

2022 CDA Presents

Pamela Smith, RDN

Immune Support, Busters and Boosters

What is the Immune System?

- ✓ The network of cells throughout our body (in the skin, the blood, and elsewhere) that work together to:
 - prevent or limit infection from potentially harmful pathogens
 - prevent damage from noninfectious agents

Components of the Immune System

- ✓ The skin can keep many germs from entering the body.
- ✓ Mucous membranes
- ✓ White blood cells
- ✓ Organs and tissues of the lymph system (thymus, spleen, tonsils, lymph nodes, lymph vessels, and bone marrow)

Innate Immunity Cells – First Line of Defense

- ✓ First line defense from pathogens that try to enter our bodies, achieved through protective barriers:
 - Skin that keeps out the majority of pathogens
 - Mucus that traps pathogens
 - Stomach acid that destroys pathogens
 - Enzymes in our sweat and tears that help create anti-bacterial compounds
 - Immune system cells that attack all foreign cells entering the body

Adaptive/Acquired Immunity Cells – Second Line of immune Response

- ✓ Special Cells with “immune memory”, learn to recognize a pathogen, microbes, threats and triggers a response to eliminate them.
 - Regulated by cells and organs in our body like the spleen, thymus, bone marrow, and lymph nodes.
 - When foreign substances/pathogens enter the body, these cells and organs create antibodies and lead to multiplication of immune cells (including different types of white blood cells) that are specific to that harmful substance and attack and destroy it.
 - The immune system then adapts, making more copies, and remembering the foreign substance so that if it enters again, these antibodies and cells are even more efficient and quick to destroy it.
 - When a new virus appears (as with Covid), no one’s immune memory had encountered it. That left more of us susceptible to being infected.
 - Vaccines work because of immune memory!
 - Vaccines expose your immune system to a version of the virus that causes the body to enhance the number of immune cells that can respond to and fight off the virus if you get exposed to the real thing.
 - Messenger RNA (mRNA) works differently by “teaching” cells how to make proteins that will trigger an immune response

Other Conditions Triggering an Immune Response

- ✓ Antigens
- ✓ Chronic Inflammation
- ✓ Autoimmune disorders *like lupus, rheumatoid arthritis, or type 1 diabetes*
- ✓ Immunodeficiency disorders

Immune Busters

- ✓ **Older age:**
 - Waning, less efficient immune
 - Micronutrient deficiencies
- ✓ **Environmental toxins**
 - Smoke
 - Air pollution
 - Excessive alcohol
- ✓ **Poor diet**
 - Eating infrequently
 - A deficit of protein, produce and healthy fats
 - Added sugars and refined processed carbohydrates
- ✓ **Excess weight**
 - Obesity is associated with low-grade chronic inflammation.
 - Fat tissue produces adipocytokines that can promote inflammatory processes.
 - impairs function of T-cells, a type of white blood cell
 - Impairs the production and activity of immune cells and antibodies.
- ✓ **Chronic Inflammatory Diseases**
 - Diabetes, Heart Disease, High Blood Pressure, Periodontal Disease
 - Auto-Immune Disorders
- ✓ **Chronic stress**
 - Stress that is *chronic* is most robbing of wellbeing
 - Stress/Cortisol surges wreak havoc in the immune system
 - Cortisol suppresses inflammation and the action of white blood cells
- ✓ **Lack of sleep and rest**
 - A *type* of cytokine is released in restful sleep that fights infection
 - too little sleep lowers the amount of these cytokines and other immune cells
- ✓ **Wellness Vandalizers: The American “Weigh”**
 - Going Long Hours Without Eating
 - Overeating/Junk Diets
 - Little or No Exercise
 - Too Little Rest
 - Poor Hydration
 - Unprocessed Stress
 - All *Do-ing*, Little *Be-ing*: use sugar & caffeine to “get us through”
 - Constant Dieting

Immune Boosters

- ✓ **Eat Well, Eat Often, Eat Balanced, Eat Bright, Eat Smart!**
 - Eat Well, Eat Often!
 - *Energy to feed your Immune System*
 - Ensures you're getting enough of the micronutrients that play a role in maintaining your immune system
- ✓ **Healthy Eating 2022**
 - Foods make a health difference at the cellular level -- good and bad.
 - Foods are full of pharmacological agents that serve as protectors against disease and promoters of wellness.
- ✓ **Choose Immune-Boosting Nutrients**
 - Vitamin B's (B6, B12, Riboflavin, Thiamine)
 - Vitamin C
 - Vitamin E
 - Zinc, Selenium, Potassium, Magnesium
 - Prebiotics and Probiotics
 - Protein
 - Omega 3's and Monounsaturated Fats
 - Spices
 - Vitamin D
- ✓ **Vitamin D: Key player in your overall health**
 - Receptors that respond to vitamin D have been found in almost every type of human cell, from your brain to your bones
 - It up-regulates your ability to fight infections and chronic inflammation, increases over 200 antimicrobial peptides, such as cathelicidin, a naturally occurring broad-spectrum antibiotic
- ✓ **Sunlight: Get into the Light!**
 - Most of us get less than 10 minutes of fresh air and sunshine daily
 - Natural light deprivation disrupts the function of our brain's suprachiasmatic nucleus (SCN), a cluster of nerves that controls our body's production/use of hormones.
 - Raises risk of viral infections 38%, doubles risk of insomnia, depression and obesity.
 - Fix: Spend at least 10 minutes relaxing outside daily.
- ✓ **Myth: Vitamin C prevents illness.**
 - Turning to large doses of vitamin C to avoid getting sick doesn't work.
 - However, vitamin C may shorten the duration of a virus once you're already under the weather.
 - Vitamin C is also an antioxidant, and those anti-inflammatory properties may reduce swollen sinuses.
- ✓ **Myth: Zinc boosts your immune system.**
 - There's not enough evidence to support taking extra zinc to prevent sickness
 - Meeting daily zinc requirements is important for a healthy immune system but exceeding these requirements can be toxic.
 - In 2009, the FDA warned consumers to stay away from zinc nasal sprays after studies found they could damage the sense of smell.

