



SAME

Helps to support healthy mood balance & relieve osteoarthritic pain

“The beneficial effects of SAME supplementation are far-reaching due to its central role in so many metabolic processes. Currently, the main uses of SAME are in the treatment of depression, fibromyalgia, liver disorders, migraine headaches and osteoarthritis.”—Dr Michael Murray, *The Pill Book Guide to Natural Medicines*.

How can one dietary supplement help so many serious health conditions? Could it be another case of hype over substance? Consider some of the research on SAME:

WHAT IS SAME

SAME (pronounced “sammy”) is short for S-adenosyl-L-methionine or S-adenosyl-methionine, a natural molecule formed in the body by methionine and adenosyl-triphosphate (ATP). What does this mean to the average person? As it is found in every cell, SAME participates in over 40 important biochemical reactions. One such chemical reaction is called ‘methylation’, a process that happens in our body about a billion times per second. As a methyl donor, SAME ‘donates’ or gives up a carbon molecule to help other molecules become active. Three key ways SAME works:

- 1) As it is involved in the manufacture of sulfur compounds, it helps to produce cartilage, making it beneficial for osteoarthritis;
- 2) By producing and regulating hormones and mood-building neurotransmitters such as dopamine, serotonin, melatonin and adrenaline, SAME aids depressive disorders;
- 3) As a building block for glutathione, cysteine and taurine (important antioxidants) it supports liver function. Why may we need SAME? Even though the body can produce enough from our food, persons with depression and other serious disorders may not make enough SAME or have low levels of this important compound.

YEARS OF RIGOROUS TESTING

While we are just beginning to hear about it in North America, SAME has undergone 20 years of research and study in Europe with excellent results. “In dozens of European trials involving thousands of patients, it has performed as well as traditional treatments for arthritis and major depression. Research suggests it can also ease normally intractable liver conditions. SAME doesn’t seem to cause adverse effects, even at high doses. And doctors have prescribed it successfully for two decades in the 14 countries where it has been approved as a drug” (Cowley, *et al*).

- SAME helps to produce cartilage because it is involved in the manufacture of sulfur compounds.
- It helps to produce and regulate hormones and mood-building neurotransmitters such as dopamine, serotonin, melatonin, and adrenaline.
- SAME is a building block for important antioxidants such as glutathione, cysteine, and taurine.
- “In dozens of European trials involving thousands of patients, it has performed as well as traditional treatments for arthritis and major depression.” (Cowley, *et al*).
- “Perhaps nowhere are SAME’s benefits so dramatic as in the liver” (Grazi, *et al*).
- It is already found in the body so supplemental SAME is very safe for long-term use.
- High quality Natural Factors SAME tablets are enteric coated allowing passage through the stomach for absorption in the intestine.

DOES IT HELP DEPRESSION

Supplemental SAME helps to raise serotonin, dopamine and phosphatidylserine levels. Dr Richard Brown, associate professor of clinical psychiatry at Columbia University, has been advocating the use of SAME for several years. He finds that it works better and faster than prescription antidepressants and without the side effects.

In 1994, Italian researchers conducted a meta-analysis of the clinical studies on SAME to compare its efficacy with that of placebo and standard tricyclic antidepressants. Their conclusion? “The efficacy of SAME in treating depressive syndromes and disorders is superior with that of placebo and comparable to that of standard tricyclic antidepressants. Since SAME is a naturally-occurring compound with relative few side effects, it is a potentially important treatment for depression” (Bressa).

A double-blind trial of 18 patients who met the criteria for major depression showed that SAME was superior to imipramine. SAME produced superior results by the end of the first week and by the “end of the second week, 66% of the S-adenosyl-

L-methionine patients had a clinically significant improvement in depressive symptoms, compared to 22% of the imipramine patients. Side effects appeared to be fewer with S-adenosyl-methionine than with imipramine during the last 5 days of the study" (Bell, *et al.*).

CAN IT HELP ARTHRITIS

While Italian researchers were studying SAME's effect on depression they noticed an interesting phenomenon. The patients in the studies had an improvement in their arthritic disorders. As far back as 1975, in an Italian open trial, 90 patients with severe degenerative forms of arthritis were given 30 mg SAME intravenously twice a day for 14 days. The SAME had a marked anti-inflammatory effect with no side effects. In a double-crossover investigation SAME was compared to indomethacin. "The therapeutic responses of the two drugs proved exactly alike, whereas the side effects following indomethacin administration were not present after SAME" (Polli, *et al.*).

In a double-blind multicenter study, 734 patients (582 had osteoarthritis of the hip or knee) were given 1,200 mg daily of SAME, the NSAID naproxen or placebo. According to the evaluations, the SAME was as effective as naproxen with fewer side effects (Caruso, *et al.*).

Not only does SAME work as an anti-inflammatory, it actually seems to promote cartilage metabolism.

SAME AND THE LIVER

"Perhaps nowhere are SAME's benefits so dramatic as in the liver" (Grazi, *et al.*). Studies show that SAME may prevent or reverse liver damage caused by alcohol, steroids and acetaminophen. SAME can help to promote bile flow and inactivate excess estrogens. "Four studies (including three double-blind ones) demonstrate that oral SAME decreases toxicity and increases bile salts and overall hepatic functioning substantially even in active alcoholics. SAME's beneficial effects in drug-detoxification appear to be caused by its dual impact on improving liver function and depression-related brain chemistry" (Horowitz, *et al.*).

CAN IT HELP FIBROMYALGIA?

At this point the research on SAME and fibromyalgia is still inconclusive. Several

small clinical trials show that it may help some of the symptoms of fibromyalgia. A larger study of 44 patients with fibromyalgia who were given 800 mg daily for six weeks, researchers noted an improvement in pain, fatigue, morning stiffness and mood but there was no change in the tender point score (Jacobsen, *et al.*). Still SAME was without side effects and when compared to TENS (transcutaneous electrical nerve stimulation), a popular treatment for fibromyalgia, SAME was significantly more effective (Di Benedetto, *et al.*).

SAME AND MIGRAINES

SAME has been used successfully in the treatment of migraines. The effects are felt gradually and require long-term treatment.

SAFETY

As a natural molecule already found in the body, supplemental SAME has proved to be very safe for long-term use with hardly any side effects, especially when compared to prescription drugs. There is a caution for those with bipolar disorder or manic depression. It could worsen the 'mania' phase of their depression. However, a small pilot study suggests that SAME may help boost the effects of antidepressants to help patients when regular treatments fail.

If there are not enough B vitamins available to the body, SAME could break down into homocysteine, an amino acid that is correlated with heart disease. With the proper amount of B vitamins SAME is re-methylated into methionine rather than homocysteine, so we suggest that anyone taking SAME ensure they get enough B vitamins, such as found in a good multivitamin or B-complex.

DOSAGE

Persons currently treated for liver disease, arthritic conditions or depression should use SAME under the supervision of their health care practitioner. It is suggested that persons with liver disorders take 800 mg twice a day; osteoarthritis sufferers could benefit from 600 to 1,200 mg per day in divided doses; the dosage for persons with depressive disorders ranges from 200 to 800 mg twice a day; migraine headache sufferers should take 200 to 400 mg twice a day.

NATURAL FACTORS SAME

As with most nutritional supplements, you do get what you pay for, and SAME is not inexpensive. Natural Factors high quality SAME tablets are enteric coated so they can easily pass through the stomach to be absorbed in the intestine. While other types of SAME are being touted, Natural Factors tosylate form SAME is the form used in the European clinical trials.

KEY REFERENCES

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