

# FACTS FOR CONSUMERS ABOUT COGNIZIN® CITICOLINE

## ***What is citicoline?***

Citicoline is a generic name for supplemental CDP-choline, a natural substance found in all living cells. In human health, CDP-choline plays important roles in the formation of cell membranes and in supporting healthy brain function. Citicoline is sometimes called the "brain nutrient" because of its roles in supporting cognition and memory.

## ***Sources***

There is very little citicoline in foods. The highest amounts are found in organ foods (liver and brains) that are not widely consumed in the United States. Some citicoline can be formed from the B vitamin choline, which is found in beef and eggs. Citicoline is available as a dietary supplement marketed under the brand name Cognizin®.

## ***Roles in health***

The primary biochemical roles of citicoline are maintaining brain cell membranes and supporting synthesis of neurotransmitters, the chemical messengers that enable brain and nerve cells to transmit information from one to another. Studies have also shown that citicoline helps boost brain energy. These roles may translate into functional benefits for brain health, particularly for maintaining healthy cognitive functioning in aging.

As early as age 22 we begin to lose neurons at the rate of about one per second, or 31 million per year. Age-related changes also include a decrease in the number and efficiency of the connections between neurons, decreased energy production, and decreased production of neurotransmitters. As a result, cells can become sluggish in their communications with each other. This process is normal and is why people occasionally experience forgetfulness, slower reaction time and dulling of senses such as sight, taste and smell as they become older.

Cognizin® citicoline has been shown in scientific studies to help support brain health and function:

- When given as a supplement to groups of elderly people, citicoline produced measurable improvements in memory, attention, behavior and reaction time.<sup>1</sup> The studies also showed that citicoline supplementation helped these people cooperate, relate to each other better, and maintain their independence.
- Promoting normal circulation is important not only for cardiovascular health but also for the health of the brain. Studies suggest that citicoline helps promote a healthy outlook and improves attention and behavior in elderly people.<sup>2</sup>
- Citicoline helps support mental agility in healthy older people. In a study of older adults who did not have cognitive impairment but who complained of forgetfulness, citicoline supplementation improved short-term memory<sup>3</sup> and verbal memory.<sup>4</sup>
- Citicoline is not just for the elderly. Even middle-aged adults have shown benefits as measured by sophisticated brain imaging techniques. A study using this new technology showed that in healthy middle-aged adults, six weeks of supplementation with Cognizin® citicoline help increase energy and electrical activity in the frontal lobe of the brain, the seat of higher thought, decision-making and focus.<sup>5</sup>

Cognizin®

[www.Cognizin.com](http://www.Cognizin.com)

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## **Citicoline supplementation**

Today 140 million Americans are over age 45, with 50 million of these being over age 65 and 41 million aged 55-65. Maintaining healthy cognitive (mental) function is one of the highest priorities as we age. It may be prudent for many people to consider including citicoline in their daily supplementation routine, along with other healthful dietary and lifestyle habits, so as to promote the best possible mental function through the entire lifespan.

Citicoline has been found to be very safe in studies done with animals and has an excellent track record of safety in clinical studies with humans. Most studies have used 500 to 1000 mg per day; however, some studies have safely administered amounts up to 2000 mg per day. A drug surveillance study that analyzed the results of citicoline treatment in more than 2,800 adults found minor transient effects in approximately five percent of cases, mostly stomach pain and diarrhea.<sup>6</sup>

A pure and natural brand of citicoline is Cognizin®, manufactured by Kyowa Hakko Bio Co. Ltd., a leading global ingredient and pharmaceutical manufacturer. Cognizin® is one of the few brands that has been scientifically studied to be safe and effective in improving brain chemistry and function.

## **References**

<sup>1</sup>Secades JJ, Lorenzo JL. *Meth Find Exp Clin Pharmacol*. 2006;27(Suppl B):1-56.

<sup>2</sup>Fiorvanti M, Yanagi M. In: *The Cochrane Library*, Oxford, England. 2006;Issue 4.

<sup>3</sup>Alvarez XA et al. *Meth Find Exp Clin Pharmacol*. 1997;19(3):201-10.

<sup>4</sup>Spiers PA et al. *Arch Neurol*. 1996;53:441-48.

<sup>5</sup>Silveri MM et al. *NMR Biomed*. 2008; www.interscience.wiley.com DOI:10.1002/nbm.1281.

<sup>6</sup>Conant R, Schauss AG. *Alt Med Rev*. 2004;9:1, 17-31.

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