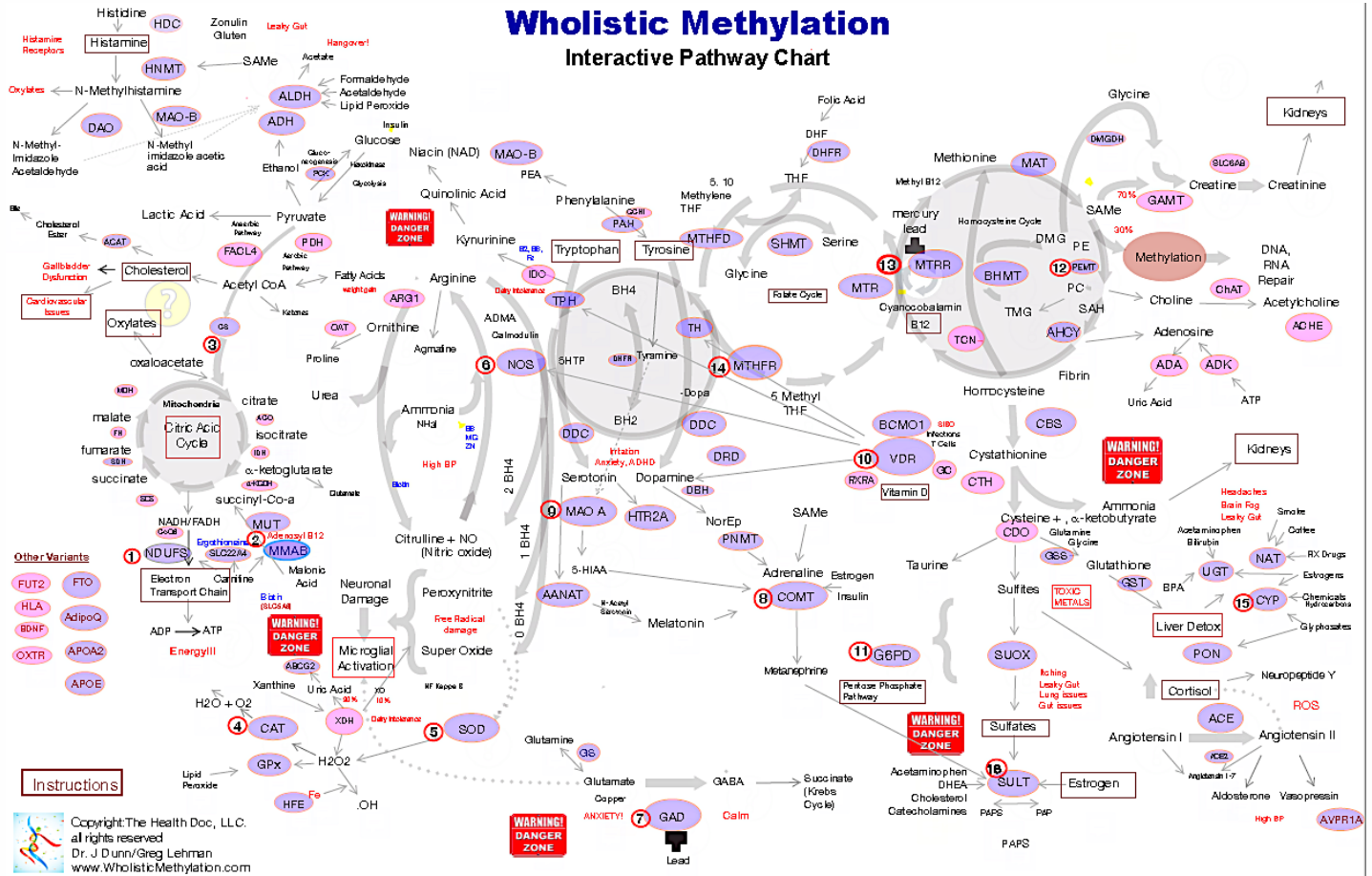


# Biochemical Pathway Analysis



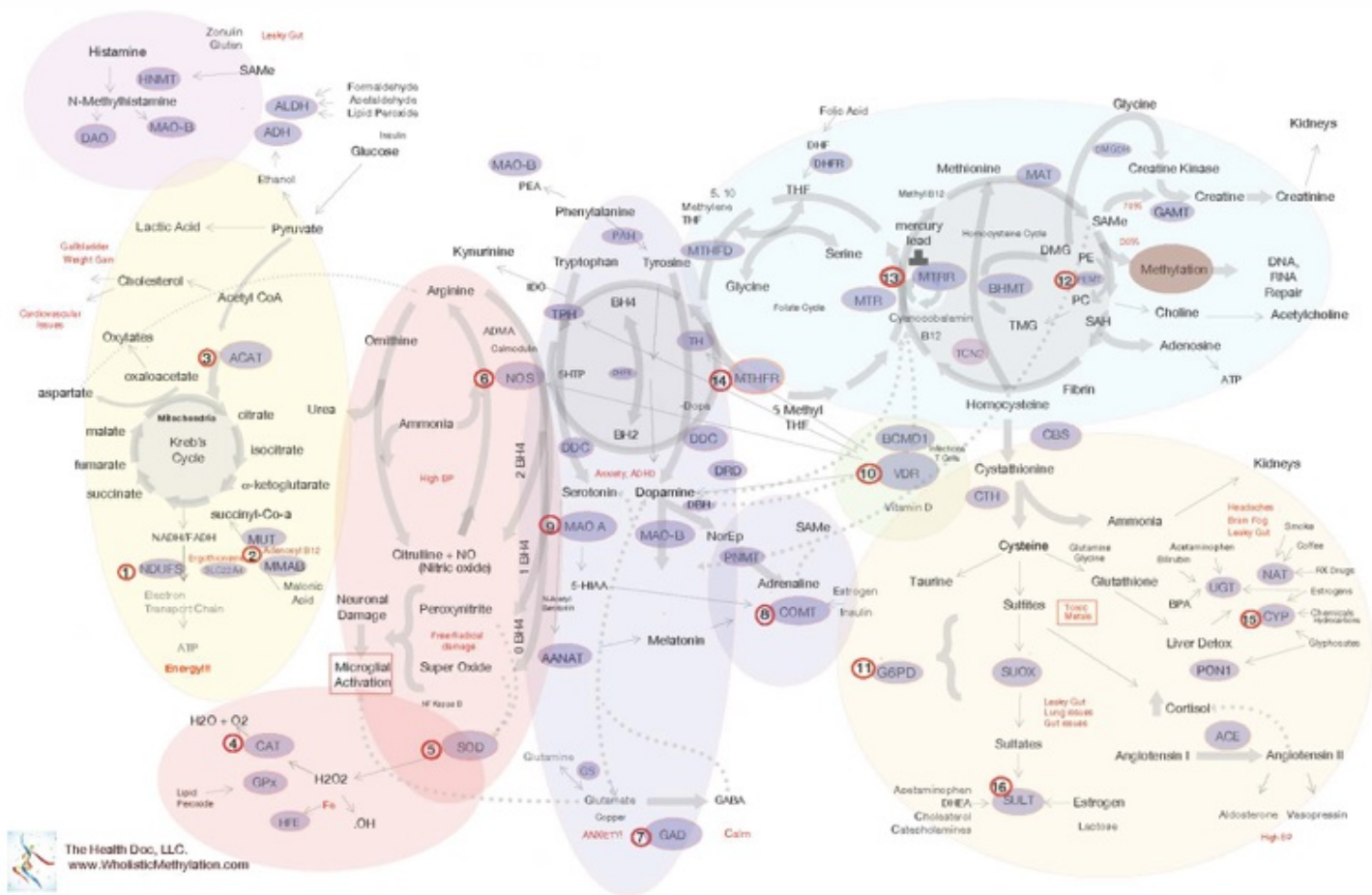
Genetic variants that are inherited in certain biochemical pathways in the body will invariably lead to biochemical imbalances, which will then exacerbate inherited genetic tendencies. Our program for addressing these tendencies can be quite different from other programs. Our emphasis is to examine what is happening at the cellular level that can cause gene variants to express. This “epigenetic pattern” reveals the true causes of dis-ease and genetic expression.

