BiliChol

Clinical Applications

- May Support Bile Synthesis and Lipid Metabolism*
- Helps Maintain Healthy Cholesterol Levels Already Within the Normal Range*
- Supports Cardiovascular Health*
- May Help Protect Liver Cells*

***BiliChol** is a specialized liver support formula that provides nutrients involved in fat metabolism, including choline, taurine, and methionine. Dandelion and celandine have been selected to support bile flow and healthy liver function. Guggul extract and inositol hexanicotinate are included to support healthy blood lipid levels already within the normal range.**

All Living Health Integrative Medicine Formulas Meet or Exceed cGMP Quality Standards

Discussion

BiliChol is a specialized formula designed to target lipid metabolism and support healthy liver function.*

Inositol Hexanicotinate is a niacin derivative that consists of one molecule of inositol surrounded by six molecules of niacin. Over a period of time, the body slowly metabolizes niacin in this derived form so that the characteristic "niacin flush" is avoided. IHN is believed to work in the body in the same way as niacin: It decreases the mobilization of free fatty acids; inhibits cholesterol biosynthesis in the liver, specifically decreasing VLDL biosynthesis; and decreases the breakdown of HDL cholesterol.*[1-3]

Greater Celandine *(Chelidonium majus)* is important in both Western phytotherapy and Traditional Chinese Medicine, as it exhibits a broad range of biological activities.[4] Its inclusion in BiliChol relates to in vitro and human studies that demonstrate its support of bile production and flow and its protective effect on liver cells.[4-6] Human studies, cited in a review by Gilca et al,[4] suggested that greater celandine helped relieve minor digestive and abdominal complaints related to the biliary system. To test the hepatotoxicity of greater celandine, researchers supplemented the diet of Wistar rats with doses that were approximately 50 to 100 times higher than those generally used in humans. The results indicated no alteration in hepatic function. Researchers caution against using greater celandine in situations (pharmacological treatments, etc.) that can compromise liver function.*[7]

Dandelion *(Taraxacum officinale)*, based on empirical findings, has been used medicinally as far back as the 10th and 11th centuries to support digestive health and kidney and liver function.[8] Recent animal and in vitro research points to the cell-protective effects and antioxidant activity of dandelion.[9] For instance, an in vitro study on increased lipid peroxidation in the cortex, hippocampus, and striatum of rats suggested that dandelion demonstrated protective antioxidant effects.[10] In another study, rats that were supplemented with dandelion extract showed increased antioxidant liver enzymes, reduced lipid peroxidation, and improved blood lipid metabolism.*[11]

Guggulsterones are the apparent bioactive compounds of guggul, an herbal extract from resin of the *Commiphora mukul* tree. Guggul is widely used in Ayurveda for its effect on blood lipids, and research suggests that guggulsterones may antagonize two nuclear hormone receptors involved in cholesterol metabolism. For example, it has been demonstrated that guggulsterone is a selective modulator of a particular bile acid receptor called a "farnesoid X receptor" (FXR). By acting as an antagonist to FXR, the guggulsterone can regulate the bile salt export pump. In other words, guggulsterone can modify the rate and amount of bile salts transported out of the liver.*[12-14]

Choline is involved in lipid transport and metabolism. Without adequate choline, lipids accumulate in the liver. Fat and cholesterol are packaged into lipoproteins in the liver and transported in the bloodstream via very low-density lipoproteins (VLDL). The body needs choline to synthesize phosphatidylcholine, a required component of VLDL particles. Although the body can synthesize small amounts of choline, exogenous sources are needed to maintain health.*[15]

Taurine, synthesized in the body from the amino acids methionine and cysteine, is considered a conditionally essential amino acid. It is required for efficient fat absorption and conjugation of bile acids, which solubilize cholesterol and increase its excretion. Studies suggest that taurine is important to various aspects of cardioprotection.[16,17] A primary role of taurine in cardiovascular health relates to its ability to scavenge hypochlorous acid (HOCl), which is produced by myeloperoxidase in neutrophils and macrophages. HOCl is a major contributor to the oxidation of LDL (low-density lipoproteins).*[17]

Methionine, a sulfur-containing essential amino acid, is one of the body's most important methyl donors. Maintaining healthy levels of methionine is important for the downstream production of glutathione, a tripeptide that assists with the protection of the liver.*[18]

***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

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Living Health Integrative Medicine, LLC
1833 Forest Dr. Suite A
Annapolis, MD 21401 410.216.9180

BiliChol

Living Health Supplements

Supplement Facts

Serving Size: 2 Capsules
Servings Per Container: 60

	Amount Per Serving	%Daily Value
Niacin (as inositol hexanicotinate)	375 mg	1875%
Inositol Hexanicotinate	500 mg	**
Choline Dihydrogen Citrate	200 mg	**
L-Methionine	200 mg	**
Taurine	100 mg	**
Dandelion 4:1 Extract (*Taraxacum officinale*)(root)	75 mg	**
Greater Celandine 10:1 Extract (*Chelidonium majus*)(whole herb)	50 mg	**
Guggulsterones (from guggul extract) (*Commiphora mukul*)(gum)	37.5 mg	**

** Daily Value not established.

Other Ingredients: HPMC (capsule), calcium silicate, silica, stearic acid, medium-chain triglyceride oil, and magnesium stearate.

Directions

Take two capsules twice daily after meals, or as directed by your healthcare practitioner.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner. Do not use if tamper seal is damaged.

References

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Does Not Contain

Wheat, gluten, yeast, soy, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, or artificial preservatives.

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Annapolis, MD 21401 410.216.9180