

C.I.R.S. & Brain Inflammation!

THE EFFECTS OF MOULD, MYCOTOXINS,
MAST CELLS ON THE MICROGLIA

DR. JESS P. ARMINE,
PRESENTER





Dr. Armin



Dr. Ben Lynch

Acknowledgements

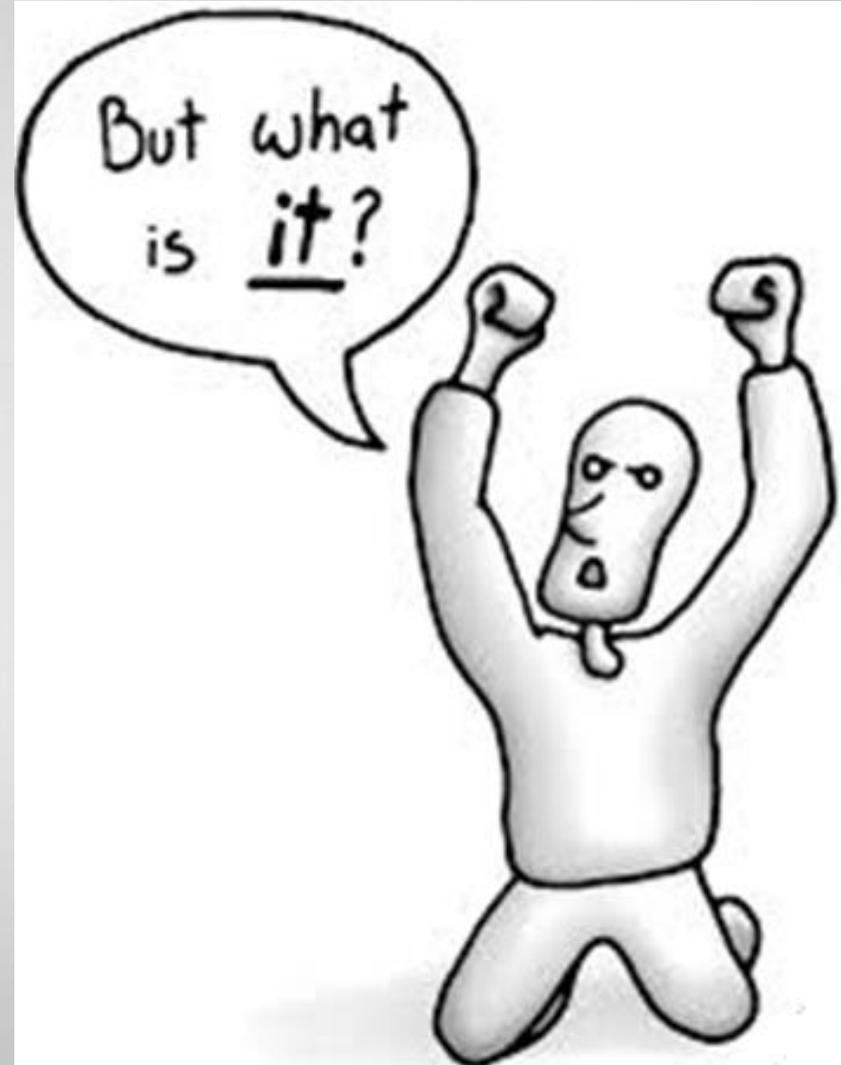


Today is Mother's Day Here in the USA

- ▶ So, I want to acknowledge she who has supported me throughout my life.
- ▶ Without her, there would be no me...on many levels...
- ▶ My Mum!!!



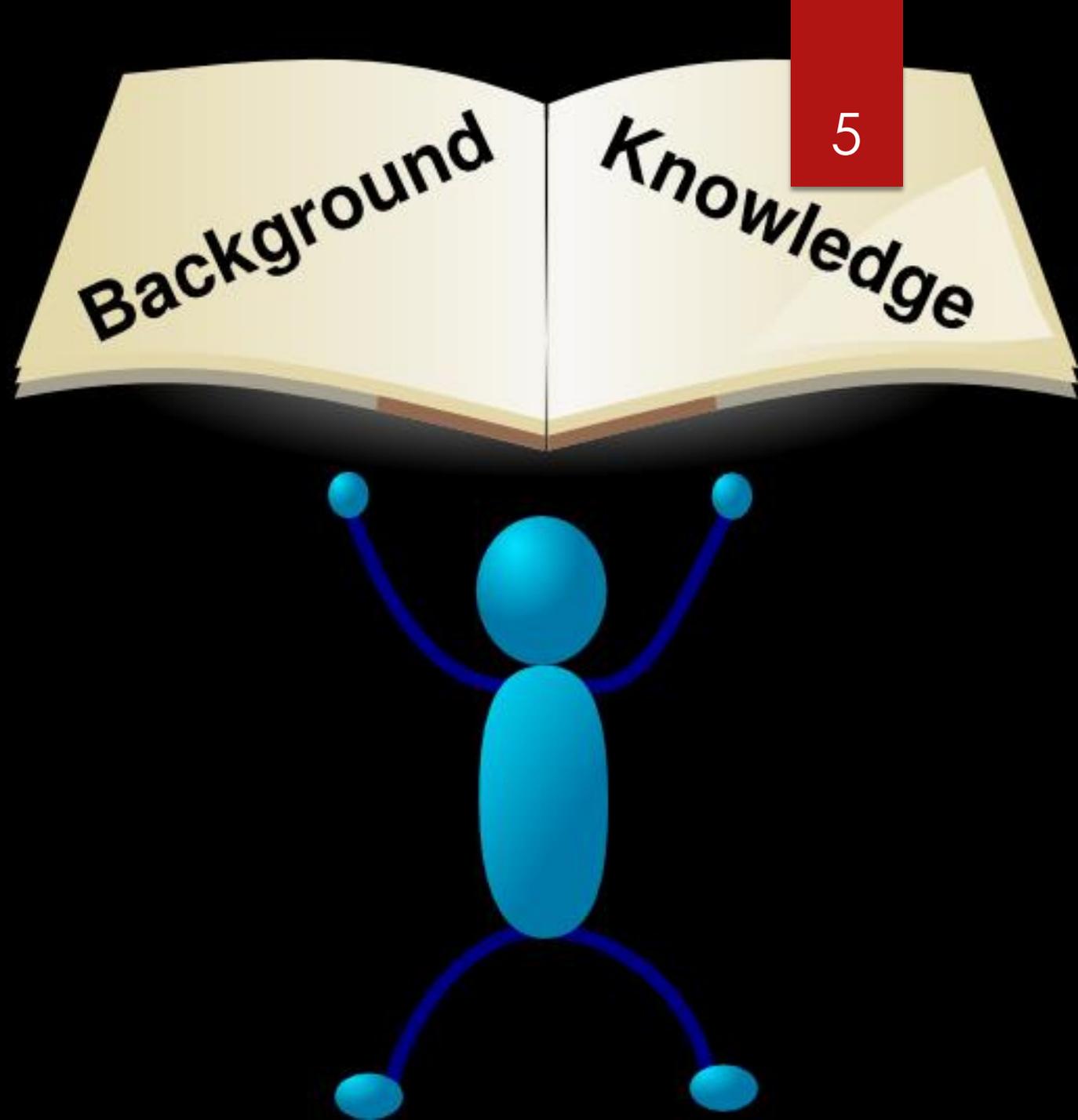
Chronic Inflammatory Response Syndrome (CIRS) is a body-wide inflammatory condition



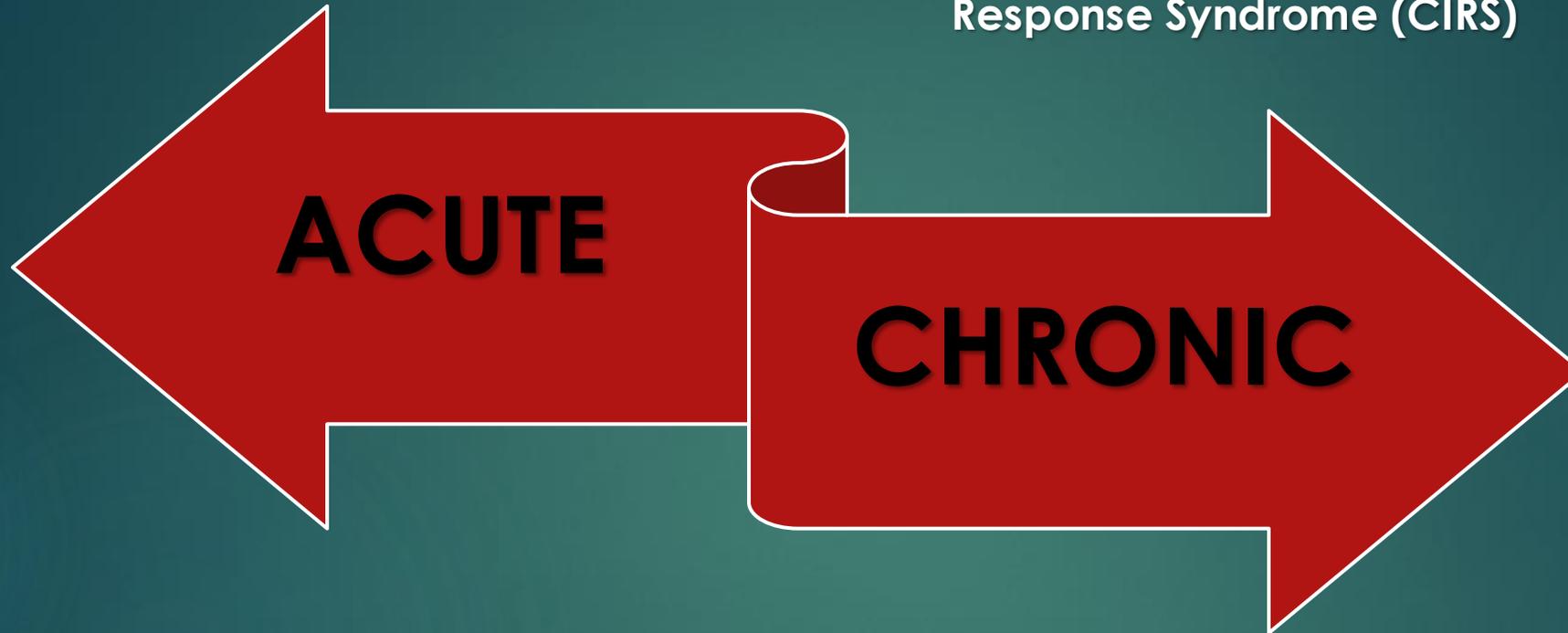
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A Little Background is in Order:

