

SAMe (s-adenyl methionine)

- General
 - Discovered in 1952
 - Clinically studied beginning in 1977
 - Physiological compound distributed naturally throughout all tissues and fluids of the human body where it is fundamental to more than 100 biochemical reactions.
 - Anti-inflammatory
 - Reduces pro-inflammation TNF-alpha, IL-6
 - Increases anti-inflammatory IL-10
 - Neuroprotective
- Evidence
 - Papakostas et al, 2010
 - RCT, DB, SAMe (1600 mg/day) vs. placebo add-on to SSRI-resistant MDD
 - Response rates: 45% with SAMe vs. 18% with placebo
 - Remission rates: 36% with SAMe vs. 12% with placebo
 - One meta-analysis suggested about 17-38% more effective than placebo, comparable to average antidepressant
 - Multiple studies on the efficacy/safety of SAMe in the treatment of adult depression (793 clients in controlled studies and 377 clients in uncontrolled studies; longest trial 42 days) demonstrated mixed evidence of efficacy
 - One small, open (uncontrolled), 4 week trial looked at safety and efficacy of 2400 mg of SAMe in the treatment of adult ADHD; it demonstrated good effect with minimal side effects
 - Some evidence that adding 200 mg SAMe to standard dose of imipramine speeds response.
 - From 1979-1997, over 20 clinical studies with more than 22,000 clients with osteoarthritis demonstrating safety and efficacy in the treatment of osteoarthritis.
 - May repair liver damage
 - May lower homocysteine levels (and lower risk for heart attack)
 - May have anti-inflammatory and analgesic effects
- Mechanism
 - Involved in transmethylation reactions, including those involved in the synthesis and activation of neurotransmitters
 - Potentially increases activity and availability of serotonin, norepinephrine, and dopamine
 - May block reuptake of serotonin, norepinephrine, and dopamine
 - Homocysteine
 - levels rise with age
 - levels rise when one is deficient in vitamin B
 - levels decrease with higher levels of folate and vitamins B6 and B12
 - increased homocysteine decreases SAMe and is a risk factor for depression (and heart disease)
- Dosing
 - **Depression**
 - **200-800 mg/day if mild**
 - **800-2800 if moderate to severe**

- **200 mg/day as adjunct**
 - Arthritis: 400-1600 mg/day
 - Fibromyalgia: 400-2400
 - **Start with 200-400 mg before breakfast; increase by 200-400 mg every 5-7 days**
 - **Administer 30-60 minutes before breakfast or lunch or 2 hours after a meal**
 - **Administer 2-3 times-a-day**
 - **Do NOT refrigerate**
 - **Do NOT break the tabs**
 - **Also take 0.5-1 mg/day vitamin B12 when using SAME**
 - Takes 2-4 weeks for efficacy
 - **NatureMade, Jarrow, GNC are solid brands**
- Side effects/risks include:
 - Gastrointestinal (worse when mixed with caffeine)
 - Nausea
 - Heart burn
 - Loose bowels
 - Palpitations
 - Headaches
 - Mania