

SAM-E

CLINICAL APPLICATIONS

- Provides Mood Support
- Supports Musculoskeletal Health
- Supports Liver Health

What is SAME?

S-Adenosylmethionine (SAME) is the active methyl form of the amino acid methionine. SAME is necessary for an array of biochemical pathways, including neurotransmitter synthesis, metabolism of homocysteine, and detoxification. As a donor of methyl groups, SAME supports glutathione production, liver health, musculoskeletal and joint comfort, and a positive mood. This formulation of SAME includes 400 mcg of 5-methyltetrahydrofolic acid, as pathways using SAME are dependent on this methylated cofactor.

Overview

SAME is a principle methyl donor for biochemical reactions throughout the body.¹ This methyl transfer is critical to reactions involving proteins, phospholipids, DNA, RNA, creatine, hormones, development of cell membranes, degradation of histamine, and formation of norepinephrine and dopamine.^{2,3}

Deficiency†

SAME levels tend to decline as people age. In addition, SAME is used in the production of the mood elevating neurotransmitter serotonin as a methyl donor. Low levels of SAME have been associated with certain mood challenges.

Detox Support and Antioxidant Protection†

SAME is an essential molecule in the synthesis of glutathione, a key component of antioxidant and detoxification.⁵ After donating a methyl group, SAME is converted to S-adenosylhomocysteine (SAH), a reaction that promotes the trans-sulfuration pathway in the liver that produces glutathione. SAH is then broken

down to trimethylglycine (TMG), or betaine anhydrous which plays an important role in maintaining a healthy SAME:SAH ratio in the liver. Studies show SAME supports liver health^{6,7} and positively affects the cell-life regulation of hepatocytes.⁸

Mood Health†

SAME appears to support mood health, possibly due to its active role in methylation and involvement in the formation of monoamine neurotransmitters.⁹⁻¹² A meta-analysis showed SAME supported a healthy mood compared to placebo, with an effect comparable to that of other treatments.¹³ A 30-day, double-blind, placebo-controlled, randomized study of 80 women suggested that there was a significant improvement in mood after the women received an oral dose of 1,600 mg/day of SAME compared to placebo.¹⁴ Another study of 143 subjects who received an oral dose of 1,600 mg/day of SAME suggested that SAME yielded positive results that were comparable to other treatments for supporting a healthy mood, but SAME was better tolerated.¹⁵ In a small, four-week, double-blind, randomized trial comparing oral SAME with other treatments, 62% of the SAME group showed significant improvement in mood and the study revealed a significant correlation between plasma SAME levels and the degree of healthy mood support, regardless of treatment type.¹⁶

Folate

Folate is a water-soluble member of the B-complex vitamins that is critical for maintaining optimal methylation pathways. Malabsorption and genetic defects in the enzyme 5-methyltetrahydrofolate reductase (5-MTHFR) can result in an impaired ability to activate folic acid. Folic acid

supports the trans-methylation pathway, which metabolizes homocysteine into cysteine. Increases in oxidative stress may shift homocysteine metabolism towards trans-sulfuration to increase hepatic production of reduced glutathione.³

Directions

1-2 capsules two times per day or as recommended by your health care professional.

Does Not Contain

Gluten, corn, yeast, artificial colors or flavors.

Cautions

If you are pregnant or nursing, consult your physician before taking this product.

Warning

This product should not be taken with any anti-depressant drugs (MAO Inhibitors, bicyclic, tricyclic, Fluoxetine, etc.) unless under close supervision of your health care professional.

Supplement Facts ^{v7}		
Serving Size 2 Capsules Servings Per Container 30		
	Amount Per Serving	% Daily Value
Folate (from 400 mcg as Quatrefolic® 680 mcg DFE (6S)-5-Methyltetrahydrofolic acid glucosamine salt)		170%
SAMe (as S-Adenosyl-L-methionine disulfate p-toluenesulfonate)	400 mg	*
* Daily Value not established.		

References

1. Halsted CH, Medici V. Vitamin-dependent methionine metabolism and alcoholic liver disease. *Adv Nutr.* 2011 Sep;2(5):421-7. [PMID: 22332083].
2. Lu SC. S-Adenosylmethionine. *Int J Biochem Cell Biol.* 2000 Apr;32(4):391-5. [PMID: 10762064].
3. Friedel HA, Goa KL, Benfield P. S-adenosyl-L-methionine. A review of its pharmacological properties and therapeutic potential in liver dysfunction and affective disorders in relation to its physiological role in cell metabolism. *Drugs.* 1989 Sep;38(3):389-416. [PMID: 2680435].
4. Mato JM, Lu SC. Role of S-adenosyl-L-methionine in liver health and injury. *Hepatology.* 2007 May;45(5):1306-12. [PMID: 17464973].
5. Natural Standard Database. SAMe. <http://naturalstandard.com/databases/herbssupplements/same.asp?#undefined>. Accessed October 21, 2012.
6. Kharbanda KK. Alcoholic liver disease and methionine metabolism. *Semin Liver Dis.* 2009 May;29(2):155-65. [PMID: 19387915].
7. Kharbanda KK, Rogers DD 2nd, Mailliard ME, et al. A comparison of the effects of betaine and Sadenosylmethionine on ethanol-induced changes in methionine metabolism and steatosis in rat hepatocytes. *J Nutr.* 2005 Mar;135(3):519-24. [PMID: 15735087].
8. Mato JM, Lu SC. Role of S-adenosyl-L-methionine in liver health and injury. *Hepatology.* 2007 May;45(5):1306-12. [PMID: 17464973].
9. Papakostas GI, Cassiello CF, Iovieno N. Folates and s-adenosylmethionine for major depressive disorder. *Can J Psychiatry.* 2012 Jul;57(7):406-13. [PMID: 22762295].
10. Baldessarini RJ. Neuropharmacology of S-adenosyl Lmethionine. *Am J Med.* 1987 Nov 20;83(5A):95-103. [PMID: 3318448].
11. Morgan AJ, Jorm AF. Self-help interventions for depressive disorders and depressive symptoms: a systematic review. *Ann Gen Psychiatry.* 2008 Aug 19;7:13. [PMID: 18710579].
12. Miller AL. The methylation, neurotransmitter, and antioxidant connections between folate and depression. *Altern Med Rev.* 2008 Sep;13(3):216-26. [PMID: 18950248].
13. Bressa GM. S-adenosyl-L-methionine (SAMe) as antidepressant: meta-analysis of clinical studies. *Acta Neurol Scand Suppl.* 1994;154:7-14. [PMID: 7941964].
14. Salmaggi P, Bressa GM, Nicchia G, et al. Double-blind, placebo-controlled study of S-adenosyl-L-methionine in depressed postmenopausal women. *Psychother Psychosom.* 1993;59(1):34-40. [PMID: 8441793].
15. Delle Chiaie R, Pancheri P, Scapicchio P. Efficacy and tolerability of oral and intramuscular S-adenosyl-Lmethionine 1,4-butanedisulfonate (SAMe) in the treatment of major depression: comparison with imipramine in 2 multicenter studies. *Am J Clin Nutr.* 2002 Nov;76(5):1172S-6S. [PMID: 12418499].
16. Bell KM, Potkin SG, Carreon D, et al. S-adenosylmethionine blood levels in major depression: changes with drug treatment. *Acta Neurol Scand Suppl.* 1994;154:15-8. [PMID: 7941961].