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Memorial Sloan Kettering  
Cancer Center

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[Leadership](#)

[History](#)

[Equality, diversity & inclusion](#)

[Annual report](#)

[Give to MSK](#)

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](http://www.mskcc.org/pe) to search our virtual library.

SAM-e - Last updated on November 9, 2022

The image shows a dark blue navigation menu for the Memorial Sloan-Kettering Cancer Center (MSK) website. The menu is organized into several sections, each with a downward-pointing arrow icon:

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  - [Contact us](#)
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  - APPOINTMENTS
  - [800-525-2225](#)
  - Five small white square icons arranged vertically.
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  - [About us](#)
  - [Careers](#) 
  - [Giving](#) 
- Cancer Care**
  - [Adult cancer types](#)
  - [Child & teen cancer types](#)
  - [Integrative medicine](#)
  - [Nutrition & cancer](#)
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- Research & Education**
  - [Sloan Kettering Institute](#)

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