



# Acetyl-L-Carnitine

## Function

Acetyl-L-Carnitine is similar in form to the amino acid L-Carnitine and also has some similar functions, such as being involved in the metabolism of food into energy. Acetyl-L-carnitine is a nutrient composed of two amino acids, lysine and methionine.

The acetyl group that is part of acetyl-l-carnitine contributes to the production of the neurotransmitter acetylcholine, which is required for mental function. Several double-blind clinical trials suggest that acetyl-l-carnitine delays the progression of Alzheimer's disease<sup>1,2</sup> and enhances overall performance in some people with Alzheimer's disease.<sup>3</sup> Alzheimer's research has been done with the acetyl-l-carnitine form, rather than the L-carnitine form, of this nutrient. One double-blind trial<sup>4</sup> has found that acetyl-l-carnitine may be helpful for people with degenerative cerebellar ataxia, a loss of muscular coordination caused by disease in the cerebellum (the hind part of the brain that controls muscle tone and balance).

## Sources

Acetyl-l-carnitine is a molecule that occurs naturally in the brain, liver, and kidney. It is also available as a dietary supplement.

## Deficiency

Acetyl-l-carnitine levels may decrease with advancing age. However, because it is not an essential nutrient, true deficiencies do not occur.

## Uses

Acetyl-l-carnitine has been used for the following conditions:

Age-related cognitive decline, Alzheimer's disease, Cerebellar ataxia, Degenerative depression (in the elderly people), Peripheral neuropathy, Weight loss management (especially with the Adkin's diet), Increased energy levels, Amenorrhea, and Male infertility.

## Dosage

Most research involving acetyl-l-carnitine has used 500 mg three times per day, although some research has used double this amount.<sup>5</sup>

## Contraindications

Side effects from taking acetyl-L-carnitine are uncommon, although skin rash, increased appetite, nausea, vomiting, agitation, and body odor have been reported in people taking acetyl-L-carnitine.<sup>6,7</sup>

## Drug interactions

Acetyl-L-carnitine is frequently taken by people with AIDS to combat the side effects of didanosine (severe peripheral neuropathy or loss of sensation in the arms and legs), and the didanosine depletes the acetyl-L-carnitine. Therefore more acetyl-L-carnitine will need to be taken to help prevent didanosine's side effects.

## References

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