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Chronic Inflammatory
Response Syndrome (CIRS)

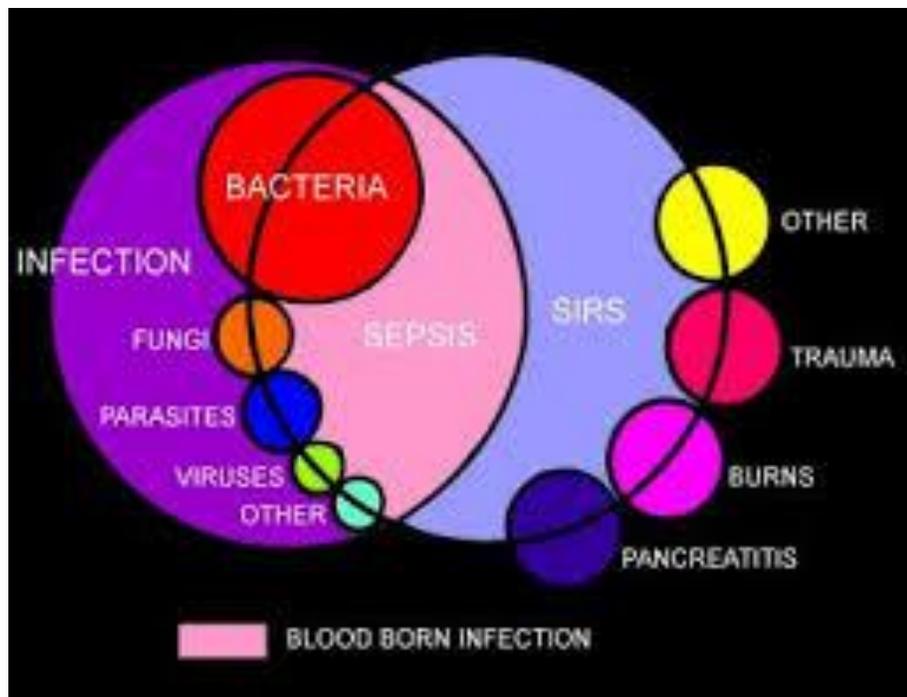


Systemic Inflammatory Response
Syndrome (SIRS)

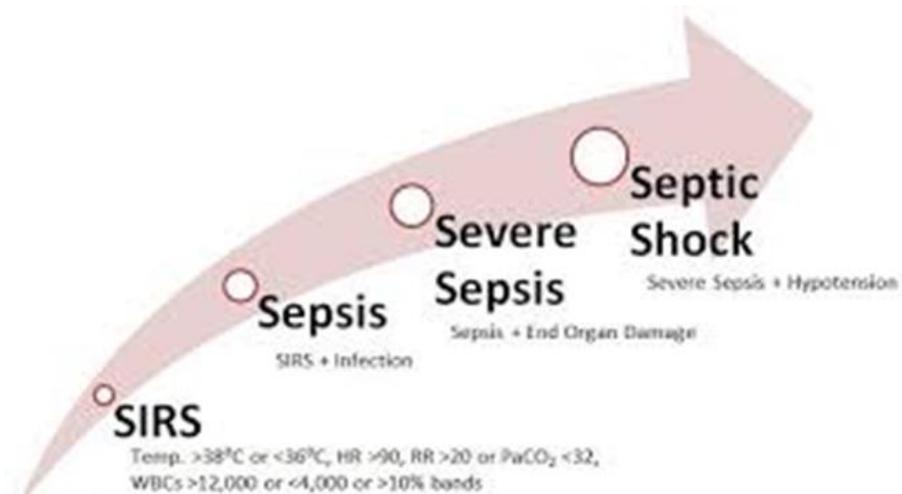
systemic inflammatory response syndrome (SIRS)

- characterized by a sequence of host phenotypic and metabolic responses to systemic inflammation that includes changes in heart rate, respiratory rate, blood pressure, temperature regulation, and immune cell activation

The Acute



Inflammatory Syndrome



If we want to know about the toxic effects of mould, mycotoxins, Lyme, Viruses, etc., on the microglia (brain cells) then we must get to the core...

BRAIN INFLAMMATION

To talk about Brain Inflammation we really need to speak of:

Chronic Inflammatory Response Syndrome

WHAT CAUSES CIRIS?

HEAT

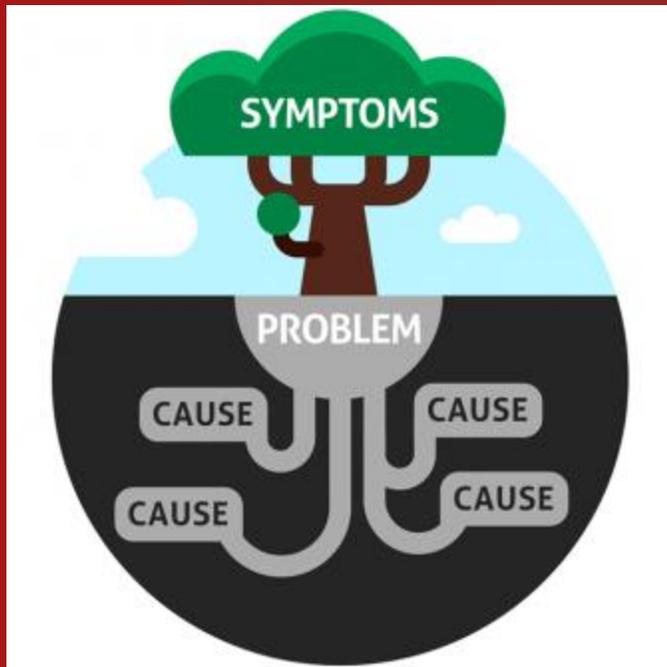
REDNESS

SWELLING

PAIN

LOSS OF
FUNCTION

CIRS- The Root Causes:



- ▶ Fungi, bacteria, actinomycetes and mycobacteria as well as inflammagens such as endotoxins, beta glucans, hemolysins, proteinases, mannans and possibly spirocyclic drimanes; as well as volatile organic compounds (VOCs).”
- ▶ Illness from a brown recluse spider bite; from fish that have been contaminated with ciguetera; and from *Borrelia burgdorferi*, (the bug that causes Lyme Disease). This would include all the vector-bourne diseases, i.e. all the borellias, bartonella, babesia, RMSF, etc.
- ▶ My Learned Colleagues are speaking about these root causes

▶ <http://www.survivingmold.com/news/2014/12/what-is-cirs/>

Root Causes Create Downstream Effects

“Downstream effects” are what the root causes do to your body and are the reasons why you won’t heal.

