Autoimmune Conditions

Recognize a Smarter Approach to Reverse Autoimmune Conditions

Functional Splanchnology Institute

David Peterson, DC, DCCN, FAAIM
# Table of Contents

Exposing and Challenging Autoimmune Assumptions 5
Challenge - Th2 is Anti-Inflammatory 5
Potential Pitfalls in Understanding Autoimmune 8
Did You Know? 12
Introduction to the Immune System 15
Calm and Quiet the Immune System 22
Developing an Autoimmune Plan 24
Your Choices: 25
The quality of the solutions we come up with will be in direct proportion to the quality of the description of the problem we’re trying to solve. Many will read this with an expectation and knowing of what they will find in this Autoimmune course. Many have been following the information throughout the internet. One has to ask, why does Autoimmune conditions continue to increase? We can’t solve a problem with the same thinking the failed to correct the problem.

It is important to understand that the way the body works does not change to suit a current philosophy of a diseases cause and effect. Neurology, physiology and anatomy in the human body do not change. They have meaning and cannot be ignored, separated, or changed to suit a particular philosophy or treatment. By understanding the normal immune system, dysfunction can be recognized. By recognizing the dysfunction, you can understand the effect and the symptoms produced. This can then develop into a protocol that will reverse or eliminate the cause of autoimmune disease and alters the effect back to normal health.

**If you are asking - Am I Th1 or Th2?**

You are asking about which Cytokines and Chemokines are more active.

Not Antibodies!

Let us rephrase the questions to better understand Autoimmunity. What are the potential pitfalls with Autoimmune treatments? What are the assumptions being made about the immune system? How should the immune system normally function?

If you are sick and tired of being sick and tired, you need to be asking hard questions. Let me give some hard answers. We will first address the pitfalls involved with Autoimmunity. Then you will be shown how the immune system is supposed to work.

**Let’s Get Started!**
Exposing and Challenging Autoimmune Assumptions

Every Autoimmune Condition — no matter how apparently complex it may be — comes with a long list of assumptions attached. Many of these assumptions may be inaccurate and could make your treatment inadequate or even misguided. While such an assumption may seem true at first, try challenging it and maybe you’ll find some very interesting treatment models (such as the ones listed below, for example).

Challenge - Th2 is Anti-Inflammatory

Th2 interleukins stimulate the body to produce antibodies and interact with white blood cells, such as interleukins 4, 5, and 13. Others promote the generation of themselves and other Th2 cytokines, like interleukin 4. Some Th2 cytokines also inhibit certain Th1 cell and cytokine activity and thus provide balance — interleukin 10 being an example.1 Interleukin 10 also aids in the immune system’s anti-inflammatory allergic responses. In excess, Th2 responses will counteract the Th1 mediated microbicidal action. The optimal scenario would
therefore seem to be that there should produce a well balanced Th1 and Th2 response, suited to the immune challenge.²

In autoimmune brain inflammation, Th1 cells are responsible while Th2 cells can be protective. Th2 cells prevent or even reversed Th1 up-regulation.

Based upon this information, one may assume that Th2 is anti-inflammatory. However, you may know people that have severe life-threatening reactions simply by coming in contact with a peanut, shellfish or getting stung by a bee. What Th system is that?

**Th2 and Anaphylaxis**

Anaphylaxis is a severe life-threatening systemic hypersensitivity reaction to dietary or respiratory allergens, characterized by swelling, breathing problems or asthma, low blood pressure, constantly feeling cold, and in worst case scenarios - death within minutes or hours after re-exposure to the allergen in sensitized individuals.³

Allergic sensitization (i.e. the asymptomatic phase) results from the priming of Th2 cells and the production of IgG and IgE by mast cells (MC).⁴ In susceptible patients, re-exposure to the allergen causes the cross-linking of specific IgG and
IgE antibodies. Anaphylaxis occurs with excess levels of Th2 cytokines (IL-4, IL-5, and IL-13) produced by lymphocytes.

This totally contradicts the meme that Th2 is anti-inflammatory. Many studies and authors are now using Th2 synonymously with Anti-inflammatory.

**Th2 and Histamine**

Idiopathic anaphylaxis has increased organ sensitivity and the sensitivity is increased with histamine. Histamine enhances the secretion of Th2 cytokines such as IL-4 (interleukin-4), IL-5, IL-10 and IL-13 and inhibits the production of Th1 cytokines IL-2, IFN gamma (INF-γ) and IL-12.

