

health **smarts**

KYLIE JAMES, CNP, & JOANNE SMITH, CNP

Immune Support & Vitamin C

Right now, we are living in uncertain times with the emergence of the novel coronavirus (COVID-19). Humans have never been exposed to this virus before, even though it's part of the cold and flu family.

On top of that, October is usually the start of flu season. The flu, or more officially influenza, is an infectious disease caused by an influenza virus. Symptoms can be mild to severe.

According to the Centers for Disease Control and Prevention (CDC), the most common symptoms for both include: a high fever or feeling feverish/chills, runny or stuffy nose, sore throat, muscle pains, headache, coughing, shortness of breath or difficulty breathing and feeling tired. These symptoms typically begin two days after exposure to the virus and last about a week. The cough, however, may last for more than two weeks.

One way COVID-19 differs from the flu is that someone may have a change or loss in taste or smell, according to the CDC.

And while flu vaccines have been around for some time, a COVID-19 vaccine was still under development as of press time in early September.

So what can you do to try and help protect yourself?

The Science

Health food stores and drugstores have been running out of various immune-supportive supplements

as people attempt to strengthen and enhance their immunity.

One of the supplements that has been in high demand is vitamin C. But does it really protect us?

Vitamin C is found in high concentrations in our white blood cells,



but it's rapidly depleted during infections, resulting in reduced immunity. Vitamin C helps us upregulate our immune system, and there has been extensive research on vitamin C's ability to support the body in recovery from a variety of viruses.

A vitamin C deficiency results in a weakened immune system and causes susceptibility to colds and other infections. Since the lining of the respiratory tract also depends heavily on the protection of vitamin C, respiratory infections and other lung-related conditions may also be a symptom of inadequate vitamin C intake.

Research shows that vitamin C in therapeutic doses has been effective in preventing and addressing the common flu virus.

A study printed in the October 1999 edition of *The Journal of Manipulative and Physiological Therapeutics*

took individuals who had cold- or flu-like symptoms and split participants into two groups.

The control population was treated with pain relievers and decongestants, whereas those in the test population were treated hourly with 1,000-milligram doses of vitamin C for the first six hours and then three times daily thereafter. Overall, reported flu and cold symptoms in the group that was administered vitamin C decreased by 85% compared with the control group.

A 2018 meta analysis of nine randomized controlled trials involving vitamin C by researchers at BioMed Research International found administration of extra therapeutic doses at the

onset of cold/flu symptoms helped reduce illness duration, shortened the time of confinement indoors and relieved the symptoms associated with it, including chest pain.

Unfortunately, because COVID-19 has never been seen before, there is little research to date about the impact vitamin C has on the virus.

However, because vitamin C has shown success in treating many other viral infections and has a low risk-profile, it may be one more tool you and your family can use to help protect yourselves.

That, of course, is in addition to social distancing, frequent hand washing and wearing a face mask and gloves in public.

Supplementation

Adding vitamin C supplementation to your diet is safe.

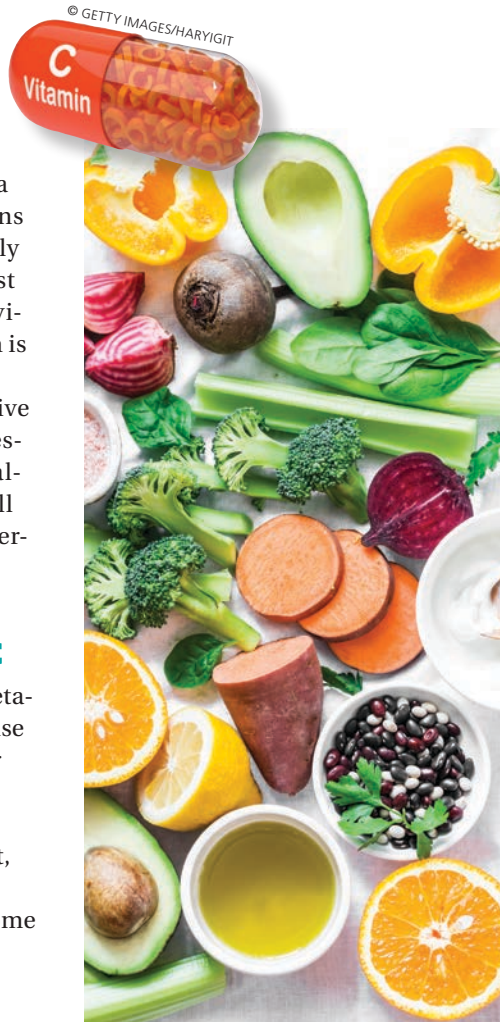
There's no documented toxicity level for vitamin C because it's a water-soluble vitamin, which means it's flushed out of the body relatively quickly. Vitamin C is also easily lost with stress, and as mentioned previously, is rapidly lost when a person is sick or has an infection.

Because vitamin C has a laxative effect at higher doses, health professionals who recommend individualized high doses for their clients will suggest taking it only for bowel tolerance. Vitamin C is best taken with meals to improve absorption.

Foods High In Vitamin C

Having a diet high in fruits and vegetables is a great step to not only increase your vitamin C intake, but also your intake of many other immune-supportive antioxidants and nutrients.

If you're unable to supplement, or simply want to increase your intake, the chart below outlines some foods that are high in vitamin C.



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DATA FROM THE WORLD'S HEALTHIEST FOODS

Food	Daily value
Bell peppers (1 cup)	291%
Broccoli (1 cup)	205.7%
Strawberries (1 cup)	136.1%
Oranges (1 fruit)	116.2%
Kale (1 cup)	88.8%
Tomatoes (1 cup)	57.3%
Cabbage (1 cup)	50.3%
Lemon juice (¼ cup)	46.8%
Parsley (2 tablespoons)	16.6%

If you do have flu-like symptoms, vitamin C supplementation is highly recommended. It's important to note that it's very difficult, if not impossible, to consume therapeutic dosages of vitamin C through diet alone.

The Institute of Functional Medicine says on its website (ifm.org) that supplementation with vitamin C appears to both prevent and treat respiratory and systemic infections and indicates that vitamin C has been used in hospital intensive care units to treat COVID-19 infections.

For more information on nutrition specific to spinal-cord injury, visit eatwelllivewellwithsci.com.

Kylie James and Joanne Smith are certified nutrition practitioners and co-authors of the Paralyzed Veterans of America-supported book Eat Well, Live Well with Spinal Cord Injury and Other Neurological Conditions. ■

The Miami Project to Cure Paralysis

Our Research Center of Excellence, housed at the University of Miami Miller School of Medicine is dedicated to finding effective treatments, improving the quality of life of individuals with spinal cord injuries, and ultimately, finding a cure for paralysis.

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