

Protecting your income and supporting your patients during COVID-19

Carolyn Ledowsky

Key outcomes of this webinar

What is COVID-19?

What are the signs and symptoms?

Previous strategies discussed

New Information

Where to from here?

How can we support you?

What is COVID-19?

Human coronaviruses, first characterized in the 1960s, are responsible for a substantial proportion of upper respiratory tract infections in children.

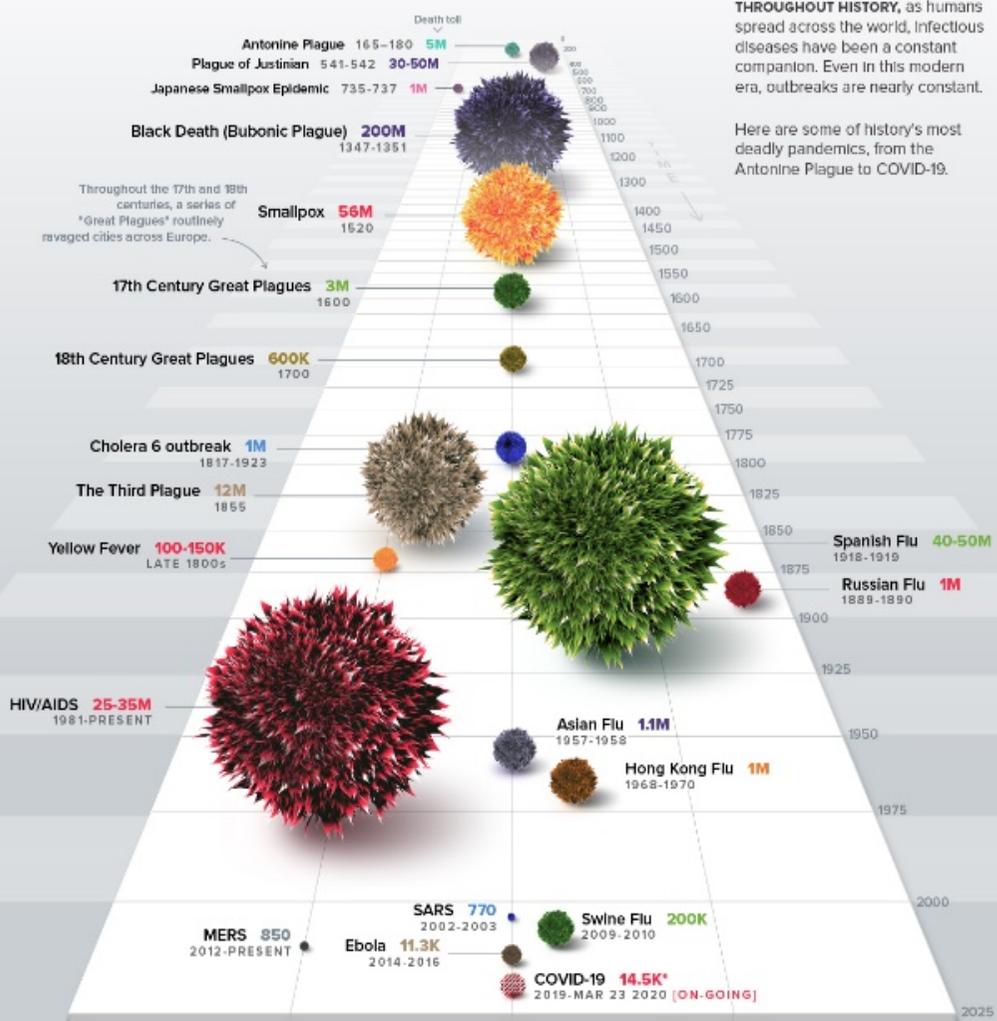
Since 2003, at least 5 new human coronaviruses have been identified, including the severe acute respiratory syndrome (SARS) coronavirus, which caused significant morbidity and mortality.

Coronavirus disease 2019 (COVID-19) is a respiratory illness that can spread from person to person. The virus that causes COVID-19 is a novel coronavirus that was first identified during an investigation into an outbreak in Wuhan, China.

https://journals.lww.com/pidj/fulltext/2005/11001/history_and_recent_advances_in_coronavirus.12.aspx

HISTORY OF PANDEMICS

PAN-DEM-IC (of a disease) prevalent over a whole country or the world.



