Can Nutrition Protect You from COVID-19?

When it comes to COVID-19, the best thing you can do is avoid exposure, all together. You know the drill: wash your hands (use hand sanitizer when you can’t), try not to touch your face (with unwashed hands), practice social distancing, use appropriate personal protective equipment (especially when social distancing is difficult), avoid large crowds, don’t get close to those that are sick and/or know they have been exposed to the virus, and follow CDC guidelines as well as local ordinances to protect yourself and prevent the spread of this virus.

Nutrition Can Make a Difference!

To be clear, there is no single nutrient, food, or supplement that can prevent or treat COVID-19 infection, but your overall nutritional status may make a difference in how prepared your body is to fight off a viral attack. Poor nutrition can affect the production and activity of immune cells and antibodies. A variety of different micronutrients are needed in each stage of the body’s multi-tiered, complicated immune response to pathogens. A few of the key nutrients that are known to be essential for the production, growth, and function of immune cells are Vitamin C, Vitamin D, zinc, selenium, iron, and protein.

Nutrition-Related Tips to Support Your Immune System:

- Choose a diet that will help you reach a healthy weight. Having too many fat cells is associated with a decrease in number as well as impaired function of certain immune system cells. In addition, fat cells release proteins called adipocytokines that can promote chronic, low-grade inflammation, that long term, can negatively affect how your immune system works.

- Choose foods rich in nutrients considered essential for good immune function:
  - Vitamin C: bell peppers, oranges, orange juice, berries, melon, tomato, broccoli, kiwi
  - Vitamin D: salmon, tuna, mackerel, fortified milk, certain brands of fortified breakfast cereals, yogurt, margarine, soy beverages (check the label)
  - Zinc: beans, nuts, seeds, beef, oysters, fish
  - Selenium: Fish (especially tuna, halibut, sardines), poultry, pork beef, whole grains
  - Iron: lean meat, seafood, poultry, beans, lentils, spinach, nuts
  - Protein: lean meats, nuts, beans, legumes, dairy, whole grains

- Add some pre/pro-biotic foods: the bacteria that live in the gut are an important part of our immune system. Although the research is emerging, there’s some evidence showing the potential of certain strains of bacteria (and certain foods that promote the growth of these strains) to improve the outcome of those with lung conditions, including those infected with COVID-19. Some food sources of prebiotics (foods that feed the friendly gut bacteria and promote their establishment in the gut) include: whole grains, beans, legumes, wheat bran, tomatoes, asparagus, chicory, onion, garlic, banana, and artichokes. Food sources of probiotics (the “good bacteria”) include fermented foods like yogurt, kefir, kombucha, sauerkraut, pickles, miso, tempeh, kimchi, sourdough bread and some cheeses. If you find yourself in the supplement aisle, strains to look for (because they are showing promising results in early research related lung conditions including COVID-19) include: *Lactobacillus rhamnosus*, *Bifidobacterium lactis*, *Bifidobacterium breve*, *Lactobacillus casei* Shirota and *Lactobacillus rhamnosus* GG.

- Don’t eat too much sugar. Some research has shown that certain immune cells (neutrophils) were less aggressive in attacking common bacteria in the minutes and hours after the ingestion of a large amount of sugar (immune response was impaired up to 5 hours after the sugar ingestion). It’s logical to think that if you eat sugary foods throughout the day, you may be
perpetually putting your immune system at a disadvantage. That being said, it’s important to note that this research is old (from the 70’s), hasn’t been replicated with viruses (like COVID-19), and the action of neutrophils is only one part of our body’s intricate, multi-faceted immune response. BUT (there’s always a “but”, isn’t there?) there are many other reasons to not to overdo it with sugar, starting with the bullet point above about a healthy weight (too much sugar may lead to obesity, which, in turn, can negatively affect your immune response). Additionally, filling up on too many sugary, processed foods, may prevent you from consuming enough wholesome, nutritious foods that contain the nutrients considered essential for a healthy immune system (your mother’s “don’t spoil your dinner” warning was for good reason!). And lastly, we can’t overlook the risks to dental health with too much sugar; it’s hard to bite into a healthy apple or crunch on nutrient-dense raw vegetables if you have bad teeth!

- Limit the alcohol: I know, this is tough news for the ‘Quarantini’ and ‘Pandemic Punch’ lovers out there, but chronic alcohol consumption as well as binge drinking can negatively affect the immune response on several different levels. Research hasn’t determined exactly how much is too much (and these amounts are likely different for different people), but generally, it’s best to avoid alcohol or keep it moderate (What’s “moderate”? Up to 1 drink/day for women, up to 2 drinks/day for men; and what’s “one drink”? 12 oz beer, 5 oz wine, 1.5 oz distilled spirits)
- Avoid caffeine before bed. While there are some immune-enhancing effects of caffeine-containing beverages like coffee and tea, sleep is very important for a properly functioning immune system. The later you consume caffeine in the day, the more likely it is to disrupt your sleep, which in turn, doesn’t do your immune system any favors. Enjoy a cup-o-joe in the morning, but it’s probably best to steer clear of caffeine within 5 hours of hitting the pillow.

BOTTOM LINE: If you look at the recommended foods and nutrition tips to promote the function of your immune system, you’ll see that all of the major food groups are represented. The recommendation to control your weight, while limiting alcohol and sugar aligns with other general health recommendations as well. Don’t underestimate the impact that a healthy, well-balanced diet with a variety of foods from each food group may make in your ability to fight off a viral attack, like COVID-19. If you have further questions about diet and immunity or any other nutrition-related concerns, be sure to set up a nutrition assessment with Campus Rec’s registered dietitian, Annie Bell. Appointments are individualized and last about an hour – oh – and they’re free! Sign up here: https://campusrec.utsa.edu/fitness-wellness/activities/nutrition

REFERENCES AND FURTHER READING:

https://www.hsph.harvard.edu/nutritionsource/nutrition-and-immunity/
http://www.eatingwell.com/article/7805547/are-there-foods-that-can-help-boost-your-immunity-heres-what-a-dietitian-says/
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4791086/
https://www.quickanddirtytips.com/health-fitness/prevention/does-sugar-really-suppress-the-immune-system
According to the Dietary Guidelines, drinks per day for men.

Too much caffeine can remove damaged or abnormal cells.

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