## The Biochemical Pathways we will be examining include:

- Energy Production
- Inflammation and Nitric oxide pathway
- Brain chemistry/Neurotransmitter Pathway
- Immune System

- Detoxification Pathways
- Methylation Pathways
- Histamine Pathways
- Fenton Reaction pathway (Iron metabolism)
- Hormone Pathways

We analyze these patterns in your genetic report and compare them with the results of your symptom questionnaire to get a better sense of what is truly expressing in your body. From this, we compile a supplementation recommendation program based on your results. This supplementation program may help to prevent or reverse the symptoms of brain imbalances that were found in your initial report.



To purchase the interactive version of this chart [click here](#).

# Biochemistry Analysis

# Brain Chemistry Pathways



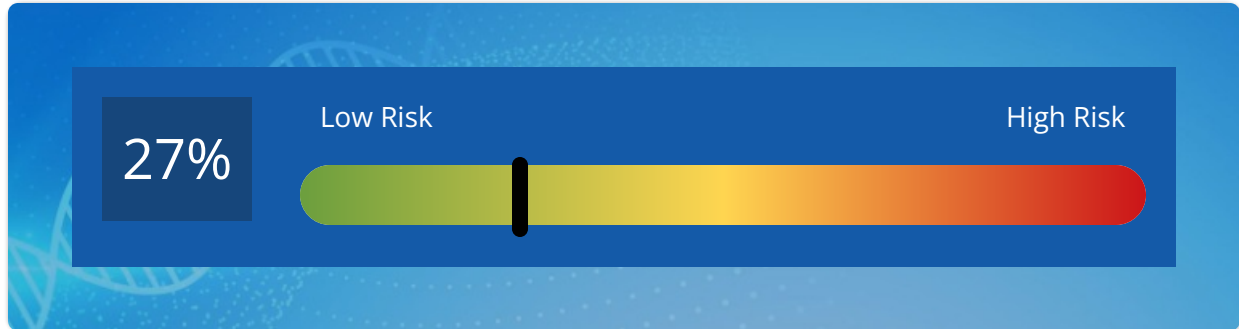
This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

(Purple Area on Pathway Chart)

You have inherited one or more homozygous genetic variants that are involved in the production and elimination of brain chemicals that can affect your mood. An imbalance of these brain chemicals, such as serotonin and dopamine, can induce feelings of depression and anxiety, as well as impacting the ability to focus and concentrate. In addition, they influence cravings and addictions. Balancing these brain chemicals through targeted nutrition can have a profound effect on your mood, focus, and addictive tendencies.

# Detoxification Pathway



This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

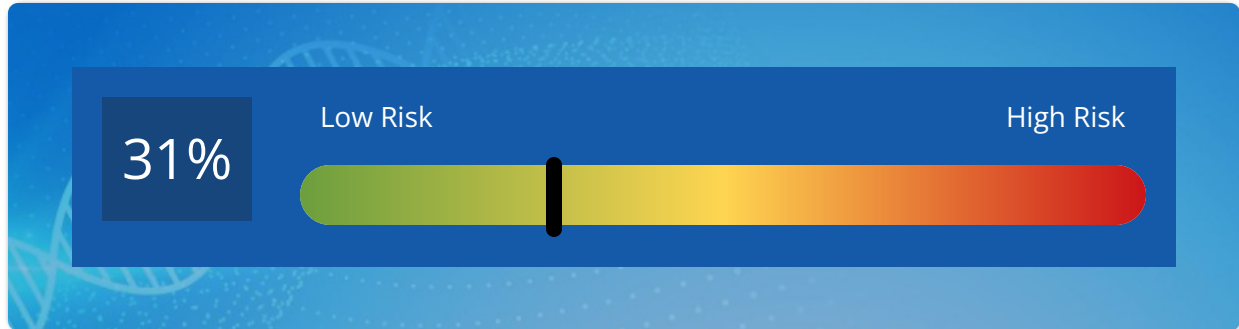
(Orange Circle on Pathway Chart)

You have inherited one or more homozygous genetic variants associated with how well you detoxify chemicals and toxins. Genetic variants here can cause toxins to build up in your system more readily than in someone who has not inherited genetic variants in these pathways. This build-up can lead to a susceptibility to chronic diseases, including environmental sensitivity and cancer. In addition, these pathways are involved in how well you break down hormones and, if not functioning properly, can lead to hormonal and mood imbalances.

