical message to inhibit cytotoxic T cell intervention and activates NK cells to attack the infected cell instead. If on the other hand the helper T cell can determine that a cytotoxic T cell can be used, it sends out a chemical message to inhibit NK cell intervention while a particular cytotoxic T cell is alerted which attacks the infected cell through the mechanism of MHC molecule class II explained above.

INTERFERONS WARN OTHER CELLS OF VIRAL DANGER

Although a cell might have been infected by a pathogen such as COVID-19, it is does not totally succumb to the invader without a whimper. It will be taken over by the coronavirus, that is a certainty, or it will die as a result of the immune system's measures to destroy the virus. However, it is amazing to learn that it's sacrifice will not be in vain. What do I mean by that?

Earlier I mentioned antiviral proteins produced by infected cells called interferons, named because of their ability to "interfere" with viral replication by antiviral proteins. Interferons are categorized as cytokines, small proteins that are involved in intercellular signalling. What I am saying here is that an infected cell can send out warning signals using interferons as the medium to communicate to adjacent cells about its predicament so that they can take measures to protect themselves. How does it do that and how effective are those measures?



How an infected cell warns other cells of pending danger

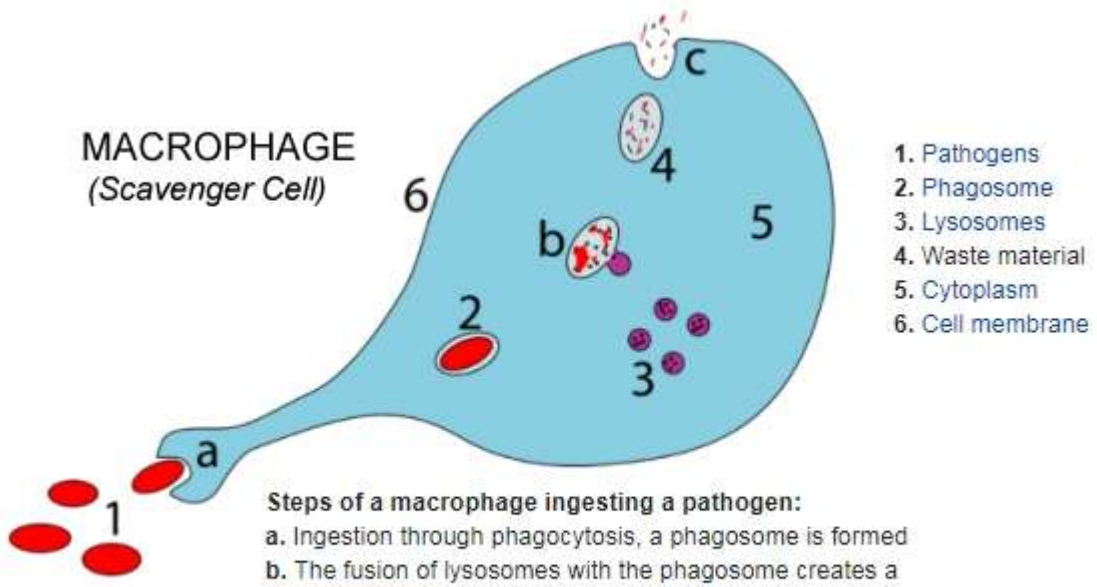
As soon as the cell has been infected by the coronavirus, although it too late for it to directly inhibit the virus's replicating itself within it, it soon recognizes that it is in peril. So the infected cell begins to produce interferons and as they build up and are secreted to the surrounding environment.

The interferons ultimately bind onto the membrane of the surrounding uninfected cells, and they immediately go into defensive mode. They alter their gene expression by destroying RNA which has the effect of inhibiting protein synthesis and this increases the cells' resistance to infection. This is because virally infected cells produce more viruses by synthesizing large quantities of viral proteins. Hence, by inhibiting protein synthesis, a cell becomes resistant to viral infection.

Furthermore, if adjacent cells have been infected and have as yet not produced interferons themselves, the external distributed interferons signals them to undergo apoptosis (programmed cell death), while at the same time immune cells such as natural killer cells and macrophages are guided to the dying cells and kill them. I have already discussed the functionality of NK cells but not macrophages.

Cells are dying, bacteria are wandering in, and viruses are attempting mass takeovers of our cells in our bodies. Our immune system is constantly hard at work destroying these intruders and cleaning up the mess. One cell in particular, the macrophage, is an integral part of this clean-up process. Macrophages are large white blood cells and the term 'macrophage' literally means 'big eater.'

MACROPHAGES



Picture Credit: XcepticZP (Public domain)
https://commons.wikimedia.org/wiki/File:Phagocytosis_ZP.svg

A macrophage is a large white blood celled amoeba-like organism, and its job is to clean our body of microscopic debris and invaders. Well something has to do this dirty job and clear up the mess. It has the ability to locate, engulf and digest cellular debris such as foreign substances, microbes, cancer cells, and anything else that does not have the type of proteins specific to healthy body cells on its surface. This process is called phagocytosis.

Macrophages are found in essentially all tissues and play a vital part of the immune system. They also play an important anti-inflammatory role and can decrease immune reactions through the release of cytokines. Macrophages that encourage inflammation are called M1 macrophages, whereas those that decrease inflammation and encourage tissue repair are called M2 macrophages.

TO SUMMARIZE

In this chapter we have learned just how our remarkable immune system is able to protect us from virus attacks such as COVID-19 coronavirus. T-cells recognize the virus signature on the surface of the infected cell and attack it immediately and quickly, if you have had the same diseases before. But if this is a new virus, as the COVID-19 is, then another powerful cell is brought into the equation and it not called a natural killer cell for nothing. It is awesome killing machine in which 5-15% are ALWAYS circulating through the body looking for abnormal or infected cells to destroy.

Cytotoxic T-cells and NK cells are also aided and abetted by other immune substances, such as helper T-cells, interferons and macrophage so it is a wonder that we get sick at all. But this is only half of the story. If you are elderly, have an underlying health condition or anybody which for all kinds of reason have a weakened immune system, this will impact on how effective your immune system will be.

For example, if you are prone to getting the common cold then it is likely that you have a weak immune system and you need to do something about it. More about that later. However, for the time being, I think it is prudent to take a break from the science on how the COVID-19 coronavirus attacks our lungs and move onto another matter which has much relevance.

HAS BORIS JOHNSON GONE MAD?

On the 19th March 2020, something extraordinary happened. British newspaper headlines carried what appeared to be a reckless statement by the Prime Minister Boris Johnson, that the "*UK can turn the tide of coronavirus in 12 weeks.*" For example, in *The Guardian* newspaper reported that "we can turn the tide within the next 12 weeks and I'm absolutely confident that we can send coronavirus packing in this country."

This mantra was repeated in the most newspapers, like *the Sun, Daily Express, BBC News* and so on. Television news outlets like *Sky News* said the same. "*UK 'can turn the tide' in the next 12 weeks, Boris Johnson says.*"

Has Boris gone mad? How can he possibly make such a claim? But what the Prime Minister has not told you is why he can make what appears to be such an outlandish irresponsible declaration. This is because his announcement is not the rallying cry of a Churchill like figure in an attempt to boost the moral of the people against apparent insurmountable odds, but rather Boris is making a claim that is based entirely upon scientific evidence.

Perhaps you missed it when Boris made that announcement at a news conference on the 19 March 2020, flanked by his chief scientific adviser, Patrick Vallance, and chief medical adviser, Chris Whitty. Boris said, "***We're guided very much by the science and whether we think the advice we have given is working.***"

It is true. It is going to happen. In 12 weeks time, which brings us to the beginning of July, there will have been a massive drop in COVID-19 coronavirus cases, and in the following chapter I present the scientific and statistical evidence to support this seeming incredulous conclusion.

Chapter 3
BORIS'S MIRACLE? 12 WEEKS TO SALVATION

On the 19th March 2020, Prime Minister Boris Johns made an announcement which many people might have thought was reckless bravado. He said he was absolutely confident that we can send coronavirus packing in this country. The UK media machine spread the message throughout the country and at the same time, the government sent out estimated 1.5 million leaflets telling Britons telling them to not go outside for the next 12 weeks to protect themselves from coronavirus." (BBC News; CityA.M, 22 March 2020).

Could self-isolation be the solution to bringing down the cases of COVID-19 so dramatically by July which Boris claims? That will certainly help, that is true, but when he made his announcement Boris said that he and the government was "guided very much by the science." Mmm! Is self-isolation the science to which Boris and his team of scientific advisors was talking about? No. There is a real scientific explanation why, by July, cases of the COVID-19 coronavirus WILL drop dramatically, so all one has to do is to contain the virus long enough for the science to kick in. That will act much faster if fewer people get the disease, hence, the government's self-isolation directive, which is the right thing to do and it will help reduce the spread of the disease in the population.

I am sure you are biting at the bit wanting to know what that science is which Boris and his team was talking about? It is this that I shall endeavour to show you in this book, but it requires me to provide proof, otherwise what I say would not be worth the paper it is written on. So I am going to approach this like a detective novel, presenting clues and discussing them until the evidence is so strong and conclusive that you will not only have hope that this dreadful disease will fade way in the summer, but before then I will provide you, and especially the vulnerable, a way to enhance your survival chances should you be unfortunate to get the disease. This is the motive for me writing the book.

THREE CLUES TO GET YOU THINKING

Boris and his scientific advisors know that there is one major factor which they have not told you about, which will not only cause the number of cases of the coronavirus in the UK to drop dramatically, but all the countries in the Northern Hemisphere will see the number of cases drop too, so much so that the disease will all but have disappeared. So what is it which will make all the difference?

There are three clues which presents itself. First, the average temperatures in the UK and other countries in the Northern Hemisphere will have risen by June/July and secondly, people will be exposed to the summer sunshine. Finally, as I shall prove, the coronavirus dubbed COVID-19 has happened before. What we are seeing today is a repeat of another coronavirus epidemic which also took place in China, during the winter of 2002/2003. It was called SARS (Severe Acute Respiratory Syndrome) and the coronavirus which caused it is designated SARS-CoV (SARS-CoronaVirus). [1]

There can be no doubt in my mind that the government advisors to the Prime Minister, have based their recommended strategy on the actions that were taken during the SARS epidemic. It worked then and will work now? I go further. I maintain that COVID-19 is really SARS by another name because the symptoms of both are identical, the causes of both are identical, both began in China in winter and... well I am getting way ahead of myself here.

You may ask why is it important to find out if COVID-19 is really SARS by another name. **If it is SARS then that will give us HOPE, because of what happened to that epidemic.**

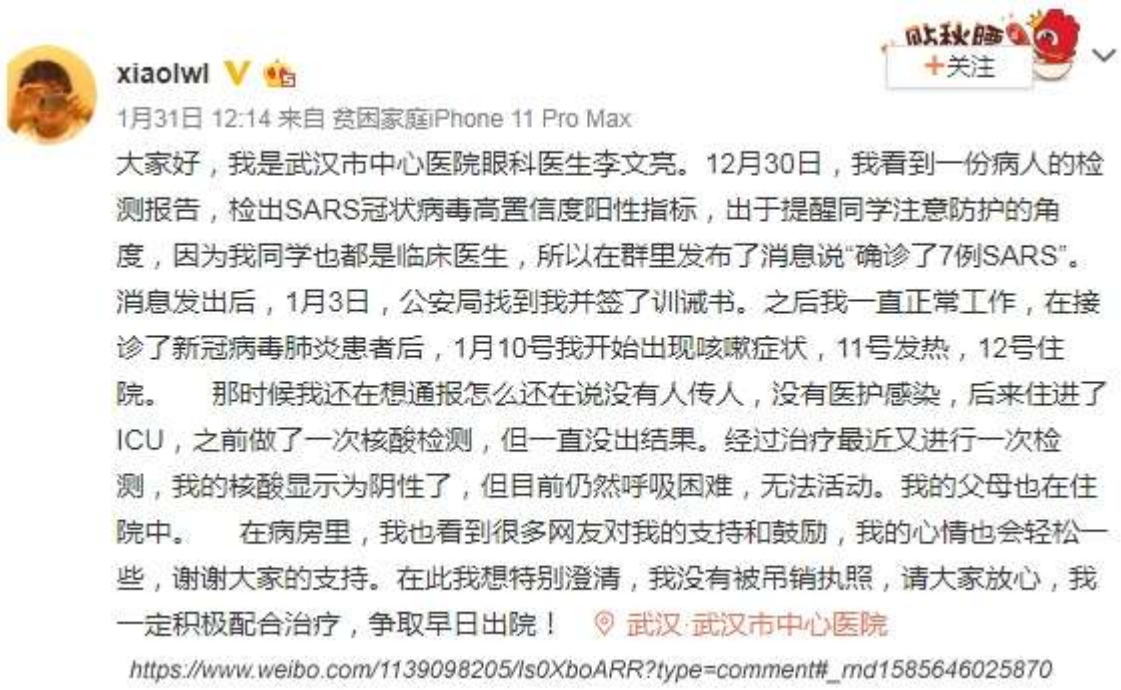
Boris claims that the virus will be beaten in 12 weeks, which will be July 2020. Guess what? The SARS epidemic fizzled out in July 2003. Surely, this cannot be a coincidence? Nor, is it? **It is on record that when Chinese doctors first tested the coronavirus now called COVID-19, they found that the pathogen tested positive for the SARS virus. That's right! SARS!**

THE STORY HOW SARS WAS COVERED-UP

Speaking as a historian and an investigative journalist, what I am about to tell you may one day be regarded as the greatest scandal of our century, far more scandalous than the Watergate cover-up in the last century which brought down a president. The Chinese government have perpetrated a cover-up of global proportions and fooled the world in believing that COVID-19 was a new coronavirus which has never been seen before. However, it is on record that the tests on the patients that had the disease proved positive for SARS, even thought Chinese authorities have tried ever since to hide this damning evidence against them.

The Chinese authorities began their cover-up by first trying to silence the doctors who were present on the scene when cases of the SARS coronavirus began to be seen in two hospitals in Wuhan and the authorities almost succeeded. But one of them managed to tell the world the truth before he died a month later. His name, Dr. Li Wenliang.

Dr. Li was coerced by the Wuhan Hospital authorities not to say anything about SARS and fearing imprisonment and the effects that would have on his family, he complied. But he became infected by SARS on 10 January 2020, and by the end of the month he was in very poor condition. He had great difficulty breathing and could not move. Perhaps, knowing that he was not going to survive, he spoke out about what happened from his death bed on Weibo, a Chinese microblogging website which is one of the biggest social media platforms in China, with over 445 million monthly active users as of Q3 2018.



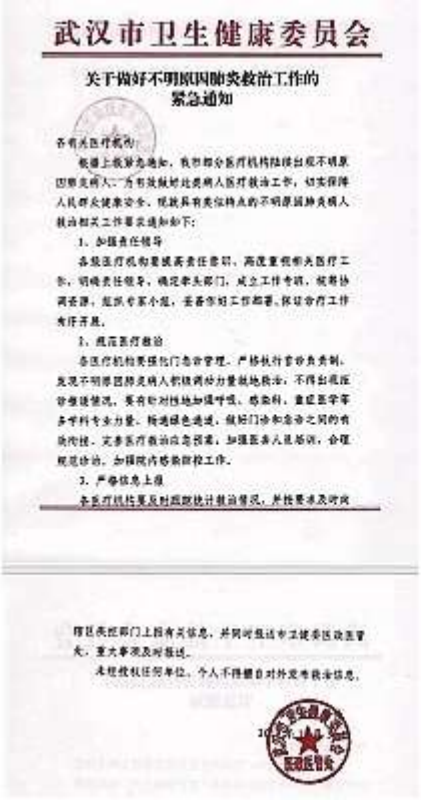
I have used Google Translate to translate what Dr. Li blogged on Weibo on 31 January 2020 using his smart phone, which he always carried with him.

> *Hello everyone, this is Li Wenliang, an ophthalmologist at Wuhan Central Hospital. On December 30th, I saw a test report of a patient who detected a high confidence positive indicator of SARS coronavirus. In order to remind students to pay attention to protection, my classmates are also clinicians, so they were released in the group. The source said "7 SARS cases were confirmed". After the news was issued, on January 3, the Public Security Bureau found me and signed a cautionary statement.*

On Li's Weibo, tens of thousands left comments thanking him for speaking out and wishing him a speedy discovery. "Dr Li, you're a good doctor with conscience. I hope you stay safe and sound," read one of the top-rated comments. Dr. Li died on 7 February 2020.

A few hours after Dr Li's death, the hashtag #WeWantFreedomOfSpeech garnered nearly two million views on Weibo, while #WuhanGovernmentOwesDrLiAnApology had tens of thousands of views. Both were quickly censored which is further evidence of the draconian information control regime of the Chinese governement at work.

Rumours about the return of SARS continued to be spread throughout the Wuhan community. Despite their best efforts of silencing the doctors who had witnessed the disease in the early patients, the rumours could not be stopped. So the Provincial Government, aided and abetted by the Wuhan medical authorities, published a notice saying that the cases described by the rumours was simply a new kind of viral pneumonia and that nobody was to worry. The disease was not contagious from human to human, they said.



武汉市卫生健康委员会

关于做好不明原因肺炎救治工作的紧急通知

各有关医疗机构：

根据上报异常情况，我市部分医疗机构陆续出现不明原因肺炎病人。为有效做好此类病人医疗救治工作，切实保障人民群众健康安全，现就具有类似特点的不明原因肺炎病人救治相关工作要求通知如下：

1. 加强责任领导

各级医疗机构要提高责任意识，高度重视相关医疗工作，明确责任领导，确定牵头部门，成立工作专班，做好协调安排，组织专家小组，妥善做好工作部署，保证合理工作有序开展。

2. 规范医疗救治

各医疗机构要强化门急诊管理，严格执行首诊负责制，发现不明原因肺炎病人积极调动力量做好救治；不得出现推诿患者情况，要有针对性地加强呼吸、感染科、重症医学等多学科专业力量，畅通绿色通道，做好门诊和急诊之间的有效衔接。完善医疗救治应急预案，加强医务人员培训，合理规范诊治，加强院内感染防控工作。

3. 严格信息上报

各医疗机构发现及时跟踪统计救治情况，并按要求及时向

辖区疾控部门上报有关信息，并同时报送市卫健委医政医管处。重大事项及时报送。

未经我机构任何单位、个人不得擅自对外发布我市信息。

关注互联网科技领域的中文IT科技博客

https://twitter.com/williamlong/status/1211843731764269056

月光博客

@williamlong

218 Following 367.6K Followers

On the evening of the 30th, an "urgent notice on doing a good job in treating pneumonia of unknown cause" was settled as the redhead document of the Medical, Administrative and Medical Office of the Wuhan Municipal Health Committee, which was widely spread on the Internet. Another titled "Urban Health and Health Commission's Emergency Notice on Reporting the Treatment of Unknown Cause of Pneumonia" states that Wuhan South China Seafood Market has seen unidentified patients with pneumonia. t.cn/AiFHTwOY

Official notice of outbreak from Wuhan Red Cross Society Hospital republished on twitter by "William Long" from ShenZhen, China

So began the cover-up which was to fool the world. Lies beget lies and before long things got completely out of control. Deaths were piling up and on the 20th January, the Central Government had to step in. President Xi Jinping ordered "resolute efforts to curb the spread" of the coronavirus and stressed the need for the timely release of information. [2]

This was the first time that President Zi had informed the Chinese public of the outbreak, but by this time the genie was out of the bottle. Thousands of Wuhan citizens had travelled to other parts of China (and abroad) and the disease was spreading like wildfire. Already, there were reports of 282 confirmed cases throughout in China, including Guangdong Province where the SARS epidemic of 2002/2003 had originated. Also, three countries: Thailand, Japan and South Korea were now reporting a number of cases and these had all been exported from China, passed on by visiting Chinese tourists who unknowingly were infected by the coronavirus.

As of 20 January 2020, 282 confirmed cases of 2019-nCoV have been reported from four countries including China (278 cases), thailand (2 cases), Japan (1 case) and the Republic of Korea (1 case); Cases in Thailand, Japan and Republic of Korea were exported from Wuhan City, China; Among the 278 cases confirmed in China, 258 cases were reported from Hubei Province, 14 from Guangdong Province, five from Beijing Municipality and one from Shanghai Municipality; Of the 278 confirmed cases, 51 cases are severely ill 12 are in critical condition; Six deaths have been reported from Wuhan City. [3]

20 January 2020

Reported incidence of confirmed 2019-nCoV cases

Table 1. Countries, territories or areas with reported confirmed cases of 2019-nCoV, 20 January 2020

WHO Regional Office	Country, territory, area	Total number of confirmed cases
WPRO	China – Hubei Province	258
	China – Guangdong	14
	China – Beijing Municipality	5
	China – Shanghai Municipality	1
	Japan	1
	Republic of Korea	1
SEARO	Thailand	2
Total confirmed cases		282

Instead of admitting that the new outbreak had broken out was SARS, the Chinese government continued to perpetuate lies to the outside world. It convinced the World Health Organization that this coronavirus was not SARS, but a coronavirus, albeit very much like it, referring to it as "SARS-like". It failed to mention that the genome for both were virtually the same. Thus, the Chinese government have been complicit in the cover-up all along.

It is time to tell the real facts and not what their propaganda machine wants us to hear, which is even now perpetuating more lies. The Chinese government claims that the numbers of cornavirus cases was dwindling in China but Michael Gove accuses China of hiding the true scale of coronavirus crisis amid a mounting diplomatic row. [4]

TRACKING THE COVER UP DAY BY DAY

If we track the events of the early days when the "new viral pneumonia" was first encountered, I think the reader will clearly see that first, the Wuhan provisional government covered-up what was identified as SARS, and then the Chinese National Government did the same. What follows is a brief account of the events that took place between December 2019 and January 2020 when the coronavirus first appeared and how it was treated. It makes sobering reading.

Some information provided below comes from the original WeChat communications, which the doctor was forced to delete. Fortunately, before it was deleted a copy of the communications was recorded by the China Digital Times, a California-based bilingual news website covering China. The site focuses especially on news items which are blocked, deleted or suppressed by China's state censors. [5]

24 DECEMBER 2019

On Christmas Day, 2019, Dr. Lu Xiaohong, the director of gastroenterology at Wuhan Fifth Hospital, received alarming news that patients at two hospitals in Wuhan were suspected of contracting viral pneumonia of an unknown cause and had been quarantined, including medical staff in the respiratory department. These hospitals were the Wuhan Union Hospital and the Wuhan Red Cross Hospital.

At first, Dr. Lu was not alarmed. This is because cases of viral pneumonia occurs every year at this time of year, which was wintertime. Keep a mental note of this because it is relevant, as is her following observation. Then she learned from her colleagues at the hospitals that some patients did not have a cough or fever, which would be normal for viral pneumonia. This was most puzzling. So when some patients who had minor symptoms had CT scans, it was found that their lungs were in a very bad condition.

It was clear that these was no ordinary cases of viral pneumonia and Dr. Lu became was very worried, especially when she learned that medical staff at the two hospitals were suspected of contracting the disease as well and were quarantined, including medical staff in the respiratory department. "That suggested the contagiousness of this virus was very strong," Dr. Lu later told the state-run China Youth Daily. It also suggested the mysterious virus could be transmitted between humans. [6]

26 DECEMBER 2019

It was on this day that Dr. Zhang Jixian, head of the respiratory department at Hubei Provincial Hospital, reported to health officials in China that a "granny" had been admitted to the hospital with what appeared to be severe case of viral pneumonia on the 16 December. [7]

The 57 old woman identified as Ms Wei had come from the Huanan Seafood Market, in Jianghan District, Wuhan, Hubei province, China. This is a livestock and seafood market and is reported to be the largest seafood wholesale market in Central China with its western zone known for selling the meat and livestock of wild animals from around the world. Over a thousand people make a living working in the market.

Ms Wei is believed to be "Patient Zero" and she was a seafood merchant selling live shrimps at the market. She said that she had begun feeling ill on the 10 December, but thinking that she was suffering from an ordinary cold, she sought treatment at a local clinic before returning to work, at which point it is highly likely she unwittingly began infecting others at the market. She said that every winter she always suffered from flu and thought this was the illness that she had. "I felt a bit tired, but not as tired as previous years", she said. Ms Wei said that she believed she had contracted COVID-19 after using a toilet in the market which she shared with wild meat sellers. Neighbouring vendors also contacted the illness, as well as several members of her family. Including one of her daughters and her niece. [8]

If what she says is true, then this means that Ms Wei got the infection from someone else, who had used the same toilet. That person has never been identified, and he or she would have been Patient Zero.

In the afternoon, Dr. Zhang examined another person who also had come from the market to the hospital. His condition was extremely severe. [9]

27 DECEMBER 2019

In the morning the partner of Ms Wei was brought to the hospital suffering from the same symptoms as his wife, by their son. Both were given CT scans and it was confirmed that both had the disease. On the same day, another person came with the infection. [10]

28/29 DECEMBER 2019

Dr. Zhang said that another person came to the hospital on 28 December, then another on the 29th. That meant that four people who had worked at the Huanan Seafood Market had the disease, and it was clear that there was a pattern. So she reported this to her superiors at the hospital. She believed that if she had not done this then doctors and nurses might become infected. [11] However, the hospital authorities did nothing, even though they knew that something serious was going on.

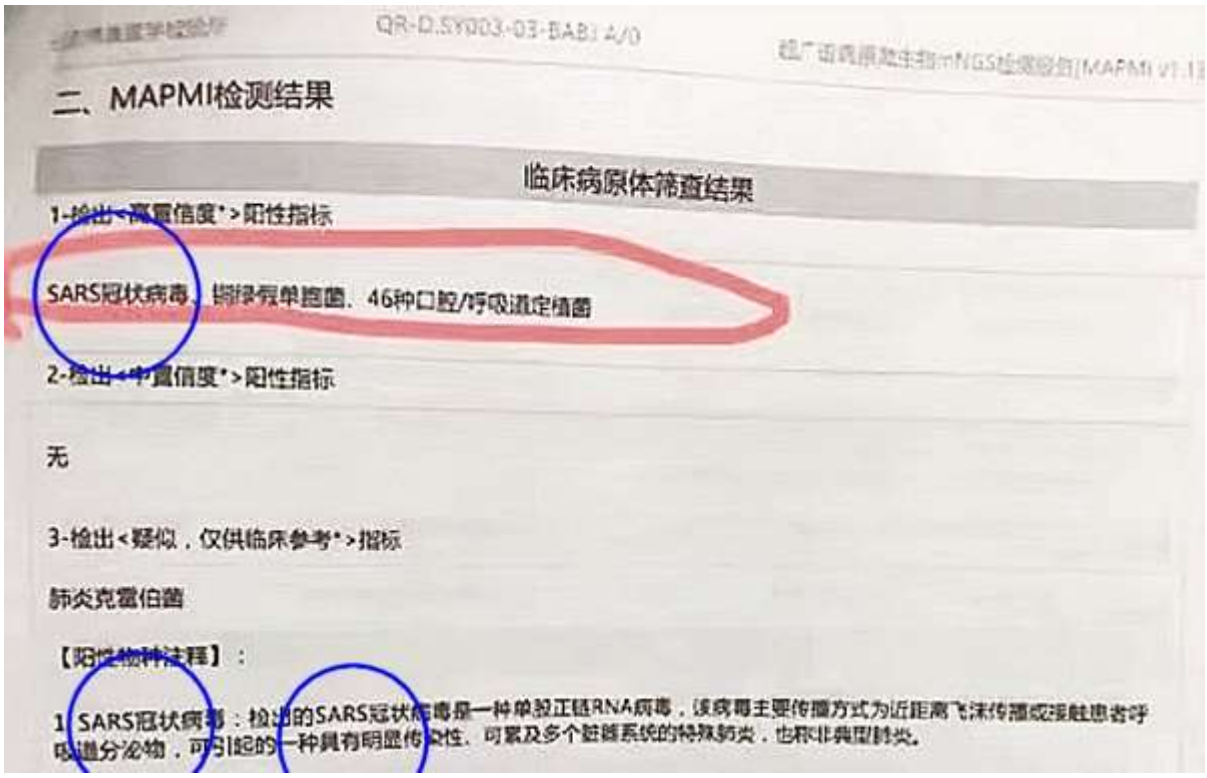
This story told by Dr. Zhang was published in a video by the Publicity Department of the Communist Party of China. The BBC called the paper "state-run and in early 2020, the United States Department of State designated the newspaper, along with several other media outlets, as "foreign missions" owned by the Communist Party of China.

It is clear from the video, which can be viewed on YouTube, [12] that the setting is too clean and polished to reflect the true conditions of the day. I think it is true to say that what Dr. Zhang said and did, including crocodile tears, was scripted by the Chinese propaganda machine.

Dr. Zhang Jixian, telling her "scripted" story published on a video produced by the China Daily, owned by the Chinese State.

Dr. Zhang received an award by the Hubei Provincial Government for championing the fight against the novel coronavirus pneumonia. Needless to say, Dr. Li did not, but he was hailed as a hero across Chinese social media, but there was no mention of Dr. Zhang. That speaks volumes, don't you think?

30 DECEMBER 2019
Test Confirms the coronavirus is SARS



二、MAPMI检测结果

临床病原体筛查结果

1-检出<高置信度*>阳性指标

SARS冠状病毒，铜绿假单胞菌、46种口腔/呼吸道定植菌

2-检出<中置信度*>阳性指标

无

3-检出<疑似，仅供临床参考*>指标

肺炎克雷伯菌

【阳性物种注释】：

1 SARS冠状病毒：检出的SARS冠状病毒是一种单股正链RNA病毒，该病毒主要传播方式为近距离飞沫传播或接触患者呼吸道分泌物，可引起的一种具有明显传染性、可累及多个脏器系统的特殊肺炎，也称非典型肺炎。

On this day, Dr. Li Wenliang and Dr. Xie Linka were working at Wuhan Union Hospital in China, and they too were getting worried. They had become aware of seven patients who had been brought into the hospital and had been quarantined. It was the test results which worried them. They were most disturbing. One of the patients had been diagnosed with SARS, because the test result showed the pathogen tested positive for the SARS virus with a high "confidence coefficient" - a measure indicating the accuracy of the test. [13]

Dr. Li ran a medical school alumni group, and he was concerned that his students and their families might be at risk. So through the popular WeChat, a Chinese multi-purpose messaging, social media and mobile payment app developed by Tencent, he sent a text message warning them that "***7 cases of SARS have been diagnosed in the South China fruit and seafood market and isolated in our hospital emergency department.***" [14] One recipient replied, "*Is SARS coming again?*" [15]

On the same day in December that Li messaged his friends, an emergency notice was issued by the Wuhan Municipal Health Commission, informing the city's medical institutions that a series of patients from the Huanan Seafood Wholesale Market had an "unknown pneumonia." The notice came with a warning: "Any organizations or individuals are not allowed to release treatment information to the public without authorization." [16]

https://chinadigitaltimes.net/space/File:发口哨的人-英文版.png
From English version of censored interview with Ai Fen (Source: CDT)

The test results that Dr. Li saw had been given to him by another doctor, Dr. Ai Fen, who was the director of the emergency department at Wuhan Central Hospital. Several patients had arrived in the department showing symptoms of what appeared to be viral pneumonia. When treated, the patients appeared to be resistant to usual treatment methods.

Dr. Ai Fen waited for the test results that she had sent for analysis and to her horror when one of them arrived on 30 December 2019 it contained the word: "**SARS coronavirus**."

Dr. Ai could not believe what she was reading and read the report several times, breaking out in a cold sweat as she did so. She knew that that meant if true. She circled the words SARS, took a photo and sent it to a former medical school classmate, now a doctor at another hospital in Wuhan. By that evening, the photo had spread throughout medical circles in Wuhan, where it was also shared by Dr Li. [17]

31 DECEMBER 2019

Sending a message on WeChat was a big mistake. Due to its popularity, user activity on WeChat is used for mass surveillance in China and the company itself also censors politically sensitive topics in China. So when screenshots of his post went viral with his name in plain view, Li knew that the authorities would find out about it and that he would probably be punished.

In the early hours of 31 December, at 1:30 am, Dr. Li received a phone call and was told to go to the Wuhan Health and Medical Committee, which at that time met overnight. When he arrived, the committee was already in session attended by the leaders of the hospital and the director of the medical office. So Dr. Li waited in another room. Afterwards, Li was summoned by officials at his hospital to explain how he knew about the cases, according to state-run newspaper Beijing Youth Daily.

It was not until about 4 am that he was driven home by the director. Dr. Li later learned that throughout the day, the director was called several times to the Supervision Department and the discipline inspection commission of the hospital and interrogated about Dr. Li's divulging of the SARS coronavirus test. The Director notified Dr. Li that he would only be punished by the hospital authorities if he would write a self-reflection and self-criticism of untrue information. This Dr. Li did, relieved that this would be the end of the matter. He was very much mistaken.

At the close of 2019, the WHO China Country Office was informed of a pneumonia of unknown cause, detected in the city of Wuhan in Hubei province, China. The WHO were told that some patients were operating dealers or vendors in the Huanan Seafood market. There was no mention that the first test results had identified the "pneumonia of unknown cause" as SARS with a high "confidence coefficient" rating that it was that coronavirus.

1 JANUARY 2020

Rumours about the re-emergence of SARS was by now flying all over social media and the provincial government began to shut down the websites to quash the rumours. Meanwhile, police officers showed up at the Huanan Seafood Wholesale Market, along with public health officials, and shut it down.

The local officials then issued a notice that the market was undergoing an environmental and hygienic clean-up related to a pneumonia outbreak. Workers in hazmat suits moved in, washing out stalls and spraying disinfectants. This was followed by Wuhan's health commission, its hand forced by those "rumours," announced that 27 people were suffering from pneumonia of an unknown cause. Its statement said there was no need to be alarmed. "*The disease is preventable and controllable,*" the statement said.

武汉市卫生健康委员会

市卫生健康委关于报送不明原因肺炎救治情况的紧急通知

各有关医疗机构：

根据上报紧急通知，我市华南海鲜市场陆续出现不明原因肺炎病人。为做好应对工作，请各单位立即清查统计近一周接诊过的具有类似特点的不明原因肺炎病人，于今日下午4点前将统计表（盖章扫面件）报送至市卫健委医政医管处邮箱。

联系人：毛冰 85697893 李堂 85690943

邮箱：whsyzc@126.com

附件：相关信息上报表

武汉市卫生健康委员会医政医管处

2020年1月1日

While this was going on, the police broadcast a message on CCTV, China's state broadcaster, making it clear how the Chinese government would treat "rumourmongers."

> *The internet is not a land beyond the law ... Any unlawful acts of fabricating, spreading rumors and disturbing the social order will be punished by police according to the law, with zero tolerance," said a police statement on Weibo, China's Twitter-like platform.* [18]

Penalties would be severe if such rumours continued, the police said. This would include imposing penalties of up to three years in prison for posting 'rumours' shared more than 500 times, or viewed by more than 5,000 people.

2 JANUARY 2020

On this day 41 people who were admitted to hospitals in Wuhan, were confirmed to have contracted (laboratory-confirmed) SARS, although it was not called that. It was still being called a viral pneumonia of unknown cause by the hospital authorities. Thirty of the infected patients were men (73%) and less than half had any underlying medical conditions. Twenty-seven of the patients had had been exposed to Huanan seafood market and only one family cluster was found, which was Ms Wei, her partner and their son.

Forty out of the 41 patients had fever at the onset of the illness, 31 had a persistent cough and 18 suffered from fatigue. Less common symptoms were sputum production (11 patients), headache (3 patients) and one had diarrhoea. Two patients however, also coughed up blood (haemoptysis) which indicated that they had a severe infection of the lungs. [19]

As for Dr. Li. when he heard the police announcement the day before he was very worried. However, as the day passed by nothing happened he thought perhaps the hospital had kept his involvement under wraps. He could not have been more wrong.

3 JANUARY 2020

Dr. Li was awakened by a knock on door of his house and an official told Dr. Li that he had been summoned to the local police station to answer some questions. Upon his arrival in the police station, Dr. Li was interrogated during which he was reprimanded for "spreading rumours online" and for "severely disrupting social order" over the message he sent in the chat group about SARS.

Knowing that the very mention of SARS was a hot potato with the authorities, and believing that he would be locked up if he did not detract what he said, he signed a statement acknowledging his "misdemeanour", promising not to commit further "unlawful acts" in the future. Having signed the document, Li was relieved when he was released after an hour of interrogation. [20]

From henceforth, Dr. Li told the news media that the virus was not SARS but was a different type of coronavirus, albeit SARS-like. The ophthalmologist returned to work at Wuhan Central Hospital feeling helpless. He said: "There was nothing I could do. (Everything) has to adhere to the official line." [21]

Dr. Xie Linka too was also arrested and interrogated because she had sent out a message telling her nursing colleagues not to wander to where the patients with the SARS-like illness had been quarantined in the hospital. Next thing she knew was that she was being berated by the hospital authorities and police and warned her to stop spreading "false information" about the deadly illness.

The Wuhan authorities now began a cover-up in earnest, beginning with the destruction of the evidence. The National Review of 17 March 2020 reported what they did.


NATIONAL REVIEW

Chinese Authorities Gagged Laboratories in December over Coronavirus-SARS Connection

By TOBIAS HOONHOUT | March 17, 2020 10:25 AM

> *China's top medical authority issued a gag order after Wuhan labs sequencing coronavirus found it resembled the SARS virus that killed nearly 800 people in 2002-2003 back in late December, according to Chinese media. Caixin Global, a respected independent publication, reported that genomics laboratories sequenced the coronavirus by December 27, but were ordered by local and national officials to hand over or destroy the samples and not release their findings.* [22]

The Times newspaper published the story too, and said that censors had been rapidly deleting the report from the Chinese Internet. The newspaper makes it quite clear that the Chinese authorities were determined to suppress the rumour that the coronavirus was SARS. It said that the Chinese laboratories were ordered to stop tests, destroy samples and suppress the news. [23]

At the same time, scientists at the National Institute of Viral Disease Control and Prevention presented their findings of samples taken from patients at the hospitals. Without admitting that SARS was responsible, the *China CDC Weekly*, the national public health bulletin published by the Chinese government, declared:

> *On January 3, 2020, the sequence of novel ß-genus coronaviruses (2019-nCoV) was determined from specimens collected from patients in Wuhan by scientists of the National Institute of Viral Disease Control and Prevention (IVDC), and three distinct strains have been established.* [24]

Being a government owned publication, it is not surprising that the scientists avoided mentioning the word SARS. In fact, they made sure that the name of the "new coronavirus" did not have SARS in it. They called it 2019-nCoV (novel coronavirus) meaning new coronavirus discovered in 2019. But they contradicted themselves by saying there were three distinct strains - but of what? The answer was to come later when 2019-nCoV was renamed SARS-CoV-2 (SARS coronavirus 2). This clearly shows that the scientists were dealing with SARS, which is exactly what the first tests had shown.

The hospitals in Wuhan reported to the Health authorities in the city that there was now 44 cases of 2019-nCoV, including 11 cases that were very serious. However, there had been reported no deaths to date. Pressure from the WHO required answering and the Wuhan medical authorities decided not to tell them about the SARS-like coronavirus but to continue saying that the disease was a pneumonia of unknown cause.

> *And the second notice on epidemic situation issued by Wuhan Health and Health Committee, that is, on January 3, 2020, the concept of "unexplained viral pneumonia" was first proposed, indicating that patients with unexplained viral pneumonia were diagnosed.* [25]

4 JANUARY 2020

Dr. Li had returned to work, meanwhile the cover-up had now extended to the outside world. The news agency Bloomberg reported:

> *Several people were arrested for circulating fake news online about the viral spread of pneumonia, provincial authorities said, adding that rumors on social media alleging that there had been an outbreak of SARS are untrue, and no person-to-person transmission has been found so far.* [26]

The World Health Organization was still being left in the dark and was beginning to be frustrated by the lack of information about the new viral pneumonia. Emails were sent but no reply was received. When the WHO were finally contacted, little information was provided. All the Wuhan Institute of Virology reported was that there had been a cluster of pneumonia cases - with no deaths - in Wuhan, Hubei Province and that investigations were underway to identify the cause of this illness. That was all.

At this time the Chinese health officials kept it to themselves that the strange sickness was caused by a SARS-like coronavirus, which they now named 2019-nCoV.

7 JANUARY 2020

The cover-up continued but the situation in Wuhan was by now getting out of hand. Social media was still actively saying that the new disease was SARS and western newspapers were reading what was being said. So the city authorities decided to come clean and announced they had identified the virus responsible for the pneumonia. It was a new coronavirus which they had named 2019-nCoV and it was identified as belonging to the coronavirus family, which includes SARS and the common cold. [27]

Xu Jianguo, the leader of the preliminary assessment of pathogenic test results and a member of the Chinese Academy of Engineering said on XinHuanet, the official state-run press agency of the People's Republic of China.

> *As of 21:00 on January 7, 2020, a new type of coronavirus was detected in the laboratory, and the whole genome sequence of the virus was obtained. A total of 15 positive results of the new type of coronavirus were detected by the nucleic acid detection method. From 1 positive patient The virus was isolated from the samples and showed a typical coronavirus appearance under an electron microscope. The expert group believes that the pathogen of this unexplained case of viral pneumonia was initially determined to be a new coronavirus.* [28]

Xinhua is the biggest and most influential media organization in China, and the ministry-level institution subordinate to the Chinese central government. It is the highest ranking state media organ in the country alongside the People's Daily and its president is a member of the Central Committee of China's Communist Party. Little wonder then that Xu Jianguo emphasized that "*The new coronavirus that caused the outbreak is different from the human coronaviruses that have been discovered and further understanding of the virus requires further scientific research.*" [29]

So, although it was admitted that the viral pneumonia was a coronavirus like SARS, Xu Jianguo stuck to the scripted party line that 2019-nCoV was not SARS.

It was also on this date, 7 January, that one of the original patients, a 61-year-old man who got sick on 31 December and whose sickness worsened on 4 January died from the coronavirus disease. He had an underlying medical condition, chronic liver disease, and he was a frequent customer at the market. Treatment did not improve his symptoms, and he died of heart failure during the evening. [30]

10 JANUARY 2020

Dr. Li was back at work at his Wuhan hospital and treated a patient which he did not know had the coronavirus. Later he started coughing and the next day he was suffering from a fever. On the 12th he was hospitalized.

In the following days, Li's condition deteriorated so badly that he was admitted to the intensive care unit, and given oxygen support. There he remained until he died less than a month later, but not before he defied the censors and reiterated that the coronavirus was SARS from his death bed.

11 JANUARY 2020

The WHO reported that it had received from the Chinese authorities the entire genome of their designated 2019-nCoV, who also submitted it to the GISAID (Global Initiative on Sharing All Influenza Data) platform so that it can be accessed by public health authorities, laboratories and researchers.

By this action the Chinese successfully had diverted attention away from the early tests and rumours that the coronavirus was SARS and the World Health Organization fell for it, hook, line and sinker. The WHO now believed the Chinese propaganda that they were dealing with a new coronavirus not seen before. Without realizing it They helped to promote this falsehood to the outside world.

On this day the Chinese authorities told the world that there had been one death from the coronavirus, the man who died on 9 January, aforementioned.

13 JANUARY 2020

The WHO told the world media that Thailand's Ministry of Public Health had reported the first imported case of lab-confirmed novel coronavirus (2019-nCoV) from Wuhan in Bangkok. How did that happen? It turns out that Thailand is the top international destination for travellers from Wuhan and when the coronavirus outbreak occurred, no restrictions were made preventing travel to the country. "*More than 25,000 people arrived in Thailand from Wuhan, the centre of the outbreak, and other affected Chinese cities between 3 and 27 January*." [31]

Besides Thailand, Japan and South Korea are also favourite locations for tourists from Wuhan and the rest of China. Had the Wuhan health authorities locked down the city and prevented travel to these destinations and other cities in China, the pandemic might not have happened.

14 JANUARY 2020

Believing what the Wuhan medical authorities were saying, Maria Van Kerkhove, acting head of WHO's emerging diseases unit said that there had been limited human-to-human transmission of the coronavirus, mainly small clusters in families, adding that "*it is very clear right now that we have no sustained human-to-human transmission*."

15 JANUARY 2020

A second death occurred in a 69-year-old man in China on 15 January.

The WHO published a protocol on diagnostic testing for 2019-nCoV, developed by a virology team from at the Charité Virology Institute in Berlin.

The Ministry of Health, Labour and Welfare, Japan reported an imported case of laboratory-confirmed 2019-novel coronavirus (2019-nCoV) from Wuhan.

16 JANUARY

On this day, the WHO was alerted by Japan's Ministry of Health, Labour and Welfare that the first case in Japan, a 30-year-old male Chinese national had tested positive to 2019-nCoV during a hospital stay between 10 and 15 January. He had earlier visited Wuhan, but said that he had not visited the Huanan Seafood Wholesale Market. However, it is quite possible that he had close contact with an affected person in the Chinese city.

Postscript: The Japanese man's symptoms began on 3 January with a fever, and he returned to Japan on 6 January and sought medical care the same day. He was hospitalized on the 10th and was discharged on 15th after his symptoms got better.

A team from the German Center for Infection Research and virologists at Charite Hospital in Berlin announced that they had developed a new lab test to detect 2019-nCoV and that the assay protocol has now been published by the WHO.

The German team was led by Christian Drosten, MD, who directs the Charité Virology Institute. He and was one of the co-discoverers of the SARS coronavirus (SARS-CoV) and involved in developing the standard diagnostic PCR test for SARS. This he immediately and unselfishly made his findings on SARS available to the scientific community on the internet, even before his article appeared in the New England Journal of Medicine in May 2003. Among others, this selfless act for the welfare of others was honoured by the journal Nature.

The speed in which the new test was developed was about 8 days, from when the genome of COVID-19 was first mapped on 7th January. This would have been impossible, which can only mean one thing. The test in fact was the same SARS PCR test that Dr. Drosten had originally developed for SARS back in 2003 and it was German manufacturers who mass-produced the test in the greatest numbers. In other words COVID-19 is really SARS described by a different name. This explains why Germany was so well-prepared for testing for COVID-19. They were already geared up for mass-producing the SARS tests and nothing need to be changed.

It is most likely that the SARS PCR-kit developed by the Germans was the same test that the Wuhan doctors used when they first tested the coronavirus in December which identified it as SARS. This is because the SARS PCR-kit was quickly accepted by the WHO when the SARS epidemic was raging, and test kits were sent to all affected regions, especially China. It became the standard test used throughout the world for testing the SARS coronavirus.

20 JANUARY 2020

The National IHR Focal Point (NFP) for Republic of Korea reported the first case of novel coronavirus in the Republic of Korea.

THE NATIONAL CHINESE GOVERNMENT TAKES CONTROL FROM THE PROVINCIAL GOVERNMENT

23 JANUARY 2020

The National Chinese authorities closed off Wuhan by cancelling planes and trains leaving the city, and suspending buses, subways and ferries within it. At this point, at least 17 people had died and more than 570 others had been infected, including in Taiwan, Japan, Thailand, South Korea and the United States.

Two days later, all provinces in mainland China except Tibet had declared a Level 1 public health emergency and all public gatherings had been prohibited. Cinemas and tourist sites were closed until further notice. The Chinese Lunar New Year holiday was extended by a week so people would stay home, and the government advised the public to self-quarantine for two weeks. Unfortunately, these measures were far too late.

Closing the stable door after the horse had bolted was futile. The world pandemic had already begun and it was not a new coronavirus as is claimed. The original SARS (SARS-Cov) coronavirus had returned with a vengeance but had been given a new name - COVID-19.

A QUESTION YOU NEED TO ASK YOURSELF

When the first people who had pneumonia type symptoms at the Wuhan hospitals in December 2019, they underwent a series of tests to try to find out what the mysterious disease was. One of the tests carried out on a patient was for SARS and it tested positive, with a high degree of certainty, which was described in medical terms as "a high confidence coefficient rating."

After this, and in the days that followed doctors at Wuhan tested other patients and confirmed that they had been infected by a coronavirus. Ask yourself this. What tests did they confirm the patients had a coronavirus? Take a look at the timeline I have presented above.

The first time the genome of the coronavirus was made public was on 7 January and it was not until 16 January when the German Center for Infection Research and virologists at Charite Hospital in Berlin miraculously announced that they had developed a new lab test to detect 2019-nCoV - all in 8 days. It is impossible that the German labs could have produced a PCR (Polymerase Chain Reaction) kit in such a short time unless it was really the original PCR-kit which had been invented by Dr. Drosten of Charite's Virology Institute in 2003 for SARS (SARS-CoV).

The German SAR PCR-kit became the universal standard kit for the detection of SARS and it was distributed around the world under the auspices of the World Health Organisation. Germany manufactured may of these kits, as did other world manufacturers, under licence. I would suggest that the reason Germany was able to produce PCR-kits so rapidly for the present coronavirus epidemic called COVID-19 (2019-nCoV) is because the kits they use are the same as the SARS PCR-kits and their manufacturing industry is already geared up to mass produce this kit.

> *It is now well-known that Germany is able to test for coronavirus on a far greater scale than the rest of Europe. The way in which the country has managed to scale up its capacity is truly remarkable. The effort is most impressive because of the speed at which Germany's efforts have been accomplished.*
>
> *Countries such as South Korea and Taiwan, which have combined mass-testing with highly effective contact tracing, have been preparing for a new respiratory disease such as that caused by the new coronavirus for many years. Germany, however, appears to have simply responded rapidly to an unexpected and sudden - if not entirely unforeseen - global health crisis.* [32]

Germany was already geared up to mass produce the SARS PCR-kit albeit under the guise of it being a new kit for COVID-19 coronavirus.

> When Drosten's university medical center developed what became the test recommended by the World Health Organization, they rolled these tests out to their colleagues throughout Germany in January. "*And they of course rolled this out to labs they know in the periphery and to hospital labs in the area where they are situated," Drosten said. "This created a situation where, let's say, by the beginning or middle of February, testing was already in place, broadly.*" [33]

Other countries had stocks of the SARS PCR-kit but this was not used or manufactured because they were told that COVID-19 was a new coronavirus. This explains why Germany's coronavirus death rate is far lower than in other countries. They were using the SARS PCR-kit. This is a shocking allegation which I make and it needs to be investigated by the European Court of Justice. Thousands of lives in other countries could have been saved had this been known and the SARS PCR-kit mass-produced.

Back to my original question. If the German 2019-nCoV kit was not available at least until the 16 January, what was the PCR-kit that the Yuhan doctors were using to detect the "new coronavirus?" It can only have been the SARS PCR-kit because this was the only one that was available at this time.

THE WUHAN DOCTORS HAD BEEN TESTING FOR SARS ALL ALONG!

Chapter 4
MOTIVE, COVER-UP AND LIES EXPOSED BY DNA

Behind any crime there is always motive, and there can be doubt that the way the Chinese authorities handled the coronavirus outbreak has been a crime against humanity. MPs of the Commons Foreign Affairs Committee, which normally examines the expenditure, administration and policy of the Foreign and Commonwealth Office, slammed China for making "false comments" about the virus which has killed more than 65,000 people globally. They said that China should have played a central role in collecting data on its spread. Instead, the committee said that right from the outset Beijing had sought to "obfuscate" over what was really happening.

The committee highlighted the way Li Wenliang, the doctor in Wuhan who first raised the alarm about the new disease, was forced to confess to "making false comments" before his death from the virus in February. "Such deliberate misleading of the WHO (World Health Organization) and scientists in other countries obscured analysis in the critical early stages of the pandemic," the committee said. (Daily Express, 6 April 2020)

Those are damning words from the Commons Foreign Affairs Committee, but does this allegation have any merit? What possible motive could the Chinese authorities have for doing what they did, or was this simply an example of pure incompetence on their part. It is the purpose of this chapter to investigate this and to build on what I have already presented so far. Among other things, I am going to show, through the science of genetics, that COVID-19 is really the re-emergence of SARS on the world scene.

The science of genetics will lead me to the truth and provide absolute irrefutable proof that the mystery disease Dr. Li and others witnessed in their patients in Wuhan was SARS. It was not a new coronavirus not seen before advocated by the Chinese propaganda machine, a mantra that fooled a gullible World Health Organization. This noble organization became an unknowing Patsy to the Chinese government and inadvertently through their pronouncements misled scientists and the press the world over.

As we shall see, only the Germans did not fall for the "new coronavirus" lie. But instead of telling the world the truth about this, they prepared their own country to tackle the COVID-19 (SARS-2) with that knowledge. So while the rest of the world struggled to find a way of developing a testing regime for a "new coronavirus", they were not told by the Germans that the original SARS PCR-test which they already had stocks could test for COVID-19.

To be fair, Germany did release very quickly, too quickly as it happens, information about their PCR-testing regime to the World Health Organization and this formed the basis for the distribution of 250,000 kits to scientists around the world. What was not said was that they were slightly modified SARS PCR-kits rebadged as COVID-ID PCR-kits.

HAS THERE REALLY BEEN A COVER UP?

In the previous chapter I demonstrated that the Chinese authorities, both the Principle and National governmentS, covered up the fact that the new coronavirus which they originally called 2019-nCoV ("n" for new) was in fact SARS-CoV, the original medical term for SARS.

As you may recall Dr. Li, who first uncounted the disease in his patients and Wuhan hospital, had received test results from Dr. Ai Fen of the Wuhan Central Hospital. I presented a copy of the original medical report which Dr. Ai had read and in which she highlighted the SARS diagnoses by circling it in red. The Chinese authorities tried to destroy this evidence, but it was saved by those who wanted to make sure it was not lost.

Dr. Li posted a text message warning his students that "7 cases of SARS have been diagnosed in the South China fruit and seafood market and isolated in our hospital emergency department." Not long afterwards he and others were arrested, and they were forced to sign a statement retracting what they had said to the effect that the new "viral pneumonia" was not SARS. However, in a phone interview before he died Dr. Li defied the hospital censors and reinforced his original statement which is worth repeating here.

> *On December 30th, I saw a test report of a patient who detected a high confidence positive indicator of SARS coronavirus. In order to remind students to pay attention to protection, my classmates are also clinicians, so they were released in the group. The source said "**7 SARS cases were confirmed**". After the news was issued, on January 3, the Public Security Bureau found me and signed a cautionary statement.* [emphasis mine]

There can be no doubt that the officials in Wuhan deliberately withheld information as that those doctors that were talking about it were explicitly told to shut up, says Richard McGregor of the Centre for Strategic International Studies in the USA and former Beijing and Washington bureau chief for the Financial Times.

> *The communist country arrested anyone "spreading rumours" online, including Dr Li Wenliang, who first raised the alert to his former classmates in a private WeChat group.* [1]

I backed up that statement by presenting a time-line of events which showed that the Wuhan medical authorities under the direction of Hubei provincial government where the city of Wuhan is situated, did instigate a cover-up of lies. They began by saying to the *World Health Organization* that the mystery disease experienced by their citizens in Wuhan was a viral pneumonia of an unknown type, when all along they knew it was the coronavirus SARS. This is because SARS PCR-kits had been used that identified what they were dealing with. If news got out that SARS was back again, this would cause China to lose face in the eyes of the world, and this could not be allowed.

Saving face is such a strong motivating force in China that commentators refer to it as a cult. Chinese culture is based on the concepts of group identity and collectivism and if one person loses face, this causes the entire wider group, be it a family, company, or entire nation, to also lose face. Thus, the medical authorities in Wuhan saw the appearance of SARS in their city as a loss of face that was not simply confined to themselves, but went right up to the top of government. The honour of China as seen from the outside world was at stake and that honour had to be protected at all costs.

> *The Chinese will go through great lengths to protect face (their own as well as others). In fact, it's perfectly acceptable to tell a lie-even a bald-faced one-if it serves to protect face. China's culture of shame doesn't think of lies in terms of "right" and "wrong." Instead, the goal of Chinese truth is often to protect the face of an individual, group, or even nation.* [2]

The SARS epidemic of 2002/2003 was a traumatic experience in the memory of government officials of China. It had not simply a public health problem but caused the most severe socio-political crisis for the Chinese leadership since the 1989 Tiananmen crackdown. The outbreak of the disease fuelled fears among economists that China's economy was headed for a serious downturn and the failure to reveal what was happening for four months spawned anxiety, panic, and rumour mongering across the country which undermined the government's efforts to create a milder image of itself in the international arena.

With this in mind it is evident that the Wuhan authorities panicked. So with the approval of the provincial government of Hubei province where the city of Wuhan was situated, the authorities set in motion a cover-up, beginning with muzzling the doctors who had reported the SARS outbreak and to destroy the evidence that SARS had arisen once more in China, in their city. Documents and samples were destroyed and a story was fabricated that a new kind of pneumonia had appeared in the hospitals. Thankfully, evidence was preserved by concerned citizens of Wuhan and that is why I can tell this story in this book today.

For two weeks or more, the medical authorities in Wuhan told their citizens that there was nothing to fear, and that the mystery disease was not contagious. As an act of the ultimate stupidity, because it was the Chinese New year and wanting to reassure people, the authorities allowed the people of Wuhan to travel by train to see friends and family across China. The railway station was a central hub for all of China and serves a Beijing, Guangzhou, Shenzhen-Hong Kong high-speed railway, and another, Shanghai, Wuhan, Chengdu, Zhengzhou bound passenger trains.

To make matters worse, the Wuhan authorities permitted internal flights to cities all over China as well as foreign travel to the favourite tourist hotspots in Thailand, South Korea and Japan via Wuhan Tianhe International Airport. In doing so, they spread the coronavirus to those countries which had no warning of what was arriving at their doorstep. The airport located in Wuhan's suburban Huangpi District, about 16 miles to the north of Wuhan city centre, is the busiest airport of central China as it is geographically located in the centre of China's airline route network. This action guaranteed that the coronavirus would spread all around the world - and it did.

Professor Xu Zhangrun of Tsinghua University in China and a well known critic of his government does not mince his words in his latest polemical work about the handling of the coronavirus epidemic in Wuhan called, "*When Fury Overcomes Fear*" which appeared online on 4 February 2020.

> *The coronavirus epidemic has revealed the rotten core of Chinese governance; the fragile and vacuous heart of the jittering edifice of the state has thereby been shown up as never before. ... It began with the imposition of stern bans on the reporting of accurate information about the virus, which served to embolden deception at every level of government, although it only struck its true stride when bureaucrats throughout the system consciously shrugged off responsibility for the unfolding crisis while continuing to seek the approbation of their superiors. ... The storied bureaucratic apparatus that is responsible for the unfettered outbreak of the coronavirus in Wuhan repeatedly hid or misrepresented the facts about the dire nature of the crisis. The dilatory actions of bureaucrats at every level exacerbated the urgency of the situation. Their behavior has reflected their complete lack of interest in the welfare and the lives of normal people.* [3]

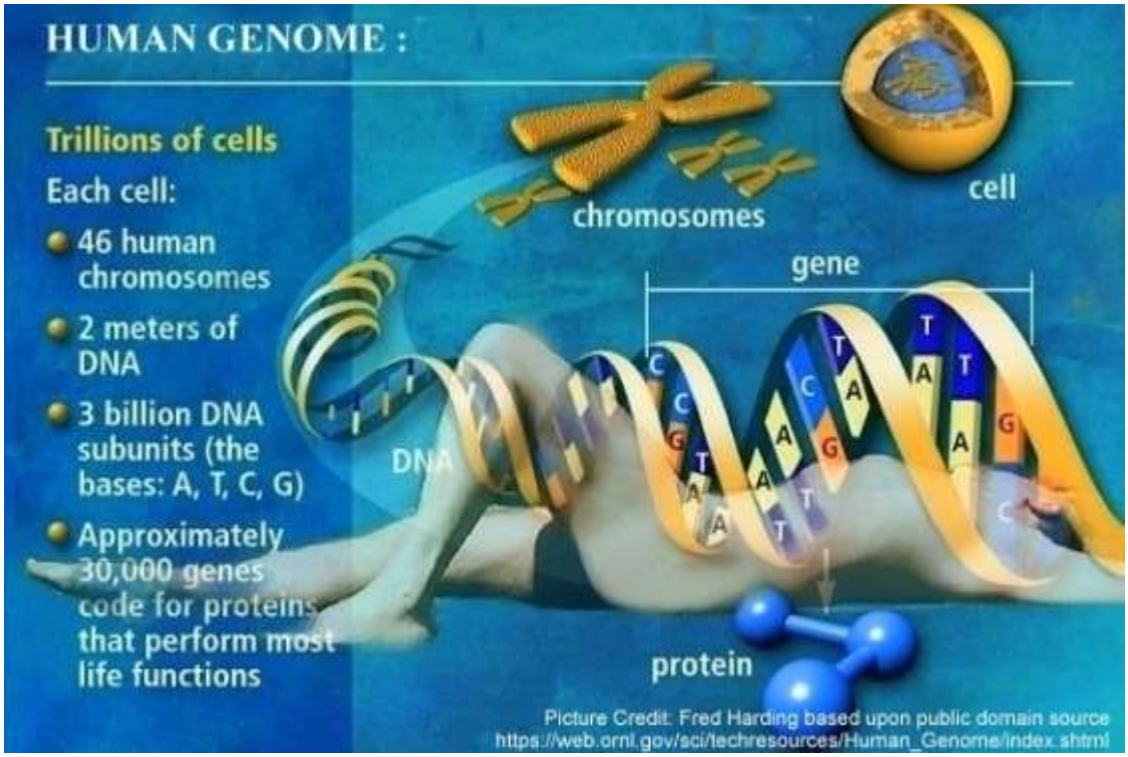
WHEN IS SARS NOT SARS?

What about COVID-19 itself. Is it SARS or something completely new? Look closely at the words of an article published on LifeScience in March 2020.

> *The new virus is a type of coronavirus that had never been seen before. It first appeared in Wuhan, China, in December 2019.* ***Officials have named the new virus SARS-CoV-2, due to its genetic similarity to the coronavirus that causes severe acute respiratory syndrome, or SARS.*** *The official name for the disease caused by SARS-CoV-2 is COVID-19.* [4] [emphasis mine]

LifeScience says that the new virus is a type that has never been seen before but then the journalist contradicts himself. He says that COVID-19 is caused by a coronavirus which has a genetic similarity to the coronavirus that causes severe acute respiratory syndrome, or SARS.

So is COVID-19 a new coronavirus or is it not? Perhaps I can clarify matters if I tell you something about the human genome by way of an analogy.



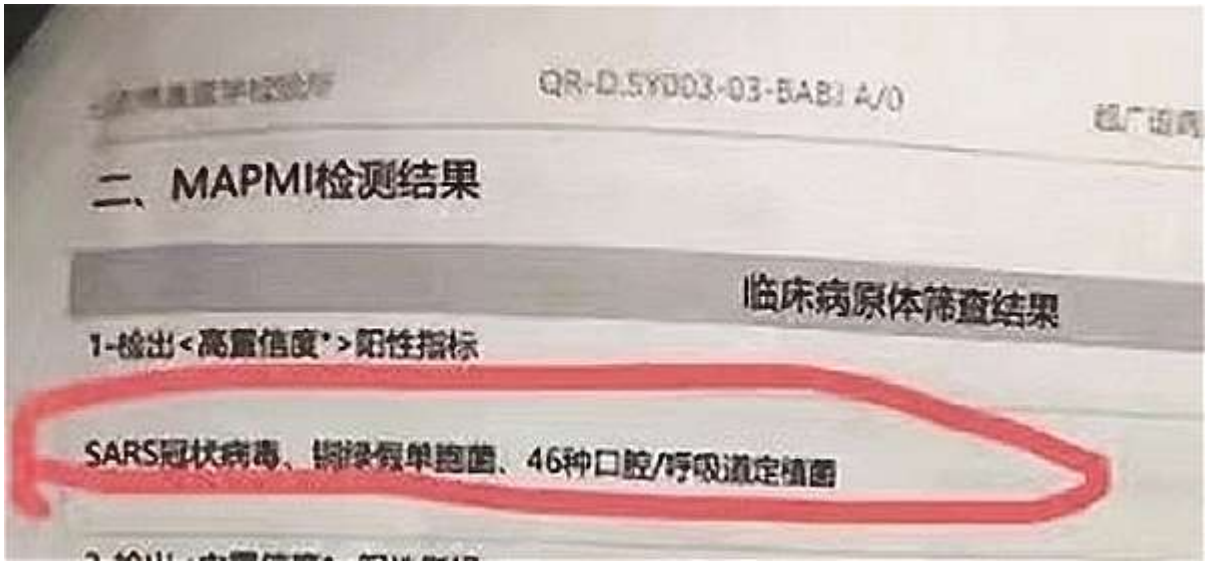
If I was to have a complete genome of myself mapped and my brother had his done too, what would the results be? We would find that they were very much the same, but not quite. There would be differences in the genome sequencing which would account for our different physical characteristics, such as the colour of our eyes, how tall we are, our complexion and so on. Of course, if our genome sequencing was exactly the same, then my brother would be a perfect copy of me - dread the thought. However, this is not possible and even twins do not have the same genome sequences. [5]

There would be even more disparity if my genome sequencing was compared to that of a male native of Nigeria. But would this disparity in the human genome disqualify us as being human? Of course not. This analogy applies to SARS too. If we were to compare the gene sequencing of SARS (SARS-Cov-1) and SARS-2 (SARS-CoV-2) alias COVID-19 then we will see differences too, but if they were very similar then can we really say that one was the SARS coronavirus and the other not? Of course not. In fact, just like human twins, if we compared the genome sequencing of different SARS-COV-2 samples, they will not be identical.