Both “upstream and downstream” must be considered and treated



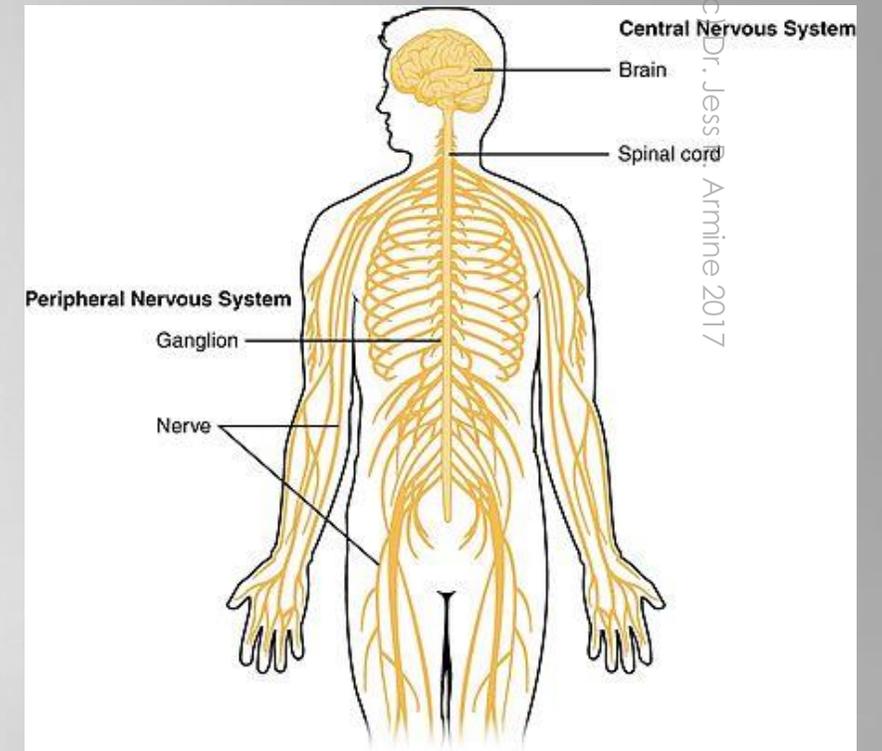
CIRS Has Caused a Rise In Health Issues

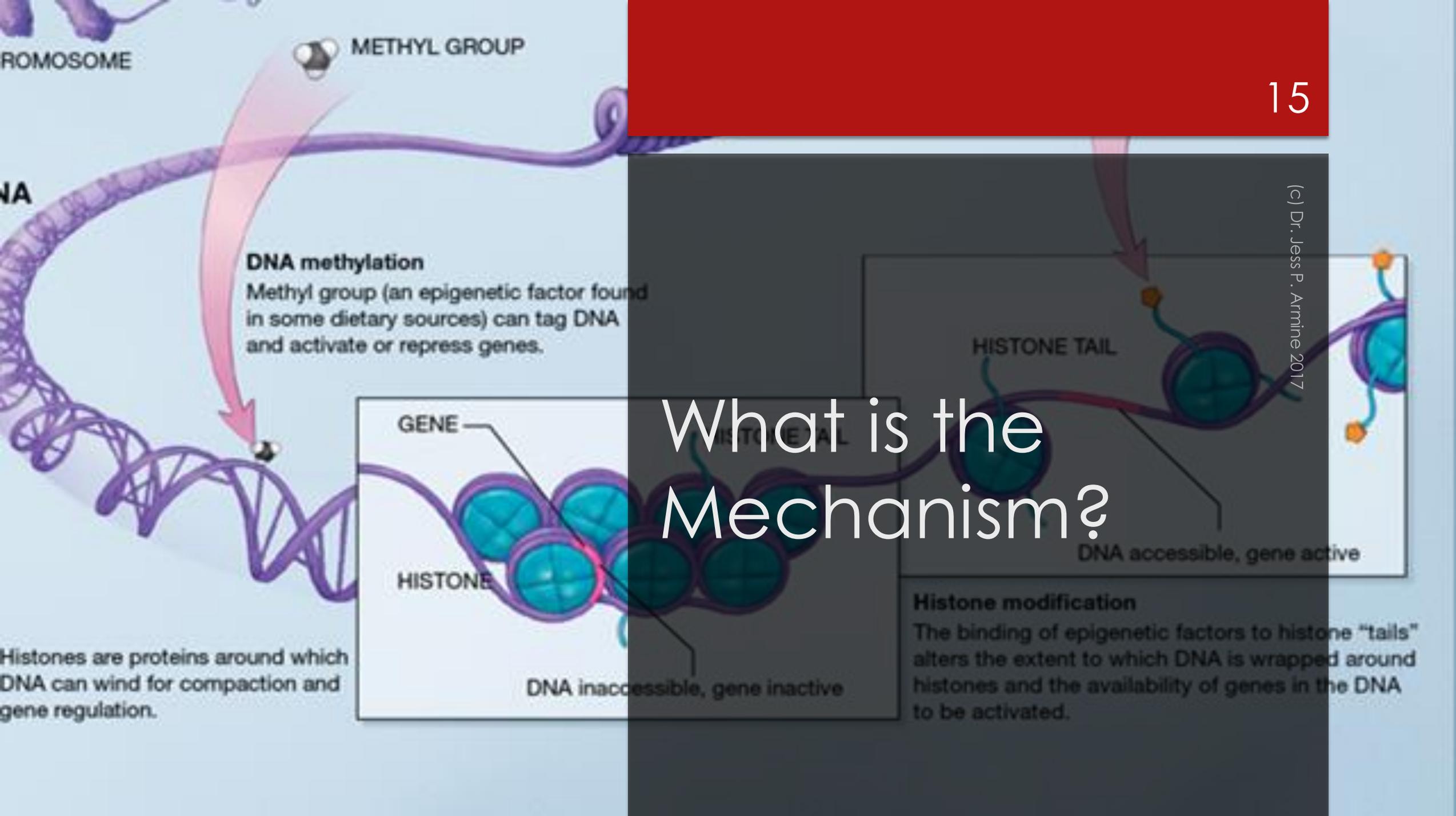
- ▶ Cardiovascular Issues
- ▶ GI (stomach) issues
- ▶ Diabetes
- ▶ Metabolic Disorders
- ▶ “Adrenal Fatigue”

- ▶ But The #1 Target For CIRS Is In The.....

Nervous System

- ▶ Depression
- ▶ Anxiety
- ▶ Migraines/Headaches
- ▶ Addictions/Cravings
- ▶ Behavioral Issues
- ▶ Dysautonomia (POTS, etc.)
- ▶ Neuropathies
- ▶ PMS/Menopausal disorders
- ▶ ADD/ADHD
- ▶ Many More...





DNA methylation
Methyl group (an epigenetic factor found in some dietary sources) can tag DNA and activate or repress genes.

GENE
HISTONE
DNA inaccessible, gene inactive

HISTONE TAIL
DNA accessible, gene active

Histone modification
The binding of epigenetic factors to histone "tails" alters the extent to which DNA is wrapped around histones and the availability of genes in the DNA to be activated.

What is the Mechanism?

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Histones are proteins around which DNA can wind for compaction and gene regulation.



Contents lists available at ScienceDirect

Mitochondrion

journal homepage: www.elsevier.com/locate/mito



Metabolic features of the cell danger response

Robert K. Naviaux*



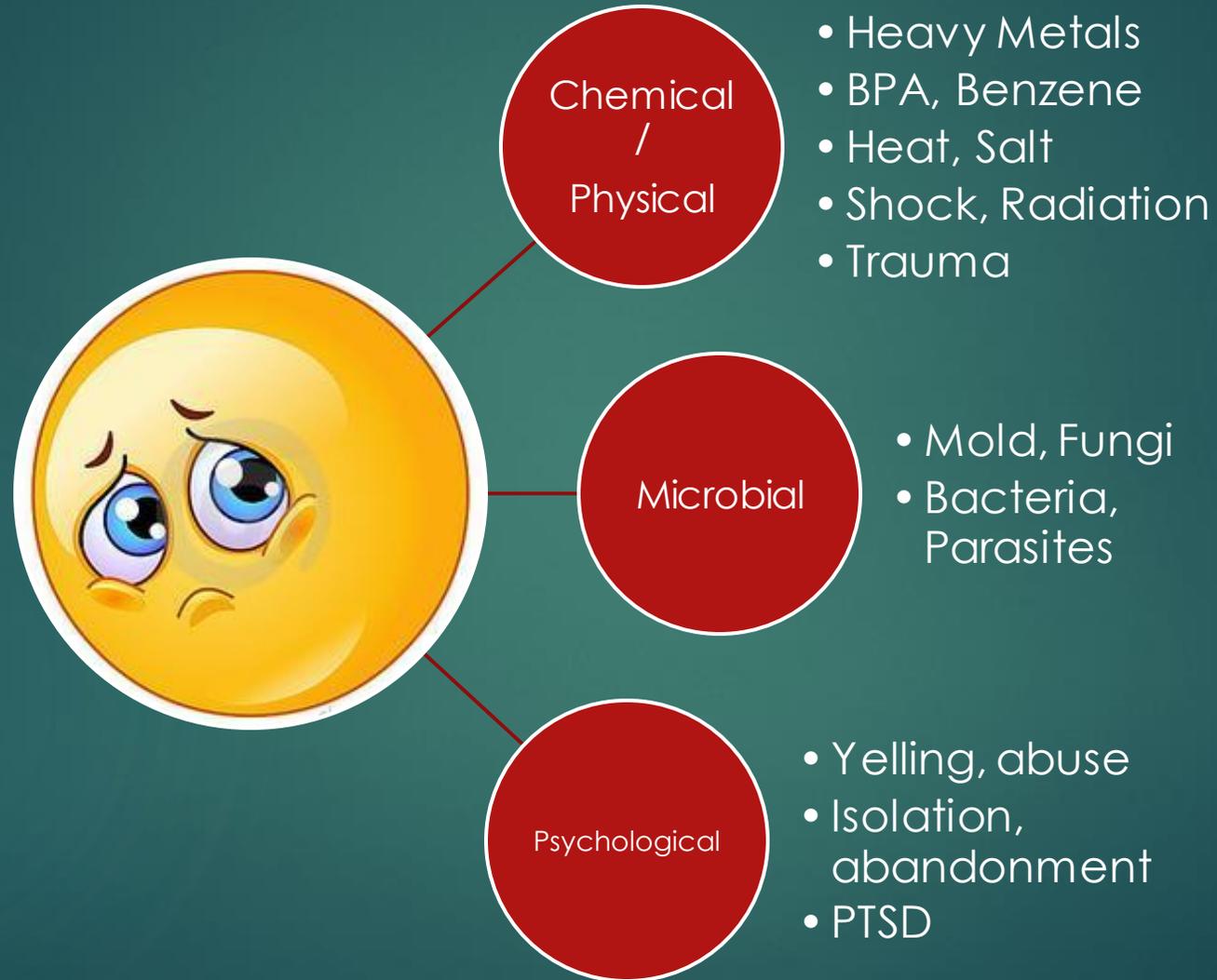
*The Mitochondrial and Metabolic Disease Center, Departments of Medicine, Pediatrics, and Pathology, University of California, San Diego School of Medicine, 214 Dickinson St., Bldg CTF, Rm C102, San Diego, CA 92103-8467, USA
Veterans Affairs Center for Excellence in Stress and Mental Health (CESAMH), La Jolla, CA, USA*

The Cell Danger Response (CDR)

Naviaux, R.K., Metabolic features of the cell danger response, *Mitochondrion* (2013), <http://dx.doi.org/10.1016/j.mito.2013.08.006>

What activates the Cell Danger Response?

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The CDR
results in a
Cascade of
Changes...

...changes in:

Cellular Electron Flow
(Mitochondria)

O₂ Consumption
"Krebs"

Cellular fluidity
"Cell Membrane Integrity"

