



During this time of great societal stress, we are here to contribute our knowledge and experience to your health and wellbeing. There is a high level of interest in evidence-based integrative strategies to augment public health measures to prevent COVID-19 virus infection and associated pneumonia. Unfortunately, ***no integrative measures have been validated in human trials specifically for COVID-19.*** Notwithstanding, this is an opportune time to be proactive. Using available evidence, we offer the following strategies for you to consider to enhance your immune system to reduce the severity or the duration of a viral infection. Again, we stress that these are supplemental considerations to the current recommendations that emphasize regular hand washing, physical distancing, stopping non-essential travel, and getting tested if you develop symptoms.

RISK REDUCTION:

- **Adequate sleep:** Shorter sleep duration increases the risk of infectious illness. Adequate sleep also ensures the secretion of melatonin, a molecule which may play a role in reducing coronavirus virulence (see **Melatonin** below).
- **Stress management:** Psychological stress disrupts immune regulation. Various mindfulness techniques such as meditation, breathing exercises, and guided imagery reduce stress.
- **Zinc:** Coronaviruses appear to be susceptible to the viral inhibitory actions of zinc. Zinc may prevent coronavirus entry into cells and appears to reduce coronavirus virulence. Typical daily dosing of zinc is 15mg – 30mg daily with lozenges potentially providing direct protective effects in the upper respiratory tract.
- **Vegetables and Fruits:** Vegetables and fruits provide a repository of flavonoids that are considered a cornerstone of an anti-inflammatory diet. At least 5–7 servings of vegetables and 2–3 servings of fruits are recommended daily. Some of these foods and/or dietary supplements include: tomatoes, apples, onions, oranges, nuts, parsley, celery, berries, green tea, and herbs licorice and Chinese skullcap.
- **Vitamin C:** Clinical trials have found that vitamin C shortens the frequency, duration and severity of the common cold and the incidence of pneumonia. Typical daily dosing of vitamin C ranges from 500mg to 3000mg daily with even higher doses utilized during times of acute infection.
- **Melatonin:** Melatonin has been shown to be anti-inflammatory. It also reduces oxidative lung injury and inflammatory cell recruitment during viral infections.
- **Curcumin:** Curcumin, a key component of turmeric, has anti-inflammatory actions and antiviral effects against a variety of similar viruses.

DURING SYMPTOMS OF INFECTION OR POSITIVE TEST FOR THE COVID-19 VIRUS:**To Avoid:**

In the absence of human clinical data, **caution is warranted with the following immune activating agents** due to their possible stimulation of an inflammatory response:

- Sambucus nigra (Elderberry)
- Isolated polysaccharide extracts from medicinal mushrooms or mycelium
- Echinacea angustifolia and E. purpurea

- Larch arabinogalactan
- Vitamin D as a dietary supplement

Likely Safe:

There are other commonly used natural immune stimulating and antiviral agents, several of which may work to restore immune balance [homeostasis]. These are, therefore, likely safe to use both prior to, and during COVID-19 virus infection. Whether these agents mitigate the symptoms or severity of COVID-19 is unknown and, therefore, the benefit of these agents during COVID-19 infection is unknown.

Recommendations include:

- *Allium sativum* (garlic)
- Quercetin
- *Astragalus membranaceus*
- Mycelium mushroom extracts as well as fruiting body extract of *Agaricus blazeii*
- *Mentha piperita* (peppermint)
- Green tea and green tea extracts
- *Andrographis paniculata*
- Zinc
- Vitamin A
- Vitamin C

The information and understanding of the COVID-19 virus infection and disease continues to change rapidly. We encourage you to make integrative recommendations carefully. **It is also important to reiterate that there are no clinically evidence-based integrative prevention or treatment strategies for Covid-19 virus infection.**

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