

Alzheimer's Disease and Non-Alzheimer's Dementia

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Principal Proposed Natural Treatments

• [Acetyl-L-carnitine](#); [Ginkgo](#); [Huperzine A](#); [Phosphatidylserine](#); [Vinpocetine](#)

Other Proposed Natural Treatments

• [Aromatherapy](#); [Carnosine](#); [Citrulline](#); [Choline](#) or [Phosphatidylcholine](#); [Fish Oil](#); Treating [High Homocysteine](#); [DHEA](#); [Folate](#); [Lemon Balm](#); [Melatonin](#); [N-Acetylcysteine \(NAC\)](#); [Sage](#); [Vitamin B6](#); [Vitamin B12](#); [Vitamin E](#)

Alzheimer's disease is the most common cause of severe mental deterioration (dementia) in the elderly. It has been estimated that 30% to 50% of people over 85 years old suffer from this condition. Its cause is not known. However, microscopic examination of the brains of people who have died of Alzheimer's shows loss of cells in the thinking part of the brain, particularly cells that release a chemical called acetylcholine.

Alzheimer's begins with subtle symptoms, such as loss of memory for names and recent events. It progresses from difficulty learning new information to a few eccentric behaviors to depression, loss of spontaneity, and anxiety. Over the course of the disease, the person gradually loses the ability to carry out the activities of everyday life. Disorientation, asking questions repeatedly, and an inability to recognize friends are characteristics of moderately severe Alzheimer's. Eventually, virtually all mental functions fail.

Similar symptoms may be caused by conditions other than Alzheimer's disease, such as multiple small strokes (called multi-infarct or vascular dementia), severe alcoholism, and certain more rare causes. It is very important to begin with an examination to discover what is causing the symptoms of mental decline. Various easily treatable conditions, such as depression, can mimic the symptoms of dementia.

Four drugs have shown at least modest benefit for Alzheimer's disease or non-Alzheimer's dementia: Reminyl, Exelon, Aricept, and Cognex. These medications usually produce a modest improvement in mild to moderate Alzheimer's disease by increasing the duration of action of acetylcholine. However, they can cause sometimes severe side effects due to the exaggeration of acetylcholine's action in other parts of the body.

Principal Proposed Natural Treatments

There are two natural treatments for Alzheimer's disease with significant scientific evidence behind them: [ginkgo](#) and [phosphatidylserine](#). [Huperzine A](#) and [vinpocetine](#), while more like drugs than natural remedies, may also improve mental function in people with dementia. [Acetyl-L-carnitine](#) was once considered a promising option for this condition as well, but current evidence suggests that it does not work.

Ginkgo

The most well-established herbal treatment for Alzheimer's disease is the herb *Ginkgo biloba*. Numerous high quality [double-blind, placebo-controlled studies](#) indicate that ginkgo is effective for treating various forms of dementia.^{1-4,76,79,80,83,91} A 1997 US trial enrolled more than 300 participants with Alzheimer's disease or non-Alzheimer's dementia.⁸⁰ Participants were given either 40 mg of *Ginkgo biloba* extract or placebo 3 times

daily for a period of 52 weeks. The results showed significant but not entirely consistent improvements in the treated group.

Another study published in 2007 followed 400 people for 22 weeks, and used twice the dose of ginkgo employed in the study just described.⁷⁹ The results of this trial indicated that ginkgo was significantly superior to placebo. The areas in which ginkgo showed the most marked superiority as compared to placebo included, “apathy/indifference, anxiety, irritability/lability, depression/dysphoria and sleep/nighttime behavior.”

On the other hand, one fairly large study of ginkgo extract drew headlines for concluding that ginkgo is ineffective.⁵ This 24-week, double-blind, placebo-controlled study of 214 participants with either mild to moderate dementia or ordinary age-associated memory loss found no effect with ginkgo extract at a dose of 240 mg or 160 mg daily. However, this study has been sharply criticized for a number of serious flaws in its design.⁶ But in another community-based study among 176 elderly subjects with early-stage dementia, researchers found no beneficial effect for 120 mg of ginkgo extract given daily for 6 months.⁸⁶

A 2011 systematic review of 9 placebo-controlled, randomized trials did find more promising evidence for ginkgo.⁹¹ The trials, which involved 2,372 people with Alzheimer's disease or another form of dementia, ranged from 12-52 weeks. Those in the ginkgo group did have improvements in their cognition scores. And, a subgroup of people with Alzheimer's disease also showed improvements in their activities of daily living.

