

Building Immunity Through Plant Based Interventions

Registered Dietitian Marie Gorski MFN,RD,LD

[Dietitian - Herbivore RD](#)

- ❖ What is immunity? Immunity is your body's built-in defense system. It acts to recognize, resist, and fight off disease causing agents like bacteria, viruses, fungi, parasites, toxins and free radicals. We can further breakdown immunity into 2 areas;
 1. *Innate Immunity* - actions within the body that are inherent at birth to create natural barriers such as physical barriers like skin and internal barriers such as stomach acid, as well as a host of anti-inflammatory agents including enzymes and proteins that work together to prevent infection, eliminate invader pathogens and stimulate the required immune response.
 2. *Adaptive Immunity* - this is when the body learns to develop an immune response to an antigen (antigen is something the body recognizes as a foreign entity) the body then produces antibodies to fight off this perceived threat.
- ❖ How is the lymphatic system involved in immunity? Lymph is a plasma that flows throughout the body collecting debris that could be harmful if left unchecked. It's kind of like a highway for potentially harmful organisms and cancer cells that are collected and deposited at lymph nodes throughout the body to be processed and eliminated. When illness or exposure to toxins occur, lymph may build up at the lymph nodes causing them to swell. If you've ever had a sore throat and felt swelling on your neck, those are lymph nodes hard at work! About 80% of the lymph produced in the body is by the gut and liver.
- ❖ Which foods naturally support the immune function? Antioxidants are known as free radical scavengers. They can neutralize many free radicals before they are able to cause damage in the body. Antioxidants can be found most abundantly in food sources rich in Vitamin C, Vitamin E and carotenoids as well as phytochemicals which are produced in all plant foods including fruit, vegetables, seeds, nuts, beans, lentils, herbs and grains. To a lesser extent, some antioxidants can be found in animal products however in order to activate these, the body extracts proteins during the digestive process after eating an animal product. In contrast, with plant foods, the antioxidants are present in their active form and do not require additional digestion to activate.
- ❖ How is the gut involved? Referred to as the body's "second brain" the gut microbiome is host to trillions of cells that produce over 70% of the immune response in the body. Consuming a diet rich in diverse food groups, particularly those high in fiber and probiotics, allows the gut to function more efficiently to reduce inflammation, regulate blood glucose, lower cholesterol, regulate hormones and support immune function.
- ❖ How else can I protect my body against the production of excess free radicals? Free radicals are produced naturally in the body as a normal response to cellular activity however, excess free radicals in the body can lead to oxidative stress which contributes to the development of many chronic diseases including, cardiovascular disease, cancer, arthritis, hypertension, autoimmune disease, diabetes, Alzheimer's disease, ALS, lupus, emphysema, Parkinson's disease, IBS, chronic inflammation, and premature aging. Aside from a diet rich in anti-oxidants, other ways we can protect ourselves is by limiting

exposure to air pollutants, pesticides, industrial chemicals, smoking cigarettes, and UV radiation.

- ❖ To support the body's immune system through diet we need to a) consume foods rich in antioxidants and b) consume foods that help support the body to produce antioxidants.

<u>Foods high in antioxidants</u>	<u>Foods that support antioxidant production</u>
<i>Vitamin C</i> - citrus fruits (including oranges, grapefruits and tangerines), strawberries, sweet peppers, tomatoes, broccoli, kiwi, pomegranate, guava, papaya, kale, beans and potatoes	<i>Selenium</i> - cacao, wheat bran, grains, yeast, onions, garlic, Brazil nut (1 daily is enough!)
<i>Vitamin E</i> - found in vegetable oils, wheat germ, whole grains and fortified cereals, seeds (particularly flax), nuts and nut butters	<i>Copper</i> - potatoes with skin on, shiitake mushrooms, cashews, sunflower seeds, dark chocolate
<i>Carotenoids</i> - Foods high in carotenoids include red, orange, deep-yellow and some dark-green leafy vegetables such as; sweet potatoes, spinach, carrots, tomatoes, Brussels sprouts, winter squash and broccoli	<i>Iron</i> - beans, lentils, nuts, seeds, whole grains, tofu, dried fruit, dark leafy greens
<i>Herb and Spices</i> - particularly; clove, mint, allspice	<i>Zinc</i> - pumpkin seeds, lentils, tofu, miso paste,
<i>Beverages</i> - tea (black, green, herbal), coffee, cacao	<i>Manganese</i> - hazelnuts, pecans, chickpeas, brown rice

TOP 5 Plant Sources with the highest antioxidant content

1. Amla (aka Indian Gooseberry)
2. Elderberries
3. Dark chocolate
4. Cloves
5. Star anise

Secrets and Lies of a plant-forward diet

Lie #1 - *"Pink salt is healthier than regular salt"* - while pink salt may have trace minerals such as iron, magnesium and potassium, you would have to consume dozens of teaspoons of pink salt daily to achieve even a small fraction of your daily needs of these minerals. Plus most pink salt does not contain added iodine which is essential for thyroid function.

