

COVID-19 UPDATE AND INTRODUCTION TO FIBER FUELED

Before this month's article, I felt a need to make a Covid 19 bulletin. Make use of the information you get by following Dr. Anthony Fauci's recommendations for prevention, to the general public for reducing the public transmission of the infection. Most of that does not answer questions about other specific things each individual can do for personal protection. This article assumes that the reader takes the virus seriously. Not only can people die, but also the "long haulers," or "Long-Covid" can have disabling symptoms for several months, after they are no longer contagious. People who are obese or over age 70 and who have at least 5 separate symptoms, such as headache, fatigue, shortness of breath, hoarseness, and muscle aches, are more likely to have Long-Covid. Even though death or disability occurs with a small percentage, it is substantial enough that the average reader needs to consider the personal risks.

For personal protection, in addition to the standard directives of social distancing, facial coverings, avoiding large crowds, and hand washing, etc., here are some recommendations: First, keep body and mind in the best health possible, because the more basic good health you have, the more balanced the immune system will be, strong and capable of fighting infection without overreacting with cytokine storm. Space does not permit here to cover all the things in these articles in the last 5 years for staying healthy. Basically, get adequate rest and sleep, exercise, manage stress, keep a positive attitude, take precautions without getting fearful and uptight about it. Get good nutrition, avoid junk food, sugar, and highly processed food, and get a large amount of colorful vegetables and fruit. Follow Michael Pollan's Food Rules: Eat food (as opposed to edible substances resembling food). Mostly plants. Not too much. Supplement with Vitamin C, echinacea, astragalus, Vitamin D (according to blood test), zinc up to 50mg/day, (less if stomach irritation occurs, and with 1-2mg of copper at 50mg zinc).

If you anticipate having to be in a situation where other people are not following the recommendations, wear personal protective equipment similar to that of hospital workers, at least an n-95 mask as well as a face shield. If you have to have people in your house for a significant length of time, even when following recommendations, have a HEPA air purifier in the house that removes particles smaller than viruses to handle the aerosols that get past the masks and from people not wearing masks properly or not at all, and that build up in the room over time. Some purifiers are IQ Air, Blue Air, Austin Air, AllerAir, etc. Whichever brand you use, be sure it removes particles smaller than 0.1 microns, as the SARS Cov 2 virus molecule is approx. 0.05 to 0.2 microns. The more people there are in a room, and the longer they stay, the more the aerosols build up. If you have to visit someone else's house, take your portable HEPA filter with you. Above all, don't share a meal with family and friends, unless everyone has been recently tested negative in the last few days, or unless you are outside with plenty distance between each person. Inside a building, this is probably the highest risk situation, comparable to bars, restaurants, and large crowds. The recent upsurge in cases has been from small family gatherings more than from public spaces. It is easier to pretend that contact with friends or family is safe, in contrast to that with strangers, and we feel reluctant to set limits on our friends and we are more likely to feel offended if they set limits on us. This is a much more difficult area to protect, and we need to pay more attention to how we interact privately with people we consider close to us.

For treatment, have stocked up ahead of time some extra liposomal vitamin C, vitamin A, and the following herbs: Licorice root, houttuynia, Chinese skullcap, and isatis. These herbs had been helpful against the SARS virus from years ago. They may be in short supply, since they are in high demand. Get the blood test for G6PD (glucose 6 phosphate dehydrogenase) in advance, if you consider the possibility of getting intravenous vitamin C in case of infection. The G6PD is a red blood cell enzyme

that, if deficient, could cause hemolysis (breaking up of red cells) when given high dose iv Vitamin C. Waiting until you are sick to do the test may be too late.

If starting to get symptoms, I suppose it goes without saying that you need to get tested and to seek medical attention. Chop ginger root, boil it and make tea, drink 1 cup 3-4x/day. This could be also beneficial if starting to get influenza.

If you have already had the virus and test negative but still have long lasting symptoms, contact an integrative or functional medicine health professional for long term support to assist all systems of the body to heal.

If precautions are taken as recommended for Covid 19, the influenza season should be less severe also, but much of the same preventive measures apply for the flu also. Elderberry extract is more specific for the flu, and oscillococcinum at the very beginning of symptoms. Herbs to have on hand for flu include licorice red root, lomatium, isatis, houttynia, and Chinese skullcap.

