

TOTAL LIVER D-TOX

Ingredients: Glucuronic Acid 10mg, Liver 5mg, Vitamin A 1,000i.u, Vitamin C 25mg, Vitamin B1 5mg, Vitamin E 10i.u, Black Currant Seed Oil 5mg, Cellulase 50mg, Amylase 50mg, Lipase 50mg, Protease 50mg, Lipoic Acid 2mg, Phosphatidyl Choline 5.75mg, Choline Bitartrate 15mg, DL-Methionine 5mg, Calcium Chelate 50mg, Magnesium 50mg, Zinc Chelate 5mg, Selenium Chelate 25mcg, Manganese 1mg, Milk Thistle 100mg, Silymarin 5mg, Garlic 50mg, Beet Root 25mg, Beet Leaf 25mg

Supportive Function: This formula provides comprehensive nutritional support for liver detoxification.

When is Total Liver D-Tox helpful? Detoxification, sluggish liver, toxic burden, environmental overload, any condition that can benefit from the clearing of waste and toxins, (especially Fibromyalgia, multiple chemical sensitivity, allergies, etc.), female disorders (clears excess estrogen), constipation, hemorrhoids, etc.

Clinical Applications/Research: **Glucuronic Acid** inhibits the enzyme that breaks apart conjugated substances that the liver is trying to clear, i.e., estrogen. By keeping the substances conjugated, glucuronic acid speeds removal.

Liver: A glandular extract of liver provides the specific amino acid sequencing for support of the liver.

Vitamin A has been reported by some investigators to enhance antibody and cell-mediated immune response. It is necessary for growth and repair of body tissues and is important in the healing process due to its important role in proper cellular reproduction. Deficiency can cause breakdown of the integrity of the GI barrier, resulting in leaky gut syndrome.

Vitamin C is a potent antioxidant and immune enhancer. Vitamin C neutralizes toxic substances and contributes to cytochrome P450 activity in the liver, which is necessary for proper liver detoxification.

Vitamin B-1: Thiamine acts as a cofactor to thiamine pyrophosphate (TPP), which plays a key role in glucose metabolism and for metabolism of branched chain amino acids.

Vitamin E: Vitamin E is a powerful antioxidant that protects the liver from cellular damage by contributing to cytochrome P450 activity in the liver.

Black Currant Seed Oil (BCSO) is a major source of gamma-linolenic acid (GLA), which is an essential fatty acid that has numerous functions in the body.

Enzymes: Cellulase is a plant wall-digesting enzyme, amylase is a starch-digesting enzyme, lipase is a fat-digesting enzyme, and protease is a protein-digesting enzyme.

Lipoic Acid is also known as thioctic acid. It is a sulfur-containing, vitamin-like substance, and can efficiently address the sulfhydryl-reactive metals (mercury, lead, and cadmium) that bind to sulfur-containing proteins. Lipoic acid is also a good mobilizer for metal removal. It is an important co-factor in important energy-producing reactions in the body. Lipoic acid is effective as an antioxidant, both for water- and fat-soluble free radicals. Lipoic acid is found in high amounts in liver and yeast (Murray, M., Encyclopedia of Nutritional Supplements, Prima Publishing, Rocklin, CA, 1996, p.343).

Phosphatidylcholine: Sometimes called lecithin, phosphatidylcholine is a molecule composed of saturated, unsaturated and/or polyunsaturated fatty acids, as well as glycerin, phosphorus and choline. It is a main component of our cell membranes and protects against oxidant damage. It aids in synthesis of acetylcholine, a potent neurotransmitter.

Choline Bitartrate has potent lipotropic activity (fat-digesting properties). Without choline, fats become trapped in the liver, where they block metabolism. A study recently showed that humans fed a diet deficient in choline developed liver disorders.

DL-Methionine is an essential sulfur-containing amino acid in one of the most usable forms. It is considered to have therapeutic, lipotropic activity similar to choline.

Cysteine and taurine biosynthesis are dependent upon methionine. These two amino acids are both required for phase II liver conjugation. It has been shown to be useful in detoxifying heavy metals, especially the sulfhydryl-reactive metals (mercury, cadmium, and lead), that are responsible for stealing sulfur from biologically active proteins.

Calcium Chelate: Calcium maintains healthy bones and tissues and acts as a co-factor in many enzyme reactions. Calcium plays a role in the intricate balance of ion transport, muscle contraction, heart maintenance, nerve impulses and muscle tone. Calcium is a natural chelating agent, which binds toxins in the body.

Magnesium increases the solubility and retention of calcium. It is important in neuromuscular contractions/relaxations, it activates enzymes necessary for metabolism of carbohydrates and amino acids, and it is integral for any healing process. Magnesium is necessary for ATP (energy) production in the mitochondria.

Zinc Chelate: Zinc acts as an antioxidant and has shown major immune-boosting effects. It aids in the liver's role of detoxification and metabolism. Zinc activates a form of SOD, a potent detoxifying enzyme.

Selenium Chelate: Selenium is a powerful antioxidant and detoxifier of a number of environmental pollutants. Selenium activates glutathione peroxidase, a potent detoxifying enzyme.

Manganese is an essential co-factor in the activity of the free radical detoxifying enzyme SOD. Manganese supplementation has been shown to increase SOD activity. High iron competes with manganese, thus high iron in the diet can deplete the body of manganese.

Milk Thistle contains silymarin, which is a very potent liver-specific antioxidant. It works by inhibiting free radical damage and promoting synthesis of new protein to replace damaged liver cells. It protects the liver against poisoning by chemicals.

Silymarin is known as "one of the most potent liver medicines known." It is the main active ingredient in milk thistle.

Garlic has been used for centuries as an antimicrobial compound. It has been found to be effective against candida and parasites, it provides radiation protection, and it is used for cholesterol and triglyceride reduction.

Beet Root and Leaf: Beets aid in gallbladder function, lymphatic function and digestion. Red beetroot is excellent for liver and biliary detoxification. Beets are high in iron and possibly possess "anti-tumor activity." Betaine accounts for the red color in beets, is listed in the Merck Index as a hepatoprotectant, and is also used as a digestive aid. A cancer clinic in Hungary did a study using red beet administration, and remarkable results were recorded (Heinerman, Heinerman's Encyclopedia of Fruits, Vegetables and Herbs, Parker Publishing Company, W. Nyack, NY, 1988).

Testimonials/Nutrient Tidbits: A doctor reports . . . I use Total Liver D-Tox (4-5 per day). Sometimes this product will cause the parotids to swell and the armpits to smell because the body is trying to detox the toxins. I add in Core Level D-Tox to make sure the colon is moving to eliminate all the added toxins (A. Hare, D.C.).

Suggested Dosage: 1-2 tablets 3 times daily or as directed

Size: 60 tablets or 180 tablets

Vegetarian: No

Contraindications: None known.