

Genetic Lifehacks

RESEARCH STUDIES ON SARS-COV-2 TREATMENT OPTIONS

Member's Summary



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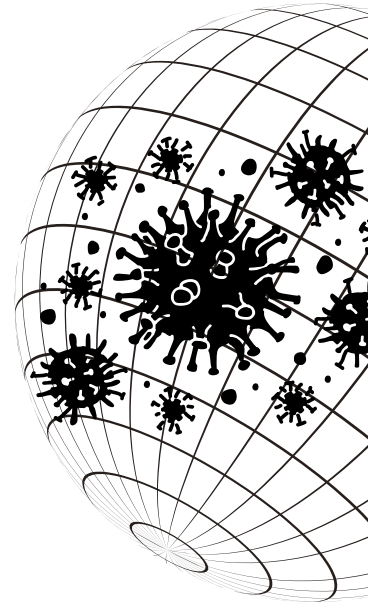
Nigella Sativa

09

Metabolic
Health

Goal

INTRODUCTION



Utilizing Research

A number of research studies and clinical trials have been completed on treating or preventing SARS-CoV-2.

In the year and a half since we've encountered the SARS-CoV-2 virus, researchers have learned a lot about the risk factors for getting SARS-CoV-2 and the risk factors for the severity of illness.

In my opinion, we all have a personal responsibility to learn from the research on this topic. Knowing the possible preventions and treatments for SARS-CoV-2 allows you to make informed choices that are right for your situation.

In these research summaries, I will only present the research and not make recommendations. I encourage you to use the information in determining your own best path forward, and please talk with your medical advisor if you have questions. I've included the study links for you to read and evaluate the studies on your own.

I want all of you to have the information and know your options. No single supplement or pill is going to treat or prevent COVID-19 at this point. Instead, a multi-pronged approach to optimizing health and lifestyle is needed.

Baseline sufficiency for prevention

VITAMIN D

Why is vitamin D important in immune health?

A type of white blood cell called a macrophage contains both the vitamin D receptor (VDR) and the ability to turn the inactive circulating form of vitamin D into the active state when needed. Macrophages use active vitamin D when initiated by interferon-gamma, which the innate immune system produces in response to pathogens such as viruses. This active vitamin D combines with the VDR to activate several genes needed in the fight against viruses.

Interestingly, research shows that vitamin D both enhances and tamps down immune response — playing a vital role in ensuring the initial immune response is strong enough. But then to also put on the brakes if the adaptive immune response is out of control.

Research on vit D:

1

SEVERITY OF SYMPTOMS

A July 2021 study showed that 84% of patients with COVID-19 (n=191) had vitamin D deficiency or insufficiency. It was a stark contrast to their age-matched healthy control group in which only 32% of people had insufficient vitamin D levels.

2

LOTS OF RESEARCH

A meta-analysis of 64 studies on vitamin D sufficiency and COVID-19 prevention shows that having adequate vitamin D reduced the risk of severe COVID by 57% (as of Aug. 10, 2021).

3

HOW MUCH?

The research on vitamin D shows that not being deficient is likely enough to help with your immune system response to COVID-19. Most studies put an adequate vitamin D level at anything over 30 ng/ml, but a couple of studies use 50 ng/ml.

4

FOR TREATMENT?

A randomized clinical trial in people with mild to moderate COVID showed that 5,000 IU daily of vitamin D reduced their sick time.

Decreased in Aging

MELATONIN

More than a sleep hormone

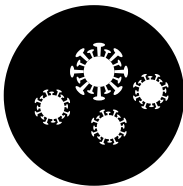
The majority of melatonin is produced at night in the pineal gland and then circulated throughout the body. On a cellular level, though, most cells can synthesize small amounts of melatonin, acting within the cell as an antioxidant, immune system modulator, and circadian rhythm signal.