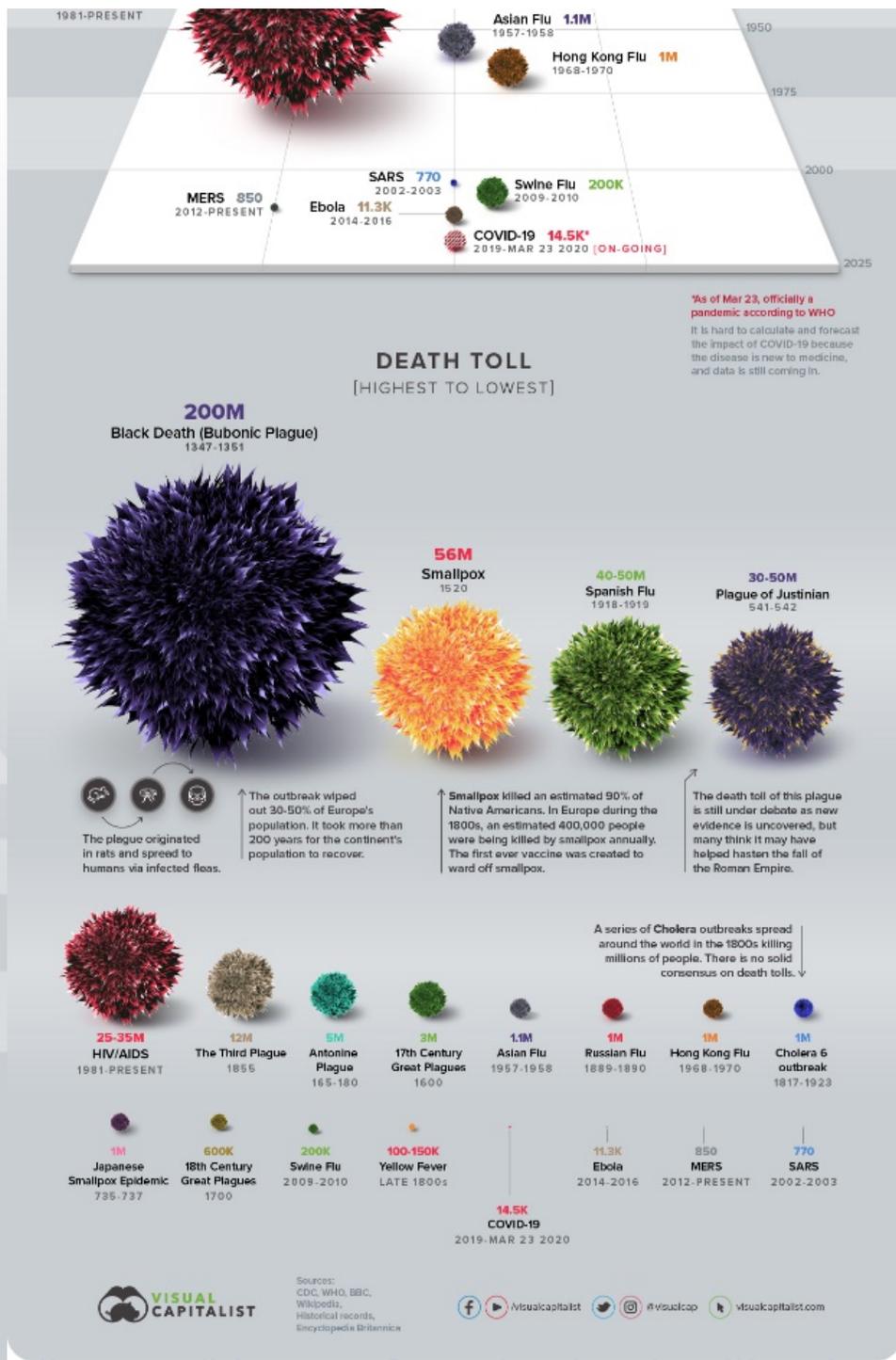
THROUGHOUT HISTORY, as humans spread across the world, infectious diseases have been a constant companion. Even in this modern era, outbreaks are nearly constant.

