

Staying Healthy

Nancy Lee Nelson, MPH, BAN, RN

June 10, 2020

Supporting Your Immune System in the Era of the Pandemic **Quality Nutrition Strategies**

Two weeks ago we begin a discussion of specific components that can improve our immune system. As we go through these components, it is important to keep in mind that immune system health depends on the health of all body systems, i.e. our body systems work together for good health. The components we are discussing in this series foster overall good health as well as creating a healthy immune system.

This week we will focus on the component of quality nutrition with strategies related to the health of our immune system and its ability to fight COVID-19.

Nutrition often involves a discussion of whether to choose generally more expensive “organic” foods. The primary rationale to choose organic foods is that chemicals such as pesticides, fungicides, herbicides are not healthy for our bodies and are both on and inside the nonorganic foods we eat. There are no bioengineered genes (GMOs) used in organic foods. No sewage sludge-based fertilizer is allowed to be used for organic goods. In addition, organic foods are fresher because they do not contain preservatives to keep a food “looking” fresher as it stays on the grocery shelf longer. As for organic meat, eggs and dairy products, livestock must have access to the outdoors, be fed organic food, and not given growth hormones, antibiotics or animal by-products. Keep in mind that frozen organic vegetables and fruits are great and are often cheaper than fresh organic vegetables and fruits.

Another important discussion relates to highly processed foods. Highly processed foods are those foods that have such things as preservatives, coloring, additives and flavorings added in part to result in a long shelf life of the food. Highly processed foods are not healthy and should be avoided. Minimally processed foods can be healthy. An example of a minimally processed healthy food is a salad that has been washed, put together with other items and bagged for our enjoyment

See <https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/processed-foods-what-you-should-know> for more information on processed foods.

Diets that contain nutritious foods high in vitamins and minerals support optimal function of the immune system. This is done in part by providing antioxidants that slow the damage caused by free radicals and by providing assistance in T-cell production which include T-cell protection of the body from disease agents.

Nutrition is a key component in the healthy functioning of our immune systems. “The WHO [World Health Organization] guidance on diet, especially during the current

pandemic, states that ‘good nutrition is crucial for health, particularly in times when the immune system might need to fight back.’”

Strategies for Quality Nutrition

Strategy 1. Eat a Variety of Colorful Fruits and Vegetables along with Lean Protein and Healthy Omega 3 Fats.

Our nutritional status is associated with a better response to severity and susceptibility to infectious disease such as COVID-19. Eating a plant-based diet high in fruits and vegetables is key to a healthy immune system “For years, registered dietitians and food scientists alike have touted the perks of eating plants and cutting back on meat . . . A study published in *The Permanente Journal* in the summer of 2016 notes that plant-based diets have gone mainstream — partly because the advantages have been well researched and healthcare practitioners recommend this way of eating as many have seen incredible results from their patients.”

Colorful fruits and vegetables have significant nutritional value especially when eaten raw. Fresh root vegetables like carrots or beets or vegetables like broccoli or cauliflower are less perishable than vegetables like lettuce.

We know that vegetarians and vegans eat a plant-based diet, but meat eaters also eat a plant-based diet when they decrease the amount of meat they eat (especially red meat) and increase fruits and vegetables in their diet.

Certain nutrients are important to our immune system - they include copper, folate, iron, selenium, zinc and Vitamins A, B6, C, D, and E. It is best to get these nutrients through fresh or frozen foods. See Exhibit 1 for list of foods that contain these nutrients.

Protein is also needed to fight viral and bacterial infections. Too little protein can harm the immune system. Protein is also required to build and repair body tissue. Good sources of protein include lean sources such as skinless chicken, turkey, beans and lentils and soy products including tofu.

Likewise, healthy fats are important for your body to absorb fat-soluble nutrients and maintain a healthy immune system. The role of omega-3 fats is thought to be beneficial to the immune system.

Garlic, onions, ginger and turmeric are great seasoning for our foods and have the added benefit of enhancing the immune system. Garlic and onions have antibacterial and antiviral qualities while turmeric and ginger have anti-inflammatory qualities.

Importantly, it is healthier to get your nutrients from food instead of supplements. That said, if you are not meeting your nutritional needs take a daily multivitamin. Try to get a half hour a day of sun exposure for Vitamin D. If you don't get enough sun each day, you

should know that it is difficult to absorb Vitamin D from foods, so you may want to take a Vitamin D3 capsule daily. One expert recommends 600 IU if you are under age 70 years and 800 IU if you are over 70 years of age.

Strategy 2. Include Anti-Inflammatories in Your Diet.

Almost all, if not all, diseases and illnesses start from an inflammatory process including cancer and dementia. The significance of inflammation has long been recognized as an indicator of illness. Significantly, this recognition of inflammation has been coupled with efforts to identify dietary factors that might decrease inflammation and diseases increased by inflammation, i.e. it is believed that eating an anti-inflammatory diet can decrease the incidence of disease.

