

Acetyl-L-Carnitine: Brain Energizer and Revitalizer

Robert Crayhon, M.S. and Julie Kreloff, M.S., R.D.

A

Acetyl-L-carnitine is one of the most extensively researched brain nutrients with a proven ability to enhance mental energy and wellness. Research shows acetyl-L-carnitine:

1. Energizes the brain
2. Increases levels of important neurotransmitter chemicals needed for memory, focus, and learning
3. Repairs the damage done to brain cells caused by stress and poor nutrition.

Because of these three areas of benefit, acetyl-L-carnitine dramatically improves mental focus and energy. Best of all, its effects can be felt in as little as twenty minutes.

Signs of inadequate acetyl-L-carnitine intake include:

- Mental fatigue • Depression • Short attention span
- Decreased memory and learning ability

Acetyl-L-carnitine is a natural component of our brain's chemistry. The body makes it in small amounts. As we age, acetyl-L-carnitine levels decline. For optimal brain function, therefore, supplements of acetyl-L-carnitine are highly recommended. The only food source for this nutrient is animal brain, which is not a recommended food! Supplemental acetyl-L-carnitine, on the other hand, is synthetically derived from other amino acids, and is suitable for vegetarians.

Improving Memory and Reversing Senility

Over thirty studies show that acetyl-L-carnitine slows or prevents age related decline in mental function.¹ 1.5 g/day of acetyl-L-carnitine given to 236 older adults for forty-five days significantly increased the effectiveness of performance on all the measures of cognitive functioning, memory performance, and constructional thinking.² Twenty adults given 1.5 g of acetyl-L-carnitine experienced reversal of many of the signs of brain aging.³ Alcoholics with cognitive impairment have also benefited from acetyl-L-carnitine.⁴

Relieving Depression

Acetyl-L-carnitine is one of the most valuable compounds for relieving depression naturally.^{5,6} It does so through increasing the energy of brain cells. Energy allows brain cells to communicate better, and a social brain is a happier brain. Acetyl-L-carnitine also increases levels of compounds such as acetylcholine, which is essential for healthy mood levels.

Speeding Stroke Recovery

One hundred sixty patients who had suffered from a stroke a year or more ago were given 1.5 g of acetyl-L-carnitine a day for eight weeks. This led to increased speed of recovery, as well as improved mood and attention span.⁷

Slowing Alzheimer's

Thirty Alzheimer's patients given acetyl-L-carnitine for 6 months saw dramatically less mental deterioration.⁸ One year treatment with acetyl-L-carnitine in 130 patients with Alzheimer's also led to a slower rate of mental decline in 13 of the 14 outcome measures.⁹ A total of over 600 patients with Alzheimer's have been studied in over twenty years of research,¹⁰ confirming that acetyl-L-carnitine benefits Alzheimer's patients.¹¹⁻¹³ Acetyl-L-carnitine may also be of benefit in the management of Parkinson's disease.¹⁴

Helping Damaged Nerves and Diabetic Neuropathy

Animal models of sciatic nerve injury show that acetyl-L-carnitine dramatically increases the speed of nerve healing and prevents loss of nerve function.¹⁵ Acetyl-L-carnitine should be considered in all cases where physical injury to neurons occurs, including brain injuries from car accidents and other causes.¹⁶ Those with brain injuries report that acetyl-L-carnitine—especially when combined with phosphatidyl serine—significantly improves overall brain function, attention span, and learning ability. Acetyl-L-carnitine has also been found helpful in the management of diabetic neuropathy,¹⁷ especially when combined with lipoic acid and GLA.¹⁸

Benefits of Acetyl-L-Carnitine:

- Quickly Improves Mental Focus and Energy
- Enhances Short- and Long-Term Memory
- Relieves Depression
- Slows Progression of Alzheimer's Disease
- Protects the Brain from Stress
- Helps Repair Physically Damaged Nerves
- Helps Stroke Victims
- Helps Prevent Age-Related Memory Deterioration
- Increases Learning Capacity
- Enhances Immune Function

Immune Enhancement

Acetyl-L-carnitine has also been found to be a powerful immune enhancer. This is due to its ability to promote the health of the nervous system, which in turn governs the activity of the immune system. Acetyl-L-carnitine may offer specific benefit to HIV patients^{19, 20} and those with tuberculosis.²¹

How to Use Acetyl-L-Carnitine

Increasing mental energy	700–2,000 mg
Relieving depression	700–2,000 mg
Immune enhancement	700–2,000 mg
Brain injuries and stroke	1400–3,000 mg
Supporting Alzheimer's	2,000–3,000 mg

Acetyl-L-Carnitine is energizing, so take no later than 4:00 p.m.

Cofactor nutrients: Phosphatidyl serine, B vitamins, lipoic acid, phosphatidyl choline, and EPA/DHA.

Contraindications: Epilepsy, manic depression.

Common Questions about Acetyl-L-Carnitine

When will I start feeling the benefits of acetyl-L-carnitine?

You should begin to feel an increase in mental energy and focus within twenty minutes. For this reason, do not take it late in the day as it may delay falling asleep.

Are there any side effects to taking acetyl-L-carnitine?

Long term, there are no side effects, only benefits. This is because acetyl-L-carnitine protects and helps to regenerate the brain. Acetyl-L-carnitine is not a stimulant. It is a nutrient which naturally increases the energy of the brain.

