

How to Hack Your Immune System

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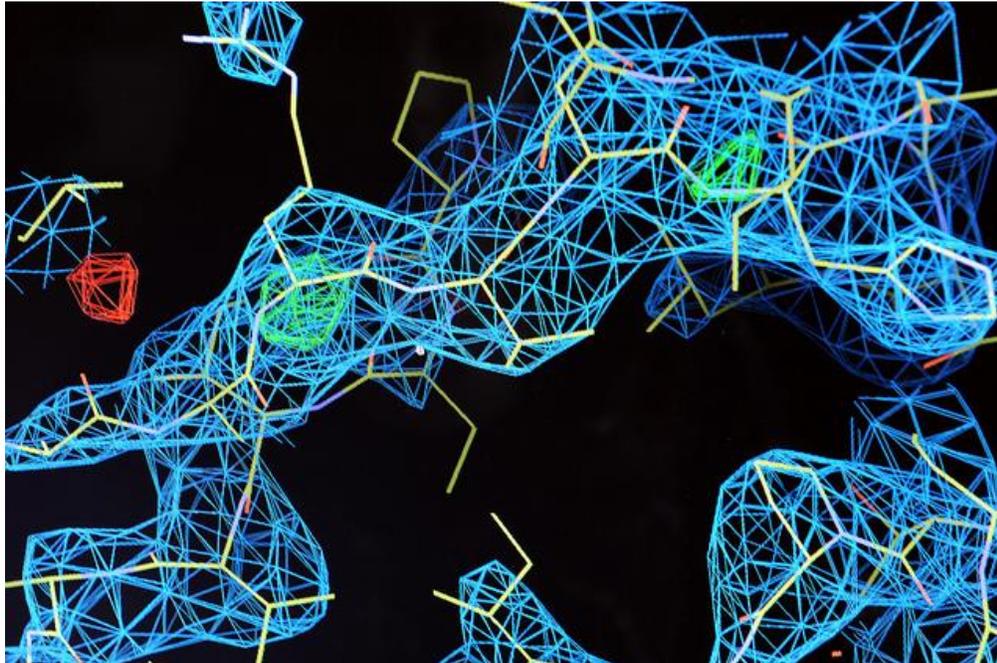


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Most of us looking to optimize our health get bombarded with information on hormones, gut health and detoxification. But we rarely hear very much about the immune system. The reasons for this are many, namely that it is quite complex and interacts with the other systems in numerous ways. The goal of this article is to give you some basic information on how our immune system works and how to improve upon it. I'm going to assume that you know some basic information, such as the importance of having an optimal level of vitamin D, sufficient sleep, etc. Another reason the immune system doesn't receive as much attention as other systems in the body is that it is perceived as less "sexy". I hope to change that perception by showing you how imbalances in the immune system can and will negatively affect the hormonal and nervous systems.

An example is an infection that our immune system cannot properly handle will activate the adrenal glands(HPA). This will lead to elevated cortisol in the short-term and depressed cortisol in the long-term if not addressed. In addition, the inflammation created from the microbes and the immune system's reaction to those bugs will cause blood sugar fluctuations. Forget the fever, cough and runny nose that you associate with pathogens in the body. Microbes are interfering with you reaching optimal health in multiple other ways. Besides the previously mentioned adrenal stress and blood sugar swings, chronic pro-inflammatory molecules known as cytokines

can deplete many of your neurotransmitters. In addition, these pro-inflammatory cytokines can punch holes in the blood-brain barrier, the protective lining around our brain. If not addressed, this can lead to degeneration in the nervous system and neurotransmitter imbalances that may manifest as anxiety, depression, brain fog, insomnia and more.

So what exactly is the immune system? It is the collection of various types of white blood cells, all of which are programmed for specific actions, that also help to differentiate self(our body) from non-self(microbes, pathogens, etc.). White blood cells are created in the bone marrow from stem cells. The immune system is divided into two major categories: the cell-mediated immunity side and the humoral immunity side. The cell-mediated division is also known as the T-helper 1 division and addresses any infections INSIDE of the cells. This includes viruses, such as Epstein-barr virus and the entire Herpes family, as well as cancerous cells. This portion of the immune system includes CD8 suppressor T-cells and Natural killer cells. The humoral immunity division, also known as the T-helper 2 division, attacks infections on the outside of the cells. This part includes the B cells, known primarily for their ability to make antibodies that tag pathogens for destruction. A healthy immune system should be able to switch back and forth between a Th-1 and a Th-2 response.

