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Health Options
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Get to know choline's essential role

Do you know what naturally occurring food substance and sometimes food additive is involved in maintaining memory storage and helping to transport fat out of the liver? This substance also forms an essential part of all cell membranes in the body and is now considered to be an essential nutrient. The answer is choline.

So what is choline? Choline is usually grouped with the water-soluble B vitamins. It is widely distributed in the typical diet ad unlike vitamins, choline is synthesized by the body. The formation of choline in the body requires adequate amounts of three B vitamins – folate, B-12, and B-6.

Choline plays a role in multiple physiological systems from all cell membranes to the function of organs like the liver. Choline produces a neurotransmitter involved in memory storage, muscle control and many other functions.

Theories based primarily on knowledge of these functions suggest that cardiovascular disease and cancer may be associated with inadequate choline intake over many years. Researchers are trying to establish whether or not low choline intake over time could be a factor in the development of some forms of dementia that involve memory problems.

For more than five decades, nutrition science has known that choline is an important compound in the body. However, because humans have the ability to synthesize choline and our diets generally contain significant amounts of choline, it has been difficult to definitively show that choline is needed in the diet.

One of the first clear indications that the body does not make choline quick enough to meet the body's own needs was recently demonstrated. When healthy men were fed a diet which was adequate in all known essential nutrients but very low in choline, the men developed liver damage. This indicates that even though the body can make choline, there is a dietary requirement as well.

In April of this year, the Institute of Medicine's Food and Nutrition Board added choline to its list of "Dietary Reference Intakes." This board didn't go as far as to define a Recommended Dietary Allowance for choline. However, the FNB established Adequate Intake and Tolerable Upper Intake Level values for choline. The AI value is an educated estimate of nutrient need that is likely to exceed the needs of just about all reasonably healthy people.

The AI Recommendations for daily choline intake range from 125 milligrams for young infants to 425 milligrams for adult women and 550 milligrams for adult men.

Foods especially rich in choline include beef liver, with about 450 milligrams per 3 ounce serving, and eggs, with about 280 milligrams per egg. Other examples include ½ cup of peanuts that each contain 25 milligrams. Lecithin is a common food additive isolated from soybeans that contains choline. The additive, found in foods like mayonnaise, salad dressings and most baked products, adds significant amounts of choline to the typical diet.

The UL value is set at a level that is considered to be the maximum intake by an individual that is unlikely to cause adverse effects. The UL for an infant is 1000 milligrams per day and 3500 milligrams for an adult.

The typical adult diet contains 700 to 1000 milligrams of choline and therefore meets the AI for choline. Too much choline can cause a fishy body odor, increased sweating, low blood pressure, light liver toxicity and tinnitus.

Should you take choline supplements? It depends. Your diet, your state of health, any medications you may already be taking, and your doctor's opinion should all be considered before adding any supplement to your diet.

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