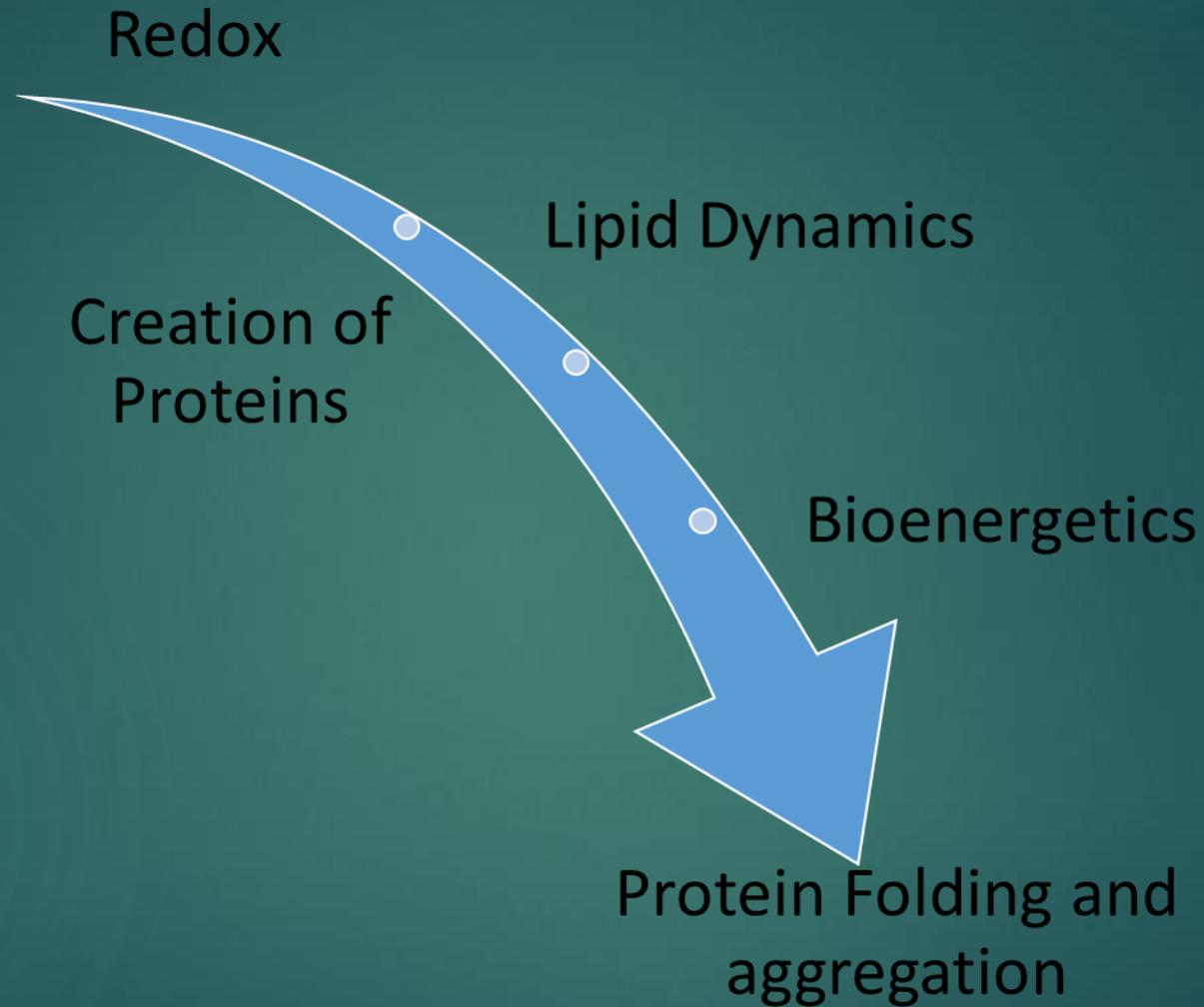
Vitamin Availability

Metal Homeostasis

"Why You See Heavy Metal Burden Without Acute Exposure"

...changes in

20

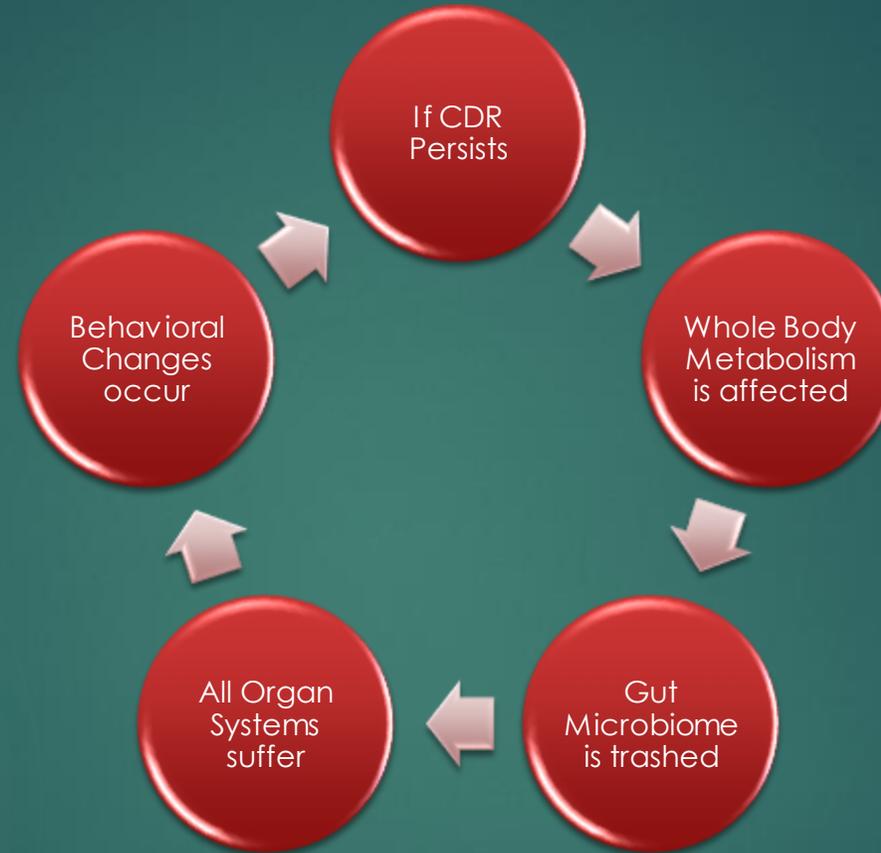


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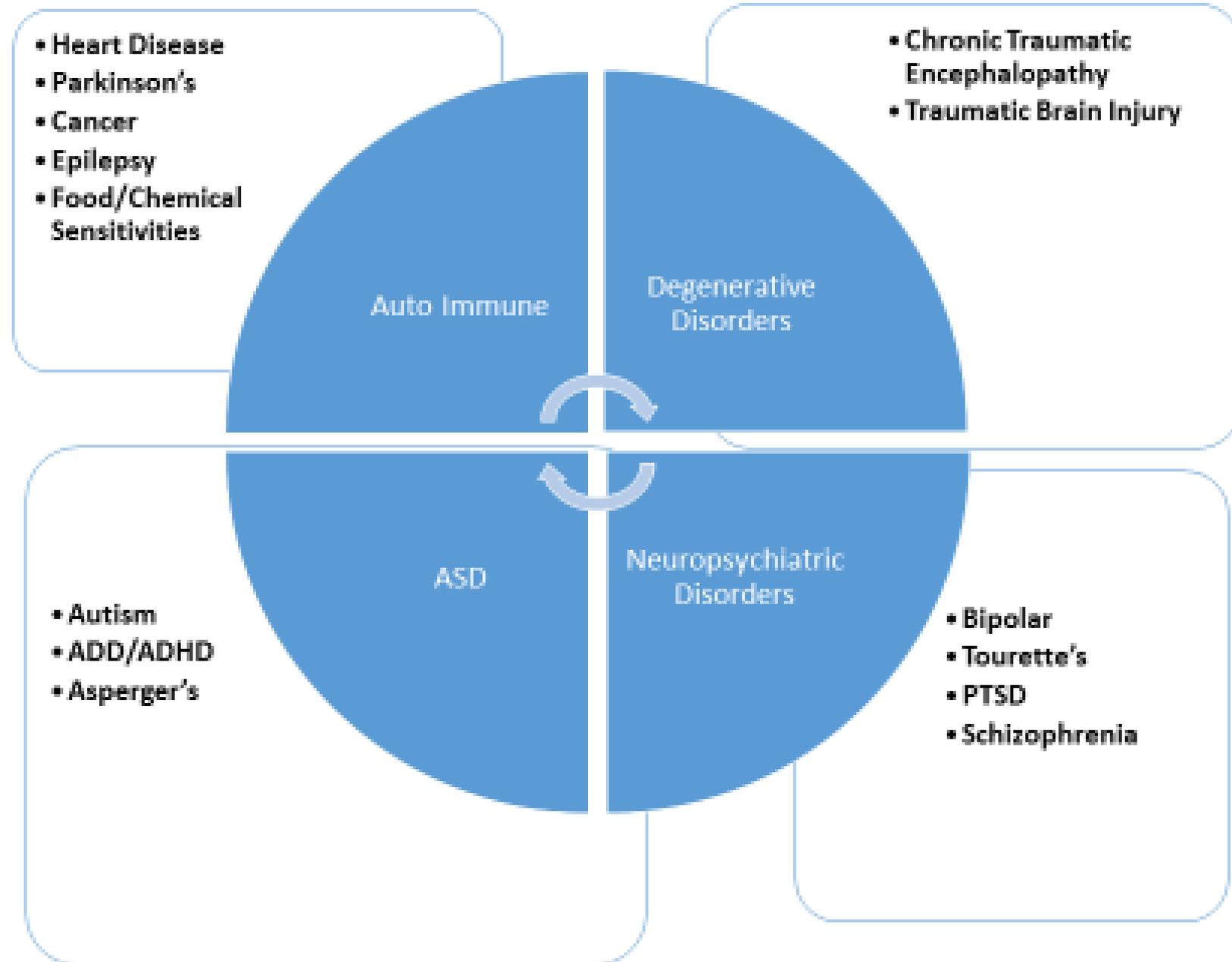
These are the homeostatic healing mechanisms... Pay Heed!

What does multiple or
chronic CDR's do???

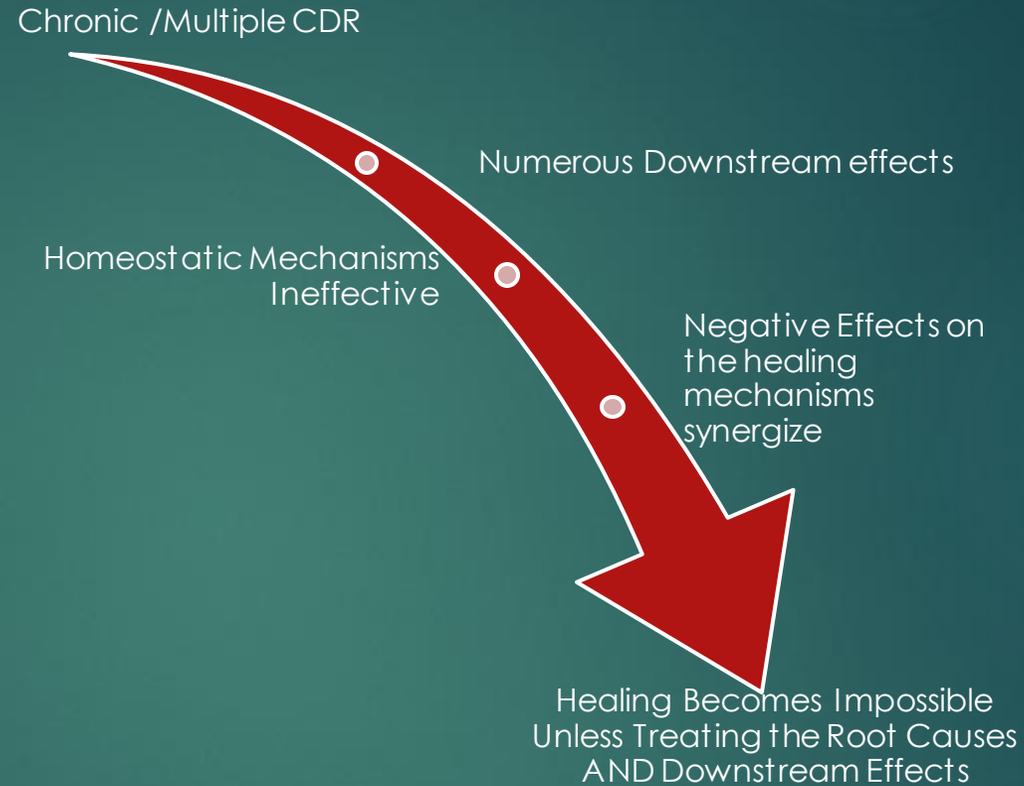
Chronic or Persistent CDR



...the result.