The ability of ginkgo to prevent or delay a decline in cognitive function is less clear. In a placebo-controlled trial of 118 cognitively intact adults 85 years or older, ginkgo extract seemed to effectively slow the decline in memory function over 42 months. The researchers also reported a higher incidence of stroke in the group that took ginkgo, a finding that requires more investigation.⁸²

In a 2009 review of 36 randomized trials involving 4,423 patients with declining mental function (including dementia), researchers concluded ginkgo appears safe. But, they also found inconsistent evidence regarding whether it works.⁸⁹

For more information, including dosage and safety issues, see the full [Ginkgo](#) article.

Phosphatidylserine

Phosphatidylserine (PS) is one of the many substances involved in the structure and maintenance of cell membranes. Double-blind studies involving a total of more than 1,000 people suggest that phosphatidylserine is an effective treatment for Alzheimer's disease and other forms of dementia.

The largest of these studies followed 494 elderly subjects in northeastern Italy over a course of 6 months.⁷ All suffered from moderate to severe mental decline, as measured by standard tests. Treatment consisted of 300 mg daily of either PS or placebo. The group that took PS did significantly better in both behavior and mental function than the placebo group. Symptoms of depression also improved.

These results agree with those of numerous smaller double-blind studies involving a total of more than 500 people with Alzheimer's and other types of age-related dementia.⁸⁻¹⁵

However, the form of phosphatidylserine available as a supplement has altered since the studies described above were performed, and the currently available form may not be equivalent. For more information, including dosage and safety issues, see the full [Phosphatidylserine](#) article.

Huperzine A

Huperzine A is a chemical derived from a particular type of club moss (*Huperzia serrata*). Like caffeine and cocaine, huperzine A is a medicinally active, plant-derived chemical that belongs to the class known as alkaloids. This substance is really more a drug than an herb, but it is sold over-the-counter as a dietary supplement for memory loss and mental impairment.

According to 3 Chinese double-blind trials enrolling a total of more than 450 people, use of huperzine A can

significantly improve symptoms of Alzheimer's disease and other forms of dementia.³²⁻³⁴ However, one double-blind trial failed to find evidence of benefit, but it was a relatively small study.³⁵ In a review of 6 randomized controlled trials, researchers concluded that, on balance, huperzine A is probably of some benefit in Alzheimer's disease, but the variable quality of these studies weakens this conclusion.⁸⁴

For more information, including dosage and safety issues, see the full [Huperzine A](#) article.

Vinpocetine

Vinpocetine is a chemical derived from vincamine, a constituent found in the leaves of common periwinkle (*Vinca minor*) as well as the seeds of various African plants. It is used as a treatment for memory loss and mental impairment.

Developed in Hungary more than 20 years ago, vinpocetine is sold in Europe as a drug under the name Cavinton. In the US, it is available as a so-called dietary supplement, although the substance probably doesn't fit that category by any rational definition. Vinpocetine doesn't exist to any significant extent in nature. Producing it requires significant chemical work performed in the laboratory.

Several double-blind studies have evaluated vinpocetine for the treatment of Alzheimer's disease and related conditions.^{23,43-49} Unfortunately, most of these suffered from significant flaws in design and reporting. A review of the literature found three studies of acceptable quality, enrolling a total of 583 people.²³ Perhaps the best of these was a 16-week, double-blind, placebo-controlled trial of 203 people with mild to moderate dementia which found significant benefit in the treated group.⁴³ However, even this trial suffered from several technical limitations, and the authors of the review concluded that vinpocetine cannot yet be regarded as a proven treatment. Currently, several better quality trials are underway.²³

For more information, including dosage and safety issues, see the full [Vinpocetine](#) article.

Acetyl-L-carnitine

[Carnitine](#) is a vitamin-like substance that is often used for angina, congestive heart failure, and other heart conditions. A special form of carnitine, acetyl-L-carnitine, has been extensively tested for the treatment of dementia: double- or single-blind studies involving a total of more than 1,400 people have been reported.^{53-64,68}

However, while early studies found evidence of modest benefit, two large and well-designed studies failed to find acetyl-L-carnitine effective at all. The first of these was a double-blind, placebo-controlled trial that enrolled 431 participants for 1 year.⁶⁵ Overall, acetyl-L-carnitine proved no better than placebo. However, because a close look at the data indicated that the supplement might help people who develop Alzheimer's disease at an unusually young age, researchers performed a follow-up trial. This 1-year, double-blind, placebo-controlled trial evaluated acetyl-L-carnitine in 229 patients with early-onset Alzheimer's.⁶⁴ Unfortunately, no benefits were seen here either.

