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Not enough research has been done to say whether SAM-e can treat depression, arthritis, or liver disease.

SAM-e is a compound produced naturally by the human body. It acts on a number of important molecules including hormones, neurotransmitters, fatty acids, DNA, proteins, and cell membranes. In the United States, SAM-e is marketed as a supplement to enhance mood, brain and neural function, joint mobility, and liver detoxification.

Data suggest that SAM-e has anti-inflammatory and antidepressant properties. Lower levels of SAM-e have been observed with various diseases such as depression, Alzheimer's and liver disease. However, study results on SAM-e for these conditions are mixed. In osteoarthritis, a few studies suggest benefit comparable with standard medications, but a panel could not recommend it for pain. More study is needed to determine safety and potential benefits.

SAM-e may interact with medications such as antidepressants, or other natural products that also affect serotonin levels. Therefore, patients should consult with their physician before taking this supplement.

What are the potential uses and benefits?

- To treat arthritis
A few studies show that SAM-e is as effective as conventional treatments in treating osteoarthritis, but a panel could not recommend it for pain because of insufficient evidence. More studies are needed.
- To treat chronic liver disease
Earlier studies found SAM-e helpful in chronic liver disease, but additional studies are needed to confirm this.
- To treat drug-induced liver toxicity
Initial studies suggest that SAM-e may help reduce liver toxicity caused by some drugs, but more studies are needed to confirm safety as well as effectiveness.

- To treat depression
Clinical studies produced conflicting results or were poorly designed. More studies are needed to evaluate this use.
- To treat hot flashes
A preliminary study suggests SAM-e is ineffective for this use.
- To treat muscle pain
Older studies of SAM-e for fibromyalgia suggest some benefit, but a panel could not recommend it for pain because of insufficient evidence. More studies are needed.
- To treat AIDS-related spinal cord disease
One study did not show significant benefits in this patient population.
- To treat Alzheimer's disease
Studies that evaluate SAM-e alone without the use of other supplements for Alzheimer's disease are lacking.

What are the side effects?

- Headache
- Mild stomach upset
- Flatulence
- Nausea and vomiting
- Patients with bipolar disorder may develop mania

What else do I need to know?

Patient Warnings:

Patients taking selective serotonin reuptake inhibitors (SSRIs), monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants, or other drugs that affect serotonin levels should avoid taking SAM-e without the supervision of a physician due to case reports of mania and serotonin syndrome, a serious condition, or other side effects.

Use of this supplement should be avoided if taking other supplements such as [5-HTP](#) or [St John's wort](#) because these products may also affect serotonin levels.

Patients who are immunocompromised should avoid this supplement due to concerns that SAM-e could enhance the growth of a microorganism called *Pneumocystis carinii*.

Do Not Take if:

You have bipolar disorder: There have been case reports of mania in patients with bipolar disorder.

You are immunocompromised: There is a theoretical risk that SAM-e could enhance the growth of a microorganism called *Pneumocystis carinii*.

You are taking clomipramine: There is a report of serotonin syndrome in a woman after simultaneous use of clomipramine and SAM-e.

You are taking antidepressants or anxiolytics (including tricyclics, MAOIs, and SSRIs) : Because many of these drugs also affect serotonin levels, there is an increased risk for side effects or toxicities if you also take SAM-e. Discuss any use of this supplement

with your treating physician.

You are taking levodopa: There is concern that taking SAM-e over a period of time may decrease the effectiveness of L-dopa, which is used for Parkinson's disease. Discuss any use of this supplement with your treating physician.

You are taking [St John's wort](#): Because SJW may also affect serotonin levels, the use of multiple herbs that do this should be avoided to reduce risks for excess serotonin in the body, a serious condition.

You are taking [5-HTP](#) : Because 5-HTP may also affect serotonin levels, the use of multiple herbs that do this should be avoided to reduce risks for excess serotonin in the body, a serious condition.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

SAM-e - Last updated on November 9, 2022

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