Chronic CDR



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CREATES THE **ROOT OF ALL EVIL**... Money???? No...



INFLAMMATION

at the *Root* of Most Diseases

And all the suffering we face...



BTW: [1 Timothy 6:10](#) For the *love of money* is a root of all kinds of evil.

HOW INFLAMMATION AFFECTS THE BODY

BROUGHT TO YOU BY



WWW.LIVELOVEFRUIT.COM

“Inflammation is at the root of practically all known chronic health conditions”

Find out how to prevent it at www.livlovefruit.com

BRAIN

Pro-inflammatory cytokines cause autoimmune reactions in the brain, which can lead to depression, autism, poor memory, Alzheimer's disease and MS.



SKIN

Chronic inflammation compromises the liver & kidneys, resulting in rashes, dermatitis, eczema, acne, psoriasis, wrinkles & fine lines.



CARDIOVASCULAR

Inflammation in the heart & arterial & venous walls contributes to heart disease, strokes, high blood sugar (diabetes) and anemia.



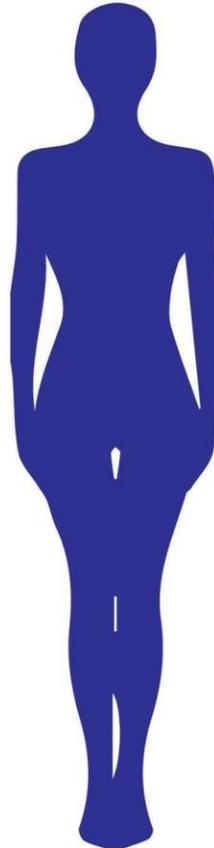
KIDNEYS

Inflammatory cytokines restrict blood flow to the kidneys. Complications like edema, hypertension, nephritis & kidney failure can result.



BONES

Inflammation interferes with the body's natural ability to repair bone mass, increasing the number of fractures & leading to conditions like osteoporosis.



LIVER

Build-up of inflammation leads to an enlarged liver or fatty liver disease. Increased toxic load build-up in the body.



THYROID

Autoimmunity as a result of inflammation can reduce total thyroid receptor count & disrupts thyroid hormone function.



LUNGS

Inflammation induces autoimmune reactions against the linings of airways. Can result in allergies or asthma.



GI TRACT

Chronic inflammation damages our intestinal lining and can result in issues like GERD, Chron's disease and Celiac disease.



MUSCLE

Inflammatory cytokines can cause muscle pain & weakness. Can manifest as carpal tunnel syndrome, or polymyalgia rheumatica, to name a few.

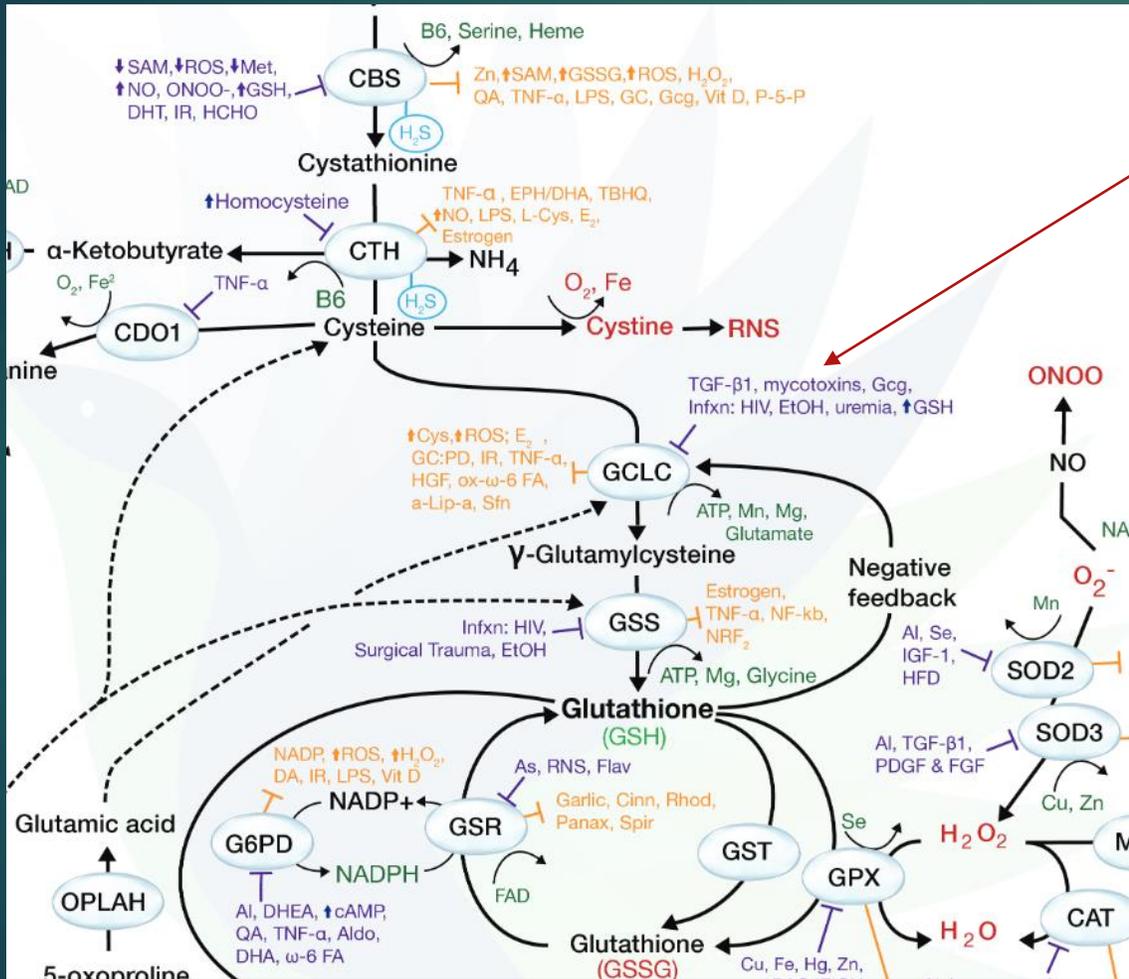


Root of All Illness

Effects of mycotoxins, bacteria and viruses on your genetic pathways and homeostatic physiology

HOW IT MAKES YOU SICK AND HOW IT PREVENTS YOU FROM HEALING

GLUTATHIONE



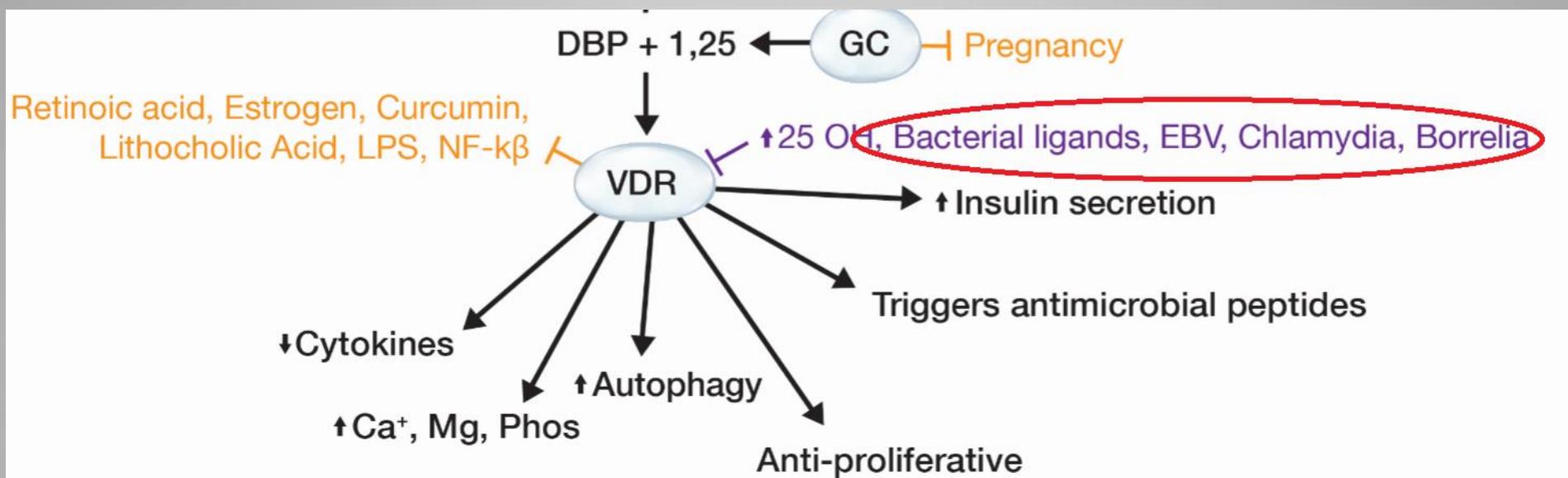
Mycotoxins slow the creation of Glutathione

Glutathione is your “Master Antioxidant and Antitoxicant”

