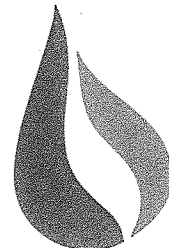


Top 5 Health Benefits of Choline



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ESCONDIDO, Calif.—Although just 10 percent of Americans consume sufficient amounts of choline, the nutrient offers crucial health benefits at every phase of life, according to the [Choline Information Council](#).

Choline may be one of today's most under-publicized and overlooked nutrients; the Institute of Medicine (the public health arm of the National Academy of Sciences) recognized it as an essential nutrient in 1998.

According to 2013 Gallup research, just 15 percent of Americans are aware of choline. In addition, data from the 2007-2008 National Health and Nutrition Examination Survey determined that 90 percent of the U.S. population currently does not consume adequate amounts. Here are five of choline's important health benefits:

1. Fetal development

For pregnant women, choline is a critical nutrient because of its role in proper fetal and child development. Unfortunately, pregnant women often consume inadequate amounts, and many multi-vitamins and prenatal supplements do not contain choline. The Nurses' Health Study, reported in 2010, found that 95 percent of pregnant women consumed less than 411 mg/d of choline, below the recommended 450 mg. In fact, the average consumption was 337 mg per day. Choline plays a critical role in the development of the part of the brain that regulates memory. Pregnant women whose choline consumption levels are at the lower end of the 300 to 550 mg range also face a deficiency that increases the risk of neural tube birth defects affecting the brain, spine and spinal canal.

2. Cognitive function

Choline is important to memory and [cognitive function](#). It is clearly linked to fetal and infant brain development and enhanced memory and cognition. Insufficient choline in the fetal brain affects the development of the areas of the brain that regulate memory. Choline availability to a fetus also appears to have an enduring significance for that individual at an advanced age. Choline may support the brain during aging, and helps prevent changes in brain chemistry that result in cognitive decline and failure. Maintaining mental function as we age is the number one consumer health concern in the United States.

3. Heart health

Average Americans, along with healthcare professionals, are concerned about preventing heart disease, the No. 1 cause of death in the United States. According to the American Heart Association 2014 data, coronary vascular disease affects 37 percent of the U.S. population (83.6 million people). Among choline's significant health benefits is the prevention of blood plaque formation. This, in turn, prevents clots that cause heart attacks and strokes. One-third of American women and half the men in the U.S. have undesirable plaque levels in their blood. Choline is also instrumental in supporting the nerve impulse systems that ensure a regular heartbeat and a strong [heart](#) muscle.

4. Liver health

According to the American Liver Foundation, nonalcoholic fatty liver disease (NAFLD) may affect up to 25 percent of the U.S. population, including 6 million children, and the incidence is on the rise. The incidence of NAFLD has more than doubled in the past 20 years. As the body's second largest organ—second only to the skin—the liver performs more than 500 critical body functions. Prevention of NAFLD is crucial. Choline supports normal liver function and helps prevent NAFLD. Consuming adequate amounts of choline promotes liver health. A healthy liver helps fight infection, provides detoxification by removing harmful substances from the blood, and helps process the food and drinks we consume to store energy, vitamins and minerals for future use.

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5. Sports Performance

Choline is an essential nutrient for health and optimized physical performance. It benefits athletes in several ways, including enhancing muscle performance during exercise, improving stamina, supporting communication with muscle fibers and promoting muscle recovery following repetitive motion. However, when athletes are deficient in choline—and when sources of choline are exhausted in the body—the body takes choline away from other key systems and organs.

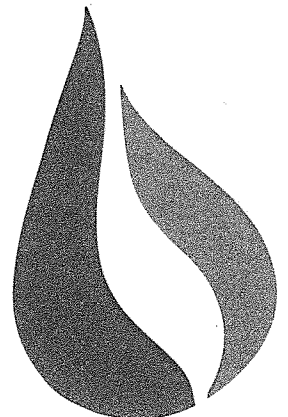
To derive the numerous health benefits offered by choline, the adequate intake (AI) level is 550 mg a day for men and 425 mg a day for women. Because our consumption of foods providing the richest sources of choline—including liver, eggs and various meats—has decreased in recent years, it is almost always necessary today to supplement the diet with choline in order to attain recommended intake levels. FDA recently proposed adding choline as a nutrient permitted to be listed voluntarily on the Nutrition Facts panel on food labels. In addition, FDA mandates choline as an ingredient in infant formula.

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On structure/function claims for choline in conventional foods (US)

Structure/function claims describe the way in which a nutrient in affects and maintains normal structure, function and well-being of the human body. These claims *do not* relate nutrients with benefits associated with ameliorating a disease state, unless such a condition is associated with a well-documented and widespread nutrient deficiency.

In 2001, notification for the following claims for choline was submitted to the US Food and Drug Administration (FDA)

- May help memory problems associated with aging
- Prenatal use may lead to lifelong improvement of visuospatial memory in children born of the pregnancy
- Supplementation during infancy and childhood may lead to improve lifelong memory
- May reduce fatigue and increase vigor during strenuous exercise
- May help reduce levels of plasma homocysteine
- May promote healthy liver function

When these claims are used on conventional foods, they must be substantiated as being truthful and not misleading. They may not suggest that the product is intended to "diagnose, treat, cure or prevent disease," as these are claims reserved for drug products. Claims on conventional foods do not currently require pre-market notification or disclaimers.

The claims listed above have been communicated on food labels using language as follows:

- Helps the Brain Send Messages
- Supports Overall Mental Functioning
- Supports Healthy Brain Function
- Nutrient Necessary for Proper Brain Development
- Nutrient for Developing Minds

References:

<http://www.fda.gov/Food/LabelingNutrition/LabelClaims/StructureFunctionClaims/default.htm>

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