Today, a variety of factors contribute to weakened immunity in the majority of the population

- 1) Heavy metals/toxic metals: Mercury, aluminum, lead, etc.
- 2) Pesticides, herbicides and other contaminants
- 3) Low body temperature
- 4) Hormonal imbalances: high cortisol/low DHEA, low cortisol/low DHEA, low thyroid function
- 5) Poor digestive health: imbalances in good:bad flora, mal-absorption, etc.
- 6) Epigenetic polymorphisms that are expressing: MTHFR, which is related to the production of certain types of immune cells known as T cells and GSTM/GSTP, which affects our levels of glutathione, an anti-oxidant important for immune function.

Addressing #1 and #2 involves optimizing Phase I and Phase II detoxification in the liver, as well as reducing exposure to these harmful compounds. Correcting #3 and #4 must involve a thorough examination of adrenal and thyroid health. An adrenal test known as an adrenal stress index should be performed to measure cortisol 4 times throughout the day, along with 2 measurements of DHEA. This is important for optimal body temperature because cortisol that is too high OR too low will negatively affect thyroid function. The following thyroid markers should be measured: free T3, free T4, TSH, reverse T3, anti-TPO antibodies, and anti-thyroglobulin antibodies. Optimizing digestion (#5) should include a baseline analysis, such as the Metametrix GI Effects Profile, to determine what abnormalities may exist in the beginning. These may include insufficient “good” bacteria, the presence of pathogenic microbes(yeast, bacteria, or parasites), low levels of stomach acid, or poor pancreatic enzyme output. Without

optimizing gut health, it is difficult, if not impossible, to have a robust immune system. Lastly, testing for epigenetic polymorphisms can be done through 23andme(www.23andme.com) and putting your raw data through a program such as Genetic Genie, Prometheus, etc. can help you determine if you have any copies of immune-related polymorphisms such as MTHFR, GSTM, etc. Bypassing the MTHFR polymorphism is as simple as taking methylfolate, B12, and co-factors, such as the other B vitamins, magnesium, zinc, etc.

While vitamin D levels tend to garner most of the mainstream media attention in regards to immune health, glutathione is equally—if not more—important in many aspects. Glutathione is necessary for controlling viral replication, antigen presentation(alerting certain immune cells that microbes or fragments of microbes are present), detoxifying environmental chemicals, and chelating heavy metals, such as mercury. Stress and epigenetic polymorphisms, such as GSTM, lead to less than optimal levels of this important nutrient. What can be done? Supplementing with an oral liposomal form or a transdermal cream form of glutathione can help to increase levels, which will fortify our immune defenses.

Hopefully, this article was able to highlight the need to optimize immune function. Immune imbalances may negatively impact other bodily systems, such as nervous system function, as well as hormone levels. And while many people will test positive for neurotransmitter and hormone imbalances, it is important to look one step further for immune imbalances and their potential impact. By following the steps outlined above, your chances of achieving optimal immune health—and consequently, optimal health in general—are greatly increased.

Dr. Tim Jackson, DPT received his undergraduate degree in Health science and chemistry from Wake Forest University in 2003. He completed his Doctorate in Physical Therapy (DPT) from the Medical University of SC in 2009. Realizing that manual therapy and orthopedic care helped only some of his patients, he began studying functional and environmental medicine, as well as digestive health, in an effort to help others achieve wellness. Dr. Tim is educated in nutritional biochemistry, digestive health and its systemic effects, as well as functional endocrinology. He recently completed the Spine portion of the Active Release Technique methodology, a system that addresses musculoskeletal trigger points and helps to expedite the healing process. Currently, Dr. Tim is working on his Certified Nutrition Specialist certification. You can find Dr. Tim at www.healyourbody.org or drtim072981@gmail.com.