



FACTS

Choline is an essential nutrient that is materially important to human health.

- Nutrition Examination Survey (NHANES) data shows 90% of the US population does not consume enough choline.
- VitaCholine is an excellent, cost-effective means to deliver the health benefits consumers are seeking.


RECOMMENDED DAILY INTAKE

The FDA has recommended a Recommended Daily Intake (RDI) for choline.

- The Final Rule is expected in late 2015 or early 2016.
- This will allow manufacturers to raise choline from the anonymity of the ingredient declaration to the prominence of the Nutrition Facts panel, along with percentage of the DV (Daily Value) delivered.


THE RIGHT SOURCE

- United States Pharmacopeia (USP) grade
- Manufactured in the USA and Italy
- VitaCholine is the only CBT made with L(+) natural tartaric acid from wine fermentation
- Available in several forms to easily meet manufacturing needs
- GRAS


CHOLINE BUZZ

The science surrounding the essential role of choline is well founded and abundant, and trade articles have highlighted choline as an ingredient to watch for 2015. Now, mainstream media such as *Good Housekeeping*, *Parade Magazine* and *First for Women* magazines have highlighted the nutritional value of choline, helping to spark increased consumer awareness.


NOW IS THE TIME

The anticipated January 2018 compliance deadline has manufacturers reviewing labels and reformulating products. Now is the time to fortify products with choline to bridge the significant dietary gap. Products with targeted health benefits in the areas of Fat Metabolism, Fitness and Energy, Memory and Cognition, and Cardiovascular Health are all excellent candidates.



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**BRAIN**

As a precursor of acetylcholine, a powerful neurotransmitter, choline may boost cognitive function by enabling messages to move faster in the brain. Choline also disposes of homocysteine, a pro-oxidant associated with age related memory loss.

**CARDIOVASCULAR**

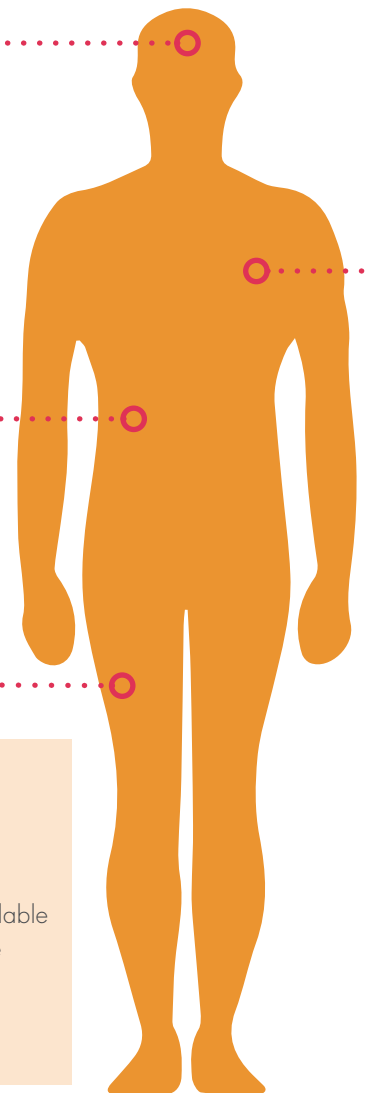
Choline defends against elevated levels of homocysteine, a pro-oxidant associated with negative impact on heart health. Choline keeps homocysteine levels in check by converting it to the essential amino acid methionine.

**FAT METABOLISM**

Choline defends against fat accumulation in the liver by enveloping lipids and transporting them out of the liver for use as energy. In fact, not getting enough choline can actually increase fat accumulation in the liver.

**FITNESS AND ENERGY**

Choline counteracts fatigue by speeding up messages from the brain to muscles. It supports carnitine and the metabolism of creatine, and optimizes nitric oxide uptake, enabling muscles to get more nutrients and oxygen.

**Choline claims are backed by strong science and regulatory support, including:**

- 6 FDA reviewed structure-function claims in the US
- 3 EFSA approved claims in Europe
- Adequate Intake of 550mg for men and 425mg for women established
- US Nutrient content claims for “Good Source” and “Excellent Source” available
- The FDA has proposed a Recommended Daily Intake (RDI) for choline to be included on Nutrition Facts panels, along with a % Daily Value
- According to current National Organic Program (NOP) guidelines, choline is acceptable for use in Organic and Made with Organic products