Genes involved in imbalances in this pathway include:

SUOX, SULT, CYP17A1, UGT, PON1, GSS, GSPT1, NAT2, CYP

# Energy Production Pathway



This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

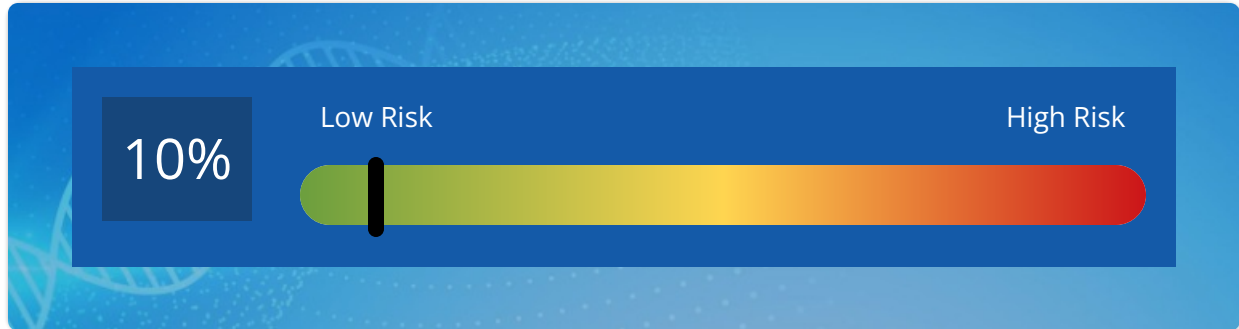
(Yellow Area on Pathway Chart)

You have inherited one or more homozygous genetic variants associated with mitochondrial dysfunction (Energy Pathway), which can ultimately lead to low energy, weight gain, neurological imbalances, inflammation, and degenerative diseases. Your mitochondria helps convert calories you consume into energy. Genetic variants and environmental assaults such as chemicals, drugs, toxic metals, radiation, and electromagnetic fields can slow down this function and can cause your body to store calories as fat instead of producing energy. This, in turn, can affect your mood. We can help this process by increasing certain nutrients tailored to your genetic report so your body can process calories more efficiently. In addition, getting your detoxification pathways balanced can help keep your mitochondria healthy.

Genes associated with imbalances in the energy production pathways include:

ACAT1, ACAT2, SLC22A4, SLC22A5, COQ6, MMAB, MUT, NDUFS3, NDUFS7, NDUF8, NDUFAB1, COMT, ADH7, ADH1A, ALDH2, ADH4, PDHA1, FUT2, PHDX

## Fenton Pathway (Iron metabolism)



This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

The Fenton Reaction is a process that converts hydrogen peroxide, a product of mitochondrial oxidative respiration, into a highly toxic hydroxyl free radical. Excess iron can increase the production of this hydroxyl radical and increase the prevalence of free radical pathologies.

Genes involved in imbalances in the Fenton Pathway include:

HFE

# Histamine and Allergy Pathways



This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

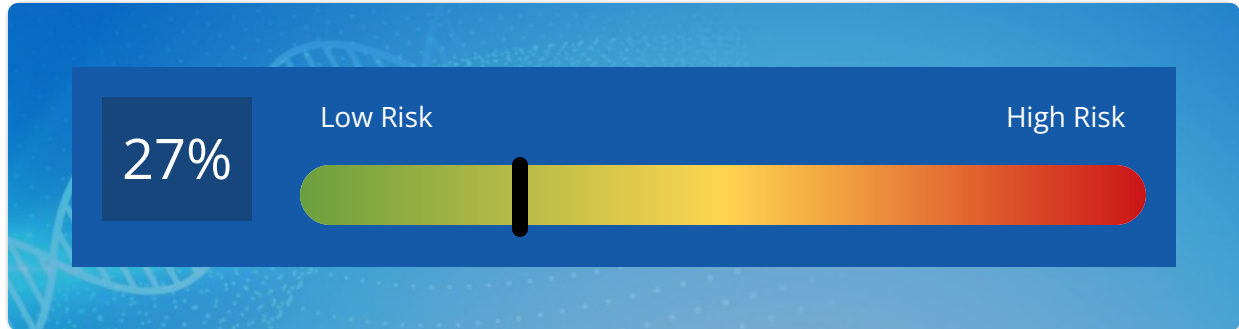
(Magenta area on Pathway Chart)

You have inherited one or more homozygous genetic variants associated with histamine imbalances. Imbalances in the histamine pathways can lead to increased histamine levels and increased susceptibility to allergic reactions, digestive disturbances, leaky gut syndrome, rashes, and hives. In addition, they can lead to brain chemistry imbalances and mood swings.