Reduced in Aging: The pineal gland begins to calcify as we get older. The calcification reduces the amount of melatonin the pineal gland can produce causing a significant decrease in melatonin in aging.



1 ANTIOXIDANT

Within cells, melatonin is produced at low levels throughout the day and night. It acts as an intracellular antioxidant, protecting cells from oxidative stress. In responding to a virus, the immune response causes an increase in oxidative stress that melatonin can temper.



2 IMMUNE SYSTEM

In addition to its role in circadian rhythm and immune response, melatonin acts directly to boost the immune system's initial response to a virus or bacteria. Melatonin also prevents an excessive response – such as in ARDS or sepsis.



3 BLOOD PRESSURE

Melatonin is involved in blood pressure regulation and the pattern of blood pressure dipping down at night. Clinical trials show that regularly taking timed-release melatonin at night reduces blood pressure.

MELATONIN

Studies on melatonin for SARS-CoV-2

Study Type	Purpose	Data / Outcome
Computer based drug repurposing	In silico study published March 2020 looking at existing drugs	<ul style="list-style-type: none">• Melatonin was predicted as an antiviral for SARS-CoV-2
Network medicine approach	Large observational study of likelihood of SARS-CoV-2 positive based on current medications	<ul style="list-style-type: none">• People regularly using melatonin were at a 28% reduced likelihood of COVID-19
Retrospective study	Large study on severe COVID-19 patients	<ul style="list-style-type: none">• Melatonin in ICU was associated with 85% reduced risk of death
Randomized Clinical Trial	Clinical trial of melatonin in mild to moderate COVID-19 patients	<ul style="list-style-type: none">• Patients receiving melatonin returned to baseline health faster

Supplemental melatonin is readily available in many different doses. We produce less melatonin as we age, so there is no one-size-fits-all solution for supplemental melatonin. Timed-release melatonin better mimics the natural production of melatonin at night.

Anti-viral, anti-inflammatory

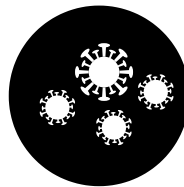
QUERCETIN

Quercetin is an active phytochemical found in many different traditionally used medicinal plants. It has many anti-inflammatory properties as well as anti-viral properties with specific viruses.



1 ANTIOXIDANT

Quercetin acts as a free radical scavenger, helping to balance out oxidative stress in cells.



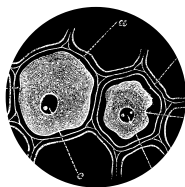
2 IMMUNE SYSTEM

In addition to its role as an antioxidant, quercetin has studies showing that it reduces upper respiratory tract infections and reduces viral load in hepatitis C.



3 SENOLYTIC

Cellular senescence occurs when a cell can no longer divide or do its normal function. Basically, the cell just sits there, giving off pro-inflammatory signals. Quercetin has been studied as a senolytic, which clears out senescent cells. Cellular senescence is a problem in older people's immune response to COVID-19.



4 MAST CELL STABILIZER

Mast cells are an essential part of the initial immune response to viruses, but overactive mast cells may add to the overactive immune response in severe COVID-19.

QUERCETIN

Studies on quercetin for SARS-CoV-2

Study Type	Purpose	Data / Outcome
Cell Studies	Multiple in vitro studies on docking with spike protein	<ul style="list-style-type: none">Quercetin acts as a promising antiviral in cell studies on SARS-CoV-2
Clinical trial	Evaluate efficacy of quercetin for prevention of COVID-19	<ul style="list-style-type: none">None of the participants in the quercetin / vitamin C / zinc trial tested positive
Clinical trial	Participants took 1,000 mg/day of quercetin plus C for prevention	<ul style="list-style-type: none">Significantly decreased risk of SARS-CoV-2
Randomized Clinical Trial	Trial in mild-Covid patients to test whether quercetin would diminish symptoms	<ul style="list-style-type: none">Patients receiving quercetin had a faster reduction in symptoms and return to normal
Randomized Clinical trial	Prevention of hospitalization in Covid patients, 1,000mg/day	<ul style="list-style-type: none">Significant decrease in the risk of hospitalization in quercetin arm of the trial

Antiviral flavonoid

CURCUMIN

A component of turmeric, curcumin is a flavonoid with many antiviral and anti-inflammatory properties. Turmeric has a long history as a spice used in Indian foods and Ayurvedic and traditional Chinese medicine.

