Immune System Basics
- “Army” of cells or your “Security Squad.”
- An extraordinarily complex and intricate configuration of biochemicals.
- Number-one priority is to protect.
- When immune system fails to do its job properly, chaos ensues.

Scientists estimate that 80% of immune system is located in your gut.

Lining of the gut wall—the epithelium—is only one cell thick.

Big part of immune system is on the other side of the wall.

When gut wall cells are healthy—immune system works well. When cells are compromised, allowing partially digested food to leak through the intestinal wall, immune system is compromised.

An overactive immune system, and eventually, autoimmune disease can be the result.

Healthy gut is a must to have a healthy immune system.

Innate Immune System: First line of defense
- First, fastest and most immediate line of defense is the innate system.
- Set up to act quickly and efficiently.
- No memory and does not confer lasting immunity.
- Responds immediately.
- Acute inflammation.
Innate Immune System: First line of defense

- There are 80 known autoimmune diseases in which a broad range of symptoms can manifest in the body.
- In these cases, the immune system mistakenly attacks healthy tissue after a perceived threat from an otherwise normal food source.
- The most common food sensitivities are gluten, dairy, eggs and nuts.
- Many factors may trigger an individual’s immune system to function inappropriately such as infectious agents such as bacteria or viruses, genetics or lifestyle factors.
- Although we are unable to change our genetic predisposition to autoimmune disease, we can change your lifestyle habits beginning with nutrition.

Common Autoimmune Disorders

The following is a list of common autoimmune diseases and autoimmune related disorders compiled by the National Institute of Health

- Celiac disease
- Type 1 Diabetes
- Addison’s disease
- Systemic Lupus
- Multiple Sclerosis
- Grave’s disease (hyperthyroidism)
- Rheumatoid arthritis
- Hashimoto’s thyroiditis
- Psoriasis
- Siogren’s Syndrome
- Systemic Lupus
- Ulcerative colitis
- Scleroderma
- Cohn’s disease
- Chronic Lyme disease

Symptoms

- Depending on the disease, symptoms of autoimmune dysfunction involve inflammation in the body that may manifest itself in a variety of ways. The most commonly affected organs and tissues include red blood cells, blood vessels, muscles, joints, endocrine gland, thyroid gland, ovaries, connective tissue, bones, tendons, skin.

The following is a list of symptoms that may indicate your immune system is not functioning properly:

1. Abdominal pain or discomfort perhaps associated with irritable bowel syndrome
2. Reoccurring fever
3. Joint pain and stiffness
4. Skin rash
5. Fatigue
6. Anemia or any known vitamin or mineral deficiency mood changes
Healing with dietary lifestyle changes

- Many of these autoimmune complications are treated using immunosuppressive medications which can put the body at greater risk of harmful infections.
- Fortunately, more evidence shows that dietary lifestyle changes can decrease the severity of these symptoms, halt the progression of disease and possibly prevent the problem from occurring from the start.

Omega – 3 Fats Decrease Inflammations

- The average American diet today consists of an unbalanced proportion of omega-3 fatty acids to omega-6 fatty acids. Ideally the human body requires omega-3 fatty acids in greater concentration because they produce anti-inflammatory effects. Although omega-6 fatty acids are necessary, a higher concentration of omega-6 fatty acids in our diet from processed foods, and high amounts of vegetable oils is associated with an increase in molecules which trigger inflammation.
- Individuals with different autoimmune diseases have shown a significant improvement in their symptoms while taking fish oil supplements. Patients with rheumatoid arthritis showed a 73% decrease in their drug treatment use and 60% of patients who had Crohn’s disease experienced a decrease in their relapse rate.
- Fatty acids are attributed to decreasing immune mediated inflammation.
- Fatty acids suppress antibodies that alarm the immune system for defense and improve the signaling pathways of cells which cause inflammation.

Promote Gut Health

- The gastrointestinal tract contains the greatest concentration of immune cells in the body and may be the activation site of fighter cells known as T-cells.
- Diets associated with chronic inflammation of the gut are therefore at a greater increase of developing an autoimmune disease.
- Increased intestinal permeability allows food allergens to pass through the intestinal wall stimulating the production of antibodies.
- As you now know, specific antibodies seek to destroy the foreign invader by releasing fighter T-cells which cause chronic inflammation of the intestines.
- These fighter cells are also released into neighboring tissue and the bloodstream. As a consequence, the entire body is susceptible to an immune response resulting in fatigue, muscle stiffness and skin reactions.

Promote Gut Health

- The result of a chronic autoimmune response and decreased gut health increases the susceptibility of individuals to develop more than one type of autoimmune disease.
- Researchers found that 30% of patients with celiac disease also suffered from another autoimmune disease or autoimmune related problem such as irritable bowel syndrome (IBS).
Oxalates and Autoimmunity

- If you are experiencing symptom flare ups with no known reason, oxalates may be a source of inflammation for you.
- Detecting if oxalates may be triggering an autoimmune response in your body can help you heal sooner. Oxalates are compounds in nature found in many protein alternatives such as soy as well as grains, nuts and some fruits and vegetables.
- Although some of these foods can be excellent additions to a healthy diet, an unhealthy gut can lead to chronic inflammation, nutrient deficiency, and oxidative stress and damage to the body.

Antioxidants Reduce Inflammation

- Theoretically, increased antioxidants can decrease oxidative stress which promotes tissue damage and therefore directly correlate to reducing inflammation, chronic illness and autoimmune disease. One study found that diets supplemented with antioxidants and lower in total fat and caloric intake delayed the onset of Lupus symptoms by stimulating a healthy immune system.
- The healthy maintenance of the gut and mind interaction is crucial to healthy aging and vitality.
- Vitamins which act as antioxidants have anti-inflammatory properties inhibiting cytokine activity in autoimmune diseases which signal cells for an inflammatory response.
- Many herbs high in antioxidants such as curcumin derived from turmeric have been shown to exhibit similar anti-inflammatory control as do synthetic drugs such as aspirin.

