Heavy Metals and Autoimmune Disease

Autoimmune disease has both genetic and environmental factors as part of its aetiology. There is a number of environmental factors associated with the development and exacerbation of autoimmune disease and they include: diet, inflammation, dysbiosis, increased intestinal permeability, infection, chemical exposure and heavy metals. The major heavy metals are arsenic, aluminium, cadmium, lead and mercury. Research suggests heavy metals may be a possible trigger in a number of autoimmune diseases and may worsen already developed autoimmune diseases.

Sources of Heavy Metals

Large fish serve as a major source of mercury exposure. Fish with the highest level of mercury include Bluefish, Grouper, Mackerel, Marlin, Orange Roughy, Seabass, Shark, Swordfish, Tilefish and Tuna. The average amount of mercury found within fish is 0.5 mcg/g. Therefore, if we calculate the weight of an average woman (65kg), fish consumption should not exceed 200g per week or otherwise risk of mercury exposure increases. Other sources of mercury include dental work such as amalgams fillings. Other heavy metals can be obtained from, old paint and water pipes, mining, cigarette smoke, tin food and contaminated food.

Heavy Metals Effect on Autoimmunity

A fundamental aspect of autoimmune disease is the production of autoantibodies. Heavy metals have been shown to increase the production of autoantibodies. Women with mercury toxicity are twice as likely to have thyroglobulin autoantibodies (thyroid autoimmune disease) than women without mercury toxicity. Heavy metals such as mercury, lead and cadmium may interfere with the Th1 and Th2 balance, resulting in increased production of pro-inflammatory cytokines and further exacerbates immune dysregulation. As digestive health has a direct impact on autoimmune disease, any substance that interferes with digestion may therefore, affect autoimmune disease. Mercury has been shown to reduce digestive enzyme activity and suppress appetite, thereby has a negative impact on digestive health.

Testing for Heavy Metals

The most accurate way to determine levels of stored heavy metal is via a hair mineral analysis. (I use Doctor’s Data – Toxic and Essential Elements Hair, as it is the same test used in many of the peer reviewed scientific studies).

Removal of Heavy Metals

The process of removing heavy metals is one not to take lightly. The first step in any detoxification program is to ensure optimal gastrointestinal health. If this fundamental aspect is not addressed, heavy metals will be reabsorbed and cause more harm. Phase I and Phase II liver detoxification are another important aspect when removing heavy metals.

Tips to Reduce Exposure of Heavy Metals.

- Research has shown that eating hard-boiled eggs will reduce mercury vapor released from amalgam fillings.
- Avoid chewing gum if you have amalgam fillings, as this will increase the release of mercury from amalgam fillings.
- Eating Brazil nuts (6 daily) will supply an important mineral called selenium. Selenium acts as a natural antagonist to mercury absorption and acts as a co-factor in the detoxification of heavy metals. (WARNING selenium is only required in microgram amounts and excess selenium may become toxic. Speak with your Nutritionist to determine the right amount for you).
- Increase fibre such as pectin to reduce the reabsorption of heavy metals.
- Increase zinc rich foods such as cashews, kidney beans, almonds and tahini. Zinc is a known antagonist to cadmium absorption.
- Increase calcium rich foods such as broccoli, kale, bok choy and tahini. Calcium is a known antagonist to both lead and aluminium absorption.

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