Vaccines will be maybe 70% effective at the most, will probably have lasting protection for a few months, and may prevent the vaccinated people from getting sick but not keep them from being contagious to others, therefore not actually curtailing the spread of the virus. So non-vaccinated people may want to continue to wear n-95 masks for self protection, even after a large part of the population has had the vaccine. It is not likely that “herd immunity” will occur any time soon.

Information is constantly evolving, so some parts of this article may become obsolete in the coming months. Keep yourself informed about new developments, and vet your sources carefully for good quality science backing up whatever you read or hear. Be patient, as we may be in this situation for some time to come, and remember that all you have learned and practiced may be applicable to the next pandemic, should it occur in the near future (let’s hope not.) The conditions are ripe for other novel viruses to jump species. Keep a positive attitude, do what needs to be done, keep a sense of humor, keep up your connection with your source of moral support, spiritual inspiration, and courage.

FIBER FUELED, by Will Bulsiewicz, MD, MSCI
Book Report by David G. Schwartz, MD
October 27, 2020

“Large bowel movements, small hospitals; small bowel movements, large hospitals,” Dr. Alan Gaby, MD, author of the textbook, Nutritional Medicine, said that in a lecture, referring to developing countries where people eat a lot of fiber and have small hospitals, in contrast to our large hospitals and reluctant colons that put out pebbles. Cause and effect? I suspect so to some extent, but correlating with other variables in the comparison also. I inserted this as an introduction. This is not in the book.

A major premise in naturopathic medicine is that all disease starts in the gut. Well, that is probably true for most or many of our chronic inflammatory conditions of civilization. In my previous articles I stressed the importance of environmental toxins in driving those diseases, but the gut is a main organ of detoxification, and the food we put into it makes a huge difference in how we detoxify.

Enter fiber. This is not just “roughage” for making the bowels move. Insoluble fiber does that, but a variety of plants provide *soluble* fiber, which feeds the gut microbiome. We have seen an explosion of articles in the last 5 years about the gut microbiome and its vital importance to our health. The gut

microbes contribute many times more DNA than all our body's cells. The body is 10% human and 90% bacteria. Sixty percent of the stool by weight is bacteria.

Dr. Bulciewicz turned his health around dramatically by changing to a primarily plant based diet. As a gastroenterologist, he has helped multitudes of his patients heal major illnesses with the information he shares about food and the gut.

He receives praise from many professors and authors for his work, including Joel Furman, MD, David Sinclair, PhD, and from his colleague, Robynne Chutkan, MD, who wrote The Microbiome Solution. Drs. Chutkan and Bolciewicz each appeared on "The People's Pharmacy" radio show. Dr. Chutkan proudly proclaims, "Gas is good!" in response to concerns about fiber causing gas.

Much has been written about the benefits of fiber, but Dr. Bulciewicz explains it in practical detail in this book, published in 2020, how good health is in direct proportion to the diversity of organisms in our gut microbiome, and that this diversity is in proportion to the diversity of plant-based foods providing that fiber. I have regularly noticed in my patients' digestive stool analyses, that they all report low levels of diversity of bacteria. We already know that natural biological systems on the planet are more robust and resilient with more biodiversity, so it stands to reason that likewise it is so in the gut. The author says that if we lack diversity in our gut microbiome, disturbances occur in "immunity, metabolism, hormones, cognition, and gene expression." He further points out that 97% of us eat an excess of protein and do not get even the minimum daily recommended amount of fiber. The average fiber intake is 15 grams per day. The American Heart Association recommends 30 grams, and the people mentioned previously in the less industrialized countries get 100 grams per day.

He lists 12 intestinal symptoms and 12 extra-intestinal symptoms, all related to damage to the gut microbiome (dysbiosis). He also lists 31 immune mediated conditions, mostly inflammation, allergies, and autoimmune conditions, also associated with dysbiosis. Transplanting stool from an asthmatic prone child into mice resulted in inflamed lungs in the mice. A stool transplant from an obese child to a mouse resulted in the mouse becoming obese. These may be catchy little anecdotes, but they illustrate how the gut bacteria regulate hormones and the immune system.

