

# LIVER & TOXICITY

The liver is the second largest organ in the body (with the skin being the first). It has over 500 functions. It is involved in digestion, the endocrine system, sugar metabolism, fat metabolism, and protein metabolism.

The liver is responsible for removing toxins from the

**In 2015 the New York State attorney general's office accused four major retailers of selling fraudulent herbal supplements. Most products (80%) from GNC, Target, Walgreens and Wal-Mart did not contain ANY of the herbs listed on their labels.**

**We have looked into the quality of supplements and can help you avoid fraud and find effective, quality products.**

body, but the amount of chemicals to which we are exposed is unprecedented in history. The average American consumes 10 pounds of food additives each year, and that is only the tip of the iceberg. We are exposed to pesticides, herbicides, heavy metals, and dioxins. The “body burden” of chemicals is tested by the Atlanta-based Centers for Disease Control and Prevention every two years. They have found that the average American now has 116 synthetic compounds in his or her body. These include dioxin (from burning plastic), polycyclic aromatic hydrocarbons (from auto exhaust) and organochlorine pesticides.

One reason that we carry so many chemicals in our bodies is that there are about 75,000 different chemicals produced in the United States each year, 3,000 of which are produced in quantities greater than 50,000 tons each year. Chemicals that were banned decades ago persist in the soil, air, and water. DDT, banned 34 years ago, still exists in detectable levels in many people. If we were tested for all of these chemicals, it would be interesting to see the CDC's results.

Recent studies have detected pesticides, plastics, and polymers not only in umbilical cord blood, but in the placenta, in human milk and in bloodstreams and body fat of infants. Toxic chemicals have far-reaching effects on our health. One toxin threatening mothers and children is mercury. Mercury has been linked to breast cancer, autism, and attention deficit disorder. In 2002, a study found that nearly 15% of American women of reproductive age have enough of this contaminant in her blood to endanger a developing fetus.

**Detoxification?** There are detoxification programs, and many are beneficial. But the truth of the matter is that detoxification is going on all the time. When we say, “detoxification program”, we mean a program that facilitates and speeds up the normal detoxification process. The unprecedented amount of toxic exposure in the late 20<sup>th</sup> and early 21<sup>st</sup> centuries are

IF YOU SIMPLY FOLLOW THE ROADMAP TO HEALTH DIET FOR 30 DAYS, YOU WILL NOTICE AN IMPROVEMENT IN YOUR SCORE WHEN YOU RETAKE THE SYMPTOM QUIZ. CONTACT OUR OFFICE FOR A COPY.

overwhelming our capacity to detoxify, and it is creating a lot of health problems. A structured detoxification may be the solution for you. Call our office for more information.

**Just plain sick?** Dr. Theron Randolph, a pioneer in environmental medicine was the first to postulate that chemical exposure can create allergies and many other chronic health problems. Often these patients are described as “just plain sick”. They often have many diverse and seemingly unrelated symptoms. Many have been to several doctors without getting relief, or even a diagnosis. Doctors are often at a loss as to how to help these patients. To them, the pattern of symptoms do not make any sense. Many patients have been told, “It is all in your head.” Many physicians who treat people who are environmentally ill believe that 15% of all chronically ill people got that way because of chemical exposure.

Fatty liver can be caused by chemical exposure, alcohol consumption, metabolic syndrome, obesity, and there may be a genetic component. Generally, fatty liver is symptom-free, although some patients may experience fatigue and malaise. It is generally reversible but can proceed to actual liver damage and cirrhosis if ignored. Fatty liver, along with other challenges to the liver (chemical exposure, virus [hepatitis], and inflammation or scarring of the bile ducts) can eventually lead to biliary stasis.

***Lifestyle considerations for people scoring high in this section:*** Dietary and lifestyle changes are much more important than supplementation. Poor dietary choices will prevent getting a good result, even if the supplementation is correct. This is especially true when trying to improve liver and gallbladder function. Follow the *Roadmap to Health* diet (available from our office). Here are some important dietary issues:

- **Drink plenty of water:** Water is necessary for removing toxins. Also, dehydration can contribute to the thickening of the bile.
- **Lose weight (if you are overweight):** Obesity is one of the causes of fatty liver.

Being overweight also increases the chance of developing gallstones. Do not lose weight too rapidly, that is also linked to gallstones.