Foods that decrease inflammation include: 1) Vegetables (raw and cooked organic when possible) 4-5 a day minimum; 2) Fruits (fresh in season or frozen organic if possible) 3-4 a day; 3) Beans & legumes 1-2 a day; 4) Whole & cracked grains 3-5 a day; 5) Pasta (al dente) 2-3 a week; 6) Healthy fats (extra virgin olive oil, expeller-pressed canola oil, nuts – especially walnuts, avocados seed – including hemp seeds and freshly ground flaxseeds) 5-7 a day; 7) Fish & seafood (wild Alaskan salmon Alaskan black cod, sardines) 2-6 a week; 8) Whole soy foods (edamame, soy nuts, soymilk, tofu, tempeh) 1-2 a day; 9) Cooked Asian mushrooms, unlimited. This information is from the Anti-inflammatory Pyramid developed by Andrew Weil, M.D. <https://www.drweil.com/diet-nutrition/anti-inflammatory-diet-pyramid/dr-weils-anti-inflammatory-food-pyramid/>

In addition to the above, turmeric has been researched and studied frequently and is thought to be a potent anti-inflammatory. For it to be absorbed it must be accompanied by pepper or BioPerine (a pepper product). Turmeric is sold as a powdered spice to be put on your food as you cook it (along with pepper) or taken as a supplement,

Strategy 3. Add Nuts & Seeds to Your Diet

Recently, there has been a wealth of information and research expounding the value of including seeds and nuts in our daily diets. For example, the well-known Nurses' Health Study suggests a reduction in mortality with eating seeds and nuts on a regular basis with the greatest benefit in reduced mortality from cancer, heart and lung disease. The evidence has been significant enough that the United States and other countries are recommending nuts and seeds in our regular daily diets.

Strategy 4. Pay Attention to Your Gut.

Gut microbiota (bacteria in the gut) comprise a significant part of your immune system. An imbalance of the gut bacteria is thought to contribute to immune dysfunction, infection and other health issues. Probiotic foods may help keep a healthy balance in the gut. Fiber, such as in fruits and vegetables, promote gut health. Notably antioxidants such as Vitamin C and E, selenium and beta-carotene fight disease. Important supporting nutrients include foods rich in Vitamin D and zinc. Notably, the foods most helpful to your gut are plant foods.

Strategy 5. Don't Sabotage Your Immune System with Unhealthy Foods or Overeating.

When stressful events, such as the Pandemic, cause you to seek “comfort foods” including desserts and other high sugar foods, highly processed convenience foods, saturated fats, increased salt, alcoholic beverages, soda pop and fast food. Think again!

This sabotage of your immune system can result in an increase of your susceptibility to COVID-19 or other infection. These foods have little nutrition and are also pro-inflammatory causing inflammation in your body that can result in your being more likely to develop an infection. These comfort foods can also result in obesity - another issue that negatively impacts your immune system. This makes it clear that it is not just what we eat, but also what we do not to eat that results in a healthy immune system.

Some people think that alcohol may kill the COVID-19 virus. On the contrary, alcohol especially in excess, weakens the immune system and negatively impacts your defense against COVID-19 and other infections. So, if you drink alcohol, do not have more than 1-2 drinks a day.

If you, like many of us, have gained weight during this Pandemic or if you already had weight to lose, focus on losing it now. A recent study of 3,615 individuals who tested positive for COVID-19 at a New York hospital, had a body mass index compatible with obesity (BMI greater than 30) with a much greater likelihood of being admitted to acute care or intensive care.

Strategy 6. Stay Hydrated.

Staying hydrated is important to a good immune system. Start your morning with a large glass of water prior to having a cup of coffee.

Hopefully, you have been asleep all night and therefore not had water during the night. You will find if you have a glass of water first thing in the morning before your cup of coffee, you will feel and stay more energized than usual. Keep in mind that coffee is a diuretic. It is important to continue drinking water throughout the day to get 8-10 cups of water.

If you have to get up during the night to use the bathroom upsetting a good night's sleep, consider a couple of strategies. First, try to stop drinking any liquids by 7 or 8 p.m. Second, both coffee and alcohol are diuretics making you need to use the bathroom more frequently and some experts say both irritate the bladder making you void more frequently.

Note that it will likely take 5-14 days before you no longer wake during the night. Try not to get up to use the bathroom, since when we routinely get up during the night, our body

thinks this is normal and wakes up whether or not it is really needed. This process, along with not drinking after 7 or 8 p.m. and avoiding bladder irritants will retrain your body.

Please review the following exhibits:

Exhibit 1: Immune System Supporting Nutrients.