Here are some of history's most deadly pandemics, from the Antonine Plague to COVID-19.

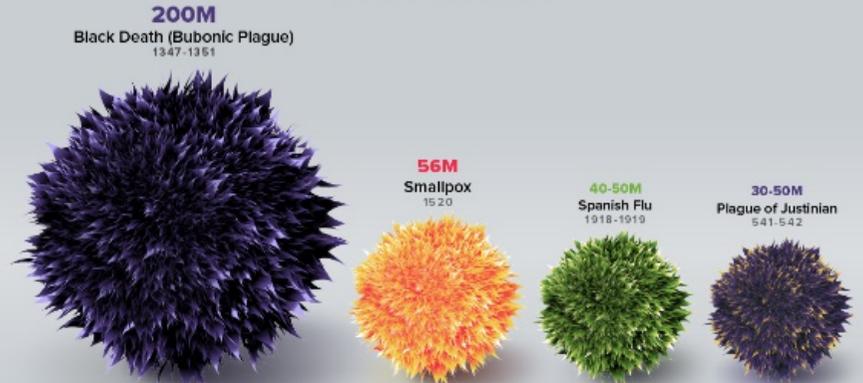
DEATH TOLL [HIGHEST TO LOWEST]

200M
Black Death (Bubonic Plague)
1347-1351

*As of Mar 23, officially a pandemic according to WHO
It is hard to calculate and forecast the impact of COVID-19 because the disease is new to medicine, and data is still coming in.



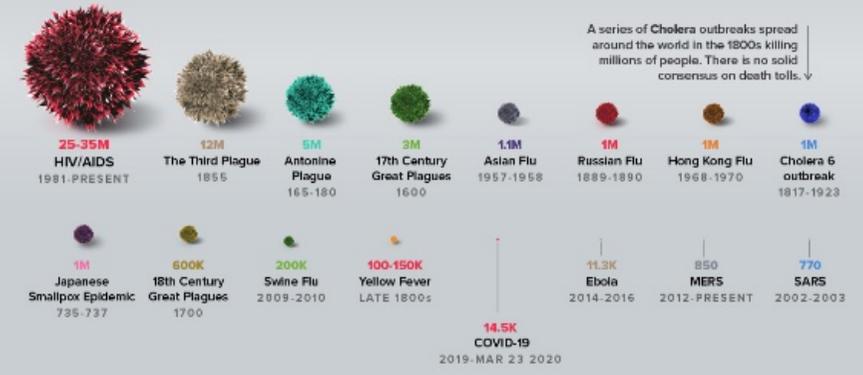
DEATH TOLL [HIGHEST TO LOWEST]



The plague originated in rats and spread to humans via infected fleas. The outbreak wiped out 30-50% of Europe's population. It took more than 200 years for the continent's population to recover.

Smallpox killed an estimated 90% of Native Americans. In Europe during the 1800s, an estimated 400,000 people were being killed by smallpox annually. The first ever vaccine was created to ward off smallpox.

The death toll of this plague is still under debate as new evidence is uncovered, but many think it may have helped hasten the fall of the Roman Empire.



A series of Cholera outbreaks spread around the world in the 1800s killing millions of people. There is no solid consensus on death tolls.



Sources: CDC, WHO, BBC, Wikipedia, Historical records, Encyclopedia Britannica



<https://www.visualcapitalist.com/history-of-pandemics-deadliest/>

COVID-19 CORONAVIRUS PANDEMIC

Last updated: March 24, 2020, 02:33 GMT

[phs](#) - [Death Graphs](#) - [Countries](#) - [Death Rate](#) - [Incubation](#) - [Age](#) - [Sympt](#)

Coronavirus Cases:

379,080

[view by country.](#)

Deaths:

16,524

Recovered:

102,423

COVID-19 CORONAVIRUS PANDEMIC

Last updated: April 03, 2020, 23:53 GMT

[Case Graphs](#) - [Death Graphs](#) - [Countries](#) - [Death Rate](#) - [Incubation](#) - [Age](#) - [Symptom](#)

Coronavirus Cases:

1,097,810

[view by country.](#)

Deaths:

59,140

Recovered:

228,405

Signs and Symptoms?