Full-genome comparison of the isolate revealed 99.99% identity with two previously sequenced genomes available at GenBank (MN988668 and NC_045512) for SARS-CoV-2 from Wuhan, China, and 99.9% with seven additional sequences (MN938384.1, MN975262.1, MN985325.1, MN988713.1, MN994467.1, MN994468.1, and MN997409.1). [6]

What this demonstrates is that no genome sequences will be exactly the same, but does that mean, for example, that the 7 x SARS-COV-2 samples that were 0.1% different from the other two samples were not SAR-COV-2 coronaviruses? Of course not. So then, at what point does one say that SARS-CoV-2 of 2019 is not the same coronavirus of 2003 - SARS-CoV-1?

That question raised above can be readily answered by the fact that when a SARS PCR-kit was used at the beginning of the outbreak at Wuhan, it successfully detected the "new pneumonia" as SARS. If the coronavirus was not SARS, then the tests would have failed, wouldn't they? No wonder Dr. Li was so worried when he messaged his students and colleagues, warning them that he had seen seven cases of SARS diagnosed at the hospitals in Wuhan. Furthermore, as proof, I have presented one of those test results, which the Wuhan medical authorities had tried to destroy. Even if you do not read Chinese, there can no doubt that on its page SARS was diagnosed.



WHY WAS COVID-19 SO NAMED?

The *World Health Organization* has much to answer for assigning a name to the Wuhan coronavirus disease that did not reflect the SARS connection. By naming the coronavirus COVID-19 they set a new precedent which differed from their usual naming conventions. It created a great deal of confusion by misleading the world into thinking that the coronavirus was something completely new, when in fact it was not. In effect the WHO reinforced the lies that the Chinese authorities were making.

For two weeks or more the *World Health Organization* had listened and believed what they were being told, that a "new pneumonia" was being seen in the hospitals of Wuhan, which was followed b news that a new never before seen coronavirus, which the Chinese named 2019-nCoV, was the cause. No mention of SARS or any link to the disease was made.

> *The Chinese government is relentless, corrupt, secretive and horrendously oppressive. While some level of cooperation is necessary to stop the disease, Chinese Communist Party leaders are the last people we should be trusting when it comes to fighting this pandemic.* [7]

I cannot help but wonder if the World Health Organization was coerced, directly or indirectly, into naming the SARS-like coronavirus as COVID-19. Anyone looking at that name will see how remarkably similar the name the Chinese gave to the coronavirus - 2019-nCoV. COVID-19 certainly does look like a rehash of the Chinese name, doesn't it? Turn the two words that make up 2019-nCoV back to front, remove the "n" for new and what do you get? You get Cov-2019 (COV-19). What WHO did next was to add the letter"D" and the end to signify it was a disease. Thus, COV-19 became "Coronavirus Disease, and the latter part reflects that the disease was first reported in the year 2019.

What is most puzzling about the naming of COVID-19 is that The International Committee on Taxonomy of Viruses (ICTV) announced on 11 February 2020 that "Severe Acute Respiratory Syndrome CoronaVirus 2 (SARS-CoV-2)" was to be the name of the newly discovered virus that caused the disease which was first seen at Wuhan. If case you did not know, the virus that caused SARS was called SARS-Cov, also known as SARS-Cov-1. Thus, the ICTV followed the traditional convention of increasing the number suffix by one, when a virus is genetically related to an earlier one.

Later, on the same day of the ICTV announcement, the *World Health Organization* announced "COVID-19" as the name they had given to the new disease caused by the coronavirus SARS-CoV-2 and even acknowledged the ICTV recognition that the name SARS-CoV-2 was chosen because the virus is genetically related to the coronavirus responsible for the SARS outbreak of 2003. Then they contradicted themselves by adding that, "While related, the two viruses are different." [8]

The two viruses are different, says the WHO. Guess where they got that idea from? Then they contradicted themselves again by explaining why they had not used the term SARS in the name.

> *From a risk communications perspective, using the name SARS can have unintended consequences in terms of creating unnecessary fear for some populations, especially in Asia which was worst affected by the SARS outbreak in 2003.* [9]

You have to admit that explanation is utter nonsense! If this was truly a concern, why did the World Health Organization not communicate their reservations to the ICTV and stop them from naming the virus SARS-Cov-2? Something does not smell right. So what was the real reason why the Chinese name (nCov-2019) for the disease was rehashed and adopted to become COVID-19? The answer comes from Tedros Adhanom Ghebreyesus, the WHO Director-General at his media briefing on 2019-nCoV on 11 February 2020.

> **First of all, we now have a name for the disease:**
>
> **COVID-19. I'll spell it:**
> **C-O-V-I-D hyphen one nine - COVID-19.**
>
> *Under agreed guidelines between WHO, the World Organisation for Animal Health and the Food and Agriculture Organization of the United Nations, we had to find a name that did not refer to a geographical location, an animal, an individual or group of people, and which is also pronounceable and related to the disease.*
>
> *Having a name matters to prevent the use of other names that can be inaccurate or stigmatizing. It also gives us a standard format to use for any future coronavirus outbreaks.* [10]

As far as the Chinese government was concerned, the use of the term SARS would have been very stigmatizing for China, and they would have lost face. It is evident that the WHO took this into consideration when naming the disease, not only rehashing the Chinese name for the disease but endorsing China's mantra that COVID-19 was a new disease.

As for the name COVID-19 can we really say that that name is "pronounceable?" SARS is easy to say but can that be said of COVID-19? Surely, it would make more sense to have adhered to the usual naming convention and call the new disease SARS-2. That is much easier to pronounce than COVID-19, don't you agree?

What the WHO did in naming the disease COVID-19 is like me going to my doctor with "cold-like" symptoms and being told that I probably had HCoV-OC43. That term is completely meaningless to me, just as the name for the disease that the WHO gave to the Wuhan coronavirus would be to the rest of the world. But my doctor told me not to worry because HCoV-OC43 was one of four coronaviruses that can cause the Common Cold. Now I understood what he was talking about. I simply had a cold and I would soon get over it.

Think about this analogy. Had the World Health Organization called the Wuhan coronavirus SARS-2, because its DNA structure is very close to SARS, everyone would know that they were dealing with a coronavirus like the one they had already tackled before. It was not new. The name SARS was well known by everyone just as the term Common Cold is universally recognized too. Knowing this, don't you think that the governments of the world would have tried the SARS-PCR-kit first to see if they could detect the disease?

Most medical authorities already had stocks of the SARS-PCR-kit readily available and had they done so, just like the whistleblowing doctors at Wuhan found, they would have seen it was able to detect and identify COVID-19 as SARS. I bet if they used the kit now on COVID-19 patients, it would show that they are infected with SARS.

When details of a COVID-19 PCR test was announced by German scientists on 16 February 2020, which I maintain is the same as the SARS PCR test, the UK and other governments were still flapping around trying to make a new PCR-kit based on the genome information provided by the Chinese medical authorities on the 5 April 2020. China had supplied a slightly modified SARS genome and fooled the world in thinking that it was new.

The tragedy is that the governments of the world could have been mass-producing the SARS PCR-kit immediately which could have prevented hundreds or even thousands of needless deaths had it been known that the SARS PCR-kit could test for the virus. But because the Chinese government and the World Health Organization said that the disease was new, only Germany suspected that it was SARS and tried out the SARS-PCF kit. It worked and for Germany it has paid dividends.

WHY GERMANY WAS SO BETTER PREPARED?

The newspaper Business Insider (4 April 2020) is one of many commentators that marvel at how Germany have managed to handle the COVID-19 disease in their country. The headline says in big bold words, "*Germany has remarkably few COVID-19 deaths. Its healthcare system shows how Germany prevented a runaway death toll.*" [11]

Behind those words are hidden the real reason for Germany's success and it is not their healthcare system, although it did play a part. Let me show you. Business Insider makes several points about Germany's success so let us comment on these one at time, now that we know what we know.

1. Germany has had remarkably few COVID-19 deaths, which experts attribute partly to its high number of hospital beds and ICU beds. [12]

This statement is true to a certain extent. Germany has a remarkable universal multi-payer health care system paid for by a combination of statutory health insurance (77% government-funded) and private health insurance (23%). According to the Euro health consumer index, which placed it in seventh position in its 2015 survey, Germany has long had the most restriction-free and consumer-oriented healthcare system in Europe. Patients are allowed to seek almost any type of care they wish whenever they want it.

The governmental health system in Germany is currently keeping a record reserve of more than €18 billion which makes it one of the healthiest healthcare systems in the world. With such funding, the German health service has numerous modern hospitals with the most up to date equipment available, but this does not explain why Germany has only about 200 coronavirus deaths despite having more than 37,000 confirmed cases of the disease. There is a more important factor involved, which Business Insider alludes to in their next point.

2. The country was also quick to roll out reliable tests for the SARS-CoV-2 coronavirus and initiate strict social distancing measures to prevent the spread. [13]

This is the critical factor that has made all the difference. I believe that when Dr. Christian Drosten, MD, who directs the Charité Virology Institute, found that the SARS-PCR kit which he developed to test for the SARS coronavirus in 2003, could be used to test for the SARS-CoV-2 which causes the COVID-19, it meant that Germany could prepare itself by mass-producing the product immediately.

As I have said on previous occasions, it would have been impossible to produce a PCR test for COVID-19 so quickly on 16 January, after the Chinese had only released the genome of the coronavirus 8 days before on 7 January 2020, allowing time for the information to reach the German laboratories from the World Health Organization for investigation. How can I make such a statement. Well let us find out what is involved in PCR testing.

PCR stands for a procedure called "Polymerase Chain Reaction" and it has been a standard practice in labs for 30 years. It is an antigen test. Do you recall what antigens are? I explained them in an earlier chapter? Antigens are molecules capable of stimulating an immune response and each antigen has distinct surface features (epitopes), which can be identified as belonging to a particular foreign substance such a virus. But there are many, many antigens that exist so testing for one that causes COVID-19 is not going to be an easy task. That task begins by taking samples from an infected person to examine.

PCR samples can come from several different locations in the patient. Simplest is the nasal swab taken from well inside the nose. The back of the throat is another option. For patients in hospital, a sample from the lower respiratory tract may give the best results.

How long does a PCR test take? It takes several hours but usually it can take days for labs to run the tests and tell people their result. But that assumes that you have a prepared PCR test already at hand, taken from a patient, and you know what you are looking for.

Hold on a moment. If Germany at this time had no cases of COVID-19, how was this disease checked out? We are told that the German scientists verified the test in the absence of SARS-CoV-2 samples or patient swabs by testing 297 clinical samples from patients with various OTHER respiratory infections. [14] I presume one of the tests was for the SARS coronavirus, using the SARS PCR-kit which the laboratory had developed and had supplies of.

Do you understand what this means? The COVID-19 PCR test was NOT TESTED ON ANY PATIENTS who had the disease.

Let us do some basic calculations base on the above statement. If it takes several hours to carry out a PCR test on a sample at the best of times, testing 297 clinical samples would have taken at least 37 days (297 × 3 = 891) working for 24 hours non-stop. Of course, there would have probably been more than one test machine in the laboratory to do the work, but they are not cheap equipment. How many of these did the German laboratory have?

Even if there were three pieces of equipment it would still have taken 10 days at least and the scientists supposedly did not know what they were looking for? They were looking for all kinds of viruses that caused respiratory infections which means that numerous testing would have needed to be done on the 297 samples that they sampled. All this takes time, more time than eight days than would have been available to find the virus antigens that cause the COVID-19 disease. There are so many antigens to wade through. That is why I doubt that a new PCR test could have been produced in such a short time, unless it was the original SARS PCR-kit rebadged.

Having said this, Germany did make available the COVID-19 (SARS-2) test configuration quickly to the World Health Organization for distribution to laboratories around the world, but Germany there can be no doubt that it had a significant head start over everybody else.

> *One of the early PCR tests was developed at Charité in Berlin in January 2020 using real-time reverse transcription polymerase chain reaction (rRT-PCR), and formed the basis of 250,000 kits for distribution by the World Health Organization (WHO).* [15]

Guess who is the director of Charité who developed the COVID-19 PCR-kit. It was the same person who put together the original SARS PCR-kit, Doctor Christian Drosten. Would it not make sense for him to try out that kit first? He evidently did.

Thus, Germany had a very efficient health service and a test which could be mass-produced immediately, which is why the country was quick to roll out reliable tests for SARS-CoV-2 and initiate strict social distancing measures to prevent the spread. Which brings me to the third point, that was raised by Business Insider.

3. Part of the reason Germany was so quick to start testing for COVID-19 is that private labs nationwide were free to offer tests, and as of April 2 have helped the country test 1 million people for the disease. [16]

The truth of the matter is that Germany mass-produced the original SARS PCR-kits in their millions and distributed them around the world in 2003. Therefore, it was not a major exercise for the private companies to do this again. They already were geared up to do so.

> *Germany was able to react to the situation unfolding in China in January and have testing established by mid-February," said epidemiology professor at Yale School of Public Health Nathan Grubaugh. "They could do this in part because Germany doesn't have a centralized diagnostic system so labs around the country were free to establish tests." In fact, as of April 2, private labs in Germany have helped the country test 1 million people for COVID-19.* [17]

The rest of Europe did not have the same capabilities and besides, they did not know that their stock of SARS PCR-kits could test for COVID-19. Germany held back that information, by claiming they had developed a PCR-kit for COVID-19 which suggested that the new kit was specially formulated for that particular coronavirus.

With that knowledge, it is understandable that five days before the first case of COVID-19 was confirmed to have been transmitted to Germany on 27 January 2020, near Munich, Bavaria the German government considered the spread of COVID-19 as a "very low health risk" for Germans and the virus in general was "far less dangerous" than SARS. [18]

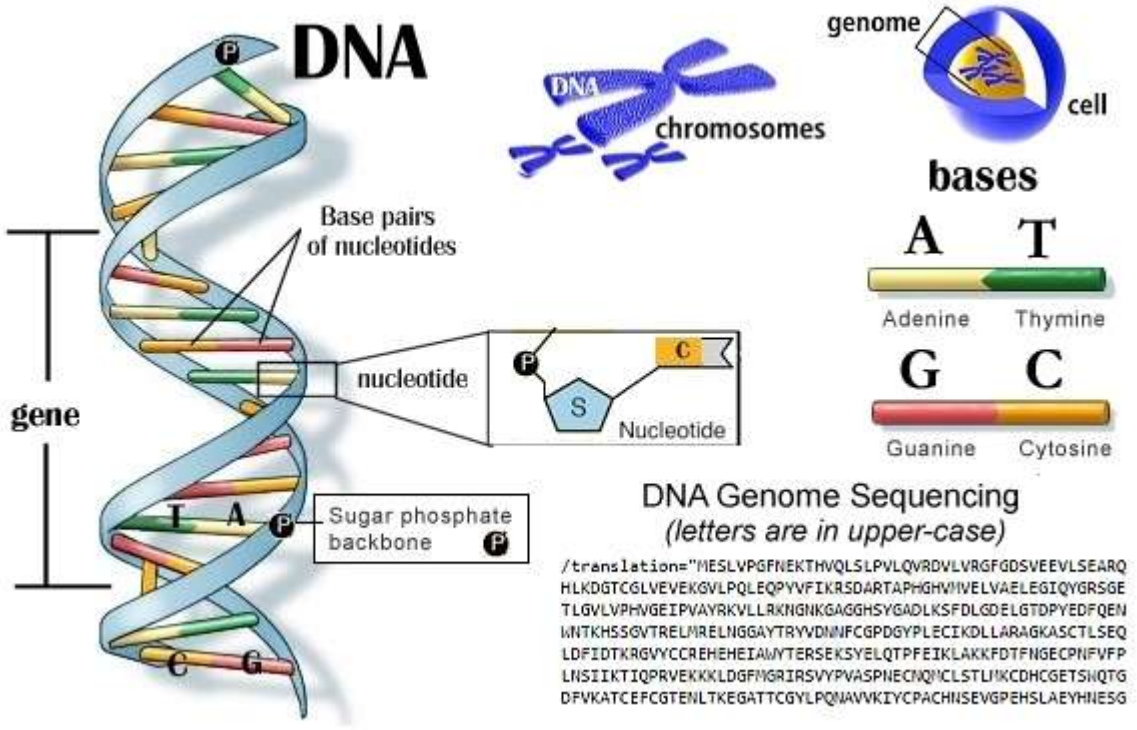
Why such confidence? Now you know why. Germany had the hospitals, the test kit and the mass-production facilities available to deal with COVID-19.

BASICS OF GENETICS EXPLAINED

The field of Genetics is a complex one and it is not the purpose of this book to blind you with science and fill your head with genetic terms which blow your mind. However, I do think it will be useful to describe some DNA basics so the reader can understand some terms mentioned in this section of the book, beginning with those that make up the human body.

DNA stands for [**D**]eoxyribo[**N**]ucleic [**A**]cid, which is a big word and I promise I won't use that word again. All you need to know is that DNA is in effect a genetic instruction book for enabling the production of proteins and cell processes that are essential to life and which are inherited from generation to generation.

Every piece of DNA is composed of gene sequences containing instructions for each cell's development, reproduction and ultimately death. These instructions in the genetic instruction book takes the form of biological coding called nucleotides, which are very much like the digital coding of computers. Computer coding is based on a 2-digit code (zero and one), but the instructions in DNA uses a 4-digit chemical code called bases. These four bases comprise chemicals cytosine (C), thymine (T), adenine (A), and guanine (G). One of these bases connected to a sugar phosphate is called a nucleoside.



In humans nucleotides are arranged in two long strands that form a spiral called a double helix. The structure of the double helix is somewhat like a ladder, with the base pairs forming the ladder's rungs and the sugar and phosphate molecules forming the vertical side pieces of the ladder. The helix is further organized into short segments of DNA called genes. If you imagine DNA being a cookbook, then genes are the recipes within that book.

Written in the DNA alphabet - A, T, C, and G - these recipes tell cells how to function and what traits to express. For example, if you have curly hair, it is because the genes you inherited from your parents are instructing your hair follicle cells to make curly strands.

Cells use the genetic recipes written in our genes to make proteins - just like we use recipes from a cookbook to make lunch. Proteins do much of the work in our cells and your body as a whole. Some proteins give cells their shape and structure. Others help cells carry out biological processes like digesting food or carrying oxygen in the blood. Using different combinations of the DNA alphabet - As, Cs, Ts and Gs - DNA creates the different proteins - just as we use different combinations of the same ingredients to make different meals.

It is estimated that we have 50 to 75 trillion cells in our body and each type of cell has its own life span. Red blood cells live for about four months, while white blood cells live on average more than a year. Skin cells live about two or three weeks. Colon cells, in contrast, have it rough… they die off after about four days. Sperm cells have a life span of only about three days, while brain cells typically last an entire lifetime (neurons in the cerebral cortex, for example, are not replaced when they die).

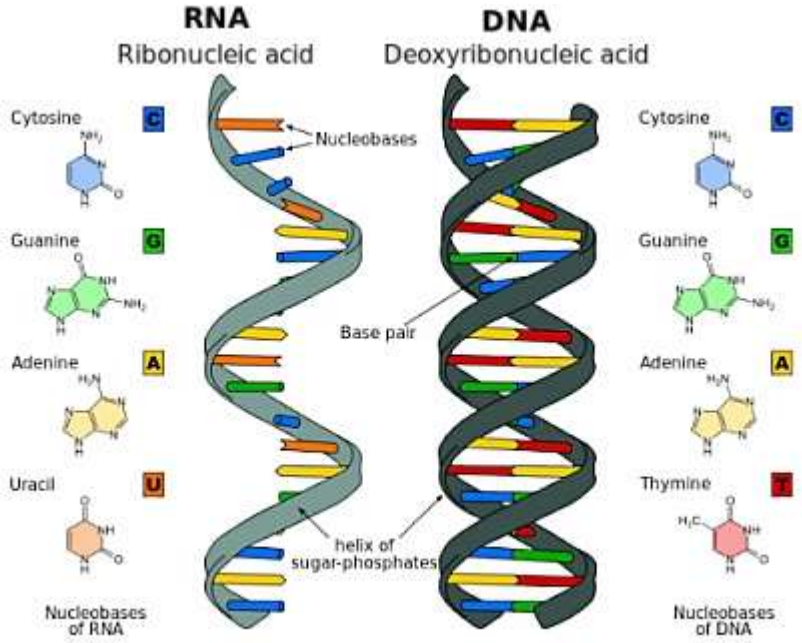
Every time a cell reaches the end of its life, it receives a chemical command to go into self-destruct mode, but before it dies, a copy of the cell is made to replace itself. This process is known as apoptosis. As apoptosis destroys unwanted cells, mitosis (cell division) makes new cells. While they may seem to be at odds with one another, apoptosis and mitosis work together to keep us healthy. Because new cells replace old, worn-out ones, our tissues remain healthy.

Our cells come in a dizzying array of types; there are brain cells and blood cells, skin cells and liver cells and bone cells. But every cell contains the same instructions in the form of DNA. So how do cells know whether to make an eye or a foot? The answer lies in intricate systems of genetic switches. Master genes turn other genes on and off, making sure that the right proteins are made at the right time in the right cells.

In order for DNA to create the different proteins it uses the nucleic acid present in all living cells called RNA (Ribonucleic acid) to act as a messenger for carrying instructions from DNA to control the making of proteins.

RNA has the bases - adenine (A), cytosine (C), guanine (G), and uracil (U). The main job of RNA is to transfer the genetic code need for the creation of proteins from the nucleus to the ribosome, the site of protein synthesis called translation. Ribosomes link amino acids together in the order specified by messenger RNA (mRNA) molecules. This involves transcription, decoding, and translation of the genetic code to produce proteins.

The ribosome is a complex molecular machine likened to a microscopic factory found within all living cells, that serves as the primary site of biological protein synthesis called "translation."



Picture Credit: Sponk: Difference DNA RNA-DE.svg:/ CC BY-SA (https://creativecommons.org/licenses/by-sa/3.0)

DNA sequencing is largely used to study human genetics, but when it comes to coronaviruses these are RNA viruses through and through. This means that our DNA sequencing technologies cannot directly decode its sequence. However, because RNA is a molecule similar to DNA, essentially a temporary copy of a short segment of DNA, scientists are able to convert that RMA information into complementary DNA (or cDNA), which can then be sequenced. The process is called "reverse transcribe" and when you look at a genome map as seen on the NCBI GenBank database you will see RNA which has been reverse transcribed to DNA and this appears in lower-case.

SARS-Cov-22 isolate Wuhan-Hu-1, complete genome
NCBI Reference Sequence: NC_045512.2

DNA (Transcribed RNA)

```
ORIGIN
      1 attaaaggtt tataccttcc caggtaacaa accaaccaac tttcgatctc ttgtagatct
     61 gttctctaaa cgaactttaa aatctgtgtg gctgtcactc ggctgcatgc ttagtgcact
    121 cacgcagtat aattaataac taattactgt cgttgacagg acacgagtaa ctcgtctatc
    181 ttctgcaggc tgcttacggt ttcgtccgtg ttgcagccga tcatcagcac atctaggttt
    241 cgtccgggtg tgaccgaaag gtaagatgga gagccttgtc cctggtttca acgagaaaac
    301 acacgtccaa ctcagtttgc ctgttttaca ggttcgcgac gtgctcgtac gtggctttgg
    361 agactccgtg gaggaggtct tatcagaggc acgtcaacat cttaaagatg gcacttgtgg
    421 cttagtagaa gttgaaaaag gcgttttgcc tcaacttgaa cagccctatg tgttcatcaa
    481 acgttcggat gctcgaactg cacctcatgg tcatgttatg gttgagctgg tagcagaact
    541 cgaaggcatt cagtacggtc gtagtggtga gacacttggt gtccttgtcc ctcatgtggg
    601 cgaaatacca gtggcttacc gcaaggttct tcttcgtaag aacggtaata aaggagctgg
    661 tggccatagt tacggcgccg atctaaagtc atttgactta ggcgacgagc ttggcactga
    721 tccttatgaa gattttcaag aaaactggaa cactaaacat agcagtggtg ttacccgtga
    781 actcatgcgt gagcttaacg gaggggcata cactcgctat gtcgataaca acttctgtgg
```

Source: https://www.ncbi.nlm.nih.gov/nuccore/NC_045512

The RNA genome of SARS-CoV-2 has 29,811 nucleotides (genetic letters) and encoding for 29 proteins. When you look at a genome map as seen on the NCBI GenBank database you will see the "translation" of protein sequences of a gene made up of these protein nucleotides.

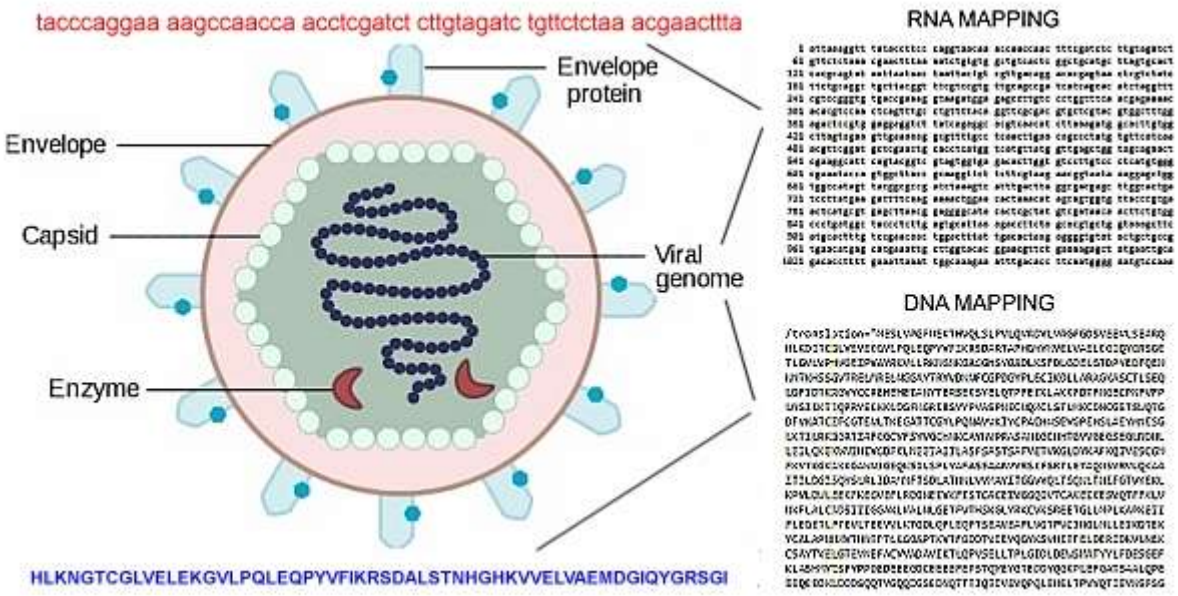
SARS-Cov-22 isolate Wuhan-Hu-1, complete genome
NCBI Reference Sequence: NC_045512.2

Translation of Protein Sequence of Nucleotides for Gene ID: 43740578

```
/codon_start=1
/product="ORF1ab polyprotein"
/protein_id="YP_009724389.1"
/db_xref="GeneID:43740578"
/translation="MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEVLSEARQ
HLKDGTCGLVEVEKGVLPQLEQPYVFIKRSDARTAPHGHVMVELVAELEGIQYGRSGE
TLGVLVPHVGEIPVAYRKVLLRKNGNKGAGGHSYGADLKSFDLGDELGTDPYEDFQEN
WNTKHSSGVTRELMRELNGGAYTRYVDNNFCGPDGYPLECIKDLLARAGKASCTLSEQ
LDFIDTKRGVYCCREHEHEIAWYTERSEKSYELQTPFEIKLAKKFDTFNGECPNFVFP
LNSIIKTIQPRVEKKKLDGFMGRIRSVYPVASPNECNQMCLSTLMKCDHCGETSWQTG
DFVKATCEFCGTENLTKEGATTCGYLPQNAVVKIYCPACHNSEVGPEHSLAEYHNESG
LKTILRKGGRTIAFGGCVFSYVGCHNKCAYWVPRASANIGCNHTGVVGEGSEGLNDNL
LEILQKEKVNINIVGDFKLNEEIAIILASFSASTSAFVETVKGLDYKAFKQIVESCGN
FKVTKGKAKKGAWNIGEQKSILSPLYAFASEAARVVRSIFSRTLETAQNSVRVLQKAA
ITILDGISQYSLRLIDAMMFTSDLATNNLVVMAYITGGVVQLTSQWLTNIFGTVYEKL
```

That's it folks. That wasn't so bad, was it? Now let us put some of what we have learned to practice. What I have said about the human DNA does not really apply to coronaviruses because like all viruses, COVID-19 (SARS-Cov-2) is not a living organism and therefore it cannot replicate itself as living cells can. It is just a piece of DNA and RNA enclosed in a protein coat. The coronavirus does not carry out metabolism (the chemical processes that are essential for life), and they do not reproduce themselves (only living cells can make copies of them).

Where viruses came from is still a much debated subject, and I am not going even try to explain this other that to say they are probably left-over pieces of DNA/RNA that have "escaped" from the genes of a larger organism, such as us humans. For example, every minute of the day we lose about 30,000 to 40,000 dead skin cells off the surface of our skin to the environment, and they all contain dead fragments of DNA. The escaped DNA could have come from fragments of DNA that were shed when moving between cells but it does not matter how or when they came about. Viruses such as COVID-19 (SARS-Cov-2) are here, and they are certainly "bad news".



CHINA FOOLS THE WORLD HEALTH ORGANZATION

On a number of occasions I have emphasized that when the Wuhan doctors tested the first patients and identified that it was SARS, they must have used the standard SARS PCR-kit because that was the only kit available at that time. But, how could SARS have been identified if it was not SARS? The last thing China wanted was for the world to know that SARS had returned, so they did all they could to destroy the test results, the samples and other records, while ensuring that the doctors who saw them was gagged with threats of going to prison for years for spreading "rumours" against the State.

Once that was done the Hubei Provincial government delayed telling the WHO what was happening until they could devise a story which could deflect the fact that SARS has returned. So the local government announced that a new type of pneumonia was being seen in Wuhan, but not to worry because it was not contagious. Then they used their people as guinea pigs by allowing them to travel all over the world as if to say, "see all is well!" However, in doing so they knowingly unleashed hundreds or even thousands of carriers of the disease on the world stage, because medical staff were being infected in the hospital. The disease was very, very contagious.

Suddenly, all over the world people were getting sick by a mysterious disease which appeared to have originated in China, while at the same time in China an epidemic was spreading like wildfire because many Wuhan citizens had visited friends and family throughout the country. Rumours were rife that SARS had come back, and it is now the Central Government stepped in on the 20 January 2020 to try to take control of the situation. SARS was back and the government was horrified by this revelation. At the same time the WHO was desperately requesting information on the new pneumonia and wanted answers.

Telling the World Health Organization that the disease was really SARS and that the Wuhan local authorities had allowed their citizens to travel with it, would have been a political suicide for the Chinese government in the eyes of the world.

Unable to bring themselves to tell the world that SARS had returned, the government lied and began to feed the lie with a story-line so brash and so despicable that it takes my breath away. The Chinese government declared that the disease was a new coronavirus not seen before and it had not been known how contagious it was. In effect, they were saying sorry and that it was not their fault. And, to add a sense of validity to their duplicity the Chinese authorities gave the "new" virus a name. They called it nCov-2019, a name which gave no hint that it was SARS.

The strategy worked. The World Health Organization accepted the explanation, hook, line and sinker and the Chinese government sighed with relief. From henceforth this mantra was repeated and repeated until all the world believed and it is believed to this very day. You can almost see the smiles on the Chinese leaders faces when the WHO announced that they had adapted the Chinese name nCov-2019, and renamed the virus COVID-19. However, there is one thing that could not be covered over and that was what the genome map of the COVID-19 revealed. It required a new strategy, and China need the World Health Organization to see it through.

On the same day (11 February 2020) the WHO announced the new name for the "new" coronavirus, The International Committee on Taxonomy of Viruses (ICTV) declared that SARS-CoV-2 (Severe Acute Respiratory Syndrome CoronaVirus 2) was to be the name of the virus that caused the disease which was first seen at Wuhan. This is because it was clear to them that SARS-CoV-2 was closely related to the virus that cause SARS, which was known as SARS-Cov-1.

The Chinese government must have had a fit when they saw this and no doubt applied pressure on the World Health Organization to clarify what this meant, and the WHO obliged saying that although the two viruses were related, "*the two viruses are different*." Can you believe that?

HOW DIFFERENT IS DIFFERENT?

How different is different? Not very much as it turns out. Alexandre Hassanin, of the National Museum of Natural History in Paris says:

> *Comparative genomic analyses have shown that **SARS-CoV-2 belongs to the group of Betacoronaviruses and that it is very close to SARS-CoV,** responsible for an epidemic of acute pneumonia which appeared in November 2002 in the Chinese province of Guangdong and then spread to 29 countries in 2003.* [19] [emphasis mine]

Today, most commentators will agree with that statement and say there is anything between 86% and 90% compatibility between the genomes of COVID-19 and SARS. Here are a few comments from such commentators.

> *The whole genome of SARS-CoV-2 has a 86% similarity with SARS-CoV.* [20]

> *Sars-CoV-2 shares between 80% and 90% of its genetic material with the virus that caused Sars - hence its name.* [21]

> *Initially, the new virus was called 2019-nCoV. Subsequently, the task of experts of the International Committee on Taxonomy of Viruses (ICTV) termed it the SARS-CoV-2 virus as it is very similar to the one that caused the SARS outbreak (SARS-CoVs).... In genetic terms, Chan et al. have proven that the genome of the new HCoV, isolated from a cluster-patient with atypical pneumonia after visiting Wuhan, had 89% nucleotide identity with bat SARS-like-CoVZXC21 and 82% with that of human SARS-CoV. For this reason, the new virus was called SARS-CoV-2.* [22]

When you look at those comments, you may be thinking that 80% to 90% similarity is not really that very similar. But then one needs to take into account that overtime there will be changes to the SARS genome, and it has been seventeen years since the last cases of SARS were witnessed, so changes would have been inevitable.

Back in 2004, a study in the journal *BMC Evolutionary Biology* showed that within a year, 114 single nucleotide variations had been identified in sixteen complete genomic sequences based upon available clinical histories during the SARS outbreak. So you can expect to find evidence of nucleotide substitution in COVID-19. [23]

Evidence of quite a number of changes to nucleotides in the genome mapping of SARS coronavirus (SARS-CoV-1) has indeed happened since the 2003 epidemic, seventeen years ago, just as the aforementioned study suggested they would. So when we take a look at the COVID-19 which is really a mutated strain of SARS, we should expect to see changes, and we do.

In a very recent study published in February 2020 scientists collected 48 publicly available genomes from COVID-19 infected patients, and they identified 80 distinct variants within the genome mapping. These were 43 mutations, 21 that were similar, 3 deletions, 11 that were non-coding and 2 were non-coding deletion types. [24]

Even though there have been nucleotide variations to the SAR coronavirus genome sequencing, especially from proteins within ORF1 which are seen in the both the SARS and COVID-19 coronavirus, there are significant sections that are virtually identical. For example a recent study (February 2020) by scientists Arun Shanker, Anajani Alluri and Divya Bhanu (Osmania University, Hyderabad, Telangana, India, showed that the "tertiary structure of the polyprotein isolate of patient 1 (SARS-CoV-2_HKU-SZ-001_2020) had 98.94 percent identity with SARS-Coronavirus NSP12 bound to NSP7 and NSP8 co-factors. [25]

Likewise, another study published on the 10 February 2020 says "*SARS-CoV and COVID-19 have an almost identical 3-Chymotrypsine-Like protease (3CLpro) amino acid sequences, with 96% identity and 99% similarity.*" [26]

It is becoming more and more apparent that COVID-19 shares a substantial amount of genetic material with that of SARS. For example, the *Daily Express* (8 April 2020) writes:

> *In early January, China shared what they had found out about the virus - its sequence of genetic material. And it was found that SARS-Cov-2 (that caused the disease Covid-19) shared up to 90 percent of its genetic material with the virus that caused SARS.* [27]

What all this means in plain English is that we should expect to find evidence of quite a number nucleotide changes (substitutions) in SARS over the 17 years when the disease first appeared that led to the strain which appeared at Wuhan, in December 2013. However, those changes have not altered the core DNA which in effect, does not make COVID-19 much different from SARS. Furthermore, we should not forget that the "new" virus was identified by using the SARS PCR-kit. This is because no other kit was available for detecting COVID-19 at that time. But the Chinese authorities continue to hide this fact from the world.

For example, an article published in *The New England Journal* of Medicine (29 April 2020) by a team of doctors from the Peking Union Medical College Hospital, Beijing, China, boldly say:

> *A 69-year-old man with a history of hypertension, diabetes, and stroke presented with fever, cough, dyspnea, diarrhea, and headache.**Covid-19 was diagnosed in the patient on January 25, 2020, on the basis of RT-PCR testing that detected SARS-CoV-2.*** [28] [emphasis mine]

However, that statement is completely wrong. How can these Chinese doctors say they diagnosed the patient "on the basis of RT-PCR testing that detected SARS-CoV-2." As we have seen, the PCR testing was carried out with the SARS PCR-kit and it was SARS (SARS-CoV-1) which was detected. You have seen the test results yourself in this book.

There were no COVID-19 PCR-kits available until late February, after the Chinese had released the genome map of the virus from which the data could be used to produce COVID-19 PCR-kits. It was not until German manufacturers assembled the COVID-19 PCR-kits and provide them to the World Health Organization for distribution around the world that these kits came available. And as I have indicated elsewhere, these COVID-19 PCR-kits were in fact SARS PCR-kits rebranded.

Clearly, the Chinese doctors in their statement are not telling the truth. Why would they lie? I think the answer to that question is obvious. Their study was funded by the State owned National Natural Science Foundation of China and the Chinese Academy of Medical Sciences Initiative for Innovative Medicine, so what would you expect with the government breathing down your back making sure that the Party line is not breached.

The truth of the matter is COVID-19 is SARS rebranded. That being the case then it is little wonder that a team headed by Alexandra C. Walls, of the Department of Biochemistry, University of Washington described the structural similarity between the two coronaviruses in a paper published in the science journal Cell (9 March 2020) as "striking".

> *The striking structural similarity and sequence conservation among the SARS-CoV-2 S and SARS-CoV S glycoproteins emphasize the close relationship between these two viruses that recognize hACE2 to enter target cells. This resemblance is further strengthened by our finding that SARS-CoV S elicited polyclonal Ab responses, potently neutralizing SARS-CoV-2 S-mediated entry into cells.* [29]

Today, questions are being asked by government officials around the world about the Chinese cover-up. For example Senators Martha McSally of Arizona says that, "*Anybody who's clear-eyed about it understands that Communist China has been covering up the realities of the coronavirus from Day 1.*" [30]

Hollie McKay of Fox News says, "*The World Health Organization (WHO) has increasingly come under the spotlight in recent weeks for its role in the coronavirus outbreak, culminating in the Trump administration temporarily halting funding…. U.S. officials are 100 percent confident China went to great lengths to cover up after the virus was out, the sources said.*" [31]

What has not clicked yet is that the cover up is really all about the re-emergence of SARS which the Chinese government is desperate to hide at all costs. But when we compare the genomes of both coronaviruses it is plain for all to see that COVID-19 is SARS albeit altered by 17 years of nucleotide mutations. That said, the core genome has remained the same. What we are looking at is not a new coronavirus but a new strain of the original SARS.

A study published in Cell Host & Microbe, 11 March 2020 says, amongst other things, that an in-depth annotation of the newly discovered coronavirus COVID-19 (SARS-CoV-2) genome, they call it by the old term 2019-nCoV, has identified 380 amino acid substitutions between (SARS) or SARS-like coronaviruses. In other words, COVID-19 (SARS-CoV-2) is a strain of SARS (SARS-CoV-1) with some Bat Genome nucleotides thrown into the mix. This is what is meant when they said that these amino acid substitutions "may have caused functional and pathogenic divergence of 2019-nCoV." [32]

GULP! THERE ARE MORE THAN 30 STRAINS OF COVID-19

When you read newspapers and articles on the genome COVID-19, I doubt that you will have been told that there is more than one strain of the virus which is causing havoc around the world. So when it is said that there is anything between 82% to 90% similarity between SARS (SARS-CoV-1) and COVID-19 (SARS-CoV-2) which of these are being compared with? How many strains are there? You are going to wish you had not asked that question because the ramifications is that a vaccine will never be developed which can protect against so many strains of the virus. How many is that? At least thirty within three genotypes (groups), and possibly more. Gulp!

Dr. Peter Forster, geneticist and lead author from the University of Cambridge and his team used data from samples taken from across the world between December 24, 2019 and March 4, 2020 and found three distinct, but closely related, genotypes of COVID-19, which they called Types A, B and C. [34]

The Cambridge team found that Type A, the original human virus genome that was present in Wuhan was the closest type of coronavirus to the one discovered in bats. However, this was not the city's only virus type because it had mutated to become a second strain Type B. Type A is seen in Americans reported to have lived in Wuhan, and a large number of A-type viruses were found in patients from the USA and Australia. In contrast, Type B was prevalent in patients from across East Asia, however it didn't travel much beyond the region without further mutations. [35]

Then Type B mutated to become Type C and is seen in Singapore, Hong Kong and South Korea but not on mainland China. Dr. Forster's analysis suggests that from these places, this strain was transported to France, Italy, Sweden and the UK. However, Dr Forster admits that, "*There are too many rapid mutations to neatly trace a Covid-19 family tree and that they had to use a mathematical network algorithm to visualize all the plausible trees simultaneously*." [36]

However, already this analysis by Dr. Forter and team is out of date because another study published shortly afterwards establishes that there are at least 30 strains stemming from the original COVID-19 Wuhan outbreak. It is published on the preprint server medRxiv and reveals that the novel (new) coronavirus SARS-CoV-2 shows the presence of new mutations in 30 strains with some of the deadliest mutations being found in Zhejiang (China) and in Europe. In contrast, the study found that milder mutations were mostly found in the USA, such as in Washington state on the West Coast, although there is a deadly strain that had evidently come across from Europe which has struck New York, on the East Coast very badly. [37]

You have to admit that this is all very confusing if not worrying. Just when you thought that when scientists and the news media spoke of COVID-19 as if it was just one, we find out that there are at least 30 strains.

Chapter 5
COULD SARS BE OUR HOPE FOR SALVATION?

You may be surprised when I say that what happened to the SARS coronavirus epidemic which took place in 2003 could be the salvation for us today, especially if as I have demonstrated that COVID-19 is really the re-emergence of the same disease, albeit a different strain. This is because SARS fizzled out in July of that year and that is the point. If SARS petered out as it did, then it is more than likely that the present COVID-19 pandemic will fizzle out too. But of course, we need to answer the question: why did SARS disappear so suddenly in the first place?

According to the 2007 book "SARS: How a Global Epidemic Was Stopped" by Shigeru Omi, who was Regional Director of the Western Pacific Regional Office for the World Health Organization, he attributed the defeat of the SARS epidemic to three events. The transparent reporting of cases, efforts to control the flow of infected people, and warm weather. [1]

1. THE TRANSPARENT REPORTING OF CASES

Reporting of cases will not stop an epidemic but knowing how many cases there are and where they are does enable government authorities to put into effect quarantine procedures such as self-isolation and to ramp up hospital support services. These measures will certainly help to contain the disease. However, when the SARS coronavirus emerged in China in 2003 there were no transparent reporting of cases by the Chinese authorities for over nearly four months by which time SARS had spread across China and other parts of the world.

According to the WHO, on the 1 April 2003 there had been 1804 cases of SARS diagnosed, 62 deaths and a total of 18 countries had witnessed cases. However, the majority of cases and deaths were in China (806 cases, 34 deaths) and Hong Kong (685 cases, 16 deaths).

The lack of transparency from China, combined with a lack of knowledge about what the virus was and a lack of preparedness among countries in the region in dealing with pandemics, all contributed to SARS's deadly impact. [2]

Cumulative Number of Reported Cases of SARS

From: 1 Nov 2002 To: 1 Apr 2003

World Health Organization

Country	Cumulative number of case(s)	Number of deaths	Local chain(s) of transmission[2]
Australia	1	0	None
Belgium	1	0	None
Canada	53	4	Yes
China	806	34	Yes
Hong Kong Special Administrative Region China	685	16	Yes
Taiwan	13	0	Yes
France	1	0	None
Germany	5	0	None
Italy	3	0	None
Republic of Ireland	2	0	None
Romania	3	0	None
Singapore	92	3	Yes
Switzerland	3	0	None
Thailand	6	1	None
United Kingdom	3	0	None
United States	69 §	0	To be determined
Viet Nam	58	4	Yes
Total	**1804**	**62**	

It was only after the Chinese government came clean in April 2003 that the world was able to take measures to contain the SARS disease which was appearing in their countries, but keep in mind that from the time when the World Health Organization officially intervened until they announced that the epidemic had been contained on 5 July 2003, it had been barely three months. So how was the disease stopped in such a short time?

Although, the transparent reporting of the disease from April onwards did help the situation, two major factors contributed to stopping the disease and the first of these was the prevention of travel of infected people just as Shigeru Omi of the World Health Organization said above.

2. EFFORTS TO CONTROL THE FLOW OF INFECTED PEOPLE

Back in 2003, the world was a different place to what it is today. In China, the transport infrastructure was limited and in a state of being modernized. There were no high-speed trains linking the cities of the southern province of Guangdong, where the outbreak started, to other cities in the country. Even today, China's passenger railways are mostly used for medium and long-distance travel, with few trains stopping anywhere but at major stations in city centres.

As far as world travel was concerned, Chinese tourism to the rest of the world was severely curtailed for political reasons by the government of China. Ironically, it is thanks to this and limited railway infrastructure that prevented the spread of SARS, limiting the disease to the cities and not the countryside.

How different it is now when the COVID-19 pandemic first appeared on the world scene at the city of Wuhan, Hubei province, China. The Chinese transport infrastructure had grown with leaps and bounds over the years and tourism by Chinese citizens to the rest of the world was booming so much so that it had become a significant part of the Chinese economy. The Chinese could go wherever they wanted, and that was the problem.

It just so happens that the COVID-19 outbreak coincided with the beginning of the Chinese Lunar New Year and China had seen a dramatic increase in international and domestic travel during this period by their citizens. Having not learned the lessons of the past with SARS by restricting travel, the Wuhan authorities did the opposite and allowed travel to continue during this time, telling their citizens that there were no problems of contagion from the pneumonia cases in the hospitals.

Basically, the Wuhan authorities were telling their citizens to go out and enjoy themselves and not to worry. With Wuhan being a city with approximately 11 million inhabitants and having a modern railway station which was a central hub for travel to all parts of China, including Hong Kong, together Wuhan Tianhe International Airport, the busiest airport of central China, tens of thousands of people joyfully heeded the words of the authorities and travelled far and wide, not knowing that some were taking the deadly disease with them.

Wuhan's citizens travelled to the major cities of China to visit family and friends, while the more wealthy of them travelled to the tourist hotspots of Thailand, South Korea and Japan. This was a disaster just waiting to happen - and it was. Meanwhile, medical staff at the hospitals were being infected, including Dr. Li. COVID-19 was very contagious, contrary to what the authorities were saying.

During the four months, between 1 November 2002 to 1 April 2003, when the SARS epidemic was still running its course there had only been 804 cases world-wide. In contrast, and in even less time (three months), between 31 December 2016 and 09 April 2020, COVID-19 had spread around the world as a pandemic, with 1,476,819 cases and 87,816 deaths. [3]

How different things might have been if the truth had been told and the provincial government had closed the railway station and airport in Wuhan. When they finally did this on 23 February 2020, it was too late. The genie was already out or the bottle and COVID-19 was beginning to rampage around the world.

> *As of 23 February 2020, 9:00, more than 78,800 cases of COVID-19 have been reported worldwide, mainly in China. In Hubei province, 64,084 cases have been reported, 12,563 cases have been recorded in the rest of China. More than 1,790 cases have been reported from other countries. Local transmission has been reported in 14 countries do far: Canada, France, Germany, Italy, Iran, Japan, Malaysia, South Korea, Singapore, Thailand, the United Arab Emirates, the United Kingdom, the United States of America and Vietnam.*

> *In the EU/EEA and the UK, 121 cases and three deaths have been reported as of 23 February. Among them, 98 are locally acquired: Italy (76), Germany (14), France (7) and the UK (1). Two deaths have been reported in Italy and one in France.* [4]

Things were about to get worse, a great deal worse. But there is also hope. If COVID-19 is a re-emergence of SARS which is what I assert in this book, then the third point raised by Shigeru Omi, may point to the world's salvation. Do you remember what he said?

3. WARM WEATHER

Eventually, with pressure mounting from around the world, the Chinese government finally admitted late in March 2003 that they were dealing with a new virus, a coronavirus which had not been seen before. They called the disease SARS (Severe Acute Respiratory Syndrome). The disease was characterized by fever and coughing followed later, if the patient did not get well, by difficulty breathing as a result of hypoxia (Oxygen deficiency) and this could be fatal. Does that not sound familiar? More about this later.

The World Health Organization promptly issued a global health alert about SARS on 12 March 2003 and began to coordinate the world's fight against the disease. Then on 5 July 2003, the WHO issued another statement.

> *On this day in 2003, the World Health Organization (WHO) announces that all person-to-person transmission of Severe Acute Respiratory Syndrome (SARS) has ceased. In the previous eight months, the disease had killed about 775 people in 29 countries and exposed the dangers of globalization in the context of public health.* [5]

Think about it. In a little over three months SARS has disappeared from 29 countries of the world, just like that! How was this possible in such a short time? The answer is that Summer had arrived in those regions. It is as simple as that. As we have seen, Shigeru Omi of the World Health Organization attributed the defeat of the epidemic to three events, one of which was "warm weather." Surely, Shigeru Omi, who is credited with the eradication of polio in the 37 countries in the Western Pacific Region in 2000 as part of the Regional Polio Eradication Initiative, would not say such a thing, unless it was true and there is considerable evidence to support what he said, which I shall present shortly.

Although it is true that many of the 29 countries infected by SARS had few cases, the facts of the matter is those cases had little chance of spreading throughout the population. This is because although the WHO's guidance on social distancing, self-isolation and travel restriction measures was being followed, there was another important factor that really played the key role at that time. Summer was fast approaching in those countries and therefore outside temperatures were rising. This is the factor that is missing at the present time with COVID-19.

The very same measures applied to SARS is being used against COVID-19 today but they have not stopped the disease from spreading, have they? However, Summer is approaching in those countries and as I write, temperatures are rising and cases of COVID-19 are now (10 April) beginning to drop. (See my special study below)

Let us turn to Professor John Nicholls at the University of Hong Kong to appraise us of how summer weather stopped SARS in its tracks. He is an expert on coronaviruses has spent 25 years studying coronavirus, and he served as a key member of the team that characterized SARS at the Hong Kong University Faculty of Medicine's Clinical Research Centre

With such credentials, one cannot ignore what Professor Nicholls has to say about SARS and this is what he has to say. There are three things the SARS does not like and that is sunlight (meaning UV light), temperature and humidity.

Sunlight, Professor Nicholls says is good for killing viruses and will kill them in about 2.5 minutes when they are exposed to the rays of the sun. With regard to temperature, the virus can remain intact at 4 degrees or 10 degrees centigrade (39 to 50 degrees Fahrenheit) for a longer period of time. But at 30 degrees then you get inactivation.

As for humidity, the virus does not like high humidity (wetness in the atmosphere). "That's why", he says. "I think SARS stopped around May and June in 2003 - that's when there's more sunlight and more humidity. The environment is a crucial factor. The environment will be unfavourable for growth around May [in Hong Kong]." [6]

On 23 May 2003, with temperatures between 19°C and 23°C in Hong Kong, the SARS outbreak was declared by World Health Organization as over for the city.

What Professor Nicholl says is supported by other scientists at Hong Kong University (HKU) too including Professor Malik Peiris and Professor Seto Wing Hong. They have shown that low temperatures and low relative humidity allows the SARS virus to survive much longer than they would in high temperatures and humidity. This would explain, they said, why warm and humid Southeast Asian countries did not have SARS outbreaks, "*unlike Hong Kong and Singapore where, in their own words, there is "intensive use of air-conditioning*." [7]

What Professor Kun Lin of the Department of Public Health, Shantou University Medical College, Shantou in China and associates did for their study was to collect the daily numbers of newly confirmed SARS patients in Hong Kong during the outbreak, between 11 March and 22 May 2003. These were obtained from an integrated database, coordinated by one of the authors the study (Johan Karlberg) from the Clinical Trials Centre at the Faculty of Medicine of The University of Hong Kong.

Professor Lin makes an important statement which lends support to the subject of this chapter, namely "**could SARS be our hope for salvation?**"

> *Incidentally, the SARS outbreak in Hong Kong occurred in winter (March) and gradually died out as spring came. Therefore, it may well be the case that the SARS virus might share a similar seasonal behaviour as that of the influenza virus.* [8]

If true, then COVID-19 too might be seasonable too, especially if it is really SARS by another name, which is what I have endeavoured to prove in this book. The evidence is that the rise in temperatures as Summer approached was a key factor in eliminating SARS in Hong Kong.

The Shantou University study found that in days with a lower air temperature during the epidemic, the risk of increased daily incidence of SARS was with a confidence rating of 95, 18·18-fold higher than in days with a higher temperature. Summarizing their study, Professor Lin recorded that, "*The daily mean air temperature remained as the sole significant meteorological factor. An increase of 1 °C in the air temperature was associated with an average reduction of 1·2 patients in Amoy Gardens.*" [9]

What about COVID-19? If it is true that COVID-19 is the re-emergence of SARS, and the substantial evidence I have provided does support that conclusion, would we not expect that there would be some indications that COVID-19 is also vulnerable to temperature and humidity. Sure enough, this is exactly what we find.

I know it is early days yet and COVID-19 is still rampaging around the world leaving death and destruction in its path, but consider this. A new study by scientists at MIT (Massachusetts Institute of Technology) found that most coronavirus transmissions had occurred in regions with low temperatures, between 3 and 17 degrees Centigrade (37.4 and 62.6 degrees Fahrenheit). They said:

> *While countries with equatorial climates and those in the Southern Hemisphere, currently in the middle of summer, have reported coronavirus cases, regions with average temperatures above 64.4 degrees Fahrenheit (or 18 degrees Celsius) account for fewer than 6 percent of global cases so far.* [10]

That's right! Only 6% of COVID-19 cases occur in regions that have temperatures above 64.4 degrees Fahrenheit. To be more specific the MIT scientists say that the data so far clearly shows that the number of cases are very low when temperatures are more than 17C and absolute humidity is more than 9 g/m 3. You cannot argue with that, can you?

The MIT scientists also say that the temperature dependency of COVID-19 may be similar to that of SARS which lost its ability to survive in higher temperatures, due to the breakdown of their lipid layer at higher temperatures. Their statement is based on a study in the journal Advances in Virology published in 2011, called, "The Effects of Temperature and Relative Humidity on the Viability of the SARS Coronavirus." I think it would be useful to quote the extract in full. It provides useful information which could be helpful in suggesting methods to control the disease.

> *The main route of transmission of SARS CoV infection is presumed to be respiratory droplets. However the virus is also detectable in other body fluids and excreta. The stability of the virus at different temperatures and relative humidity on smooth surfaces were studied. The dried virus on smooth surfaces retained its viability for over 5 days at temperatures of 22-25°C and relative humidity of 40-50%, that is, typical air-conditioned environments. However, virus viability was rapidly lost (>3 log(10)) at higher temperatures and higher relative humidity (e.g., 38°C, and relative humidity of >95%).*
>
> *The better stability of SARS coronavirus at low temperature and low humidity environment may facilitate its transmission in community in subtropical area (such as Hong Kong) during the spring and in air-conditioned environments. It may also explain why some Asian countries in tropical area (such as Malaysia, Indonesia or Thailand) with high temperature and high relative humidity environment did not have major community outbreaks of SARS.* [11]

Dr. K. H. Chan together with colleagues at the Department of Microbiology, The University of Hong Kong, Queen Mary Hospital, Pokfulam, writing in the journal Advances in Virology in 2011 says that studies taken together explain why some Asian countries in tropical area (with high temperature at high relative humidity) such as Malaysia, Indonesia, and Thailand did not have nosocomial outbreaks of SARS. However, it is an observation that he makes which really caught my eye.

> *It may also explain why Singapore, which is also in tropical area, had most of its SARS outbreaks in hospitals (air-conditioned environment).* ***Interestingly, during the outbreak of SARS in Guangzhou, clinicians kept the windows of patient rooms open and well ventilated and these may well have reduced virus survival and this reduced nosocomial transmission.*** [12] [emphasis mine]

Dr. Chan further explains that viruses do not replicate outside living cell but infectious virus may persist on contaminated environmental surfaces and the duration of persistence of viable virus is affected markedly by temperature and humidity. His study demonstrated that SARS virus can survive at least two weeks after drying at temperature and humidity conditions found in an air-conditioned environment.

The virus is stable for 3 weeks at room temperature in a liquid environment but it is easily killed by heat at 56°C for 15 minutes. This indicates that SARS is a stable virus that may potentially be transmitted by contact any inanimate object (as a towel, money, clothing, dishes, books or toys etc.) that can transmit infectious agents from one person to another. These results may indicate that contaminated surfaces may play a major role in transmission of infection in the hospital and the community. [13]

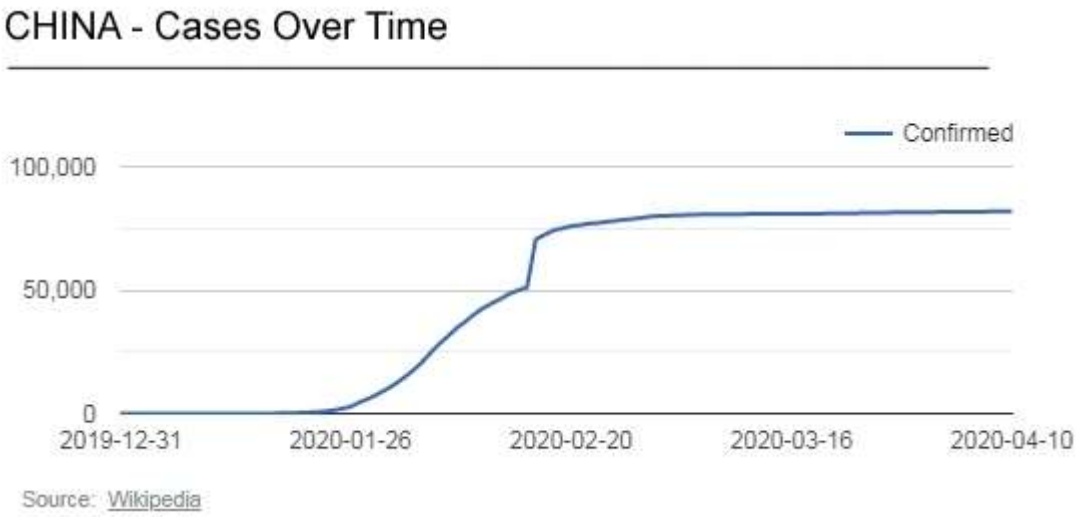
Those prophetic words were written in 2011 and as you know, here in the UK, the government and the NHS have expressed how important it is to wash our hands after touching surfaces and to prevent contamination of surface by coughing over them to prevent the spread of the COVID-19 virus.

Note that it is heat at about 56°C for 15 minutes, a little over half of boiling point (100 °C) which can easily kill the virus. That is an important point rarely raised and why surfaces outside in the environment will be killed by heat of the sun on them.

In conclusion, with reference to SARS, Dr. Chan said:

> *In this study, we showed that high temperature at high relative humidity has a synergistic effect on inactivation of SARS CoV viability while lower temperatures and low humidity support prolonged survival of virus on contaminated surfaces. The environmental conditions of countries such as Malaysia, Indonesia, and Thailand are thus not conducive to the prolonged survival of the virus. In countries such as Singapore and Hong Kong where there is a intensive use of air-conditioning, transmission largely occurred in well-air-conditioned environments such as hospitals or hotels.*

WHY HAS SINGAPORE BEEN HIT SO BAD BY COVID-19?



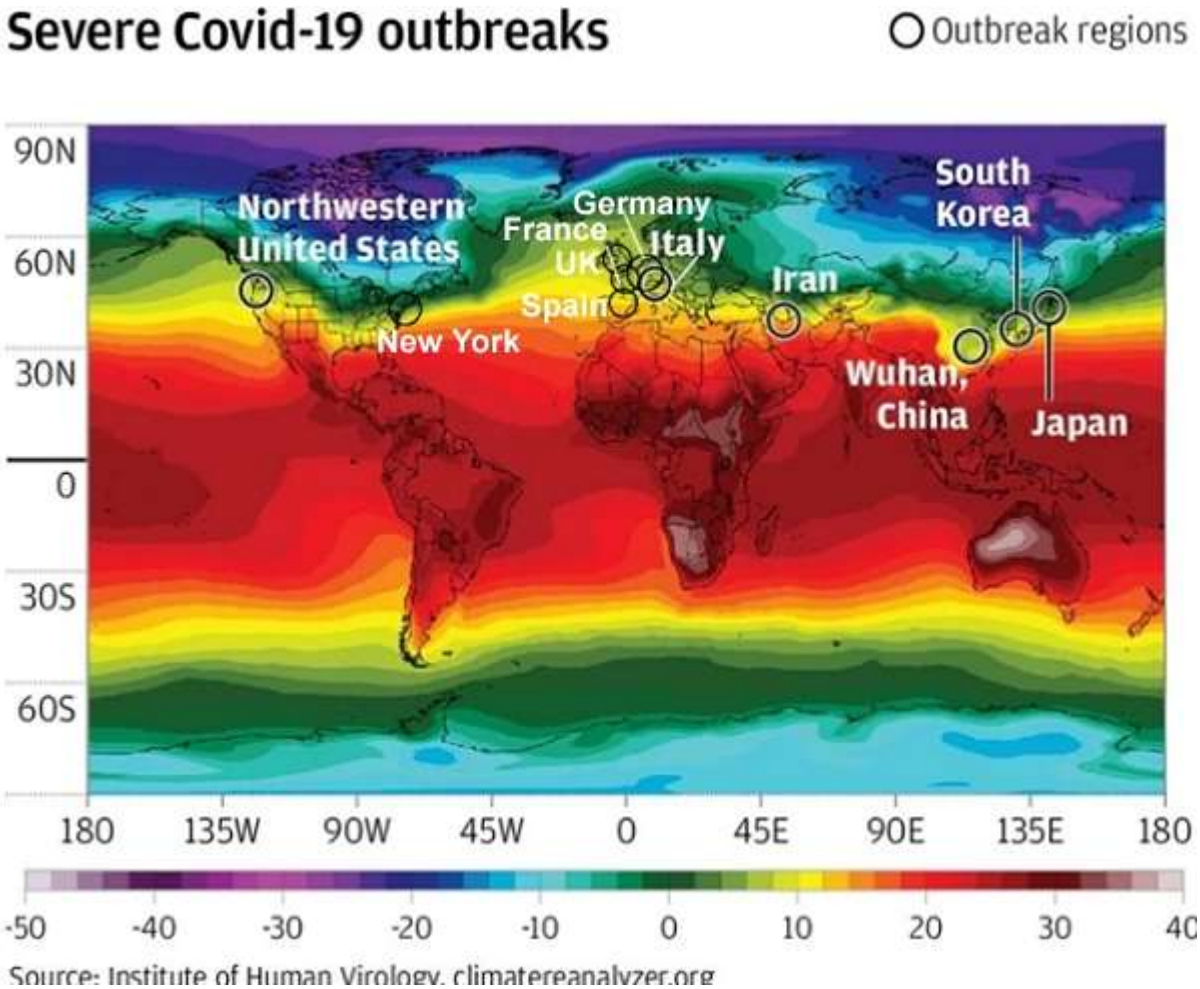
Talking about Singapore, its weather is shaped by two monsoon seasons, the first of which is the Northeast Monsoons which usually run from December to early March, with December being the wettest month. The COVID-19 virus cannot survive outside in such conditions. Likewise, the Summer-like temperatures which are present almost all year round prevent the virus from being able to contaminate external surfaces outside. Average daily temperature fluctuates by only a couple of degrees over the course of a year and are about 27.5°C/81.5°F.

When one takes these factors into consideration, it is clear that Singapore is not a good place for the virus that causes COVID -19 (or SARS) to survive - outside that is. However, the observation by Dr. Chan no doubt explains why, Singapore has suffered so badly from the COVID-19 pandemic. The disease has spread within apartments, hospitals and hotels, restaurants and shopping malls, where air-conditioning is standard. Person-to-person close contact is the main means by which the disease is spread in Singapore, but also, in those air-conditioned place, surfaces will also be contaminated because they will be kept cool.

