

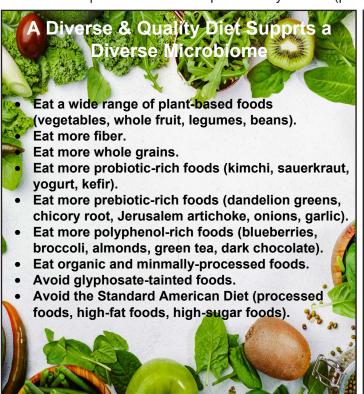
Fall 2023

COVID and Your Gut Microbiome

Microbial Health Impacts Immune Health

In recent years, the gut microbiome has emerged as a primary driver of immune health. In addition to supporting digestion, the beneficial microbes in the gut microbiome can either destroy or control the populations of harmful microbes, thereby bolstering the immune system. An illness is often the result of a perturbation in the normal equilibrium among the microbiome's trillions of inhabitants. In light of the global COVID-19 pandemic, researchers have uncovered some fascinating and promising information about the microbiome which just may help address COVID going forward and any future pandemics.

The microbiomes of patients who were hospitalized with COVID-19 had significant perturbations. Research has since shown that SARS-CoV-2 (the virus that causes COVID-19) harms the microbiome by reducing the diversity of the beneficial bacteria. Specifically, *Faecalibacterium prausnitzii*, *Eubacterium rectale*, and bifidobacteria were low. Even after patients recovered and for up to 30 days post-recovery, these bacteria levels remained abnormally low. A reduction in diversity and fewer beneficial bacteria leads to a situation in which harmful microbes (i.e., antibiotic-resistant bacteria and opportunistic bacteria) thrive and out-pace the beneficial bacteria that would normally keep the microbial populations balanced and healthy. Researchers also found that SARS-Co-V-2 can alter the delicate gut lining so that harmful microbes escape into the bloodstream. In turn, dangerous inflammation surges within the body and secondary infections ensue, which can be debilitating (i.e., long COVID) or even deadly. This is why gut health is so important. The development of synbiotics (probiotics + prebiotics) as treatment is also on the horizon.



RESEARCH PEARLS:

Particulate Air Pollution & Dementia

Epidemiologists and public health researchers released the findings of their nationwide study that found a link between dementia and areas with high pollution from wildfires and agriculture. Of the 27,857 participants studied, 4,195 (15%) developed dementia over the course of the 10-year study period. People who lived in areas with the highest levels of particulate matter (smoke, soot, dirt, and dust) were more likely to develop dementia than those in areas with less particulate matter. The study authors noted that the dementia-particle pollution link was observed in residential areas where the pollution level was less than the national air quality standards.

The study did not aim to establish a mechanism for how particle pollution contributes to dementia. However, because the particles are tiny (1/20 the width of a human hair), it's likely that they get stuck in the lungs or enter the bloodstream or access the brain via the nose.

JAMA Intern Med. 2023 Aug 14;e233300

Blue Zone Diets

Eating Like the Centenarians in Okinawa

Okinawans are some of the world's longest living people who follow a traditional diet which is primarily plant-based, although not strictly vegetarian. As such, this diet is nutrient-dense and antioxidant-rich, despite it containing relatively few calories. The diet relies on Okinawan, or Japanese, sweet potatoes as the staple food. Rich in fiber and vitamins A and C, these sweet potatoes comprise about two-thirds of the diet. Leafy greens, including those from the sea, root vegetables, soy products, low-glycemic grains, and locally-caught fish round out the diet. Animal-based foods are consumed sparingly, and dairy is avoided.

The primary difference between the Okinawa diet and the other Blue Zone diets is that it reflects a lower consumption of healthy fats and is low in calories. If you want to eat like a Okinawan, structure your overall eating pattern as follows:

Enjoy daily

Vegetables: Okinawan sweet potatoes

("satsumaimo"), bamboo shoots, cabbage, white

radish, carrots, Chinese okra, burdock

Fruits: bitter melon, pumpkin

Legumes: soy, soy-based products (tofu, miso, natto)

Grains: millet, noodles, rice

Fish & Sea Vegetables: fish, seaweed, kelp, algae Condiments: turmeric, assorted herbs & spices

Enjoy occasionally

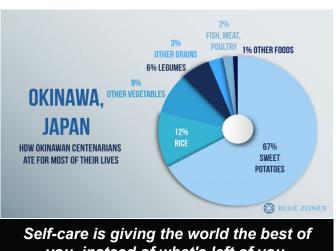
Meat: pork, chicken, goat

Avoid

Meat & Poultry: beef, processed or cured meats, eggs

Dairy: milk, butter, cheese

Other: cooking oils, fruits, nuts, seeds, sweets



you, instead of what's left of you.

Katie Reed

Dear Dr. Liker...

Should I get the new COVID booster this fall?

Yes. The newest COVID vaccine was approved in mid-September and is now available at major



pharmacies. The vaccine is designed to cover the most common variants. We've already begun to see an uptick in COVID-related illness. Being vaccinated will help prevent you from becoming infected or if you do become infected, symptoms will be less severe and last a shorter duration.

Even though the COVID-19 pandemic is officially over, some variants are still circulating in the community, and they continue to mutate into new forms with varying degrees of illness and infectiousness. In the same way that influenza viruses circulate around the globe and mutate from year to year, so too is occurring with coronaviruses. And for the very same reason annual flu shots are recommended, so too will COVID boosters. You can get the COVID shot at the same time as the flu shot, or space them two weeks apart, depending on your preference.

Even if you had previous COVID shots, or you don't think you're at risk this time around, the more people who are vaccinated, the more protection that is achieved in the community. This benefits not just you, but also those who are most at risk - the elderly, very young children, those with compromised immune systems, and those who cannot be vaccinated due to cancer treatment. HL



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