The COVID-19 virus affects different people in different ways. COVID-19 is a respiratory disease and most infected people will develop mild to moderate symptoms and recover without requiring special treatment. People who have underlying medical conditions and those over 60 years old have a higher risk of developing severe disease and death.

Common symptoms include:

- fever
- tiredness
- dry cough
- Aches and pains
- Runny nose
- Sore throat
- Diarrhea
- Nausea

<http://www.ncbi.nlm.nih.gov/pubmed/26242570>

Pneumonia- According to Prof John Wilson, President-elect of RACGP & respiratory physician. 4 Categories of people who catch it:

- Sub-clinical – have the virus but no symptoms
- Mild symptoms – URT infection, fever and cough (maybe headache or conjunctivitis)
- Positive Covid-19 – present to hospitals and surgeries – flu like symptoms that keep them off work
- Severe illness that features pneumonia (in Wuhan that was 6% of the population)
 - Infection reaches the respiratory tree, which becomes injured
 - Causes inflammation, which irritates the nerves in the lining of the airway
 - Can go past the lining to the gas exchange units at the end of passages
 - If they are infected – pour out inflammatory material into air sacs
 - Lungs become filled with inflammatory material and this causes pneumonia

https://www.theguardian.com/world/2020/mar/26/what-happens-to-peoples-lungs-when-they-get-coronavirus?utm_source=ActiveCampaign&utm_medium=email&utm_content=What+Are+the+Long+Term+Effects+of+COVID-19%3F&utm_campaign=Coronavirus+Email+5+-+What+Are+The+Long+Term+Effects+-+SH+List

"For the 16-20% of symptomatic patients who eventually need ICU care, it is difficult to predict," he said, referring to the percentage of those hospitalized who will need critical care.

Patients who go into the intensive care unit and need ventilators are more likely to have lung damage, and to develop acute respiratory distress syndrome (ARDS), a severe lung condition in which fluid collects in the lungs' air sacs.

"Based on experience from SARS and MERS, some patients may develop lung fibrosis," Xiao said, though he noted that lung fibrosis, which is when lung tissue becomes scarred, has not been observed in the limited studies we have so far about COVID-19.

<https://abcnews.go.com/Health/coronavirus-long-term-effects/story?id=69811566>

Heart Damage

- It enters the cells by attaching to the ACE2 receptor, which serves as an entry point for the virus and because these receptors are high in the heart, it exposes the heart to more damage.
- A study from China found that 20% of patients developed an injury to the heart during hospitalization.
- Another study found that 7.2% of patients developed acute cardiac injury.
- There has been suggestion that those taking ACE inhibitors, ARB's and other renin-angiotensin-aldosterone system antagonists can increase susceptibility to the infection and severity of the disease. As ACE inhibitors and ARB's upregulate ACE2 expression in the heart. <https://www.tctmd.com/news/covid-19-should-not-guide-use-ace-inhibitorsarbs-heart-societies-say>

https://jamanetwork.com/journals/jamacardiology/fullarticle/2763524?utm_source=ActiveCampaign&utm_medium=email&utm_content=What+Are+the+Long+Term+Effects+of+COVID-19%3F&utm_campaign=Coronavirus+Email+5+-+What+Are+The+Long+Term+Effects+-+SH+List

https://jamanetwork.com/journals/jama/fullarticle/2761044?utm_source=ActiveCampaign&utm_medium=email&utm_content=What+Are+the+Long+Term+Effects+of+COVID-19%3F&utm_campaign=Coronavirus+Email+5+-+What+Are+The+Long+Term+Effects+-+SH+List

A study on SARS/Covid-19

Therapies that act on coronavirus act in 4 ways:

1. Prevent Virus RNA synthesis and replication – Plpro inhibitors are essential for correcting virus replication and is a popular target for coronavirus inhibitors.
 - chrysin & baicalin from *Scutellaria baicalensis* (antivirus/anti-inflammatory)
 - epigallocatechin gallate from *Camellia sinesis* (antioxidant)
 - *Vitis vinifera* (antioxidant/anti-inflammatory)
 - Andrographolide from *Andrographis* (Antivirus/anti-inflammatory effect)
 - Rosemarinic acid from Rosemary (Antivirus/antioxidant)
 - Magnolol from magnolia (Anti-tumor/antimicrobial)