Lie #2 - *"Soy increases the risk of breast cancer in women and can cause men to grow breasts"* - not only does soy not increase these risks it actually can be preventative AGAINST breast cancer. *Phytoestrogens (like those found in soy) have a similar structure to the estrogen naturally produced in the body therefore they compete for estrogen receptor sites which means natural estrogen can be bound to less areas in tissues which can help reduce the overall estrogenic effect in the body. It's like having two puzzle pieces fighting to fit the same spot and one is made of natural estrogen and the other is made from a phytoestrogen found in certain foods. Sometimes the estrogen will lock into the puzzle but sometimes the phytoestrogen will win and that estrogen piece might be discarded through waste.* Here are some foods that are rich sources of phytoestrogens:

Ground flaxseed, all beans and lentils (kidney, black, white, chickpeas, lentils), mung beans, sesame seeds and tahini, garlic, dried apricots, prunes, dates, fresh parsley, dill and sage, green tea, fennel seeds, peaches, strawberries, blackberries, tempeh, miso, tofu, edamame, soybeans, soymilk, red clover (as in tea), cruciferous vegetables including; broccoli, cabbage, cauliflower, Brussels sprouts, collard greens, bok choy, kale, kohlrabi, mustard greens, rutabaga, radish, watercress, wasabi.

Secret #1 - *Consuming a plant-forward diet can improve mental health and mood.* Fun fact, over 90% of the serotonin produced in the body comes from the gut. Serotonin is considered one of the "happy hormones" that can affect mental health and mood. Consuming a plant-forward diet rich in fiber and antioxidants, improves gut health allowing a more clear pathway between the brain and the gut.

Secret #2 - *A plant based diet can help regulate blood sugars and boost energy* - numerous studies support that a diet rich in fiber and lower in saturated fat can help stabilize blood sugars allowing the body to experience less spikes(hyperglycemia) and dips(hypoglycemia) in blood sugars. Energy in the body is produced when the body breaks down macronutrients; carbohydrates, fats and protein into fuel. The preferred fuel source for the body (and particularly the brain) is glucose which is produced from breakdown of carbohydrates. When the body's preferred fuel source is not abundantly present, it is essentially deprived of its ideal fuel source therefore the individual will feel "low energy" which could translate into fatigue, mood changes and brain fog.

Roasted Sweet Potato, Quinoa & Kale Bowl with Marie's Sunshine Dressing

Why it's antioxidant-rich: Sweet potatoes (fiber, beta-carotene), kale (fiber, vitamins A, C, polyphenols), quinoa (high fiber, polyphenols), black beans (fiber, anthocyanins)

Serves: 2

Main Ingredients

- 1 large sweet potatoes, cubed
- 1 tbsp olive oil
- ½ tsp smoked paprika
- ½ tsp garlic powder
- ½ tsp onion powder
- Salt & pepper
- 3 cups chopped kale
- 1 tsp lemon juice or ACV
- 1 cup cooked black beans
- 1 cup cooked quinoa
- ½ cup unsalted nuts (optional for a Vitamin E, protein and fiber boost)

Dressing Ingredients (large batch with leftovers)

- ¼ cup extra virgin olive oil, avocado oil or grapeseed oil
- ¼ cup mix of apple cider vinegar and lemon juice (or all ACV or all lemon juice)
- ¼ cup tahini
- 1 tbsp Dijon mustard (or preferred mustard)
- 1 tbsp pure maple syrup
- 1-2 tbsp nutritional yeast
- 1 tsp miso (lighter the color the lighter the flavor, I like yellow miso in this)

Instructions

1. Roast sweet potatoes at 400°F (205°C) with oil and spices for 25–30 minutes.
2. Massage kale with lemon juice (Or ACV) and a pinch of salt until softened.
3. Combine roasted sweet potatoes and kale in a bowl.
4. For the dressing, mix everything together with a whisk, thin with water as needed.

Optional add ins' for bonus flavor and antioxidants:

- ⅛ to ¼ tsp each, garlic powder, onion powder, turmeric
- Sesame seeds
- Gochujang, Sriracha or other hot sauce