Is it histamine in the diet that is the problem? Or is it a Th2 dominance occurring with exposure to bacterial LPS, foods or lectins. Will avoiding histamine producing foods be beneficial since overactive immune cells produce and release histamine? Lactic acid bacteria, i.e. Lactobacillus (Yes, the ones in probiotics) produce histamine.

**Challenge - Th2 and Cortisone/Prednisone**

Cortisone/Prednisone reduces the number and severity of episodes of idiopathic anaphylaxis by suppressing Th2 cytokine production. Did you make the connection with the information above?

“Th2 cells prevent or even reversed Th1 up-regulation.”

Those using Cortisone/Prednisone are suppressing Th2, leaving the Th1 cytokines responsible for the onset of autoimmunity unchecked. When Th1 cytokine are unchecked, the Th17 gets agitated, further increasing the autoimmune symptoms.

*Cortisone/Prednisone suppresses Th2, leaving the Autoimmune Th1 cytokines unchecked.*
Potential Pitfalls in Understanding Autoimmune

■ If you are asking - Am I Th1 or Th2?
  • You are asking about which Cytokines and Chemokines are more active.
  • Not Antibodies!

■ Focusing on Antibodies.
  • Which are preceded by Cytokines, Chemokines and Immune Mediators.
  • Which can be damaged by bacteria, mold and parasites.
  • While ignoring Cytokines, Chemokines and Immune Mediators.
    • Which can provoke an inflammatory immune response without antibodies.

■ Focusing on Th1 and Th2.
  • While ignoring Th17 and the other Th systems.
    • Which are associated with severe autoimmune and leaky gut.

■ Provoking an immune response with the Th1/Th2 Challenge in your body when you suspect you have an autoimmune condition.
  • Thinking it will result in a controlled immune reaction.
    • When Autoimmunity is an “Uncontrollable” immune response.

■ Assuming the Immune System is functioning properly with Autoimmune conditions.
  • When the Immune System is “Not” functioning properly.

■ Assuming the body is capable of unlimited, on-demand production of White Blood Cells, Cytokine, Chemokine, Immune Mediators and Antibodies.
• When the cells that produce the immune system components become fatigued with constant stimulation and demand.
  • Which can be further fatigued by immune stimulating supplements and bone broth.

Assuming that all lab tests are absolutely accurate without taking into account the bullet points listed above.
• When lab tests are about probabilities, not absolutes.

Assuming hormones are only involved in sex or stress responses.
• When hormones are involved in the control and regulation of the immune system and inflammatory processes.

Expecting cleanses and detoxes to reverse autoimmune conditions.
• When cleanses and detoxes require properly functioning organs of elimination.
  • Which are not functioning properly due to the Autoimmune conditions.
Using Social Media to self-diagnose.

- While seeking groups of people with a common symptoms.
  - When you are a unique individual with your own distinct immune cytokine, chemokine and antibody response.

False expectations that success will come by doing the same program with the second, third, or fourth doctor.

- When if the treatment protocol did not work with the first Doctor, it is highly unlikely the protocol will work with the fourth Doctor.

Alternative Medicine claiming to do Functional Medicine

- While doing the same Alternative Medicine treatment.
- Using antiquated lab testing and protocols.

Functional Medicine practitioners that views you as a unique individual with your own set of immune related symptoms.

- While everyone gets the same cleanse, detox and elimination diet.
- While “stimulating” an “unregulated” Autoimmune Immune system.

References: Exposing and Challenging Assumptions about Autoimmunity


9 Chonnmairee T; Patel JA; Lett-Brown MA; Uchida T; Garofalo R; Owen MJ; Howie VM. Virus and bacteria enhance histamine production in middle ear fluids of children with acute otitis media. J Infect Dis. 1994; 169(6):1265-70


Did You Know?

- Th1, Th2 and Th17 dominance is controlled by cytokines and chemokines.
- Immune cells have a limited lifespan.
- Immune cells have memory.
- Immune cells are used by bacteria as incubators.
- Bacteria can hack into the immune system altering immune cell behavior.

Everything the body does is defensive in nature. By design immune cells have a limited lifespan and a memory. The limited lifespan restricts the amount of inflammation that can occur. For protection, the immune cell memory remembers previous encounters with bacteria and viruses.