The situation in Singapore is aggravated by it being a leading tourist destination and a sea of humanity visits the city each year. The latest figures show that between January and May 2019, 7.8 million international tourists visited the island, more than 3 times of Singapore's total population. So while temperatures and humidity do not play a part in the spread of COVID-19 outside, the crowding and air-condition in the places I have mentioned is the perfect breeding ground for the virus. What this means is that while many places in the world will see significant drops in cases of the disease, in Singapore this will take a long time, if at all, UNLESS THE AUTHORITIES THERE IMPLEMENT A TOTAL TRAVEL BAN IN AND OUT OF THE CITY.

I am glad to say that on 23 March 2020 Singapore implemented a travel ban of sorts. For all short-term visitors (tourists) there is no entry or transit through Singapore. However, for Singapore citizens, permanent residents, and long-term pass holders coming from Hubei Province there is a 14-day quarantine, while from all other countries there is a 14-day Stay Home Notice (SHN). I do not think the latter measure is good enough because many parts the world have many cases of COVID-19, not just China. All returning Singapore citizens should be quarantined for at least 14 days. However, the good news is that cases are now falling.

THE BIG PICTURE



If we take a look at a world map produced by the Climate Change Institute at the University of Maine and adapted by the Institute of Human Virology which has recently been published we can see the whereabouts of the major incidents of COVID-19 have occurred.

From the map it is clear that the main outbreaks including Wuhan, South Korea, Japan, Iran, Italy and the North-western states of the USA are all in the Northern Hemisphere and follow a temperature zone band for winter, where temperatures on average is above freezing, between 3°C (37°F) and 18°C (65°F) from December to April.

Hence, countries and states experiencing high growth rates such as Europe, Iran, South Korea, New York and Washington (US) exhibit weather patterns similar to original hotspots of Hubei and Hunan with has mean temperatures between 3 and 10C in February and March. While countries with warmer humid climates such as Singapore, Malaysia, Thailand and other South-East Asian countries exhibited a lower growth rate.

Within the USA, the outbreak also shows a north-south divide. Northern (cooler) states have much higher growth rates compared to southern (warmer) states, and the metropolis of New York has been hit the heaviest, as has London in the UK.

As far as the UK is concerned, the Express newspaper says that the UK is one of dozens of countries in the centre of a killer danger zone for the lethal virus. The newspaper says that "Various studies have revealed COVID-19 spreads quickest in areas where average temperatures range from 5-11C and humidity of 47-79 percent" and that "*Virtually all of Europe is acting as a hotbed for coronavirus, with average temperatures for this time of year falling into the 5-11C bracket." Likewise with the USA*." [14]

Interestingly, the Express says that "*as temperatures begin to increase, coronavirus could die out and be pushed into winter in the Southern Hemisphere, bringing practically all of Africa, South America, parts of southern Asia and Australia into play…. The Department of Health has warned the UK will likely experience its coronavirus peak in around three months, when 95 percent of the infections are expected to occur. This means most people will contract the virus between late May and June.*" [15]

From this, then it is evident that the UK Department of Health expect cases of COVID-19 will drop substantially in July and August as the summer takes control of our weather. The government has evidently looked at the same data as I have, without saying on what basis they arrived at their conclusions. Now you know, but there is a hell of a price to be paid in deaths during this period.

On the 11 April 2020, there has been 78,991 confirmed cases, of which 9,875 have died in the UK. If what the government says is true that most cases of COVID-19 will be during May and June, the worst is yet to come. This raises a serious cause for concern. Most deaths have been with people who are elderly, and people who have underlying health conditions.

> The data shows what experts have been telling us - that some people are at a higher risk of complications. That includes people over the age of 70 and those with underlying health conditions. [16]

This means that hundreds or even thousands of such vulnerable people will die, unless there is something they can do to prevent this. And, there is. The following chapters will not only show how you can increase the chances of survival if you should get the COVID-19 disease, regardless if you are one of the vulnerable people or not, but will also provide evidence to show that what I have written is substantiated by medical science. But first, it will be beneficial to learn about the symptoms you are likely to get, what treatments if any, that are available and to describe how your immune system responds to the COVID-19 infection as each symptom develops.

It was while writing the next chapter that I came across two treatments for COVID-19 that are "non-standard", both of which are proven to work, reducing recovery times and are saving lives. One treatment is being used at Warrington Hospital in the UK and the other has been implemented in every hospital in Sri Lanka for treating COVID-19 and has had remarkable results. These treatments are life savers, make no mistake and should become standard protocols for the treatment of the COVID-19 disease everywhere.

Chapter 6
SYMPTONS, IMMUNE SYSTEM AND A TREATMENT THAT WORKS

Do not be complacent. Nobody is immune from being infected by the coronavirus that causes COVID-19. Not even the Prime Minister, Boris Johnson. On 27 March 2020 Boris reported that he had the disease and had gone into self-isolation for 14 days. However, unlike the Health Secretary, Matt Hancock, who also got the disease at the same time and recovered quickly, Boris did not. On 5 April 2020, Boris was admitted to St Thomas' hospital after suffering persistent coronavirus symptoms, including a high temperature and a cough, for more than ten days.

The next day, 6 April 2020 he was moved to intensive care and for three days, this is where he remained until the danger had passed, and he was moved a normal ward. On 12 April 2020 Boris left hospital to continue his recovery at Chequers, the Prime Minister's country residence in Buckinghamshire. His gratitude for what the NHS staff at the hospital is clearly visible in a public address he made posted on a video. After rallying the nation with a Churchill-like speech he expressed special praise to two nurses who were by his side at the time when "it was touch and go."

> *I have today left hospital after a week in which the NHS has saved my life, no question. It is hard to find words to express my debt... I hope they don't mind if I mention in particular two nurses who stood by my bedside for 48 hours when things could have gone either way. They are Jenny from New Zealand, Invercargill on the South island to be exact, and Luis from Portugal - near Porto. And the reason in the end my body did get enough oxygen was because every second of the night they were watching, and they were thinking, and they were caring and making the interventions I needed.* [1]

It is time to ask an important question. Why did Matt Hancock do so much better that Boris and recovered so quickly? It is true that Matt is 13 years younger than the Prime Minister, who is 55 years age, but that cannot be the reason, can it? After all it is well known that people who are over 70, even if they otherwise fit and well, are vulnerable to the disease, for reasons which I shall explain why later. However, neither Boris nor Matt fitted that profile nor did they have any underlying medical conditions, which is another significant risk factor which has been identified.

Official Portraits of Prime Minister, Boris Johnson and Health Secretary, Matt Hancock

Picture Credit: Ben Shread / OGL 3 (http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3)

There is one factor which might have some bearing on the matter and that is, it is evident that Boris was overweight when he was infected by the coronavirus. When someone is overweight it can weaken the body's immune system and increase inflammation, which makes it harder for the body to fight off infections. But there has to be more to this than simply being overweight, don't you agree?

Let us take stock of their circumstances. Both Boris Johnson and Matt Hancock had isolated themselves for 14 days inside their homes, which means that their environmental conditions can be said to be the same.

As there is no vaccine for COVID-19 or for SARS or even the 4 coronaviruses that cause 20% of the cases of the Common Cold, thus neither of them could have had one. Hence, we can rule that out of the equation. Neither were they given antibiotics because everyone knows that antibiotics only work on bacteria and not viruses.

NHS RECOMMENDED TREATMENT MEASURES

With not having been vaccinated or given antibiotics, this leaves only one other possible explanation why Matt might have fared better that Boris. He might have had received better recommended medical treatment when compared to Boris. After all, Matt is the Health Secretary, and he might have had access to a drug that did the trick, which Boris did not. Nope! This is not possible because currently there are no drugs or effective treatment which can directly attack the virus that causes COVID-19 (SARS-CoV-2), just as there were none for SARS (SARS-Cov-1) either. The NHS is quite clear about this.

- *There is currently no specific treatment for coronavirus.*
- *Antibiotics do not help, as they do not work against viruses.*
- *Treatment aims to relieve the symptoms while your body fights the illness.* [2]

So what is the treatment which is recommended by the NHS, which both parties must have followed. The NHS recommends three measures when you are at home and these are:

- *rest and sleep*
- *drink plenty of water to avoid dehydration - drink enough so your pee is light yellow and clear*
- *take paracetamol to lower your temperature* [3]

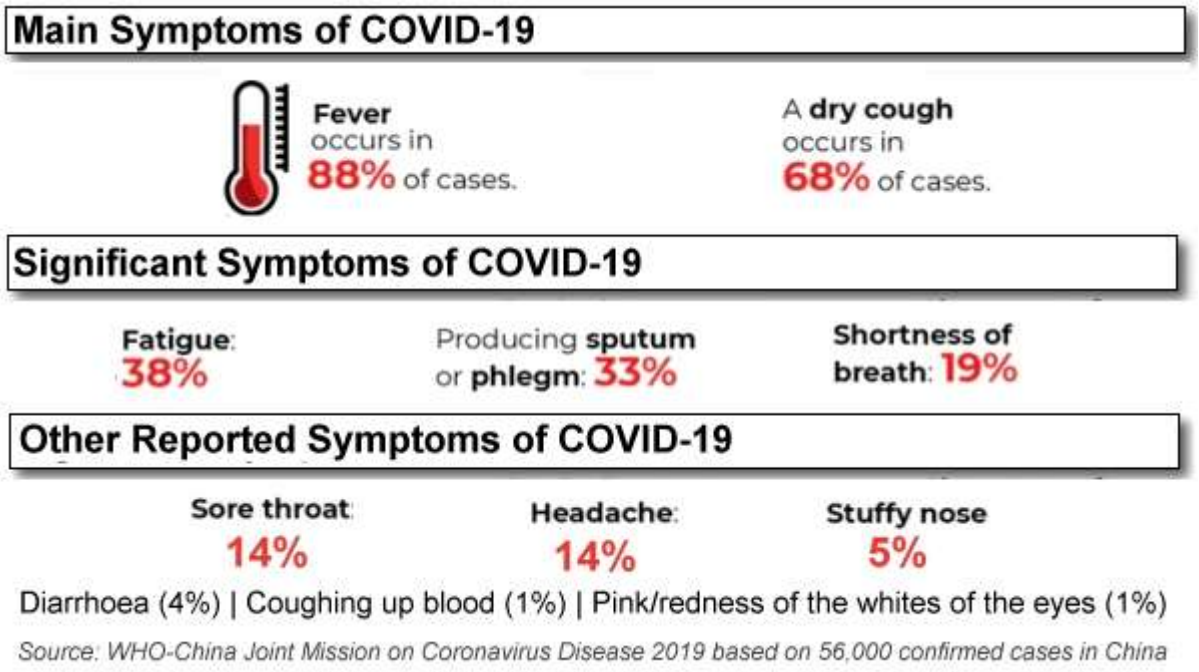
The best recommendations are the first two listed by the NHS, sleep and drinking plenty of water to avoid dehydration. However, I do have my reservations about taking paracetamol to lower temperature. This is because having a fever is one of the potent weapons in your immune system's arsenal to tackle invading pathogens, and we are taking a substance which is aimed at preventing the immune system doing its work. Also, there are issues that have been raised in medical journals with respects to using paracetamol to treat COVID-19.

However, before I discuss these treatments in more detail taken from peer-reviewed and respected science journals, I think it would be appropriate to spend some time describing the symptoms caused by COVID-19 because there is considerable ambiguity between the definitions of mild, moderate and severe infection, definitions which also vary between countries.

SYMPTOMS OF COVID-19

When a person is first infected with the coronavirus (SARS-CoV-2) which causes COVID-19, there does not appear to be any symptoms for at least about 4 days, although this could be as long as 14 days. This is known as the incubation period and this raises the likelihood that people can spread the virus long before they know they have it. I say there does not appear to be any symptoms, but in fact there are. It is just that symptoms are so mild that people are not aware of them.

According to the Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19) published in 24 February 2020 which is based on 56,000 confirmed cases revealed the most common symptoms to be:



- Fever (88%).
- Dry cough (68%).
- Tiredness (38%).
- Coughing up sputum (33%).
- Shortness of breath (19%).
- Aching muscles or joints (15%).
- Sore throat (14%).
- Headache (14%).
- Blocked nose (5%).
- Coughing up blood (1%).
- Pink/redness of the whites of the eyes (1%) [4]

Interesting as these statistics maybe, the World Heath Organization does not say in what particular pattern the order of symptoms develop, which is not really helpful. The best they have come up is a generalization and it is one which many commentators have repeated.

> *People with COVID-19 generally develop signs and symptoms, including mild respiratory symptoms and fever, on an average of 5-6 days after infection (mean incubation period 5-6 days, range 1-14 days).* [5]

This description is still vague and it also gives the impression that having a fever is bad, which for reasons I shall explain, it is not. The NHS is also somewhat vague too. They concentrate on the two main symptoms which are fever (88%) and a dry cough (68%).

> **Do not leave your home if you have either:**
>
> - *a high temperature - this means you feel hot to touch on your chest or back (you do not need to measure your temperature)*
> - *a new, continuous cough - this means coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours (if you usually have a cough, it may be worse than usual)*
> - *to protect others, do not go to places like a GP surgery, pharmacy or hospital. Stay at home*

This is good advice but it is not enough. Like you I want to know the first indications that I have the disease and the sequence of events that follows which lead to these two main symptoms described the WHO and the NHS. Which of these come first, or do they come together, and what about the others listed by the WHO. At what point to they appear, if they do. So I have trolled through many medical and news articles to come up with what I think provides a good outline of the what happens to us when we become infected. However, please note, these are designed for guidance and are not a substitute for seeking help about your individual symptoms. So let me begin.

THE INCUBATION PERIOD

When you first get infected, you will probably be unaware that you have been because it is unlikely that you will be aware of any symptoms, even though your immune system will have been activated. This period is called the incubation period and is defined by the WHO this way.

> *The "incubation period" means the time between catching the virus and beginning to have symptoms of the disease. Most estimates of the incubation period for COVID-19 range from 1-14 days, most commonly around five days.* [6]

The incubation period being on average about five days has been determined by a number of studies, such as this one by a team led by Stephen A. Lauer, (MS, PhD) from the Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore. They analysed data from 181 confirmed COVID-19 cases outside Hubei province, China, which intimates that the median (average) incubation period is 5.1 days (95% CI 4.5 to 5.8 days), and 97.5% of those who develop symptoms will do so within 11.5 days (CI 8.2 to 15.6 days) of infection. [7]

Interestingly, if my thesis that SARS-CoV-2 is really SARS then we would expect to see the same length for the incubation period, and we do. "This work provides additional evidence for a median incubation period for COVID-19 of approximately 5 days, similar to SARS," says Dr. Lauer. [8] The researchers go on to state, only around 101 of every 10,000 people who contract SARS-CoV-2 are likely to develop symptoms after 14 days. Now you know why the public health agencies, such as the NHS, tell you to self-isolate for this time.

> - *If you live with someone who has symptoms, you'll need to self-isolate for 14 days from the day their symptoms started. This is because it can take 14 days for symptoms to appear.*
> - *If more than 1 person at home has symptoms, self-isolate for 14 days from the day the first person started having symptoms.*
> - *If you get symptoms, self-isolate for 7 days from when your symptoms start, even if it means you're self-isolating for longer than 14 days.*
> - *If you do not get symptoms, you can stop self-isolating after 14 days.* [9]

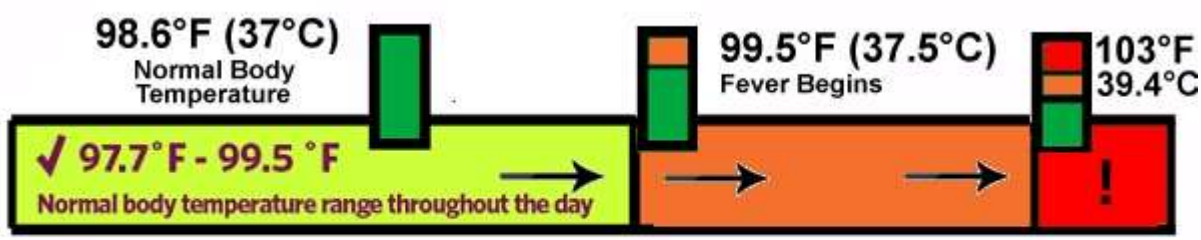
We are told that mild infection starts normally with a fever, although it may take a couple of days to get a fever,' explained Dr Maria Van Kerkhove, of the *World Health Organization's Health Emergences Program* during a 9 March 2020 press briefing. "*You will have some respiratory symptoms; you have some aches and pains. You'll have a dry cough. This is what the majority of individuals will have.*" [10]

I believe that it is important to talk about the symptoms of the COVID-19 virus and provide information which is rarely given in the news media why you have them from a medical point of view without being too technical. It is for this reason that, earlier in this book, I provided some information about the lungs and how the coronavirus enters into cells. So you should now be acquainted with some terms which I shall be speaking shortly. The first symptom appears to be fever, with coughing and fatigue a close second.

1. FEVER (PYREXIA) - 88%

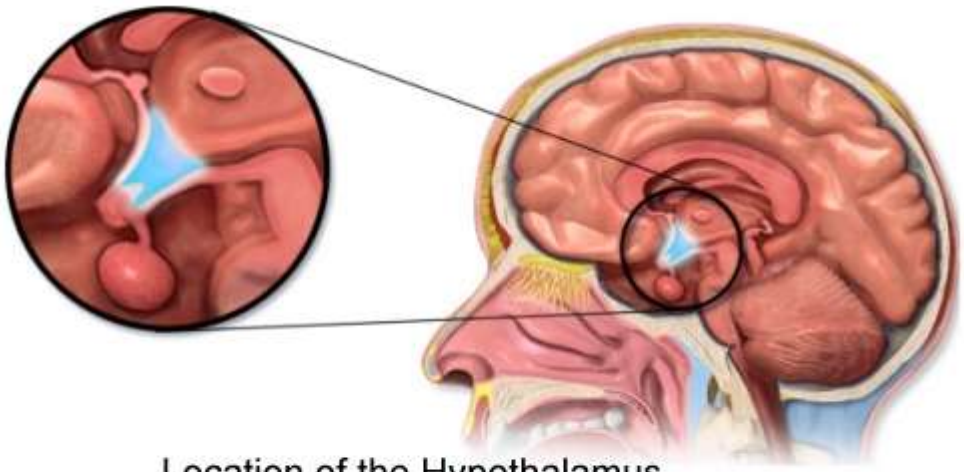
Evidence from both medical as statistical analysis shows that in the majority of cases the first symptom which you have will be fever, the rise in your bodily temperature. This is probably just beginning during the incubation period but your body temperature is rising so slowly and within normal body temperature parameters that you are completely unaware what is happening. So you go about your daily routines oblivious as to what is going on inside you because you have no outward signs of any symptoms.

Normal body temperature varies by person, age, activity, and time of day. The average normal body temperature is generally accepted as 98.6°F (37°C). Some studies have shown that the "normal" body temperature can have a wide range, from 97°F (36.1°C) to 99°F (37.2°C). [11]



For adults if fever at 103°F (39.4°C) keeps rising
or lasts longer than 48 hours seek medical attention

From a medical point of view the reason why fever will more than likely the first symptom to be experienced by a person infected by the COVID-19 virus is because it is the immune system's immediate response mechanism against a viral invasion. When pathogens invade the body and infiltrate body tissues, they release biochemical substances called pyrogens in the blood stream and these travel through the blood until they finally reach the hypothalamus, which sits at the base of the brain.



Location of the Hypothalamus

Picture Credit: Blausen.com staff (2014)."Medical gallery of Blausen Medical 2014. WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.010. ISSN 2002-4436. / CC BY (https://creativecommons.org/licenses/by/3.0)"

The hypothalamus acts as the body's thermostat and when it detects the pyrogens in the blood, it is tricked by the immune system in sensing an artificially cool body temperature. The brain responds by knocking the body thermostat up a few notches. Blood rushes to the body's core, heating the body overall but cooling the surface - hence the chills some people get. The body's metabolic rate goes up and muscles contract causing you to shiver. [12]

It is important to appreciate that fever is not an illness. Rather it is the immune system's first response to a bacterial or viral invasion and its importance cannot be overestimated. A rise in body temperature has been shown to:

- *Increase antibody production;*
- *Enhance mobility and function of neutrophils and macrophages (kill bacteria);*
- *Increase production of cytokines (assist with immune response);*
- *Enhance T-lymphocyte activity (attack and destroy antigens);*
- *Reduce serum iron (necessary for bacterial growth);*
- *Inhibit some pathogens such as Streptococcus pneumoniae.*

The immune system invokes fever functionality in order to buy time to mobilize its arsenal T-cells or natural killer (NK) cells to tackle the intruder, which at this time are unidentified antigens. As helper T-cells move into action, these if you remember are what identify the intruder, the hypothalamus ramps up the body temperature, the febrile temperature as it called by medics. Once the fever process has begun, it won't be long before you will most certain be aware of the fever burning inside you, even though you might feel cold (chills) and your chest and back are hot to the touch.

You feel chills because your hypothalamus thermostat has been set above your actual body temperature, so you are fooled in thinking that you are feeling chilly and clammy. However, as soon as your body temperature rises to match the thermostat, the chills and clamminess stop.

Just the opposite occurs as the fever breaks: the thermostat in the brain is turned back down to normal, but it takes time for the body to release the excess heat. So you will feel really hot and sweaty until your temperature falls to equal that of the thermostat. **This is a good sign that you are over the worst of it, but you must take plenty of water during this distressing time so you don't become dehydrated.** The biggest sweats usually come at the end of a fever, and the biggest chills at the beginning.

The fever response of the immune system has been the normal "first responder" since man has walked the earth. In many instances all types of bacterial and viral infections have been stopped in their tracks by this immune system response alone. However, the way coronaviruses invade the cells of the body has enabled it to exist longer that would have been expected.

Our normal temperature is varies from 36.4°C (97.7°F) to 37.5°C (99.5°F) depending on what time of day it is. Hence, the average temperature between this range works out at 37°C (98.6°F) Now one would have thought that with your body temperature being 37°C then if the COVID-19 coronavirus has entered the lungs, which keeps pace with body temperature, then it would be wiped out. This is because it has been observed that the coronavirus is sensitive to temperature and when exposed in the outside world to temperatures over 30°C (86°F) with humidity high, the virus becomes inactive and does not survive.

However, we are talking about the outside world not the lungs. Although the tissues of the lungs are kept at normal body temperature, the air inside the lungs on the surface of the bronchial tubes are continuously being cooled by air being sucked in through the nose. If it is winter then cold air is breathed into the lungs and thus there is a chill factor involved. Because the flow of air moving back and forwards through the bronchial tubes, in and out of the lungs, the temperature is not constant long enough for the coronavirus to be destroyed. In other words the COVID-19 coronavirus "feels" quite comfortable in the human body" under such conditions.

When the immune system responds to the coronavirus invasion, it raises the temperature of the body to a fever temperature of between 37.5°C to 103°C. This will certainly help to kill some viruses trapped on the mucus and cilia but this all depends on how cold the air is outside the human host which is being breathed in. However, when summer arrives, the air becomes a lot warmer and the body temperature, even if is normal, combined by the warmer air gets sucked into the lungs kills the virus. That is one of the reasons why SARS was brought to a halt in July in 2003. The same will happen with COVID-19, of that I am certain.

I can say such a prediction based, not only from what I have presented in this book showing the evidence which proposes that COVID-19 is really SARS, but because of a new study which has come to my attention. I shall tell you about that study, which has the title, "Temperature Significantly Change COVID-19 Transmission in 429 cities, later in this chapter, but I think the title speaks for itself, don't you?

Most fevers usually go away by themselves after 1 to 3 days but according to the findings of the WHO mission to China the virus that causes COVID-19, fever and other symptoms can persist for seven to 12 days in moderate cases and two weeks in severe cases.

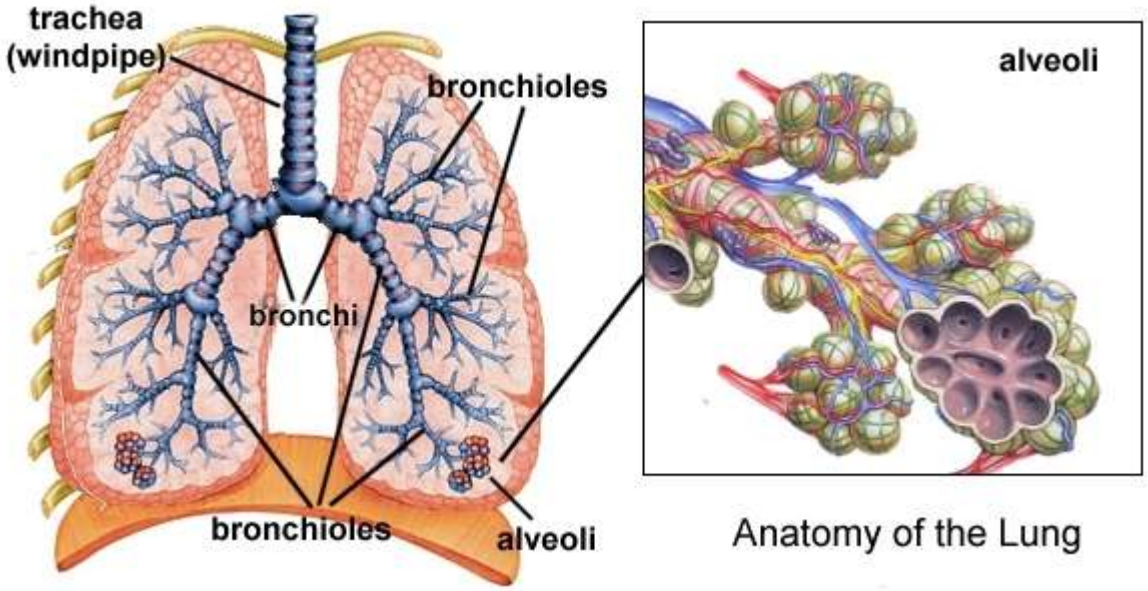
For Matt Hancock, the Health Secretary, after seven days self-isolating and working from home he had recovered. Not so poor Boris. The Prime Minister who had gone into self-isolation at the same time as his Cabinet colleague, was still suffering with a high temperature fever and a persistent cough after 10 days, which was a cause for concern by his doctors. They advised him to go to the intensive care unit at St Thomas's Hospital which he did. He recovered and 12 April Boris, 15 to 16 days after showing symptoms he left hospital to continue his recovery at Chequers.

Did you notice, if you saw him read out his emotional speech from Chequers rallying the country, Boris did not cough once. Talking of which, the next highest symptom reported is a persistent continuous dry cough, which either accompanies the fever, or comes afterwards.

2. A CONTINUOUS DRY COUGH - 68%

The other main symptom experienced by people infected by the COVID-19 coronavirus is a continuous dry cough, defined by the NHS as "coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours." Some infected people have reported that they had a cough first, which was closely followed by the fever, or visa versa. I bet that you have not been explained why you have that cough? It is important for you to know so I am going to explain it.

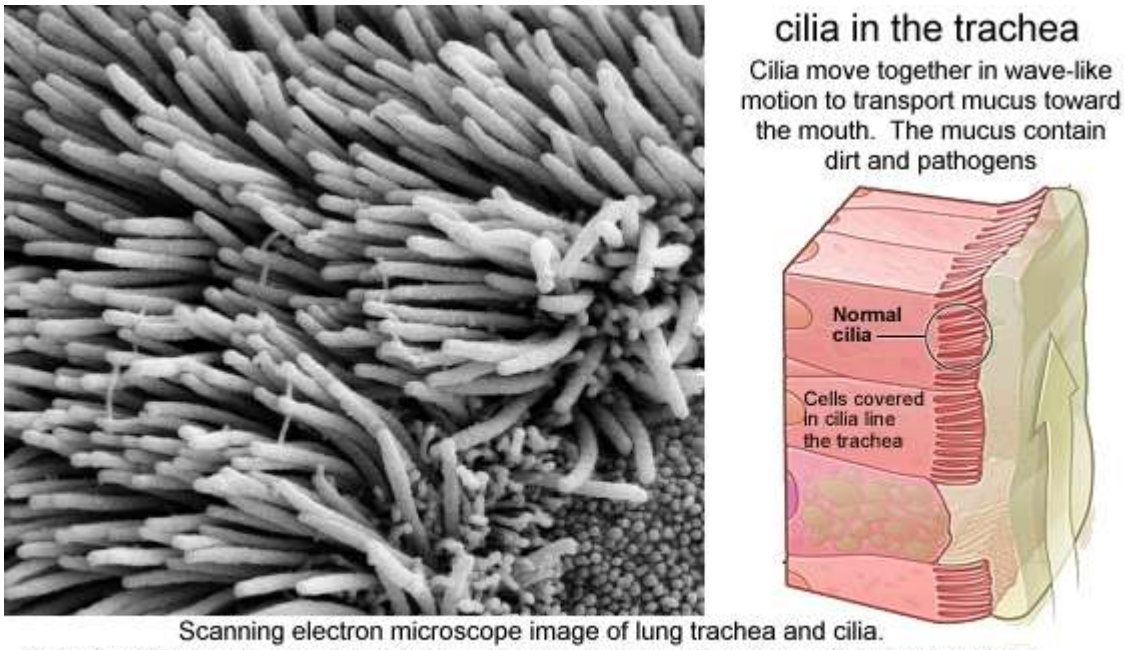
Do you remember my brief discussion on the lungs in the Preface of this book. If not here is a recap. Each lung has separate sections, called lobes. Normally, as you breathe, air moves freely through your trachea (windpipe). The windpipe splits into two breathing tubes which carry the air into the lungs. These breathing tubes are called bronchi. The air then passes from the the two bronchi to numerous smaller tubes called bronchioles and from these to about 600 million tiny sacs, called alveoli.



Anatomy of the Lung

Your airways and alveoli are flexible and springy. When you breathe in, each air sac inflates like a small balloon. And when you exhale, the sacs deflate. Small blood vessels, called capillaries, surround every alveoli so that the oxygen from the air you breathe passes into them. Then carbon dioxide from your body passes out of your capillaries into your alveoli so that your lungs can get rid of it when you exhale. Now to explain the reason why you have a persistent cough.

The trachea, bronchi and bronchiole tubes are lined with millions of hair-like cilia which are continuously moving in the direction of your throat.



Scanning electron microscope image of lung trachea and cilia.
Note the difference in size between the cilia and the microvilli(on non-ciliated cell surface)

Compiled from Public Domain sources via wikimedia commons.
Louisa Howard: scanned cilia - Diagram: National Heart Lung and Blood Institute

The job of the cilia is to constantly push mucus and pathogens out of your airways, where they may expelled by blowing your nose or coughing. If a person inhales coronavirus particles through the nostrils, some are caught within the mucus of the nose, but most are sucked into the lungs along with the air which has been breathed. The coronavirus particles get ensnared and stuck among the moving cilia inside the lung's bronchial tubes and this causes irritation. Consequently, your lungs initialize an automatic reflex action to clear your airways of mucus and irritants such as the coronavirus particles, so you have a "tickly" dry cough. A dry cough is a cough that does not bring up any mucus (phlegm) and doctors often refer to dry coughs as non-productive coughs.

The good news is that at this time, the COVID-19 virus has not as yet found its way into the cells of the lungs yet, but the bad news is that because you have breathed in so many coronavirus particles into your bronchi and bronchiole tubes, you just cannot cough out enough of them to clear them. So the cough persists. Eventually, over time, you will succeed in expelling the coronavirus particles, but not all of them. Some manage to enter into the cells of your bronchi and bronchiole tubes and that is when the trouble begins. More about this later.

3. TIREDNESS (FATIGUE) - 38%

Despite being 69 years of age I have a very strong immune system, for reasons which I shall explain why, and how what I do will help you to fight the COVID-19 coronavirus. Consequently, when my family is around me suffer from colds and flu, I rarely get any symptoms. However, I know that I have been infected by a virus when I am overcome by a feeling of overwhelming fatigue.

This is not the usual tiredness one gets after a night of poor sleep, or tiredness with an unusually intense bout of exercise. It is a feeling of complete exhaustion. So I go to bed and sleep for hours, more hours than I usually sleep. Afterwards, I awake feeling a lot better and while my family are still suffering from symptoms of the sickness, I am not. What is going on?

You have to remember that your immune system is at war inside your body trying to defeat a viral enemy which threatens to do harm you. We all have a certain pot of energy available to us on a daily basis. When life is normal we can spend that energy physically, mentally or emotionally but when the body is attacked by virus, the immune system's priority is to fight that infection with everything it has in its arsenal.

Depending upon the severity of COVID-19 coronavirus infection and how it has been dealt with so far, such as how effective implementing fever protocols has been, the immune system calls upon as much of the reserves from the energy pot as is needs to fight the disease. White blood cells are diverted from their usual job of keeping your muscle fibres and joints repaired and healthy, to fighting off the virus, meaning that you quickly lose strength in your muscles, leaving you less able to stand and move.

Although the immune system has forced you to sleep so that it can use freed up energy normally use for normal daily routines, sleep is also an important part in fighting the infection. "*One reason our immune system function is so closely tied to our sleep is that certain disease-fighting substances are released or created while we sleep. Our bodies need these hormones, proteins, and chemicals in order to fight off disease and infection.*" [13]

There is considerable scientific evidence to support the above statement. One of the key immune responses to viral attack is to send in NK (natural killer cells) to attack them. Sleep plays a key role in maintaining NK cell activity and sleep depreciation decreases this. [14]

> *Analysis of their blood samples showed that those whose sleep had been disrupted had decreased levels of natural killer cells (NKCs), which take their name from the way they help destroy illness-causing cells. A decreased NKC count indicates a weakened immune system and a body more vulnerable to illness.* [15]

As for T-cells, another important immune response to pathogen infiltration in the body, a study led by Professor Stoyan Dimitrov of the Institute of Medical Psychology and Behavioural Neurobiology, University of Tübingen, Germany and published in the Journal of Experimental Medicine published (12 February 2020) concludes that sleep strengthens the potency of certain immune cells by improving their chances of attaching to - and eventually destroying-cells infected with viruses. [16]

What all this means is that feeling fatigue when you have been infected with the COVID-19 coronavirus is a good thing because you will feel the need to sleep, and when you do, not only will you be releasing much-needed energy resources for the immune system to fight the disease, but sleep also strengthens the potency of certain immune cells to fight the virus.

4. COUGHING UP SPUTUM (phlegm) - 33%

This seems to be a puzzling symptom at first. Sputum is a mixture of saliva and mucus coughed up from the respiratory tract, typically as a result of infection or other disease and often examined microscopically to aid medical diagnosis. However, as we have seen, one of the major symptoms is a dry cough during which no sputum is coughed up. So why is it that according to World Health Organization sputum production is a significant symptom and as much as 33% of the 56,000 Chinese confirmed cases reported this.

The evidence is that this symptom occurs sometime AFTER the first stages of the disease, when infected people have not recovered. Data published by the Chinese Centres for Disease Control and Prevention (CDC) suggest that 81% of COVID-19 patients only develop mild symptoms like cough, fever and aches. However, the coronavirus became "severe" in 15% of cases and "critical" in 5% percent, and the evidence is that it in the last to two categories where the severe cases that this particular symptom occurs. I expect you wonder what is happening in your body to cause this symptom to occur.

As you know, the immune system will have triggered your hypothalamus in the brain to raise your body temperature, and if you touch your chest and back your skin will feel hot to the touch. However, this is not the only action that has been set in motion and one of them is the cause of coughing up sputum. The problem for the immune system is this. Until it can identify what the intruding virus is it conserves its resources and holds back mass-producing T-cells or natural killer (NK) cells. So in the interim the immune system, alongside its fever strategy, invokes two mechanisms to try to thwart the viral intruders. One is preventative and the other is offensive.

As you can imagine, as the cells of your body heat up because of the rise in temperature of the fever, they become stressed suffer from heat shock. This is not good. Unless is something is done by the immune system, those cells would die with catastrophic consequences. So an amazing thing happens. To cope with the stress, cells activate an intracellular signalling pathway called the unfolded protein response (UPR) which warn the immune system that they are being stressed and unless something is done the proteins that make up the cells will "fold" (collapse within themselves). When that happens cells will undergo apoptosis (cell death), which is very dangerous, as you can imagine.

The immune system responds by telling the cells to secrete what are called Heat Shock Proteins (HSP). These have the effect of correcting misfolded proteins, limit cell death, prevent excessive aggregation of proteins and process various protein molecules secreted by cells of the immune system that serve to regulate the immune system called cytokines. By helping to stabilize partially unfolded proteins, HSPs aid in transporting proteins across membranes within the cell. HSPs therefore help our body's cells live longer and fight infection.

While all this is going on, the immune system has a major problem on its hands. Normally, invoking a fever response will kill bacterial or viral invaders on the surface of the bronchial tubes and cilia before they can spread to other tissues. Unfortunately for us, the COVID-19 virus is able to take advantage of the cold winter air being breathed in by the lungs and some survive in what is otherwise a hostile environment for them. Consequently, coronaviruses manage to enter the cells of the bronchial and bronchioles tubes and in the process leave viral antigen identification markers on the outer membrane the cells which are different from the cells "self-antigens" which tell the immune system that they are healthy.

Normally, when you have a strong immune system, you have numerous T-cells roaming around in the lymph fluid of the lymphatic vessels which run alongside each cell. These are quickly mobilized into action. Cytotoxic T-cells try to latch on to the key-shaped virus antigen receptors on an infected cell. An accelerated memory response of T cells occurs in 2 to 5 days upon reexposure to a viral antigen. [17]

I won't go on to describe what happens next as this has already been explained in another place. The problem is that the COVID-19 coronavirus which is rampaging around the world as I speak is new as far as our immune system is concerned. This is the same if COVID-19 was SARS too. This means that in effect T-cells are useless for attacking this particular virus. However, the immune system does not know this yet so it goes through the T-cell process anyway but as a safeguard it sends in natural killer (NK) cells. These do need not to specifically identify the virus. All they need to do is confirm from the identify markers on the cells, whether they are healthy ones or not.

Natural killer cells represent 5-20% of circulating lymphocytes (white cells) in humans. During infection, NK cells migrate towards and accumulate at the sites of infection but how many arrive depends on the condition of your immune system and how aged you are. If your immune system is in poor condition because it is already struggling with an underlying medical condition, then few NK cells will be available to target the new infection. Furthermore, the NK cell daily IFN-? production peaks on day 3 and then undergo a dramatic decline to nearly zero by day 4. [18]

> *Underlying chronic health conditions such as heart disease, diabetes and lung disease can affect the immune system. This reduces the body's ability to fight off infection or illness, so the symptoms and impact from infection can be worse.* [19]

This all makes perfect sense, because if there are only a few NK cells available to attack an infection it stands to reason that the pathogens will increase faster than those which have been destroyed. Obvious really, isn't it?

To make matters worse if you are over 70 years of age (or even less), the number of NK cells your body produces is much reduced, which explains why we read "*People at higher risk include those who are over 70, regardless of whether they have a medical condition or not...*" (BBC News, 7 April 2020) So if you are "old" and suffering from an underlying medical condition, you are hit with a double whammy. In fact, you have been given a death sentence.

Don't panic! I would not be writing this book if I did not think I can improve your chances, by showing you how to build up immune system and your NK-cell count with tried and tests methods based on science principles and research. So please keep on reading.

Returning to the symptom about which I am discussing, namely coughing up a mixture of saliva and mucus (Sputum). If you have a strong immune system then these measures will have stopped the infection and in 80% cases, they do. However, if you are older than 70 with a low NK-cell count, have underlying chronic health problems, your immune system will be weak. As a consequence, the immune measures thus far implemented is like using a bandaid over a deep cut which is bleeding profusely. In our case the immune measures of fever, HSPs and NK-cells have failed to destroy the COVID-19 virus and the invaders are beginning take control of your bronchioles in your lungs and the alveoli are becoming inflamed.

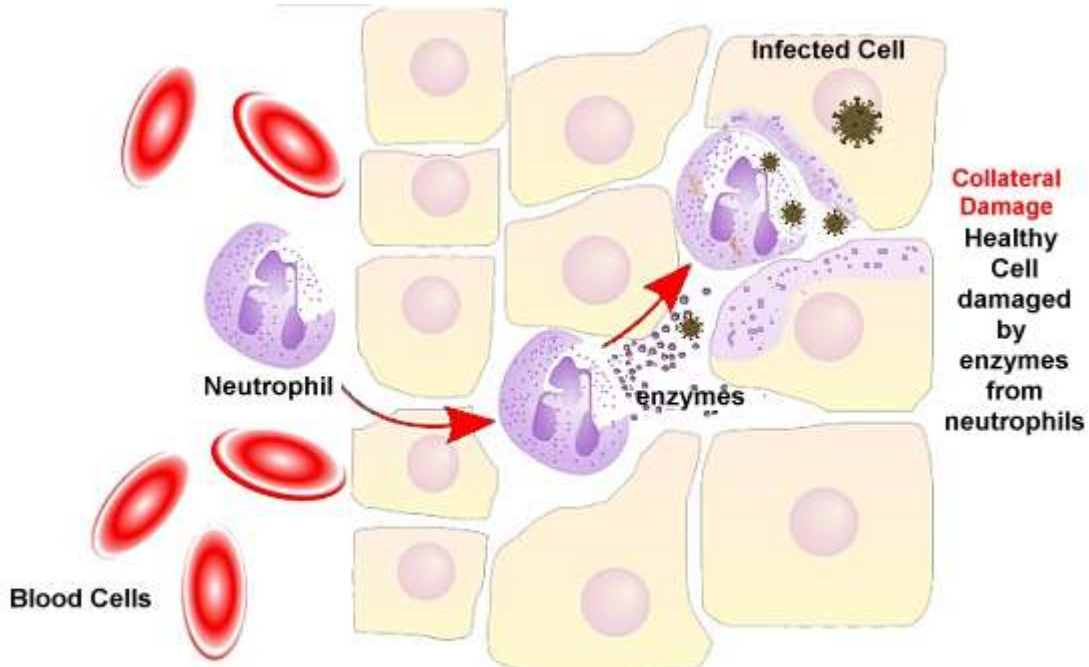
This is when the immune system takes drastic measures. First it ramps up the temperature of the fever temperature and then, akin to bowmen sending a shower of arrows at a target in the hope that some of them will hit it, the immune system does very much the same. As you will know, some arrows might hit the target, that is true, but unintended targets will be hit too. This is what is called collateral damage.

This is a risky strategy but for our immune system, the situation has become desperate. So, supported by large white blood celled amoeba-like organisms called macrophages which clear up the cellular debris from what is about to happen, the immune system throws into the fray massive waves of white cells called neutrophils to the site of infection. Their orders are to kill all cells in the area of the infection, friend or foe. I told you that things were getting desperate, didn't I?

Neutrophils is one thing which our body has in abundance. Our immune system produces roughly 100 billion of these cells each day, and after being released from the bone marrow, around half of these cells are present along the lining of blood vessels and the other half are found in tissues of the body.

Typically, neutrophils make up more than 50% of all bloodstream leukocytes, cells that engulf and digest viruses, bacteria and fungi, and some would have joined battle against the intruder with NK-cells. But as things get dire, the number of neutrophils may increase to 80% as more of them enter the fray.

How do neutrophils know where to go? When a virus or bacteria damages healthy cells, the cells release "chemokines" which attract neutrophils to the site in a process called chemotaxis. All hell has broken out, with the temperature of the fever rising, the neutrophils swamp the area of infection. Neutrophils address foreign invaders like viruses by "eating them" a process referred to as phagocytosis, or by taking them up into the cell in a process called endocytosis. Once the foreign organism is inside the neutrophil, it is "treated" with enzymes which result in the destruction of the organism.



Neutrophils destroying viruses and infected cells

However, there is a price to pay. Nearby healthy cells are being attacked too and worse still, the bronchioles tubes and alveoli are becoming inflamed as the vast army of neutrophils attacks the multiplying viruses on their surfaces. Consequently, fluid gets excreted into the alveoli sacs and now your coughing has changed from a dry one to a wet one as your lungs try to expel the fluid, a combination of saliva and mucus. However, another thing is happening. You are getting short of breath.

Note: You have about 480 million alveoli, located at the end of bronchial tubes so depending upon how many of these are filling up with fluid, you might not have a wet cough, but you could still be getting increasingly short of breath depending on how many alveoli sacs are being filled up with fluid.

5. SHORTNESS OF BREATH (Dyspnea) - 19%

By now you are feeling awful and you are beginning to get short of breath. This is the stage where Boris had got to when his doctors recommended that he went into intensive care, unaware that inside his bronchioles and alveoli, the vast neutrophil horde was running amuck as they try to irradiate the virus invader from the cells of the lungs..

If neutrophils were to continue to live, they would be worse that the viruses that they were trying to destroy. Fortunately for us, the immune system has built into them a fail-safe mechanism which causes them to commit suicide after five days to prevent them from causing too much damage. In the meantime, the alveoli sacs are filling up with fluid, and coughing is not getting rid of it. You slowly being starved of oxygen.

According to a study called "Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China" (7 February 2020) shortness of breath was reported 5 days after the first symptoms. In the quote below ARDS stands for Acute Respiratory Distress Syndrome and IQR is the InterQuartile Range, defined as the difference between the upper and lower quartile values (any of three points that divide an ordered distribution into four parts each containing one quarter of the scores) in a set of data. Don't worry about IQR, I don't understand that either, but for the purposes of this book it is not important.

> *The median durations from first symptoms to dyspnea, hospital admission, and ARDS were 5 days (IQR, 1-10), 7 days (IQR, 4-8), and 8 days (IQR, 6-12), respectively.*
> *Of the 138 patients, 64 (46.4%) had 1 or more coexisting medical conditions. Hypertension (43 [31.2%]), diabetes (14 [10.1%]), cardiovascular disease (20 [14.5%]), and malignancy (10 [7.2%]) were the most common coexisting conditions.*
> *Compared with patients who did not receive ICU care (n=102), patients who required ICU care (n=36) were significantly older (median age, 66 years [IQR, 57-78] vs 51 years [IQR, 37-62]; P<.001) and were more likely to have underlying comorbidities.* [20]

If it takes 4 to 5 days for COVID-19 symptoms to appear (incubation period) and 5 days when you get shortness of breath, then this pattern appears to be a common one. "More than 8 in 10 cases are mild. But for some, the infection gets more severe. About 5 to 8 days after symptoms begin, they have shortness of breath (known as dyspnea). Acute respiratory distress syndrome (ARDS) begins a few days later." (WebMD)

Boris had to go into intensive care 10 days after being in self-isolation when the start when his symptoms first appeared. If this is happening to you, you too must follow the Prime Minister's example and call 999 for an ambulance.

Speaking to BBC Radio 5 Live, NHS paramedic Jake Jones revealed the shortness of breath experienced by those affected by the virus is very different from that experienced because of other respiratory conditions.

> *A lot of people are having the initial symptoms of a cough and a fever, sometimes one without the other but a lot of the times people are getting those two symptoms. And then a few days later, people are presenting to us extremely short of breath. It's different from some of the other breathing problems that we used to go into. Essentially they are breathing very fast because they can't take a very deep breath. I guess because of what the COVID is doing inside the lungs. People are breathing very fast and they are often oxygen deprived by the time we get to them. It's like a slow-motion health disaster unfolding in front of us.*

I repeat, if this is what is happening to YOU MUST RING 999 and call an ambulance so you can get to an intensive care unit as quickly as possible. When you get there you will be fed with oxygen to bolster your oxygen levels in support your lungs that are now not up to the job. Your life is now hanging in the balance, as Boris was to say. "*It could have gone either way*".

Things could have gone either way, says Johnson

Unprotected nurses can refuse to treat patients

PM pays tribute to staff after leaving hospital ● British death toll from coronavirus passes 10,000

iteven Swinford Deputy Political Editor
Jominic Kennedy Investigations Editor

Boris Johnson has thanked the NHS taff who saved his life in hospital as he admitted that "things could have gone ither way".
The prime minister was discharged yesterday after a week in St Thomas' lospital in central London, including

Source: The Times, 13 April 2020

What I have presented so far have been the five sequential stages that people will experience from the time of the first symptoms to the point where up to 20% of us will have reached should the immune system have failed to defeat the infection. Thankfully, the actions of the immune system will have saved 80% of us and after a few days we will either be on the road to recovery as our Prime Minister Boris Johnson was, or we will have fully recovered as Matt Hancock did and that is good news indeed.

Furthermore, should you be infected by the COVID-19 coronavirus again, your immune system will have "remembered" its viral identification markers and antibodies and T-cells will quickly eradicate the virus. You should be in effect be immune, but one should not be complacent. This because just as COVID-19 (SARS-CoV-2) has, in my opinion, mutated from SARS (SARS-CoV-1) such mutations will no doubt happen again, just as it does with the Common Cold. You might contract the virus again, but this time our immune system will have adapted, and while you in a second infection you might get a few minor symptoms you should get better quickly.

I should add that during the aforementioned five sequential stages, you could experience other symptoms at anytime. These include aching muscles or joints (15%), Sore throat (14%), Headache (14%), Blocked nose (5%). However, these symptoms may not necessarily be caused by COVID-19. There is one symptom which has not been listed by the World Health Organization which I referred to above and this is a "lack of appetite 40%-84%." According to information gathered from researchers in China and published on WebMD, the most common symptoms among people who had COVID-19 were:

- **Fever 83%-99%** *(WHO 88%)*
- **Cough 59%-82%** *(WHO 68%)*
- **Fatigue 44%-70%** *(WHO 38%)*
- **Lack of appetite 40%-84%** *(WHO - not listed)*
- **Shortness of breath 31%-40%** *(WHO 19%)*
- **Mucus/phlegm 28%-33%** *(WHO 33%)*

(saliva mixed with discharges from the respiratory passages)

- **Body aches 11%-35%** *(WHO 15%)*
- *WHO - Sore throat (14%)*
- *WHO - Headache (14%)*
- *WHO - Blocked nose (5%)*
- *WHO - Coughing up blood (1%)*
- *WHO -Pink/redness of the whites of the eyes (1%)*

According to the Chinese report, without giving out any percentages other symptoms include sore throat, headache, chills, stuffy nose, nausea or vomiting and diarrhoea. It further says that "Symptoms usually begin 2 to 14 days after you come into contact with the virus."

As you can see, these Chinese statistics are almost identical to the one that the WHO published but in 4th place it is not shortness of breath which is listed. It is lack of appetite and at 40%-84% it is obviously common.

So what you may ask? Well one of the other symptoms is headache. (WHO 14%) That symptom may not be caused by COVID-19 after all. It could be that, because of their loss of appetite, 40% to 84%s suffer from this, a person who normally consumes a lot unhealthy sugary foods such as cakes, biscuits and chocolate, may simply be suffering from sugar withdrawal symptoms.

It is well established that people may experience a number of unpleasant symptoms when they initially cut sugar from their diets. These can include: headaches, lack of energy, muscle aches, nausea, bloating, stomach cramps, irritability or anxiety, feeling down or depressed." Sound familiar? [21]

So you see COVID-19 symptoms are not always cut and dry. That being said, if you have reached the fifth stage of the symptoms I have discussed this far, loss of breath, you are now on the crossroads between life and death. Getting to a intensive care unit at a hospital is imperative because you could be in the first stages of pneumonia, which could be fatal.

AT THE CROSSROADS BETWEEN LIFE AND DEATH

I have to report some sad statistics. I cannot hold back from the truth, so I am not going to beat around the bush. According to a report by the Intensive Care National Audit published, at the end of March, 66% of patients hooked up to ventilators will succumb to the killer infection. The ICNARC report looked at the first 775 patients who had fallen critically ill with COVID-19 across 285 intensive care units. [22]

The report broke down the risk of death from coronavirus by age and BMI index and found that the over-70s were the most at-risk group, which confirms what has been seen across the world. It should be noted that the likelihood of having chronic conditions increases markedly as people age, with four out of five over-65s living with at least one underlying health condition. As has been seen elsewhere, the chances of death on the ICU with COVID-19 increase markedly with age, reaching 73% in the over 70s. "The death rate increases dramatically with age (death rate in people 16 to 49 is 24.3%, for 50-69 years 40.3% and over 70 years old 73.2%)" [23]

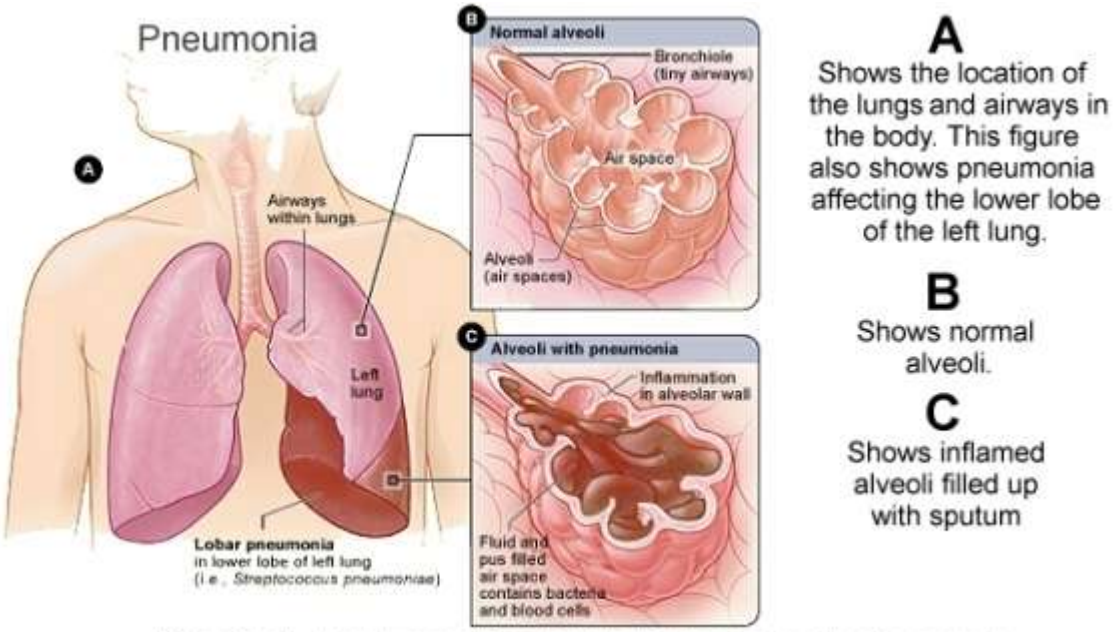
There was some good news in the report, believe it or not. There was little discrepancy between overweight patients and those with a healthy body weight. Those with a BMI under 25, the ideal range being between 18.5 to 24.9, the mortality rate was 42.1 per cent. For overweight patients, it was 41.7 per cent so it appears that overweight people have a slight advantage of their skinnier counterparts. Duncan Young, Professor of Intensive Care Medicine, University of Oxford, says that based on this report it is not likely that obesity is linked to severe COVID-19 infection requiring an ICU admission. [24]

The question you will probably be asking yourself is why people are dying even though they have been put on a ventilator? The answer is because putting people on ventilators will not guarantee survival although the good news is that, according to the above statistics, 34% do come through in the end. However, keep in mind that people are put in intensive care because their immune system is still fighting the disease and therefore the next couple of days will be critical.

You are literally at the crossroads between life and death. Boris Johnson got through this, thanks to the support of the hospital staff, and they will do whatever they can to get you through this too, should you find yourself in the unfortunate position of being in the same boat as the Prime Minister. His boat did not sink and hopefully neither will yours.

For a time, a day or two, you will be in a kind of limbo not knowing if your immune system can stop the inflammation in the bronchioles or not. If it cannot then more and more of your alveoli air-sacks will continue to be flooded with fluid.

There will come a point when, no matter how much oxygen is fed to the lungs, the oxygen will not be able bi-pass the fluid filled alveoli. You will have in fact, "Severe Acute Respiratory Syndrome" (SARS) which is really another name for pneumonia. You could develop lobar pneumonia, where one lobe of your lungs is affected, or you could have bronchopneumonia that affects many areas of both lungs, the worst position you can possibly have.



Picture Credit: Heart, Lung and Blood Institute / Public domain (wikipedia commons)

Pneumonia, is defined in a dictionary as "a respiratory disease characterized by inflammation of the lung parenchyma (excluding the bronchi) with congestion caused by viruses, bacteria or irritants." The NHS describes pneumonia as inflammation of the tissue in one or both lungs. "At the end of the breathing tubes in your lungs are clusters of tiny air sacs. If you have pneumonia, these tiny sacs become inflamed and fill up with fluid." [25]

The usual treatment for pneumonia is antibiotics, along with rest and drinking plenty of water to stop you from becoming dehydrated, because of the fever that accompanies the condition. However, these treatment recommendations refer to pneumonia which has been caused by a bacterium, which means that because COVID-19 (SARS-CoV-2) is a virus, antibiotics will be useless against it. Therefore, treatment is limited. According to Medical News Today, "A person with viral pneumonia should get plenty of rest and drink extra fluids... In some cases of viral pneumonia, a doctor may prescribe antiviral medication." [26]

I shall now discuss these antiviral medications together with the present recommended treatments for the symptoms of disease, which may or may help you to recover from the disease. However, the truth of the matter is, there is no real treatment available specifically for COVID-19 at the present time and there is one treatment recommended by the NHS and other medical organizations which does give me cause for concern, and that is the taking of paracetamol to reduce the temperature of fever.

TREATMENTS AND OTHER INTERVENTIONS

The NHS is right when it says that there is currently no specific treatment for coronavirus and that antibiotics do not help because they do not work against viruses. So the only treatment which one can do, they say, is to "relieve the symptoms while your body fights the illness." In other words it is really only your immune system that can treat the disease and I think from what I have written in this book that message is very clear.

There are currently three recommended treatments that the NHS recommends and these I listed earlier but I repeat them here anyway.

- *rest and sleep*
- *drink plenty of water to avoid dehydration - drink enough so your pee is light yellow and clear*
- *take paracetamol to lower your temperature*

The best recommendations are the first two listed by the NHS, sleep and drinking plenty of water to avoid dehydration, both of which I have discussed in detail when speaking about the symptoms of the COVID-19 virus, so there is no need to repeat them here. However, it is the third recommendation that I have reservations about.

Should You Take Paracetamol?

The NHS and most medical commentators say that you should take paracetamol to lower your temperature. Surely, that is a sensible form of treatment, but think about it. Why does the immune system put your entire body in a state of raised temperature (fever) in the first place? It does so because putting your body in this state of fever is one of its most potent weapons when tackling pathogens which have entered the body. Even the NHS agrees with that statement.

> *Fever helps your body fight infections by stimulating your immune system: your body's natural defence. By increasing your body's temperature, a fever makes it harder for the bacteria and viruses that cause infections to survive.* [27]

Health Magazine, part of the Meredith Health Group, is equally clear as to what fever is all about. It says:

> *It's important to note that a fever isn't actually a disease on its own, but a sign that your body is trying to fight an illness or infection, per MedlinePlus. The resource explains that viruses and bacteria that cause infections can thrive in a normal human body temperature environment. A fever results from your body trying to kill the pathogen, through essentially making your body an inhospitable environment for it. Fevers also activate your body's immune system, in an added attempt to kill the pathogen.* [28]

What I am getting at is that when you take paracetamol or other antipyretics you are actually working against your immune system, and this I will suggest is going to extend the length of the fever and may allow the coronavirus more time to exist longer and do more damage. What paracetamol and other antipyretics do is override the signals that tell your hypothalamus to elevate your body temperature and it will reduce it instead. Medically speaking the enzyme cyclooxygenase is inhibited thereby reducing the prostaglandin E2 in the hypothalamus.

I know my reservations goes against the advice posted on many medical websites including the NHS but what I have said makes a great deal of sense, don't you agree? So when medical professionals say that you get a fever because your body is trying to kill the virus or bacteria that causes the infection and also activates your body's immune system, don't you think that it is counterproductive to use a drug that is designed to reduce that fever temperature?

A study by the *Centre for Evidence-Based Medicine* of Oxford University which was published on 19 March 2020 says, that for most adults, there is no convincing evidence that fever is itself detrimental and does not automatically require suppression. It further says that the current evidence does not support routine antipyretic administration to treat fever in acute respiratory infections and COVID-19. [29]

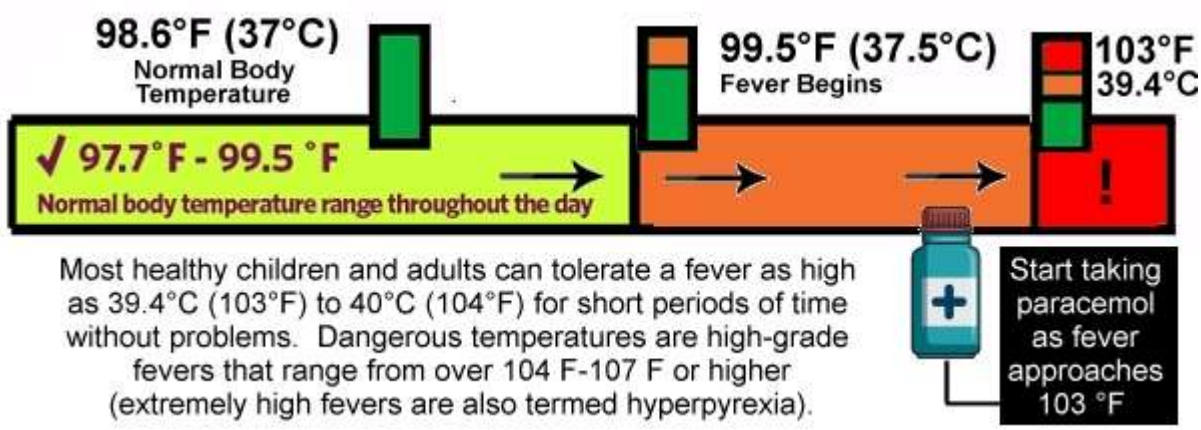
The facts of the matter is, most fevers usually go away by themselves after 1 to 3 days most health commentators will tell you, during which one should drink lots of water to prevent dehydration because you will be sweating a lot. But that is all. However, there does come a point when taking paracetamol would be the prudent thing to do.

IMPORTANT NOTICE (WHEN YOU SHOULD TAKE PARACETAMOL)

Taking paracetamol during the early stages of a fever is counterproductive and unnecessary. *Mayo Clinic* for example, which is the foremost American academic medical centre based in Rochester, Minnesota, which employs 4,500 physicians and scientists focused on integrated clinical practice, education and research, says:

> *Fevers generally go away within a few days.* ***A number of over-the-counter medications lower a fever, but sometimes it's better left untreated.*** *Fever seems to play a key role in helping your body fight off a number of infections.... For an adult, a fever may be uncomfortable, but usually isn't a cause for concern unless it reaches 103 F (39.4 C) or higher.* [30] [emphasis mine]

The key point being made by Mayo Clinic and which is repeated by most medical literature is that there is not a cause for concern until the fever reaches 103°F (39.4 °C). When the fever approaches this temperature, it is then that I believe it would be prudent to start using antipyretics like paracetamol to keep the temperature below that temperature. That does make sense, don't you agree.



The medical evidence is that most healthy children and adults can tolerate a fever as high as 39.4°C (103°F) to 40°C (104°F) for short periods of time without problems. However, it is known that children between the ages of 6 months and 5 years may experience fever-induced convulsions (febrile seizures), which usually involve loss of consciousness and shaking of limbs on both sides of the body. Although alarming for parents, the vast majority of febrile seizures cause no lasting effects. Mayo Clinic recommends that if a seizure occurs:

- *Lay your child on his or her side or stomach on the floor or ground*
- *Remove any sharp objects that are near your child*
- *Loosen tight clothing*
- *Hold your child to prevent injury*
- *Don't place anything in your child's mouth or try to stop the seizure* [31]

Mayo Clinic says that most seizures stop on their own but take your child to the doctor as soon as possible after the seizure to determine the cause of the fever.

It should be said that temperatures between 104 F and 106 F is deemed as becoming dangerous and the fear is that it could lead to hyperpyrexia. The medical criterion for hyperpyrexia is when someone is running a body temperature of more than 106.7°F (41.5°C). Some doctors lower the measure for hyperpyrexia to include anyone with a body temperature of 106.1°F or 41.1°C and above. [32]

Hyperpyrexia is life threatening and causes bleeding in the brain known as intracranial haemorrhage and on rare occasions, Sepsis which results in organ damage. However, long before you would have got hyperpyrexia you would already be in hospital being treated for COVID-19. Putting it bluntly - you would have died of pneumonia long before your fever will have reached the critical level of hyperpyrexia. From my studies I have made from the many medical material I have examined, nobody with the COVID-19 or SARS virus has died of hyperpyrexia.

Why taking Ibuprofen is not recommended

What about using ibuprofen for targeting the inflammation in your lungs? Would that not be a good idea? After all it is an easily available general off-the-shelf medicine which is used for treating pain, fever and inflammation. In fact the World Health Organization, until recently recommended it as a treatment for COVID-19. Then they changed their mind, and then they changed their mind again. So did the NHS. What is going on?