The author also lists 12 metabolic conditions and 10 hormonal conditions affected by the microbiome. The metabolic response to the food each person eats is a reflection of the unique make up of that person's gut microbiota. Loss of diversity, increase in pathogenic bacteria, and inflammation from bacterial endotoxin are associated with weight gain, obesity, and diabetes. Gut microbes control the release of hormones that regulate energy balance and appetite. The microbiota can regulate the amount of circulating estrogen and testosterone. For example, *Clostridia scindens* converts cortisol to androgens. Too much of this microbe can result in excess testosterone, etc., and too little could result in deficiency. From other sources I remember also that certain *Clostridia* interfere with neurotransmitter metabolism, dopamine, epinephrine, and norepinephrine. Damage to the microbiota causes leaky gut and release of bacterial endotoxin that can travel to the testes and reduce testosterone and sperm production. Gut microbes produce and respond to the neurotransmitters serotonin, dopamine, GABA, and norepinephrine. Ninety per cent of the body's serotonin and 50% of the dopamine are produced in the gut. There is a big overlap between Irritable Bowel Syndrome (IBS) and anxiety and depression. Gut bacteria can manipulate cravings and eating behavior. Yeast (*Candida*) can cause the person to crave sugar, because the yeast thrives on sugar.

More than 90% of the genes in our bodies are from microbes, and our own genes' expression is affected by the gut microbes through epigenetics. One example is celiac disease. In order to have

celiac disease, one must first have the genetic makeup in QD2 and QD8, second, exposure to gluten, and third, damage to gut microbiota.

What things damage the gut bacteria? Drugs such as NSAID's, antibiotics, steroids, environmental chemicals in our foods, food additives, preservatives, sweeteners, excessive salt, and in general, the SAD (Standard American Diet). Sadly, only 11% of the average diet comes from beans, vegetables, fruit, legumes, nuts and seeds, and whole grains; about 57% from processed plant based foods, and 32% from animal products. He points out that from the 5 Blue Zones around the world with extraordinary longevity, their diets are 90% plant based.

Fats are a mixed situation. Monounsaturated and omega -3 fats are beneficial, and saturated fats increase the growth of inflammatory microbes, cause leaky gut, and the release of bacterial endotoxin. Animal protein causes a shift in the microbiome that decreases gut health.

Studies of a carnivore diet similar to keto or paleo diets showed an emergence of inflammatory bacteria like *Bilophila wadsworthia*, *Alistipes putredinis*, and *Bacteroides*, within 24 hours of starting the carnivore diet. Meanwhile there was a recession of healthful microbes like *Roseburia*, *Eubacterium rectale*, and *Faecalibacterium prusnitzii*. I had heard tangentially from environmental medicine lectures that saturated fats were not helpful for detoxification and the gut bacteria, but I had not seen in detail the effects on the microbes. Maybe this explains some of the issues with saturated fat, inflammation, and heart disease. Maybe it's not so much about cholesterol.

Considering that we need a variety of fibers from a variety of plants and a large amount of total fiber to have optimal balance of our gut microbiome, to me this means that there isn't much room in the stomach for non-fibrous foods such as animal products or highly processed plant based foods, without overeating. He recommends stopping eating when 80% full, as in one of the Blue Zones, Okinawa, the saying is, "hara hachi bu." This is a digestive, metabolic, immunological argument favoring mostly plant based foods. Many are the ecological, religious, and ethical proponents of vegetarian diets, but the author presents this fiber issue as the major advocate for eating mostly plants, aside from those other issues. The author recommends 90% plant based diet, and his diet is about 100%. I have reservations about a totally vegan diet, mainly from an anthropological perspective, that no known population group has lived on a totally vegan diet historically for a long period of time. I think the 90% plan is good. Of course there are always special situations that require diets different from this. No one diet for everyone. And a plant based diet is not healthy if it has a lot of sugar and junk food.

Dr. Bulciewicz points out that it is the postbiotic effects of the short-chain fatty acids (SCFA's) produced by the bacteria that makes the big difference. While we can get caught up in debates over the macronutrients of carbohydrates, fats, and protein, we can miss the "elephant in the room," fiber, but we think of fiber as not a very sexy topic. In fact, it has connotations of "gas," which is likewise not very appealing. When it comes to vibrant health though, we need to go with what works. We also see many debates over which probiotic is best, which ones implant and which ones pass on through, which ones are killed by stomach acid or not, etc. If we increased the amount and variety of fibers, this could be the game-changer, and probiotics, prebiotics, and postbiotics as supplements would look rather puny in relation to power of fiber from food. We too often have thought of fiber also as something inert, like "roughage," or as a laxative. Insoluble fiber may be seen as roughage, but the soluble fiber gives us the SCFA's and other postbiotic nutrients. Postbiotics are beneficial compounds produced by bacterial metabolism.

Next month's article covers these magical SCFA's and their multiple benefits to health.