Effect:
Lack of detoxification

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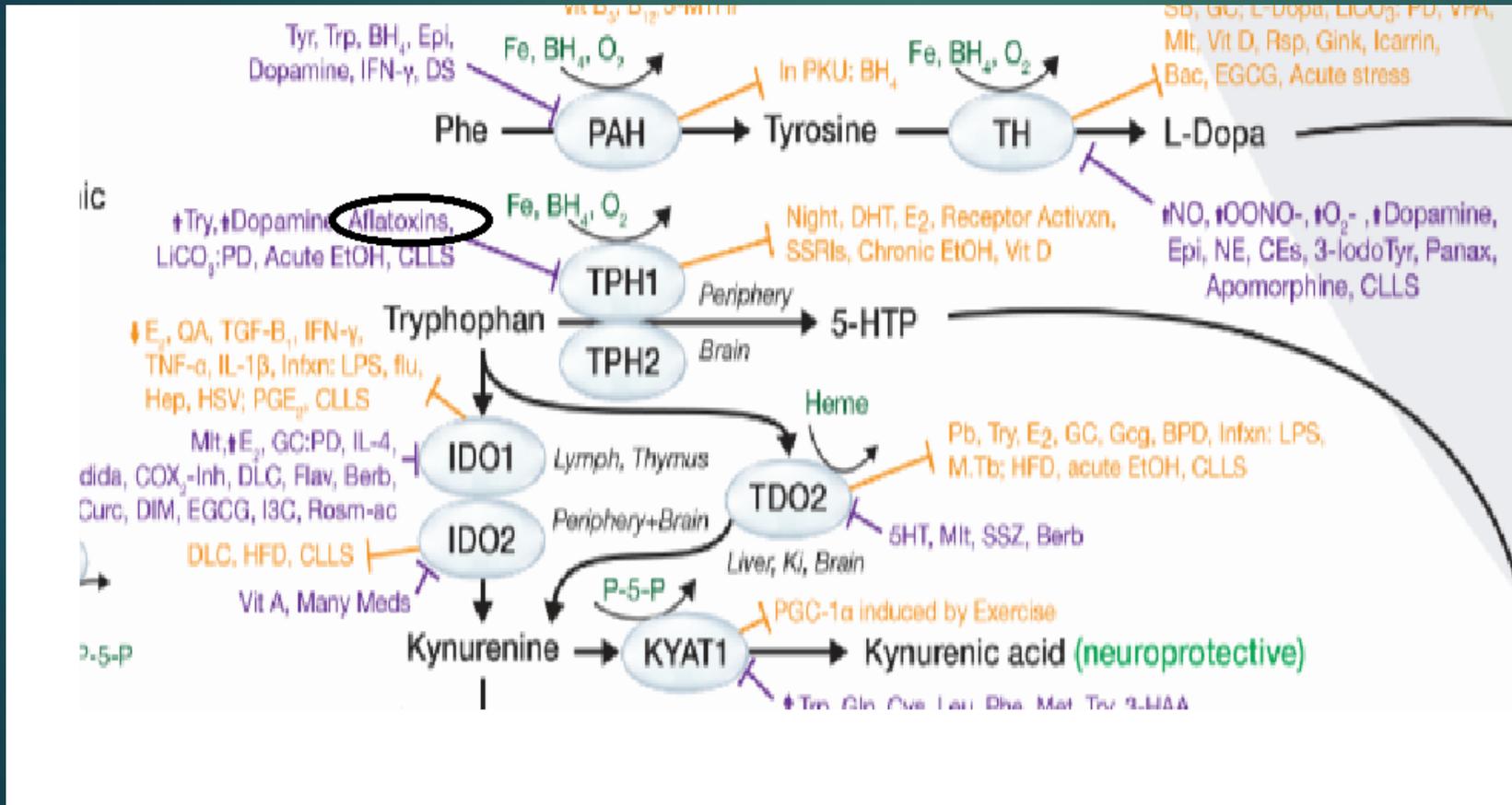
*PathwayPlanner, seekinghealth.org, Dr. Ben Lynch, used with permission



High levels of Vitamin D, Bacteria, Viruses (EBV), Lyme, Will Slow the Healing Effects of the Vit. D Receptor (VDR) Function.

Result: Increased cytokines (inflammation), Decreased Ca, Mg, Phos, autophagy, insulin. Inhibits activation of antimicrobial cascade

Aflatoxins decrease production of Serotonin



**Result:
Greater Neural Excitation**

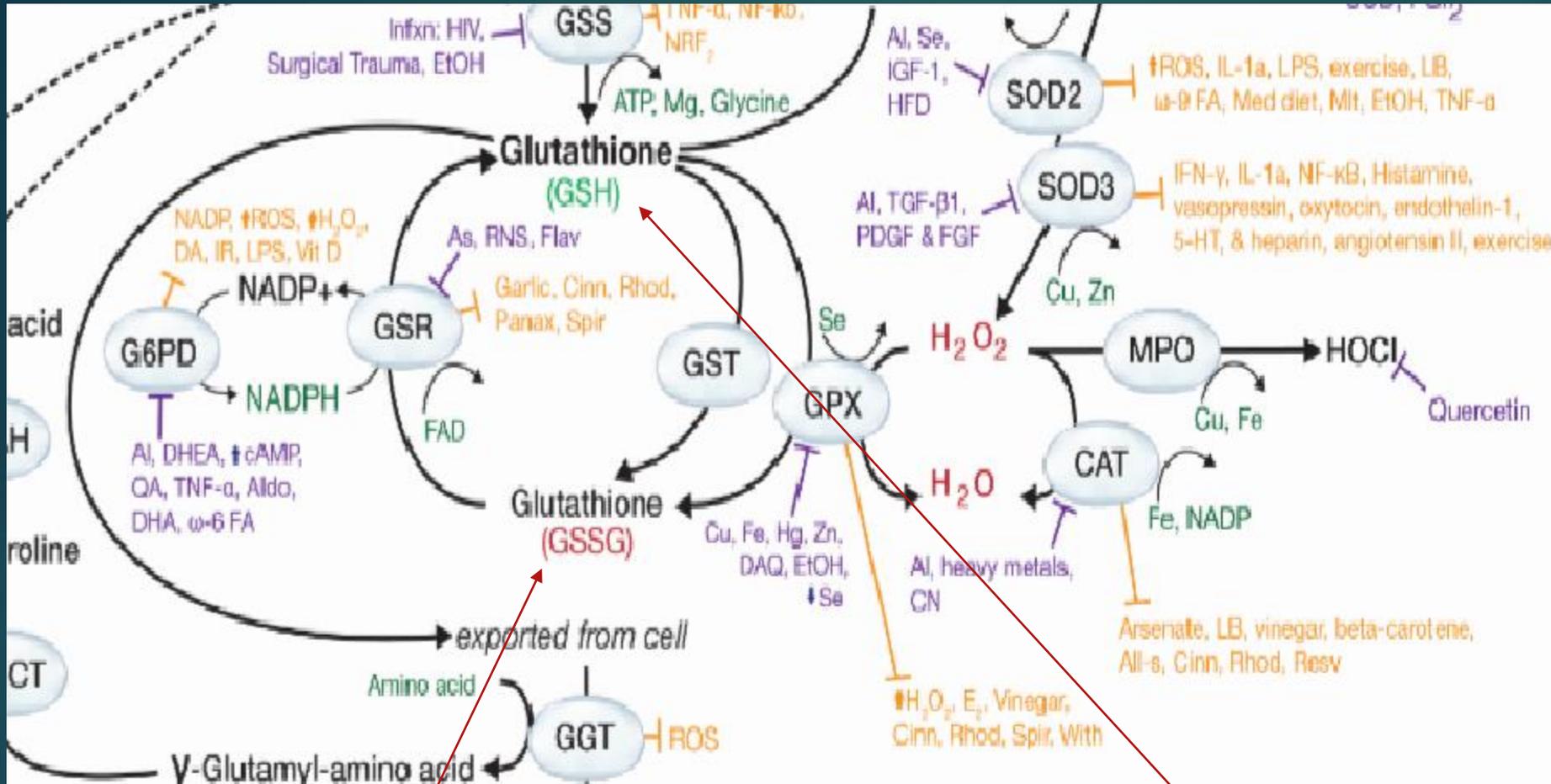
Serotonin

Glutathione Conjugation and Mitochondrial Function

The Relationship

Journal of Amino Acids, Volume 2012 (2012), Article ID 736837, <http://dx.doi.org/10.1155/2012/736837>

Glutathione Homeostasis and Functions: Potential Targets for Medical Interventions. Volodymyr I. Lushchak

