

# Choline

Choline is a water-soluble nutrient.

It is usually grouped within the B-complex [vitamins](#). Choline generally refers to the various quaternary ammonium salts containing the N,N,N-trimethylethanolammonium cation. (X<sup>-</sup> on the right denotes an undefined counteranion.)

The cation appears in the head groups of phosphatidylcholine and sphingomyelin, two classes of phospholipid that are abundant in cell membranes. Choline is the precursor molecule for the neurotransmitter acetylcholine, which is involved in many functions including memory and muscle control.

Some animals must consume choline through their diet to remain healthy. To humans, choline is an essential nutrient, as its role in reducing the risk of neural tube defects, fatty liver disease, and other pathologies has been documented.

Furthermore, while methionine and folate are known to interact with choline in the methylation of homocysteine to produce methionine, recent studies have shown that choline deficiency may have adverse effects, even when sufficient amounts of methionine and folate are present.

It is used in the synthesis of components in cell membranes. The 2005 National Health and Nutrition Examination Survey stated that only 2% of postmenopausal women consume the recommended intake for choline.

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Last update: **2024/06/07 02:56**