<https://reader.elsevier.com/reader/sd/pii/S2211383520302999?token=4CEEB59B6401B9DEB764BFED1D2FEB0193953DD57BFE31A5CA85DF55A707D4D7AE3FD932583F30A2A8ABBCC33D28FAF8>

A study on SARS/Covid 19

Therapies that act on coronavirus act in 4 ways:

2. Block virus binding to human cell receptors – Spike is the main structural protein of coronavirus. It binds to the host cell receptors to mediate virus invasion. WE need to target spike proteins:

- Licoflavonol from Glycyrrhiza (licorice)
- Cosmosiin from (Scutellaria baicalensis)
- Neohesperidin from Citrus aurantium – hesperidin was the most effective in disrupting the interaction of ACE2 and SPIKE complex.
- Piceatannol from Vitis vinifera exhibited high binding affinity.

<https://reader.elsevier.com/reader/sd/pii/S2211383520302999?token=4CEEB59B6401B9DEB764BFED1D2FEB0193953DD57BFE31A5CA85DF55A707D4D7AE3FD932583F30A2A8ABBCC33D28FAF8>

A study on SARS and Covid-19

Therapies that act on coronavirus act in 4 ways:

3. Products inhibiting virulence factor to restore hosts innate immunity

- products with antibacterial and anti inflammatory effects exhibiting high binding affinity to target proteins
- Wongonoside from scutellaria baicalensis
- Vitexin from Vitex negundo
- Andrographolides from Andrographis

<https://reader.elsevier.com/reader/sd/pii/S2211383520302999?token=4CEEB59B6401B9DEB764BFED1D2FEB0193953DD57BFE31A5CA85DF55A707D4D7AE3FD932583F30A2A8ABBCC33D28FAF8>

A study on SARS and Covid-19

Therapies that act on coronavirus act in 4 ways:

4. Act on hosts specific receptors or enzymes preventing virus from entering hosts cells ie; Nsp 1, Nsp3 (Nsp3b), Plpro, Nsp3e), Nsp7_Nsp8 complex, Nsp9–Nsp10, and Nsp14–Nsp16, 3CLpro, E-channel (E protein), ORF7a, Spike, ACE2, C-terminal RNA binding domain (CRBD), N-terminal RNA binding domain (NRBD), helicase, RdRp, and TMPRSS2

