



ADVANCED MOLD IMMUNE MODULE

Course Objectives

MODULE 1 – FACTORS OF IMMUNE DYSREGULATION

This video discusses common immune disruptors and the problems we see clinically.

In this module, the participant will learn:

- How indoor air quality affects immune regulation.
- The cells of the two arms of the immune system.
- About polarization of the Innate and Adaptive immune systems.
- What triggers certain T cells to be made.
- The normal roles of T helper cells.
- How stress affects immune balance.
- How hypoxia impacts the immune response.
- The things that cause hypoxia.
- How the sleep wake cycle is involved in immune regulation.
- The most common sleep problems and causes.
- The disruptors of the circadian rhythm.
- How blood glucose affects immune regulation.
- How the vagal nerve outflow is important in immune regulation.
- Strategies on how to stimulate vagal motor outflow.
- About the bi-stable microbiota immune balance.
- How dysbiosis affects immune functioning.
- How combined stressor affect immune balance.



- About impaired brains and the immune system connection.
- What foods support healthy brain immune functioning.
- How the fatty acid balance affects immune functioning.
- About why protein is important in immune cells.
- What roles Vitamin A & D plays in immune balance.
- How imbalances in Vitamins E & C affect immune regulation.
- The important role that zinc plays in the immune response.
- How selenium is needed in immune regulation.
- How aging affects our ability to fight infections.
- What foods support a healthy digestion.
- The role that hormones play in immunity.
- The differences in gender in the immune response.
- How genetics affects immune function, and what SNiPs to focus on that can impact immune functioning.
- How chemicals and haptens are handled by the immune system.

MODULE 2 – LEAKY MITOCHONDRION & THE IMMUNE CONNECTION

This video discusses mitochondrial injury and cell defense and introduces the different branches of the immune system.

In this module, the participant will learn:

- What systems are affected by damaged mitochondrion.
- The Cell Danger Response (CDR) phases of mitochondria.
- How “leaky” mitochondria cause reactive oxidative species.
- Symptoms of a leaky mitochondrion.
- How the body responds to an invading antigen.
- The process of inflammatory resolution and things that prevent it.



- The body's physical protective barriers of immunity.
- About the body's mucosal barriers.
- About the innate system phagocytes and how they work.
- How pathogens enter the body through the gut.
- The cascade of events that trigger an immune response.
- About the immune mediators – Chemokines and Cytokines.
- The basic response of the Adaptive immune system.
- The differences of response between B & T cells and how the body knows which to produce in response to an invader.
- The basic response to an antigen.
- The basics of Complement activation.
- About what can go wrong with immune activation.
- About neutrophil secondary necrosis.
- What MMP-9 is and how it can be used to measure tissue damage.
- How memory cells are formed.
- About clonal expansion and contraction of antibodies.

MODULE 3 – T CELL REGULATION

This video is all about understanding T cell regulation and polarization, along with understanding Mast Cell Activation and Dysfunction.

In this module, the participant will learn:

- The four main polarizations of the adaptive T cell response.
- Normal roles of T cells.
- The different cytokines secreted by T cells.
- The Th1/Th2 teeter-totter.
- About Th1 dominance.



- About Th2 dominance.
- The pattern of T cell dominance common with toxic mold.
- Which T cell becomes dominant with parasites and worms.
- Which T cell becomes dominant with bacteria, viruses, and yeast.
- About the immune system in the hollow spaces and on the mucous membranes.
- About the Th17/T regulatory cells teeter-totter
- The purpose of T regulatory cells and what stimulates secretion of these cells.
- About Th17 cells and how they can cause a dominance leading to autoimmunity.
- About autocrine loops of the immune system.
- About the balance between Th17 cells and TGF Beta.
- How NSAIDs promote inflammation.
- About glutathione and its role in inflammation.
- The teeter-totter between glutathione and TGF Beta.
- How glutathione is important in protecting RBCs.
- The symptoms of mold illness comparing acute vs. chronic exposure and the impact on the immune response.
- The role of toxin complexes in cardiovascular disease.
- About inflammasome activation.
- About MDSCs formation.
- About what activates Mast Cells.

MODULE 4 – TOXIC MOLD EXPOSURE & IMMUNE LAB WORK

This video covers how mold specifically impacts the immune system and what to look for in labs.