Suspicions that something odd was going on was when statistical evidence was released in March 2020 which showed that patients in China who had diabetes were more than twice to three times as likely to die of COVID-19 than other patients who did not have diabetes. This suspician was raised by Professor Sten Madsbad from the Department of Endocrinology, Hvidovre Hospital, University of Copenhagen, Denmark who commented:

> *When comparing intensive care and non-intensive care patients with COVID-19, there appears to be a twofold increase in the incidence of patients in intensive care having diabetes. Mortality seems to be about threefold higher in people with diabetes compared with the general mortality of COVID-19 in China... Indeed, people with diabetes are a high-risk group for severe disease. Notably, diabetes was also a risk factor for severe disease and mortality in the previous SARS, MERS (Middle East respiratory syndrome) coronavirus infections and the severe influenza A H1N1 pandemic in 2009.* [33]

This was an enigma to be sure and it began to get media attention in a letter which was published on 11 March 2020 by researchers at University Hospital Basel, in Switzerland, and Aristotle University of Thessalonica, in Greece. Published in The Lancet Respiratory Medicine. The letter reviewed three early sets of case reports from China, covering almost 1,300 patients gravely ill with COVID-19. The letter's authors observed that a significant number of those patients (12%-30%) had high blood pressure and diabetes depending on which study of the three studies was vetted.

The researcher came to a staggering conclusion. They theorized that higher rates of expression of a particular enzyme called Angiotensin-converting enzyme 2, known for short as ACE2, might be raising the risk of coronavirus infection because of the use of ACE2 inhibitors such as ibuprofen, which was being used as part of the treatment for COVID-19 patients. [34]

This letter raised eyebrows because ACE2 is a transmembrane protein and it serves as the main entry point into cells for COVID-19 and SARS coronaviruses. By using ibuprofen which is an ACE2 inhibitor to reduce the functionality of the enzyme, it makes it easier for those coronaviruses to enter the cell and infect it. It is like a door which is normally held ajar becoming wide open thereby allowing more light into the room except that in this analogy, the room is your lungs and the light is the coronavirus invasion force massed outside desperate to get in and reproduce.

On 18 March 2020, this information was taken up by the French Ministry of Health which circulated a warning against using ibuprofen for COVID-19 fevers, citing "serious adverse events" occurring in "possible or confirmed cases." [35]

The same day, the French minister of health, a physician, tweeted advice to avoid ibuprofen and other anti-inflammatories because they could be "an aggravating factor" in COVID-19 infections and what he said went viral around the world. It was repeated in media outlets from the United States to the United Kingdom to Israel to Singapore to New Zealand. As a result, the World Health Organization issued a statement which said:

> *Original (18 March 2020): The World Health Organization recommended Tuesday that people suffering COVID-19 symptoms avoid taking ibuprofen, after French officials warned that anti-inflammatory drugs could worsen effects of the virus.* [36]

Since then there has been a fiery debate over the safety of using ibuprofen for the treatment of COVID-19 with claim and counter-claim being voiced. In the meantime medical authorities have taken a cautionary approach, leaving it up to you to decide whether to take ibuprofen or not. On their website the NHS says:

> **NHS coronavirus advice**
>
> *The Commission on Human Medicines has now confirmed that there is no clear evidence that using ibuprofen to treat symptoms such as a high temperature can make coronavirus (COVID-19) worse.*
>
> *You can take paracetamol or ibuprofen to treat the symptoms of coronavirus. We recommend that you try paracetamol first, it has fewer side effects than ibuprofen and is the safer choice for most people.*
>
> *Always follow the instructions that come with your medicine.* [37]

It is your choice but if I was a diabetic I would think twice before using ibuprofen. Besides, as I have stated above, you should not be taking fever suppressing drugs like paracetamol anyway, unless the fever is approaching 103° F because you would be preventing the immune system doing its job.

A Simple Treatment Proven to Work

So far I have presented the official recommended treatments for COVID-19, but there is one treatment which may effective but it is one which is not listed by the NHS or anybody else for that matter. I came to know about this from Rick, a friend of mine who lives in Norfolk with whom I regularly chat with on Skype. Knowing that I was writing this book, Rick sent me a copy of a text message he received from a Sri Lankan friend and this is it said.

1st hand information

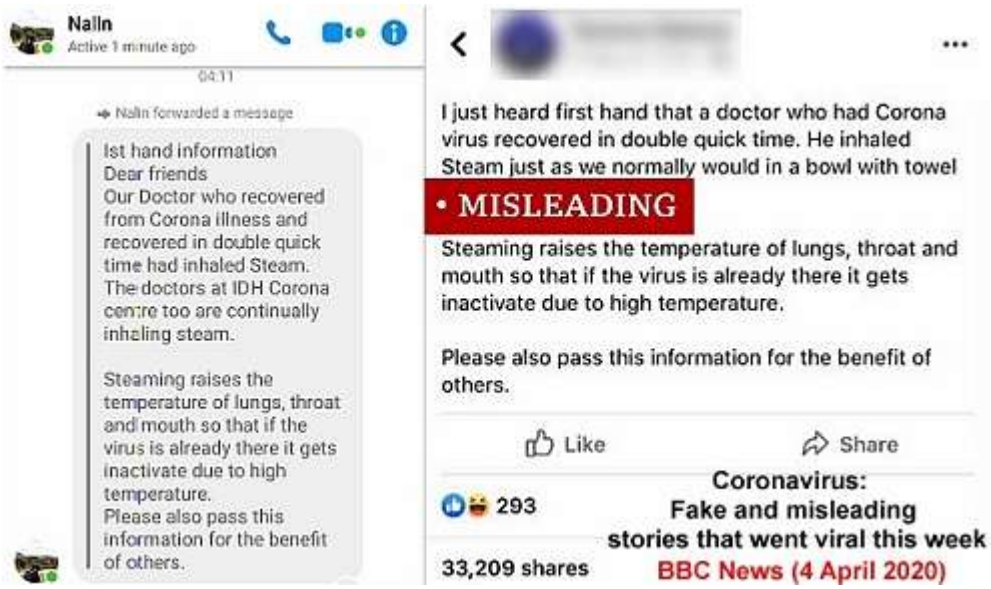
Dear friends

Our Doctor who recovered from Corona illness and recovered in double quick time had inhaled Steam. The doctors at IDH Corona Centre too are continually inhaling steam.

Steaming raises the temperature of the lungs, throat and mouth so that if the virus is already there it gets inactive due to high temperature.

Please pass this information on for the benefit of others.

Well you could have knocked me down with a feather. My first thought was that this was some kind of scam, although the motive behind it escaped me. Anyway, I thought I should investigate, and so I did. Goodness! There were a lot of traffic on social media such as Facebook and elsewhere saying that steam inhalation can cure COVID-19. And there it was, the same notice, but from a user Facebook page in Durham, according to the BBC Reality Check service.



The BBC condemned the notice as fake, declaring that no evidence that steam inhalation works as a treatment for coronavirus. Furthermore, the news agency said that any attempt to inhale steam at this temperature, would be extremely dangerous and risk burns. Despite this warning the BBC did provide some really useful information:

High-temperature steam-cleaning of surfaces in hospitals and elsewhere does destroy the coronavirus (as well as other types of viruses) says Prof Keith Neal, a specialist in the study of the spread of infectious diseases at the University of Nottingham. [38]

Based on that information, here is a VERY GOOD TIP. Instead of using cloths soaked with antiseptic solution, why not use a hand-held steamer to clean work surfaces etc? They are cheap and are readily available in stores like Argos, B&Q, Homebase their online shopping websites and online vendors such as eBay and Amazon.

"High-temperature steam-cleaning of surfaces in hospitals and elsewhere does destroy the coronavirus (as well as other types of viruses) says Prof Keith Neal"

Hand-held steamers could be a useful tool to sanitize the surfaces of your home from COVID-19 and other viruses

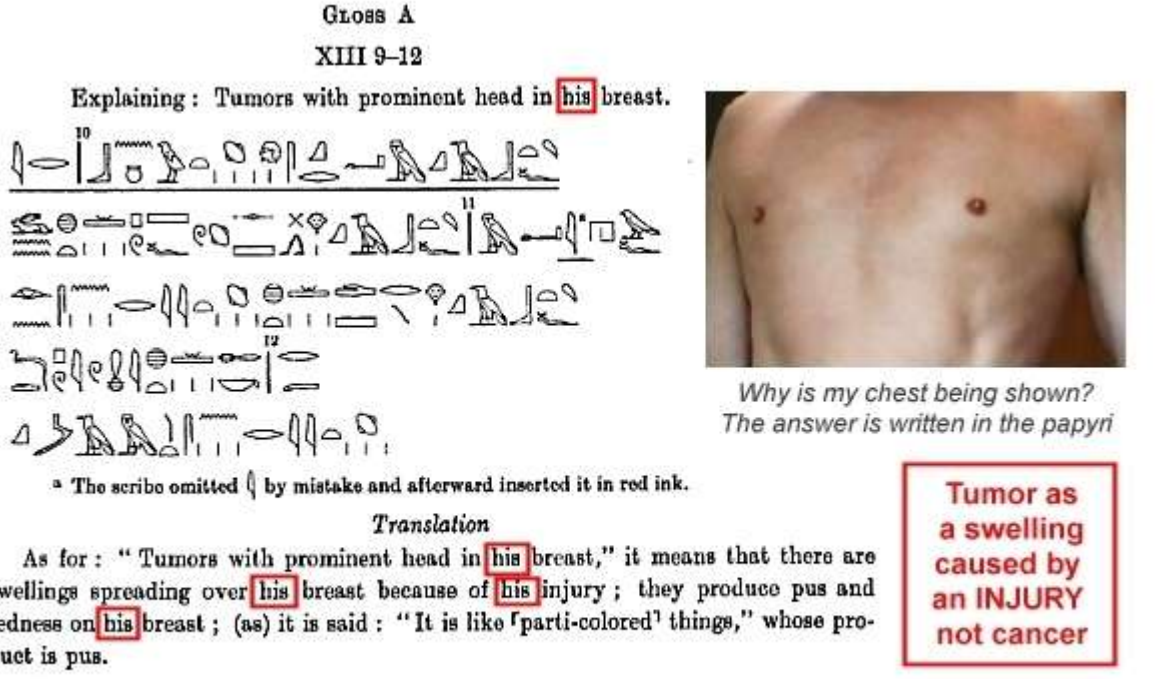
Many media commentators followed the BBC's lead and condemned the post vigorously and mercilessly without investigating the viability of what was being suggested by the post. Reuters were quick to say that "These posts claim that inhalation of steam from boiling water, sometimes with various infused ingredients, will kill the coronavirus. This is false. While it may help ease symptoms like congestion, steam inhalation also carries the risks of burns." [39]

So that, was that. It was a scam of some kind although I did wonder where the person in Durham got the message from. Was it from the same person which my friend got his message from, Nalin in Sri Lanka, I wondered? Although the message posted on Facebook was similar, it was not identical to Nalin's one. Did you not notice? Nalinsaid, "*Our doctor who recovered from Corona....*" while the Facebook message said, "*I just heard first hand that a doctor who had Corona virus....*" This suggests to me that the Facebook message was a rewrite of the original. It certainly looks that way, don't you think?

I was in two minds to simply ignore the message, but from past experience, when "experts" sing the same tune almost word-for-word, then a little bell rings in my head that something odd is going on here. The thing is this. I have found that some "experts" have in the past been just as guilty of pushing false information out which is then subsequently believed by the media who propagate it like a chain letter. For example, when writing my books on breast cancer [40] I read so many "experts" say that breast cancer was seen in Egypt and as proof they usually refer to two Egyptian manuscripts as proof. These are the Edwin Smith Surgical Papyrus (c. 3000 BC) and the Ebers Papyrus (c. 1550 BC).

It just so happens that I am a historian, and ancient Egyptian history is a particular speciality of mine. So, when I read what was being said about breast cancer being found in the two specifically named ancient Egyptian papyri, I knew this was completely untrue. I have studied those papyri in great depth, and I was surprised that anyone who read them could possibly have come to the conclusion that breast cancer existed in Ancient Egypt. So in my books I showed that these "expert" claims were false by presenting translations of the very papyri themselves, so they could be read by the reader to see for themselves how false the "expert" claims were.

It is there in black and white. The those papyri did not talk about breast cancer but talked about injuries to the breast such as being pierced by a spear. What was even worse, is that the "expert" claimants had obviously not read the source material because they all had missed out an important fact which made their claims ridiculous. The two papyri talked about chest ailments of MEN not women, even though the "expert" claims were used as proof that women had the disease long ago. Clearly, someone had written a factoid, which I was able to trace to the predecessor of the American Cancer Society, and thereafter it has been repeated as a fact ever since.



Gloss A

XIII 9–12

Explaining: Tumors with prominent head in his breast.

Why is my chest being shown?
The answer is written in the papyri

[a] The scribe omitted ⌈ by mistake and afterward inserted it in red ink.

Translation

As for: "Tumors with prominent head in his breast," it means that there are swellings spreading over his breast because of his injury; they produce pus and redness on his breast; (as) it is said: "It is like ⌜parti-colored⌝ things," whose product is pus.

Tumor as a swelling caused by an INJURY not cancer

MEDIA DECEPTION: The Edwin Smith Papyrus was specifically dedicated to the treatment of men and not women. Tumors of the breast were those found on men

How does the saying go? Once bitten twice shy. So you see, from what I had experienced with my researches on breast cancer, I wondered if the furore against the message was actually based on solid evidence or simply repeated what someone had said in condemning the item. I therefore, I looked at the text message more closely and this time it occurred to me that Nalin was not claiming that steam inhaling cured COVID-19 but that it helped patients to recover twice as fast. Now that is a different ball game.

I have seen such statements before, and they were not hoaxes. There are to be found in a number of peer-reviewed medical journals, which in my database of research material flagged up for me.

Take this one for example published in the IOSR *Journal of Dental and Medical Sciences*, February 2015. Written by Manpreet Singh Nanda, a professor at the Maharishi Markandeshwar Medical College and Hospital. He described a study which involved 100 patients with a common cold infection and this is what he found.

> *100 patients with common cold infection were taken up for study. 50 patients in study arm were given steam inhalation with inhalant capsules along with other medications. Remaining 50 patients in control arm were not given steam inhalation. Patients were evaluated after 1, 2 and 3 weeks for subjective relief of symptoms as well as endoscopic findings. The results showed that there was better and faster relief of symptoms in study group with steam inhalation than the control group without steam inhalation. The side effects of the same were also minimal. So it can be concluded that steam inhalation with inhalant capsules do have a role in treatment of common cold infection.* [41]

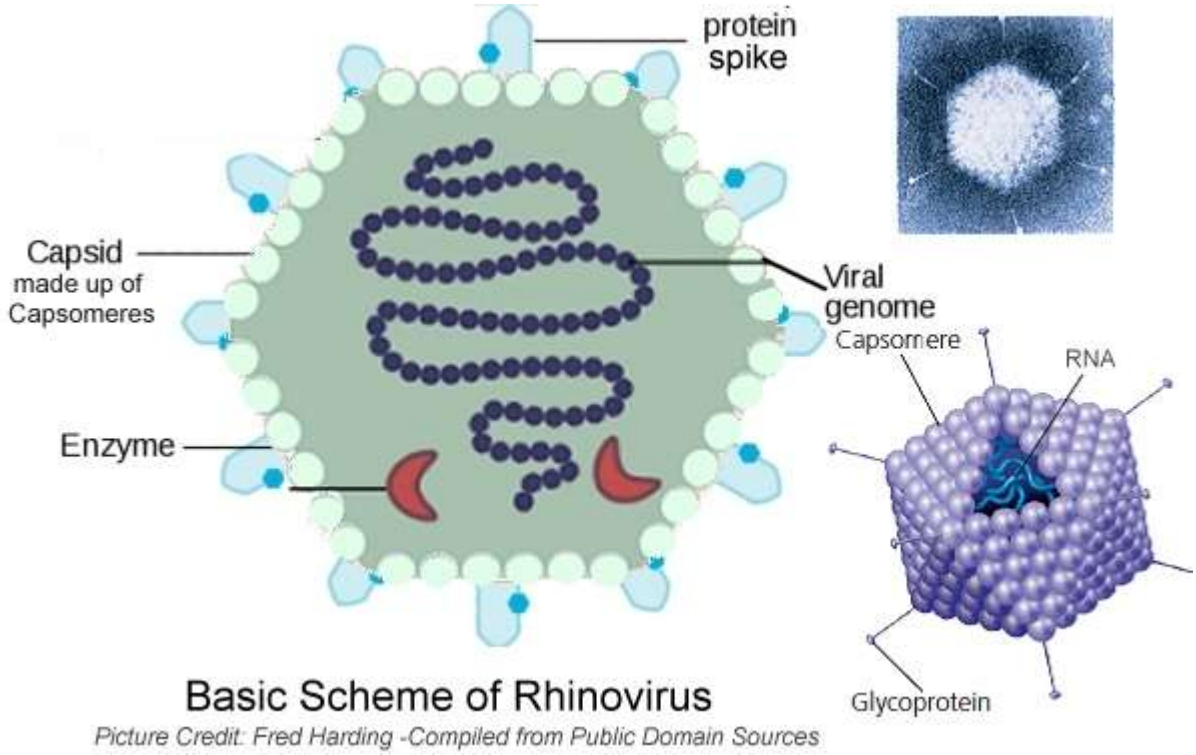
The study showed that steam inhalation reduced illness recovery time by about one week compared to no steam inhalation at all. Isn't that what the text message was really saying?

Now I admit the first to admit that the common cold is not COVID-19 but as I have said elsewhere it is well established that at least 20% of common colds are caused by four coronaviruses, the same family to which COVID-19 and SARS belongs. So there is relevance to the study by Professor Singh Nanda. Also, a number for senior commentators have supported steam inhalation as a treatment for cold symptoms, such as Professor Steve Field, chairman of the Royal College of General Practitioners. He says that it is the best way to reduce inflammation is to keep the nasal passages clear.

> *The common cold is a collection of different viruses and your immune system's response to them causes the symptoms of inflamed nasal passage and lining of the sinuses - which causes sneezing, runny nose and sore eyes," explains Professor Steve Field, chairman of the Royal College of General Practitioners. "The best way to reduce this inflammation is to keep the nasal passages clear. Steam is wonderful at achieving this.* [42]

That is a most interesting statement, by one of Britain's leading medical experts, don't you agree? However, take note that what Professor Field said is related to inflammation within the nose, "nasal passage and lining of the sinuses" and not the lungs. That is an important observation for which I will explain later, with connection with anosmia, the loss of smell, because there is new evidence that this is a symptom of COVID-19 infection.

What about the other 80% of common colds? What are they caused by? They are caused by rhinoviruses which are viruses which are almost identical to coronaviruses and it uses the same methodology and pathways to infect a cell. The only difference is that rhinoviruses do not have a protein envelope as coronaviruses do but are covered by capsomeres instead.



I wondered if any studies have been used for treating rhinovirus infections with steam inhalation, and so I checked my medical database. Sure enough a number of studies popped up and in fact there is a special name given for the treatment. It is called rhinothermy and this is a term that applies to the delivery of humidified air to the upper airways via the nasal passages at a temperature of 41°C. Note that the temperature is not the same temperature as steam (100 °C) so the issue of getting burned by steam that some commentators, such as the BBC above, have raised is not an issue.

Why 41°C? The study of which I speak, "Randomized controlled trial of rhinothermy for treatment of the common cold: a feasibility study" published in the British Medical Journal Open Access portal, explains why this particular temperature.

> Human rhinoviruses (HRVs), which cause up to two-thirds of colds, have temperature-dependent replication and most HRV strains replicate optimally at 33°C.... Forstall et al report that the greatest inhibition of HRV occurs when exposed to a temperature of 43°C for at least one?hour and Conti et al report that HRV replication is suppressed when exposed to a temperature of 45°C for 20?minutes. [43]

This would certainly be the ideal temperature for use against the COVID-19 which becomes inactive at 30°C under constant conditions. The study used a modified myAIRVO 2 device which is depicted in their study document to deliver the humidified air to the upper airways.

The intervention group received rhinothermy via the modified myAIRVO 2 device (PT100AZ, Fisher & Paykel Healthcare), a heated breathing tube and chamber (900PT551, Fisher & Paykel Healthcare),

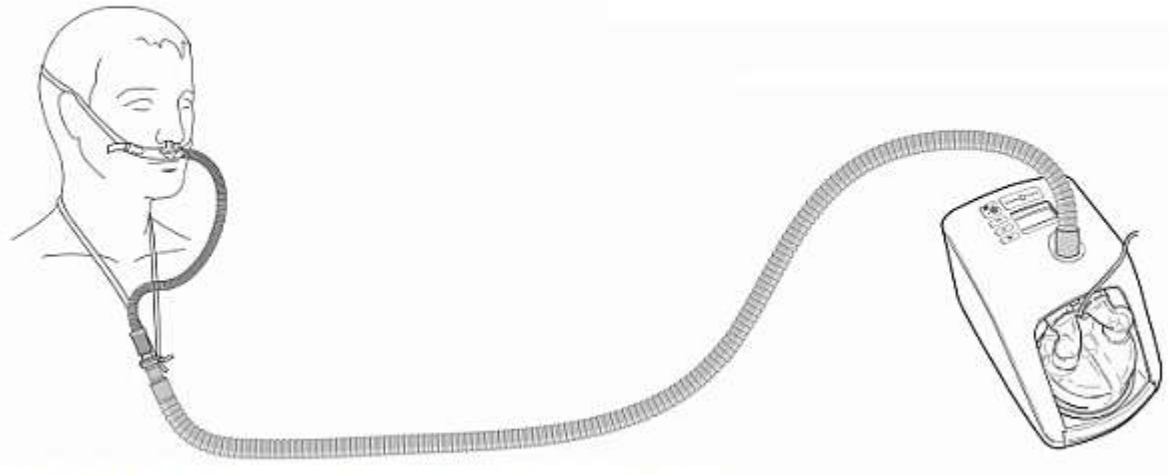


Figure 1 Illustration of 'myAIRVO 2 and Optiflow+cannula' setup.

Hei Sv, *et al*. *BMJ Open* 2018;**8**:e019350. doi:10.1136/bmjopen-2017-019350 3

The researchers from the Medical Research Institute of New Zealand, Victoria University of Wellington, University of Otago and the University of Groningen in the Netherlands came to a positive conclusion, albeit one of cautious optimism.

> *This study shows that an RCT of rhinothermy with the modified myAIRVO 2 device is feasible, that rhinothermy is well tolerated and that the estimated change denoting substantial clinical benefit for the modified Jackson score is a 5-unit change.*
>
> *Our observation that rhinothermy improved symptoms now requires replication in a larger study of common colds. Investigation of the efficacy of rhinothermy in the treatment of influenza is also a priority, in view of the temperature-sensitivity of influenza viruses and the major public health burden of influenza worldwide.* [44]

Although positive as the results were, there have not been many studies of this kind. However, there was a study carried out by Cochrane, a research gathering organization. It has a global independent network which gathers and summarizes evidence to help researchers, health professionals, patients, carers to make informed choices about treatment.

Cochrane recognized that the common cold has been treated for centuries with inhaled steam to encourage mucus to drain away more easily but observed that there had been no large-scale clinical trials undertaken to test the clinical efficacy of this therapy.

Why not, I ask myself. Perhaps the "experts" are more interested in researching new therapies which will make them bundles of money rather than pursue a possible health solution which does not cost anything and does not require special equipment. Anyway that said, Chochrane did carry out a large scale study based on six trials involving 387 participants; 215 participants had a naturally acquired common cold and 172 healthy participants were inoculated with the common cold virus. Anyway, what did Cochrane find with their study?

> *We combined data from studies reporting the same outcomes. Studies conducted in Europe showed a positive effect whereas those from North America showed no benefit.... **This review found that in some studies inhaling steam helped symptoms; in others it did not**. The conclusion is that there is not enough evidence to support steam inhalation for the common cold. None of the studies included children.* [45]

It should be noted that although the Cochrane study was inconclusive, one has to keep in mind that other commentators have advised cautious interpretation of their evidence, concluding that its quality was low grade and that the absence of evidence does not equate to the evidence of absence. [46]

The indications are that there is a benefit of using steam inhalation as a treatment for viral infections, but the "experts" just cannot make up their minds, no doubt because so few trials have been carried to check this theory out. Which is not very helpful when trying to determine if the message from Nalin in Sri Lanka is valid or not. So what should I do next? Search for information in Sri Lanka of course and it did not take me long to find something of considerable significance.

THE TREATMENT THAT WORKS

The first piece of information I found was the announcement by Dankotuwa Porcelain PLC, renowned for its luxurious and elegant porcelain tableware, introducing "***the all new customized steam inhaler which is ideal for individuals affected by respiratory tract infections including COVID-19.***" Furthermore, it is described as a "*modified version of the existing steam apparatus called the Nissen Steamer which is considered outdated but is currently being used by hospitals.*"

> *Designed and advised by Dr. Charith Nanayakkara, this modified steam inhaling device will be made available at hospitals and quarantine centers currently providing medical care for patients affected by the Coronavirus Disease (COVID-19). The Dankotwa steam inhaler is also easy to use and can be utilized at homes for prevention of multiple respiratory tract related conditions.* [47]

Mr. Prakash (left), Director of Dankotuwa Porcelain shows the latest personal steam inhaler that was designed by Dr. Nanayakkara (right)

So when Nalin in Sri Lanka said in his message, that the doctors at the IDH Corona Centre were continually inhaling steam, he was not talking porkies. Here was evidence to support his claim. Nissen Steamers were being used in hospitals on the island for treating COVID-19. Mr. Prakash, the Group Director of the company stated his belief that:

> *We believe that with Dankotuwa Porcelain's all new steam inhaler Sri Lanka and the world will benefit immensely to treat many respiratory tract related illnesses and discomforts and stay healthy. As per medical advice and insights, the steam inhalation can help immensely in the prevention and treatment of many respiratory related conditions which includes infections such as COVID-19, We are also trying to make the product more affordable across nations. Once manufacturing operations are enabled fully, we intend producing this in bigger batches for the benefit of the community at large.* [48]

What I talk about now is most interesting. The Dankotuwa modified steam inhaling device in the news item was being supported by Dr. Charith Nanayakkara. He is a professor at the Department of Surgery specializing in Neurosurgery at Teaching Hospital, Kotelawala Defense University, Sri Lanka, where he lectures. He made it known that the new device was going to be made available at hospitals and quarantine centres currently providing medical care for patients affected by the Coronavirus Disease (COVID-19).

Dr. Nanayakkara said that the company were also planning on making "Dankotuwa Steamers" available to countries like the USA, Italy, France. He believed it to be a versatile simple weapon to combat COVID-19 as that it was high time "that we Sri Lankans took care of the world as well." [49]

Blimey! That was dynamite. But who was this Dr. Nanayakkara? For all I know he could be just a junior doctor trying to a name for himself by allying himself with Dankotuwa. So I searched for information on him on the web, and he was most certainly not a junior. Dr. Nanayakkara is a highly respected doctor with credentials as long as your arm.

Dr. Nanayakkara has written a number of peer-reviewed papers for various Neurosurgical publications, and he is the author of 13 books, those I counted, on various topics such as cranial and spinal surgery and Cerebral Tumours. Not only that, but he won the e-Swabhimani Award for the best e-health intervention for the website 'Wedananasala' (hgucolombo.org/), a Sinhala website on health education for the public and medical doctors and where he is the website administrator. Now I was listening. [50]

It also turns out that Dr. Nanayakkara participated in the actual design of the Dankotuwa steam inhaling device too, so I wondered if such equipment was something new in hospitals. He made it quite clear that steam inhalation therapy in hospitals was the norm.

> *Steam inhalation is also used by Physiotherapists when conducting chest physiotherapy and by Nursing officers on a regular routine basis to clear lungs of secretions.... For patients with chest infection, steam inhalation is currently prescribed twice a day. However, this frequency can be adjusted according to the requirement.* [51]

So, if Dr. Nanayakkara reckons that steam inhaling is a useful tool for treating chest infections including COVID-19, and because it is used in hospitals in Sri Lanka as standard treatment, who am I to argue. In fact, I wondered if this treatment could explain why Sri Lanka has been ranked 9th best country in the world for its successful immediate response on tackling the virus. [52]

I WRITE TO DR. NANAYAKKARA

Time was getting short as my book was near to completion. However, I took a chance and wrote to Dr. Nanayakkara on 19 April 2020 asking him if he could provide me with any information of the extent of the use of steam inhalation therapy in hospitals in Sri Lanka which I can include in my book. He responded within a day, which was marvellous and what he had to say was truly awesome. Dr. Nanayakkara was saying that the equipment appears to reduce the mortality of patients, and that he was planning to gather all the data on this to produce a report. What follows is a transcript of what he said in the email.

Dear Fred Harding,

I am happy to see your interest in Steam Inhalation as a treatment strategy for COVID19.

Extent of use:

It is currently used in the National Institute of Infectious Diseases (IDH)** to treat all the inward COVID19 positive patients using the apparatus that we donated as described in the article. - **Anecdotally it appears to reduce the mortality of our patients, but I am planning in gathering data on this and to conduct a research. [emphasis mine]

Steam inhalation using a bowl and a towel is something that we Sri Lankans practice at household level for generations as it is a component of our indigenous medical techniques.

With kind regards

Charith

I do hope that doctors all around the world will take note of this important successful treatment for COVID-19, but more importantly you at home who might be in the early stages of the disease.

In case you want to know about the number of COVID-19 cases in Sri Lanka, it was on 27 January 2020 when the first confirmed case of the virus was reported on the island. This was a 44-year-old Chinese woman from Hubei Province in China, and she was admitted to the same hospital which Dr. Nanayakkara referred to above and where steam inhalation therapy was standard practice. The Chinese woman had arrived as a tourist with another group of travellers and had been screened at the Bandaranaike International Airport after having a high fever. She fully recovered and was released from the hospital on 19 February.

That was over two months ago and currently, Sri Lanka has had only 271 confirmed cases. Of these 96 have recovered. The fact that there has only been 7 deaths on an overcrowded island with a population of 21.67 million and cities heavily congested is truly remarkable. One can only conclude that the success of the steam inhalation treatment in the hospitals and it being used extensively at home by the island's population is clearly a significant factor in the low numbers of the disease and deaths in Sri Lanka.

As of 23 March, forty-five quarantine centres have been built in the country by the Sri Lanka Army as a preventive measure to tackle the coronavirus pandemic. Nearly 3,500 people have been under quarantine in these centres which also include 31 foreigners from 14 countries.

This action by the military of Sri Lanka no doubt has helped the situation, but with over 21 million people living on the island in crowded conditions, quarantining 3,500 people is just a drop in the ocean. So there must be another factor involved, and I believe I know what that is. The ambient temperature in Sri Lanka is currently 28°C and this is close to the limit where the COVID-19 (SARS-CoV-2) virus becomes inactive. I surmise therefore that it is probably the warm temperatures outside and the steam inhalation treatment inside combined that has contributed the success of treating COVID-19 in Sri Lanka.

For me this information alone was enough for me to conclude that Nalin's message and what he said was genuine. So while in the UK and the West doctors flap around unable to make up their minds whether steam inhalation is of value or not, the medical authorities in Sri Lanka have shown the way and have put our doctors to shame. The hospitals in that island nation are not only using steam inhalers for treating COVID-19 in hospitals in Sri Lanka, but the latest product they use was designed by one of their leading doctors too.

Then there is the matter of a patent that has been filed at the Australian Patent office, International Publication Number WO 2016/011496 Al. Based on tests, the patentors of an iodine based steam inhalation treatment they call PVP-I declare:

> *Despite all these limitations, the present inventors have surprisingly found that when used as an intranasal preparation according to the methods of the present invention, PVP-I* ***is effective in reducing both the severity of symptoms of a cold and the duration of a cold. Further, it has additional benefits with respect to reducing the viral load and viral shedding in the nasal passages during a cold,*** *reducing secondary illnesses, and reducing the risk or severity of serious LRI and exacerbations in at-risk individuals. Finally, methods are disclosed that have utility in prevention of colds.* [54] [emphasis mine]

This brings me to ask why I think steam inhalation works in treating COVID-19 and other viruses such as colds and flu. This is where I put on my computer systems analyst hat on and put logical and critical thinking to answer that question. I invite you to see my credentials at the back of this book.

Let us get back to basics. The main entry point for the coronavirus is through the nasal passages of your nose, after you have breathed in virus laden droplets from the coughing or exhalation of air of an infected person. What happens is some viral particles get deposited on the mucus lining of your nostrils while others are sucked on the bronchial tubes inside your lungs and are posited on the millions of cilia that line their walls.

Now think about this. Do you really believe that all the viral particles inside your nose will simply descend into your lungs straight away and add to the viral load in your lungs immediately? Of course not. Viral shedding from the nasal passages will happen gradually over time, and some viral particles will even be removed by the blowing of your nose.

Don't you think it makes sense that if you had a method of killing the virus inside your nose that this will play a significant role in reducing the severity of the disease. With less viral load inside your lungs there are fewer viruses for your immune system to contend with. Surely, that is common sense? The evidence is that steam inhalation will kill virus particles trapped in your nose.

I can tell you this. From the research I have presented here and with the knowledge of the successful use of steam inhalation therapy in the homes and hospitals of Sri Lanka, I know what I will be doing should I detect the first signs of COVID-19 in me. What you do in such circumstances is your decision but ask yourself this. What have you got lose by using this therapy at home during your period of quarantine? It could make the difference between you getting better sooner or languishing in misery as the virus takes root inside you and grows, reinforced by viral shedding from your nose and throat.

UPDATE: 22 April 2020

Ever since I learned about the work of Dr. Nanayakkara and use of the inhalation device in hospitals in Sri Lanka, I kept up my communication with him and asked him if he could provide more information. He readily agreed, and he sent me details on how he got involved in designing the Dankotuwa Inhaler and what impact it has on COVID-19 patients in Sri Lanka.

Dr. Nanayakkara and the company that manufactured the device has donated 682 Dankotuwa Inhalers to the Hospitals treating the COVID-19 (+) patients, starting from National Institute of Infectious Diseases (IDH) which was treating over 100 patients at that time. Currently, in Sri Lanka there are just over 300 Patients being treated for COVID-19 and each have been given an inhaler.

The results have been spectacular, but I shall let Dr. Nanayakkara tell you in his own words about this in the next chapter, which is a copy of the document he sent to me on the 22 April 2020. It is a must-read and shows how one man can make a difference in a medical world of high tech, and design a simple device for treating COVID-19 patients which is evidently working and saving lives in Sri Lanka.

THE LOST SYMPTOM

If you remember, I mentioned the advice of Professor Steve Field, chairman of the Royal College of General Practitioners, when he said that the best way to reduce inflammation caused by a virus in the nasal passages was keep them clear by using steam. I refer to this now because, during my researches for this book, I came across an important newsletter issued by ENT UK, the professional membership body representing Ear, Nose and Throat surgery and related specialities in the United Kingdom.

The newsletter was written by Professor Nirmal Kumar, President of the organization, and co-signed by Claire Hopkins, Professor of Rhinology, King's College London and President of the British Rhinological Society and Consultant ENT Surgeon, Guy's and St Thomas' Hospitals, the latter hospital being the one which our Prime Minister attended for treatment and it highlights a symptom of COVID not often discussed.

Issued on 21 March 2020 it was sent to Public Health England and was concerned about a symptom of COVID-19 which has remained in the background. An early symptom was the loss of smell (anosmia). The newsletter highlighted that post-viral anosmia as being one of the leading causes of loss of sense of smell in adults, accounting for up to 40% cases and that there is already good evidence from South Korea, China and Italy that significant numbers of patients with proven COVID-19 infection had been developing this condition.

This was very serious because to treat anosmia it was standard practice to use steroids such as corticosteroid and ENT UK doctors had received reports that their use "***may increase the severity of infection.***" Thus, they sent out the newsletter to warn doctors to watch out for people who were showing symptoms of anosmia for no apparent reason as being suggestive that they had the COVID-19 virus and advised that they should self-isolate in order to reduce the risk of transmission by otherwise asymptomatic carriers of infection.

Two weeks later, ENT UK issued an update saying that a large number of patients had contacted them directly to share their experiences. This has been mirrored on social media, where patients with both confirmed or suspected COVID-19 infection have widely reported suffering with anosmia. The organization therefore felt justified in issuing their warning, and were delighted that it had been heeded and that the team at King's College, London added loss of sense of smell to the COVID-19 symptom tracker on 24 March 2020. In a research update published 1 April 2020, they reported that loss of sense of smell or taste is a stronger predictor of coronavirus infection than fever.

The patients who had tested positive for COVID-19, 59% reported losing their sense of smell or taste, compared with only 18% testing negative. These findings supported the suggestion that anosmia may be an early warning sign of infection, and the lead researcher, Professor Tim Spector stated:

> *When combined with other symptoms, people with loss of smell and taste appear to be three times more likely to have contracted COVID-19 according to our data, and should therefore self-isolate for seven days to reduce the spread of the disease.* [55]

I raise this issue in the book so that you know of this symptom but also I am sure it is obvious to you now from what I have written that there is a solution of treating anosmia without the use of steroids. This is because, as it has been noted from studies of people suffering from loss of smell is that a major symptom for this condition is inflammation of the mucosa in the nasal passages.

> *One of the most common causes of anosmia and hyposmia are viruses that produce upper respiratory infections, often referred to as the "common cold. Viruses could impact smell function in any of several ways. They could attack various cells in the nasal tissue, inducing local inflammation and disrupting odor detection.* [56]

One recent study (29 March 2020) says that inflammatory and obstructive Disorders account for 50% to 70% of cases of anosmia. These include nasal and paranasal sinus disease (rhino-sinusitis, rhinitis and nasal polyps) and these "anosmia through inflammation of the mucosa as well as through direct obstruction." [57]

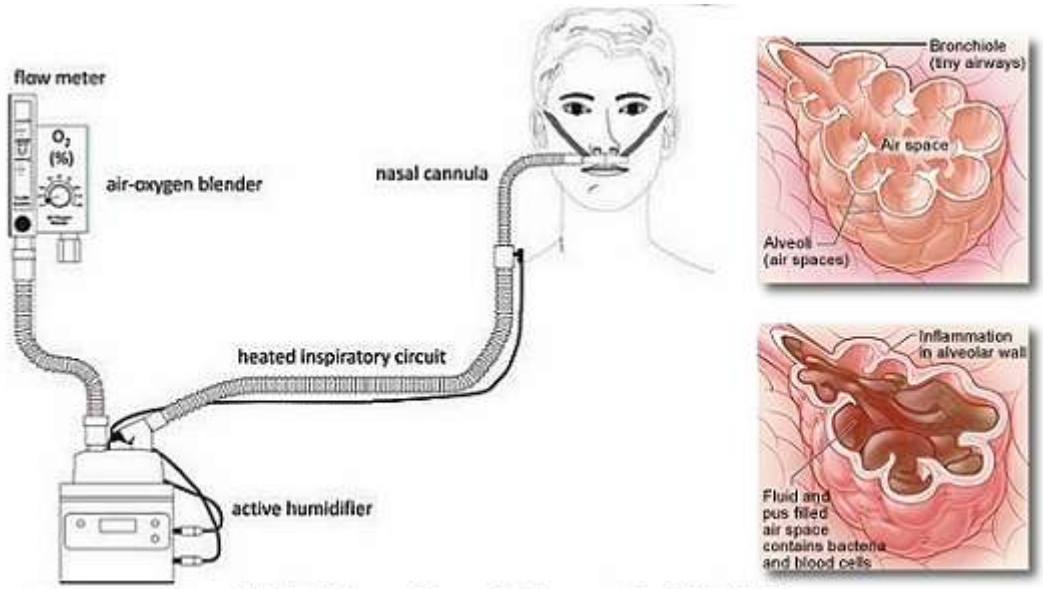
Here we are talking about inflammation of the mucosa in the nasal passages and the usual treatment being steroids, which for COVID-19 patients is said to be dangerous because they intensify the virus infection. So what treatment can be used for nasal inflammation instead? The one recommended by Professor Steve Field, Chairman of the Royal College of General Practitioners, of course. That's right. Steam inhalation. He says that it is the best way to reduce inflammation is to keep the nasal passages clear. Need I say more?

TWO TREATMENTS FOR SERIOUS CASES

There are two treatments which are given when a person has had to be hospitalized when the COVID-19 symptoms have got so bad that there is difficulty in breathing properly. One treatment is more dangerous than the other but is used as a last resort when without such an intervention, the patient would surely die.

Mild Pneumonia

When Boris Johnson was hospitalized, he was suffering from mild pneumonia brought on by the COVID-19 disease. The symptoms were shortness of breath, chest pains, fatigue and a cough that produced sputum. The doctors would have found that the oxygen in his blood lower than 95%, so they fed him oxygen from a High Flow Nasal Cannula (HFNC). This is standard practice. When I came out of my operation of key-hole surgery to remove my appendix in 2019 this is what was given to me when I found myself having breathing difficulties coming out of the anaesthetic. However, for patients with COVID-19 this is much more serious situation.



High Flow Nasal Cannula (HFNC)

At this stage of the COVID-19 infection some alveoli air sacs in the lungs have become inflamed by the interaction between the immune system and the COVID-19 virus it is trying to eliminate. As a consequence, they have become filled with fluid thereby preventing oxygen-carbon dioxide exchange in the blood from happening. This means that the reduced number of unaffected alveoli air sacs cannot provide enough oxygen to the blood so the oxygen levels drops below 95% and carbon dioxide levels increase.

A HFNC delivers a flow of humidified oxygen though a small-bore nasal cannula and allows the flow that would traditionally move slowly through the upper airway to move quickly and maintain a constant stream of fresh gas which effectively washes out upper airway dead space. This constant stream of fresh gas flow creates an environment that assists exhalation effort by flushing the exhaled air out to maintain this reservoir of fresh air ready to be inhaled. The higher the flow, the more important proper humidification and conditioning of the flow becomes. Without humidity, the oxygenation and ventilation effects of high-flow therapy would be quickly overcome by the negative impact that dry air has on lung tissue.

This procedure buys more time for the immune system to destroy the infection, and when it does the inflammation ceases and the fluid in the alveoli air sacs gradually drain away or are expelled through coughing. Depending upon how bad the inflammation was, there will be some permanent damage to some alveoli, but this will probably be minimal and will not cause future breathing difficulties. After all you have over a 600 million alveoli in your lungs and if you stretched them out, they would cover an entire tennis court.

Most people will recover from the mild pneumonia cause by the COVID-19 disease but others will not. COVID-19 is not called Severe Acute Respiratory Syndrome (SARS) without reason. If the immune system cannot kill the infection in the lungs then the situation becomes life threatening. As more and more alveoli air sacs in the lungs become filled up with fluid, the air and carbon dioxide exchange to and from the blood get lesser and lesser. Breathing becomes more and more difficult and this is when doctors have to resort to desperate measures. They put the patient on a ventilator to "force" air into the lungs and this has its own dangers too.

The Last Symptom and it's Controversial Treatment

When UK Prime Minister Boris Johnson went into the intensive care unit at St Thomas's hospital in London he was given oxygen with a HFNC, but he did not need to be put on a ventilator. The three days in the ICU being fed with air from the HFNC was enough time for his immune system to overcome the COVID-19 infection, and he was soon on the road to recovery.

Some patients are not so lucky. These include those who have a weakened immune system due to an underlying medical condition or person over 70 whose immune system has not been maintained properly. With their immune systems unable to stem the COVID-19 infection these vulnerable people will have developed the full-blown pneumonia-like symptoms of SARS. There lives now hang in the balance and doctors have to take desperate measures. They put the patient on a ventilator to "force" air into the lungs.

The ventilator takes over the breathing process of the patients who are heavily sedated, so they cannot fight the sensation of not being able to breathe on their own. It pumps the lungs, but also sends oxygen to the vital organs, including the heart, brain and liver which need it to function. At least that is the theory. The bad news is that the death rate for those treated on ventilators is devastating.

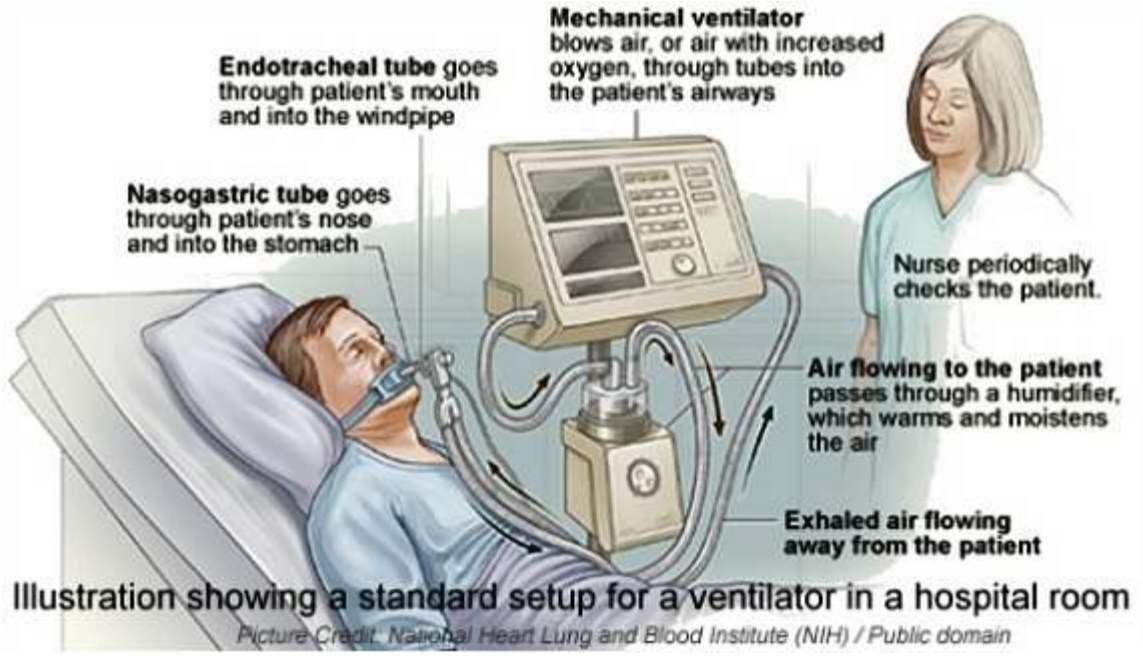


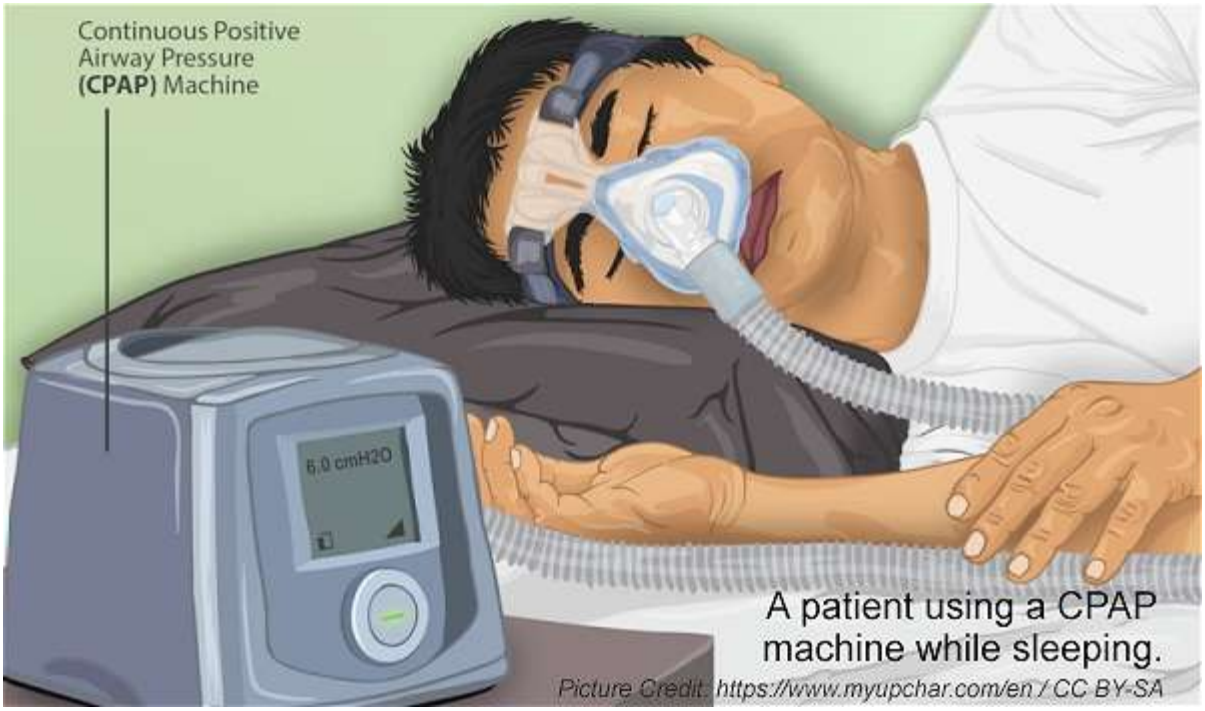
Illustration showing a standard setup for a ventilator in a hospital room

Picture Credit: National Heart Lung and Blood Institute (NIH) / Public domain

For example, in one British study of 98 Covid-19 patients who were put on them or on similarly invasive breathing-support equipment, two-thirds died, according to a new report by our Intensive Care National Audit and Research Centre. In New York, which has been hit particularly hard by the virus, 80% of ventilated patients failed to recover. The loss of life in other countries for those on the machines is equally terrifying, and it may not entirely caused by the virus. The actual treatment with the ventilator may actually be causing more harm than good.

As I have explained before, fluid in the form of yellowy mucous gunk clogs some tiny air sacs lining the lungs. But if the infection escalates more and more alveoli become filled with this fluid. That is when a ventilator is used but this appears to be a fruitless knee-jerk reaction. This is because no matter how hard the ventilator pushes oxygen into the lungs, that oxygen cannot get through the mucous barrier and into the blood stream. This, in turn, causes the patient to become calamitously starved of oxygen. However, if doctors try to fix the problem by turning up the ventilator pump's air pressure volume this leads to lung damage. This most likely explains why the death figures for ventilated virus cases remain so alarmingly high. [58]

So then what is the solution. More and more doctors now believe Covid-19 patients should get breathing masks which deliver oxygen in a non-invasive way. A simple machine called CPAP, standing for Continuous Positive Airway Pressure, which is often used by people in their own homes to conquer sleep apnoea (snoring and interrupted breathing), is suggested as an alternative to ventilators. All CPAPs inflate the lungs to keep the patients airways open. Early results on 40 patients, who would otherwise have gone on to a ventilator, found half were able to go home within 14 days of admission to hospital. [59]



The Jury is out on this one. Ventilator supporters say it could be related to how sick they are when they're put on the ventilators. Others believe the outcome depends on the patients' physical shape before catching the virus. However, the solution may be to use CPAPs instead, which are less intrusive and more readily available. They can be mass-produced easily and much greater numbers. We just need evidence that they work before changing from ventilators to CPAPs for the treatment of very ill coronavirus patients.

*** STOP PRESS ***

Today, 24 April 2020, just before I published this book, I read a news report that doctors at Warrington Hospital that medics have adapted a breathing aid device known as "black boxes" for use on patients seriously ill with the coronavirus. The "black boxes" were designed for use on people suffering from a sleep disorder called apnoea, a condition which can cause a person to stop breathing while asleep. Guess what they are? They are CPAPs!

One of the doctors, Dr. Mithun Murthy, says that these devices "had already saved the lives of hundreds of patients." Another doctor, Dr. Mark Forrest says that "Often we were seeing positive reaction within 15 minutes. " They say that recovery rates have been much faster than has been the case with ventilators. Doctors were also aware that patients who had to be put on ventilators had a poor recovery rate and in some cases a patient had only a 50-50 chance of recovering from the invasive treatment of ventilators. (Daily Express, 24 April 2020)

IMPORTANT LESSONS LEARNED

The objective of this chapter was to appraise you with what symptoms you will likely have should you be unlucky enough to get COVID-19 and what treatment you might expect to receive from the NHS in dealing with them.

The symptoms were listed in the order of the highest commonality that patients have reported. These symptoms were Fever (88%), Dry cough (68%), Fatigue (tiredness) (38%), Coughing up sputum (33%) and Coughing up sputum (33%). Other symptoms included Aching muscles or joints (15%), Sore throat (14%), Headache (14%), Blocked nose (5%), Coughing up blood (1%) and Pink/redness of the whites of the eyes (1%). The last three I did not discuss because of their low incidence level.

As each symptom is discussed, using our Prime Minister, Boris Johnson's experience with his infection as an example, I described what was happening inside our lungs as our body's immune system battles with the coronavirus invaders.

I also voiced my concerns about the taking of paracetamol and ibuprofen to reduce fever, and made known a symptom which has had little publicity, even though it is prevalent in the world. I told you about a warning that says that the use of steroids, the usual for this condition, made the COVID-19 infection worse.

We learned too how the infection can escalate because of a person having a weakened immune system due to being elderly and having underlying medical conditions. I described two treatments which are used when the condition becomes life threatening. One treatment is benign but the last, the use of a ventilator as a last report, may in fact be killing the patient. I showed that there was an alternative that could be used called a CPAP, a Continuous Positive Airway Pressure device used for sleeping disorders and just before publishing this book, I learned that Warrington Hospital in the UK was successfully using his device instead of ventilators resulting in a reduced death rate and a much quicker recovery time.

Finally, and most exciting of all, I stumbled upon a simple treatment used by hospitals in Sri Lanka, and developed a relationship with a senior doctor On that island, his name is Dr. Charith Nanayakkara. He is a doctor who as credentials as long as your arm, who told me about the treatment which was saving the lives of patients with COVID-19.

Dr. Charith Nanayakkara has kindly written an article for this book on his experiences in treating COVID-19 with the device he helped to design, and how it was making a major impact in reducing mortality and length of illness in hospitals treating COVID-19 on the island. The next chapter is his story written in his own words. You must read it because it describes a treatment which has proved its worth which you can do at home should you become infected by the coronavirus.

Chapter 7
HOW I GOT INVOLVED IN DESIGNING THE "DANKOTUWA INHALER" AND THE RESULTS FROM ITS USE BY COVID-19 PATIENTS IN SRI LANKA

By Dr. Charith Ishan Janendra Nanayakkara

Article date: 22 April 2020

Credentials:

MD (Doctor of Medicine) - Colombo, Sri Lanka
MBBS (Bachelor of Medicine, Bachelor of Surgery) - Colombo
RCS (Member of the Royal Colleges of Surgeons) - England
RCPSG (Royal College of Physicians and Surgeons of Glasgow
CTHE (Certificate for Teaching in Higher Education)

Clinical Work:

Department of Surgery / Neurosurgical Unit, University Hospital KDU, Werahera, Boralesgamuwa, Sri Lanka.

Lecturer:

Department of Surgery, Faculty of Medicine, Kotelawala Defense University. (KDU) KandawalaWatte Estate, Ratmalana, Sri Lanka.

Well since medical student days something that I saw in western medicine is that it has so much more to be developed. Even complex plastic surgical procedures thought by the majority as a feat that can only be accomplished with modern science were done centuries ago by the ayurvedic practitioners in India and other countries.

Steam inhalation is a treatment technique that is commonly used in Sri lanka and it will be extremely difficult to find someone who has never done steam inhalation for a cough, cold or headache due to sinusitis. When I was a medical student I noticed that there is a seasonal variation in "flu" meaning that it is commoner in the winter and that "flu shots" are planned accordingly. These "flu shots" were given to make sure that people (especially the more vulnerable ones) would be able to withstand the winter rise in "flu".

I always wondered well if we all know that winter causes the flu season why don't we treat the winter rather than the flu. I didn't mean to magically change the seasonal climate change but to change the climate around our body so that it doesn't fall sick. Heating used in the households and warm clothes would definitely play a part in this and then came steaming. Well I find it difficult to isolate steaming from the holistic concept of managing a proper temperature inside and around the body. Warm clothes and heating warms up the environment around us while steam inhalation would warm up the respiratory tract that would other than warming the entire body has effects on the respiratory tract which acts locally.

We have a technique of steam inhalation that we use in the Sri Lankan hospitals that practices Western Medicine as well. This vintage inhaler named "Nelson's Inhaler" is getting out of fashion due to the competition that it receives from modern nebulizers. While nebulizers use a drug to do the deed, steam inhalers principally work due to the heat that it carries to the airway. Since the mechanism of action is different we could use both techniques together in the same patient.

As a doctor practicing Neurosurgery I also successfully use steam inhalation in patients who visit my clinic with sinus type headache. However, since I recommend this in the clinic and due to the unavailability of a proper steam inhaler these patients use the traditional hot water in a bowl and a towel technique. I felt the necessity of developing a steamer which overcomes the deficiencies of the Nelson's inhaler which are the tube made of rubber which we replaced with porcelain and I also added a nasal inhaling tube which will focus the steam more on to the sinuses above the eyes that are notorious to cause headaches in the front of the head.

With the above mentioned knowledge and experience when I heard of COVID-19 in Wuhan I thought it was high time that I develop an inhaler and donate it to the Chinese people (I did share my knowledge with them via facebook as that was the only mode that I could think of during that time).

The idea was to share the knowledge with them so that they could mass produce it themselves and use it rather than to commercially sell it to them. As holds to most if not all inventions I had to go from one porcelain company to the other telling them my idea and my willingness to personally bear the cost to mass produce this inhaler so that it could be sent to China as a donation.

This process of finding a willing company wasted several months until COVID-19 struck Sri Lanka. Since Sri Lankans are aware of the significance of steam inhalation when I finally spoke to the Dankotuwa Porcelain Company they agreed to mass produce it and to donate it to all the hospitals that treat COVID-19 cases.

To honour their gesture I named the inhaler "Dankotuwa Inhaler" rather than Charith's Inhaler and I am still respectful towards their contribution in our country's battle against the virus which we hope to share with the rest of the world. People are welcome to produce this Inhaler and use it to combat the current pandemic as I do not intend to hold on to Patent rights due to the obvious humanitarian need of the hour.

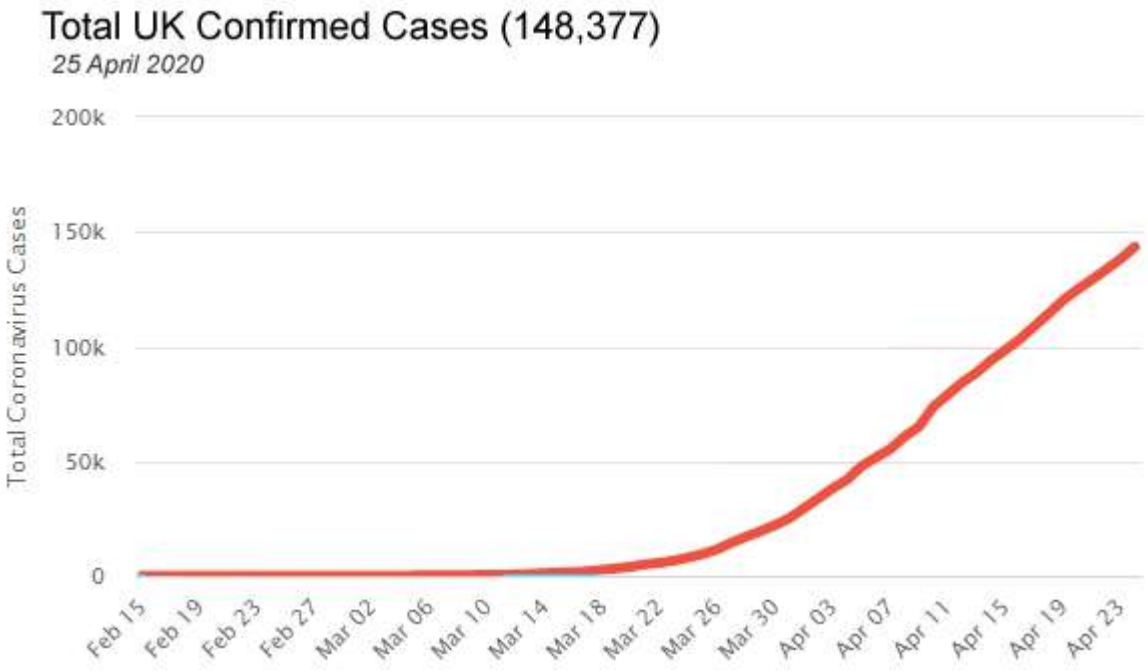
With the help of the Dankotuwa Porcelain Company I was able to donate 682 Inhalers to the Hospitals treating the COVID-19 (+) patients starting from National Institute of Infectious Diseases (IDH) which was treating over 100 patients at that time. To date Sri Lanka has just over 300 Patients and we have already given enough Dankotuwa Inhalers to treat all of them giving one inhaler for each patient.

The most important question that I should answer is "Does it really work?" Well I will let the numbers do the talking rather than giving a non scientific response (based on my preliminary research analysis). **The answer is YES!**

Private email (21 April 2020): "We donated inhalers at National level on the 6th of April to be used on all the patients with a positive (or even suspected) PCR test and have had only two deaths since then even though the number of cases went up from 176 to 330. We already had 5 deaths for an infected population of 176. We also didn't report a single death during the last 12 days (9 April) although the cases were detected at a higher rate than during the initial period of the infection. In other words just 3 days after providing these inhalers at national level we haven't had a single death."

Chapter 8
REASONS FOR HOPE

When I began writing this book on 20 March 2020 there were 3,269 confirmed cases of infection by COVID-19 and 144 deaths. Today, 25 April 2020, a little over a month later, there are 148,377 confirmed cases of coronavirus infections and 20,319 deaths. That is truly a shocking statistic and worse still it is widely believed that there have been more cases and deaths at home which have not been counted in the statistics. Even I had not imagined this would happen in the short time that this book was being written.



To add to the misery, for almost a month the whole country has been in lockdown, with most of the population staying home in self-isolation and extraordinary things have happened during this time. As rumour spread that there was going to be a lockdown, many people went mad panic buying. They stocked up toilet rolls, hand sanitizers and non-perishable food, anything and everything they could get their hands on. For a time there appeared to be a dog-eat-dog mentality among shoppers with the battle cry "look after number one and damn everyone else."

In some places, police had to be called in to break up disturbances when people descended on shops like a plague of locusts and fought each other for the last toilet roll. Others stripped the shelves of anything that would help them survive the crisis which was beginning to unravel before their eyes. It was so surreal that when I went shopping to get the basics of life and walked down the aisles of the huge superstore down the road where I live the shelves all but empty. I couldn't get a loaf of bread or even a bottle of milk. Crazy!

There have been some amusing moments such as when woman tweeted: "*The world's gone mad! 3 supermarkets - no toilet roll! Last I heard coronavirus causes a flu-like illness not wild, explosive diarrhoea!*" (Metro, 5 May). But, nobody is laughing now. After 4 weeks stuck at home unable to see extended family or friends, forbidden to travel where we want and with most shops and businesses closed all around Britain, for many people it has been a very stressful time to say the least. However, amidst all this doom and gloom something amazing happened. When the shock of what was happening had sunk in and people realized that everyone was in the same boat regardless of what their status in society was, everyone became more civil to one another. It seemed that everyone were pulling together in ways that were reminiscent to the days of the Blitz of London in 1941.

Interestingly, people in those days clung to the words of Winston Churchill who rallied them with his famous oratory through the medium of radio. Now here we are in 2020, with Prime Minister Boris Johnson doing the same, telling us to hold firm saying that we will beat this if we worked together. The British bulldog spirit which had lain dormant for decades, rose to the challenge. Thousands of retired health workers responded to the call to arms and volunteered to man the NHS battlements, putting their lives at risk to fight the dreaded coronavirus enemy.

People staying at home in self-isolation battened down the hatches to keep the enemy at bay from their doors, and, to the surprise of many, discovered that there were other people living in the house besides themselves. Family members, once trapped inside mobile phone zombie land, found themselves talking and eating together. Some even found out the wonders of reading books. What a surprise. Who would have thought that life could change so rapidly and in such a positive way.

Then there was Captain Thomas Moore. What can one say? He was raising money for frontline healthcare workers in the UK by walking a 100 laps around his garden before his 100th Birthday (30 April 2020). The British people known throughout the world for their generosity had by 24 April raised over £28.7 million for his cause. What an inspiration he is as are the people of this great nation has been.

Big companies to have done their bit. Tescos for example, has given food and ingredients for over million meals for the charity SalutetheNHS.org which have distributed over 1 million free meals to frontline NHS workers. The company recently announced that, in addition to their ongoing monthly donation of £3 million of meals, over the next 12 weeks they were going to donate a further £15 million of food to community groups and food banks, bringing their total food donations for the coming year to £52 million. Everyone is in this together, big or small, doing their bit for Queen and country. And even she has done her bit too, giving speeches of encouragement just like her father, King George VI had done in the war.

