



## Lecithin & Choline

Lecithin is a phospholipid mixture and an important component of all cells.<sup>[1]</sup> Choline, an essential nutrient, is enriched in lecithin and is vital for various body functions, ranges from maintaining structural integrity of cell membranes to neurotransmission, as well as lipid-cholesterol transport and metabolism.<sup>[2]</sup> Choline deficiency has been associated with disorders related to cardiovascular, liver and brain functions.

## Promote Cardiovascular Health

Hyperlipidemia refers to high concentrations of cholesterol and triglycerides in blood. These substances could accumulate on the inner blood vessel wall forming plaques and harden the blood vessel, which could lead to increase in blood pressure.<sup>[3]</sup> In severe cases, blood clots could block blood flow and that would lead to impairment of organ functions in the affected areas. Conditions in the heart like coronary atherosclerosis or even heart attack could arise from hyperlipidemia.<sup>[4]</sup> A study on patients with hyperlipidemia has shown that lecithin supplementation could aid lipid homeostasis and reduce total cholesterol and low-density lipoprotein in blood.<sup>[5]</sup>

## Maintain Health Of Liver

Liver is an essential organ for metabolism and detoxification poisonous substances. Choline is required to make the phosphatidylcholine portion of the very-low-density lipoprotein (VLDL) needed for exporting triacylglycerol from the liver.<sup>[6]</sup> A choline-deficient diet may lead to development of fatty liver disease while the disorder could be improved by choline supplementation.<sup>[7]</sup> Studies using rodent model or human patient subjects have shown that a lecithin-rich diet could stimulate bile and biliary cholesterol secretion and as such enhance lipid metabolism and reduce fat accumulation in the liver.<sup>[5,8]</sup> A choline metabolite, betaine, has been shown to provide hepatoprotection and improve liver functions.<sup>[9]</sup>

## Maintain Normal Brain Function

Cognitive abilities deteriorate with aging mainly due to reduced cerebral blood flow and degeneration of neurons in brain.<sup>[10]</sup> Alzheimer's Disease and other dementias are well known in related to the decrease in acetylcholine (ACh) release in the brain.<sup>[11]</sup> ACh is a neurotransmitter widely diffused in central, peripheral, autonomic and enteric nervous system.<sup>[2]</sup> ACh is an important chemical in controlling many brain functions including memory and learning. Lecithin is a good source of choline which is the precursor for ACh.<sup>[2]</sup> Hence, regular intake of lecithin could help maintain ACh level in the brain and as such improve memory and other brain functions.<sup>[12]</sup>

## Benefits Of Taking Lecithin May Include:

- ◆ Maintain cell membrane integrity and fluidity<sup>[1]</sup>
- ◆ Aid liver triglycerides transport and bile secretion<sup>[5,8]</sup>
- ◆ Help maintain healthy blood vessel, liver, heart and brain<sup>[5,9,12]</sup>
- ◆ Protect liver cells and improve liver functions<sup>[9]</sup>
- ◆ Support neurotransmitter synthesis<sup>[2]</sup>
- ◆ Improve memory and learning ability<sup>[12]</sup>

## Recommended Dose:

For adult take 1-2 softgel capsules daily or as directed by physicians.

## References:

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