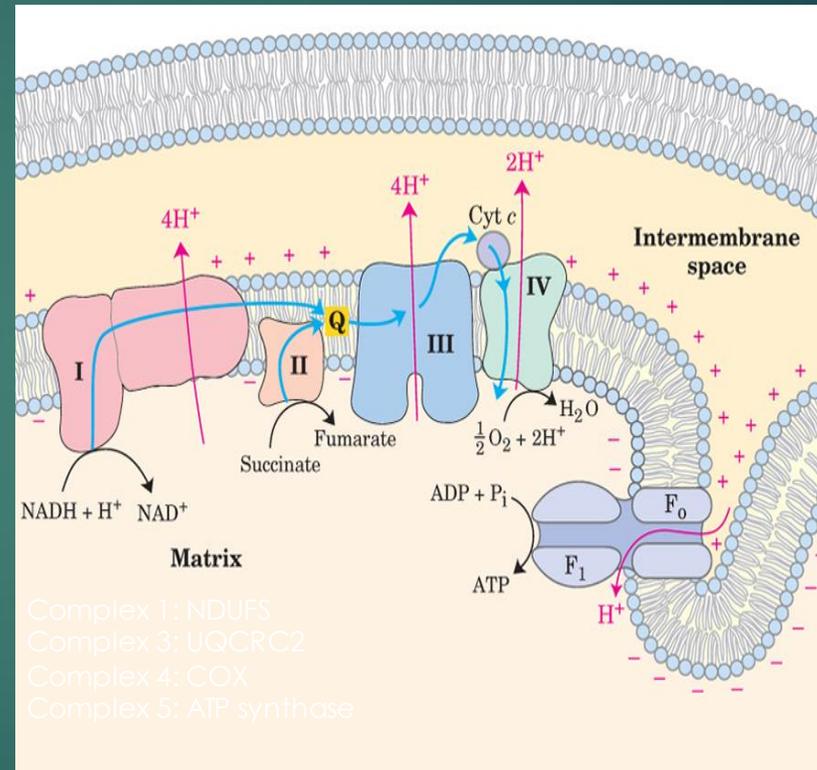


GSSG (oxidized GSH) lack of ability to recycle to Active (reduced) GSH

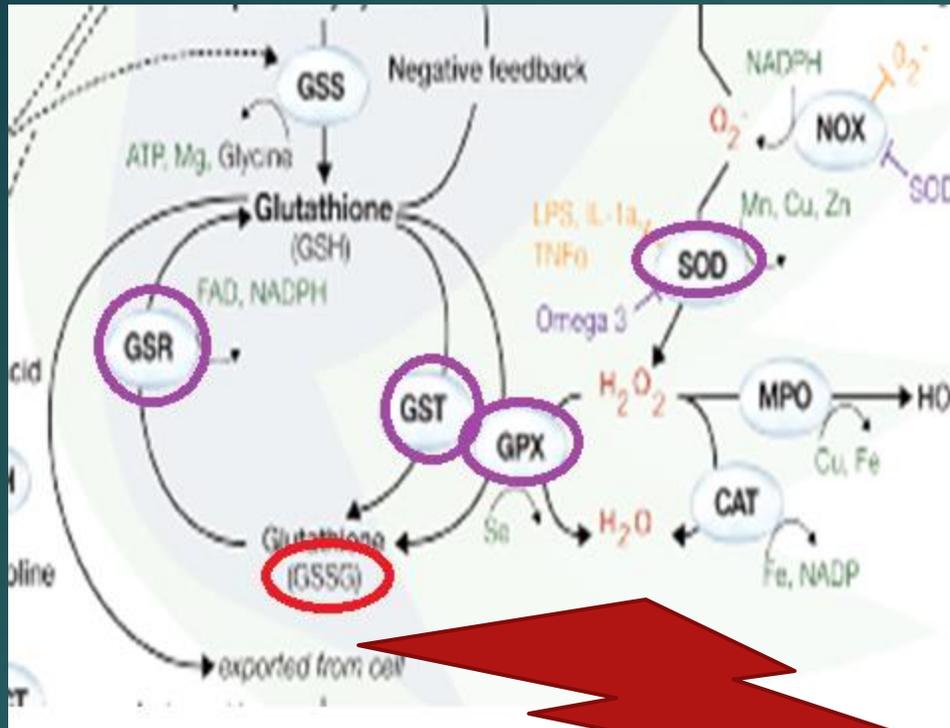
Effect: Lack of Mitochondrial Function

Mitochondrial Complex 1-The Most Important

NDUFS7	rs2332496	A	AG	+/-
NDUFS7	rs7254913	G	AA	-/-
NDUFS7	rs1142530	T	TT	+/+
NDUFS7	rs7258846	T	TT	+/+
NDUFS7	rs11666067	A	AA	+/+
NDUFS7	rs2074895	A	AA	+/+
NDUFS7	rs809359	G	AA	-/-
NDUFS8	rs4147776	C	AA	-/-
NDUFS8	rs1122731	A	AG	+/-
NDUFS8	rs999571	A	AG	+/-
NDUFS8	rs2075626	C	CT	+/-
NDUFS8	rs3115546	G	TT	-/-
NDUFS8	rs1104739	C	AC	+/-
NDUFS8	rs1051806	T	CT	+/-



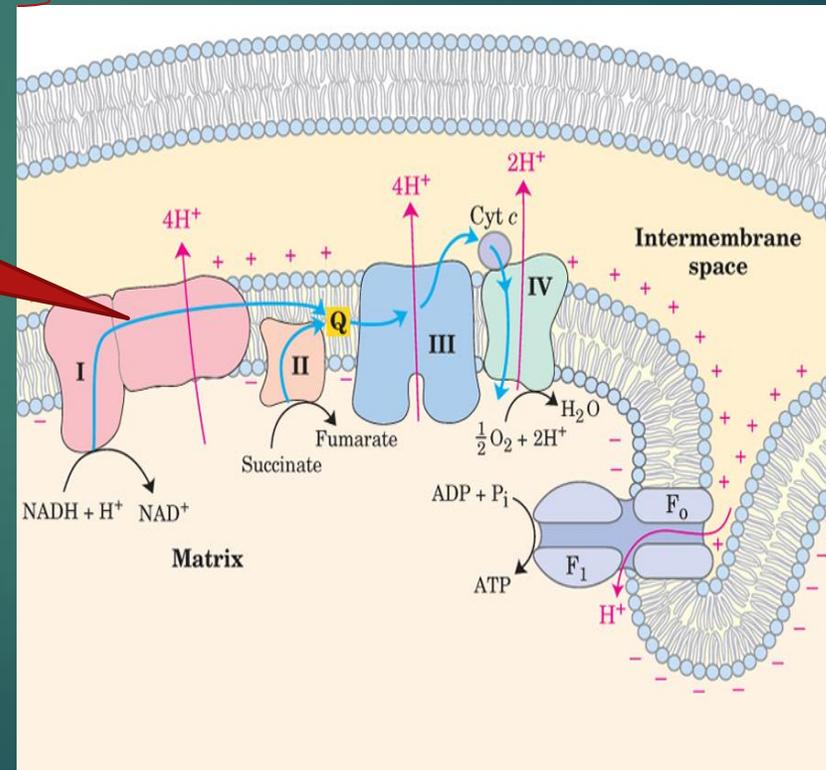
NADH-ubiquinone oxidoreductase (NDUFS) - GSSG will block the entry of the electron donors into the electron transport chain

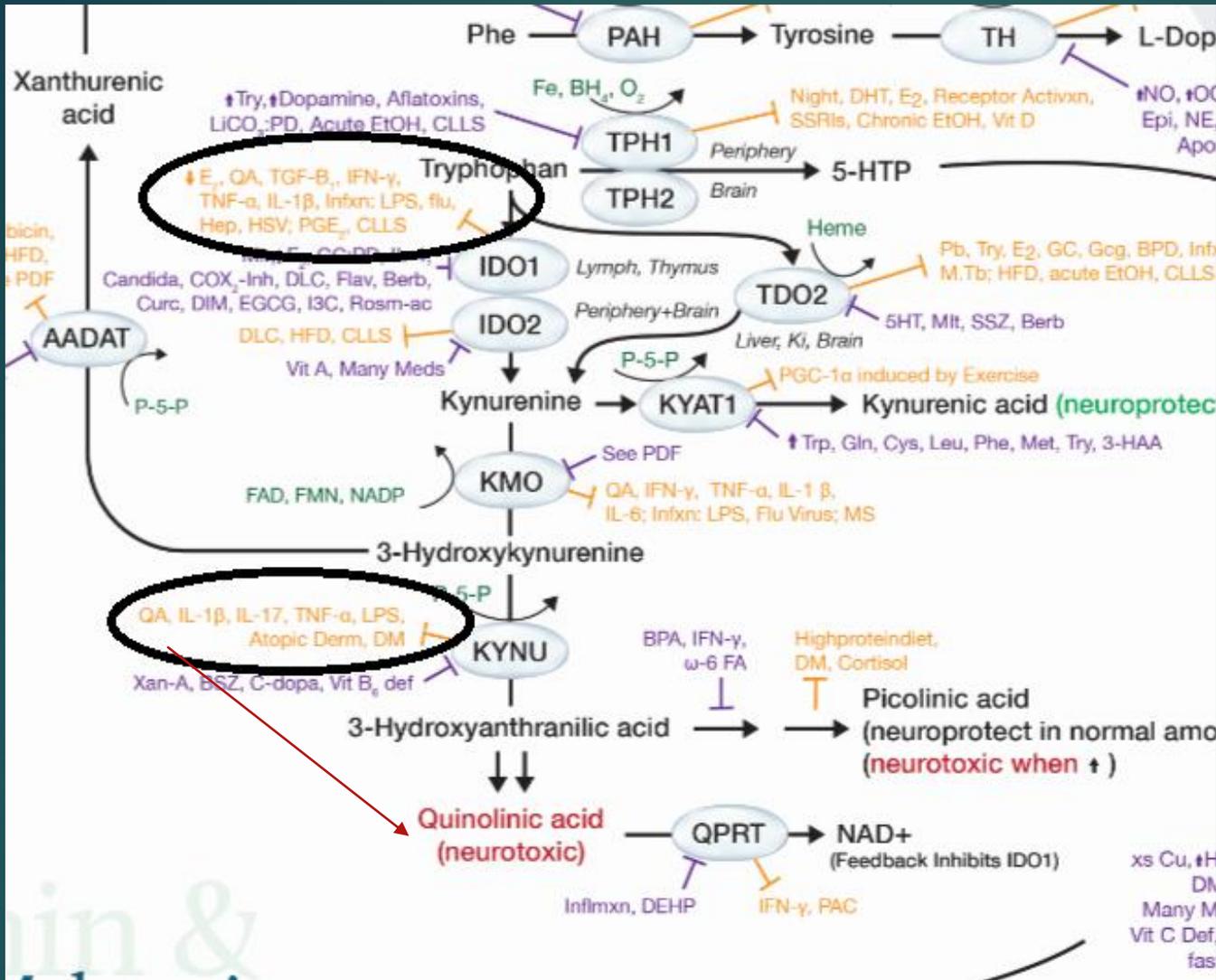


SNPs here will raise your index of suspicion.
(I made them purple so we do not focus on minutia but on function)

High Levels of GSSG (due to lack of recycling) blocks Complex I.