- ✓ **Fact: Chicken soup IS a cure-all.**
 - The healing benefits of chicken soup are numerous.
 - Not only is grandma's home remedy heartwarming, but it also has properties that fight inflammation, promote hydration and get mucus flowing.
- ✓ **Eat more Whole Plant Foods**
 - Fruits, vegetables, nuts, seeds, legumes and mushrooms are rich in nutrients and antioxidants that may give you an upper hand against harmful pathogens.
 - Pre-biotic fiber in plant foods feeds your gut microbiome, or the community of healthy bacteria in your gut.
 - A robust, diverse gut biome can improve your immunity and help keep harmful pathogens from entering your body via your digestive tract
- ✓ **Eat more Beneficial Fats**
 - Boost your body's immune response to pathogens by decreasing chronic inflammation
 - Olive oil, which is highly anti-inflammatory, anti-bacterial and anti-viral is linked to a decreased risk of chronic diseases like heart disease and type 2 diabetes – and helps fight off harmful disease-causing bacteria and viruses
 - Omega-3 fatty acids, such as those in salmon and chia seeds, fight inflammation
- ✓ **Eat more Prebiotic-filled Produce and Probiotic-filled Fermented Foods**
 - A flourishing network of gut bacteria can help your immune cells identify and differentiate between normal, healthy cells and harmful invader organisms.
 - The probiotic *Bifidobacterium animalis* has been indicated in a stronger immune response.
- ✓ **Probiotic-Rich Foods**
 - Dairy: Yogurt, Kefir, Buttermilk, Aged Cheeses (bleu, Gouda and cheddar) Crème Fraiche, Lassi
 - Fruits /Vegetables: Brined pickles and olives, tangy chutneys, sauerkraut and kimchi, pickled beets, sauerruben
 - Soy: Miso, tempeh, natto, soy sauce, tamari
 - Nondairy Beverage: Kombucha, Tepache
- ✓ **Prebiotic-Rich Foods**
 - Veggies: Mushrooms, tomatoes, artichokes, alliums, greens, asparagus
 - Fruits: Berries, cherries, bananas
 - Whole Grains/Seeds: Oatmeal, quinoa, farro, barley, flaxseed, wheat berries
 - Legumes: Lentils, Dried Beans, Peanuts and Soynuts
- ✓ **Stay Connected and Laugh A LOT!**
 - People who feel connected to friends - whether it's a few close friends or a large group - have stronger immunity than those who feel alone.
 - Laughing is good for you! It curbs the levels of stress hormones in your body and boosts a type of white [blood](#) cell that fights infection.
- ✓ **Drink Water, Drink Water, Drink Water!**
 - Water is essential for immune health

- if you're already on the cusp of cold or respiratory virus, water can loosen congestion
 - Limit dehydrating, immune-suppressive beverages like sugary drinks and alcohol
- ✓ **Get Moving and Stay Moving!**
- Exercise regularly to strengthen immunity
 - Exercise promotes good blood circulation, which helps your immune system do its job more efficiently.
- ✓ **Get Restful Sleep**
- Sleep, a natural immunity booster
 - Sleep deprivation elevates cortisol levels, and our immune system wears down. As a result, and we tend to have fewer reserves to fend off or recover from illness
 - Adults should get seven to nine hours of sleep each day, while children need eight to 14 hours, depending on their age.
- ✓ **Crack down on spreading germs.**
- Good old-fashioned hygiene/handwashing helps prevent the spread of germs.
 - Remember to wash produce before eating or using in recipes.
- ✓ **Fact: Even if** you eat well, get plenty of rest, exercise, drink adequate fluids and manage your stress, you may still catch a cold, flu, viruses... If so, your illness may not last as long, and you may not feel so bad.
- ✓ **S.M.A.R.T. Nutrition: Strategic Eating & Drinking “Eat Right Prescription”**
- Drink LOTS of water
 - Eat Early and Eat Often
 - Eat Balanced
 - Eat Beneficial Fats
 - Eat Bright
- ✓ **\$64,000 Question: Do you need to supplement a healthy diet?**
- Food is better than supplements because it contains hundreds of additional nutrients, including *PHYTOCHEMICALS*
 - Most supplements serve as catalysts
 - Data suggests that if supplements are helpful, it may be for reducing the severity of an infection or illness once you catch it, rather than preventing it in the first place.
- ✓ **Supplement Sense**
- Broad range balanced multiple vitamin and mineral supplement with no more than 150% of RDA for nutrients
 - 1000 mg Omega 3's EPA and DHA; consider Krill oil
 - 500 mg Vitamin C twice/day
 - 200-400 IU natural Vitamin E once/day if no hx of CAD
 - 200 mcg Selenium or 2 Brazil Nuts/day or 1 portobello mushroom
 - Calcium/magnesium and Vitamin D₃ at bedtime

✓ **Conclusions -- Being sick and tired is NOT normal – it's caused by:**

- A diet low in fruits, vegetables, whole grains, proteins and smart fats.
- Too much food at the wrong time and too little movement!
- Lack of Sleep; Lack of Sunshine
- Stress without Recovery
- Lack of Soul Care

The Bottom Line for Living Well:

Eat Well, Eat Often; Move Well, Laugh and Love More; Play Outdoors; Sleep; Rest