Genetic variants associated with increased imbalances in histamine pathways include:

HNMT, DAO, MAO-B, HDC, MTHFR

# Hormone Pathways



This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

Hormone production and elimination pathways can affect your brain chemistry. How well you make and eliminate your hormones can be determined by your genetics and affected by your lifestyle and diet.

Genetic variants associated with hormone imbalances include:

CYP17A1, SULT, COMT, UGT, CYP1B1, CYP19A1, CYP1A1, SHBG, SRD5A2, CYP24A1



# Immune System Pathway



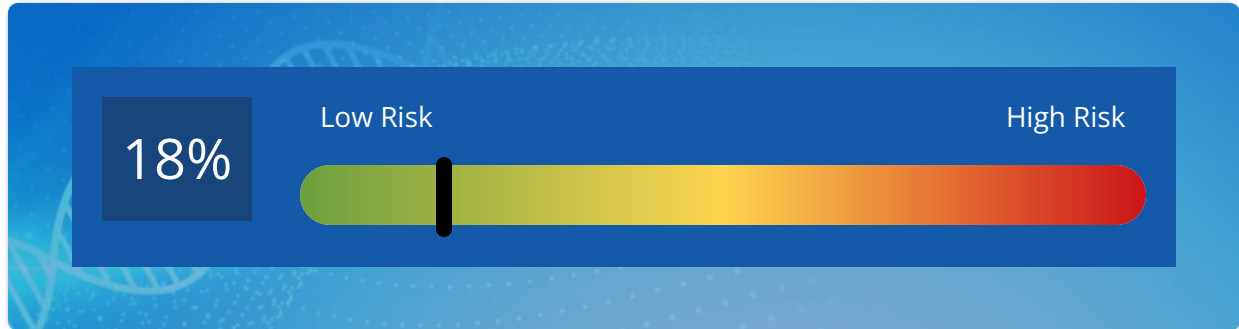
This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

(Green Circle on Pathway Chart)

You have inherited one or more homozygous genetic variants involved in the functioning of your immune system and in the vitamin D receptor activity. Inherited genetic variations in this pathway can have a profound effect on your ability to fight infections and to correctly absorb minerals. Genetic variants here may lead to chronic infections, such as Epstein Barr Viral infections and autoimmune diseases. In addition, these genetic variants have been shown to contribute to brain chemistry imbalances.

# Inflammation Pathways



This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

(Pink area on Pathway Chart)

You have inherited one or more homozygous genetic variants involved in the process of inflammation. These genetic variations can reduce your ability to get rid of inflammatory molecules in the body. As a result, you will likely have problems with chronic pain and swelling. Inflammation can be a contributing factor in the development of chronic diseases as well, including heart disease, arthritis, and cancer.

Genes included in the inflammatory pathways of the chart include:

HFE, CAT, SOD1, SOD2, GPx, IDO1, SLC23A1, FAAH

# Methylation Pathway



This slider indicates your risk of developing this issue based on your DNA upload. If the arrow is in the green area, your risk is low, if it is in the yellow area, the risk is medium, if it's in the red area, your risk is high.

---

(Blue area on Pathway Chart)

You have inherited one or more homozygous genetic variants associated with imbalances in the methylation pathway. This pathway is critical in “turning off” the expression of certain genes that are associated with diseases. Low methylation is associated with an increased risk of cancer, heart disease, hormone imbalances, infertility, miscarriage, autism, detoxification imbalances, mood disorders, and many other imbalances. Balancing methylation pathways can reduce the risk of diseases that could express as we age. Methylation is also critical in repairing DNA and RNA. Defects can lead to damaged DNA, which could result in a risk of free radical imbalances.

Genes in the methylation pathway include:

MTHFR, MTRR, MTR, PEMT, TCN, MTHFD, FOLH1, SLC19A1, BHMT