It gets pretty confusing when talking about the immune system. This is due to the way the body is viewed by healthcare. Every component is compartmentalized. Heart conditions are treated by Cardiologists. Emotions are treated by Psychologists. Back pain is treated by Chiropractors. This violates the tenet stating - No part of the body can be understood separate from the whole.
The same can be said with the compartmentalization of the immune system. Not only that but the immune system is the least understood. In the “Why Do I Still have Thyroid Symptoms? When My Lab Tests are Normal”, Dr. Kharrazian recommends doing a Th1/Th2 challenge. Which at the time the book was being published the best information known about the immune system. About the same time as the Thyroid book by Dr. Kharrazian was released, a new Th17 system was identified. Since then several more have been identified. These systems were in existence prior to the Th1/Th2 Challenge. Why is it still being taught? The answer is that it would be very difficult to recall all the books for them to updated. Th17 is a major component in autoimmunity. The others are involved in leaky gut. Besides the focus in on antibodies, not cytokines or chemokines.

Cytokines
Chemokines

Antibodies

Th1/Th2 Challenge

Antibodies

Th1

Th2

2008

Th_reg

Th.Helper

Th_reg

Th.Helper

Present Year

Th1

Th_Helper

Th17

Th17

Th?

Th?

The immune system is further compartmentalized by focusing strictly on antibodies. This is problematic because cytokines and chemokine can provoke an immune response independent of antibodies. There is also the assumption that the body is always capable of producing antibodies. In addition to that, microbes damage or control antibodies for their self preservation.
Under our current medical system, autoimmune diseases are not recognized as diseases of the immune system as a whole. Instead they are seen as diseases of particular organs. Unfortunately, that means that there isn't a unified branch in conventional medicine to treat autoimmune conditions. If, on the other hand, you are suffering from an autoimmune disease, you will see a specialist who focuses on the organ system that is being affected: a rheumatologist for rheumatoid arthritis; an endocrinologist for Hashimoto’s and diabetes, a gastroenterologist for celiac, ulcerative colitis and Crohn’s; a dermatologist for psoriasis; and so on. If you have multiple autoimmune conditions, as many people do, you will see several different specialists.

To understand the abnormal autoimmune system, you need to know what a normal immune system performs. In this introduction to Autoimmunity, we'll take a look at the parts of the immune system from the perspective of how they are supposed to work in the next section.
Introduction to the Immune System

The immune system is very complex. It's made up of several types of cells and proteins that have different jobs to do in fighting foreign invaders. Our immune system is constantly on the alert, attacking at the first sign of an invasion by harmful organisms. The cells of the immune system work together with different proteins to seek out and destroy anything foreign or dangerous that enters our body. It takes some time for the immune cells to be activated - but once they're operating at full strength, there are very few hostile organisms that stand a chance.
Immune cells are white blood cells produced in huge quantities in the bone marrow. There are a wide variety of immune cells, each with its own strengths and weaknesses. Some seek out and devour invading organisms, while others destroy infected or mutated body cells.

**Immune cells must be programmed or educated upon arrival at the scene.**

Immune cells must be programmed or educated upon arrival at the scene. Special proteins called cytokines and chemokines act as dispatchers and on-scene incident commanders, controlling the production of immune cells, determining which type get sent and what they do when the immune cells arrive. Yet another type has the ability to release special proteins called antibodies that mark intruders for destruction by other cells.
But the really cool thing about the immune system is that it has the ability to "remember" enemies that it has fought in the past. If the immune system detects a "registered" invader, it will strike much more quickly and more fiercely against it. As a result, an invader that tries to attack the body a second time will most likely be wiped out before there are any symptoms of disease. When this happens, we say that the body has become immune.

The Complement System

The first part of the immune system that meets invaders such as bacteria is a group of proteins called the complement system. These proteins (Cytokines and Chemokines) flow freely in the blood and can quickly reach the site of an invasion where they can react directly with antigens - molecules that the body recognizes as foreign substances. When activated, the complement proteins can:

• trigger inflammation with out antibodies.
• attract eater cells such as macrophages to the area.
• coat intruders so that eater cells are more likely to devour them.
• kill intruders.

Phagocytes

This is a group of immune cells specialized in finding and "eating" bacteria, viruses, and dead or injured body cells. There are three main types, the granulocyte, the macrophage, and the dendritic cell.

• The granulocytes often take the first stand during an infection. They attack any invaders in large numbers, and "eat" until they die. A small part of the granulocyte community is specialized in attacking larger parasites such as worms.

