

OXIDATIVE STRESS

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WHAT IS OXIDATIVE STRESS?

Oxidative stress is an **imbalance** between free radical molecules and antioxidants in your body.

Oxidation is when free radicals interact with other molecules in the body. This can be harmful like when we are exposed to environmental exposures such as pollution, or it can be beneficial like helping to fight pathogens and reducing the risk of infections.

Everyone produces some free radicals naturally in their body through processes like exercise or inflammation. **Antioxidants stabilize free radicals** to make them less harmful. Otherwise without antioxidants, the free radicals can start doing damage to fatty tissue, DNA, and proteins in your body.

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ANTIOXIDANTS

We can't completely avoid free radical exposure and oxidative stress but we can minimize the effects of oxidative stress on our body. We can do this by **increasing antioxidants and decreasing our exposure to external free radical sources.**

Here are some harmful sources of oxidative stress:

- Smoking
- pollution
- not consuming enough antioxidants through dietary sources
- sedentary lifestyle
- low intake of fruit and veg
- chemical exposure
- excess alcohol intake
- overeating
- not getting enough sleep
- xenobiotics
- carcinogens

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GLUTATHIONE

Glutathione is an antioxidant produced by cells in the body. It's made up of three amino acids: glutamine, glycine, and cysteine. It is one of the most important defenses against oxidative stress, which reduces disease.

Glutathione levels in the body may be reduced by a number of factors, including poor nutrition environmental toxins, and stress. It also declines with age.

GLUTATHIONE TRANSFERASES

The **glutathione transferases enzymes** (GSTs; also known as glutathione S-transferases) are encoded by a large gene family. They are involved in the removal of products caused by oxidative stress and are a major part of the detoxification in the liver.

Enzymes that don't work effectively or are deleted can result in cancers.

Deprivation of glutamine results in **increased intestinal permeability** since glutamine helps to form tight junctions between cells of the delicate intestinal wall.

Oxidative stress is an important factor in the pathogenesis of celiac disease. The antioxidant capacity of celiac patients is significantly reduced, mostly by a depletion of glutathione.

Some of us have genetic mutations or deletions of these genes that alter the enzymatic activity of these genes. When genes in this family are not working properly, your body will not be able to detox correctly.

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GENETIC TESTING

I am an accredited **DNAylsis Nutrigenetic practitioner** and I can assist you in getting your genetic test done as well as your Feedback report which will explain what (if any) of these **GST polymorphisms** you have and the nutrigenetic interventions you can take to help your genetic expression.

The test will also tell you the genetic status of your **oxidation and detoxification pathways**.

Contact me if you are interested in Genetic testing. (available worldwide)