many of the above herbs discussed

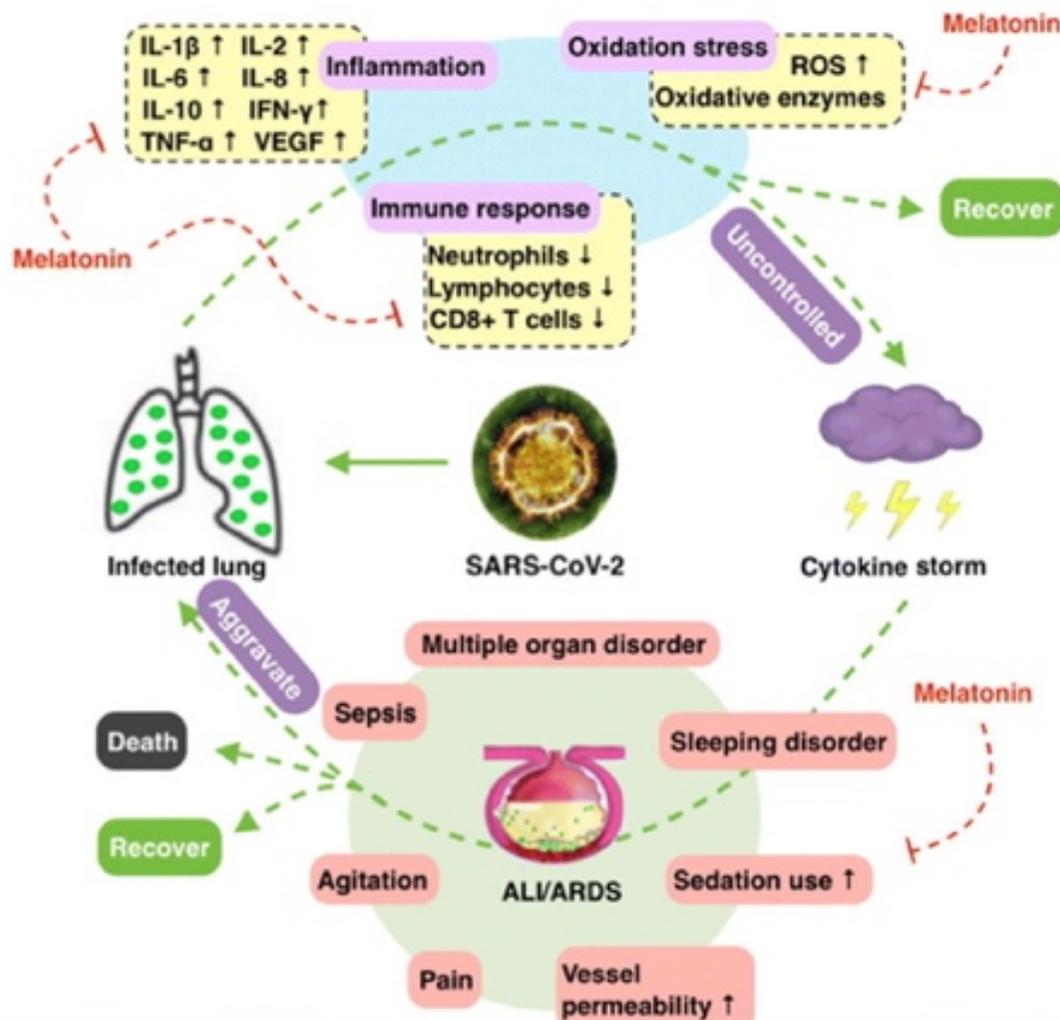
<https://reader.elsevier.com/reader/sd/pii/S2211383520302999?token=4CEEB59B6401B9DEB764BFED1D2FEB0193953DD57BFE31A5CA85DF55A707D4D7AE3FD932583F30A2A8ABBCC33D28FAF8>

Melatonin

“the evidence suggests that excessive inflammation, oxidation, and an exaggerated immune response very likely contribute to COVID-19 pathology. This leads to a cytokine storm and subsequent progression to acute lung injury (ALI)/acute respiratory distress syndrome (ARDS) and often death.”

Melatonin, a well-known anti-inflammatory and anti-oxidative molecule, is protective against ALI/ARDS caused by viral and other pathogens. Melatonin is effective in critical care patients by reducing vessel permeability, anxiety, sedation use, and improving sleeping quality, which might also be beneficial for better clinical outcomes for COVID-19 patients. Notably, melatonin has a high safety profile. There is significant data showing that melatonin limits virus-related diseases and would also likely be beneficial in COVID-19 patients.

<https://www.sciencedirect.com/science/article/pii/S0024320520303313#0005>



<https://www.sciencedirect.com/science/article/pii/S0024320520303313#0005>

Fig. 1. Pathogenesis of COVID-19 and potential adjuvant use of melatonin. We postulated that lungs infected by SARS-CoV-2, and a suppressed immune response, elevated inflammation and excessive oxidation stress proceed unabated, this results in the activation of the cytokine storm. ALI/ARDS may ensue, accompanied by a series of complications, the outcomes of which vary according to the severity of the disease. Melatonin may play a role of adjuvant medication in the regulation of immune system, inflammation and oxidation stress, and provide support for patients with ALI/ARDS and related complications. ALI: Acute lung injury; ARDS: Acute respiratory distress syndrome.

Melatonin

Thus, we hypothesize that excessive inflammation, depressed immune system, and an activate cytokine storm substantially contribute to the pathogenesis of COVID-19.

Melatonin

Thus, we hypothesize that excessive inflammation, depressed immune system, and an activate cytokine storm substantially contribute to the pathogenesis of COVID-19

Melatonin is not viricidal but it has indirect anti-viral actions [3] due to its anti-inflammation, anti-oxidation and immune enhancing features

In previous respiratory syncytial virus models, melatonin caused down-regulation of acute lung oxidative injury, pro-inflammatory cytokine release and inflammatory cell recruitment.