Exhibit 2: Recommended Daily Intake and Portion Size

Exhibit 3: Delicious Plant-Based Recipes by Mari Schindele

EXHIBIT 1

IMMUNE SYSTEM SUPPORTING NUTRIENTS

It is best to get these nutrients through fresh or frozen foods rather than canned foods or supplements.

NUTRIENT	WHERE FOUND
VITAMIN A (Beta Carotene)	Plant foods such as: Carrots, mango, broccoli, tomatoes, sweet potatoes, spinach, pumpkin, cantaloupe and squash
VITAMIN B6	Cold water fish such as tuna, baked potatoes, chickpeas (hummus), bananas, lean chicken breast
VITAMIN C	Oranges, grapefruit, berries, melons, bell peppers, broccoli, melons, leafy green vegetables like spinach and kale, brussels sprouts and papaya
VITAMIN D	SUN, eggs, fatty fish (salmon, mackerel, tuna and sardines), milk and 100% juices and cereals fortified with Vitamin D
VITAMIN E	Peanuts, sunflower seeds, almonds, wheat germ oil, hazel nuts, spinach and broccoli
ZINC	Wheat germ, beans, nuts, tofu, beef and seafood such as oysters, crab, lean meats, poultry, baked beans, yogurt, chickpeas
PROBIOTICS	Yogurt and fermented foods
PROTEIN	Plant-based and animal based foods: Nuts, seeds, beans, lentils, yogurt, eggs, chicken, turkey, beef, seafood
SELENIUM	Garlic, broccoli sardines, tuna, brazil nuts, barley
FOLATE (Natural Form) FOLIC ACID (Synthetic Form)	Beans, peas and leafy green vegetables; Fortified foods (check the label) as enriched breads, pastas, rice and other 100% whole-grain products

IRON	Chicken, turkey, seafood, beans, broccoli, kale
COPPER	Beans, nuts, oysters, shellfish, whole grains, potatoes, organ meats, (liver, kidney), prunes, cocoa, black pepper, dark leafy greens, dried fruits (prunes), black pepper
HEALTHY FATS	Omega-3 fats such as fatty fish, nuts and flaxseeds

EXHIBIT 2

RECOMMENDED DAILY INTAKE & PORTION SIZE

SOURCE: Kelly Magowanm, RD, “A Dieticians Guide to Portions and Servings Sizes,” Feed Your Potential365 (2020).

What and How Much for Daily Servings and Portion Sizes?
 You know to fill your plate with fresh produce, whole grains, and lean protein. But again, how much? While everyone’s health history and nutritional needs are different, Kelley points to the national guidance from USDA’s MyPlate (*table below*).

The plate itself can be just as important as what you put on it. “Many studies show that when we use larger bowls and plates, we tend to serve larger portions,” Kelley explains. “Picking one that’s about 10 inches in diameter is a great way to enjoy your food in more appropriate portions and set yourself up for long-term success.”

SERVING AND PORTION SIZES

FOOD GROUP	DAILY INTAKE	SERVING SIZE	FOODS	OTHER TIPS
Fruits	1.5-2 cups	1 cup	Apples, bananas, oranges etc.	A whole piece of fruit s one serving
Veggies	2.5-3 cups	1 cup	Broccoli, carrots, kale etc.	2 cups raw leafy greens to count as one serving
Grains	3-3.5 ozs.	1 oz.	Bread, cooked rice, popcorn	Aim to get ½ of servings from whole grains
Protein	5-5.5 ozs.	3 oz. meat 4 oz. fish	Small chicken breast, ½ oz. nuts, 1 Tbsp peanut butter ¼ cup cooked	For plant-based, use nuts and beans to replace meat

			beans or tofu	
Dairy	3 cups	1 cup	8 oz, of milk 1 cup of yogurt, 2 cups of cottage cheese, 1/3 cup shredded cheese	Stick to low-fat or non-fat options if possible

EXHIBIT 3

DELICIOUS & HEALTHY PLANT-BASED RECIPES

By Mari Schindele

These delicious recipes from “Vegetarian Cooking for Carnivores” written by my beloved niece and Godchild Mari Schindele are healthy, nutritious, inexpensive to make and absolutely delicious recipes. For those of you who are able to print the complete recipe booklet, it will be attached to the E-Blast along with this article. For those of you unable to print the recipe booklet, I have included a couple of the recipes below.

The Best Hummus Ever

1. Dump a 15 oz. can of chickpeas into a colander and rinse thoroughly, and then dump into the food processor.
2. Add in one small cut-up clove of garlic (to taste) and pulse until a mealy texture is formed (about 10 pulses).
3. Pour in $\frac{3}{4}$ cup each of tahini and fresh-squeezed lemon juice (about 2-1/2 to 3 lemons' worth). Add 1 tsp. salt, $\frac{1}{2}$ tsp. cumin, and a dash of chili powder (all spices to taste).
4. Process for about 10 seconds and then check seasonings and texture. Add more salt, seasoning, and/or water to get it the way you like it.
5. Process for 3 minutes, scrape finished humus into a bowl and enjoy!

