

Bile Deficiency: Heartburn, Poor Digestion, Toxicity

By Michael McEvoy, FDN, CNC, CMTA - September 14, 2011

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Of your liver's [500 functions](#), its production of bile is one of the most important. Bile is an essential "de-greaser" and "emulsifier" of dietary fats. Bile is also essential for the

utilization of the fat soluble vitamins A, D, E and K. The bile that is produced by your liver also contains conjugated "already used" hormones, toxins, foreign chemicals and heavy metals.

An insufficient amount of bile salts can prevent proper dietary fat utilization, cause acid indigestion as well as a backup of toxicity.

Bile insufficiency can also cause poor hormone synthesis because of the fact that all hormones are made from lipids.

Functions Of Bile

Bile is produced by the hepatocyte cells of the liver from cholesterol. When acidified food enters into the small intestine from the stomach, bile salts alkalinize the food, preparing nutrients for assimilation in the small intestine.

Bile emulsifies fat, increasing fat absorption. Bile also contains the conjugated toxins from the 2 phases of liver detoxification. These toxins may include carcinogens, xenobiotic chemicals, pharmaceuticals and heavy metals like mercury, aluminum and lead. When hemoglobin is broken down in the liver, bilirubin is conjugated and excreted through the bile.

Problems When There Is Inadequate Bile

Heartburn can directly be caused if there is a bile salt insufficiency. One of the functions of the alkaline bile salts is to neutralize the food that has been acidified in the stomach by hydrochloric acid. Stomach acid that has not been neutralized is likely to cause heartburn.

A person who complains of feeling abdominal tightness, bloating and having a difficulty digesting fats may very well have a bile insufficiency.

Inadequate levels of bile can cause a build-up of toxins in the liver because of the fact that bile conjugates and carries out the body's burden of toxicity. Liver congestion can result in gall bladder stones and stagnation. If a person's cholesterol production is low, bile production is also likely to be low.

Another important component to fat digestion and utilization is hormone synthesis. ALL hormones are synthesized from fat. Endocrine dysfunction may improve greatly with improving liver function.

Helping The Liver To Detoxify & Produce Adequate Bile

In order for the liver to function properly, adequate protein is essential. Amino acids are primary constituents of phase I and II of liver detoxification. The amino acid L-Taurine is critical for bile formation, while the sulphur-bearing amino acid L-Methionine is the primary methylating agent in the liver. Cysteine, another sulphur-bearing amino acid is a precursor to the antioxidant Glutathione, the body's most ubiquitous

antioxidant. Glutathione scavenges free radicals and toxins, which end up excreted through bile.

Proper cellular hydration is also essential for liver detoxification. Approximately 85% of bile is made from water.

The nutrient Betaine, also known as trimethylglycine is one of the most powerful liver detoxificants. Betain is found in the highest concentrations in beets and beet greens.

Individuals with bile acid insufficiency can also benefit from taking bile salts derived from either ox bile or bovine bile salts.

Identifying Bile Insufficiency

On a blood test, if blood cholesterol levels are lower than 170, it is possible there is a bile acid insufficiency. Increases or decreases in the liver enzymes ALT (>30, <10) or AST (>30, <10), GGTP (>30) can indicate dysfunction and/or congestion in the liver.

If you would like to speak with Michael and Julie regarding your health & nutrition needs, or to schedule a private consultation, [please contact us here.](#)

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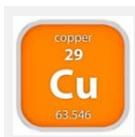
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Michael McEvoy and Julie Sands Donaldson have over 44 combined years experience in the fields of health & nutrition.

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