

About vitamin E

This fact sheet is provided for your information only and does not represent an endorsement of vitamin E supplements by the Alzheimer's Association.

How might vitamin E supplements benefit a person with Alzheimer's disease?

The normal cell function called “oxidative metabolism” results in byproducts known as free radicals. Free radicals are highly reactive compounds that quickly “attack” critical cell structures. Cells have natural defenses against this damage, which include the antioxidants vitamins C and E, but with age some of these protective mechanisms decline. Brain cell damage caused by free radicals may play a role in Alzheimer's disease.

What was the result of the multicenter national study of vitamin E and Alzheimer's disease?

Research reported in the April 24, 1997, issue of the *New England Journal of Medicine* investigated the effectiveness of vitamin E and selegiline, a drug with antioxidant properties that is prescribed for treating Parkinson's disease. The research was part of the Alzheimer's Disease Cooperative Study, a consortium of academic Alzheimer research centers sponsored by the U.S. National Institute on Aging. The study suggests that either selegiline or vitamin E delays the occurrence in patients with Alzheimer's disease to one or more of the following “endpoints”: death, institutionalization, progression from moderate to severe dementia, or loss of ability to perform two of three basic activities of daily living (eating, grooming or toileting). When both agents were given together, there was also a delay in progression of Alzheimer's disease as measured by these endpoints. However, both agents together did *not* help more than either drug alone. These agents did not improve memory and thinking test scores.

These results are encouraging but as yet have not been confirmed by other studies. We also do not know if these agents would be helpful in milder or severe stages of

Alzheimer's disease. There was no evidence that intellectual deterioration was slowed. Finally, any medication may have side effects or potential interactions with other drugs. For example, it is known that certain doses of selegiline (higher than those used in the study) can lead to serious interactions with some types of foods and certain medications.

Should vitamin E be prescribed?

Vitamin E worked at least as well as selegiline on Alzheimer's progression in this study and had fewer side effects. Vitamin E also costs less. For these reasons it is preferred over selegiline in Alzheimer's disease treatment. Vitamin E is considered to be a relatively safe medication and most people can take it without side effects. However, any change in medications should first be discussed with your primary care physician because all medication can cause side effects or interactions with other medications. People taking “blood-thinners” like warfarin (Coumadin®), ticlopidine (Ticlid®), and others may not be able to take vitamin E or will need to be monitored closely by their physician if they are taking vitamin E.

What dose of vitamin E is appropriate?

Exactly what dose of vitamin E is the “best” is not known. The doses of vitamin E in the study were 2,000 IU daily. Other doses need to be studied to answer this question confidently. Many doctors recommend 400 IU twice daily because they believe this dosage to be safe for most individuals and it should have the antioxidant effect desired in the brain.

Are there other drugs available to treat symptoms of Alzheimer's?

The first Alzheimer medications approved by the U.S. Food and Drug Administration (FDA) were cholinesterase (*KOH luh NES ter ays*) inhibitors. Three of these drugs are commonly prescribed—donepezil (Aricept®), approved in 1996; rivastigmine (Exelon®), approved in 2000; and galantamine (Reminyl®), approved in 2001. Tacrine (Cognex®), the first cholinesterase inhibitor, was approved

in 1993 but is rarely prescribed today because of associated side effects, including possible liver damage. All of these drugs work by preventing the breakdown of acetylcholine (pronounced *a SEA til KOH lean*), a chemical messenger in the brain that is important for memory and other thinking skills.

Memantine, approved in 2003, is classified as an *uncompetitive low-to-moderate affinity N-methyl-D-aspartate (NMDA) receptor antagonist*, the first Alzheimer drug of this type approved in the United States. It appears to work by regulating the activity of glutamate, another of the brain's specialized messenger chemicals involved in information processing, storage and retrieval.

These drugs have primary mechanisms of action that are different from the mechanism of vitamin E. There are also several experimental Alzheimer drugs under investigation at study sites nationwide. To obtain information about FDA-approved medications or investigational drugs, please call us 1.800.272.3900 or visit our Web site at www.alz.org.

What other help is available for people with Alzheimer's disease and their families?

Through their collective experience, families and professional caregivers have developed a wide range of strategies to help manage symptoms of Alzheimer's disease and to help reduce its impact on affected individuals, families and friends. Helpful strategies include environmental and behavioral modifications, activity programs, and support and respite services.

Resources

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The Alzheimer's Association is fighting on your behalf to give everyone a reason to hope. For more information about Alzheimer research, treatment and care, please contact the Alzheimer's Association.

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