In this module, the participant will learn:

- How mold toxins cause immune dysregulation.
- What risk factors predispose an individual to immune dysregulation from mold exposure.
- The clinical symptoms from mold exposure.
- The role that barriers play in immune dysregulation.
- The mechanisms of how mold toxins cause illness.
- The metabolic effects of mold toxins on immune function.
- The factors that cause immune polarization due to mold toxins.
- About the immune evasion strategies employed by mold and mold toxins.
- Basic labs to start with in mold illness
- What labs are considered 2nd tier labs to consider in mold illness.
- What labs are considered 3rd tier to consider in mold illness.
- The clinical implications of a lowered Innate and Th1 immunity.
- Lab evaluations of lowered Innate and Th1 immunity.
- Lab evaluations of Th2/Th17 polarization.
- How mycotoxins affect glutathione production.
- How to assess glutathione.
- About the NADPH and glutathione teeter-totter.
- The benefits and risks of excess of TGF Beta.
- What lab markers reflect inflammation.
- About a Th1 dominant and inflamed individual and clinical pearls about addressing the inflammation in this type of individual.
- How to recognize symptoms of inflammasome activation and what labs reflect inflammasome activity.



- How mycotoxins synergize with LPS.
- How to evaluate mycotoxins and LPS in lab work.
- Tryptophan metabolism and the relationship to ATP production and immune functioning.
- The clinical symptoms of NAD/niacin deficiency.
- What to look for in lab tests for abnormalities in tryptophan metabolism.
- How mycotoxins affect neutrophil elastase.
- The clinical implications of elevated neutrophil elastase.
- How to analyze the CBC differential.
- More about complex patterns of the CBC differential.
- About other complex pattern findings in common lab work.
- How to recognize abnormal T regulatory cells in lab work.
- What cluster of differentiation means in immune labs.
- About CD-19 B cells in lab work.
- Clinical pearls in measuring cytokines in lab work.

MODULE 5 – INNATE IMMUNE MODULATION

This video discusses how to get started with immune modulation, how to use diet therapy, herbs & targeted supplementation to restore/repair cell membranes & support proper innate immune functioning.

In this module, the participant will learn:

- Where to start with immune modulation and first steps to take.
- The importance of diet choices in immune modulation.
- How digestive bitters can be used in modulating the innate immune system.



- About cell membranes and how to repair them.
- About using tocotrienols and glutathione in protecting and repairing cell membranes and modulating the immune response.
- How to squash inflammasome activation.
- How to use melatonin with inflammasome activation.
- About the mycotoxin-hormone-limbic connection.
- About mycotoxin molecular mimicry in sex hormones.
- How to use polyphenols in modulating the immune system.
- About phenol sensitivity and how to resolve it.
- What foods contain polyphenols.
- What herbs can be used as polyphenols.
- The nutrients and supplements that can be used to support the Innate immune system and block inflammasome activation.

MODULE 6 – T CELL DYS-REGULATION: TH2 & MAST CELLS

This video focuses on how to modulate the adaptive immune system back into homeostasis with clinical pearls on how to target or block certain Th2 and mast cells and stabilize histamine pathways.

In this module, the participant will learn:

- The typical clinical presentation of mold illness.
- Clinical presentation of a Th2 polarization.
- How to modulate a Th2 polarization.
- How mast cells and eosinophils are connected.
- How mast cells become pre-loaded with IgE.
- The systems affected by mast cell activation and the associated symptoms.



- How histamine is metabolized.
- How to assess histamine symptoms.
- How to assess foods in the diet for triggering histamine symptoms.
- What the 2ndry pathways are for mast cell degranulation.
- TSLP:TSLPR complexes and how they are involved with mast cells.
- What over-the-counter, prescription drugs, and natural nutrients that can be used to stabilize mast cells.
- Things that increase Diamine Oxidase Enzyme (DAO) activity.
- Things that impair DAO activity.
- How to assess DAO activity.
- How aldehyde dehydrogenase enzyme is involved in the metabolism of histamine.
- How to assess aldehyde dehydrogenase enzyme activity.
- How to modulate eosinophils
- To recognize the clinical picture of eosinophilia.

MODULE 7 – T CELL DYS-REGULATION: TH1 – TH17 – T REGULATORY CELLS

This video focuses on areas on how to clinically modulate the Adaptive immune system back into homeostasis with clinical pearls on how to target or block the autoimmune Th17 pathways, how to approach a Th1 highly inflamed individual, and how to modulate T regulatory cells as well as review how the Adaptive and Innate system can be modulated to achieve immune homeostasis using diet, supplements, and lifestyle modification strategies.

In this module, the participant will learn:

- How to block and modulate a Th17 polarization.
- Recognize the clinical picture of a Th17 polarization.



- Recognize and remove triggers of excess TGF Beta.
- What the considerations are for modulating TGF Beta, and how to approach a TGF Beta dominance clinically.
- To recognize the clinical picture of TGF Beta dominance.
- The problems associated with a very low TGF Beta.
- To recognize the clinical picture of a very low TGF Beta.
- How to down-regulate a Th1 dominant highly inflamed individual.
- To recognize the clinical picture of a Th1 inflamed individual.
- How to assess and address an over-driven Th1 response.
- To incorporate all the factors in modulating innate & adaptive immune responses.