This is especially true if there are numerous NDUFS snps

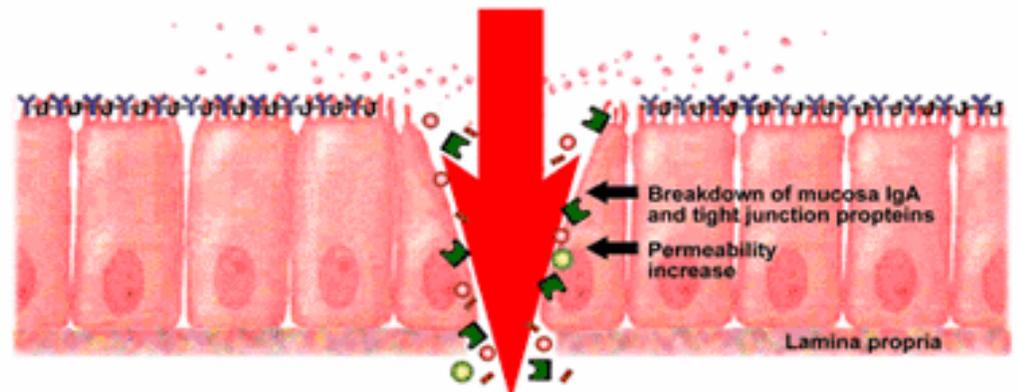
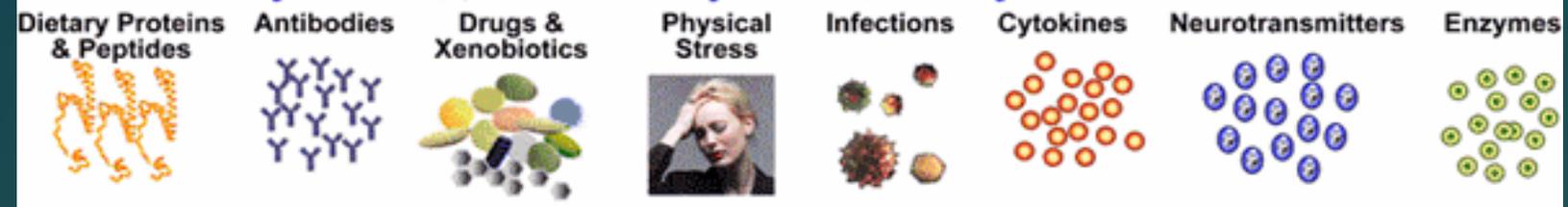




Inflammation creating neurotoxic (microglial) excitation

The Other Great Contributor To Inflammation

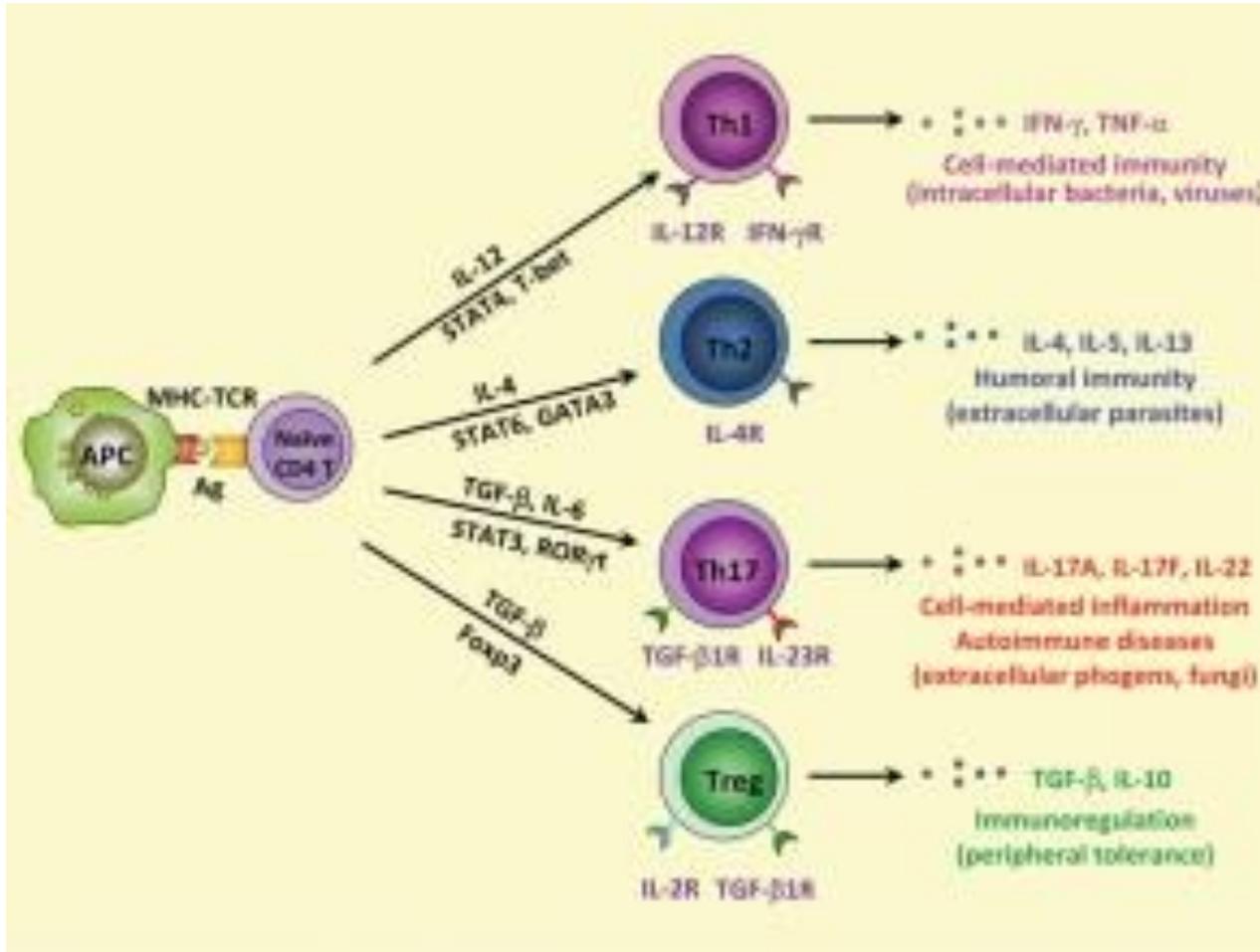
Factors affecting mucosal immune system resulting in intestinal barrier dysfunction, autoimmunity and nervous system abnormalities



INTESTINAL BARRIER DYSFUNCTION
FOOD ALLERGY & INTOLERANCE
IMMUNE SYSTEM ABNORMALITIES
AUTOIMMUNITY

INFLUENCE ON THE BLOOD-BRAIN BARRIER AND NEUROAUTOIMMUNITY

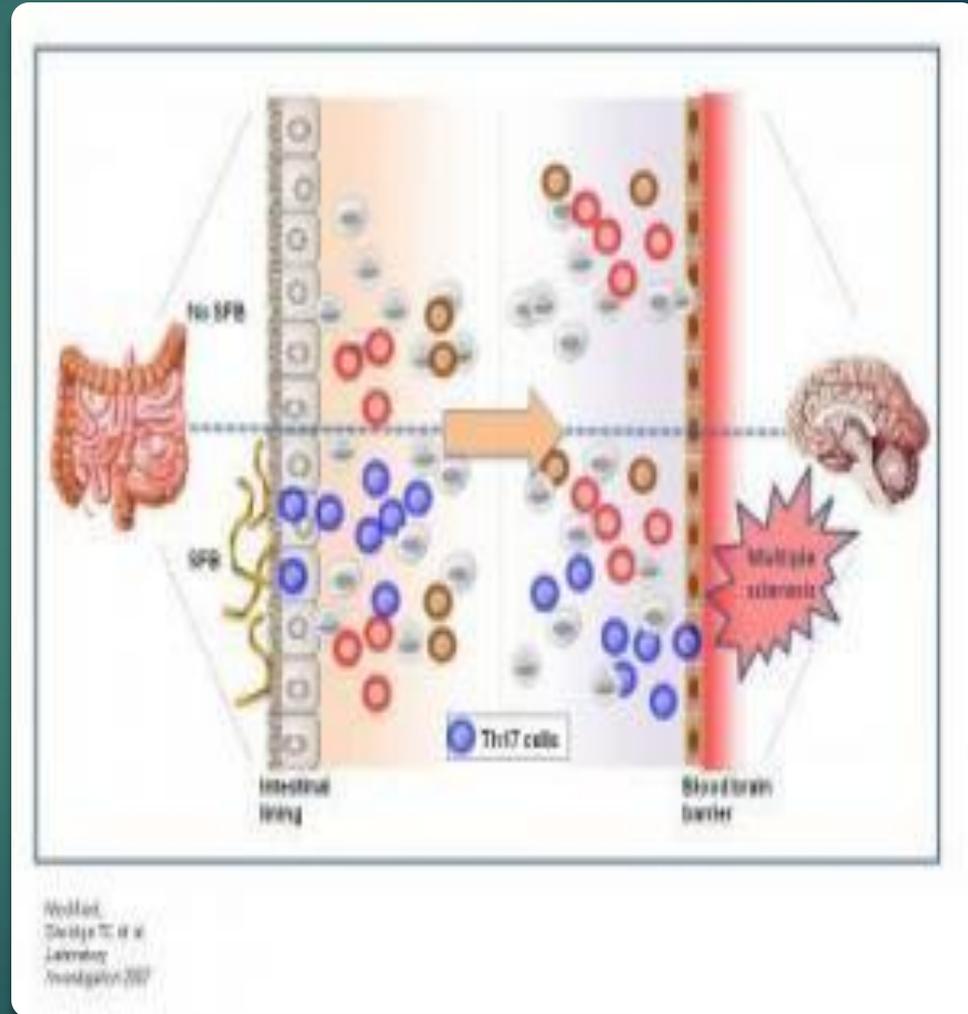
<http://www.glutenfreesociety.org/gluten-free-society-blog/leaky-gut-syndrome-is-gluten-at-the-root/>



Of Bugs and Brains: Gut Bacteria Affect Multiple Sclerosis

<http://www.sciencedaily.com/releases/2010/07/100719162643.htm>

Proceedings of the National Academy of Sciences.
Credit: Lee, Mazmanian/Caltech; modified from
Savidge TC et al. *Laboratory Investigation* 2007



Inflammation is the Great Enemy

- ▶ CIRS will affect multiple body systems
- ▶ CIRS has many root causes
- ▶ Via CDR and resultant inflammation, you will not be able to heal completely unless:
 - ▶ You elucidate and eradicate the root causes
 - ▶ You re-establish homeostasis by identifying and healing all the downstream effects

SO.....
WHAT HAVE
WE
LEARNED?



The good physician treats the disease; the
great physician treats the patient who has the
disease.
William Osler

Look for Health Care Providers who embrace the above philosophy.

Very much like all the providers lecturing today! 😊

*Sir Wm. Osler. Founding Father of John's Hopkins Medical Center

Thank you!

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www.drjessarmine.com



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