THE TUESDAY MINUTE

IT'S TIME TO FEEL GOOD AGAIN

THIS WEEK'S TOPIC

Acetaldehyde Exposure

"Acetaldehyde is a neurotoxin that comes from both exogenous and endogenous sources and can be a problem if it abnormally accumulates."

Neurotoxins, just the word makes me cringe. Neurotoxins can be exogenous, from the outside; or endogenous, meaning they originate as metabolic byproducts. Some examples of neurotoxins are lead, ethanol, mercury, glutamate and nitric oxide.

Neurotoxins are also compounds that when abnormally concentrated can become neurologically toxic. For example, both nitric oxide and glutamate are essential for health; however, they exert neurotoxic effects when they are at excessive concentrations.

Let's consider another neurotoxin that comes from both outside and inside sources and can be a problem if it abnormally accumulates, acetaldehyde. (My thanks to both Dennis McInerney for his Bio-Blog on acetaldehyde and Dr. Wally Schmitt for sharing his insights.)

Acetaldehyde is very common; it is ubiquitous in our environment. Many individuals are exposed to acetaldehyde by simply breathing ambient air. "Environmental sources of acetaldehyde include room air deodorizers, colognes and perfumes. Inhalation of air containing elevated levels of acetaldehyde can cause respiratory tract irritation, central nervous system depression and possibly pulmonary edema. Very high concentrations can cause dizziness, hypoventilation, convulsions or even death.

Acetaldehyde is also found as a hidden ingredient in common foods. It is an important component of food flavorings and is added to milk products, baked goods, fruit juices, candy, desserts, and soft drinks. Other sources of exposure are alcoholic beverages and the subsequent metabolism of alcohol to form acetaldehyde.

Intestinal Candida albicans is a source of endogenous acetaldehyde. Candida albicans live by fermenting sugars to produce energy. The waste byproduct of this energy production is acetaldehyde. Individuals with excessive overgrowth of Candida albicans develop symptoms similar to acetaldehyde exposure such as poor memory,

lethargy, depression, irritability, and headaches. The metabolic pathway to breakdown acetaldehyde is dependent upon molybdenum and iron as catalysts and is carried out in the presence of niacinamide and riboflavin.

Molybdenum and iron are generally the rate limiting catalysts in this reaction. Most individuals have adequate iron stores. A molybdenum deficiency, on the other hand, is often the reason many individuals suffer symptoms from even low level acetaldehyde exposure.

I first learned about molybdenum from my friend Dr. Wally Schmitt. He explained that "one of the byproducts of yeast metabolism is acetaldehyde and molybdenum is necessary to convert acetaldehyde into harmless acetic acid and ultimately into the beneficial acetyl-CoA." But here's the important part, if the body is not processing acetaldehyde efficiently, it can build up in the system. Then exposure to a small dose, whether by smell or internal fermentation, becomes an excess and can weaken the system.

Dr. Schmitt developed an interesting test, called the “Aldehyde Sniff Test." Isolate and test a strong muscle to make sure it has sufficient tone. Next, have the patient smell some type of acetaldehyde substance, for instance, nail polish remover. Immediately retest the previously strong muscle. If it weakened, then there is a good chance the body was already over-loaded with acetaldehyde. Something as small as a simple whiff, will neurologically cause a strong muscle to go weak.

Dr. Schmitt then instructs the patient to chew a tablet with molybdenum, re-sniff the acetaldehyde and then retest the muscle. According to Dr. Schmitt and my personal experience, the weak muscle becomes strong about 85% of the time indicating a functional need for molybdenum.

Biotics Research has created an organic food form of molybdenum using their antioxidant and enzyme rich vegetable tableting base. See below for more information on this process. Two forms are available: Mo-Zyme, which contains 50 mcg of molybdenum; and Mo-Zyme Forte, which contains 150 mcg of molybdenum.

Years ago, Dr. Harry Eidenier taught me that a uric acid less than 3.0 indicates either a chronic B12 or molybdenum deficiency. You can rule out a B12 deficiency by looking at the MCV and MCH. If the MCV is over 89.9 and the MCH is over 31.9 chances of a B12 deficiency are very strong. But if the MCV and MCH are under those levels, assume a molybdenum deficiency until it can be ruled out via blood, urine or hair mineral testing. Less common causes for low uric acid are vitamin D deficiency, heavy metal body burden, diuretics and some types of cancer.

By the way, if you would like to learn to use blood or are using blood as means to gain objective data, consider taking the seminar series taught by Dr. Abbas Qutab called "Mastering the Science of Integrative Blood Chemistry." It is being taught in various parts of the country. See the link below for scheduling.

In conclusion, if you or your patients are sensitive to automobile exhaust, smoke, perfume, or for that matter any commercialized or synthetic odor; if you experience headaches when you drink red wine with sulfates or get close to a chlorinated pool; or if you are one of those people who are overly sensitive to carbohydrates; consider that the inability to break down acetaldehydes may be a factor and molybdenum may be a silver bullet for you.

Thanks for reading this week’s Tuesday Minute edition. I'll see you next Tuesday.