Prior research studies show that it helps prevent infection from other enveloped viruses, including RSV and the flu. Studies in the original SARS virus showed it might be effective, and studies on acute respiratory distress syndrome and sepsis show that curcumin may modulate an excessive immune response.

Curcumin is not very bioavailable. Thus, some supplement formulations add fats as lipids or nanoparticles for increased absorption. Piperine, a compound found in black pepper, is sometimes combined with curcumin to prevent rapid elimination.

Research on Curcumin for SARS-CoV-2

1 IN VITRO STUDIES

Cell studies show that curcumin directly binds to the Spike protein. Theoretically, this should prevent the SARS-CoV-2 virus from easily entering the cell and reduce replication.

2 HOSPITALIZATION

A small clinical trial (41 participants) found that curcumin decreased the length of stay in the hospital. It also improved oxygen levels by day 2.

3 HOW MUCH?

A placebo-controlled clinical trial used 525 mg of curcumin w/ piperine twice a day. COVID-19 patients who received the curcumin supplement had earlier symptom recovery and less deterioration than the control group.

4 FOR TREATMENT?

A triple-blind randomized placebo-controlled clinical trial with mild to moderate covid patients tested curcuminoids in nanomicelles. The group receiving the curcuminoids had symptoms resolve faster, including the return of taste and smell.

References:

Studies: <https://www.geneticlifehacks.com/plant-compounds-sars-cov-2/>

Curcumin: <https://www.geneticlifehacks.com/curcumin-supplements-decreasing-inflammation/>

Black Cumin Seed

NIGELLA SATIVA

Nigella sativa, also known as Black Seed or Black Cumin, is a medicinal plant native to the Middle East. Interestingly, hundreds of studies on Nigella sativa show that it may help with pathogenic infections (viral, bacterial, fungal), diabetes, cardiovascular disease, and inflammatory disorders.

A recent placebo-controlled randomized clinical trial involving 313 COVID-19 patients in Pakistan looked at the effectiveness of Nigella sativa plus honey compared to a placebo. The patients who received Nigella sativa plus honey were sick for a shorter time than those in the placebo arm of the trial. The Nigella sativa plus honey group patients had a 50% shorter duration of illness, both for moderate and severe illnesses.

Computer modeling studies also show that the active phytoconstituents of Nigella sativa interact with SARS-CoV-2. Nigella sativa may be effective not only in blocking replication but also in decreasing the ability of the virus to enter cells.



Prevention

METABOLIC HEALTH

The most significant risk factors for severe COVID-19 are age and poor metabolic health. People with diabetes and obesity are at a significantly increased risk with COVID-19. Thus, focusing on your metabolic health may help to prevent complications or severe disease.



BLOOD GLUCOSE LEVELS

Genetic variants increase your risk of higher blood glucose

- Dietary choices are very important
- Timing of eating may matter
- <https://bit.ly/3ibQ59q>

GENETICS AND WEIGHT

Research shows:

- 60% of obesity susceptibility is genetic
- Different genetic variants impact weight in different ways
- <https://bit.ly/3ETaMAO>



CIRCADIAN RHYTHM

Immune response:

- Varies with circadian rhythm
- Sleep is important for fighting off viruses
- <https://bit.ly/3zLj8GQ>

We are not helpless against viral respiratory diseases! Good metabolic and immune system health is important in your body's ability to fight off infection. Be prepared with natural ways of boosting your immune system, but also seek medical help when needed.