One review of literature interpreted the cumulative results to mean that acetyl-L-carnitine may be mildly helpful for mild Alzheimer's disease.²² However, another review concluded that if acetyl-L-carnitine does offer benefits for any form of Alzheimer's disease, they are too minor to make much of a practical difference.²¹

For more information, including dosage and safety issues, see the full [Carnitine](#) article.

Other Proposed Natural Treatments

Two small double-blind studies performed by a single research group found evidence that the herbs [sage](#)²⁰ and [lemon balm](#)¹⁹ can improve cognitive function in people with mild to moderate Alzheimer's disease.

One study found that vitamin E (dl-alpha-tocopherol) may slow the progression of Alzheimer's disease, but another did not.^{66,72} A very large study failed to find that use of vitamin E reduced risk of general mental decline (whether caused by Alzheimer's or not) in women over 65.⁷⁵

Vitamins B6, B12, and folate have also been studied. Researchers found that daily intake of these vitamins did not improve cognitive ability in older men with high blood pressure, nor did it reduce the risk of dementia.⁹⁰

Very preliminary evidence suggests that N-acetylcysteine (NAC) might be helpful for slowing the progression of Alzheimer's disease.⁶⁷

Lavender oil used purely as aromatherapy (treatment involving inhaling essential oils) has been advocated for reducing agitation in people with dementia⁵²; however, people with dementia tend to lose their sense of smell, making this approach seem somewhat unlikely to work.⁶⁹ Topical use of essential oil of the herb lemon balm has also shown promise for reducing agitation in people with Alzheimer's disease⁵¹; the researchers who tested it considered their method aromatherapy because the fragrance wafts up from the skin, but essential oils are also *absorbed* through the skin and this mechanism of action seems more plausible. Oral use of lemon balm extract has also shown promise.⁷⁰

As we explained at the beginning of this article, drugs used for Alzheimer's disease affect levels of acetylcholine in the body. The body makes acetylcholine out of the nutrient choline. On this basis, supplements containing choline or the related substance phosphatidylcholine have been proposed for the treatment of Alzheimer's disease, but the results of studies have not been positive.²⁴⁻²⁸ One special form of choline, however, has shown more promise. In a 6-month, double-blind study of 261 people with Alzheimer's disease, use of choline alfoscerate at a dose of 400 mg 3 times daily significantly improved cognitive function as compared to placebo.¹⁸

Colostrin, a substance derived from colostrum, has shown some promise for treatment of Alzheimer's.⁷¹

Bee pollen, carnosine, citrulline, DMAE,^{42,50} inositol, magnesium, pregnenolone, vitamin B₁, and zinc have also been suggested as treatments for Alzheimer's disease. However, as yet there is no reliable scientific evidence to support their use. Elevated blood levels of the substance homocysteine have been suggested as a contributor to Alzheimer's disease and multi-infarct dementia. However, a double-blind, placebo-controlled study failed to find that homocysteine-lowering treatment using B-vitamins was helpful for multi-infarct dementia.⁷³ Similarly, two studies failed to find benefits in people with Alzheimer's disease.^{81,88} In another study, a mixture of B-vitamins did not improve quality of life in people with mild cognitive impairment of various causes.⁷⁸ Early reports suggested that declining levels of the hormone DHEA cause impaired mental function in the elderly. On this basis, DHEA has been promoted as a cognition-enhancing supplement. However, the one double-blind study that tested DHEA for Alzheimer's disease found little to no benefit.^{16,17}

Studies of fish oil have failed to find it helpful for Alzheimer's disease, whether for delaying its onset, slowing its progression, or improving its symptoms.^{74,77,87}

In a sizable Danish trial, researchers investigated the effects of melatonin and light therapy (bright light exposure during daylight hours) on mood, sleep, and cognitive decline in elderly patients, most of whom suffered from dementia.⁸⁵ They found that melatonin 2.5 mg, given nightly for an average of 15 months, slightly improved quality of sleep, but it worsened mood. Melatonin apparently had no significant effect on cognition. On the other hand, light therapy alone slightly decreased cognitive and functional decline and improved mood. Combining melatonin with light therapy improved mood and quality of sleep. In a systematic review of 5 randomized trials including 323 people with dementia, researchers failed to find evidence that melatonin is helpful in enhancing memory and other cognitive abilities.⁹² In 2 of the trials, however, melatonin was associated with short-term improvement in mood and behavior.

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