While all this has been happening, one person stood out like Winston Churchill reborn, Boris Johnson. The old saying "cometh the hour, cometh the man" certainly was apt in his case. He had only been Prime Minister for four months when he was confronted by a crisis which was no less critical to the nation than the Nazi disease that threatened to swamp this nation in the dark days of 1941. But like Churchill before him, Boris rose to the challenge, his oratory skills equal to the task as Winston's had been. Who was not moved by the words he spoke to rally the nation to arms as we saw him clearly suffering from the symptoms of the coronavirus which he had only announced days before. Shortly thereafter he was moved to St Thomas hospital to the Intensive Care Unit and for the first time, even his political opponents and critics were genuinely sympathetic to his condition.

When Boris went to the ICU when his life lay in the balance, I asked my wife who could possibly replace him should he die. Pat is not a fan of the Prime Minister by any means but even she agreed that there was nobody in government or in the opposition that has his charisma, power of personality or strength of purpose who could replace him as head of our nation. That was scary because if he were to die, I feared Britain would fall into the abyss and not be able to climb out again without someone of his stature to lead us. For all his faults, and Boris has many, he is truly the man of the moment. It is almost if gods had chosen him to be in the right place at the right time to help us through this crisis.

Thankfully, Boris has recovered from the illness and has once more taken direct control of the Battle of Britain, a battle which is being fought on two fronts. One is against a disease which knows no borders and which is taking such a heavy toll of our nation's citizens. The other is the European Union that is determined to punish us for having left their domain. They are currently insisting that there should be an extension of the transition period, knowing that they can charge the UK billions of pounds to help them to recover from the ravages of the coronavirus. And, they are even demanding unchanged access for European fishing fleets to UK waters.

Today, we are free a free people again who voted four years to leave the EU. Boris and his team are standing firm against such outrageous demands. Better to leave under World Trade Organization rules at the end of the year than be dictated by over paid bureaucrats in Brussels and remain as EU's cash cow and vassal state, by extending the transition period.

When all said and done and despite all the good intentions and wonderful work by so many people in this great nation of ours, the reality of our situation has not changed. COVID-19 remains a continuing threat, especially to people like me who is 69 years of age (my wife 72) and the many people who have underlying medical conditions. The evidence is that when it comes to the activities of the Grand Reaper, we are his favourite targets and this pestilence is his meat grinder. There have been 19,506 deaths in the UK so far and no doubt many more to come. But together we can send the Grand Reaper packing, because though this book I will show ways by which you can deny the death stalker from getting his way.

As for my family, I have never seen Pat, my wife, so frightened before, although she tries to hide it, but her actions betray her fears. I go once a week to do some food shopping and I cannot praise enough the local superstores of Tesco, Sainsbury's, Morrisons, Lidl and other superstores, and especially the people who work for them. They have done a magnificent job to ensure that shelves are more or less back to their former glory. But when I come home with the shopping, there Pat is waiting at the open front door open looking worried. She makes sure that before I do anything else I wash my hands. Meanwhile, outcomes a cloth wet with sanitizing solution with which she wipes each item in the shopping bag. This is so bizarre and could even be funny if it were not for it being so serious.

The other day, Pat gave me a dressing down when I stopped outside our house after taking a walk around the block and spoke to our new neighbour. She had seen I was not 6 feet (1.83 m) away from him, and so I got a lashing tongue and rightly so too. And when the bin men came to empty the bins or when recycling lorry collected the recycling, who was it making sure that I wash my hands while she wiped the handles of the bins. Multiply this fear millions of times over and as for us oldies, fear is real - although perhaps I am the exception. I am not fearful for myself Why not you may ask? It has nothing to do with bravado. All will become clear as this chapter unfolds.

Yet despite all the doom and gloom which continues to shroud our lives today, this book has enabled me to do my bit too and through it, I hope the information that it contains will save lives. That is why I have made the book FREE. It will be made available for download as a PDF from numerous websites or if you prefer, you can purchase it at close to publishing cost for the Kindle or as a paperback made available via Amazon. Please tell everyone you know about it, so they too can download it and benefit from what is written inside.

When I began writing this book a month ago, I had no idea where it would take me, but I was convinced that it was the right thing to do because I felt that I had important knowledge which could help save lives. Now that the book is completed I am pleased to say that my gut feeling has born fruit and it has turned out far better than I had expected. This because as each day passed, new information was being released by the medical authorities and this meant I could add new and useful in formation in real time as each chapter developed. Everything came together perfectly.

For example, I never thought for a moment that in the later stages of my writing this book when I was following a trail of footprints of a treatment which had been previously pooh poohed by the popular press, that I would end up in communication with a leading doctor in Sri Lanka. He had participated in designing a simple device which was being used in all hospitals in his country that were treating COVID-19 patients - and it was having amazing results.

Then, just before I finished the book when I was questioning the use of ventilators in critically ill patients. I and others had observed that there was a poor survival rate with their use and I wondered if an alternative, a CPAP device might be a better and safer solution. Lo and behold, the next day I read a newspaper report that a hospital in Warrinton were using these devices exclusively and were seeing a decline in death rate and much faster recovery times for all their patients. I was blown away by such a coincidence, and I was able to put that vital information in the book.

The cutting-edge up-to-date information contained in this book serves the purpose of providing the background knowledge necessary for me to be able to offer hope when there were none, especially if you are over 70 and have underlying health issues. But hope without substance is no hope at all. So you may rightly ask, what is it that I can offer which can give substance to hope? This is what this chapter is all about, to provide that substance to the hope that I claim to offer, the hope that is blazoned on the cover of this book.

So let me begin by asking, why was it important to establish that COVID-19 is SARS rebranded? As we shall see, in a weird sort of way, this is the best hope we have that this pandemic will soon come to an end in the summer and make reality what Boris said on 19 March 2020 when he declared:

> *I think, looking at it all, that we can turn the tide within the next 12 weeks and I'm absolutely confident that we can send coronavirus packing in this country.*

10 REASONS WHY COVID-19 IS SARS?

Today, it is now generally acknowledged that China has covered up what happened at Wuhan. Andreas Fulda, a senior fellow at the University of Nottingham Asia Research Institute, said "*nations around the world have "opened their eyes" to the "cover up" of the coronavirus outbreak by the Chinese government.*" [1]

If you recall, when I began this book I wrote about this cover up which began to take shape at the beginning of January 2020. This was when the Chinese authorities were downplaying the extent of the virus, while doctors at the epicentre of the outbreak in Wuhan were reporting human-to-human transmission, not least by contracting the disease themselves. In the most famous example, Dr. Li Wenliang was censured for "spreading rumours" that he has seen test results that showed that it was SARS that had been diagnosed and for trying to alert other doctors with that information. In little over a month he had died from the virus himself at age 33.

Ask yourself this. Why would China go to such great lengths to cover up the COVID-19 outbreak when in 2003 they were heavily criticized for withholding information about SARS for four months as is reported by The Guardian, 9 April 2003.

> *The Chinese government has faced criticism from home and abroad about its slowness in releasing information about the outbreak. Even after recent pledges of openness by senior officials, the health ministry and other offices decline to release details about deaths and cases of infection.* [2]

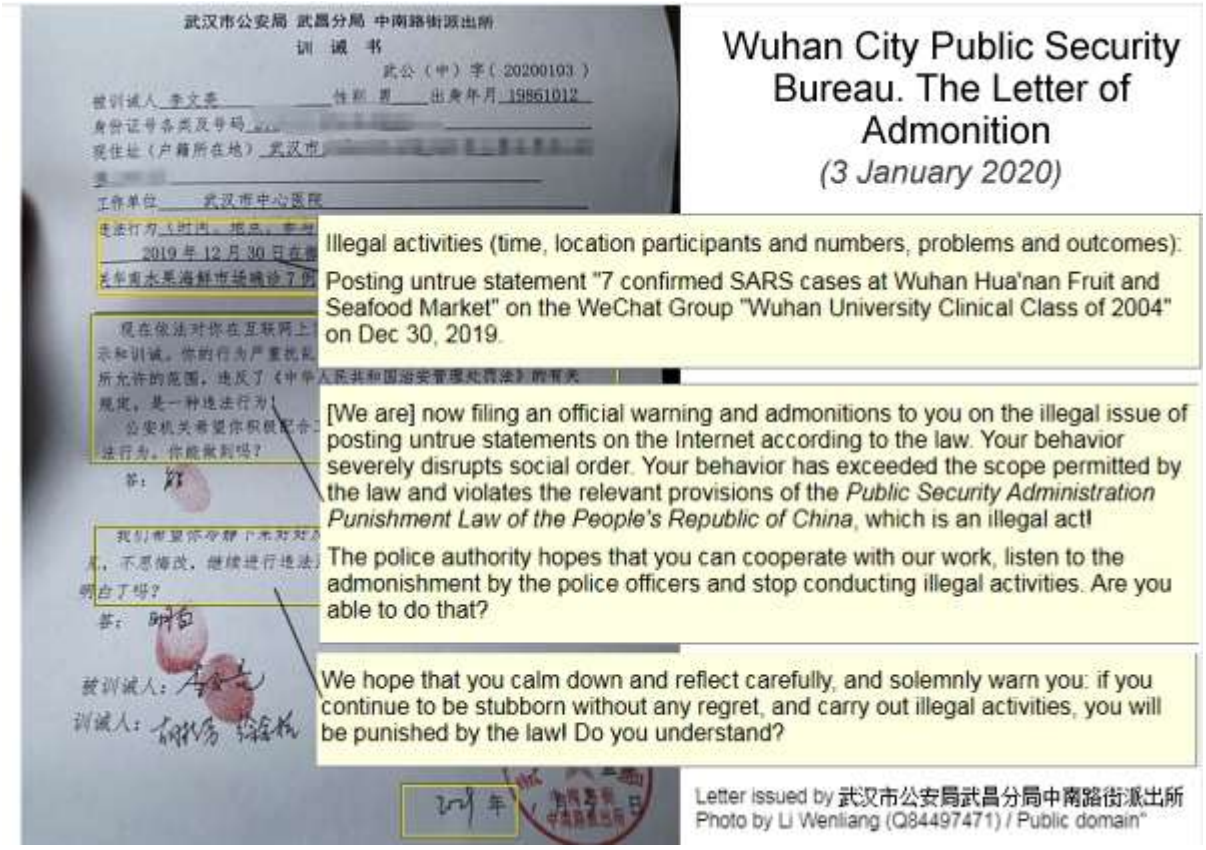
The book, *The Struggle for Democracy in Mainland China, Taiwan and Hong Kong: Sharp Power and Its Discontents* by Andreas Fulda published in 2019, says that the state led by President Xi Jinping was reluctant to report the pandemic because it would reflect badly on the Communist Party. [3]

This is highly significant. The standing of China in the world is a matter of great importance to the Chinese leaders so why would they risk losing that reputation which had taken so long to build by making the same mistakes as they had done before with SARS and withhold information about the Wuhan infection? It just does not make sense. Unless there was something so embarrassing, so stigmatizing that saving face was far more important than simply being looked upon with disapproval by organizations like the toothless and overrated World Health Organization which could easily be manipulated anyway. Reputations can be restored in a fairly short time but the Chinese government knew that the stigmatism of what was found at Wuhan would last for decades.

So what was it that was found at Wuhan that caused so much embarrassment. It was recorded on the test results of the first patients treated. It was SARS! This can be the only explanation and why the Chinese authorities went to great lengths to destroy the test results, samples and anything which should even hint that SARS had been identified at Wuhan. If there was nothing to hide, why were the samples which might have provided vital information about the virus destroyed, if it was later claimed that the virus was something new and had never seen before. Obviously, the Chinese authorities did not want the world know that SARS had returned and China, despite all their reassurances that this would never happen again.

A blackout was immediately imposed on any information getting out to the outside world as to what had happened unless it was provided by the State. All witnesses were told that if they told anyone that they would be punished most severely. All the doctors who sent messages to colleagues were forced to withdraw their accusation and confess that they misled the people in believing that they had seen SARS.

I have managed to get a copy of the document that Dr. Li Wenliang signed. Here is its translation and it is most damming because it proves that SARS was identified at the hospitals at Wuhan and that the Chinese Police made him sign a statement withdrawing his claim.



Wuhan South Public Security Bureau
Wuchang Branch
Zhongnan Road Street Police Station

Admonition
Wu Gong (Zhong) No. (20200103)
Disciplined: Li Wenliang; Sex: Male; Birthday: October 12, 1986 ID number types and numbers: (Redacted)
Current address (location of residence): (Redacted), Wuhan City
Workplace: The Central Hospital of Wuhan
Illegal activities (time, location, participants and number of participants, problems received and outcomes):

Posting untrue statement **"7 confirmed SARS cases at Wuhan Hua'nan Fruit and Seafood Market"** on the WeChat Group "Wuhan University Clinical Class of 2004" on Dec 30, 2019.

[We are] now filing an official warning and admonitions to you on the illegal issue of posting untrue statements on the Internet according to the law. Your behavior severely disrupts social order. Your behavior has exceeded the scope permitted by the law and violates the relevant provisions of the Public Security Administration Punishment Law of the People's Republic of China, which is an illegal act!

The police authority hopes that you can cooperate with our work, listen to the admonishment by the police officers and stop conducting illegal activities. Are you able to do that?

Answer: Yes.

We hope that you calm down and reflect carefully, and solemnly warn you: if you continue to be stubborn without any regret, and carry out illegal activities, you will be punished by the law! Do you understand?

Answer: Understand.

Disciplined: Li Wenliang? (January 3, 2020)
Instructor: Hu Guifang Xu Jinhang?
Work unit: Wuhan South Public Security Bureau Wuchang District Bureau Zhongnan Road Street Zhongnan Road police station

Date: 3 January 2020 [4]

Meantime, the Wuhan Municipal Health Commission had published a situation report of the "pneumonia in our city" on 31 December, in which their spokesperson, Da Zhong Small, stated that "on the current situation of pneumonia in our city dated 31 December: "Epidemiological investigation, preliminary laboratory analysis and other aspects of the situation that the above cases are viral pneumonia. The investigation so far has found no obvious person-to-person transmission, and no medical personnel have been infected." [5]

This information was communicated to the Chinese office of the World Health Organization in Beijing who announced, "*On 31 December 2019, the WHO China Country Office was informed of cases of pneumonia of unknown etiology (unknown cause) detected in Wuhan City, Hubei Province of China… The causal agent has not yet been identified or confirmed. On 1 January 2020, WHO requested further information from national authorities to assess the risk.*" [6]

Then extraordinarily, the WHO accepted the Chinese assurances that the disease was not contagious, and advised, "*WHO advises against the application of any travel or trade restrictions on China based on the current information available on this event.*" [7]

It is important to emphasize that the Chinese government stuck to the statement made by the Wuhan Municipal Health Commission that the virus seen at Wuhan was an unidentified case of pneumonia, knowing full well that it was SARS.

The Commission believing that all the evidence that showed that the infection was SARS had been destroyed and safe in the knowledge that witnesses had been muzzled, they convinced President Xi Jinping and is advisors to concoct a cunning plan. They were to present a story that made China look like an unwitting victim of circumstances beyond their control, while at the same time hiding the fact that SARS had re-emerged under their watch by giving the virus a name which would divert attention to that fact. Their story goes like this which is based upon my own analysis.

> *We the Chinese government are sorry about what happened with the new disease spreading around the world. However, when patients appeared at Wuhan with pneumonia-like symptoms we thought this is what it was, pneumonia. We believed at first that this disease was not contagious. So that is why Wuhan citizens were allowed to travel around the world to celebrate the Chinese New Year with family and friend before it contagious attributes had been confirmed. At the time the World Health Organization agreed with us and advised that there would be no need for any travel or trade restrictions to be imposed.*
>
> *Later however, we found out that the disease was not pneumonia but a new coronavirus, one which had not been seen before and, for the purpose of identification in future communications, we have called it 2019-nCoV. We will of course cooperate fully with the WHO to keep the world updated with the latest developments.* [hypothetical explanation]

I don't think I need to talk about what happened next as this has already been covered in the book at length but the success of this strategy speaks for itself. China used the WHO to mislead the world, as Senator Marco Rubio recently told Fox News, and everyone is convinced that they are dealing with a new disease when in fact it is SARS returned. Incredibly, the WHO renamed the Chinese name 2019-nCoV as COVID-19 which is really the same name reversed.

Although the world knows that the Chinese government has carried out a cover up of sorts, what they have not grasped yet is that this has not been about a new coronavirus appearing at Wuhan and the delay in divulging it appearance which allowed the virus to spread across the world. It has been all along about President Xi Jinping and the Chinese leadership saving face from the embarrassment that it was SARS that was tested positive in patients at Wuhan.

> *China has a history of mishandling outbreaks, including SARS in 2002 and 2003. But Chinese leaders' negligence in December and January-for well over a month after the first outbreak in Wuhan-far surpasses those bungled responses. The end of last year was the time for authorities to act, and, as Nicholas D. Kristof of The New York Times has noted, "act decisively they did-not against the virus, but against whistle-blowers who were trying to call attention to the public health threat."* [8]

It took time for the Chinese authorities to destroy the evidence (samples, documents, test results), muzzle witnesses and invent a credible story which could explain the delays in reporting the disease and exonerate the government from all blame. Since then, Shadi Hamid of the American newspaper, the Atlantic says that Beijing is successfully dodging culpability for its role in spreading the coronavirus.

> *Well before the new coronavirus spread across American cities, the Chinese regime was already rather creatively trolling U.S. publications, expelling American journalists, and "weaponizing wokeness" over anything it perceived as critical of China's role in mishandling the epidemic."* [9]

To ensure that the story was adopted by the rest of the world, the Chinese government cleverly manipulated the World Health Organization in promoting it and the strategy worked. As a result, everybody thinks they are dealing with a new coronavirus not seen before thanks to the WHO replicating everything the Chinese government told them, virtually word for word.

In the book, it became necessary for me to spend time to present evidence to show that COVID-19 is SARS rebranded. I think it will be a good idea to look at that evidence again by summarizing the main points, and where necessary, include additional information which I have identified since my original assessment when I began writing this book. That way you should be able to see that COVID-19 is SARS, and if it is, then this makes a big difference in knowing what will happen to the present pandemic in the near future and give us hope that it will be over with soon.

1. SARS and COVID-19 originated from exposure to bat coronavirus.

Commentators agree that the coronavirus that causes both SARS and COVID-19 originated in bats before taking up residence in humans.

"*The 2003 outbreak of SARS was eventually traced to horseshoe bats in a cave in the Yunnan province of China, confirmed by a 2017 paper published in the journal Nature.*" [10]

"*Experts at the World Health Organization (WHO) are seeing more evidence linking the novel coronavirus, now called the COVID-19, to bats.*" [11]

Need I say more?

2. SARS and COVID-19 are genetically very similar

Commentators agree that SARS and COVID-19 are genetically very similar, and depending on which strain of COVID-19 is compared, the similarity is said to be between 82% and 90%. As one commentator said:

> *Although SARS-CoV-2 came as a new virus to the human world, its high homology [similarity] to SARS-CoV as reported on 7 January 2020 should have caused high alert to China based on her deep memory of the SARS outbreak in 2003.* [12]

The Chinese government was alerted that it was SARS from the very beginning but were too embarrassed to announce it to their people for fear of losing face and respect in the eyes of the world.

That there would be some changes (mutations) to SARS genome during the seventeen years since it last appeared is to be expected. However, the genetic core code of both coronaviruses are so close which is why the International Committee on Taxonomy of Viruses announced on 11 February 2020 that "Severe Acute Respiratory Syndrome CoronaVirus 2 (SARS-CoV-2)" was to be the name of the newly discovered virus that caused the disease which was first seen at Wuhan.

In fact, today there are at least 30 different strains of COVID-19 (SARS-CoV-2) existing in the world today, which shows how in only a very short time, mutations have already occurred in the current virus. Perhaps Veronika Skvortsova, head of Russia's Federal Medical-Biological Agency (FMBA) and Putin's ex-health minister, knows something more about this that we have not been told. When she was asked if the virus was man made, she replied:

> *This question is not that easy. It demands a very thorough study,' she said on Russia's Channel One. "We can see that a fairly large number of fragments distinguishes this virus from its very close relative, SARS.* ***They are approximately 94 per cent similar****, the rest is different..."* [13] [emphasis mine]

Need I say more?

3. Test results identified Wuhan patients as having been infected by SARS

I was able to locate the original test results and other documented evidence proving this was true. Photos of these were posted by concerned Chinese individuals who know how distrustful the Chinese government can be. The posted them on Internet sites that have been successful in keeping the Chinese censors at bay, just in time before the Chinese government was able to destroy the originals. Written in Chinese of course, I was able to read them using the magnificent Google Translate program.

Dr. Li Wenliang, before he died, posted a message on the Chinese micro blogging website in defiance of the "confession" that he was made to sign to reiterate that it was SARS which had been identified as the disease that his patients had at the Wuhan hospitals. One cannot ignore the testimony of a dying man, can one?

Need I say more?

4. SARS and COVID-19 enters the human cell by the receptor ACE2

The spike protein is one of four structural proteins - S, E, M and N - that form the outer layer of the coronavirus and protect the RNA inside, and they form prominent spikes on the surface of the virus by arranging themselves in groups of three. These crown like spikes give coronaviruses their name. Part of the spike can extend and attach to a protein called ACE2, which appears on particular cells in the human airway. The virus then invades the cell through this entry point.

ACE2 is the angiotensin-converting enzyme 2 which is found in the lower respiratory tract of humans and has been identified as the receptor used for cell entry for both SARS-CoV and SARS-CoV-2. [14] "Human ACE2 was found to be a receptor for SARS-CoV-2 as well as SARS-CoV" [15]

Need I say more?

5. SARS and COVID-19 infect people the same way

The World Heath Organization says that people can catch COVID-19 from others who have the virus. The disease spreads primarily from person to person through small droplets from the nose or mouth, which are expelled when a person with COVID-19 coughs, sneezes, or speaks. Furthermore, "*These droplets can land on objects and surfaces around the person such as tables, doorknobs and handrails. People can become infected by touching these objects or surfaces, then touching their eyes, nose or mouth.*" [16]

The Centers for Disease Control and Prevention referring to information provided by the National Center for Immunization and Respiratory Diseases, Division of Viral Diseases says that, the primary way that SARS appears to spread is by close person-to-person contact and is thought to be transmitted most readily by respiratory droplets (droplet spread) produced when an infected person coughs or sneezes. It also said that, "*The virus also can spread when a person touches a surface or object contaminated with infectious droplets and then touches his or her mouth, nose, or eye(s).*" [17]

Need I say more?

6. SARS and COVID-19 key symptoms are identical

The Centers for Disease Control and Prevention says that SARS usually begins with a high fever (measured temperature greater than 100.4°F [>38.0°C]). The fever is sometimes associated with chills or other symptoms, including headache, general feeling of discomfort, and body aches. Some people also experience mild respiratory symptoms at the outset. Diarrhea is seen in approximately 10 percent to 20 percent of patients.

After 2 to 7 days, SARS patients may develop a dry, nonproductive cough that might be accompanied by or progress to a condition in which the oxygen levels in the blood are low (hypoxia). In 10 percent to 20 percent of cases, patients require mechanical ventilation. [18]

According to the WHO, the most common symptoms of Covid-19 are fever, tiredness and a dry cough. Some patients may also have a runny nose, sore throat, nasal congestion and aches and pains or diarrhea. [19]

Need I say more?

7. SARS and COVID-19 mean incubation period are identical

The average incubation for both coronaviruses are the same, about 5 days. Medical News Today says a new study confirms previous estimates suggesting that the median incubation period for the new coronavirus, SARS-CoV-2, is about 5 days. "*This work provides additional evidence for a median incubation period for COVID-19 of approximately 5 days, similar to SARS," the investigators write in their study paper*. [20] The Lancet says, "*COVID-19 and SARS have a median incubation time of about 5 days*." [21]

8. SARS and COVID-19 coronaviruses are the same size

The coronavirus SARS-CoV-2 that causes COVID-19 is the same size as SARS-CoV-1 which caused SARS in 2003. "*SARS-CoV-2 is similar to SARS-CoV in size and both are approximately 85 nm*." [22]

Of course, they would be the same size if they were the same coronavirus, wouldn't they.

In contrast, the Middle East Respiratory Syndrome (MERS-CoV) which was first identified in Saudi Arabia in 2012 is bigger. It is between 118-136 nm in diameter. MERS-CoV does not pass easily between people unless there is close contact.

Need I say more?

9. COVID-19 genome was released in less than 2 weeks.

Do you believe in miracles?

> *On January 9, 2020, the Chinese health authorities and the World Health Organization (WHO) announced the discovery of a novel coronavirus, known as 2019-nCoV, which was confirmed as the agent responsible for the pneumonia cases. Over the weekend of January 11-12, the Chinese authorities shared the full sequence of the coronavirus genome, as detected in samples taken from the first patients*. [23]

That is truly miraculous for two reasons. First, according The Times and other sources such as Caixin Global, a respected independent publication, the Chinese authorities destroyed the samples of the first patients.

CORONAVIRUS

Chinese scientists destroyed proof of virus in December

Philip Sherwell, Bangkok

Sunday March 01 2020, 12.01am, The Sunday Times

Chinese laboratories identified a mystery virus as a highly infectious new pathogen by late December last year, but they were ordered to stop tests, destroy samples and suppress the news, a Chinese media outlet has revealed.

> *Chinese laboratories identified a mystery virus as a highly infectious new pathogen by late December last year, but they were ordered to stop tests, destroy samples and suppress the news, a Chinese media outlet has revealed.* [23]

Secondly, somehow from these destroyed samples, in less than 2 weeks the Chinese laboratories managed to produce "the full sequence of the coronavirus genome", when it took 4 months to sequence the SARS genome.

> *December 31st, public health officials reported that they had patients with the then-unknown virus to the World Health Organization (WHO). Two weeks later, scientists had isolated and published the virus's genetic sequence, determining that it was a type of virus called a coronavirus, which is part of the family of viruses that also caused the SARS outbreak... By comparison, the SARS virus emerged in November 2002, but it took until April 2003 for scientists to get a full genetic sequence.* [24]

No wonder Kristian Andersen, director of infectious disease genomics at the Scripps Research Translational Institute was incredulous.

> *The process moved quickly even though it's flu season in China, which likely made the process more complicated than usual. Clinicians had to first figure out that the illnesses they were seeing were unusual and not just caused by the normal flu. "I've been quite impressed by how fast this whole response went. It's extremely difficult, to realize you have an outbreak, be able to isolate the virus, sequence it, and share data. This is not easy.* [25]

I am amazed too. Did it not occur to anybody that it was just too easy. It would only be a matter of rehashing the SARS genome and present this as the new coronavirus and nobody would be none the wiser. Call me cynical if you will, but creating the complete genome of the "new coronavirus" in less than two weeks, amid all the chaos that was happening in Wuhan, does stretch credibility to the limits. Don't you agree?

Need I say more?

10. SARS and COVID-19 risk groups are identical

If you are 65 years of age or older you or have underlying health conditions you are at the greatest risk of dying from COVID-19. This was also the case with SARS.

SARS:

"*Based on data received by WHO to date, the case fatality ratio is estimated to be less than 1% in persons aged 24 years or younger, 6% in persons aged 25 to 44 years, 15% in persons aged 45 to 64 years, and greater than 50% in persons aged 65 years and older*." [26]

COVID-19: "*The majority of deaths involving COVID-19 have been among people aged 65 years and over (16,690 out of 19,112), with 41% (6,899) of these occurring in the over-85 age group*." (UK Office for National Statistics)

"*8 out of 10 deaths reported in the U.S. have been in adults 65 years old and older*." (CDC)

If you have underlying health conditions, you are at the greatest risk of dying from COVID-19. This was also the case with SARS.

SARS:

"*After other factors were controlled for, visiting a fever clinic and having a chronic medical condition remained significantly associated with a risk for SARS... In this investigation, persons with chronic medical conditions also had a significantly higher risk of clinical SARS developing. A disproportionate occurrence of the disease in persons who are elderly or who have a chronic disease was noted in other SARS outbreaks*." [27]

"*SARS patients with diabetes were older, with wider extent of lung infection, lower lymphocyte percentage, more frequent liver damage and higher mortality rate (3/4, 75%). The serious result of hypoglycemia, [abnormally low blood sugar] which aggravated respiratory failure should be weighed.*" [28]

COVID-19:

"*Older adults and people who have severe underlying medical conditions like heart or lung disease or diabetes seem to be at higher risk for developing more serious complications from COVID-19 illness.*" [29]

Need I say more?

Concluding remarks

So we have it! All the evidence points to COVID-19 being a genetic variant of SARS which has mutated over a period of seventeen years. In other words COVID-19 is SARS rebranded by China.

Using an analogy. When you purchase a branded tin of baked beans from your local shop and buy another cheaper unbranded one, which is not so thick and juicy looking, do you say the branded one is baked beans and the other is similar but not the same because it has fewer beans and thinner tomato sauce. For goodness' sake, both tins are baked beans and sold as such! So when we compare SARS and COVID-19 as I have done above, how can anyone not recognize that they are both the same? In the analogy, SARS is the branded one, being the master copy and COVID-19 is the non-branded one because it is a watered down (genetic variant) copy of the original, but it is still SARS!

Comment

It is time the world wakes up and study the evidence that I have presented here showing that COVID-19 is really SARS in disguise and take the Chinese government to task for their deceit. If I was in charge of my country I would claim compensation from China for the unprecedented economic damage that has been caused, because of the deception of President Xi Jinping and those that are under his authority.

FIRST HOPE
No more cases of COVID-19 in Summer?

I have laboured on the issue of COVID-19 being SARS for a very good reason. If you read any medical literature about SARS, they will tell you that cases of the disease fell rapidly in May and June in various parts of the world until there were no more cases in July. This prompted the World Health Organization to declare on the 5 July 2003:

> *On this day in 2003, the World Health Organization (WHO) announces that all person-to-person transmission of Severe Acute Respiratory Syndrome (SARS) has ceased.*

Ask yourself this. When Boris Johnson declared on the 19 March 2020 that COVID-19 would be beaten in 12 weeks, was his scientific advisors based on how SARS fizzled out by the end of June, leading to the WHO announcement on July 2003? If you add 12 weeks (3 months) to 19 March, this brings us to 19 June. Is this a coincidence?

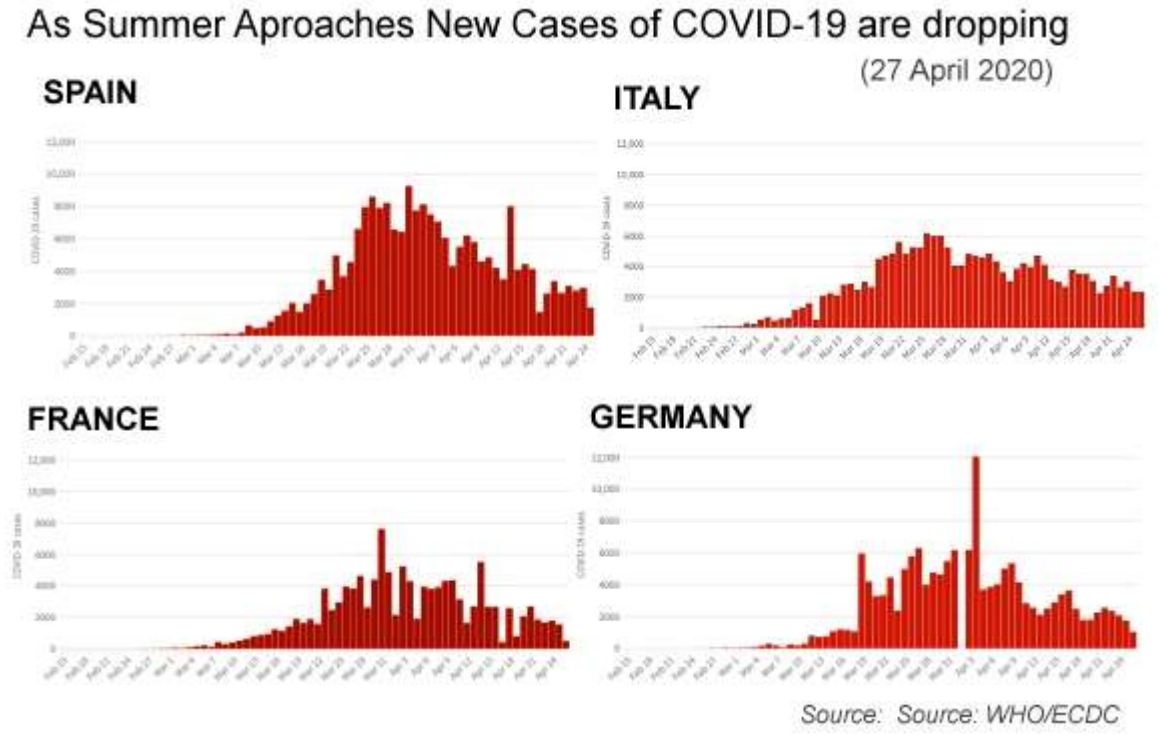
Why did SARS disappear so suddenly when it did? The answer I have presented in another place and which the WHO recognized as "warm weather" being one of three factors it identified as stopping the disease. Summer had come and with summer comes higher temperatures and humidity, both which are deadly to coronaviruses like SARS.

For example, On 23 May 2003, with temperatures and humidity having increased in Hong Kong, the SARS outbreak was declared by World Health Organization as over for the city. "I think SARS stopped around May and June in 2003 - that's when there's more sunlight and more humidity. The environment is a crucial factor. The environment will be unfavourable for growth around May [in Hong Kong]," said Professor Nicholls.

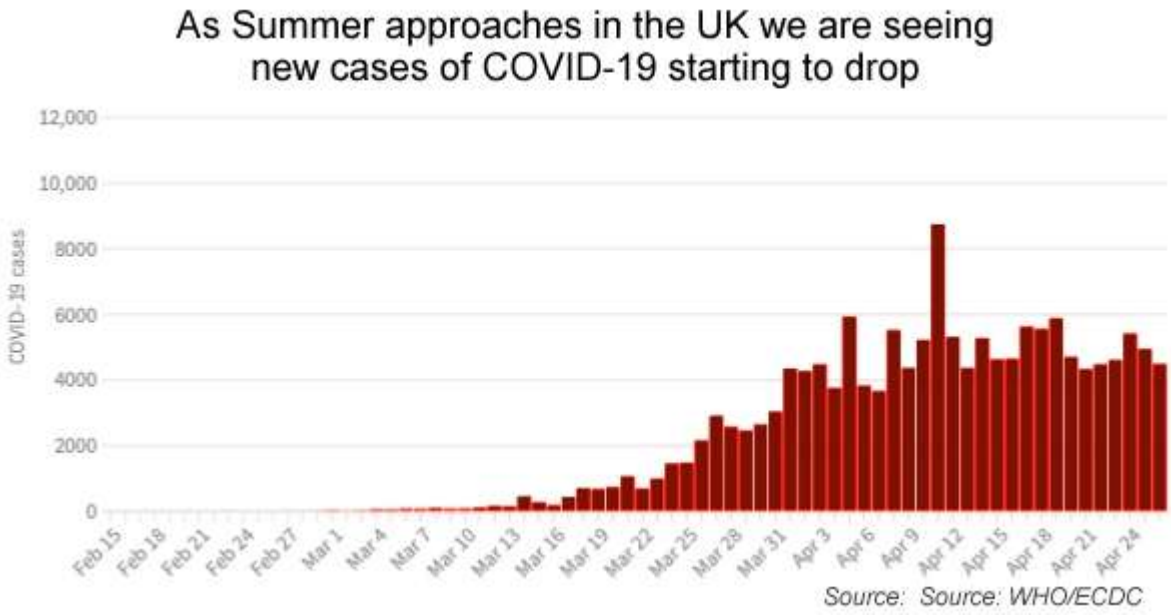
Karen J. Monaghan, Acting National Intelligence Officer for Economics and Global Issues of NIC public website writes:

> *The number of SARS cases peaked in May and steadily declined worldwide with the WHO declaring on July 5 that all transmission chains of the disease had been broken. The decline may reflect a seasonal retreat of the disease in warmer months, which is common for respiratory illnesses in temperate climates.*

Thus, if COVID-19 is SARS by another name then there is HOPE that those countries in the Northern Hemisphere which have been the hardest hit by the pandemic, will see as summer approaches a decline in COVID-19 cases. It is happening now (27 April 2020). Countries like Spain and Italy which are further south in the Northern Hemisphere are for the first time seeing a decline in new cases of COVID-19.



In the UK summer begins later than that on the European continent, but I am pleased to see that statistics up to 27 April sees new cases beginning to drop too.



In Hong Kong, just like it was with SARS, cases have dramatically dropped. "But in recent weeks, the daily increase in Covid-19 cases has slowed down dramatically, with no new cases at all recorded on Monday," says South China Post, 21 April 2020.

> *Hong Kong has recorded 1,025 confirmed cases since the beginning of the pandemic. There was a surge in cases from mid-March, with dozens of new infections identified every day, many related to Hongkongers arriving from overseas. But that situation has gradually eased. Since April 12, Hong Kong's new daily case rate has dropped into the single digits, ranging from one to five.* [30]

Here we can see history repeating itself in Hong Kong because in May 2003, there were no more SARS cases in Hong Kong. The same is happening in Korea.

> *New COVID-19 cases in South Korea falls to single digit... South Korea reported eight new cases of the coronavirus, falling the daily cases for the first time to single digit since Feb. 18, health authorities said on Sunday*. (Anadolu Agency, Turkey)

In Thailand, we see the same. "*New Covid-19 cases drop to 13, lowest in weeks, with 1 new death*." (The Thaiger, 23 April 2020) Likewise in Malaysia, "*Malaysia records the lowest new Covid-19 cases in a day since MCO started*." (Malay Mail, 28 April 2020)

Based on the evidence I have presented, from the time this book is published on 30 April 2020, coinciding with the 100th birthday of Captain Thomas Moore, you will see COVID-19 cases fizzle out in the Summer. **Isn't that a wonderful hope?**

*** STOP PRESS ***
Exclusive Research Material

When I first contacted Dr. Charith Nanayakkara on 19 April 2020 with respect to the Dankotuwa Porcelain's steam inhaler which was being used in Sri Lankan hospitals, he was deep in a research study into the spread of COVID-19. The following day he wrote:

> *I will give you the preliminary conclusions of my research project on COVID19 spread. The facts that I am going to mention are proven statistically (I can send you the data as well if you like.*
>
> *1) Statistically the most important factor that influences the spread of the virus is the environmental temperature. The top 24 countries affected with the disease have a temperature which 10 degrees Celsius Colder than the bottom 113 countries. (Private email)*

When I told Dr. Nanayakkara that I was very interested in reading his research material and perhaps include it in my book, telling of my deadline for its publication, he said he would work to finish his study before that time. He was as good as his word. Although he is a busy doctor, he must have worked very hard to complete his study because he finished it on 26 April 2020 and sent me copy with permission for me to publish it in my book.

I was stunned by what Dr. Nanayakkara's research showed. His findings are dynamite and confirms what I had written about COVID-19's susceptibility to environmental temperature. I therefore have added it as Appendix 1 at the end of the book in full. Please note that this is an independent study and Dr. Nanayakkara has not seen a draft of my book at anytime to compare notes. I feel privileged to have been given a copy of his study before it is uploaded to science academic websites and published in medical journals.

May I encourage any medical personnel who read this book and are treating COVID-19 patients to contact Dr. Nanayakkara for more information on the steam inhalation treatment which is being used in every hospital in Sri Lanka for the treatment of this disease. His email is found in his study document in Appendix I at the end of this book.

SECOND HOPE
New Treatments for Improved Survival and Recovery Rates

When I began writing this book, I had not anticipated that I would find three treatments which may increase the chances of people infected with the COVID-19 virus surviving the disease. The first thing the NHS says is to self-isolate. "*If your symptoms are mild, you'll usually be advised to not leave your home for at least 7 days. Anyone you live with should not leave your home for 14 days.*" (NHS website, last reviewed: 23 April 2020).

This makes perfect sense knowing how COVID-19 behaves and is very good advice. But what about treatment? What can you do to help yourself. The NHS says that "there is currently no specific treatment for coronavirus. Antibiotics do not help, as they do not work against viruses. Treatment aims to relieve the symptoms while your body fights the illness.

Under the heading, "**How to treat coronavirus symptoms at home**", the NHS recommends three options to help relieve symptoms. "*(1) get lots of rest and sleep (2) drink plenty of water to avoid dehydration - drink enough so your pee is light yellow and clear (3) take paracetamol or ibuprofen to lower your temperature if you are uncomfortable.*"

New Treatment One - Provisional

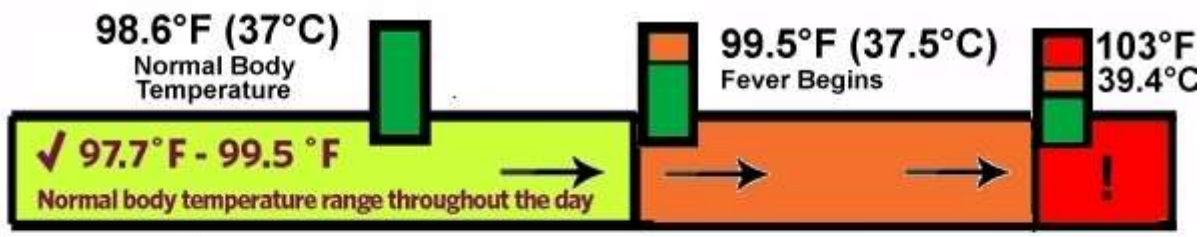
The first two treatments described by the NHS are very good advice but the third one I have my great concerns about, which I voiced in this book. The reason being is that the NHS and every medical journal I have read about the symptom of fever says that this is your immune system's way to kill viruses and bacteria, by raising our body temperature. There is evidence that some microorganisms are adversely affected by temperatures above 37 °C and some host response mechanisms perform better at higher body temperatures, which I referenced in the book.

Although I am not a doctor, rational thinking suggests that if fever is part of the body's natural response to infection, then by taking antipyretics like paracetamol, which lowers fever, you would in effect be preventing your immune system from doing its job. Would that not be counter-productive forcing your immune system to increase body temperature even more, which you treat with more paracetamol?

I think you see what I am getting at. Not only could you be exacerbating the situation by causing the immune system to call on more resources to increase your body temperature to counteract your treatment interventions, but if the fever temperature is kept lower than what the immune system is trying to achieve, would that not also increase how long you will have fever? And, worse still, would that not enable viruses to survive longer in your body to do more damage and therefore extend the time of you will have the disease and delay your recovery?

As I said I am not a doctor, so I would recommend you discuss this with your medical practitioner. Although taking paracetamol is recommended by the NHS I would be surprised if your GP advised you to take paracetamol or ibuprofen during at least the first three days of your fever, because it is widely known that fevers usually go away by themselves within 3 days, that is why it is widely recommended that one should only get medical help if you have any kind of fever for more than three days. However, it is recommended to call your doctor immediately if your temperature goes up to 103 °F (39.44 °C) or higher and to let your doctor know if your symptoms get worse or if you have any new symptoms. [32] [33]

If your temperature continues to rise towards 103 °F (39.44 °C) by the third day, it might be prudent to take paracetamol then, but check with your doctor first. I would suggest that if you don't take any antipyretics like paracetamol within the third days of your fever you will probably will have helped your immune system to kill the virus and you will recover. Hence, I call this a provisional new treatment which needs further investigation.



"Call your doctor immediately if your temperature is 103°F (39.4°C) or higher."

(Healthline)

"For an adult, a fever may be uncomfortable, but usually isn't a cause for concern unless it reaches 103 F (39.4 C) or higher. Call your doctor if your temperature is 103 F (39.4 C) or higher."

(Mayo Clinic)

New Treatment Two - Steam Inhalation

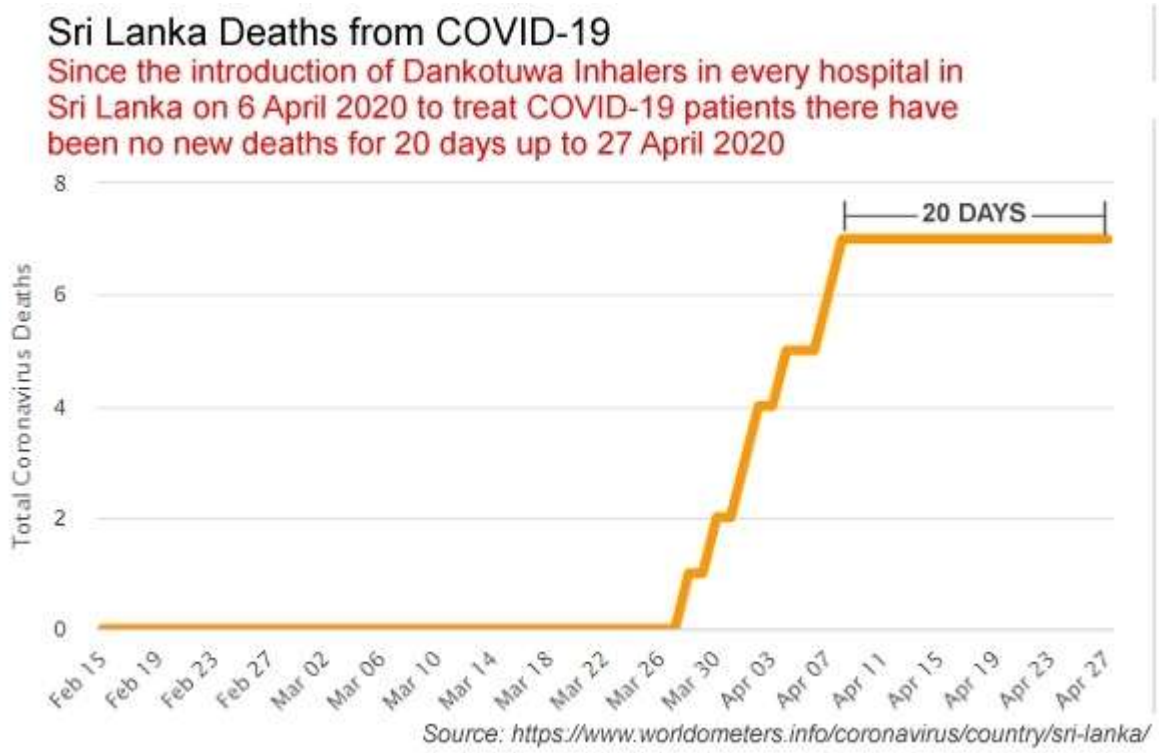
I could not have imagined when writing this book that I would chance upon the work of a senior doctor in Sri Lanka, one of a number doctors on the island treating COVID-19 patients with a steam inhalation device which is used in every hospital. It has had remarkable results in reducing the death rate and improving recovery times for patients.

I want to make it perfectly clearly that the steam inhalation device of which I speak, called a Dankotuwa Inhaler, will not cure COVID-19. What it does is kill SARS-CoV-2 particles that are trapped in the mucous and cilia of your nose and bronchial tubes before they have a chance to infect cells in your lungs. For more information please refer to Chapter 7 of this book.

I would think that using this method of treatment would be most effective in the early stages of the disease just when you are beginning to get a fever, which indicates some coronavirus particles have penetrated your lungs cells. However, you can bet that there will be a lot more that won't have infected cells. So looking at this from a rational point of view, getting rid of those "floating" virus laden particles and killing them will clearly improve your chances for your immune system to fight the infection, if it has fewer coronavirus incursions to deal with you. Dr. Nanayakkara wrote to me on 21 April 2020 and said:

> *We donated inhalers at National level on the 6th of April to be used on all the patients with a positive (or even suspected) PCR test ... We also didn't report a single death during the last 12 days (9 April) although the cases were detected at a higher rate than during the initial period of the infection. In other words just 3 days after providing these inhalers at national level we haven't had a single death.*

I checked out Dr. Nanayakkara's claim from the statistics found on the worldmeters website (worldometers.info). It was reported that new cases of COVID-19 in Sri Lanka from the 6 April 2020, when the Dankotuwa Inhalers was given in every hospital in Sri Lanka to treat COVID-19 patients, there were a total of 178 cases. On the day of Dr. Nanayakkara's email to me (21 April) this had risen to 310, and my final check, on the 27 April this had risen to 588 cases. However, the number of deaths had peaked at only 7 on 8 April. Allowing for 2 days for the device to be setup and used by patients, there have been no more deaths for 20 days. That's right! 20 days. Take a look at the following graph and compare to what was happening before. As you can, see the death rate has been stopped in its tracks. That is truly amazing, don't you agree?



New Treatment Three - PCAPs instead of Ventilators

This a new and exciting treatment which has proven to save lives. May I encourage any medical personnel who are treating COVID-19 patients contact Dr. Nanayakkara for more information on the steam inhalation treatment which is being used in every hospital in Sri Lanka for the treatment of this disease.

Should you be unfortunate to find yourself in an intensive care unit fighting for breath the last thing on your mind will be to debate with the medical staff who are trying to save your life whether to be put on a ventilator or use something different. This has to be the most difficult situation that doctors have to make, but there his new hope that there is another solution which may be a game changer.

It is at present standard practice in nearly all treatment centres in the UK to use a ventilator in critically ill patients, and I am sure you have seen distressing images in the media showing patients lying on their backs, semi-conscious because they have had to be given sedatives to make them drowsy because the tube placed down their throat will be uncomfortable.

Putting someone on a ventilator is really the last drastic measure that medical professionals have had to use to date, and NHS doctors have based their decision of this treatment on the activities of other medical personnel throughout the world facing similar circumstances. One has to remember that the NHS has only been treating severe cases of COVID-19 since the beginning of March 2020 and the only treatment which has been available has been to use a ventilator for critically ill patients. But here we are approaching the end of April, and we are now getting feedback from medical services around the world that using a ventilator may not be the best treatment for critically ill COVID-19 patients after all.

Reports from Wuhan, Seattle and cities in Italy now suggest that placing patients on ventilators may not significantly improve their chances of recovery or survival. "Contrary to the impression that if extremely ill patients with COVID-19 are treated with ventilators they will live and if they are not, they will die, the reality is far different," says Dr. Muriel Gillick, a geriatric and palliative care physician at Harvard Medical School. She further said that placing a patient on a ventilator could damage their lungs by introducing too much pressure into the organ. [34]

Throughout March, as the pandemic gained momentum in the United States as it had in the UK, much of the preparations like everywhere else focused on ventilators as the only tool for treating critically ill patients with COVID-19. However, five weeks later, a paper published in the journal JAMA about New York State's largest health system, has put the cat among the pigeons. It says that 82% of the 320 Covid-19 patients on ventilators who were tracked in the study died. The study found that of those who died, 57% had hypertension, which is when blood pressure remains abnormally high (a reading of 140/90 mm Hg or greater). It was also found to that 41% were obese and 34% had diabetes which is consistent with risk factors recognized listed as an underlying medical condition. [35]

If any good news should come out of the study, it seems that asthma does not play any significant role in outcomes. Also, there was one surprising finding from the study, and this was that 30% of the patients sick enough to be admitted to the hospital did not have a fever. Which suggests, from my studies, that the fever had succeeded in defeating the disease and that the breathing difficulties are really the result of damage to the lungs and not the continued infection from COVID-19 and would have healed given time. The evidence now is that putting people on ventilators risks further damaging the lungs by applying more pressure to them and this might explain the appalling success rate when using these devices.

Until now, medical experts have feared to use any other equipment other than ventilators of critically ill COVID-19 patients. Alison Pittard, dean of the UK's Faculty of Intensive Care Medicine, said only a few days ago (27 April 2020) that at the beginning of the pandemic the idea was that these patients are sick and needed to be put on ventilators quickly, but now she believes that this was not the right thing to do. She has become aware that in the light of recent experience, there have been successes in using non-invasive ventilation methods, which include oxygen piped through nasal tubes or modified CPAP devices which apply continuous positive airway pressure to the lungs. [36]

It is true that there are concerns for using CPAP devices, but those concern have nothing to the treatment of the patient. The devices will generate cloud of solid or liquid particles when the patient exhales and these may contain the virus droplets and therefore could pose an infectious risk to healthcare workers. Also, these devices use up large quantities of oxygen, and just as the UK are finding a deficiency in PPE equipment, this could put a strain on supplies. Having said there is the worry that a patient's symptoms can worsen unexpectedly and suddenly, and fitting a ventilator at this time under these circumstances could be too late to be of any use. However, evidently Warrington Hospital who have been using CPAP devices do not seem to have faced this problem.

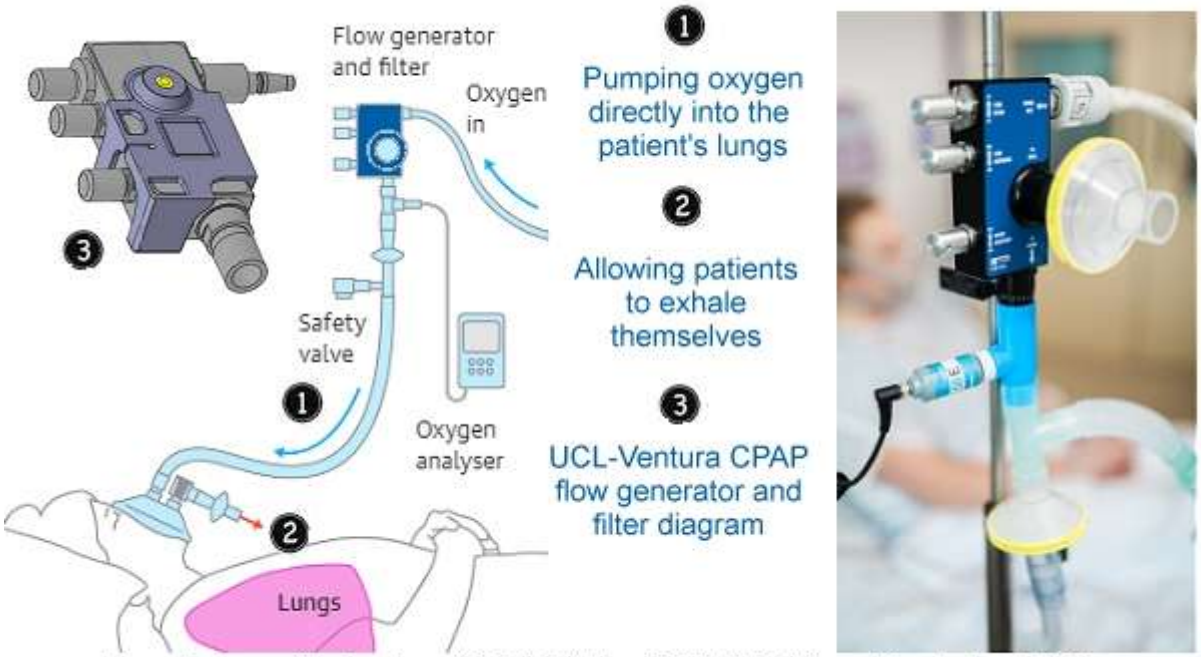
Elsewhere, I have described how doctors at Warrington hospital have cut back on using ventilators and are using CPAP devices, which they have modified calling them "black boxes" and claim that using them has resulted in having a far quicker patient recovery rate.

To recap, Dr Murthy, one of a team of doctors using the device believes that it has probably been responsible for changing the lives and the medical outcome for hundreds of COVID-19 patients who had passed through hospital. He said that they found that by putting patients on the black boxes as soon as they arrived in the department stabilized quickly, avoiding ventilation. Furthermore, the boxes are considerably cheaper than the hospital versions and are simple enough for patients to use at home at night for typically a maximum of 12 hours. [37]

From what I have been able to find out, the "black boxes" are normal CPAP devices which have been fitted with superior masks and linking them up to oxygen. Usually, CPAPs pump feed air externally to the device and do not use oxygen from oxygen bottles.

Now, in a remarkable example of co-operation between the medical world and industry, University College London engineers have worked with clinicians at UCLH and Mercedes Formula One with a CPAP design solution that minimizes the risks to health staff. They have built a device called a UCL-Ventura CPAP, and like the "black box" devised by Warrington hospital, it delivers oxygen to the lungs based on CPAP technology.

The "black box" was produced within an amazing rapid time frame of fewer than 100 hours from the initial meeting to production of the first device. This proves that there is nothing that cannot be done when two industries get together in a time of emergency, pool their resources and invent a device such as this. It is something that we Brits excel at.



Breathing aid device (CPAP) for COVID-19 patients by UCL

Source: University College London Hospitals NHS Foundation Trust

Forty of the new devices was delivered to ULCH and to three other London hospitals for trials which began on 20 March 2020. If the trials were to go well, it is claimed that up to 1,000 of the CPAP machines can be produced per day by Mercedes-AMG-HPP production facilities. [38]

I am pleased to announce in this book that the Mercedes Formula One/UCLH device clinical trials have been completed and the new CPAP device is now in full production at the Mercedes AMG HPP's facility in Brixworth.

> *This CPAP has been approved for manufacture by UCL by UK regulators, the Medicines and Healthcare products Regulatory Agency (MHRA) under special conditions. These conditions state that this is a non-CE marked CPAP, given approval for use in the NHS for the interest of public health protection under the Covid-19 pandemic emergency.* [39]

This is great news and a major breakthrough because besides the Warrington hospital success rate, reports from Italy indicate that approximately 50% of patients given CPAP have avoided the need for invasive mechanical ventilation, reducing the demand on intensive care staff and beds. [40]

UCL have made full details of the design and production methods available so that other firms around the world can produce them. They have been published on a research licensing website created by UCL Business to help share technology that can tackle Covid-19. The licence is free for two years.

This UCL-Ventura CPAP device has the potential to revolutionize how critical patients are treated and will give them a much better chance of survival and recovery that the use of ventilators. No longer will ventilators, which will still have their place, be the last chance saloon for COVID-19 patients. Truly, this is a new treatment worthy to be crowed about and a wonderful example of British innovation leading the way.

The UK government has placed an order for 10,000 of these units so by the time this book is published, hospitals will be receiving this equipment.

THE MOTHER OF ALL HOPES
Improving your chances of Survival

What I have presented in the this chapter is the hope that if COVID-19 is really SARS then by the summer it will have fizzled out. Until that happens, I have reported on new exciting treatments which will give you a better chance of getting better that simply playing a wait and see approach as advocated by the NHS and other medical authorities by self-isolating for 14 days, to sleep and to drink plenty of water. In 80% of cases most people will recover, but what about the other 20% - the elderly and those who have underlying health conditions. What about them?

Statistics say that 8 out of 10 deaths have been in adults 65 years old and older which means that for all intents and purposes they have been given a death sentence and although some will escape that fate, many others won't. Is there anything that can be done to improve their chances and even the score? The answer is yes!

Throughout this book there has been one thing which has cropped up time and time again. It is evident that your survival depends on how strong and efficient your immune system is. So if you were to improve your immune system's ability to fight viruses like COVID-19 then logic dictates that not only will you have a better chance for a quick recovery, but if this did not happen and you had to go into intensive care and aided by the new treatments I have outlined above, your risk of dying will be greatly reduced. Does that not make sense?

I have good news for you if you are over 65 like me. Regardless of your age or medical condition there are ways to boost your immune system and it is fairly easy to do. So in the next chapter I am going to write about how to do this. Don't worry, I am not going to promote some "snake oil", medicine that is medically worthless. Everything I will write about will be backed up by scientific evidence which you can check out yourself.

At the end of the chapter I will be telling you about a flavonoid which was used successfully treat SARS patients. It is currently undergoing trials in Canada and China and it is available now, off the shelf. No prescription is required. I have been using it for years for a health condition I have, and it has proven to be indispensable. Join me now as I reveal how you can boost your immune system and increase our chance of surviving a COVID-19 infection.

Chapter 9
THE MOTHER OF ALL HOPES

Throughout this book there is one thing which has cropped up time and time again. Defeating COVID-19 and ensuring your survival depends on one thing and that is how strong your immune system. The bad news is, if you are age 65 years of age or over, have an underlying medical condition regardless of your age, your chances of survival is rotten to say the least.

> *More than 95 percent of the people who have reportedly died of COVID-19 in Europe were over age 60. The US Centers for Disease Control and Prevention reported that from February 12 to March 16, 2020, COVID-19 fatality in the United States was highest in people over 85, followed by people ages 65 to 84.* [1]

These statistics suggest that people like me who are 69 years of age and older, get infected by COVID-19 might as well sign our Last Will and Testament and wait for the Grand Reaper to knock on our door. But it does not have to be like that. The problem is not your age or even your underlying condition. It is your weakened immune system and the good news is, you can do something about it. That is why I said earlier that I am not afraid. I know my immune system is in excellent shape. How do I know this? Because most of the time, when my family are suffering from colds and flu, I am not. I might sometimes feel unusually fatigued and by this I know I have been infected. But usually, I take myself to bed and sleep it off.

The last time this happened was at the beginning of January 2020 when my teenage grandson was kind enough to cough and sneeze all over the place resulting in my wife, daughter and her husband suffered from flu symptoms for a week or more. As for me, one day during this time I felt very tired, so I went to bed and slept for 12 hours. When I awoke, I felt fine and that was that. I recall getting a sore throat initially but that disappeared very quickly. Since the only thing standing in the way of the flu bug my family had been my immune system, then it must have been in good shape. There is a good reason for this and I will come to that in due course. But if I can do it so can you and it does not matter if you are old or younger, what I have to say will help you through the disease should you get it. It is the mother of all hopes.

NATURAL KILLER CELLS ARE THE KEY

When I previously discussed (chapter 2) the different cells in your body which the immune system uses to attack viruses there were two that were key players, and a third about which I have not spoken about - antibodies.

When a person has had a virus (or bacterial infection), the immune system "remembers" them by identification markers. So the next time the same virus infects a person again, the immune system can recognize the pathogen quickly without having to send helper T-cells to identify it. The immune system releases antibodies, large Y-shaped proteins that can stick to the surface of bacteria and viruses and kill them.

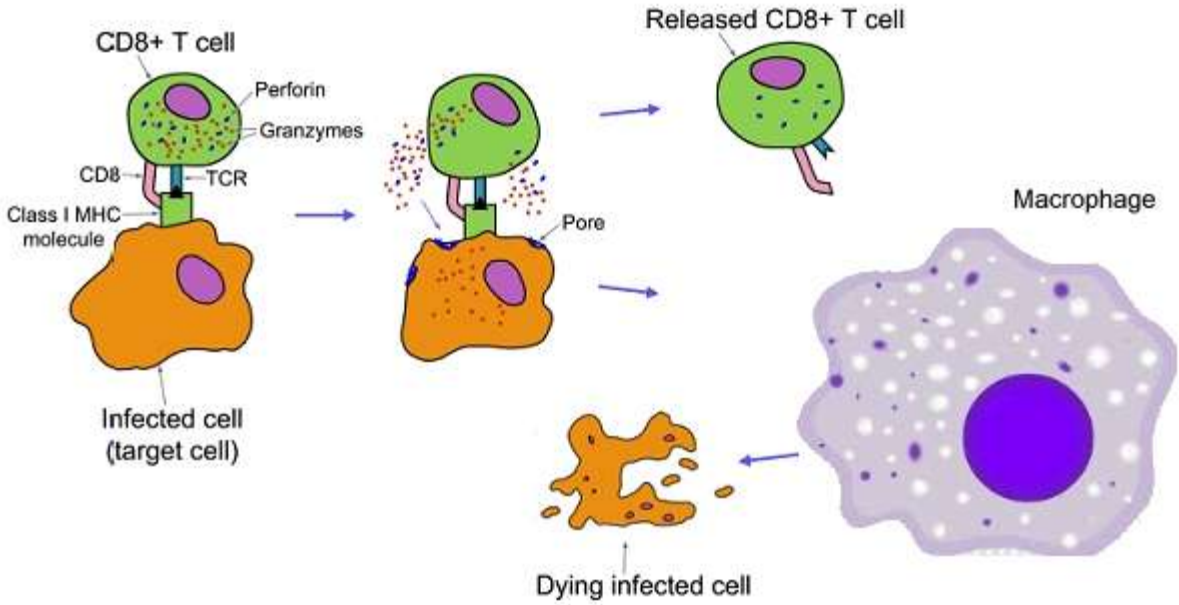
Antibodies

An antibody recognizes a unique part of a virus called an antigen and each of the "Y" of an antibody contains a structure like a lock that fits one particular key-like structure on an antigen. This binds the two structures together using this binding mechanism and then the antibody can neutralize its target directly. Antibodies exist because when a person successfully fights off the virus, these antibodies remain in a person's blood for a long time to protect against future infection.

Antibodies make it possible for a "serological test" to check to see if you have been infected before. The test is basically a piece of kit which pricks your finger for a blood sample, which is then placed in the kit's analysis unit. The unit checks the blood for COVID-19 antibodies and if it detects them then it means you have had the disease before and have some immunity to it. However, this test is not the same as testing for the virus itself, which is why it only takes about 15 minutes to do.