B Vitamins and Methylation

- Folate, B-6 and B-12 have antioxidant properties. Vitamin B-6 has specifically been shown to inhibit macrophages from engulfing foreign matter associated with autoimmune diseases.
- Vitamin B-6 deficiency is also positively correlated with increased sensitivity to oxalates in food.
- Individuals with MTHFR gene mutations have a lowered ability to produce the key anti-oxidant glutathione. Glutathione is critical for detoxification and immune modulation. These individuals are at a much greater risk for developing auto-immune or chronic inflammatory diseases.
- They need extra methylation support nutrients such as methylfolate, methyl-B12, zinc, magnesium, riboflavin and B6.
Vitamin D

- Vitamin D₃ plays a critical role in the development, coordination and control of the immune system.
- Individuals with Vitamin D₃ deficiencies are at a much greater risk for the development of an auto-immune disease or chronic inflammatory disease. Supplementing to boost Vitamin D₃ levels can be very effective for reducing inflammation.
- Studies have found that biologically active Vitamin D is linked to a decrease risk of Type-1 diabetes in which the pancreas does not produce insulin.
- Sunshine is a natural source of Vitamin D. People in geographical locations that see fewer hours of sunshine have higher rates of Type-1 diabetes.

Choose the Right Proteins

- Proteins break down into amino acids and their sequence can promote inflammation. Researchers are beginning to find that although such triggers as gluten cause an autoimmune response in people with celiac disease or gluten sensitivity, it is the chain of amino acids that are contained in the gluten which damage the small intestine.
- Wheat, soy and milk have all been associated with promoting Type-1 diabetes due to how the body perceives the protein contained in these common food allergens. Countries that consume refined wheat flour as a major food source found that there is a higher incidence of Type-1 diabetes.
- Opt instead for organic, pasture-raised meats such as turkey and lamb and wild caught fish high in omega-3 fatty acids like Alaskan salmon.

Avoid Nightshades

- Avoid nightshade vegetables such as tomato, white potato and any pepper variety can help to improve an unhealthy autoimmune response.
- Nightshades can increase calcium deposits in tissue which causes chronic inflammation leading to a cascading effect of adverse health consequences.
- Damage to the kidney and liver can trigger autoimmune disease such as rheumatoid arthritis and diabetes. Not everyone responds negatively to nightshades, however, many individuals with autoimmunity struggle with these foods.
Autoimmune diet plan

- To get started on an autoimmune diet plan, check out the shopping guide. Following the diet plan for 90 days is crucial in resetting your body’s immune response.
- The diet eliminates nightshade vegetables, dairy, eggs, chocolate, nuts, and caffeine sources such as coffee and chocolate. It is high in low-glycemic fruits, organic vegetables, organic, grass-fed and pasture-raised protein sources, wild caught fish, fermented foods and healthy fats.
- Pork and shellfish are eliminated because they are one of the most highly toxic foods you can consume. Pigs and shellfish are scavengers and pollutants containing heavy metals and toxins which are easily absorbed along with the animal’s hormones.
- People exposed to toxins such as coal miners have an increased risk at developing an autoimmune disease such as rheumatoid arthritis by a minimum of three times the normal expectancy.

A Lifelong Commitment

- Resetting your autoimmune system can leave you with phenomenal physical results. Preventing flare ups of symptoms from reoccurring following a strict 30-90 day autoimmune diet regimen requires a change in lifestyle.
- Although you may be able to slowly reintroduce limited quantities of inflammatory foods back into your diet, maintaining a healthy gut can prevent the severity of an autoimmune response. Be vigilant for the initial period and then slowly reintroduce (if you’re reading this book, you’ll likely be reintroducing) fringe foods back in.
- I typically recommend adding one fringe food every 3 days while you analyze how your body is responding to that individual food.
- If you notice more inflammatory symptoms such as pain, headaches, fatigue, acne/eczema, allergies or clearing your throat a lot then it is a sign you are not tolerating that food and it should be eliminated for another 90 days before reintroducing.
Lifestyle Tips

- The following tips can decrease the severity of symptoms if you have an autoimmune disease, prevent an unhealthy autoimmune response or stop the progression of an autoimmune condition.
- Breast feeding is recommended to introduce foods to babies while they are developing an immune system and prevent an autoimmune response later in life.
- Practice stress reduction; and yes, laughing amongst friends counts.
- Exercise decreases cortisol levels and helps to balance hormones.
- Avoid unnecessary use of antibiotics. Antibiotics deplete the healthy bacteria in your gastrointestinal tract leaving you at risk for harmful pathogens.
- Detox the body of toxins and chemicals from non-food sources such as skin and hair care products. Your skin is a sponge and your body does not need any additional pollutants.

Autoimmune Nutritional Tips

- Switch to organic teas such as green tea or herbal teas instead of coffee.
- Commit to taking a probiotic and prebiotic daily to maintain a healthy gut flora.
- Eliminate refined sugars which cause inflammation and increase the variety of fruits and vegetables to aid in detoxifying the body of irritants.
- Replace industrialized vegetable oils with organic, cold pressed coconut oil or extra virgin olive oil to supplement your diet with healthy fats.
- Avoid any food source that does not come from nature such as artificial sweeteners, synthetic food dyes and preservatives.
- Buy organic. Chemical toxins such as pesticide residue destroy the healthy micro flora of the gut thereby creating an environment susceptible to unhealthy autoimmune response. Drink purified water to avoid contaminants such as heavy metals and chemicals.

Thank you!

Questions?