10mg day of melatonin was considered to be a safe and effective level

<https://www.sciencedirect.com/science/article/pii/S0024320520303313#f0005>

Nitric Oxide Inhibits the Replication Cycle of Severe Acute Respiratory Syndrome Coronavirus

Sara Åkerström, Mehrdad Mousavi-Jazi, Jonas Klingström, Mikael Leijon, Åke Lundkvist, Ali Mirazimi

DOI: 10.1128/JVI.79.3.1966-1969.2005

Nitric oxide (NO) is an important signaling molecule between cells which has been shown to have an inhibitory effect on some virus infections. The purpose of this study was to examine whether NO inhibits the replication cycle of the severe acute respiratory syndrome coronavirus (SARS CoV) in vitro.

The up-regulation of iNOS is common during an infection, and it is known that some viruses and bacteria are either inhibited or stimulated by increased levels of NO

<https://jvi.asm.org/content/79/3/1966>

A study on flu vaccination and coronavirus

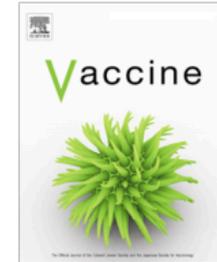
Vaccine 38 (2020) 350–354



Contents lists available at [ScienceDirect](#)

Vaccine

journal homepage: www.elsevier.com/locate/vaccine



Influenza vaccination and respiratory virus interference among Department of Defense personnel during the 2017–2018 influenza



Receiving influenza vaccination may increase the risk of other respiratory viruses, a phenomenon known as virus interference.³ Products inhibiting virulence factor to restore hosts innate immunity.

Vaccine derived virus interference was significantly associated with coronavirus and human metapneumovirus;

•

<https://www.sciencedirect.com/science/article/pii/S0264410X19313647>

How can we minimize risk

1. Isolation and social distancing – at least 1 metre distance
2. Avoid contact with people that might have mild symptoms but pass on to you.
3. Wash hands thoroughly with soap and water or hand sanitizer
4. Avoid touching your face
5. Cover your mouth and nose when coughing and sneezing
6. Stay at home and if you show any symptoms at all – do not leave the house

https://www.who.int/health-topics/coronavirus#tab=tab_2

How can we minimize risk

7. Refrain from smoking and other activities that weaken the lungs
8. Take supplements to support the immune system
9. If you do get symptoms act quickly

<http://www.ncbi.nlm.nih.gov/pubmed/26242570>

Step 1 -Antiviral support

- **Vitamin C** – 3-5gms per day
- Zinc –Suggest 50mg per day and 50mg twice a day in active infection. Vitamin A – 5,000IU per day
- MCN Nasal spray – this is antiviral, antifungal and anti bacterial – use this twice a day to protect your nasal passages from the virus. 2 sprays in each nostril twice a day. (it stings at first but will clear the head)
- Antiviral immune herbal formula – 5ml twice a day
- Transfer Factors – to increase NK cells

Step 2 –signs and symptoms

- **Vitamin C** – 3-5gms per day
- Zinc –Suggest 50mg per day and 50mg twice a day in active infection.
- MCN Nasal spray – this is antiviral, antifungal and anti bacterial – use this twice a day to protect your nasal passages from the virus. 2 sprays in each nostril twice a day. (it stings at first but will clear the head)
- Herbal support
 - Cough/sore throat mix
 - Respiratory/inflammatory mix – licorice, andrographis, scutellaria B, rosemary, vitis
 - Melatonin 10mg
 - Quercetin – 200mg 3 x day

How can we help

- How can we help?
 - More appointments available
 - I will be available for ½ hour herbal consults Thursday 1pm – 6pm each week (to be extended where need be)
 - We will be having regular webinars/facebook sessions to keep you informed
 - If you are feeling anxious/depressed or alone, ring us

THANK YOU AND QUESTIONS

CONTACT US:

MTHFR Support Australia



info@mthfrsupport.com.au



Tel: 02 99081888



www.mthfrsupport.com.au

Copyright MTHFR Support Australia 2106. All rights reserved. This document may not be copied or Distributed without the prior written permission of Carolyn Ledowsky