Are there nutrients that help acetyl-L-carnitine work more effectively?

Phosphatidyl serine, B vitamins, lipoic acid, phosphatidyl choline and EPA/DHA (fish oils) all increase the effectiveness of acetyl-L-carnitine.

This flyer is for educational purposes only. The statements contained herein have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

References

1. Dowson JH, Wilton-Cox H, Cairns MR, Ramacci MT. The morphology of lipopigment in rat Purkinje neurons after chronic acetyl-L-carnitine administration: a reduction in aging-related changes. *Biol Psychiatry* 1992; 32:179-87.
2. Cipolli C, Chiari G. [Effects of L-acetylcarnitine on mental deterioration in the aged: initial results]. *Clin Ter* 1990; 132:479-510.
3. Guarnaschelli C, Fugazza G, Pistorini C. Pathological brain ageing: evaluation of the efficacy of a pharmacological aid. *Drugs Exp Clin Res* 1988; 14:715-8.
4. Tempesta E, Troncon R, Janiri L, et al. Role of acetyl-L-carnitine in the treatment of cognitive deficit in chronic alcoholism. *Int J Clin Pharmacol Res* 1990; 10:101-7.
5. Tempesta E, Casella L, Pirrongelli C, Janiri L, Calvani M, Ancona L. L-acetylcarnitine in depressed elderly subjects. A cross-over study vs placebo. *Drugs Exp Clin Res* 1987; 13:417-23.
6. Garzya G, Corallo D, Fiore A, Lecciso G, Petrelli G, Zotti C. Evaluation of the effects of L-acetylcarnitine on senile patients suffering from depression. *Drugs Exp Clin Res* 1990; 16:101-6.
7. Patti F, Marano P, Cappello S. Effects of L-Acetylcarnitine on functional recovery of hemiplegic patients. *Clin Trials J* 1988; 25:87-101.
8. Sano M, Bell K, Cote L, et al. Double-blind parallel design pilot study of acetyl levocarnitine in patients with Alzheimer's disease. *Arch Neurol* 1992; 49:1137-41.
9. Spagnoli A, Lucca U, Menasce G, et al. Long-term acetyl-L-carnitine treatment in Alzheimer's disease. *Neurology* 1991; 41:1726-32.
10. Brooks JO, 3rd, Yesavage JA, Carta A, Bravi D. Acetyl L-carnitine slows decline in younger patients with Alzheimer's disease: a reanalysis of a double-blind, placebo-controlled study using the trilinear approach. *Int Psychogeriatr* 1998; 10:193-203.
11. Rai G, Wright G, Scott L, Beston B, Rest J, Exton-Smith AN. Double-blind, placebo controlled study of acetyl-L-carnitine in patients with Alzheimer's dementia. *Curr Med Res Opin* 1990; 11:638-47.
12. Brooks JO, 3rd, Yesavage JA, Carta A, Bravi D. Acetyl L-carnitine slows decline in younger patients with Alzheimer's disease: a reanalysis of a double-blind, placebo-controlled study using the trilinear approach. *Int Psychogeriatr* 1998; 10:193-203.
13. Thal LJ, Carta A, Clarke WR, et al. A 1-year multicenter placebo-controlled study of acetyl-L-carnitine in patients with Alzheimer's disease. *Neurology* 1996; 47:705-11.
14. Pucca FM, Genco S, Specchio LM, et al. Clinical pharmacodynamics of acetyl-L-carnitine in patients with Parkinson's disease. *Int J Clin Pharmacol Res* 1990; 10:139-43.
15. De Angelis C, Scarfo C, Falcinelli M, et al. Acetyl-L-carnitine prevents age-dependent structural alterations in rat peripheral nerves and promotes regeneration following sciatic nerve injury in young and senescent rats. *Exp Neurol* 1994; 128:103-14.
16. De Angelis C, Scarfo C, Falcinelli M, Reda E, Ramacci MT, Angelucci L. Levocarnitine acetyl stimulates peripheral nerve regeneration and neuromuscular junction remodelling following sciatic nerve injury. *Int J Clin Pharmacol Res* 1992; 12:269-79.
17. Pacifici L, Bellucci A, Piovesan P, Maccari F, Gorio A, Ramacci MT. Counteraction on experimentally induced diabetic neuropathy by levocarnitine acetyl. *Int J Clin Pharmacol Res* 1992; 12:231-6.
18. Quatraro A, Roca P, Donzella C, Acampora R, Marfella R, Giugliano D. Acetyl-L-carnitine for symptomatic diabetic neuropathy [letter]. *Diabetologia* 1995; 38:123.
19. Famularo G, Moretti S, Marcellini S, et al. Acetyl-carnitine deficiency in AIDS patients with neurotoxicity on treatment with antiretroviral nucleoside analogues. *Aids* 1997; 11:185-90.
20. Scarpini E, Sacilotto G, Baron P, Cusini M, Scarlato G. Effect of acetyl-L-carnitine in the treatment of painful peripheral neuropathies in HIV+ patients. *J Peripher Nerv Syst* 1997; 2:250-2.
21. Jirillo E, Altamura M, Munno I, et al. Effects of acetyl-L-carnitine oral administration on lymphocyte antibacterial activity and TNF-alpha levels in patients with active pulmonary tuberculosis. A randomized double blind versus placebo study. *Immunopharmacol Immunotoxicol* 1991; 13:135-46.