- **Avoid refined food, hydrogenated oils (trans fats) and chemical additives:** These burden the liver. Sugar and refined starch can lead to metabolic syndrome, which leads to fatty liver.
- **Deal with hypochlorhydra if it is present:** Stomach acid is necessary to trigger bile production. Contact us for a consultation to learn more.
- **Eat bitter herbs, and bitter green foods:** Anything bitter is good for the liver and gallbladder. Spices and herbs like turmeric, dandelion, fennel, cilantro, and parsley are good for the liver. Bitter green leafy vegetables like endive and arugula are also good to eat.
- **Eat small meals:** With any digestive issue, biliary insufficiency included, eating small and well-masticated meals improves digestion.
- **Be mindful of the fats and oils in your diet:** Avoid commercial vegetable oils, like corn and canola, they are pro-inflammatory. Also, a lot of commercial oils contain GMOs. If you eat animal products, eat free-range chicken, grass-fed beef and other animals raised without hormones and antibiotics. Choose lean meats. Animal fat contains arachidonic acid, which is pro-inflammatory. Use extra virgin olive oil, coconut oil or avocado oil. Make sure oils are cold-pressed and not heat or chemically extracted.
- **Be mindful of the possibility of hidden food sensitivities:** One theory held by many in functional medicine is that biliary insufficiency and even gallstones are caused by hidden food sensitivities. Contact us for more information about hidden food sensitivities.
- **Avoid GMOs:** One of the reasons foods are genetically modified is so they can be heavily sprayed with glyphosate (an herbicide, sold commercially as Roundup). Also, there is a fair amount of evidence that eating GMOs inflames the GI tract.

## Supplementation

It is not uncommon for someone who has had a single large chemical exposure or prolonged chemical exposure to become sensitive to foods and chemicals. Liver support is important for these individuals, and they also need certain nutrients that will act as cofactors for various chemical reactions that occur in the body. For example, someone who is sensitive to aldehydes and ketones (perfumes, etc.) will improve when given the trace mineral molybdenum because the mineral is necessary for the chemical reactions in the body that get rid of aldehydes and ketones. Along with the liver support, high doses of vitamin C and trace minerals are often helpful. Often vitamin C to bowel tolerance is helpful. Here are some supplements that are commonly given to support liver and detoxification:

- **Phosphatidylcholine:** One of the best researched uses of phosphatidylcholine is in ameliorating liver damage. There are many studies that show its benefit for patients with both alcoholic and non-alcoholic fatty liver.
- **Trace minerals:** Molybdenum has already been mentioned. Selenium is cofactor for glutathione, which offers antioxidant protection and is necessary for the liver to remove toxins. Lithium (as a trace mineral—not the drug given to those with bipolar disorder) is necessary for the production of substances that protect the nervous system from toxins. Zinc is also necessary as a cofactor for several enzymes used for detoxification. These are just a few examples.

- **Vitamin C:** Offers antioxidant protection. It also increases the availability of glutathione.
- **Lipoic acid:** Alpha-lipoic acid is a powerful antioxidant. It is unique because it is soluble in both water and lipid. Alpha-lipoic acid can also recycle antioxidants, including vitamin C, vitamin E, and glutathione. When antioxidants neutralize a free radical, they destabilize and become free radicals themselves. Alpha-lipoic acid helps restore them by absorbing excess electrons and converting them to the back to their stable form.
- **Silymarin (milk thistle):** Milk thistle seed might protect liver cells from toxic chemicals and drugs. It also seems to have blood sugar-lowering, antioxidant, and anti-inflammatory effects.
- **Glutathione:** This is a combination of three amino acids (tripeptide). As an antioxidant, glutathione helps our bodies balance free radicals and stay healthy. It works at the cellular level to prevent inflammation and other cell damage.
- **N-acetylcysteine:** This is an amino acid is necessary for the production of glutathione.
- **Taurine:** Studies indicate that taurine helps to protect the liver cells against oxidative damage thus ensuring that the liver cells efficiently remove harmful compounds.

There are other substances that aid in detoxification, liver function, and offer antioxidant protection. This is just a partial list.

Detoxification and liver function are complex topics. This report will give you a basic understanding of what is involved. Feel free to contact our office for more information or to schedule a consultation.

CONTACT US FOR A CONSUTATION