Customizable Chili

Mari's Comment: Guys, this is my VERY BEST recipe. It's cheap, it's easy to prepare and clean up, it's loaded with flavor and nutrition, it feeds an army, and the chili by itself is vegan and gluten-free. I have served this chili to well over a hundred people since I created the recipe, including invertebrate carnivores and everyone loves it. I encourage everyone to give this recipe a try!

1 Heat about $\frac{1}{4}$ cup vegetable oil in a very large stock pot. Toss in one finely minced yellow onion (note the size of all vegetables should be to your taste, but I use a smallish onion), sprinkle some salt, and sauté.

2. While the onion is sautéing, prepare the spices: finely mince 1 clove of garlic with salt to form a paste; chop 1-2 chili peppers, discarding the seeds and veins; and mash up 1 chipotle chili in adobo sauce (you can get cans of this in the Mexican food section of most grocery stores). Dump all these in, along with 2 T each cumin and coriander powder and about 1 tsp dried oregano.

3. While the spices are sautéing, chop up a bell pepper, dump into the pot, and sprinkle salt over it to help soften it,

4. While the bell pepper is sautéing, quarter a zucchini lengthwise and slice (I use a small-to-medium zucchini,) Dump it into the pot and sprinkle salt over.

5. While the zucchini is sautéing, take 3-5 fresh tomatoes and squeeze the seeds and pulpy stuff out. Coarsely chop, dump into the pot and sprinkle salt over.

6. Let the whole vegetable mess cook a bit until everything is soft. Then dump in all your canned items: 1 28 oz./800 gm can of diced tomatoes, and 1 each 15 oz./400 gm can thoroughly rinsed black beans, kidney beans and chickpeas (i.e. 3 total cans of beans. Note: It is important to rinse the beans to get rid of the icky brine!

7. Now give everything a big stir and test for seasonings. I usually add more cumin at this point, as well as a squeeze of tomato paste and a bit of water. You can let the chili simmer over low heat for an hour or so to do the Vulcan Flavor Meld.

8. And now for the best part: customizing your chili! While the chili is simmering prepare the following items so that people can fix their chili however they like: a. grated sharp Cheddar cheese, b. quartered limes, c. lots more mashed chipotles in adobo sauce for people who like their chili hot and smoky, d. chopped cilantro, and e. corn chips for dipping (this is how you persuade picky kids to eat the chili: tell them it's salsa).

Once you make this chili, you won't look back.

Also See .pdf attachment for more of Mari's delicious and healthy recipes attached with article at bottom of the E-Blast.

REFERENCES

1. Breda Gavin-Smith, "The Role of Nutrition in the Immune System: Should We Pay Attention? Part I of II," *Public Health Nutrition – Sight and Life* (April 17, 2020). <https://sightandlife.org/blog/nutrition-immunity/>
2. Melinda Beck and Orville Levander, "Host Nutritional Status and Its Effect on a Viral Pathogen," *The Journal of Infectious Disease* (September 2000). https://academic.oup.com/jid/article/182/Supplement_1/S93/2191642
3. "Organic Foods: What You Need to Know," *HelpGuide* (2020). <https://www.helpguide.org/articles/healthy-eating/organic-foods.htm>
4. "Food and Nutrition Tips during Self-Quarantine, WHO/Europe, (2020). <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/technical-guidance/food-and-nutrition-tips-during-self-quarantine>
5. Andrew Weil, M.D., "Guide to Healthy Eating, Part 2, *Little, Brown and Company*, (2013).
6. "The Power of Plant-Based: Embracing Nature's Healthy Bounty," *Eating Well*, (2019).
7. Jean Carper, "The Food Pharmacy," Bantam Books, (1988).
8. "Build Your Diet and Eat for Your Immune Health" Cleveland Clinic Men's Health Advisor (July 2020).
9. "Food and Nutrition Tips During Self-Quarantine," *World Health Organization Europe International Health* (May 27, 2020). <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/technical-guidance/food-and-nutrition-tips-during-self-quarantine>
10. "Are High-Protein Foods Good for the Immune System?" WebMD, (May 13, 2019). <https://www.webmd.com/cold-and-flu/qa/are-highprotein-foods-good-for-the-immune-system>
11. "Healthy Immunity Diet Guidelines," *EatingWell* (2020). <http://www.eatingwell.com/article/8762/healthy-immunity-diet-guidelines/>
12. Sara A. Arscottm PhD, David Rakel, MD, Adam Rindfleisch,MD, "The Anti-Inflammatory Lifestyle, University of Wisconsin Integrative Health (October 2018). https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/handout_ai_diet_patient.pdf