Cytotoxic T-cells

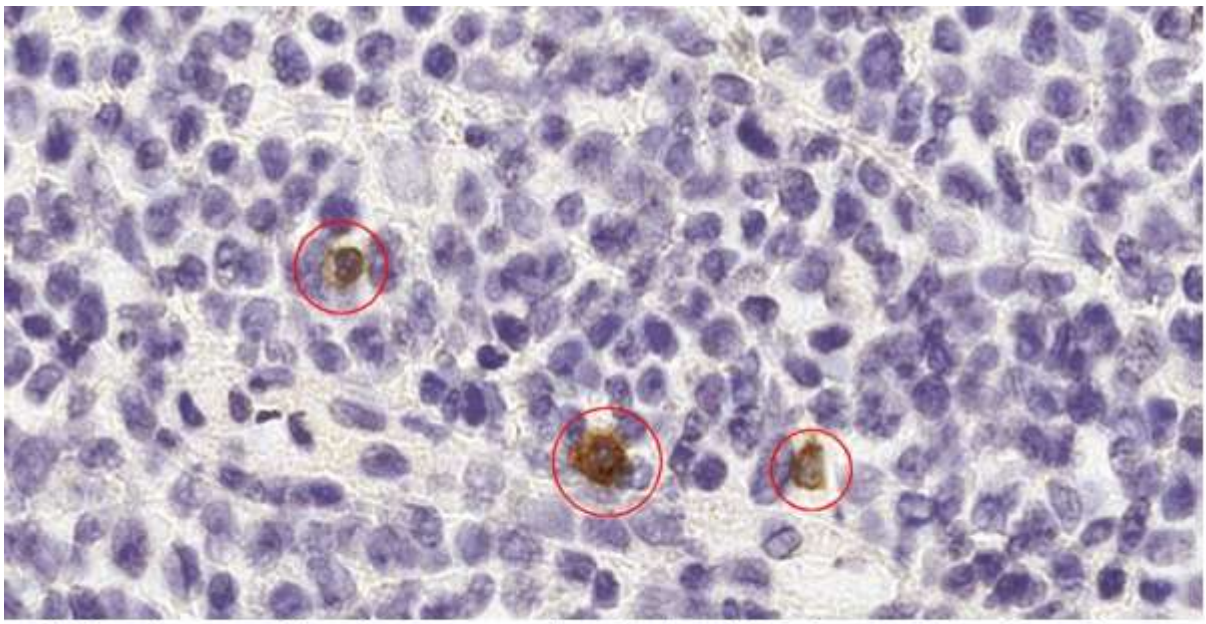
The situation changes if a virus has managed to infect a cell by getting inside it. All an antibody can do is to tag the cell. The immune system then responds by sending in T-cells, which quickly identifies the infected cell and gets to work to destroy it. As I explained before, T-cells latch on MHC class-I molecules on the surface of an infected cell and once they do then the virus has no chance. The T-cell releases perforin which makes a pore (hole) in the membrane of the infected cell. Then through the pore the T-cell introduces cytotoxins into the cell which destroys the cell and any viruses within it. Pieces of destroyed cells and viruses are then cleaned up by macrophages, which are large white cells that engulf and digest debris from what remains of the invading virus.



How Cytotoxic T-cells work

This is a most efficient way for the immune system for of dealing with pathogens which have infected a person before but if the virus is new to your immune system then this process is completely useless and won't even be started. It is unlikely that you will have had COVID-19 before unless you had SARS, but only 4 people in the UK had that in 2003. Not to worry though. The immune system has already unleashed its most powerful weapon in its arsenal at the enemy and these are Natural Killer cells (NK Cells). They are the shock troops of the immune system, the first wave of defenders against infection and disease, and they are not called "killer" cells for nothing.

Natural Killer Cells



NK cells patrolling between cells of a healthy human lymph node

Source: Institute of Pathology, University of Bern

NK cells are part of the innate arm of the immune system that you were born with and are a type of white cell. They normally constitute as much as 15% of the white cells in your blood and are always circulating throughout the body constantly in contact with other cells looking for abnormal or infected cells to destroy.

The function of NK cells are to eliminate aberrant cells, including virally infected cells and tumorigenic cells, these are those that capable of forming tumours. For this purpose NK cells store cytotoxic proteins inside specialized lytic granules which keeps their deadly cargo under lock and key, so to speak, until it is time to release the proteins into a cell to destroy it.

How NK cells can identify friend from foe depends on a balance of signals from activating receptors and inhibitory receptors on the NK cell surface. Inhibitory receptors act as a check on NK cell killing. Normal healthy cells express MHC I receptors which mark themselves as friendly "self cells". Inhibitory receptors on the surface of the NK cell recognize self cells and this "switches off" the NK cell, preventing it from killing them. However, infected cells disrupt and lose their MHC I identity pattern, and so they stand out like a sore thumb and for NC cells they are like a red flag to a bull.

> *These cells can react very quickly upon stimulation, faster than T cells, as they can kill directly "missing-self" cells that lack MHC class-I molecules without any need of previous sensitization, antibody binding, or peptide presentation.* [2]

Activating receptors on a NK cell recognize molecules that are expressed on the surface of infected cells, and if they are not friendly self cells, it "switches on". It is just like a gun having switched off the safety catch. The NK cell latches onto an infected cell and when it has, it activates the lytic granules, so they secrete their cytotoxic molecules into the target cell and destroys it, together with the virus within it.

While this is going on, the immune system has already triggered a fever and the body temperature increases. Thus, the immune system has implemented a two-pronged attack against an invading pathogen attack on the body and in most cases these actions alone are more than capable to deal with the invader.

I am sure you have seen a major flaw in this otherwise wondrous process. Success or failure in defeating the viral invaders and that is how many NK cells you have in your blood when the COVID-19 virus makes its attack and how aggressive NK cells are, meaning cytotoxic activity, when they do.

It is obvious therefore that the fewer NK cells you have and their effectiveness in cytotoxic activity, or both, that the likelihood of defeating the disease will be greatly reduced. Unfortunately, if you are 60 or older you will usually have fewer NK cells in your blood. Now you know why the elderly are at more risk of dying from SARS-CoV-2 than those who are younger and are more susceptible to an increased incidence and severity of other diseases such as coronary heart disease, liver fibrosis, infectious diseases, diabetes and cancer. [3]

This also explains why people with underlying medical conditions also are at greater risk too. They, too, have a deficiency in NK cells in the blood, which studies have shown make them prone to having these diseases. For example, a recent report concludes "Surgical stress results in a significant reduction in natural killer (NK) cell cytotoxicity (NKC)... NKA [NK cell IFN? secretion] is significantly suppressed for up to two months following surgery in CRC patients, a degree of surgery-induced immunosuppression far worse than previously reported." [4]

As you can see, everything hinges on how many NK cells is in the blood at the time of infection, they being the first wave to attack the viral invaders, and how fast the immune system can produce more reinforcements. The good news is you are never too old or so unwell that you cannot boost the number or the cytotoxicity of NK cells in the blood and this the mother of hopes that this chapter is all about. One of the key factors that keep your NK cells numbers low is zinc deficiency.

THE ROLE OF ZINC IN NK CELL CYTOTOXICITY

A study by the American Ageing Association says that old people aged 60-65 years and older have zinc intakes below 50% of the recommended daily allowance on a given day. [5] Another study says that zinc deficiency affects about 2 billion people worldwide, including an estimated 40 percent of the elderly in the United States - who are also among the most likely Americans to end up in an ICU. [6]

Why is zinc deficiency a factor in the NK cell production and functionality? A team of led by Eugenio Mocchegiani from the Centre of Nutrition and Ageing at the Italian National Research Centres on Ageing (INRCA) says:

> *Zinc deficiency in humans is quite prevalent, affecting over two billion people (Prasad 2008). A lot of evidences support the belief that the main factor associated with zinc deficiency seems to be an inadequate zinc dietary intake influenced in turn by other several intrinsic and extrinsic factors (Gibson et al. 2008). Indeed, zinc is well recognised as an essential trace element for all organisms and plays an important role in the development and integrity of the immune system affecting both innate (T, NK, and NKT cells) and adaptive (anti/pro-inflammatory cytokine production) immune responses (Prasad 2000; Ibs et al. 2003; Bogden 2004; Haase et al. 2006b.)* [7]

Did you observe what the study says about T, NK, and NKT cells? More about this shortly. This study goes on to say that the elderly have only 42.9% of the recommended daily allowance (RDA). This data, it says has been confirmed by other studies (ZENITH project, Andriollo-Sanchez et al. 2005; ZINCAGE project, Mocchegiani et al. 2008a; Japan study, Kogirima et al. 2007 and German study from the Max Ruben Institute, MRI 2008). The European Nutrition and Health Report summarize data regarding the nutritional zinc uptake in elderly from Austria, Denmark, Germany, Hungary and found that, for example, UK zinc uptake is particularly low in among the elderly.

For your information the recommended daily allowance for zinc is as follows:

- **Birth to 6 months:** 2mg (maximum 4mg)
- **Infants and children 7 months to 3 years: 3mg**

(maximum 5mg to 12 months, 7mg to 3 years)

- **Children 4 to 8 years:5mg**

(maximum 12mg)

- **Children 9 to 13 years: 8mg**

(maximum 23mg)

- **Teenagers 14 to 18 years (girls): 9mg**

(maximum 34mg)

- **Teenagers 14 to 18 years (boys): 11mg**

(maximum 34mg)

- **Adults (women): 8mg**

(maximum 40mg)

- **Adults (men): 11mg**

(maximum 40mg)

- **Pregnant teenagers: 12mg**

(maximum 34mg)

- **Pregnant women: 11mg**

(maximum 40mg)

- **Breastfeeding teenagers: 13mg**

(maximum 34mg)

- **Breastfeeding women: 12mg**

(maximum 40mg)

There are many studies which show that zinc is essential for the immune system and NK cell proliferation and potency. Such studies also confirm a decline of zinc levels with age. Yet, despite its important function, the body has only limited zinc stores that are easily depleted and require replacing on a regular basis. This it normally achieved through the consumption of certain foods. For example, foods that are high in zinc include oysters, beef, chicken, tofu, pork, nuts, seeds, lentils, yogurt, oatmeal, and mushrooms.

The problem is that in many cases the diet of the elderly are such that they invariably tend not provide a sufficient level of nutrients needed to maintain an adequate healthy status. This leads to micronutrient deficiencies and an impaired immune response with subsequent development of underlying degenerative diseases. This therefore effects how NK cells can function and makes them less effective destroying viruses like COVID-19. So one answer in building up your immune system and ensure that NK cells are at optimum levels is to use zinc supplements. We know that doing this makes a great deal of difference as a number of studies have discovered.

For example, in a study by the *Journal of Immunity and Ageing* published in June 2009 says that it has concluded that zinc supplementation enhances NK cell activity by increasing perforin expression and in increases the interleukin (IL)-2 enhanced NK cell activity additively. In contrast, zinc deficiency reduced NK cell activity and dampens the IL-2 medicated enhancing effect on NK cells. [8]

Another study, "**Zinc and respiratory tract infections: Perspectives for COVID-19 (Review)**", published only a couple of weeks ago on the 13 April 2020 says:

> *Despite the lack of clinical data, certain indications suggest that modulation of zinc status may be beneficial in COVID-19. In vitro experiments demonstrate that Zn2+ possesses antiviral activity through inhibition of SARS-CoV RNA polymerase.*
>
> *Indirect evidence also indicates that Zn2+ may decrease the activity of angiotensin-converting enzyme 2 (ACE2), known to be the receptor for SARS-CoV-2. Improved antiviral immunity by zinc may also occur through up-regulation of interferon a production and increasing its antiviral activity. Zinc possesses anti-inflammatory activity by inhibiting NF-?B signaling and modulation of regulatory T-cell functions that may limit the cytokine storm in COVID-19.*
>
> *Although the therapeutic effects of Zn are considered as inconsistent, the existing evidence-based data indicate efficiency of Zn supplementation and improvement of Zn status in prevention of pneumonia and its complications due to anti-inflammatory effect of zinc.* [9]

I am reminded that way back to the days of the SARS epidemic in 2003, George F Rowland, an Immunologist Zeon Healthcare Ltd wrote that there could be considerable benefit from the widespread use of maximum strength zinc lozenges as a precautionary measure during the SARS pandemic. He said that zinc ions when released in the vicinity of the oral mucous membranes can protect cells from attack by viruses such as rhinoviruses. It is believed, he said, that zinc ions attach to cell surface receptors thereby blocking viral attachment and uncoating. It is possible therefore, he theorized, that the attachment of the coronavirus causing SARS can be blocked by zinc ions in the mouth.

A 2010 study led by University of Leiden Medical researchers in the Netherlands sought to understand how zinc inhibited virus replication. The team reported that zinc inhibits SARS-CoV, the original virus that caused SARS in the 2003 outbreak. The study is heave stuff full of medical gobbledygook, but the gist is that zinc impairs SARS virus's replication process. For those with a medical background the study explains what happens. It is a very comprehensive study, so I have only cited two paragraphs which gives an overview of the results.

> *In this study we demonstrate that the combination of Zn2+ [zink ions] and PT [zink pyrithione] at low concentrations (2 μM Zn2+ and 2 μM PT) inhibits the replication of SARS-coronavirus (SARS-CoV) and equine arteritis virus (EAV) in cell culture. The reporter gene expression of both SARS-CoV-GFP and EAV-GFP was already significantly inhibited in a dose-dependent manner by the addition of PT alone. This effect was significantly enhanced when 2 μM of Zn2+ was added to the medium. Using GFP-expressing EAV and SARS-CoV [29], [30], we found that the combination of 2 μM PT and 2 μM Zn2+ efficiently inhibited their replication, while not causing detectable cytoxicity (Fig. 1).* [10]

Based on the data I have discussed above it is evident that zinc has two roles when it is involved in viral infections. Zinc inhibits virus replication within a cell, and enhances the killing power of NK cells. But going down to your local pharmacist and asking for a bottle of zinc ions pyrithione combination supplement will not go down very well and the pharmacist will probably send you packing. However, asking for zink lozenges or syrup is a different matter.

Todd Neff writing for *UC Health* (University of Colorado Health) which is closely affiliated with the University of Colorado School of Medicine asks, "**Coronavirus: To zinc or not to zinc?**" In the article published 25 March 2020, he describes a Cochrane review updated in 2013 which summarized 18 randomized controlled trials involving 1,781 participants across all age groups found that zinc, particularly in lozenge or syrup form, inhibits replication of the common cold virus and shortens the average duration of the disease when taken within 24 hours of onset of symptoms at a dose of more than 75 milligrams a day. [11]

Taking a large dose of zinc supplements, more that 75 mg for a short period of time as soon as symptoms appear seems to be very effective against the common cold, but will it be for COVID-19? Todd Neff says, "I*n my experience as a virologist and pathologist, zinc will inhibit the replication of many viruses, including coronaviruses. I expect COVID-19 will be inhibited similarly, but I have no direct experimental support for this claim.*" [12]

WARNING: Taking large doses of zinc is dangerous long term it can lead to toxicity. Because of this, zinc supplements should only be taken by people with conditions that cause a loss of zinc from the body, or where there is good evidence that zinc deficiency exists - and for a brief period at the outset of an infection. Under such circumstances, evidence that an intake of between 75-200 mg per day for short periods of time (5 to 10 days) have shown no adverse effects while demonstrating a reduction in duration of the common cold for example. [13]

The scientific evidence for the use of zinc as a stimulant for the potency of NK cells is considerable and the potential for it to help your immune system's fight against a COVID-19 infection is also evident too. A recent study (13 February 2020) written by two Chinese doctors who have been up to their necks in fighting the disease in China report:

> *Increasing the concentration of intracellular zinc with zinc-ionophores like pyrithione can efficiently impair the replication of a variety of RNA viruses. In addition, the combination of zinc and pyrithione at low concentrations inhibits the replication of SARS coronavirus (SARS-CoV). Therefore, zinc supplement may have effect not only on COVID-19-related symptom like diarrhea and lower respiratory tract infection, but also on COVID-19 itself.* [14]

Another study by a scientist at the Department of Molecular & Cellular Biochemistry, University of Kentucky referencing zinc and COVID-19 says, "*A complete scientific premise involving five groups of evidence was presented supporting the hypothesis that COVID-19 severity can be reduced with the administration of zinc in an orally and gastrointestinal absorbable form. This scientific premise supports future testing of orally administered zinc in a form that maximizes oral and gastrointestinal absorption for the treatment of COVID-19.*" [15]

I think the message is clear. In order for NC cells to work effectively, they need zinc, which is great news but there is a major snag. Zinc might have helped the immune system to create the most super destructive NK cells ever but if you don't have many of them to go against an enemy which has superior numbers and is self-replicating faster than the NK cells can destroy, your immune system will be fighting a loosing battle. So in order to even the odds or better, the immune system needs to mass produce these super-duper NK cell killing machines, and to do that requires substantial infusion of Vitamin D3.

ZINC IS NOT ENOUGH! VITAMIN D3 IS NEEDED TOO

I would love to say that waving a magic wand of zinc will drive the nasty coronavirus away, but unfortunately, zinc on its own is not enough for improving NK cell functionality and proliferation. NK cell function depends on adequate levels of Vitamin D3 and is an important regulator of immune system. [16]

Why is vitamin D3 so important and what accounts for its deficiency in many of us? Many years ago when reading Genesis I pondered the significance of God creating man naked. Now I know why. Our mental and physical well-being, immune system potency and bone growth depends upon the symbiosis between the sun's ultra-violet B rays and our exposed naked skin to them. The more skin that is exposed to the sun, the greater the synthesis of vitamin D3 there is.

However, the amount of D3 which synthesized is related to the amount of UV-B radiation absorbed by the skin and therein lies the problem. The solar radiation reaching the surface of the earth is diminished in the Northern Hemisphere during the Autumn and winter months when the sun is lower in the sky. Consequently, little or no D3 can be synthesized by our skin during this period, which for London (51° N latitude) is from November through February. This means that most people cannot get enough vitamin D3 during that period and have to rely on certain foods or vitamin D3 supplements. To make matters worse, the older you get the less vitamin D3 your skin can manufacture.

> *A comparison of the amount of previtamin D3 produced in the skin from the 8- and 18-yr-old subjects with the amount produced in the skin from the 77- and 82-yr-old subjects revealed that aging can decrease by greater than twofold the capacity of the skin to produce previtamin D3. Recognition of this difference may be extremely important for the elderly, who infrequently expose a small area of skin to sunlight and who depend on this exposure for their vitamin D nutritional needs.* [17]

For the aged, loss of mobility and residential care restricts solar exposure. Reduced appetite and financial problems often add to these problems. Anyway, diet is a poor source of vitamin D, only wild oily fish, egg yolk, cod-liver oil and fortified foods. Some breakfast cereals and butter in the UK and some orange juices and milk contain them.

Butter contains 60 IU in 100 grams but since a block is usually 250 mg, you need to eat almost half to get that many International Units of vitamin D3, which is not very practical. The recommended intake of vitamin D3 is 400-800 IU/day (10-20 micrograms) but most studies suggest that this is too low and that 1000-4000 IU (25-100 micrograms) is needed to maintain optimal blood levels. [18]

What happens when levels of Vitamin D3 are found deficient in patients which have been infected by the COVID-19 coronavirus? Reports are coming in thick and fast that vitamin D insufficiency (VDI) may be an underlying driver of COVID-19 severity.

For example, scientists from the Queen Elizabeth Hospital Foundation Trust and the University of East Anglia have linked low levels of vitamin D3 with COVID-19 mortality rates across Europe. The researchers dug through existing health literature to catalogue the average levels of vitamin D among the citizens of 20 European countries, and then compared the figures with the relative numbers of COVID-19 deaths in each country. The study showed there was convincing correlation between the figures, where populations with vitamin D3 deficiency also featured more deaths from SARS-CoV-2. [19]

A study dated 28 April 2020 came to a similar conclusion. Their retrospective observational study suggested a link between vitamin D deficiency (VDI) and severe COVID-19. They put it this way: "*Anecdotal and observational data indicate that VDI may play a significant role in the progression of the COVID-19 disease state.*" [20]

What is it about vitamin D3 which, if it is deficient within us, enables viruses like COVID-19 (SARS-CoV-2) to take hold and multiply? First, by binding to the vitamin D response element in various gene-promoter-regions, the site in a DNA molecule in the gene where transcription, the copying of DNA is initialized, results in the decrease of cytokines (protein molecules that serve to regulate the immune system) which tend to cause inflammation. Secondly, this process also increases production of antiviral and antibacterial proteins and therefore play an important role in antiviral innate adaptive immunity. [21]

More importantly, as I have highlighted in another place, SARS and COVID-19 viruses gain access into a cell via the ACE2 receptor, leading to cytokine storms, with subsequent fatal respiratory distress syndrome. Vitamin D is involved in suppressing renin-angiotensin system regulation by reducing blood pressure which makes it harder for viruses to enter the ACE2 receptor, delaying them long enough for NK cells or T-cells to latch on and destroy them. [22]

In another recent study (9 April 2020) Mark Alipio of the Davao Doctors College, University of Southeastern Philippines, and headed "**Vitamin D Supplementation Could Possibly Improve Clinical Outcomes of Patients Infected with Coronavirus-2019 (COVID-2019)**" makes the case that "vitamin D supplementation could possibly improve clinical outcomes of patients infected with COVID-2019. He conducted a retrospective multicentre study of 212 cases with laboratory-confirmed infection of SARS-CoV-2 by analysing data pertaining to clinical features and serum 25(OH)D levels (the medical term for vitamin D3) were extracted from the medical records.

> *A multinomial logistic regression analysis reported that for each standard deviation increase in serum 25(OH)D, the odds of having a mild clinical outcome rather than a severe outcome were approximately 7.94 times (OR=0.126, p<0.001) while interestingly, the odds of having a mild clinical outcome rather than a critical outcome were approximately 19.61 times (OR=0.051, p<0.001).* [23]

In plain English, this suggested that in COVID-19 patients, vitamin D3 levels improved clinical outcomes, and/or mitigated the worst (severe to critical) outcomes. Conversely, decreased vitamin D3 levels worsened clinical outcomes.

We have seen the importance of zinc in the cytotoxicity in NK cells but does vitamin D3 have any influence. A sub-study of a school-based surveillance program entitled "the CASPIAN-III Study" was established in Iran to assess the relationship of serum zinc and vitamin D3 levels in a nationally representative sample of Iranian children and adolescents. The study was prompted by another one in which 150 Iranian pregnant women showed that 37% of them were vitamin D deficient and 23% were zinc deficient, which resulted in low birth weight, prematurity, miscarriage, fetal or infant death, postdate pregnancy, premature rupture of membranes, cleft palate and neural tube defects in the fetus.

That study proved that there was a statistically significant association between serum zinc and vitamin D3 levels. Iranian doctors wanted to know that "*Given the high prevalence of hypovitaminosis D and zinc deficiency, as well as their possible interactions, this study aimed to assess the relationship of serum zinc and 25 (OH)D levels in adolescents*." [24]

For the CASPIAN III study, data were obtained using the questionnaires completed by students and their parents. A trained team of health professionals conducted physical examination and blood sampling. Blood samples were taken after twelve hours of fasting.

The results of the study came to the conclusion that illnesses associated with vitamin D deficiency (hypovitaminosis D) was accompanied by low zinc level, and "that hypovitaminosis D is probably due to inadequate exposure to sunlight." The study explained that the "*vitamin D receptor (VDR) binds zinc, and the activity of vitamin D dependent genes in cells is influenced by intracellular zinc concentrations. Zinc help vitamin D to work inside the cells*." [25]

Vitamin D3 regulates cell differentiation and growth by binding to the vitamin D receptor found in most body cells and zinc plays an important part in doing this. Consequently, if a person has zinc deficiency, then this makes this process less efficient. In other words it is important that there is sufficient zinc concentrations for vitamin D3 to be effective in regulating the functionality of cells.

Needless to say, sunbathing or taking vitamin D3 and zinc supplements will ensure that your immune system is at optimum efficiency in tackling the COVID-19 virus. It cannot do that if the immune system has its arm tied behind its back, metaphorically speaking.

The question that needs to be asked is why is vitamin D3 deficiency allowing the virus that causes COVID-19 to run amuck? This is not fully understood but one theory may provide the answer. White cells like NK and T-cells produce vitamin D receptors (VDRs) and the vitamin D-activating hydroxylase.

The significance of this is that these cells need to be triggered from being harmless immune cells into killer cells that are primed to seek out and destroy all traces of a foreign pathogen. This is done when the cells are exposed to a foreign pathogen. Using their VDRs, they searched for vitamin D. If they cannot find enough vitamin D in the blood, then the NK and T-cells remain in stasis until there is enough vitamin D to activate them. [26]

The immune system would have already dispatched thousands and thousands of white cells called neutrophils to swamp the area, and they will kill all cells in the vicinity, friend or foe. Unless NK cells or T-cells are activated which take the decisive role against virus incursions, besides activating fever measures, the neutrophils are the only defence the body has left to deal with the COVID-19.

Sometimes, the fever and neutrophil defence mechanism will work, but in most cases things go from bad to worse. Lung tissue (parenchyma) becomes so inflamed that full-blown pneumonia (Severe Acute Respiratory Syndrome) takes over.

The vast army of neutrophils attacks the multiplying viruses on the surface of the bronchioles tubes and alveoli and a combination of saliva and mucus are excreted into the alveoli sacs, which gradually fill up. Oxygen and carbon dioxide exchange becomes increasingly less, breathing becomes more and more difficult until eventually there is respiratory failure. Unless there is something that can be settle things down BEFORE that deadly stage is ever reached. This is where Quercetin may the answer to our prayers.

COULD QUERCETIN BE OUR SAVING GRACE?

As this book comes to its close, I have been following the work of Dr. Chrétien of the Montreal Clinical Research Institute (IRCM), who is generally recognized as one of the most respected scientists and medical researchers in the world.

Dr. Chrétien was a Professor of Medicine in the Faculty of Medicine at the Montreal University from 1975 to 1999. In 1998, he was appointed a Professor, Department of Medicine, Faculty of Medicine, University of Ottawa. In 2006, he was appointed Senior Scientist of Hormone, Growth and Development at the Ottawa Health Research Institute. He has also served as an honorary professor at both the Chinese Academy of Medical Sciences and Peking Union Medical College and has received may honours, his recent being a member of the Canadian Medical Hall of Fame in 2017, such is the veneration in which he is held.

> *Dr. Michel Chrétien now has over 600 publications in print. Back in the 1980s, he was the seventh most cited scientist in the world. Chrétien - founder of the Ottawa Institute of Systems Biology at the University of Ottawa and Director of Montreal University's laboratory in functional endoproteolysis - helped discover proprotein convertases through his 1967 pro-hormone theory. The convertases, groups of proteins that activate other proteins, act in the development of diseases such as cancer and diabetes. Chrétien is a Fellow of the Canadian Academy of Health Sciences and an Officer of the Order of Canada. He received the McLaughlin Medal from the Royal Society of Canada. His brother is former Prime Minister Jean Chrétien.* [27]

When a person of Dr. Chrétien's stature is taking seriously the possibility that a natural substance called quercetin might be an effective treatment for COVID-19, and he and his team are pumping a million dollars into research, development and trials, then this is something you cannot ignore.

For most people, they will probably never heard of quercetin and yet it is a substance which they ingest every day from food in small amounts. As scientists all around working for big pharmaceutical companies search for a drug which can be used for treating COVID-19 with huge potential financial benefits coming to them if they succeed, many have ignored quercetin as a potential treatment.

I think co-researcher Dr. Majambu Mbikay hits the nail on the head when he says that quercetin would cost a mere $2 a day which is a negligible amount that stands in stark contrast to the $1,000-per- injection cost of existing COVID-19 treatments. [28]

Quercetin is not a drug but is a natural flavonoid found in onions, apples, berries, tea, broccoli, nuts, grapes, and therefore wine. It is one of the most abundant dietary flavonoids, with an average daily consumption of 25-50 milligrams. In red onions, higher concentrations of quercetin occur in the outermost rings and in the part closest to the root, the latter being the part of the plant with the highest concentration. One study found that organically grown tomatoes had 79% more quercetin than non-organically grown fruit. Quercetin is also present in various kinds of honey from different plant sources. Of course, unless your diet consists of the aforementioned foods, then the average daily consumption will be greatly reduced.

Going back to 2004, after the SARS outbreak had disappeared, doctors from Department of Cell Biology and Genetics, College of Life Sciences Beijing, and the Centre for the Study of Liver Disease and Department of Surgery, The University of Hong Kong, Pokfulam, Hong Kong, carried out a study to see if quercetin and other flavonoids can interfere with the ability of the spike protein of SARS-CoV to enter host cells through the ACE2 receptor. With respects to quercetin they came to the following conclusion that, quercetin does "antagonize SARS-CoV entry, and that "As an FDA-approved drug ingredient, quercetin offers great promise as a potential drug in the clinical treatment of SARS." [29]

Having learned from studies like the one above researchers have been applying computer modelling techniques to identify molecules with structures that could conceivably block the "ACE2 receptors" on cells to which the coronavirus that causes COVID-19 attaches, much like a key fits into a lock. As you now know from what I have written previously, once the virus enters a cell it hijacks the cellular machinery and uses it to reproduce itself. When the cell's DNA has been totally replaced by the virus DNA, it disintegrates, spilling more virus into surrounding cells and the process begins again. The infection spreads. Based on its molecular structure, quercetin could be the "key" that fits the lock and blocks virus "keys" from gaining access to the cell.

Another important attribute that quercetin has is it is anti-inflammatory. After absorption, quercetin becomes metabolized in various organs including the small intestine, colon, liver and kidney. Continuous intake of quercetin accumulates in blood and significantly increases quercetin concentration in plasma. We can absorb significant amounts of quercetin from food or supplements, and elimination is quite slow, with a reported half-life ranging from 11 to 28 hours. [30]

That is good news because if you get a virus like COVID-19 your blood will have plenty of quercetin in it to help fight the disease if you have been regularly taking it. This also might explain why quercetin is reported to be a long-lasting anti-inflammatory substance that possesses strong anti-inflammatory capacities. In a review published in the journal *Viruses*, Dr. Chrétien and Dr. Mbikay concluded that quercetin inhibited viral infections in the early stages - particularly during viral attachment and viral-cell fusion. [31]

Quercetin has already shown the ability to inhibit both the A and B types of influenza, along with the H1N1 which was the most common cause of human influenza (flu) in 2009, and is associated with the 1918 flu pandemic. It has also been effective against H3N2 viruses such as "Hong Kong" flu. Some forward-thinking physicians in the US already credit quercetin with being both safer and more effective than Tamiflu, the "gold standard" of medical therapies for influenza. [32]

I should add that quercetin does have side effects, good ones. If you have hay fever, you will find that symptom disappears because quercetin is a natural antihistamine restricting histamine from being released from cells. Other research showed that people who were overweight and took a quercetin supplement of 150 milligrams (mg) or more per day had lower levels of harmful cholesterol in their blood, as well as reduced systolic blood pressure, which measures the pressure in the blood vessels during a heartbeat. From personal experience, quercetin also stops the pain associated with inflammation of the prostate gland as a result of prostatitis. I shall be writing a new book on quercetin in more detail later in the year.

One of the core most remarkable properties of quercetin is its ability to modulate inflammation as I have experienced with prostatitis. Quercetin inhibits inflammatory enzymes cyclooxygenase (COX) and lipooxygenase thereby decreasing inflammatory mediators such as prostaglandins and leukotrienes. This is important as far as COVID-19 is concerned because with excessive inflammation in the lungs in the finals stages of disease resulting in respiratory failure, animal experiments suggest that quercetin treatment may reduce lung inflammation too.

In 2018, American researchers from Temple University and Michigan infected mice with a rhinovirus. Some had quercetin, others have not. After 14 days, the researchers studied the lungs of the mice. The rhinoviruses promoted permanent lung inflammation, with an accumulation of immune cells. The authors showed that quercetin supplementation reduced in strength all the pathological changes associated with rhinovirus. Quercetin slowed the progression of the virus and the viral load was lower in mice supplemented with quercetin than the control mice which did not have any. [33]

Of course mice are not people and rhinoviruses is not coronaviruses although they do have the same pathway into a cell, the ACE2 receptor. What all this boils down to that a comprehensive study is needed to test out quercetin in COVID-19 patients. I am pleased to say that such a study is being carried out as I write this.

Dr. Chrétien has a long-standing connection to high-level scientists in China because he trained emerging scientists from China at the Clinical Research Institute of Montreal (IRCM), where he is president. One of those he trained was Chen Zhu, a molecular biologist who, back home in China, eventually entered politics and served as minister of health from 2007 until 2013. When the COVID-19 outbreak occurred in Wuhan in December 2019, Dr. Chrétien contacted Zhu and offered to help.

Zhu contacted officials at the highest levels of the National Health Commission, the government agency managing the crisis. In mid-February, it was agreed that a trial should go ahead using quercetin, and Chrétien's team was invited to start clinical trials in China. One advantage is that The U.S.-based Food and Drug Administration has already approved quercetin as safe for human consumption, which means the researchers can skip testing on animals. What was needed is funding, and on 4 March 2020, the Lazaridis Family Foundation contributed $1 million to support a trial. The Foundation is a Canadian registered charity dedicated to supporting ground-breaking basic research at the highest levels as well as community-building philanthropy in the Quantum Valley in Waterloo, Ontario, Canada. [34]

A clinical trial protocol for treating up to a thousand patients has been developed with Jeremy Carver and Wendy Hill of the International Consortium on Antivirals (CITAV / ICAV) and medical authorities in the People's Republic of China. The trial is expected take about four months ending about August 2020. If the trials are successful, I think it will be fair for me to say that quercetin is "THE MOTHER OF ALL HOPES." Don't you agree?

The trial is now in progress and will use the drug produced by the Swiss company Quercegen Pharmaceuticals, which, according to Chrétien, produces the purest available quercetin. According to the company website it says:

> *The Company has discovered that certain combinations of Quercetin, vitamins and other nutritional compounds can greatly increase Quercetin absorption and levels in the blood and assist in making Quercetin and the added ingredients more effective in promoting health and performance. The Company's patented QB3C™ formulation-platform promotes better absorption of Quercetin in plasma with a longer half-life and has been extensively tested in randomized clinical trials.* [34]

Of course this kind of claim has been made by other pharmaceutical companies with aspirin and paracetamol concoctions. I don't think I need to mention any brand names as they are regularly advertised on television. Such sales speak mean that companies can charge more for their product but the actual active ingredients are the same as generic medicines. So you don't need to go to Quercegen Pharmaceuticals for quercetin. I certainly don't. I buy quercetin from the UK's most well known high street health store Holland and Barrett "Quercetin plus Vitamin C". The contents are 50 x coated capsules:

Quercetin - 500 mg
Vitamin C - 1,400 mg

If not available, I get an equivalent product manufactured by Solgar® Quercetin Complex from various online stores. The contents are 50 x vegicaps:

Vitamin C - 500mg
Quercetin - 500mg
Bromelain - 50mg
Citrus Bioflavonoids - 50mg
Rose Hips Powder -50mg
Acerola Powdered Extract - 50mg
Rutin - 10mg

If you buy quercetin elsewhere, make sure you buy from recognized trusted brands and not from "cheaper" unknowns which could be selling fakes.

Interestingly, Quercegen Pharmaceuticals, QB3C™ say that their products are a combination of 99.5% pure quercetin with vitamin B3 and C. From this I thought that most of the product would be quercetin, but it is not. What the company means is whatever quantity of quercetin is in their product it is from 99.5% pure quercetin. Checking their website, their products are soft chews which contain the following ingredients:

Quercetin - 250 mg
Vitamin C - 250 mg
Vitamin B3 -20 mg
Folic Acid - 200 mg (Vitamin B)

My quercetin purchase does not contain vitamin B3 (Niacin). I get 43.7 mg of that vitamin from my regular multivitamin effervescent supplement which I have once a day. It also has 9 mg of zinc, calcium 120 mg and magnesium (95 mg).

As you may have noticed I take a lot of vitamin C. This is because I rarely consume foods that are rich in that vitamin. Vitamin C can be found in broccoli, cantaloupe, cauliflower, kale, kiwi, orange juice, papaya, red, green or yellow pepper, sweet potato, strawberries, and tomatoes. Anway! What has taking vitamin C have to do with COVID-19? A lot as it happens.

VITAMIN C SUPPORTS THE IMMUNE SYSTEM AND QUERCETIN

I am sure that vitamin C needs no introduction. It is a water-soluble vitamin that helps maintain a healthy immune system and it does this by preventing free radicals from causing damage to our cells. To explain what free radicals are, the body is always under constant attack from oxidative stress. This is when Oxygen in the body splits into single atoms with unpaired electrons. These unstable atoms are called free radicals, and they scavenge the body to seek out other electrons, so they can become a pair. As they do this they cause damage to cells, proteins and DNA. They are associated with human disease, including cancer, atherosclerosis, Alzheimer's disease, Parkinson's disease and many others. They also may have a link to ageing, which has been defined as a gradual accumulation of free-radical damage.

Where does the link between vitamin C and quercetin come in? On its own, quercetin has a low bioavailability, which means your body absorbs it poorly. However, vitamin C or digestive enzymes like bromelain increases quercetin absorption. In addition, vitamin C helps to regenerate quercetin and maintain its antioxidant properties - leading researchers to believe that combining the two could pack a double virus-fighting punch. And preliminary research seems to back this up! In a study published in the Journal of Research in Medical Sciences, researchers found that a combination of 500 mg of quercetin and 250 mg of vitamin C lessened cell damage and caused a marker of inflammation to decrease by 62 percent.

> *Eight-week supplementation with quercein and vitamin C was effective in reducing oxidative stress and reducing inflammatory biomarkers including CRP and IL-6 with little effect on E-selectin in healthy subjects.* [35]

I don't think that it is necessary for me to go into how vitamin C boosts our immune system because I think this accepted by all. What it is important to know is that quercetin could be the key in the treatment of COVID-19 but without vitamin C the absorption of this natural flavonoid would be considerably reduced. Hence, besides the other benefits that vitamin C brings to the immune system, the greater amount of vitamin C you have in your body the greater the absorption of quercetin.

This book has shown how quercetin is important in inhibiting SARS and COVID-19 access to cells through the ACE2 receptor as well as quercetin's remarkable anti-inflammatory characteristics, but zinc plays an important role too. Zinc enhances NK cell activity and cytotoxicity but depends on adequate levels of Vitamin D3 to work its magic and besides this, vitamin D3 is an important regulator of immune system too. So in summary then, quercetin, zinc, vitamin C and D are all dependent upon won another.

*** STOP PRESS ***

I had all but complete his book when a new study about quercetin and vitamin D3 was sent to my email box. It said that vitamin D3 and quercetin are widely acknowledged as being COVID-19 mitigation agents, lessening the severity or intensity of the disease. This is discussed in great detail in the new study published 30 April 2020, headed, "*Vitamin D, Quercetin, and Estradiol manifest properties of candidate medicinal agents for mitigation of the severity of pandemic COVID-19 defined by genomics-guided tracing of SARS-CoV-2 targets in human cells.*" [34]

> *Present analyses and numerous observational studies indicate that age-associated Vitamin D deficiency may contribute to high mortality of older adults and elderly. Immediate availability for targeted experimental and clinical interrogations of potential COVID-19 pandemic mitigation agents, namely Vitamin D and Quercetin, as well as of the highly selective (Ki, 600 pm) intrinsically-specific FURIN inhibitor (a1-antitrypsin Portland (a1-PDX), is considered an encouraging factor.*
>
> *Specifically, gene expression profiles of Vitamin D and Quercetin activities and their established safety records as over-the-counter medicinal substances strongly argue that they may represent viable candidates for further considerations of their potential utility as COVID-19 pandemic mitigation agents.* [35]

To summarize then, what this chapter has shown is that vitamin D3 and zinc deficiency explains why older people and those with an underlying medical condition are so vulnerable to the COVID-19 virus. I would also add that vitamin D3 deficiency may also account for the disproportionate fatalities in BAME (Black, Asian, Minority Ethnic) persons in the United Kingdom and elsewhere.

FRED'S SURVIVAL PROTOCOL

The general preventive guidelines as published by the government and the NHS involves frequent hand washing, mouth and nose covering during coughing and sneezing, and to avoid close contact with individuals by social distancing. All these are good recommendations, but if you should become infected by COVID-19 you are advised to self-quarantine for 7 days and your family living with you 14 days. You are therefore left to weather the storm yourself. As there is no specific treatment for COVID-19, apart from sleep and drinking water to prevent dehydration due to the fever you get, that leaves you few options.

Recent studies presented in this book show those patients which have and serious complications and have died from the disease, include the elderly, anybody with underlying medical conditions and people of African and Asian ethnic backgrounds, are the same people which have deficiencies in certain vitamins and minerals, especially vitamin D3 and zinc. Therefore, the best solution in combating the disease is obvious. To reverse those deficiencies we need to boost our immune system with those vitamins and minerals and to imbue its fighting capabilities to tackle this deadly disease. The evidence presented in this book is that there are four important vitamins and minerals which can make all the difference. These are quercetin, vitamin D3, vitamin C and zinc.

With respects to vitamin D3, a study which was released (2 April 2020) entitled, "Evidence that Vitamin D Supplementation Could Reduce Risk of Influenza and COVID-19 Infections and Deaths" confirms my rationale by saying:

> *Evidence supporting the role of vitamin D in reducing risk of COVID-19 includes that the outbreak occurred in winter, a time when 25-hydroxyvitamin D (25(OH)D) concentrations are lowest; that the number of cases in the Southern Hemisphere near the end of summer are low; that vitamin D deficiency has been found to contribute to acute respiratory distress syndrome; and that case-fatality rates increase with age and with chronic disease comorbidity, both of which are associated with lower 25(OH)D concentration. To reduce the risk of infection, it is recommended that people at risk of influenza and/or COVID-19 consider taking 10,000 IU/d of vitamin D3 for a few weeks to rapidly raise 25(OH)D concentrations, followed by 5000 IU/d. The goal should be to raise 25(OH)D concentrations above 40-60 ng/mL (100-150 nmol/L). For treatment of people who become infected with COVID-19, higher vitamin D3 doses might be useful.* [36]

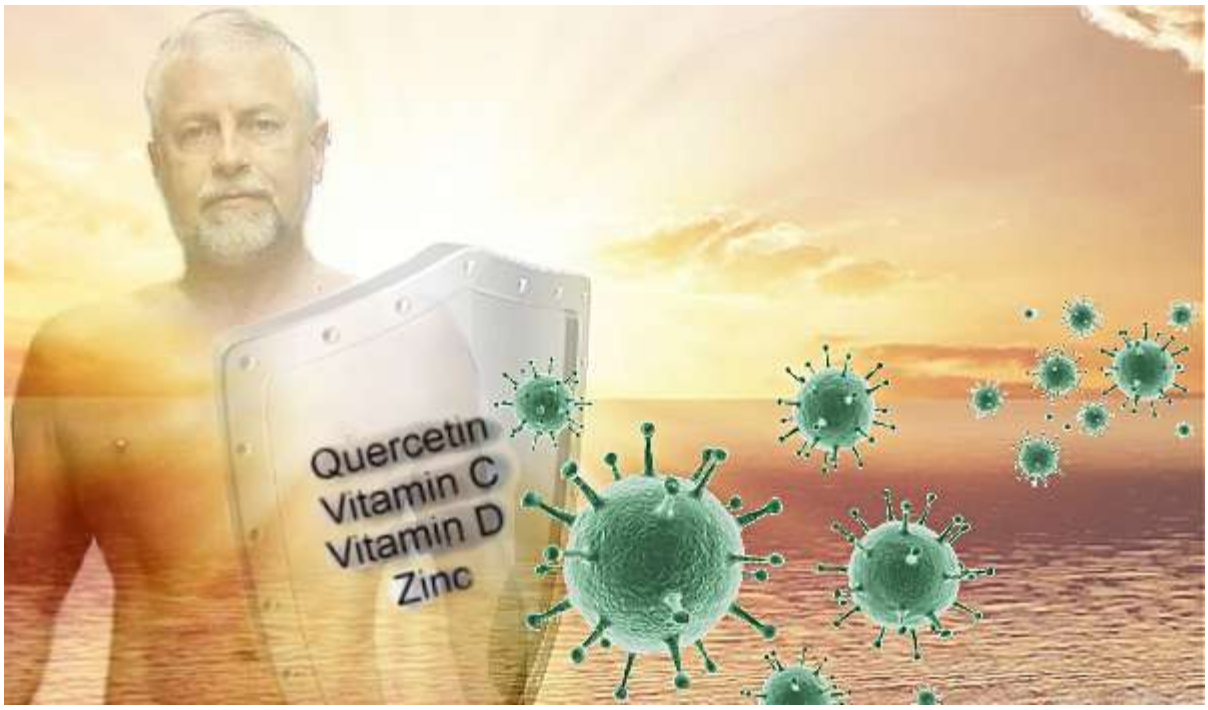
The evidence presented in this book is that there are four important vitamins and minerals which can make all the difference. These are quercetin, vitamin D3, vitamin C and zinc. A study, one of many as it happens, was published in January 2020 agrees with my analysis. With the title, "A Review of Micronutrients and the Immune System-Working in Harmony to Reduce the Risk of Infection", this is what the study has to say.

> *It has since been established that the complex, integrated immune system needs multiple specific micronutrients, including vitamins A, D, C, E, B6, and B12, folate, zinc, iron, copper, and selenium, which play vital, often synergistic roles at every stage of the immune response. Adequate amounts are essential to ensure the proper function of physical barriers and immune cells; however, daily micronutrient intakes necessary to support immune function may be higher than current recommended dietary allowances.*
>
> *Certain populations have inadequate dietary micronutrient intakes, and situations with increased requirements (e.g., infection, stress, and pollution) further decrease stores within the body. Several micronutrients may be deficient, and even marginal deficiency may impair immunity. Although contradictory data exist, available evidence indicates that supplementation with multiple micronutrients with immune-supporting roles may modulate immune function and reduce the risk of infection. Micronutrients with the strongest evidence for immune support are vitamins C and D and zinc.* [37]

As for quercetin, perhaps of the greatest importance in fighting the COVID-19 virus, important human trials are being carried as I write this. The doctor in charge of these trials, Dr. Chrétien of the Montreal Clinical Research Institute in Canada, is of the highest reputation and international renown. Do you think he would be doing this if he did not have the confidence that quercetin is man's best hope in treating the virus that cause COVID-19?

What follows is my personal immune boosting regime which I submit purely for illustrative purposes to give you an idea on what supplements to use which should increase your chances from surviving a COVID-19 infection and help you to recover faster. What you do with this information is for you to decide and act upon.

I am 69 years of age going on 70 and I have an underlying medical condition of prostatitis, but I am not afraid. For reasons I have explained in this book and this chapter, I believe that my "survival protocol" will see me through the disease in the likely event that I will get COVID-19.



I am convinced that despite all the hype about finding a vaccine this will not happen because there are to many strains of the SARS-CoV-2. And if it does it will be like the flu vaccine, which can protect against one or more flu viruses, but flu keeps mutating as does the common cold. You can bet that COVID-19 will do the same. Already there are over 30 different strains. That is why despite decades of working on a vaccine for the common cold, there are over 200 viruses that cause the disease. So the only way for you to protect yourself is to make your immune system strong and I believe for me, this I have done. So here is what I am doing to boost my immune system and what I shall do should I get the disease.

Note: Any supplier or supplement brands I list here are for information purposes only. I am not affiliated or get any financial reward from any of them which I have listed.

1. Quercetin

I have been taking quercetin for about 12 years now for treatment of prostatitis pain and it has truly been a blessing. Also, I suffer terribly with hay fever since childhood but since I have taken quercetin hay fever is a thing of the past. I have also read that quercetin helps people with asthma too. So although I am suggesting taking quercetin as a pre-treatment for COVID-19, taking it anyway, I am sure, will help with those conditions too.

Taking quercetin should be at the top of your list for boosting your immune system, and I recommend taking at least quercetin 500 mg with vitamin C 500 mg or greater. These are the ones I tend to use.

Holland & Barret - quercetin 500 mg, vitamin C 1400 mg
Solgar Quercetin Complex with Ester-C - quercetin 500 mg, Vitamin C 500 mg, bromelain - 50 mg

You can always buy quercetin without vitamin C and buy vitamin C separately.

Doctors Best Quercetin Bromelain - quercetin 500 mg, bromelain - 250 mg
Lamberts Quercetin - quercetin 500 mg
Swanson High Potency Quercetin - 475 mg
Solaray Quercetin - quercetin 500 mg
Body First Quercetin with Bromelain - quercetin 800 mg, bromelain - 165 mg
Now Quercetin with Bromelain - quercetin 800 mg, bromelain - 165 mg

2. Vitamin C

Because I am getting vitamin C (500 mg +) with quercetin, I don't need to purchase any more. However, if I was not able to get this combination, I can always buy quercetin and vitamin C separately. It is important that both quercetin and vitamin C is taken together because, besides vitamin C helping to maximize your immune system against free radicals, this vitamin helps the absorption of quercetin.

Vitamin C is easily available I won't provide a list. There are many good brands that are selling 1000 mg vitamin C, these are the ones you need to buy. I don't bother with multivitamins because usually they only contain 50 mg to 100 mg of vitamin C.

2. Vitamin D3

Throughout the winter months I buy Vitamin D3 supplements of 4000 IU or above. These are readily available as soft gels (my favourite) or capsules. Here are some brands I use and others you might like to try. Don't bother with multivitamins because usually you will be lucky to get 100 to 200 mg of vitamin D3. They contain cholecalciferol, which is the same type of vitamin D3 which is made by the skin when exposed to sunlight.

Holland & Barret Vitamin D3 - vitamin D3 4000 IU
Nutravita Vitamin D3 - vitamin D3 4000 IU
Incite Vitamin Vitamin D3 - vitamin D3 4000 IU
Vita Premium Vitamin D3 - vitamin D3 4000 IU
Vitabright Vitamin D3 - vitamin D3 4000 IU

There are many others with lower IU which are fine, but you will need to take 3 or 4 a day of these which could prove very expensive. The minimum daily dose I take is 4000 IU. I tend to double up to 8000 IU from November to March.

The best way to get vitamin D3 is by exposing as much of our skin to the sun's rays as soon as you are able. The more of your skin that is exposed, the greater the concentration of vitamin D2 you will have. That is a no-brainer. I always usually begin in April when the sun is not so fierce, and over time gradually build a tan which protects me later in the summer when the sun's rays are stronger. I have been doing this for years and I have never had sunburn, even in the hottest sunshine or skin cancer.

4. Zinc

This is a tricky one. Unlike quercetin, vitamin C and vitamin D which the body has good tolerance of handling large doses of these, with zinc that is a different matter. Too much zinc over a long period of time is toxic to the body. Yet, zinc is a very importance mineral in your body that is involved in hundreds of chemical reactions and is important for immune function, acid-base balance, digestion, growth and development, skin and hair health, genetic transcription, antioxidant activity and much more. This means a balance has to be set that may differ from person to person.

The NHS recommends 9.5 mg a day for men (aged 19 to 64 years) and 7 mg a day for women. Most medical literature recommend a little more, 11 mg for men (maximum 40 mg) and 8 mg for women (maximum 40 mg) The Institute of Medicine set the tolerable upper limit for zinc at 40 milligrams a day for adults, less for teens and children. "The tolerable upper limit is the highest daily intake "likely to pose no risk of adverse health effects for almost all individuals."

It does look that a daily intake of 40 mg is the highest one should go (long term) that is. So how much zinc do I take? Not surprising with my prostatitis problem I have searched far and wide for a supplement which might help me. I found this with Doctor's Best Comprehensive Prostate Formula which I have been taking for years and it has 15 mg of zinc.

Vitamin D3 - 1000 IU
Vitamin B6 - 50 mg
Zinc (as zinc citrate) - 15mg
Selenium - 200 ug
Copper - 1 mg

I have had no side-effects with this dose of zinc. You may ask why copper and selenium is in the formula? Zinc can deplete copper in the body, so if you are taking supplemental zinc, you need to make sure you have adequate copper. As for selenium, it is known to strongly influence inflammation and immune responses. "The notion that Se "boosts" the immune system has been supported by studies involving ageing immunity or protection against certain pathogens." [38] In this book I have not investigated if this is true.

WebMD says that for people with mild zinc deficiency, recommendations suggest taking two to three times the recommended dietary allowance (RDA) of zinc for 6 months. [39] My comment: That would be a daily intake of between 22 mg to 33 mg which appears to be okay as it is within 40 mg, the highest daily limit recommended. In people with moderate to severe deficiency, recommendations suggest taking four to five times the RDA for 6 months. [40] My comment: That would be between 44 mg to 55 mg which seems to me to be a bit too much for such a long time.

If I add up my present supplement regime for keeping my immune system as strong as it can be my daily intake is as follows:

Qercetin - 500 mg
Vitamin C - 1400 mg
Vitamin D - 5000 IU (4000 IU plus 1000 IU with Prostate formula)
Zinc - 15 mg
Selenium - 200 ug
Copper - 1mg

What happens if I become infected with COVID-19?

1. I plan to double my quercetin, vitamin D and zinc dosage for 5 days or longer if I feel it necessary.

Qercetin - 1000 mg
Vitamin C - 1400 mg
Vitamin D - 5000 IU (4000 IU plus 1000 IU with Prostate formula)
Zinc - 15 mg
Selenium - 200 ug
Copper - 1 mg

2. It is recommended by the NHS that I can take paracetamol to reduce fever. However, I personally will not being doing this unless my temperature gets close to 39.4 °C (103 °F). It seems to me that I did take paracetamol then I would be acting against my immune system which has raised body temperature to kill the virus.

3. As soon as symptoms appear I shall steam inhale, with the aim of killing any COVID-19 virus laden droplets in the nose, and bronchial tubes. Evidence, suggests that this action reduces viral load, which means the immune system have fewer viruses to deal with. Just now, I have checked what is happening in hospitals in Sri Lanka who are treating patients with the COVID-19 coronavirus with this therapy and there have been no deaths since steam inhalation was introduced 8 April 2020 and 3 May 2020 at total of 25 days. I think that speaks for itself. Don't you?

It follows therefore that by boosting your immune system with quercetin, zinc vitamin C and D, this will reverse any deficiencies of these. This means that vulnerable people or anybody else for that matter who have these deficiencies will have a far better chance of surviving and cheating death should they succumb to the disease. This is the "Mother of Hopes" about which the heading of this chapter refers and I submit this for your attention, review and approval.

Please pass this book on to everyone you know and tell them that it can be downloaded free as a pdf. Please refer to my website teklinepublishing.co.uk for more details. Thank you for reading.

NOTES AND REFERENCES

Preface

[1] James Gallagher, "Coronavirus: How close are we to a vaccine or drug?", BBC News, 20 March 2020
[2] "Coronavirus (COVID-19)", NHS Website, Retrieved 20 March 2020
[3] Stephanie Pappas, "Is there a cure for the new coronavirus?" LiveScience, 14 March 2020
[4] Ajay Nair, "Coronavirus deaths in the UK rise to 144 as 3,269 test positive for COVID-19", The Guardian, 19 March 2020
[5] Rachael Kennedy, "Coronavirus: What are the 'underlying health conditions' at greater risk from illness?", Sky News, 17 March 2020
[6] Kristeen Cherney, "Infections in Pregnancy", Healthline Motherhood, 28 March 2016
[7] "Age and Cancer Risk", National Cancer Institute website, retrieved 20 March 2020
[8] "How Chemotherapy Affects the Immune System", breastcancer.org, 4 September 2014
[9] Ibid;
[10] Cindy Boren ,"A 21-year-old Spanish coach died from coronavirus. He didn't know he also had leukemia", New York Times, 17 March 2020 [11] "Leukemia: Cancer That Affects the Blood", RCCA (Regional Cancer Care Associates)

Chapter 1
A STUDY OF THE COVID-19 CORONAVIRUS

[1] Ann C. Palmenberg, (Institute for Molecular Virology, University of Wisconsin, Madison, WI 53706, USA), David Spiro, Ryan Kuzmicka, Shiliang Wang, Appolinaire Djikeng (Craig Venter Institute, Rockville, MD 20850, USA), Ann C. Palmenberg)Institute for Molecular Virology, University of Wisconsin, Madison, WI 53706, USA), Claire M. Fraser-Liggett (Institute for Genome Sciences, University of Maryland School of Medicine, Baltimore, MD 21201, USA) "Sequencing and Analyses of All Known Human Rhinovirus Genomes Reveal Structure and Evolution", Science, 3 April 2009, doi: 10.1126/science.1165557, PMID: 19213880
[2] "Q&A on coronaviruses (COVID-19)", WHO website, 9 March 2020
[3] "9 Things You Probably Didn't Know About Sneezing", HuffPost, 14 March 2014
[4] Thevarajan, I., Nguyen, T.H.O., Koutsakos, M. et al. Breadth of concomitant immune responses prior to patient recovery: a case report of non-severe COVID-19. Nat Med (2020). https://doi.org/10.1038/s41591-020-0819-2
[5] Ibid;

[6] Clive Cookson, "Coronavirus patient shows encouraging immune system fightback", Financial Times, 21 March 2020

Chapter 2
YOUR IMMUNE SYSTEM TO THE RESCUE

[1] "Major histocompatibility complex", Encycloepedia Britannica, retrieved 20 March 2020
[2] "Natural Killer (NK) Cells", NKMax website retrieved 20 March 2020. NKMax Health is a leading innovator of Natural Killer (NK) cell products in the health and wellness community, with the goal to help people in their quest for a healthier immune system.
[3] "Guidance on social distancing for everyone in the UK", gov.uk, Updated 23 March 2020
[4] Sellamuthu Subbanna Gounder, Basri Johan Jeet Abdullah, Nur Ezzati Izyan Binti Mohd Radzuanb, Farah Dalila Binti Mohd Zain, Nurhidayah Bt Mohamad Sait, Corine Chua, and Baskar Subramani corresponding author, "Effect of Aging on NK Cell Population and Their Proliferation at Ex Vivo Culture Condition", Analytical Cellular Pathology, Published online 2018 Aug 2. doi: 10.1155/2018/7871814, US National Library of Medicine, PMCID: PMC6098903, PMID: 30175033
[5] Jon Hazeldine, Janet M. Lord, "The impact of ageing on natural killer cell function and potential consequences for health in older adults", Aging Research Reviews, 2013 Sep; 12(4): 1069-1078. doi: 10.1016/j.arr.2013.04.003, NCBI (The National Center for Biotechnology) PMCID: PMC4147963, PMID: 23660515

Chapter 3
BORIS'S MIRACLE? TWELVE WEEKS TO SALVATION

[1] "SARS (severe acute respiratory syndrome)", NHS website. "SARS (severe acute respiratory syndrome) is caused by the SARS coronavirus, known as SARS CoV."
[2] Yong Xiong and Nectar Gan, "This Chinese doctor tried to save lives, but was silenced. Now he has coronavirus", CNN, 4 February, 2020
[3] World Health Organization. "Novel Coronavirus (2019-nCoV) SITUATION REPORT - 1, 20 January 2020", Geneva: WHO; 2020
[4] Gordon Rayner, "Michael Gove accuses China of hiding true scale of coronavirus crisis amid mounting diplomatic row", The Telegraph, 29 March 2020
[5] Congressional-Executive Commission on China (U.S.) (27 October 2016). Congressional-Executive Commission on China Annual Report 2016. Government Printing Office. pp. 71-. ISBN 978-0-16-093479-7.
[6] Wang Jiaxing, "Before Zhong Nanshan spoke, the doctor in Wuhan issued an outbreak alert to a nearby school", China Youth Daily, 28 January. In Chinese, but translated by Google into English. (mp.weixin.qq.com/s/IzzCnz4Yr2jEIYZePiu_ow)
[7] YouTube video (watch?v=IQH4zHX0_aA) Reported by Mengzhe & Wang Xiaoying Edited by Liu Hao
[8] Ciarian McGTrath, "Coronavirus breakthrough: 'Patient Zero' at Wuhan market REVEALED", Daily Express, 27 March 2020

[9] YouTube video (watch?v=IQH4zHX0_aA) Reported by Mengzhe & Wang Xiaoying Edited by Liu Hao
[10] Ibid;
[11] Ibid;
[12] Ibid;
[13] Han Qian, "Disciplined Wuhan Doctor: 11 Days after being infected by a patient, he was admitted to an Isolation Ward", China Digital Times, 27 January, 2020 - Copy of transcript interview with Dr. Li, which has repeadly been removed by the Chinese Government, but preserved by the Chinese Digital Times, an independent, bilingual media organization that brings uncensored news and online voices from China to the world.
[14] Ibid;
[15] Yong Xiong and Nectar Gan, "This Chinese doctor tried to save lives, but was silenced. Now he has coronavirus", CNN, 4 February, 2020
[16] Ibid;
[17] Lily Kuo, "Coronavirus: Wuhan doctor speaks out against authorities", The Guardian, 11 March 2020
[18] Yong Xiong and Nectar Gan, "This Chinese doctor tried to save lives, but was silenced. Now he has coronavirus", CNN, 4 February, 2020
[19] Professor Chaolin Huang, "Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China", Jin Yin-tan Hospital, The Lancet, 15 February 2020, Volume 395, Issue 10223, P497-506
[20] Yong Xiong and Nectar Gan, "This Chinese doctor tried to save lives, but was silenced. Now he has coronavirus", CNN, 4 February, 2020
[21] Ibid;
[22] Tobias Hoonhout, "Chinese Authorities Gagged Laboratories in December over Coronavirus-SARS Connection", National Review, 17 March 2020 [23] "Chinese scientists destroyed proof of virus in December", The Times 17 March 2020
[24] Tan WJ, Zhao X, Ma XJ, Wang WL, Niu PH, Xu WB, et al. "A novel coronavirus genome identified in a cluster of pneumonia cases - Wuhan, China 2019-2020." China CDC Weekly 2020;2(4):61 -2. http://weekly.chinacdc.cn/en/article/ccdcw/2020/4/61
[25] Chen Xiaoxue, "New crown pneumonia", Github. 19 February, 2020. GitHub os open platform for backing up deleted articles by the Chinese government on platforms such as WeChat and Weibo.
[26] Jason Gale, "China Pneumonia Outbreak Spurs WHO Action as Mystery Lingers", Bloomberg, 4 January 2020
[27] "Timeline: How the new coronavirus spread", AlJazeera News
[28] Zhang Yisu, "Experts claim that the new coronavirus is of unknown origin in Wuhan", Xinhua News Agency, 9 January 2020
[29] Ibid; [30] Lisa Schnirring,"Japan has 1st novel coronavirus case; China reports another death", CIDRAP (Center for Infectious Disease Research and Policy), 16 January 2020
[31] Rebecca Ratcliffe, "Coronavirus: first human transmission in Thailand as death toll hits 258", The Guardian, 31 January 2020
[32] Jack Dickens, "Why is Germany able to test for coronavirus so much more than the UK?", Reaction, 31 March 2020
[33] Rob Schmitz, "Why Germany's Coronavirus Death Rate Is Far Lower Than In Other Countries", NPR, 25 March 2020

Chapter 4
MOTIVE, COVER-UP AND LIES EXPOSED BY DNA

[1] Cullum Hoare, "Concealing the truth' Chinese whistleblower speaks out on COVID-19 outbreak in Wuhan", The Daily Express, 2 April 2020
[2] China Mike, "The Cult of "Face" in China", 10 January 2020
[3] Xu Zhangrun, Translated and Annotated by Geremie R. Barmé, "Viral Alarm: When Fury Overcomes Fear", ChinaFile, 5 February 2020
[4] Rachael Rettner, "The new coronavirus: Your questions answered", LifeScience, March 2020
[5] Anahad O'Connor, "The Claim: Identical Twins Have Identical DNA", New York Times, 11 March 2008
[6] Ranjit Sah, Alfonso J. Rodriguez-Morales, Runa Jha, Daniel K. W. Chu, Haogao Gu,d Malik Peiris,d Anup Bastola, Bibek Kumar Lal,f Hemant Chanda Oj, "Complete Genome Sequence of a 2019", American Society for Microbiology, Volume 9 Issue 11 e00169-20
[7] Emily Schrader, "China is no role model for coronavirus containment - or anything else", The Jerusalem Post, 15 March 2020
[8] WHO website, who.int/emergencies/diseases/novel-coronavirus-2019
[9] Ibid;
[10] Tedros Adhanom Ghebreyesus, "WHO Director-General's remarks at the media briefing on 2019-nCoV on 11 February 2020", WHO website
[11] Don Reisinger, "Germany has remarkably few COVID-19 deaths. Its healthcare system shows how Germany prevented a runaway death toll", Business Insider, 2 April 2020
[12] Ibid;
[13] Ibid;
[14] Cormac Sheridan, "Coronavirus and the race to distribute reliable diagnostics", Nature, 19 February 2020, Nature Biotechnology ISSN 1546-1696
[15] Ibid;
[16] Don Reisinger, "Germany has remarkably few COVID-19 deaths. Its healthcare system shows how Germany prevented a runaway death toll", Business Insider, 2 April 2020
[17] Ibid;
[18] "New Virus is no Reason for Alarmism",RP Online, 22 January 2020, translated by Google Tranlate
[19] Alexandre Hassanin, "Coronavirus Could Be a 'Chimera' of Two Different Viruses, Genome Analysis Suggests", Science Alert, 24 March 2020
[20] Chan JF Kok KH Zhu Z et al., "Genomic characterization of the 2019 novel human-pathogenic coronavirus isolated from a patient with atypical pneumonia after visiting Wuhan! Emerging Microbes and Infections. 2020; 9: 221-236
[21] Laura Spinny, "When will a coronavirus vaccine be ready?", The Guardian, 5 April 2020
[22] Cascella M, Rajnik M, Cuomo A, Dulebohn SC, Di Napoli R, "Features, Evaluation and Treatment Coronavirus (COVID-19", StatPearls Publishing LLC, 2020
[23] Zhao, Z., Li, H., Wu, X. et al. Moderate mutation rate in the SARS coronavirus genome and its implications. BMC Evolutinary Biology 4, 21 (2004). https://doi.org/10.1186/1471-2148-4-21
[24] T. Koyama, D. Platt & L. Parida. Variant analysis of COVID-19 genomes. [Submitted]. Bulletin World Health Organisation. E-pub: 24 February 2020. doi: http://dx.doi.org/10.2471/BLT.20.253591

[25]Shanker, Arun & Bhanu, Divya & Alluri, Anajani. (2020). Analysis of Whole Genome Sequences and Homology Modelling of a 3C Like Peptidase and a Non-Structural Protein of the Novel Coronavirus COVID-19 Shows Protein Ligand Interaction with an Aza-Peptide and a Noncovalent Lead Inhibitor with Possible Antiviral Properties. 10.31219/osf.io/2zuea
[26] T. Koyama, D. Platt & L. Parida. Variant analysis of COVID-19 genomes. [Submitted]. Bulletin World Health Organisation. E-pub: 24 February 2020. doi: http://dx.doi.org/10.2471/BLT.20.253591
[27] Chanel Georgina, "Coronavirus cure hope: Blood of recovered victims helps ICU patient come off ventilation", Daily Express, 8 April 2020
[28] Yan Zhang, "Coagulopathy and Antiphospholipid Antibodies in Patients with Covid-19", The New England Journal of Medicine, 29 April 2020
[29] Alexandra C.Walls, Young-JunPark, AlejandraTortorici, AbigailWall, Andrew T.McGuire, DavidVeesler, "Structure, Function, and Antigenicity of the SARS-CoV-2 Spike Glycoprotein", Cell, 9 March 2020, https://doi.org/10.1016/j.cell.2020.02.058
[30] Kathy Gilsinan, "How China Deceived the WHO", The Atlantic, 12 April 2020
[31] Hollie McKay, "How complicit is the WHO in China's coronavirus cover-up?", Fox News, 22 April 2020
[32] Dr. Liji Thomas, "Mutations in novel coronavirus make it more dangerous", News Medical Life Sciences, 20 April 2020
[33]
[34] Richard Hartley-Parkinson, "Coronavirus mutated into three distinct strains as it spread across the world", Metro, 10 April 2020
[35] Ibid;
[36] Ibid;
[37] "Patient-derived mutations impact pathogenicity of SARS-CoV-2", medRxiv 14 April 2020

Chapter 5
COULD SARS BE OUR HOPE FOR SALVATION?