• The macrophages ("big eaters") are slower to respond to invaders than the granulocytes, but they are larger, live longer, and have far greater capacities. Macrophages also play a key part in alerting the rest of the immune system of invaders. Macrophages start out as white blood cells
called monocytes. Monocytes are able to leave the blood stream with the release of histamine, turn into macrophages.

- The **dendritic cells** are "taster" cells lining the intestinal tract. They are constantly tasting or monitoring what is in the gut. They can devour intruders, like the granulocytes and the macrophages. And like the macrophages, the dendritic cells help with the activation of the rest of the immune system when they detect issues with food. They are also capable of filtering body fluids to clear them of foreign organisms and particles.

**Lymphocytes - T cells and B cells**

White blood cells called lymphocytes originate in the bone marrow but migrate to parts of the lymphatic system such as the lymph nodes, spleen, and thymus. There are two main types of lymphatic cells, T cells and B cells. The lymphatic system also involves a transportation system - lymph vessels - for transportation and storage of lymphocyte cells within the body. The lymphatic system feeds
cells into the body and filters out dead cells and invading organisms such as bacteria.

**T cells**

T cells come in two different types, helper cells and killer cells. They are named T cells after the thymus, an organ situated under the breastbone. T cells are produced in the bone marrow and later move to the thymus where they mature.

Helper T cells are the major driving force and the main regulators of the immune defense. Their primary task is to activate B cells and killer T cells. However, the helper T cells themselves must be activated. This happens when a macrophage or dendritic cell, which has eaten an invader, travels to the nearest

In order of occurrence: 1. Antigen recognition, 2 Clonal selection, 3. Interleukin secretion (Cytokine/Chemokine production), 4 Antibody production.
lymph node to present information about the captured pathogen. The phagocyte displays an antigen fragment from the invader on its own surface, a process called antigen presentation. When the receptor of a helper T cell recognizes the antigen, the T cell is activated. Once activated, helper T cells start to divide and to produce proteins that activate B and T cells as well as other immune cells.

**Killer T cell**

The killer T cell is specialized in attacking cells of the body infected by viruses and sometimes also by bacteria. It can also attack cancer cells. The killer T cell has receptors that are used to search each cell that it meets. If a cell is infected, it is swiftly killed. Infected cells are recognized because tiny traces of the intruder, antigen, can be found on their surface.

**B Cells**

The B lymphocyte cell searches for antigen matching its receptors. If it finds such antigen it connects to it, and inside the B cell a triggering signal is set off. The B cell now needs proteins produced by helper T cells to become fully activated. When this happens, the B cell starts to divide to produce clones of itself. During this process, two new cell types are created, plasma cells and B memory cells.

The plasma cell is specialized in producing a specific protein, called an antibody, that will respond to the same antigen that matched the B cell receptor. Antibodies are released from the plasma cell so that they can seek out intruders and help destroy them. Plasma cells produce antibodies at an amazing rate and can release tens of thousands of antibodies per second.

When the Y-shaped antibody finds a matching antigen, it attaches to it. The attached antibodies serve as an appetizing coating for eater cells such as the macrophage. Antibodies also neutralize toxins and incapacitate viruses, preventing them from infecting new cells. Each branch of the Y-shaped antibody can bind to a different antigen, so while one branch binds to an antigen on one cell, the other branch could bind to another cell - in this way pathogens are gathered into larger groups that are easier for phagocyte cells to devour. Bacteria
and other pathogens covered with antibodies are also more likely to be attacked by the proteins from the complement system.

**Memory Cells**

The **Memory Cells** are the second cell type produced by the division of B cells. These cells have a prolonged life span and can thereby "remember" specific intruders. T cells can also produce memory cells with an even longer life span than B memory cells. The second time an intruder tries to invade the body, B and T memory cells help the immune system to activate much faster. The invaders are wiped out before the infected human feels any symptoms. The body has achieved immunity against the invader.

Although rather long and complex, this overview is just a glimpse of the immune system and the intricate ways in which its various parts interact. Immunity is a fascinating subject that still conceals many secrets. When the immune system is fully understood, it will most likely hold the key to eliminating autoimmune conditions.
Calm and Quiet the Immune System
Rather Than Suppress or Stimulate

**Suppression** - In conventional medicine, the belief is that once you have an autoimmune condition, there's nothing you can do to reverse it, only attempts to manage the symptoms. Managing the symptoms typically involves harsh medications that are aimed at suppressing your immune system. While these medications can be effective at reducing some of the symptoms of the disease, since they suppress the entire immune system, they aren't without many unwanted side effects such as fatigue, weight gain, depression, increased infection rates and even cancer.