[1] Shigeru Omi, "SARS: How a Global Epidemic Was Stopped", WHO, 2006
[2] Julia Hollingsworth, "A lot has changed since China's SARS outbreak 17 years ago. But some things haven't", CNN, 25 January 2020
[3] "Situation update worldwide, as of 9 April 2020", European Centre for Disease Prevention and Control
[4] "Outbreak of novel coronavirus disease 2019 (COVID-19): situation in Italy", © European Centre for Disease Prevention and Control, Stockholm, 2020
[5] "2003 July 05: World Health Organization declares SARS contained", This Day in History, history.com
[6] Alex Krupp, "Conference call with Coronavirus expert", fwdeveryone.com, 6 February 2020
[7] Dr Jyoti Somani and Professor Paul Tambyah, "Commentary: Hot and humid weather may end the novel coronavirus - as well as the development of a vaccine!", CNA (Channel News Asia), 5 February 2020
[8] Kun Lin, Daniel Yee-Tak Fong, Johan Karlberg, "Epidemiology & Infection, 2006 Apr; 134(2): 223-230 PMCID: PMC2870397, PMID: 16490124
[9] Ibid;
[10] Qasim Bukhari, Yusuf Jameel, "Will Coronavirus Pandemic Diminish by Summer?", SSRN, 19 Mar 2020

[11] K. H. Chan, J. S. Malik Peiris, S. Y. Lam, L. L. M. Poon, K. Y. Yuen, and W. H. Seto, "The Effects of Temperature and Relative Humidity on the Viability of the SARS Coronavirus", Advances in Virology, Volume 2011 doi.org/10.1155/2011/734690
[12] Ibid;
[13] Ibid;
[14] Paul Withers, "Disturbing coronavirus temperature map shows worst hot spots for virus to spread", Daily Express, 20 March 2020
[15] Ibid;
[16] Michelle Roberts, "Most coronavirus deaths occurring in hospitals", BBC News, 7 April 2020[14] Paul Withers, "Disturbing coronavirus temperature map shows worst hot spots for virus to spread", Daily Express, 20 March 2020
[15] Ibid;
[16] Michelle Roberts, "Most coronavirus deaths occurring in hospitals", BBC News, 7 April 2020

Chapter 6
SYMPTONS, IMMUNE SYSTEM AND A TREATMENT THAT WORKS

[1] "I owe them my life": UK PM Boris Johnson praises medics in his first comments after being releases from ICU", The Economic Times, 12 April 2020
[2] "Management - confirmed coronavirus (COVID-19)", england.nhs.uk
[3] Ibid;
[4] "Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)", WHO, 16-24 February 2020
[4] Ibid;
[5] "Q&A on coronaviruses (COVID-19)", WHO, 8 April 2020
[6] Ibid; [7] Stephen A. Lauer, MS, PhD; Kyra H. Grantz, BA; Qifang Bi, MHS; Forrest K. Jones, MPH; Qulu Zheng, MHS; Hannah R. Meredith, PhD; Andrew S. Azman, PhD; Nicholas G. Reich, PhD; Justin Lessler, PhD, "The Incubation Period of Coronavirus Disease 2019 (COVID-19) From Publicly Reported Confirmed Cases: Estimation and Application", Annals of Internal Medicine, 10 March 2020
[8] Ibid;
[9] "Self-isolation if you or someone you live with has symptoms", NHS, nhs.uk
[10] Natalie Rahhal, "More than 80% of coronavirus patients only get mild symptoms, like a cough and fever, and most recover quickly from their infections, Chinese data reveals", Mail Online, 20 March 2020
[11] "Body temperature norms", MedlinePlus. MedlinePlus is a service of the National Library of Medicine (NLM), the world's largest medical library, which is part of the National Institutes of Health (NIH)
[12] "What causes a fever?", Scientific American, 21 November 2005
[13] "The Effect of Sleep on the Immune System", Valley Sleep Center, 24 April 2017
[14] Nayyab Asif, "Human immune system during sleep", American Journal of Clinical and Experimental Immunology, 2017; 6(6): 92-96, 20 December 2017
[15] "Natural Killer Cells Need A Good Night's Sleep", Science Daily, 26 January 2018 reviewing Center For The Advancement Of Health, UPMC Health Systems (UPMC) Western Psychiatric Institute and Clinic in Pittsburgh

[16] Stoyan Dimitrov, "Gas-coupled receptor signaling and sleep regulate integrin activation of human antigen-specific T cells", Journal of Experimental Medicine, Volume 216, Issue 34, March 2019
[17] Casali P., Trinchieri G. (1984) Natural Killer Cells in Viral Infection. In: Notkins A.L., Oldstone M.B.A. (eds) Concepts in Viral Pathogenesis. Springer, New York, NY
[18] Mary E. Ross, Michael A. Caligiuri, "Cytokine-Induced Apoptosis of Human Natural Killer Cells Identifies a Novel Mechanism to Regulate the Innate Immune Response", Blood, Ash Publications (1997) 89 (3): 910-918
[19] Andrea Downey, reviewed by Dr Sarah Jarvis MBE, "COVID-19 coronavirus: what is an underlying health condition?", Patient, 25 March 2020
[20] Dawei Wang, MD1; Bo Hu, MD1; Chang Hu, MD1; et al, "Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China", JAMA, 7 February 2020
[21] What to know about sugar detox symptoms, "Medical News Today, Article 326575
[22] "ICNARC report on COVID-19 in critical care", 27 March 2020
[23] Connor Boyd, "What's the TRUE risk of dying from coronavirus if you are in hospital? NHS data shows 66% of patients hooked up to ventilators will succumb to the killer infection", Mail Online, 2 April 2020
[24] "Expert Reaction to ICNARC Report on the first reported 775 patients critically ill with covid-19", Science Media Centre, 29 March 2020
[25] "Overview Pneumonia", NHS website, nhs.uk
[26] "What are the symptoms of viral pneumonia?", Medical News Today
[27] "Fever in adults", NHS Inform (Scotland), nhsinform.scot
[28] "What Temperature is Considered a Fever in Adults? Doctors Explain the Most Common Coronavirus Symptom", Heath Magazine, Meredith Health Group
[29] Sophie Park, Jon Brassey, Carl Heneghan, Kamal Mahtani, "Managing Fever in adults with possible or confirmed COVID-19 in Primary Care", CBEM (Centre for Evidence-Based Medicine), Oxford Univesity COVID-19 Evidence Service, updated 18 March 2020
[30] "Fever: Overview", Mayo Clinic, mayoclinic.org
[31] Ibid;
[32] "Hyperpyrexia: What to know about a high fever", Medical News Today
[33] Sten Madsbad, "COVID-19 Infection in People with Diabetes", Touch Endorcrinology
[34] Maryn McKenna, "The Ibuprofen Debate Reveals the Danger of Covid-19 Rumors", Wired, 26 March 2020
[35] Rob Picheta, "France says ibuprofen may aggravate coronavirus. Experts say more evidence is needed", CNN Health, 18 March 2020
[36] "Updated: WHO Now Doesn't Recommend Avoiding Ibuprofen For COVID-19 Symptoms", Science Alert, 17 March 2020
[37] "Ibuprofen for adults (including Nurofen)", NHS, nhs.uk/medicines/ibuprofen-for-adults/
[38] "False claim: Steam therapy kills coronavirus", Reuters, 30 March 2020
[39] Nanda, Manpreet. (2015). Efficacy of Steam Inhalation with Inhalant Capsules in Patients with Common Cold in a Rural Set Up. IOSR Journal of Dental and Medical Sciences. 14. 10.9790/0853-14123741
[40] "Breast Cancer Prevention and Cure: Your Choice!" (2006), "Breast Cancer: Cause - Prevention - Cure", (2007, 2011), "Tyranny of the Bra: In Ten Studies The New Evidence", 2019

[41] Jack Goodman, "Coronavirus: Fake and misleading stories that went viral this week", BBC News, 4 April 2020
[42] Kate Hilpern, "How to treat colds without drugs", The Independent, 2 Novermber 2010
[43] Hei SVD, McKinstry S, Bardsley G, et alRandomised controlled trial of rhinothermy for treatment of the common cold: a feasibility studyBMJ Open 2018;8:e019350. doi: 10.1136/bmjopen-2017-019350
[44] Ibid;
[45] Meenu Singh, Manvi Singh, "Heated, humidified air for the common cold", Cochrane Acute Respiratory Infections Group, 4 June 2013
[46] David Church, GP, "Steam inhalation therapy", Br J Gen Pract. 2012 Nov; 62(604): 571.PMCID: PMC3481493, PMID: 23211156, doi: 10.3399/bjgp12X658179
[47] "Dankotuwa Porcelain Manufactures Customized Steam Inhalers fit for use at Homes and Healthcare Establishments", The Island, 10 April 2020. See also: "Dankotuwa Porcelain manufactures customized steam inhalers for homes and healthcare enterprises", Colombo Page, Sri Lanka Internet Newsletter, 9 April 2020
[48] Ibid;
[49] Ibid;
[50] "Dr. Charith Ishan Janendra Nanayakkara", CeylonMediWeb, ceylonmediweb.com
[51] "Dankotuwa Porcelain makes steam inhalers fit for homes & healthcare establishments", Lanka Business Online, 8 April 2020
[52] "SL performs well in fighting Coronavirus & ranked 9 in GRID Index", Daily Mirror Online, 19 April 2020
[53] Personal email from Dr. Charith Nanayakkara, 20 April 2020
[54] Xi Li; Forshing Lui, "Anosmia", StatPearls Publishing LLC, PMID: 29489163
[55] "Anosmia as a potential marker of COVID-19 infection - an update", ENT UK, 1 April 2020
[56] Steven D. Munger, "Is the loss of your sense of smell and taste an early sign of COVID-19?", The Conversation, 27 March 2020
[57] Xi Li; Forshing Lui, "Anosmia", StatPearls Publishing, NCBI NBK482152, 29 March 2020
[58] Sue Reid, "Is this proof 'life-saving' ventilators are actually deathtraps? Their success rate is appalling and medics are increasingly worried they may do more harm than good, disturbing report reveals", MailOnline, 17 April 2020
[50] Ibid;

Chapter 7
HOW I GOT INVOLVED IN DESIGNING THE "DANKOTUWA INHALER" AND RESULTS FROM ITS USAGE BY COVID-19 PATIENTS IN HOSPITALS IN SRI LANKA

Not Applicable

Chapter 8
REASONS TO HOPE

[1] Rebecca Perring,"China threatens EU: Gag criticism of Beijing's coronavirus LIES or face consequences", Express, 26 April 2020. "CHINA has been accused of openly threatening the EU - warning Brussels to block a report alleging Beijing was deliberately spreading disinformation about the coronavirus outbreak, or face the consequences."
[2] "China accused of Sars cover-up", The Guardian, 9 April 2003
[3] Rebecca Perring,"China threatens EU: Gag criticism of Beijing's coronavirus LIES or face consequences", Express, 26 April 2020. "CHINA has been accused of openly threatening the EU - warning Brussels to block a report alleging Beijing was deliberately spreading disinformation about the coronavirus outbreak, or face the consequences."
[4] "Wuhan City Public Security Bureau Wuchang Branch Zhongnan Road Street Police Station

The Letter of Admonition

[5] Da Zhong Small, "Wuhan Municipal Health Commission on the current situation of pneumonia in our city", Wuhan Principle Health Commision, 31 December 2019
[6] "Pneumonia of unknown cause - China> Emergencies preparedness, response", WHO Disease outbreak news, 5 January 2020
[7] Ibid;
[8] Shadi Hamid, "China Is Avoiding Blame by Trolling the World", The Atlantic, 19 March 2020
[9] Ibid;
[10] Emily Wong, "Where Did This Coronavirus Originate? Virus Hunters Find Genetic Clues In Bats", NPR, 15 April 2020
[11] "WHO experts see more evidence linking COVID-19 to bats", Manilla Bulletin, 12 February, 2020
[12] Ye Yi, Philip N.P. Lagniton, Sen Ye, Enqin Li, and Ren-He Xu, "COVID-19: what has been learned and to be learned about the novel coronavirus disease", International Journal of Biological Sciences, 2020; 16(10): 1753-1766
[13] Will Stuart, "Wuhan laboratory scientists 'did absolutely crazy things' to alter coronavirus and enabled it to infect humans, Russian microbiologist claims", MailOnline, 23 April 2020
[14] Prof Annelies Wilder-Smith, MD, Calvin J Chiew, MPH, Vernon J Lee, PhD, "Can we contain the COVID-19 outbreak with the same measures as for SARS?", The Lancet, 5 March 2020
[15] Ye Yi, Philip N.P. Lagniton, Sen Ye, Enqin Li, and Ren-He Xu, "COVID-19: what has been learned and to be learned about the novel coronavirus disease", International Journal of Biological Sciences, 2020; 16(10): 1753-1766
[16] "Q&A on coronaviruses (COVID-19)", WHO website, 17 April 2020
[17] "Frequently Asked Questions About SARS", CDC, last reviewed: 3 May 2005
[18] Ibid;

[19] "What is Coronavirus, what are its symptoms, and when should I call a doctor?", The Guardian, 17 April 2020
[20] "SARS-CoV-2: Study confirms previous incubation period estimates", Medical News Today
[21] Prof Annelies Wilder-Smith, MD, Calvin J Chiew, MPH, Vernon J Lee, PhD, "Can we contain the COVID-19 outbreak with the same measures as for SARS?", The Lancet, 5 March 2020
[22] Ye Yi, Philip N.P. Lagniton, Sen Ye, Enqin Li, and Ren-He Xu, "COVID-19: what has been learned and to be learned about the novel coronavirus disease", International Journal of Biological Sciences, 2020; 16(10): 1753-1766
[23] "Chinese scientists destroyed proof of virus in December", Sunday Times, 1 March 2020
[24] Nicole Wetsman, "Rapid global response to the new coronavirus shows progress made since SARS", The Verge, 22 January 2020
[25] Ibid;
[26] Karen J. Monaghan, "SARS down but still a threat", Institute of Medicine (US) Forum on Microbial Threats; Knobler S, Mahmoud A, Lemon S, et al., editors. Washington (DC): National Academies Press (US); 2004
[27] Jiang Wu, Fujie Xu, Weigong Zhou, Daniel R. Feikin, Chang-Ying Lin, Xiong He, Zonghan Zhu,§ Wannian Liang, Daniel P. Chin, and Anne Schuchat, "Risk Factors for SARS among Persons without Known Contact with SARS Patients, Beijing, China", Emerging Infectious Diseases, 2004 Feb; 10(2): 210-216. doi: 10.3201/eid1002.030730
[28] Zhihong Liao, "The Clinical Features of SARS Patients with Diabetes or Secondary Hyperglycemia", American Diabetes Association, 64th Scientific Sessions (2004),Abstract Number: 2039-PO
[29] "People Who Are at Higher Risk for Severe Illness", CDC website, last reviewed: 7 April 2020
[30] Elizabeth Cheung, "Coronavirus: with infection rate slowing to a crawl, is it time for Hongkongers to relax a bit? Here's what you need to know", South China Morning News, 21 April 2020
[31] Dr A Sahib Mehdi El-Radhi, "Why is the evidence not affecting the practice of fever management? Arch Dis Child 2008;93:918-20
[32] "How to Tell When a Fever in Adults Is Serious", Healthline
[33] "Fever Overview", Mayo Clinic
[34] Nicoletta Lanese, "Are ventilators being overused on COVID-19 patients?", Live Science, April 2020
[35] Ariana Eunjung Cha, "Coronavirus: 88% of Covid-19 patients on ventilators didn't survive in New York's hospital system, study finds", Independent, 24 April 2020
[36] Michael Pooler and Bethan Staton, "Doctors debate when best to place virus patients on ventilators", Financial Times, 27 April 2020
[37] Gary Skentelbury, "Warrington Hospital leading the way in cutting COVID-19 death rates", Warrington Worldwide, 23 April 2020
[38] "Life saving breathing aid developed to keep COVID-19 patients out of intensive care", NIHR (National Institute of Health Research), 30 March 2020
[39] "UCL-Ventura breathing aid (CPAP) - Design and manufacturing package", UCL
[40] Ibid;

Chapter 9
THE MOTHER OF ALL HOPES

[1] "Rights Risks to Older People in COVID-19 Response", Human Rights Watch, 7 April 2020
[2] Xavier Camous, Alejandra Pera, Rafael Solana, and Anis Larbi,"NK Cells in Healthy Aging and Age-Associated Diseases", BioMed Research International, Volume 2012 |Article ID 195956 | 8 pages | https://doi.org/10.1155/2012/195956
[3] Sellamuthu Subbanna Gounder, Basri Johan Jeet Abdullah, Nur Ezzati Izyan Binti Mohd Radzuanb, Farah Dalila Binti Mohd Zain, Nurhidayah Bt Mohamad Sait, Corine Chua, and Baskar Subramani corresponding author, "Effect of Aging on NK Cell Population and Their Proliferation at Ex Vivo Culture Condition", Analytical Cellular Pathology, Published online 2018 Aug 2. doi: 10.1155/2018/7871814, US National Library of Medicine, PMCID: PMC6098903, PMID: 30175033
[4] Angka, L., Martel, A.B., Kilgour, M. et al. Natural Killer Cell IFN? Secretion is Profoundly Suppressed Following Colorectal Cancer Surgery. Annals of Surgical Oncology volume 25, 3747-3754 (2018). https://doi.org/10.1245/s10434-018-6691-3
[5] Mocchegiani E, Romeo J, Malavolta M, Costarelli L, Giacconi R, Diaz LE, Marcos A. Zinc: dietary intake and impact of supplementation on immune function in elderly. Age (Dordr). 2013 Jun;35(3):839-60. doi: 10.1007/s11357-011-9377-3. Epub 2012 Jan 6. PMID: 22222917; PMCID: PMC3636409
[6] Ohio State University, "Zinc helps against infection by tapping brakes in immune response", Science Daily, 7 February 2013
[7] Mocchegiani E, Romeo J, Malavolta M, Costarelli L, Giacconi R, Diaz LE, Marcos A, "Zinc: dietary intake and impact of supplementation on immune function in elderly", Age (Dordr). 2013 Jun;35(3):839-60. doi: 10.1007/s11357-011-9377-3. Epub 2012 Jan 6. PMID: 22222917; PMCID: PMC3636409
[8] Haase H, Rink L, "The immune system and the impact of zinc during aging." Immunity and Ageing, 2009 Jun 12;6:9. doi: 10.1186/1742-4933-6-9. PMID: 19523191; PMCID: PMC2702361
[9] Anatoly V. Skalny, "Zinc and respiratory tract infections: Perspectives for COVID-19 (Review)", International Journal of Molecular Medicine, 13 April 2020, DOI: 10.3892/ijmm.2020.4575 (Sechenov First Moscow State Medical University (Sechenov University), 119146 Moscow)
[10] te Velthuis AJ, van den Worm SH, Sims AC, Baric RS, Snijder EJ, van Hemert MJ. Zn(2+) inhibits coronavirus and arterivirus RNA polymerase activity in vitro and zinc ionophores block the replication of these viruses in cell culture. PLoS Pathog. 2010 Nov 4;6(11):e1001176. doi: 10.1371/journal.ppat.1001176. PMID: 21079686; PMCID: PMC2973827
[11] Tod Neff, "Coronavirus: To zinc or not to zinc?", UCHealth, 25 March 2020
[12] Ibid;

[13] Rondanelli M, Miccono A, Lamburghini S, Avanzato I, Riva A, Allegrini P, Faliva MA, Peroni G, Nichetti M, Perna S. Self-Care for Common Colds: The Pivotal Role of Vitamin D, Vitamin C, Zinc, and Echinacea in Three Main Immune Interactive Clusters (Physical Barriers, Innate and Adaptive Immunity) Involved during an Episode of Common Colds-Practical Advice on Dosages and on the Time to Take These Nutrients/Botanicals in order to Prevent or Treat Common Colds. Evid Based Complement Alternat Med. 2018 Apr 29;2018:5813095. doi: 10.1155/2018/5813095. PMID: 29853961; PMCID: PMC5949172. See also: Hunter N.B. Moseley, "Current Evidence Supporting the Use of Orally Administered Zinc in the Treatment of COVID-19", University of Kentucky, Lexington KY, United States
[14] Lei Zhang, Yunhui Liufrom "Potential interventions for novel coronavirus in China: A systematic review", Journal of Medical Virology, 13 February 2020, doi.org/10.1002/jmv.25707. Department of Neurosurgery, Shengjing Hospital of China Medical University, Shenyang, Liaoning, China
[15] Hunter N.B. Moseley, "Current Evidence Supporting the Use of Orally Administered Zinc in the Treatment of COVID-19", University of Kentucky, Lexington KY, United States
[16] Meenakshi Ponnana, Ramya Sivangala, Lavanya Joshi, Shruthi Thada, Vijaya Lakshmi Valluri, Suman latha Gaddam, "Effect of vitamin D levels on natural killer cells in diabetes mellitus patients with tuberculosis", European Respiratory Journal 2014 44: P2685
[17] MacLaughlin J, Holick MF, "Aging decreases the capacity of human skin to produce vitamin D3", Journal of Clinical Investigation, 1985;76(4):1536-1538. doi:10.1172/JCI112134
[18] Adda Bjarnadottir, MS, RDN, "How Much Vitamin D Should You Take For Optimal Health?", Healthline, 4 June 2017
[19] Mike Mcrae, "COVID-19 Deaths Are Being Linked to Vitamin D Deficiency. Here's What That Means", Science Alert, 1 May 2020
[20] Frank H. Lau, Rinku Majumder, Radbeh Torabi, Fouad Saeg, Ryan Hoffman, Jeffrey D. Cirillo, Patrick Greiffenstein, "Vitamin D insufficiency is prevalent in severe COVID-19", 28 April, 2020' doi: doi.org/10.1101/2020.04.24.20075838
[21] Robert A Brown, "Is ethnicity linked to incidence or outcomes of covid-19?", British Medical Journal 2020;369:m1548. doi.org/10.1136/bmj.m1548
[22] Ajabshir. S., Asif, A., Nayer, A., (2014). "The effects of vitamin D on the renin-angiotensin system", Journal of Nephropathology. 3(2): 41-43. doi: 10.12860/jnp.2014.09
[23] Mark Alipio, "Vitamin D Supplementation Could Possibly Improve Clinical Outcomes of Patients Infected with Coronavirus-2019 (COVID-2019)", SSRN, 9 April 2020
[24] Shams, B., Afshari, E., Tajadini, M., Keikha, M., Qorbani, M., Heshmat, R., Motlagh, M. E., & Kelishadi, R. (2016). The relationship of serum vitamin D and Zinc in a nationally representative sample of Iranian children and adolescents: The CASPIAN-III study. Medical journal of the Islamic Republic of Iran, 30, 430.
[25] Ibid;
[26] "Vitamin D crucial to activating immune defenses", Science Daily, 8 March 2020, University of Copenhagen; Journal Reference: von Essen et al. "Vitamin D controls T cell antigen receptor signaling and activation of human T cells", Nature Immunology, 2010; DOI: 10.1038/ni.1851
[27] Caroline O'Neill, "Renowned researchers inducted into hall of fame", CMAG News, 4 May 2017

[28] ByLori Alton, "Breaking NEWS: Can quercetin help us to avoid the threat of coronavirus infection?", Journalonline, 23 March 2020
[29] Ling Yi, Zhengquan Li, Kehu Yuan, Xiuxia Qu, Jian Chen, Guangwen Wang, Hong Zhang, Hongpeng Luo, Lili Zhu, Pengfei Jiang, Lirong Chen, Yan Shen, Min Luo, Guoying Zuo, Jianhe Hu, Deliang Duan, Yuchun Nie, Xuanling Shi, Wei Wang, Yang Han, Taisheng Li, Yuqing Liu, Mingxiao Ding, Hongkui Deng, Xiaojie Xu, "Small Molecules Blocking the Entry of Severe Acute Respiratory Syndrome Coronavirus into Host Cells", Journal of Virology Sep 2004, 78 (20) 11334-11339; DOI: 10.1128/JVI.78.20.11334-11339.2004
[30] Li, Y., Yao, J., Han, C., Yang, J., Chaudhry, M. T., Wang, S., Liu, H., & Yin, Y. (2016). "Quercetin, Inflammation and Immunity". Nutrients, 8(3), 167. doi.org/10.3390/nu8030167
[31] ByLori Alton, "Breaking NEWS: Can quercetin help us to avoid the threat of coronavirus infection?", Journalonline, 23 March 2020
[32] Ibid;
[33] Mohammad Farazuddin, Rahul Mishra, Yaxun Jing, Vikram Srivastava, Adam T. Comstock, Umadevi S. Sajjan, "Quercetin prevents rhinovirus-induced progression of lung disease in mice with COPD phenotype", Plos One, 5 July 2018
[34] Nick Taylor-Vaisey, "A made-in-Canada solution to the coronavirus outbreak?", Maclean's Magazine, 24 February 2020
[35] Askari, Gholamreza et al. "The effect of quercetin supplementation on selected markers of inflammation and oxidative stress." Journal of research in medical sciences : the official journal of Isfahan University of Medical Sciences vol. 17,7 (2012): 637-41
[36] Glinsky, Gennadi (2020): Vitamin D, Quercetin, and Estradiol manifest properties of candidate medicinal agents for mitigation of the severity of pandemic COVID-19 defined by genomics-guided tracing of SARS-CoV-2 targets in human cells. ChemRxiv. Preprint. doi.org/10.26434/chemrxiv.12052512.v7
[37] Gombart AF, Pierre, Maggini, "A Review of Micronutrients and the Immune System-Working in Harmony to Reduce the Risk of Infection", Nutrients, 2020 Jan 16;12(1). pii: E236. doi: 10.3390/nu12010236
[38] Glinsky, Gennadi (2020): Vitamin D, Quercetin, and Estradiol manifest properties of candidate medicinal agents for mitigation of the severity of pandemic COVID-19 defined by genomics-guided tracing of SARS-CoV-2 targets in human cells. ChemRxiv. Preprint. doi.org/10.26434/chemrxiv.12052512.v7
[39] "Zinc: Dosing", WebMD, webmd.com/vitamins/ai/ingredientmono-982/zinc
[40] Ibid;
[41] Glinsky, Gennadi (2020): Vitamin D, Quercetin, and Estradiol manifest properties of candidate medicinal agents for mitigation of the severity of pandemic COVID-19 defined by genomics-guided tracing of SARS-CoV-2 targets in human cells. ChemRxiv. Preprint. doi.org/10.26434/chemrxiv.12052512.v7

APPENDIX I
ENVIRONMENTAL TEMPERATURE VS COVID-19

"Demon living right under our noses?"
(CROSS SECTIONAL ANALYTICAL STUDY)

MBBS (Colombo), MD (Surgery), MRCS(England),
MRCS(Glasgow), CTHE(KDU)
Department of Surgery,
Faculty of Medicine.
Kotelawala Defence University

Tel No. -0094777274939
E mail - drcharithnanayakkara@gmail.com

Findings of this research and conclusions are my own and don't represent the opinions of the Institution where I work.

This is a self funded project and I don't have any conflicts of interest.

Abstract

Objective: To determine if there is a significant difference in environmental temperature of countries with extremely high vs low COVID-19 cases in March and April.

Design: Cross sectional analytical study.

Setting: International Study including all the countries with reported COVID-19 cases.

Participants: All cases in World Health Organization Coronavirus disease 2019 (COVID-19) Situation Report - 63 , 75 and 85 1.

Exposure: Average Temperature of each country (Google) on the dates of the reported total number of cases (23/03/2020, 04/04/2020 and 15/04/2020) were used as an approximate representative value.

Main Outcome and Measure: Predetermined outcome - difference in the temperature in top 24 countries with COVID-19 vs bottom 113 countries on 23/03/2020, 04/04/2020 and 15/04/2020 10:00 Central European Time.

Results: 191 (March 23), 207 (April 4th) and 213 (April 15th) countries/territories were analyzed. Top 24 countries with highest COVID-19 cases and 113 countries with lowest cases were separated into two groups. On March 23rd, April 4th and 15th the average temperature in the top 24 countries was 10.20C (SD-5.7, n=24, 95% CI=[7.9 to 12.5]), 12.60C (SD-5.9, n=24, 95% CI [10.2 to 15]) and 9.40C (SD-7.1, n=24, 95% CI [6.6 to 12.2]) while the bottom 113 countries recorded 21.80C (SD-9.7, n=113, 95% CI=[20 to 23.6]), 23.70C (SD-6.9, n=113, 95% CI [22.4 to 25.0]) and 22.40C (SD-7.5, n=113, 95% CI [21.1 to 23.8]) respectively.

The temperature difference between above groups in respective time windows were 11.60C (t=5.7 and p < 10-4), 11.10C (t = 7.3 and p < 10-4) and 13.00C (t = 7.8 and p<10-4) which was extremely statistically significant.

Conclusions and Relevance:

Like seasonal flu, temperature is extremely significant in the spread of COVID-19. Maintaining higher temperatures in hospitals/homes would definitely help control the spread of the virus while efficient warm clothes and possibly other manoeuvres that elevate the body temperature like steam inhalation and warm drinks could help and needs further research.

Introduction

COVID-19 is one of the biggest medical challenges faced by the modern world as the rapid increase in cases in a very short duration overwhelms the medical capacity in affected countries. Seasonal variation in influenza ("flu") is an already proven fact and it is especially known that respiratory tract infections are commoner in winter.

The "flu" season and even the timing of the "flu shot" uses that knowledge when we take measures to treat or prevent seasonal influenza. Understanding the exact impact of environmental temperature in COVID-19 pandemic is important as it will give us an insight into how simple measures like heating of houses and warm clothes could change the natural course of the disease in a country that has cold weather.

COVID-19 also carries a significant mortality and has a massive impact on the world economy. Thus, it is of utmost importance that we understand the factors that govern its distribution and virulence so that we could take all possible measures to keep it under control to minimize loss of human lives and to stabilize the world economy soon.

Method

Participants: All the reported cases in the World Health Organization (WHO) Coronavirus disease 2019 (COVID-19) Situation Report - 63, 75 and 85 1. were taken for analysis.

Objective: To determine if there is a significant difference in environmental temperature of top 24 countries with COVID-19 cases vs bottom 113 countries in March and April (as in 23/03/2020, 04/04/2020 and 15/04/2020 10:00 Central European Time - CET)

Design: Cross sectional analytical study in multiple stages.

Setting: International Study including all the countries with reported COVID-19 cases according to the WHO.

Exposure: Average Temperature of each country (Google) on the dates of the reported total number of cases (23/03/2020, 04/04/2020 and 15/04/2020) were used as an approximate

representative value as a practical method to compare the above mentioned two groups.

Main Outcome and Measure: Predetermined outcome - difference in the temperature in top 24 countries with COVID-19 vs bottom 113 countries in March and April (23/03/2020, 04/04/2020 and 15/04/2020 10:00 Central European Time) and its statistical significance.

Initially all the countries with COVID-19 cases in March (23/03/2020) were tabulated and countries with more than 1000 cases and less than 100 cases were separated. The average temperature of all the countries for 23/03/2020, 04/04/2020 and 15/04/2020 was searched from google and recorded. Majority of the countries didn't have fluctuations of temperature of over 50C within the preceding two weeks.

24 countries had over 1000 cases while 113 countries had less than 100 cases. For comparison, the same number of countries were used in April as well (i.e. 24 countries as countries with the highest prevalence of COVID-19 and 113 countries as countries with lowest prevalence).

Each group was analyzed for statistical significance separately using Google Sheets statistical tools using the student's t test for the difference between the mean temperature of each group in given time windows (as three such windows were used).

Results

Six geographical areas with 191, 207 and 212 countries and regions were analyzed in the WHO Coronavirus disease 2019 (COVID-19) Situation Report No. 63 (dated 23/03/2020), No. 75 (dated 04/04/2020) and No. 85 (dated 15/04/2020) respectively1. (Table 1)

Overview of WHO COVID-19 situation reports (Table 1)

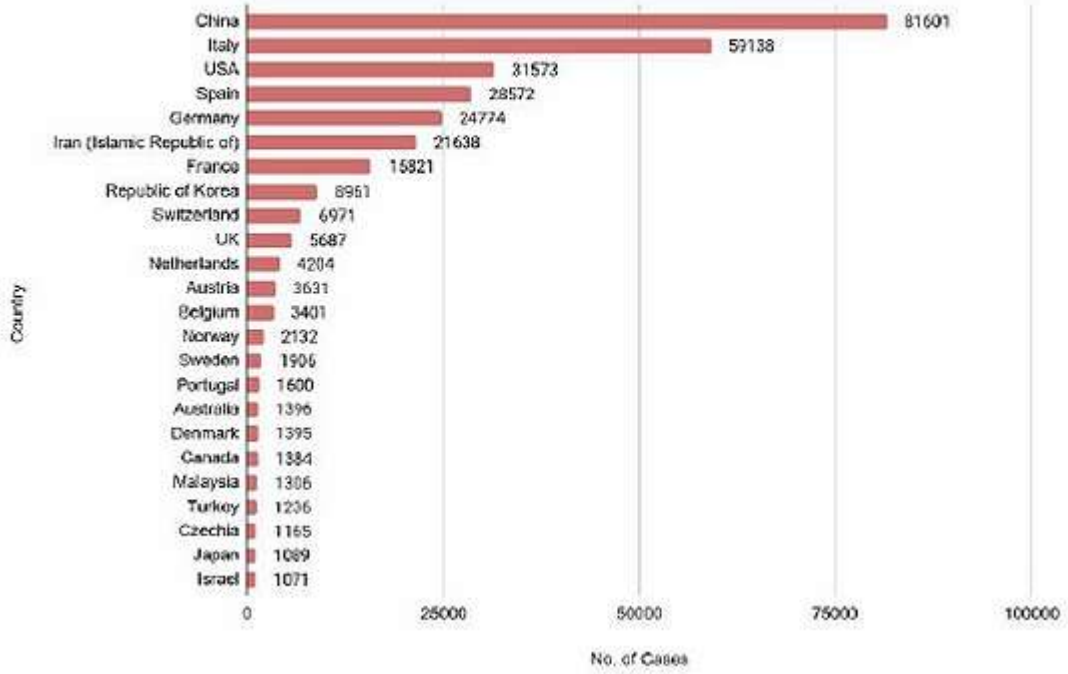
Date	WHO Report No	Confirmed COVID-19 Cases	No. of Deaths	Death %
23/03/2020	63	332,930	14,509	4.4
04/04/2020	75	1,051,635	56,985	5.4
15/04/2020	85	1,914,916	123,010	6.4

A total of 24 countries with over 1000 confirmed cases and 113 countries with less than 100 confirmed cases were identified in Report No.63. The number of cases in each group is shown in Chart 1, Chart 3.1 and Chart 3.2. Their environmental temperature on the 23/03/2020 was also shown in Chart 2, Chart 4.1 and Chart 4.2.

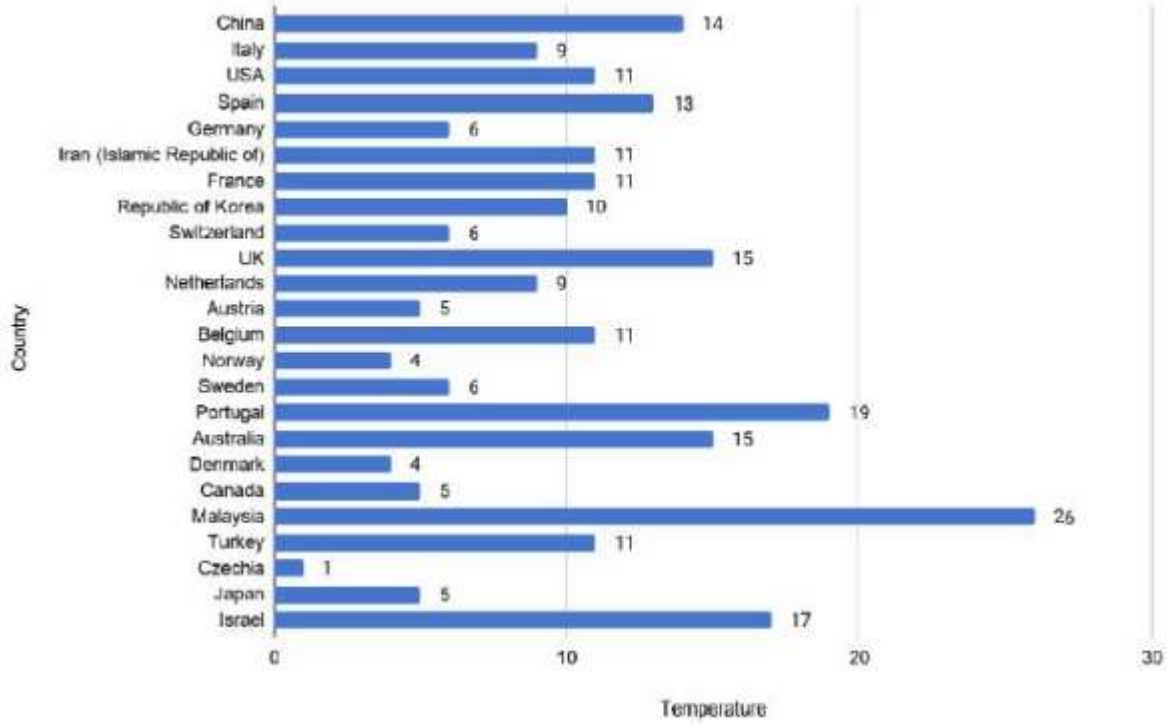
Similarly top 24 and lowest 113 countries with COVID-19 cases are selected and their number of cases are shown in Chart 7, Chart 9.1 and Chart 9.2 for 04/04/2020 according to report No. 75. Their environmental temperatures are shown in Chart 8, Chart 10.1 and Chart 10.2. As we chose 15/04/2020 for further analysis the top 24 and lowest 113 countries with their case distribution is shown in Chart 13, Chart 15.1 and Chart 15.2 according to report No. 85. Their temperature distribution for the designated date was shown in Chart 14, Chart 16.1 and Chart 16.2.

Top 24 countries and lowest 113 countries were chosen to make a comparison between the dates uniform as on 23/03/2020 countries with over 1000 cases were 24 in number and countries with less than 100 cases were 113 in number. To visually appreciate the distribution of the cases against the temperature the number of cases for the three chosen dates in the world are illustrated in Charts 5, 11, and 17 right next to them the temperature ranges are also shown in Charts 6, 12 and 18.

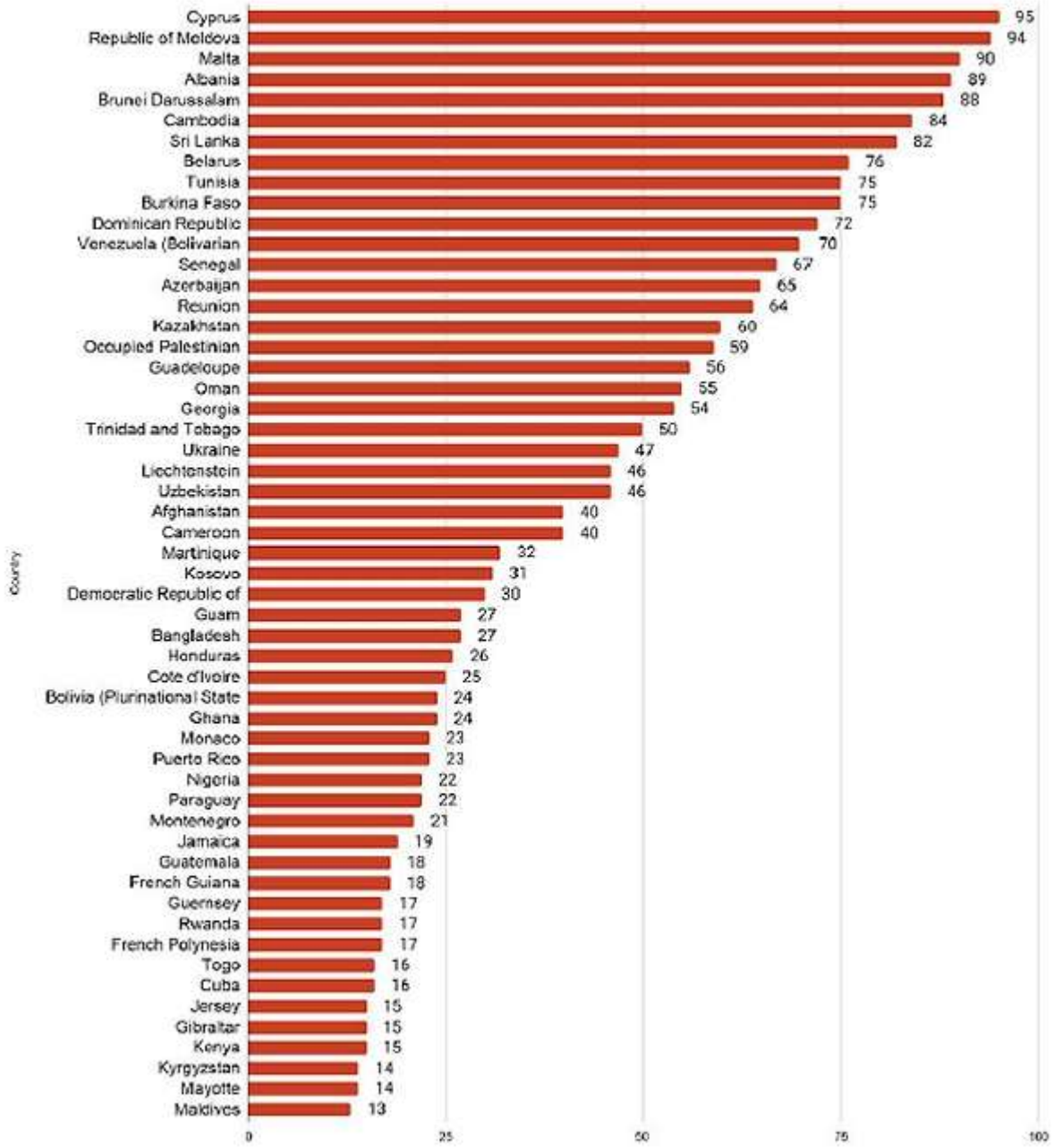
No of Cases in Top 24 countries with COVID-19 (23/03/2020) (Chart 1)



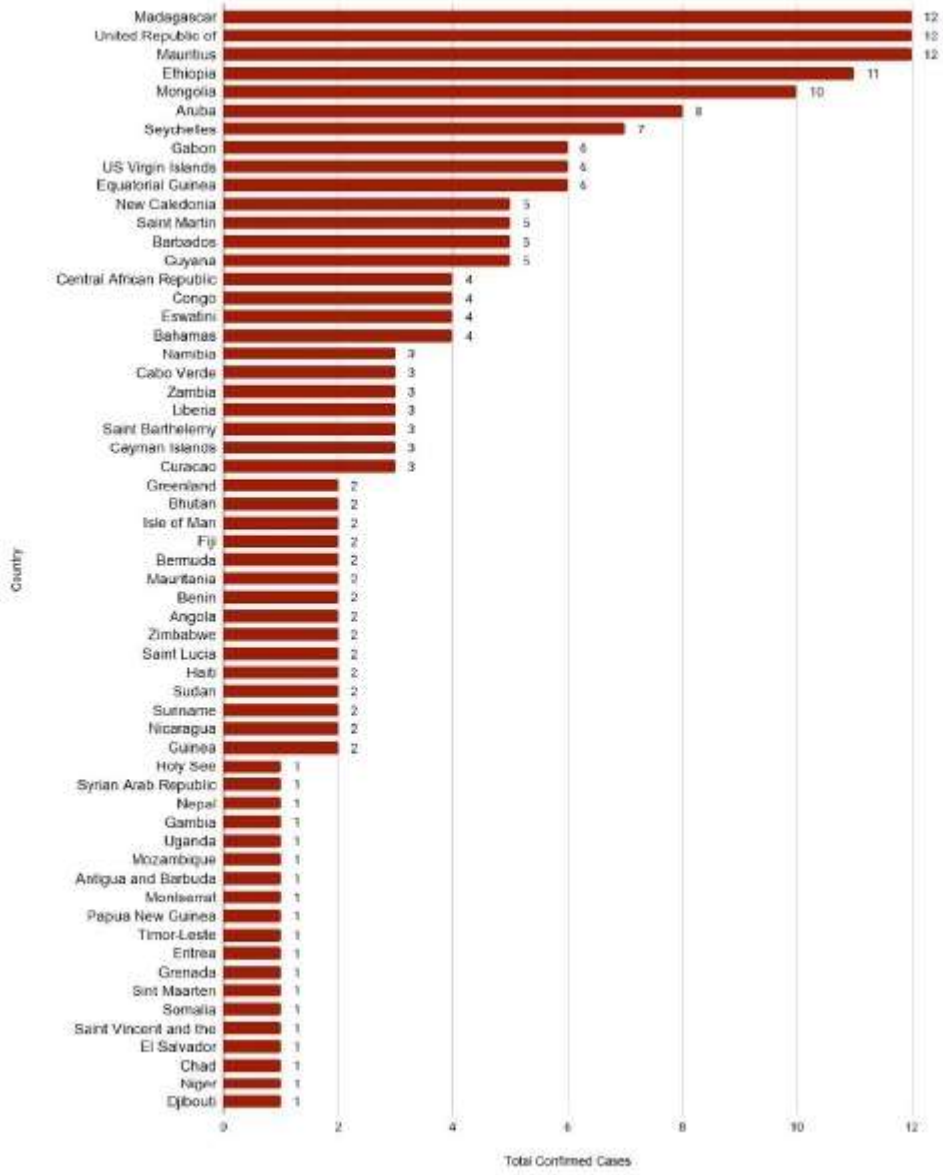
Temperature in Top 24 countries with COVID-19 (23/03/2020) (Chart 2)



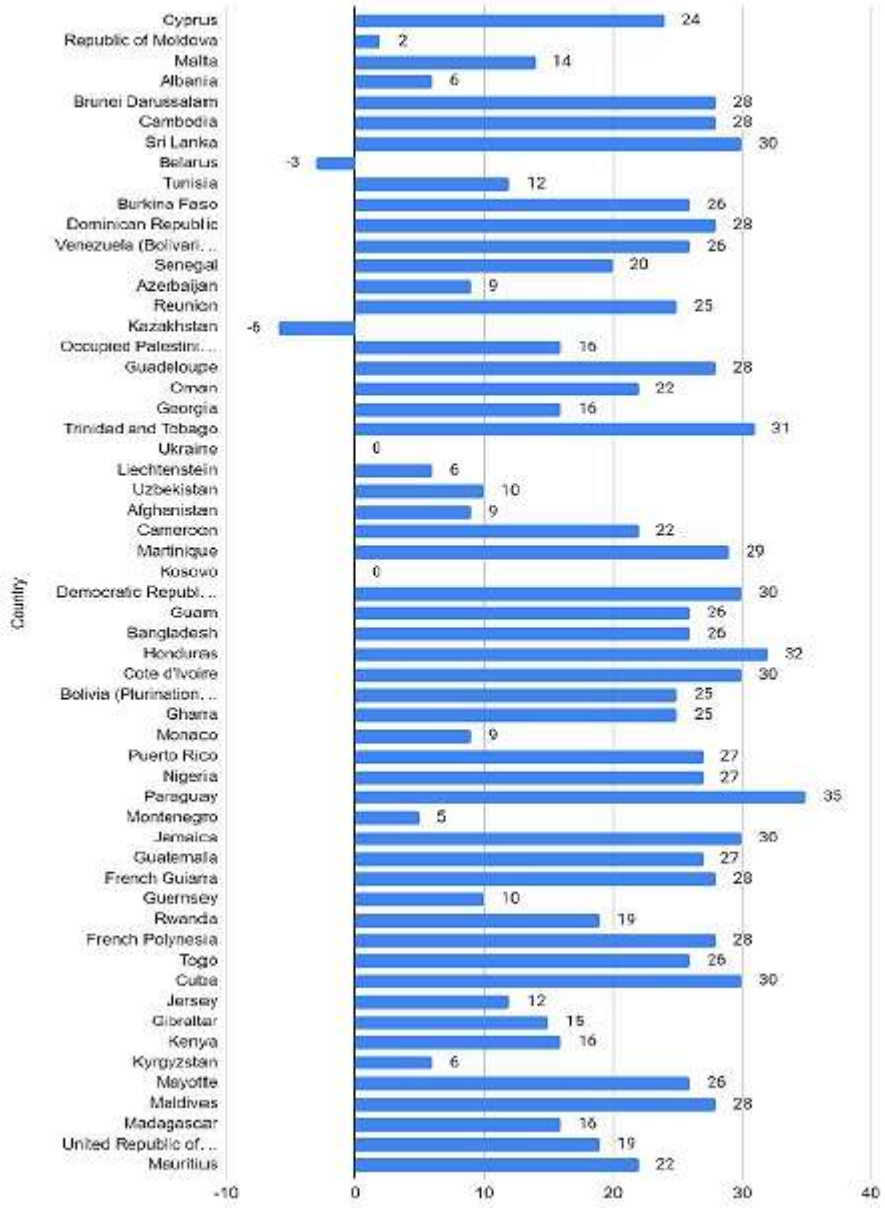
No of Cases in Lowest 113 countries with COVID-19 (23/03/2020) - (Chart 3.1)



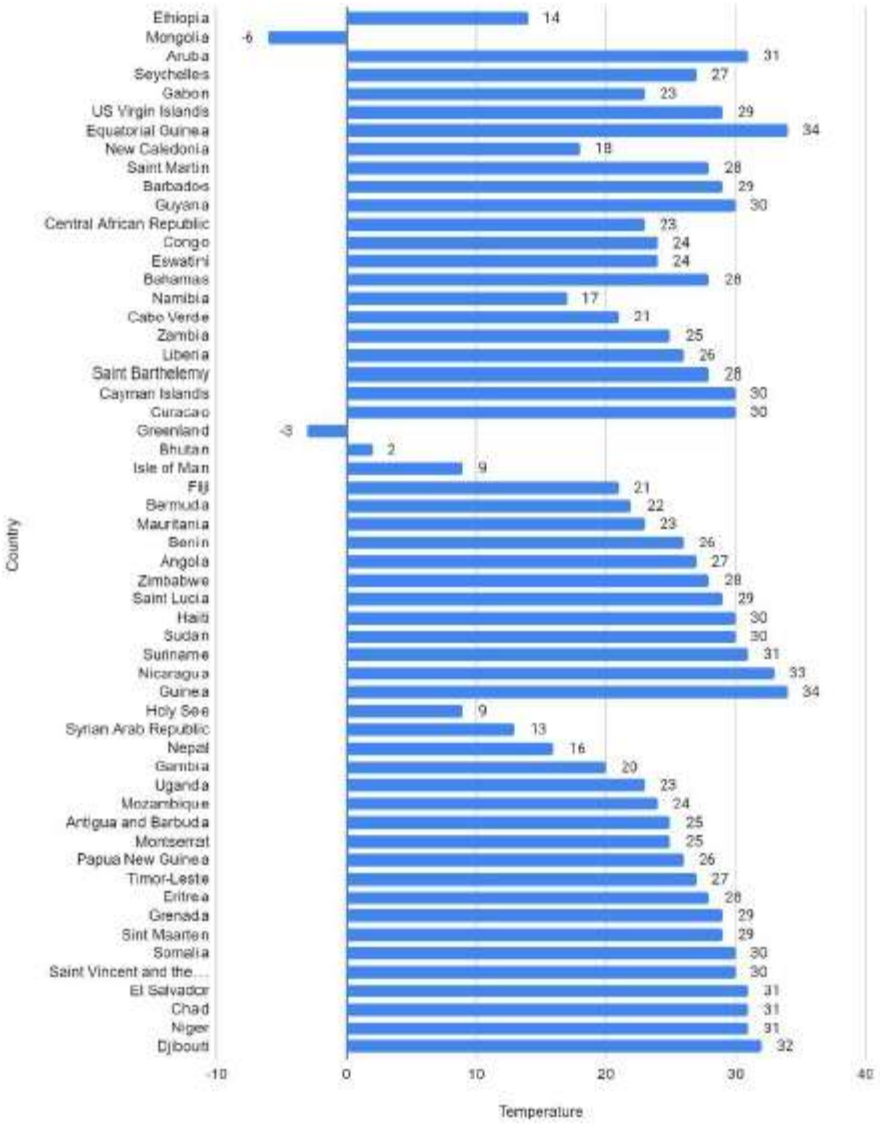
No of Cases in Lowest 113 countries with COVID-19 (23/03/2020) - (Chart 3.2)

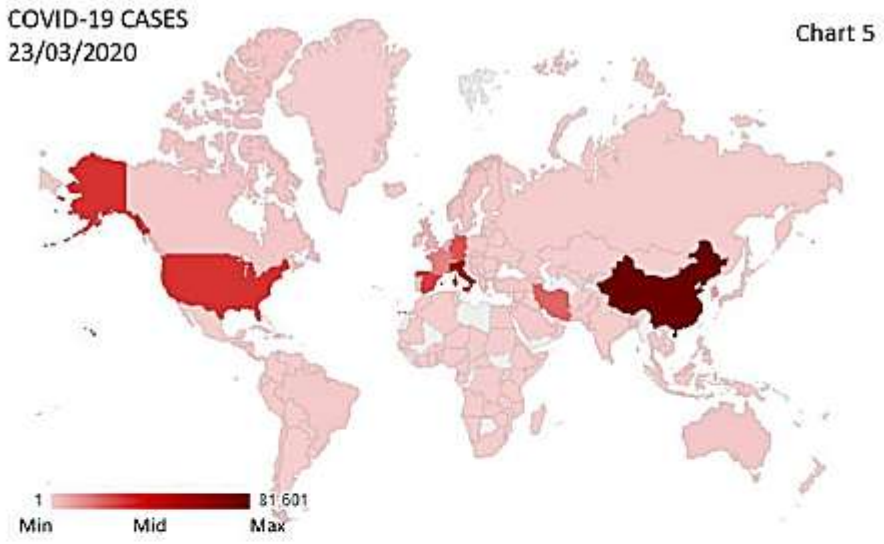


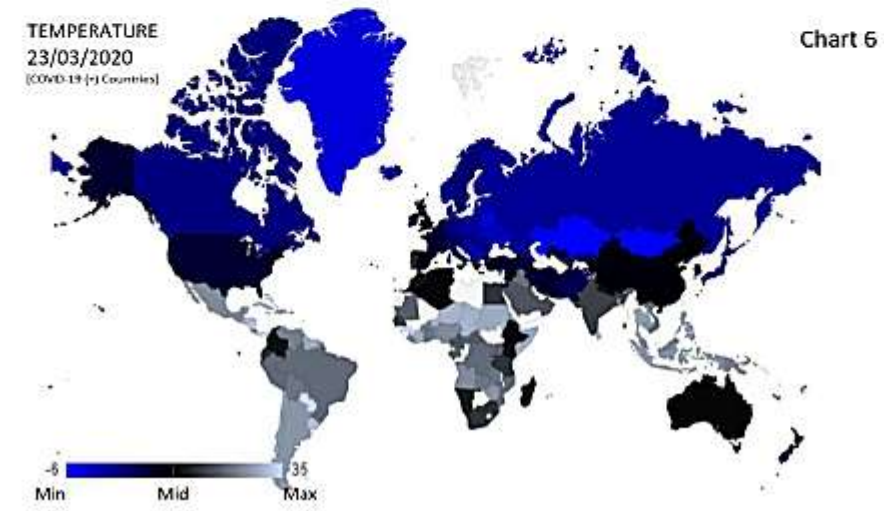
Average Temperature in Lowest 113 countries with COVID-19 (23/03/2020) (Chart 4.1)



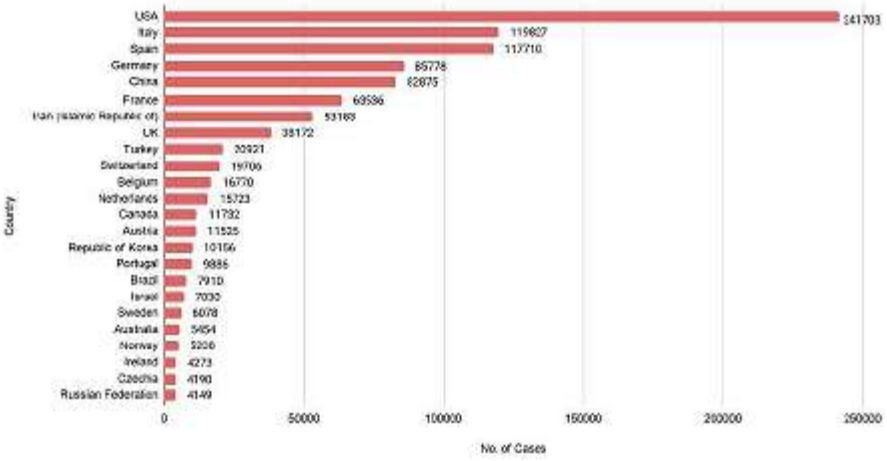
Average Temperature in Lowest 113 countries with COVID-19 (23/03/2020) (Chart 4.2)



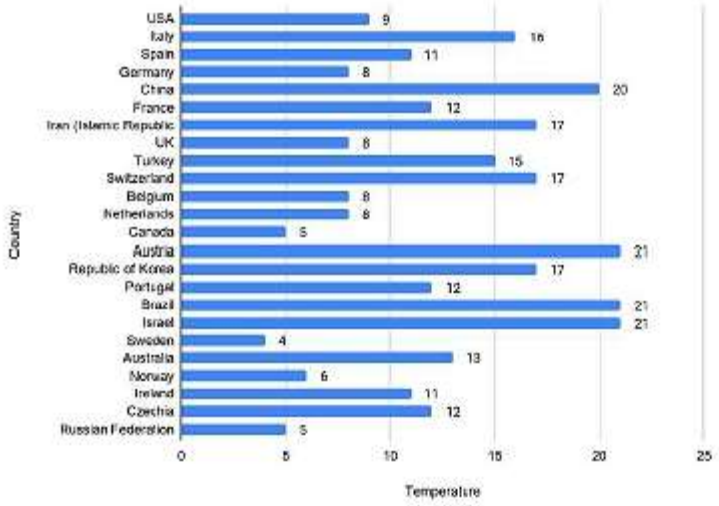

COVID-19 CASES
23/03/2020
Chart 5
1
81,601
Min
Mid
Max


TEMPERATURE
23/03/2020
Chart 6
-6
35
Min
Mid
Max

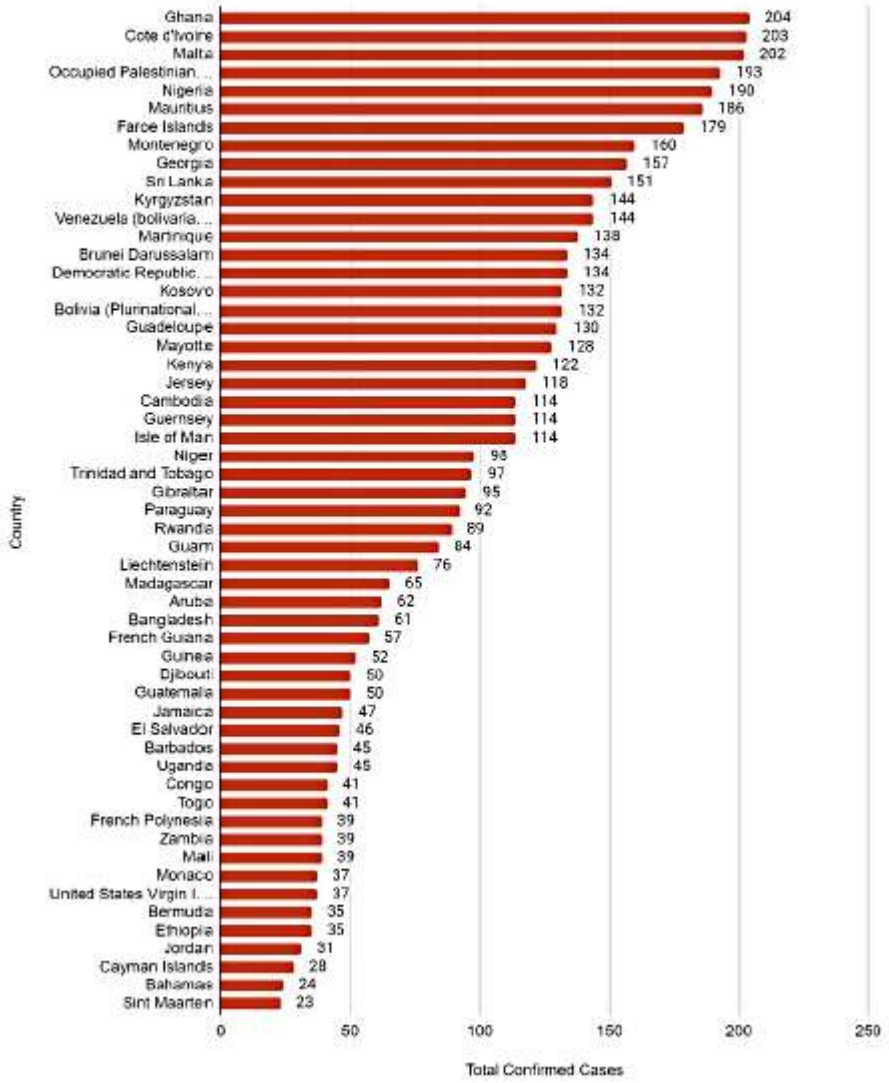
No of Cases in Top 24 countries with COVID-19 (04/04/2020) - (Chart 7)



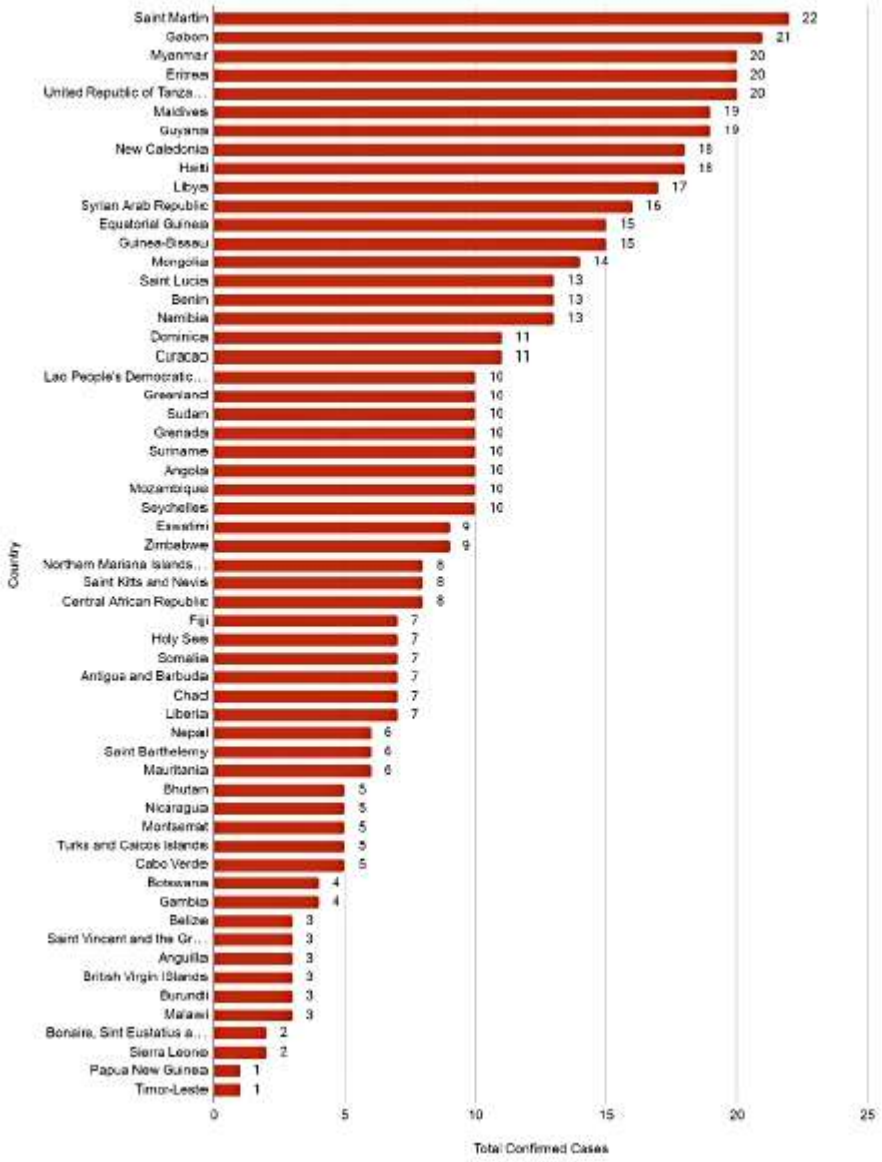
Average Temperature in Top 24 countries with COVID-19 (04/04/2020) (Chart 8)

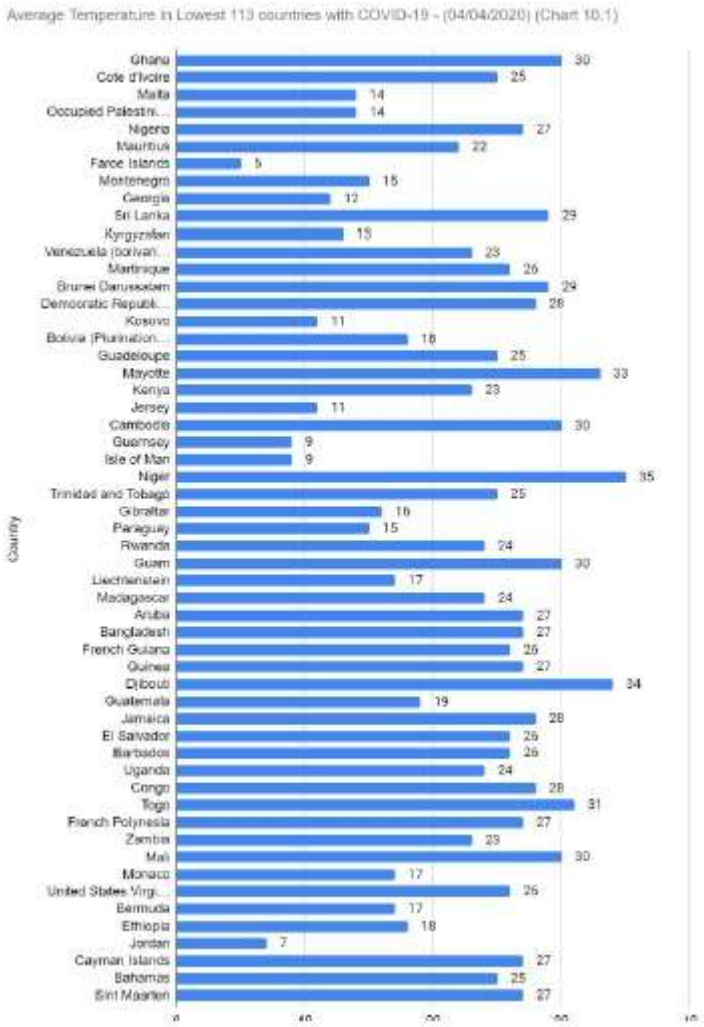


No. of Cases in Lowest 113 countries with COVID-19 (04/04/2020) (Chart 9.1)



No. of Cases in Lowest 113 countries with COVID-19 (04/04/2020) (Chart 9.2)




Average Temperature in Lowest 113 countries with COVID-19 - (04/04/2020) (Chart 10.1)
Country
Ghana 30
Cote d'Ivoire 25
Malta 14
Occupied Palestini... 14
Nigeria 27
Mauritius 22
Faroe Islands 5
Montenegro 15
Georgia 12
Sri Lanka 29
Kyrgyzstan 15
Venezuela (Bolivari... 23
Martinique 26
Brunei Darussalam 29
Democratic Republi... 28
Kosovo 11
Bolivia (Plurination... 18
Guadeloupe 25
Mayotte 33
Kenya 23
Jersey 11
Cambodia 30
Guernsey 9
Isle of Man 9
Niger 35
Trinidad and Tobago 25
Gibraltar 16
Paraguay 15
Rwanda 24
Guam 30
Liechtenstein 17
Madagascar 24
Aruba 27
Bangladesh 27
French Guiana 26
Guinea 27
Djibouti 34
Guatemala 19
Jamaica 28
El Salvador 26
Barbados 26
Uganda 24
Congo 28
Togo 31
French Polynesia 27
Zambia 23
Mali 30
Monaco 17
United States Virgi... 26
Bermuda 17
Ethiopia 18
Jordan 7
Cayman Islands 27
Bahamas 25
Sint Maarten 27

Average Temperature in Lowest 113 countries with COVID-19 - (04/04/2020) (Chart 10.2)

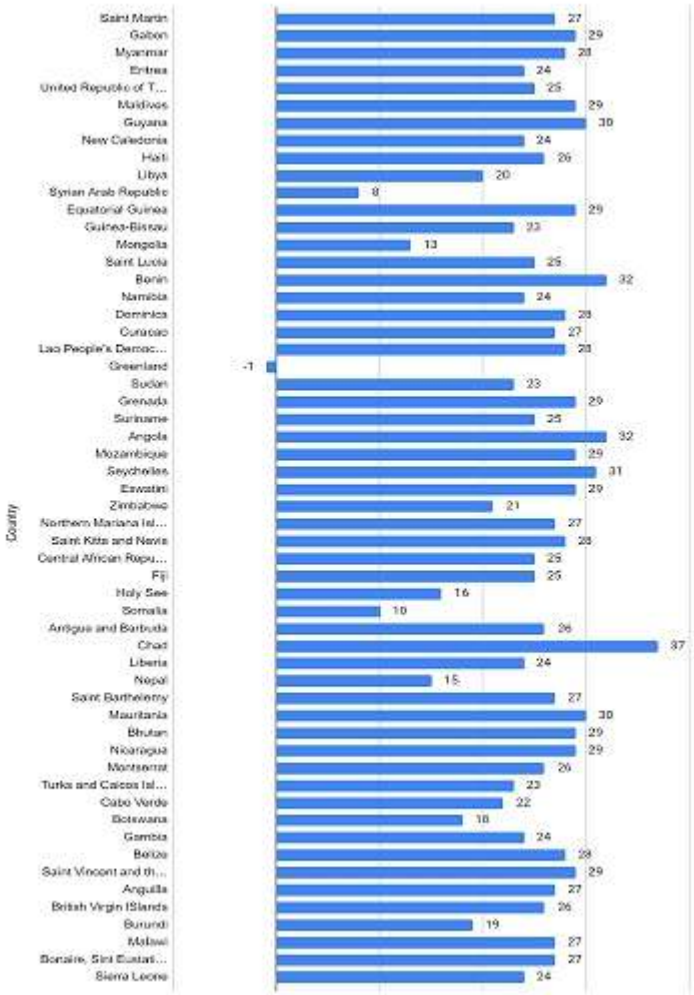


Chart 11

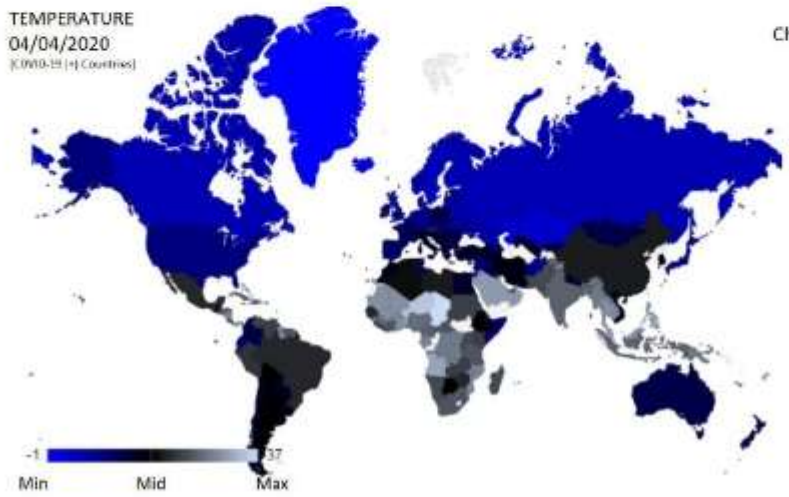
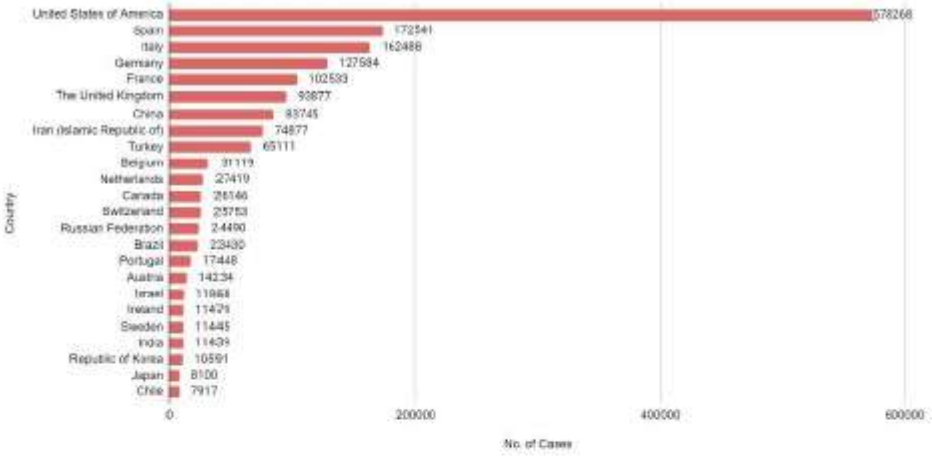
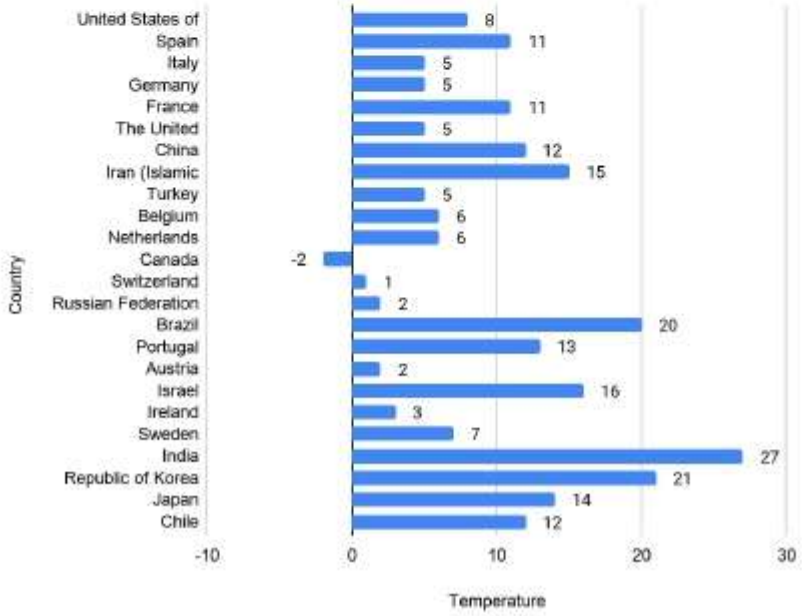


Chart 12

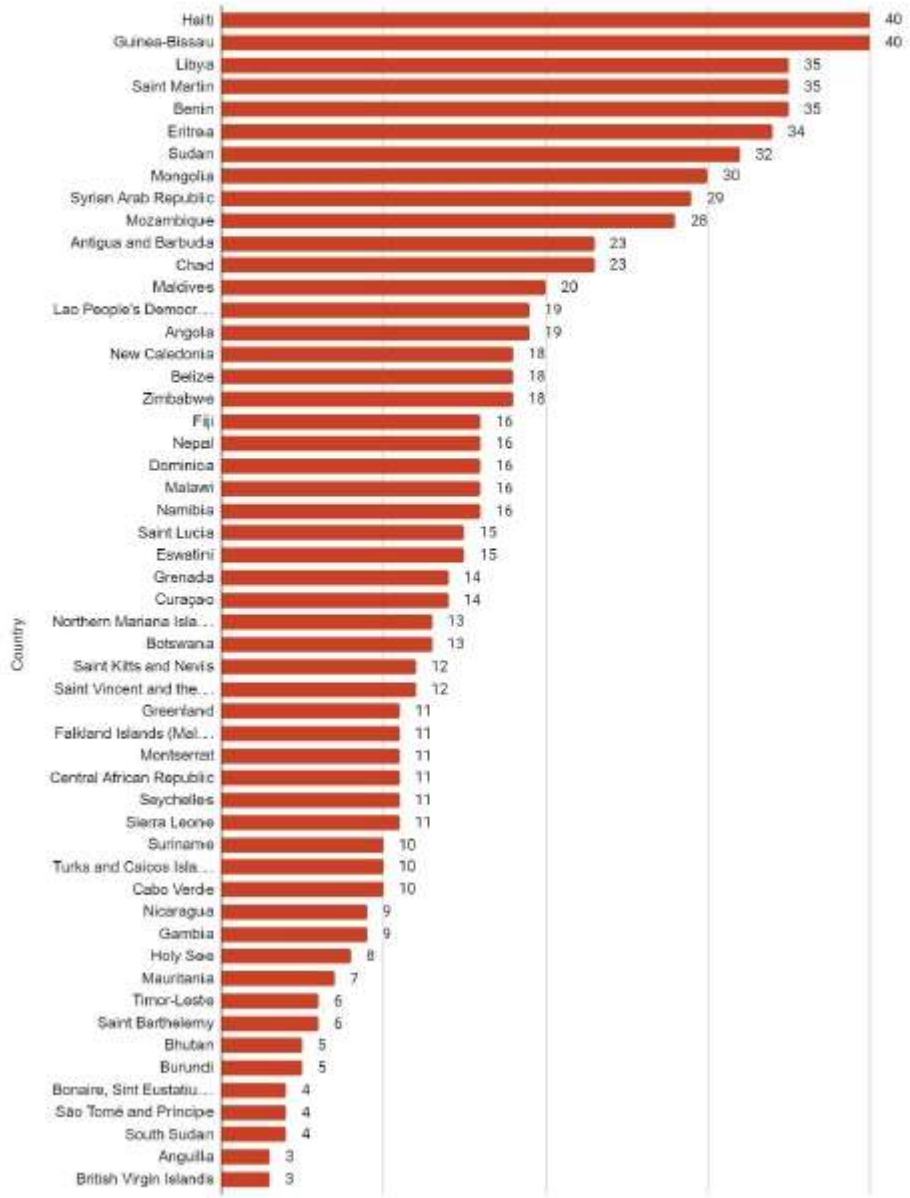
No of Cases in Top 24 countries with COVID-19 (15/04/2020) (Chart 13)

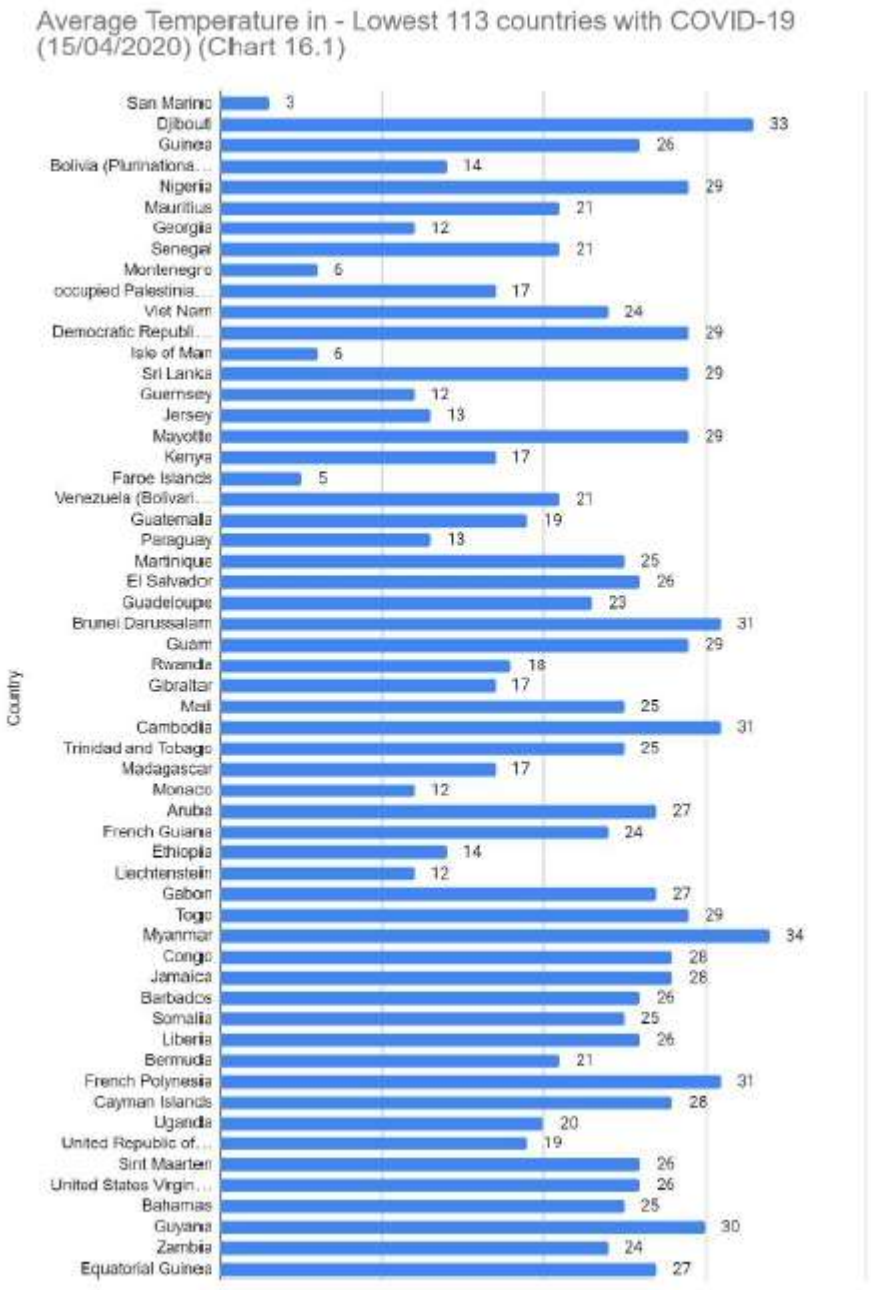


Average Temperature in Top 24 countries with COVID-19 (15/04/2020) (Chart 14)

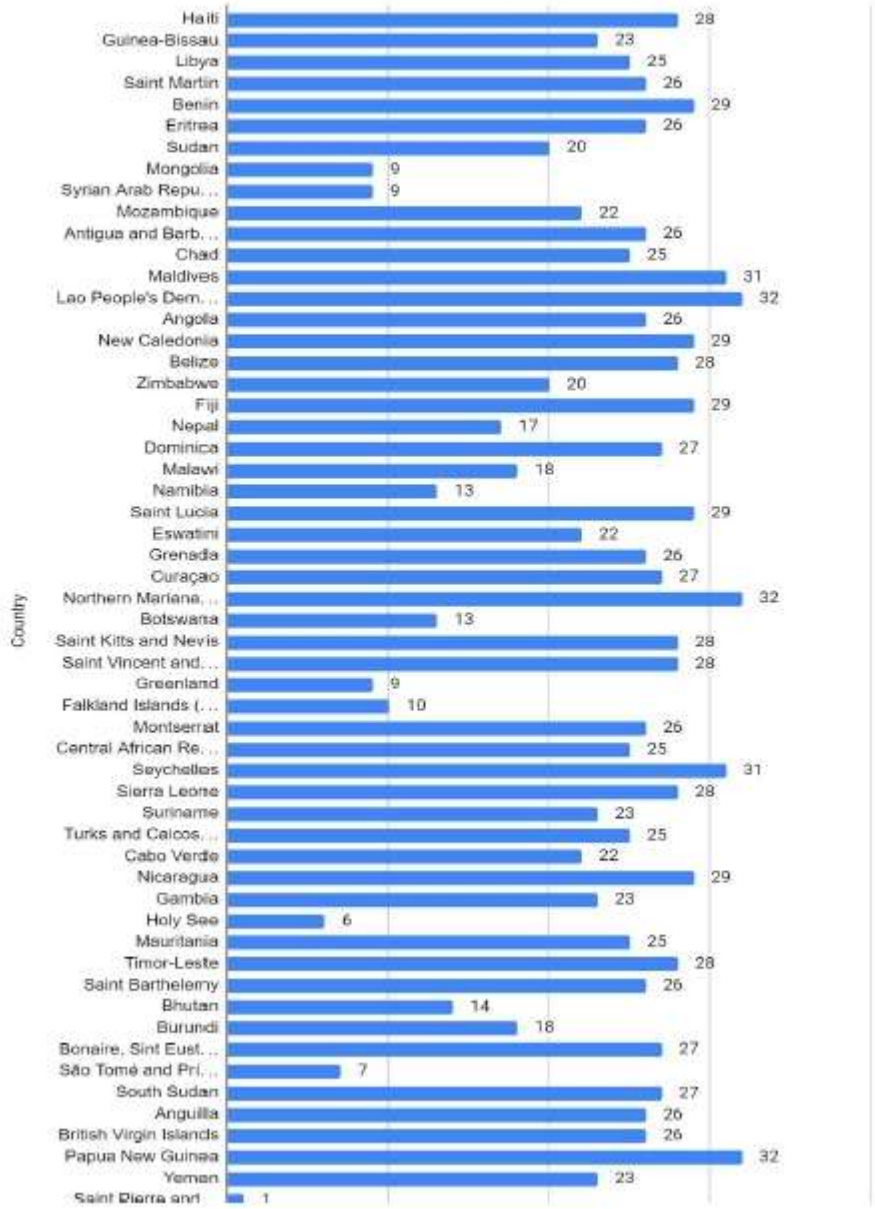


No of Cases in Lowest 113 countries with COVID-19 (15/04/2020) (Chart 15.2)




Average Temperature in - Lowest 113 countries with COVID-19 (15/04/2020) (Chart 16.1)
Country
San Marino 3
Djibouti 33
Guinea 26
Bolivia (Plurinationa... 14
Nigeria 29
Mauritius 21
Georgia 12
Senegal 21
Montenegro 6
occupied Palestinia... 17
Viet Nam 24
Democratic Republi... 29
Isle of Man 6
Sri Lanka 29
Guernsey 12
Jersey 13
Mayotte 29
Kenya 17
Faroe Islands 5
Venezuela (Bolivari... 21
Guatemala 19
Paraguay 13
Martinique 25
El Salvador 26
Guadeloupe 23
Brunei Darussalam 31
Guam 29
Rwanda 18
Gibraltar 17
Mali 25
Cambodia 31
Trinidad and Tobago 25
Madagascar 17
Monaco 12
Aruba 27
French Guiana 24
Ethiopia 14
Liechtenstein 12
Gabon 27
Togo 29
Myanmar 34
Congo 28
Jamaica 28
Barbados 26
Somalia 25
Liberia 26
Bermuda 21
French Polynesia 31
Cayman Islands 28
Uganda 20
United Republic of... 19
Sint Maarten 26
United States Virgin... 26
Bahamas 25
Guyana 30
Zambia 24
Equatorial Guinea 27

Average Temperature in - Lowest 113 countries with COVID-19 (15/04/2020) (Chart 16.2)



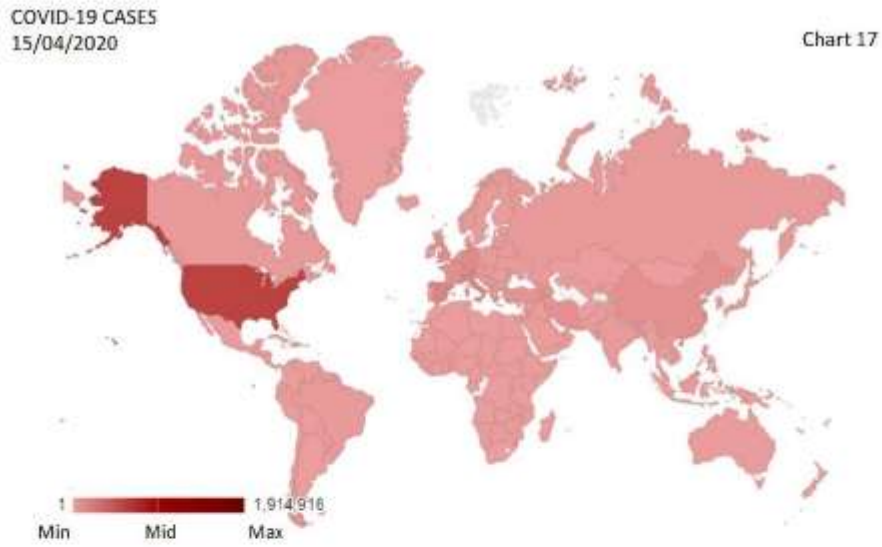
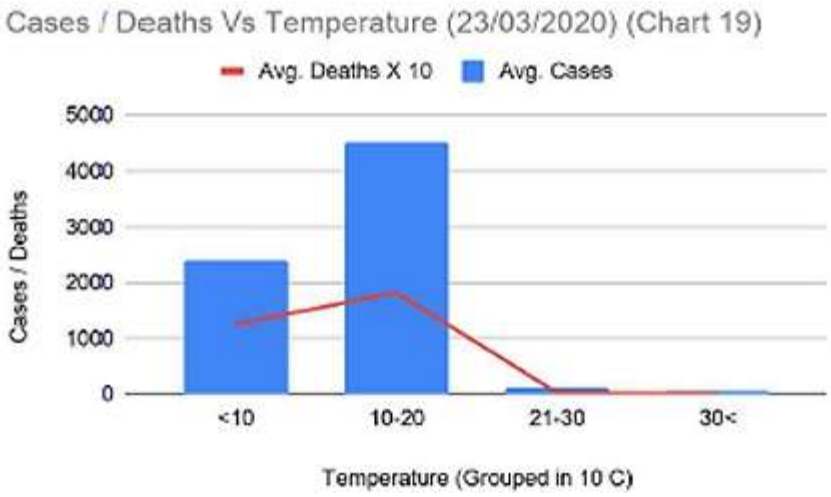
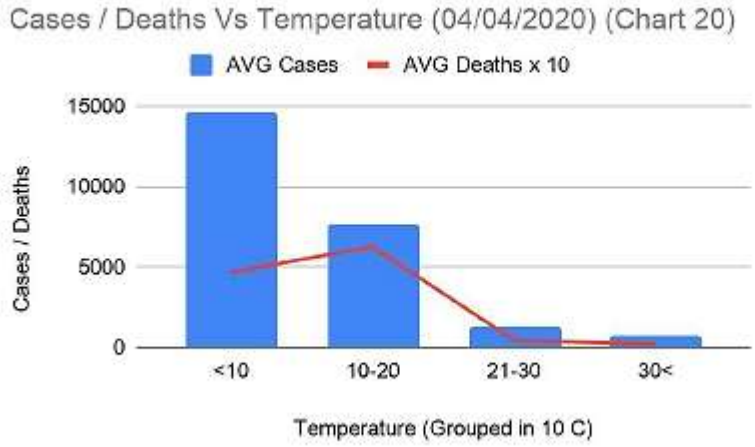


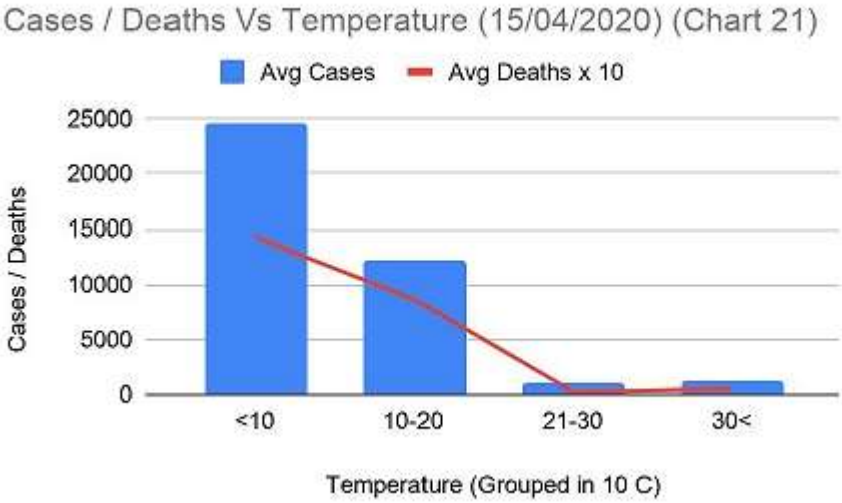
Chart 17

Chart 18

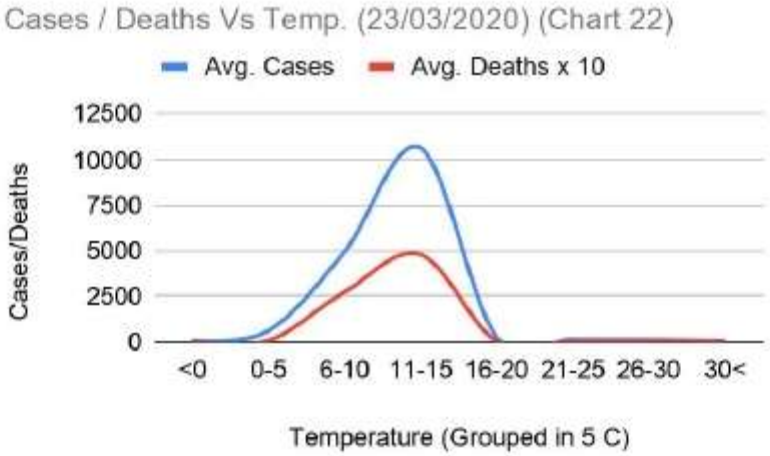
All the countries were categorized into 4 groups based on their temperature and average number of cases in those respective countries are shown in Chart 19, Chart 20 and Chart 21 based on the data gathered for 23/03/2020, 04/04/2020 and 15/04/2020 respectively. The average number of deaths for each group was also calculated and added to the charts after that. The average number of deaths was multiplied by 10 so that it could be shown in the same scale clearly and that any variation with the temperature is also clearer.

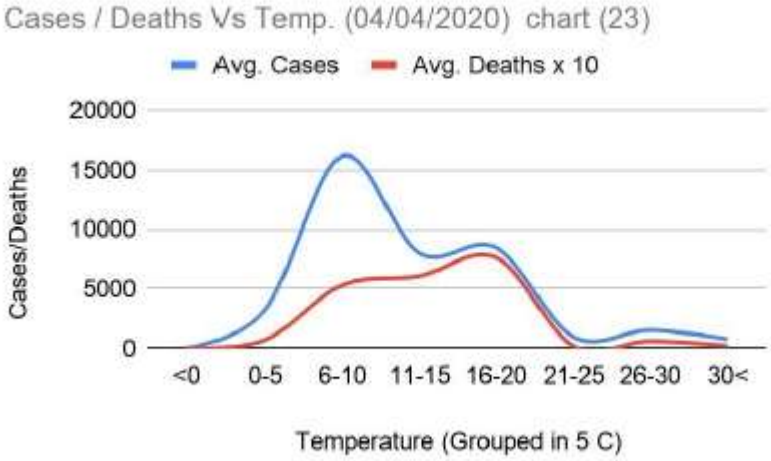


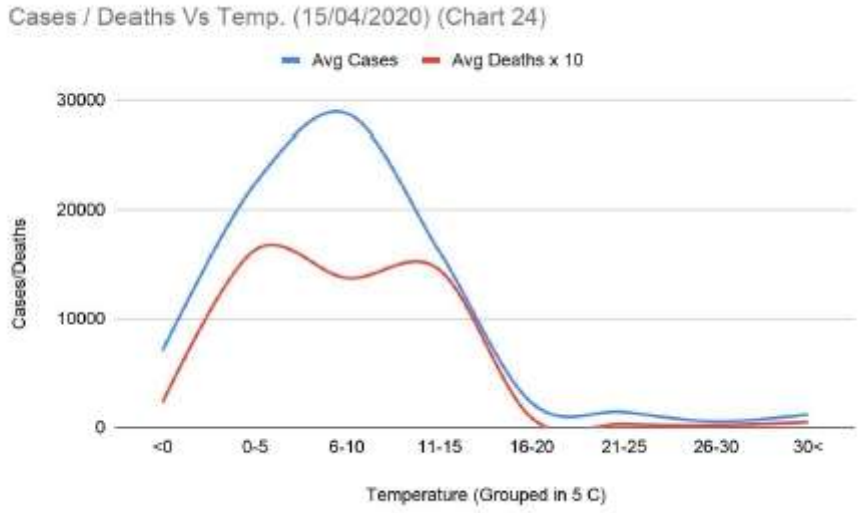




All the countries were re-categorized into 8 groups based on their temperature of the designated dates and their average number of cases and deaths (multiplied by 10 to make it more visible in the same scale) which is shown in Chart 22, 23 and 24.



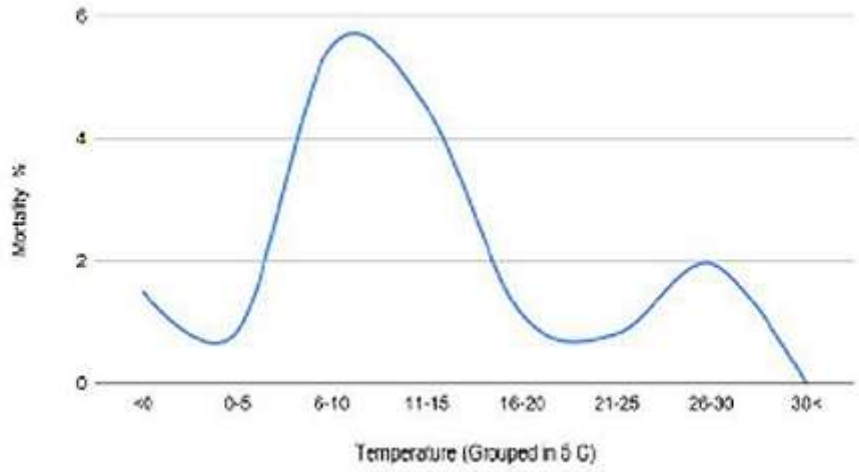




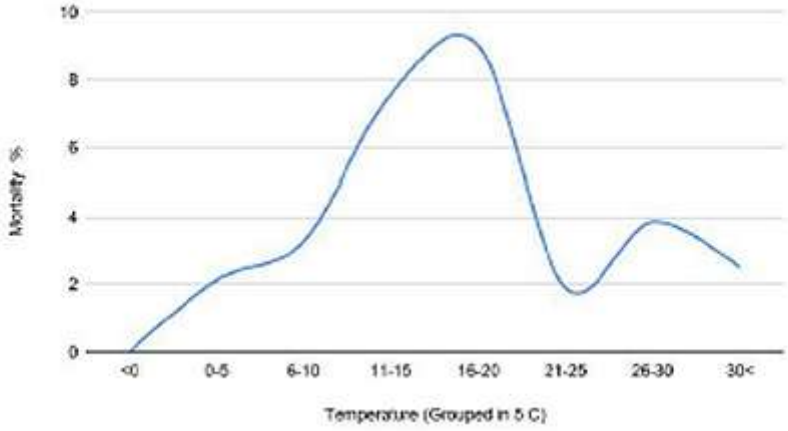
Mortality rate or the number of deaths per every 100 cases is also an important factor when it comes to management of the patients and to assess the efficiency of treatment strategies.

The average mortality rate was calculated in countries categorized into 8 groups based on the temperature (50C) groups. Change of average mortality according to temperature is shown in Charts 25, 26 and 27.

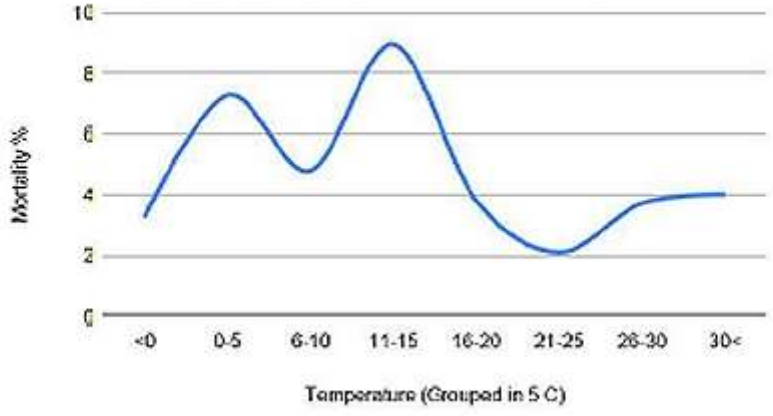
Mortality Rate % Vs. Temperature (23/03/2020) (Chart 25)



Mortality Rate % Vs. Temperature (04/04/2020) (Chart 26)



Mortality Rate % Vs. Temperature (15/04/2020) (Chart 27)



To summarize the results; Chart 28 shows the change in COVID-19 cases according to temperature in the selected three days with an obvious reduction in cases in countries with a temperature over 210C. However, the mortality rate which is shown in Chart 29 shows that the number of deaths per 100 cases doesn't necessarily follow the same pattern. Summary of the number of cases and the absolute number of deaths is shown in Chart No. 30 which shows the trend observed in Chart 28 which is lesser number of cases and absolute number of deaths in temperatures over 210C.

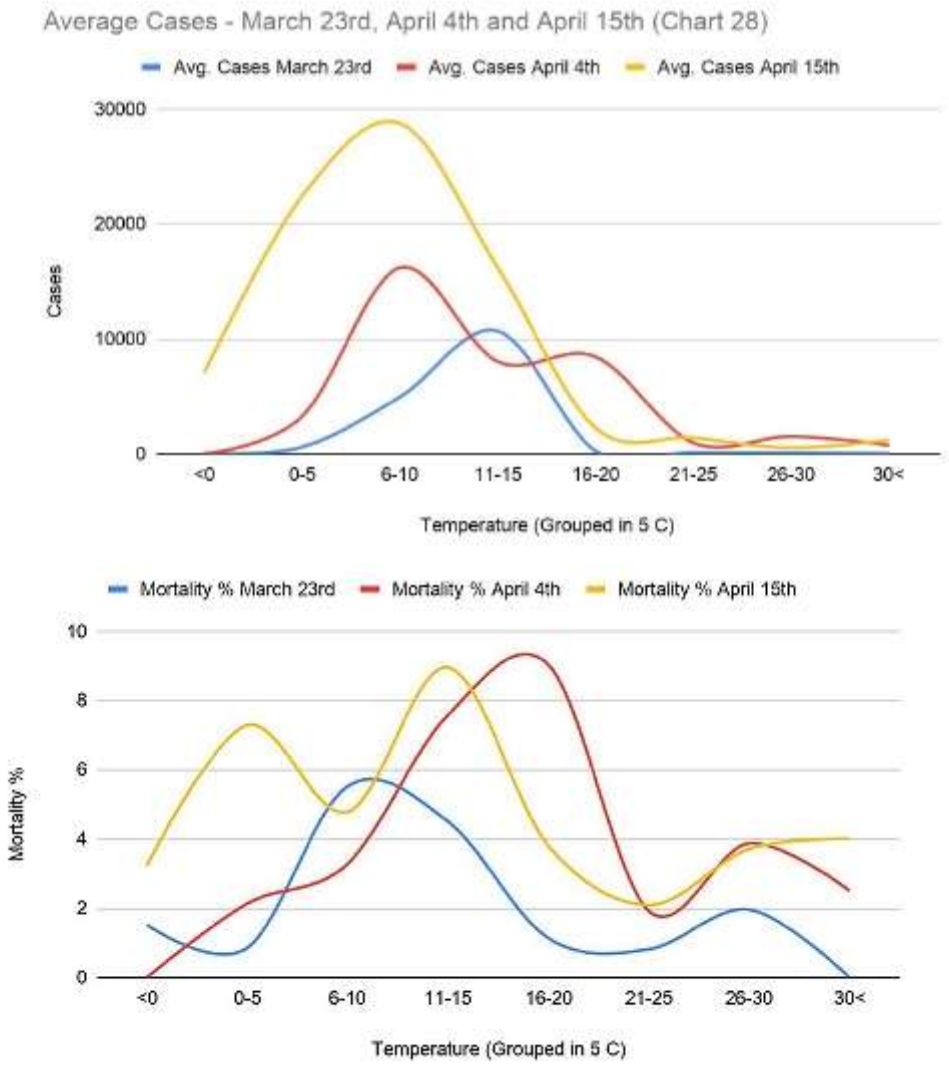
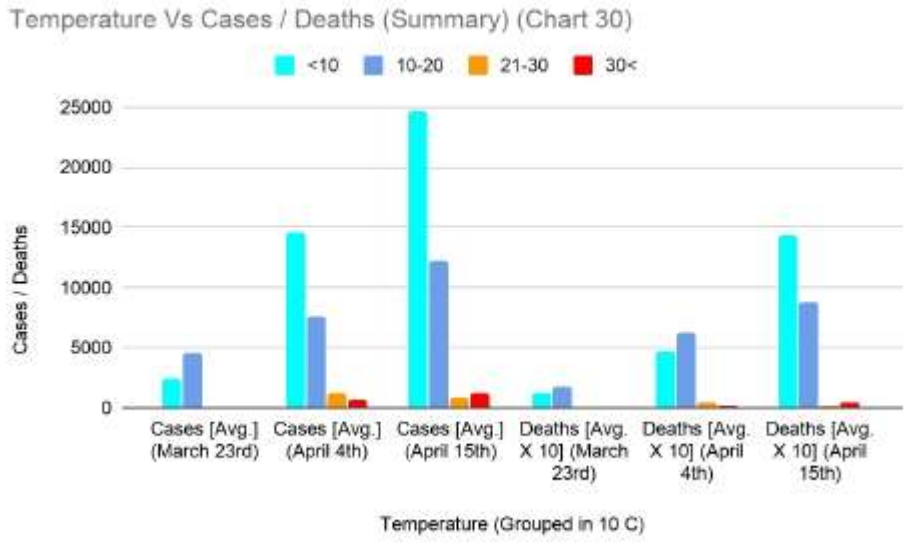


Table 2 shows the average temperature of top 24 countries with the highest number of cases and the lowest 113 countries with their statistical parameters on 23/03/2020, 04/04/2020 and 15/04/2020. The difference in the temperature of these two groups of countries were analyzed.



In Table 3 which was found to be extremely statistically significant. Similarly the average temperature in top 30 countries with deaths from COVID-19 and lowest 30 countries and

average temperature of top 30 countries with highest Mortality rate from COVID - 19 and lowest 30 countries are shown in Table 4 and 6 respectively.

Analysis of the difference in the top 30 countries with the highest number of deaths from COVID-19 with the lowest 30 countries was also extremely statistically significant (Table 5). However the mortality rate between the 30 countries with the highest mortality rate and the lowest 30 was only statistically significant on the 23/03/2020 and it was not statistically significant on the 04/04/2020 and 15/04/2020 as shown in Table 7.

Average Temperature of Countries with Top 24 & Lower 113 COVID-19 (+) **Cases**

(Table 2)

	Top 24 countries					**Lower 113** Countries				
Date (2020)	**Avg. Temp (°C)**	SD	Variance	n	95% CI	**Avg. Temp (°C)**	SD	Variance	n	95% CI
23/03	**10.2**	5.7	32.3	24	7.9 – 12.5	**21.8**	9.7	94.7	113	20.0 – 23.6
04/04	**12.6**	5.9	34.9	24	10.2 – 15.0	**23.7**	6.9	47.5	113	22.4 – 25.0
15/04	**9.4**	7.1	49.7	24	6.6 - 12.2	**22.4**	7.5	55.8	113	21.1 - 23.8

Difference in Temperature of Countries with Top 24 & Lowest 113 COVID-19 (+) **Cases**

(Table 3)

Date (2020)	Avg. Temperatures Analyzed (°C) (Top 24 & Lower 113 Countries)	**Temperature Difference (°C)**	df	t	p	Conclusion on difference of mean Temperatures
23/03	10.2 & 21.8	**11.6**	135	5.7	$<10^{-4}$	*Extremely Statistically Significant*
04/04	12.6 & 23.7	**11.1**	135	7.3	$<10^{-4}$	*Extremely Statistically Significant*
15/04	9.4 & 22.4	**13.0**	135	7.8	$<10^{-4}$	*Extremely Statistically Significant*

Average Temperature of Countries with Top 30 & Lowest 30 COVID-19 (+) **Deaths**

(Table 4)

	Top 30 countries					**Lower 30** Countries				
Date (2020)	**Avg. Temp (°C)**	SD	Variance	n	95% CI	**Avg. Temp (°C)**	SD	Variance	n	95% CI
23/03	**12.6**	7.5	56.0	30	9.9 – 15.3	**26.1**	5.9	34.2	30	24.0 - 28.2
04/04	**14.5**	6.8	45.8	30	12.1 – 17.0	**24.7**	7.0	49.3	30	22.2 – 27.2
15/04	**11.0**	8.9	79.2	30	7.8 - 14.2	**22.3**	8.6	74.3	30	19.2 - 25.4

Difference in Temperature of Countries with Top 30 & Lowest 30 COVID-19 (+) **Deaths**						
(Table 5)						
Date (2020)	Avg. Temperatures Analyzed (°C) (Top 30 & Lower 30 Countries)	**Temperature Difference (°C)**	df	t	p	Conclusion on difference of mean Temperatures
23/03	12.6 & 26.1	**13.5**	58	7.8	$<10^{-4}$	*Extremely Statistically Significant*
04/04	14.5 & 24.7	**10.2**	58	5.7	$<10^{-4}$	*Extremely Statistically Significant*
15/04	11.0 & 22.3	**11.3**	58	5.0	$<10^{-4}$	*Extremely Statistically Significant*

Average Temperature of Countries with Top 30 & Lowest 30 **Mortality Rates**										
(Table 6)										
	Top 30 countries					**Lower 30** Countries				
Date (2020)	**Avg. Temp (°C)**	SD	Variance	n	95% CI	**Avg. Temp (°C)**	SD	Variance	n	95% CI
23/03	**19.9**	10.0	100.0	30	16.3 - 23.5	**26.1**	5.9	34.2	30	24.0 - 28.2
04/04	**20.9**	8.3	68.9	30	17.9 - 23.9	**24.8**	7.1	50.4	30	22.3 – 27.3
15/04	**19.2**	9.6	91.8	30	15.8 - 22.6	**17.9**	7.6	57.6	30	15.2 - 20.6

Difference in Temperature of Countries with Top 30 & Lowest 30 **Mortality Rates**						
(Table 7)						
Date (2020)	Avg. Temperatures Analyzed (°C) (Top 30 &	**Temperature Difference (°C)**	df	t	p	Conclusion on difference of mean Temperatures
	Lower 30 Countries)					
23/03	19.9 & 26.1	**6.2**	58	2.9	$5x10^{-3}$	*Very Statistically Significant*
04/04	20.9 & 24.8	**3.9**	58	2.0	0.054	*Not Statistically Significant*
15/04	19.2 & 17.9	**1.3**	58	0.6	0.562	*Not Statistically Significant*

Discussion

We conclude that the environmental temperature plays a very significant role if not the most important factor in the spread of COVID-19. Even though environmental temperature or the climate cannot be changed easily the indoor temperature can be maintained close to that of tropical values. Warm clothes and keeping the body warm when travelling outdoors also would contribute in slowing down the spread of the virus. Since temperature is a key factor, maneuvers that have an effect on the body temperature also should be considered as possible ways to curtail the virus spread such as steam inhalation and consumption of warm beverages which needs further research.

References

1. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200323-sitrep-63-covid-19.pdf
2. Havers F, Hicks L, Chung J et al. Outpatient Antibiotic Prescribing for Acute Respiratory Infections During Influenza Seasons.
JAMA Netw Open. 2018;1(2):e180243.
doi:10.1001/jamanetworkopen.2018.0243
3. Zhou F, Yu T, Du R et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. The Lancet. 2020. doi:10.1016/s0140- 6736(20)30566-3

ABOUT THE AUTHOR

Fred Harding
Born: 9th January 1951

CREDENTIALS

I think at this stage of writing that it is important for me to present to you my credentials otherwise you might think that this book was written by someone who does not know what they are talking about. I am not a doctor that much is true, but I would argue that this gives me an advantage, because my skill set is not confined to one line of reasoning. Besides being a historian, my forte is that of a computer analyst, someone who is skilled in handling data.

I have found that the subject of history together with the science of genetics, which I regard as a form of biological programming, and Information Technology, which I have been involved in ever since its conception, are a brilliant combination of skills to understand how the COVID-19 disease works and the coronavirus that causes it (SARS-Cov-2) works. One needs to examine the historical recorded on how the coronavirus came to spread as it did, and you need the kind of mind that can look at the data which is coming in every day and analyse it in real time so that you can build a picture of what is happening. And that mindset requires a skill set of logic and reason, which is what computer analytical skills can bring to bear on the subject.

By the way, I am an award-winning software programmer, and I received an award from the British Computer Society Awards in 2003, the Oscars of the computer industry for a software program which I developed for a leading Health & Safety consultancy in the UK. Established in 1957, the British Computer Society (BCS) is the leading body for those working in IT. Today it has a world-wide membership now over 60,000 members in over 100 countries and BCS is the qualifying body for Chartered IT Professionals.

Professor Graham Brookes, who was Chairman of the BCS Technology Awards Assessors Panel at the time, wrote a letter to me (17 July 2003) saying that my program had been unanimously selected as one of four finalists in the Applications category and that it would go forward for consideration by the final Judging Panel. I would be given the opportunity to exhibit and demonstrate my software on the 4 September at the prestigious Hilton Hotel, Park Lane, London at a special meal event set for the occasion. It is there that I was given an award as a runner-up, a notable achievement in its own right. My software was competing with no less that IBM UK Laboratories (IBM Websphere UDDI Registry) and Speed-Trap Ltd (now Cebrus Technologies).

BCS IT Professional Awards 2003

17th July 2003

Mr Fred Harding
Software Development Manager

Dear Fred
THE BRITISH COMPUTER SOCIETY IT PROFESSIONAL AWARDS 2003
TECHNOLOGY AWARDS

At their final meeting this week the Technology Assessors Panel unanimously selected your project 'CMS' as one of the BCS Technology Awards Finalists in the Applications Category.

Your entry will now go forward for consideration by the final Judging Panel, where you will be given the opportunity to exhibit and demonstrate your project. The judging will take place during the afternoon fo 24 September at the Hilton Hotel, Park Lane, London. The final decision of the judges will be announced during the evening. Further details of this exciting event will be sent to you shortly, so please keep this date free.

Many congratualations on your achievement.

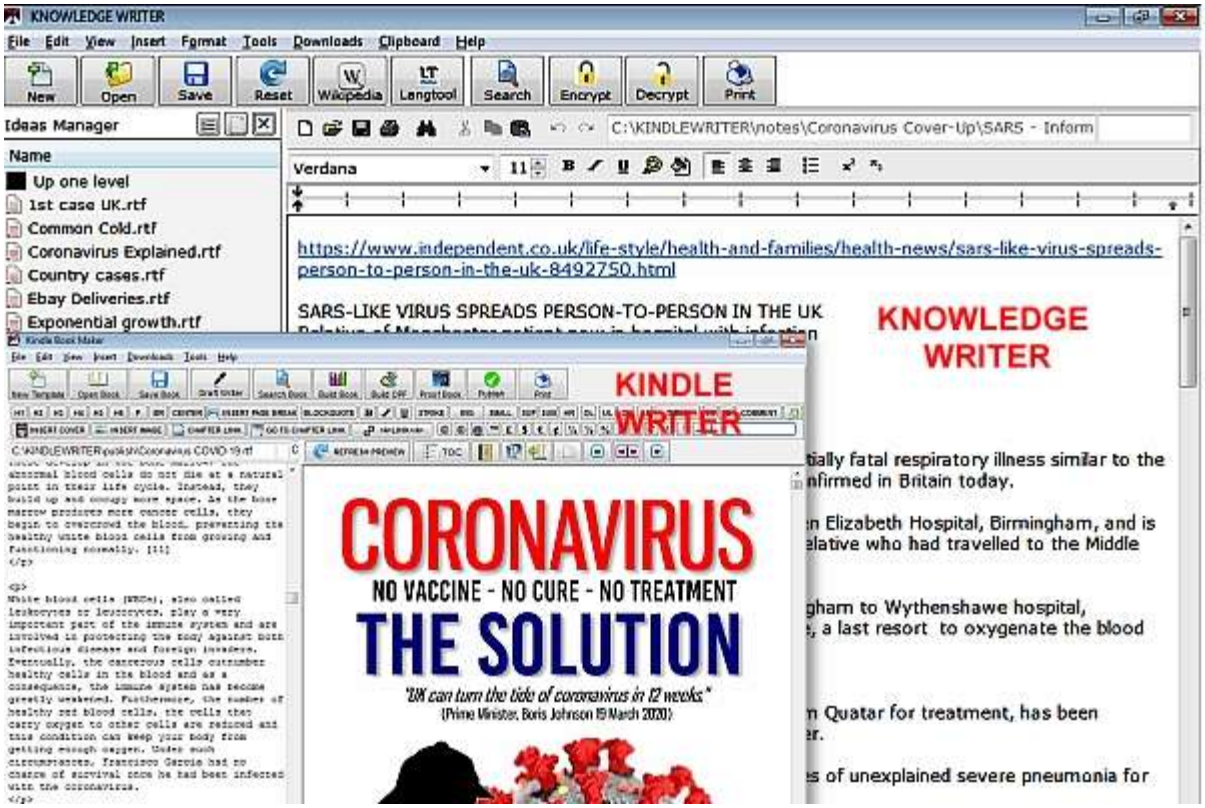
Yours sincerely

Professor Graham Brookes
Chairman
BCS Technology Awards Assessors Panel

At that time I was working as there the company's programmer, and was their primary developer of their leading COSHH Management System (CMS), and sole programmer of their Asbestos Management System (AMS). COSHH stands for Control of Substances Hazardous to Health and the knowledge I gained enabled me to write books on cancer, particularly breast cancer, which has been cited in a number of peer-reviewed medical journals. The measures taken by the government such as the use of RPE (respiratory protective equipment) and washing hands using hand sanitizer is based on COSHH.

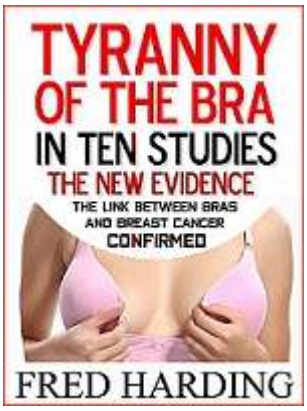
I worked for the company for eleven years as their Software Development Manager, leading a small team of programmers, before I retired to Devon, England in 2009. However, this did end my programming skills and I now use special software which I began developing in 2011 called Kindle Writer. This enables me to publish e-books and paperbacks like the one you are now reading and write about the knowledge that I have accumulated over the years, aided by another program of mine called Knowledge Writer.

Knowledge Writer is an ideas processor and a managed database where I store my research material. I am proud to say that Kindle Writer has helped over 200 people to realize their dreams and become authors and in the coming Autumn I shall be making the latest version of this software free.

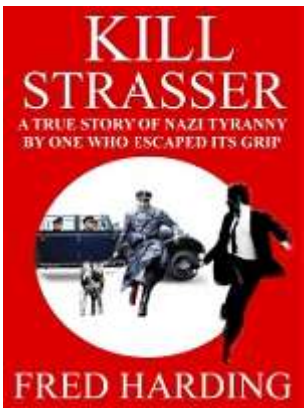


Over the years I have accumulated an extensive database of COSHH, cancer and other health issues, together with an understanding how our immune system works which I researched extensively for my books on cancer. Added to this, I have one significant advantage of being a computer analyst and a software programmer when it comes to reviewing the daily information about the COVID-19 coronavirus pandemic. My analytical and logical thinking which has served me in good stead for most of my life, together with the software tools I have at my disposal, has made it possible for me to present the logical and informed case that this book expands upon with a degree of academic authority that few people can match.

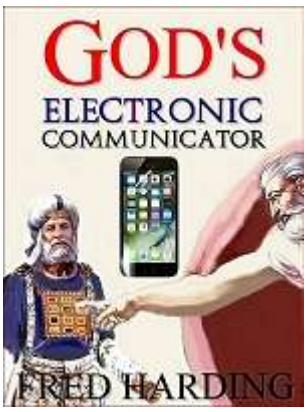
BOOKS BY THE AUTHOR
(All books are illustrated and available on Amazon)



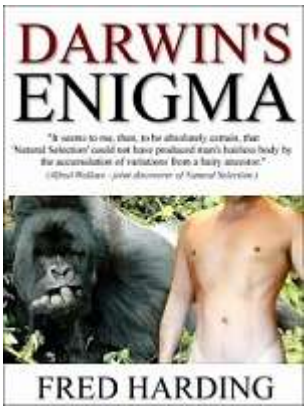
2019
Tyranny of the Bra:
In Ten Studies The New Evidence
Kindle Edition: ASIN: B07VZC6718
Paperback: ISBN-10: 1087318726
ISBN-13: 978-1087318721



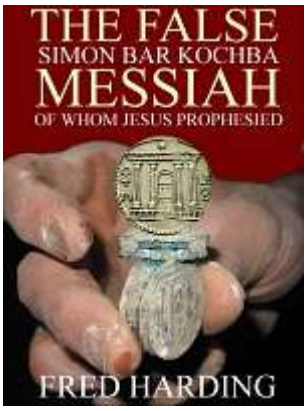
2019
Kill Strasser:
A True Story of Nazi Tyranny By One Who Escaped its Grip
Kindle Edition: ASIN: B07NGLBKXR
Paperback: ISBN-10: 1797819119
ISBN-13: 978-1797819112



2017
God's Electronic Communicator
Kindle Edition: ASIN: B0784T6L1Y
Paperback: ISBN-10: 1981676953
ISBN-13: 978-1981676958

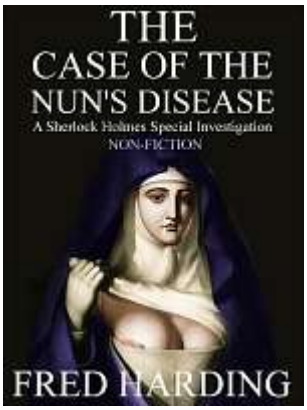


2017
Darwin's Enigma
Kindle Edition: ASIN: B00SPGA4U2
Paperback: ISBN-10: 1512003972
ISBN-13: 978-1512003970



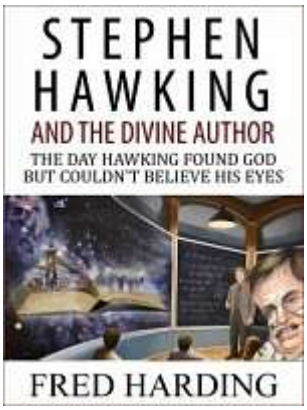
2017
The False Messiah of whom Jesus prophesied: Simon Bar Kochba
Kindle Edition: ASIN: B072JWTV1B

2017
Hard Brexit Guaranteed
Kindle Edition: ASIN: B0756GCDXY

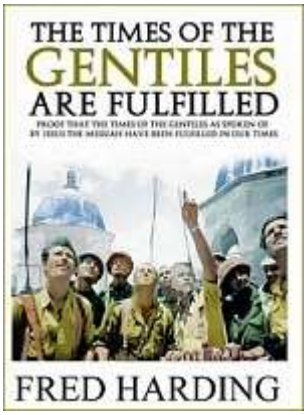


2017
Case of the Nun's Disease:
A Sherlock Holmes Special Investigation
Kindle Edition: ASIN: B072JWLGCM

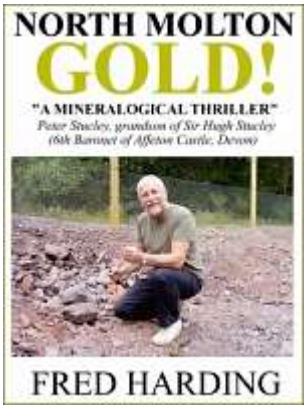
2016
The Apocalypse Deception:
The Book of Revelation is not what it claims to be
Kindle Edition
Kindle Edition: ASIN: B01MAYEY0Q
Paperback: ISBN-10: 1539106217
ISBN-13: 978-1539106210



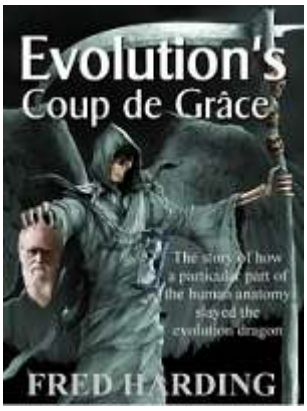
2015
Stephen Hawking and the Divine Author: The Day Hawking Found God But Could't Believe His Eyes
Kindle Edition: ASIN: B00WXP064K
Paperback: ISBN-10: 1539866262
ISBN-13: 978-1539866268



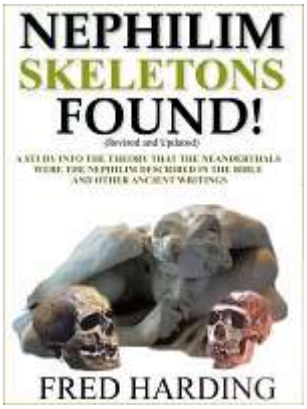
2015 The Times of the Gentiles Are Fulfilled: Proof that the Times of the Gentiles have been fulfilled in Our Times
Kindle Edition: ASIN: B019HR9D6S
Paperback: ISBN-10: 1539686736
ISBN-13: 978-1539686736



2014
North Molton Gold!
Kindle Edition: ASIN: B008NXCHVQ
Paperback: ISBN-10: 1503165639
ISBN-13: 978-1503165632
"A Mineralogical Thriller"
Peter Stucley, grandson of Sir Hugh Stucley (6 Baronet of Affeton Castle, Devon)

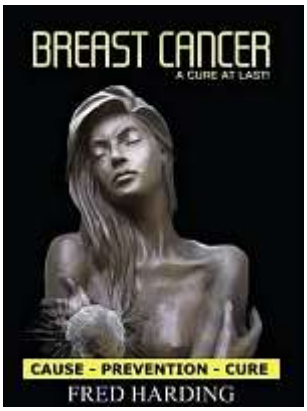


2013
EVOLUTION'S Coup de Grâce
Kindle Edition: ASIN: B00GOFPB2M



2013
Nephilim Skeletons Found
#1 Best Seller Category Paleontology
Kindle Edition: ASIN: B00CKU8I5M
Paperback: ISBN-10: 1500702323
ISBN-13: 978-1500702328

2012
Kindle Writer Simplified
Kindle Edition: ASIN: B009THGA9K



2007 - 2011
Breast Cancer:
Cause - Prevention - Cure
Kindle Edition: ASIN: B005HM9BHY
Paperback: ISBN-10: 1719931909
ISBN-13: 978-1719931908

2006
Breast Cancer Prevention and Cure:
Your Choice!
Paperback: ISBN-10: 1846851726
ISBN-13: 978-1846851728