**Stimulation** - In contrast, Alternative and Functional Medicine (AFM) sees the body as a whole and works on the principle that the health of one system impacts the health and function of the others. Instead of focusing on disease symptom management, AFM focuses on supporting and strengthening the immune system. Using the more is always better Blue man approach (search: blue man, colloidal silver) to the majority of their supplement protocols.
Calm and Quiet - The optimal scenario should produce a well balanced Th1, Th2 and Th17 response, suited to the immune challenge. The response should be elegant, not too much, not too little. The immune system should be calm and quiet, ready to respond only when needed. Like a group of superheroes, waiting for their call to respond.

The immune system is self-regulating. Autoimmune conditions are a unregulated immune system where each of the Th systems can be over-stimulated or under-stimulated when exposed to bacteria, yeast, parasites, food, or damaged cells of the body. All in different directions. Examples of this will be seen in the next unit.

Using blanket statements like Th1 is inflammatory or Th2 is anti-inflammatory is short sighted and incomplete. The immune cells must be produced in the bone marrow, which can fatigue with constant demand or stimulation.

Did you notice anything missing in the paragraph above? Probably not if you are fluent with the current internet information. Th17 was purposely omitted. If the information you are reading does not include Th17, it is inaccurate.

If the information you are reading does not include Th1, Th2 and “Th17” regarding Autoimmunity. It is inaccurate.

While there is no known cure for autoimmune disease, I believe that there are critical elements that are at the root of all autoimmune conditions. In my functional medicine practice I have been able to successfully help hundreds of patients reduce cytokine/chemokine stimulation, get off their harsh medications, and become symptom free.
Developing an Autoimmune Plan

Regaining control of an unregulated Autoimmune system is a multilevel approach. There is no one size fits all. You can not stimulate your way out of suppressed or overactive immune system, because you are dealing with multiple Th systems.

If you have any of the following illnesses, you should consider the points to discuss and ponder below. Gluten sensitivity, Hashimoto’s/Low thyroid, Rheumatoid Arthritis/joint pain, IBD, IBS, low blood sugar, allergens, Fibromyalgia, Candida overgrowth, skin ailments, hair loss, Sjogren’s, Scleroderma, digestive disorders, Celiac Disease, cirrhosis, MS, MG, blood disorders, liver disease, headaches, PMS, re-current miscarriages, Lupus, Guillain-Barre, adrenal dysfunction, insomnia, extreme fatigue, generalized weakness, susceptibility to infections, and poor memory and brain fog. Each is these is an autoimmune disease or is a condition related to immune dysregulation and tissue destruction.

Point to Discuss and Ponder?

- What is a cytokine storm/ autoimmune flare up?
- How is TH17 involved in the TH1/TH2 challenge?
- How do you determine triggering events?
- Do you use food or supplement challenges to determine treatment protocols?
- What lab testing have you used? Did you utilize stimulated cytokine testing? Did you utilize neurotransmitter testing?
- Do you have a list of foods that induce cytokine immune response?
- How have you treated your condition? What were the treatment options? Are dietary, lifestyle, supplements and/or medications addressed? What are the benefits and side effects?
- Has your Doctor effectively cared for patients who feel like they can't function and patients that are sick and don't know why?
Can your Doctor determine the root of the problem or is it just cleanse, detox and antibody testing for everyone?

Does the Doctor practice use lab testing and analysis close to the current year. Rather than antiquated, outdated lab testing and supplement protocols.

As you will see in the next unit of the Autoimmune course. Re-regulating the Th1, Th2 and Th17 systems is complex. Multiple factors have to be considered.

The better you educate yourself, the better decisions you will make regarding your health.

**Your Choices:**

- Fill out the Autoimmune Questionnaire.
- Go to the next unit to better educate yourself.
- Go to the next unit after calling to set up a consultation.
David Peterson, DC, DCCN, FAAIM
17331 Penn Valley Dr.
Penn Valley, CA 95946
530-615-4083
dpeterson@stlwa.com
www.wellnessalternatives-stl.com
www.masteringthegut.com