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## Q&amp;A

**TMG, Breast Cancer, and more****Q:** *What is TMG, and why do I need it?*

TMG, or trimethylglycine, is a potent remethylation agent derived from sugar beets. This supplement is used to protect against the damaging effects of a toxic amino acid called homocysteine, which has been linked to cardiovascular and Alzheimer's disease. Elevated homocysteine has also been linked to complications in diabetes, lupus, and other chronic diseases. The "tri" means there are three methyl groups on each glycine molecule that can be transferred to homocysteine to remethylate it into methionine and s-adenosyl-L-methionine (SAME). This remethylation or detoxification of homocysteine requires the following co-factors: folic acid, vitamin B6, vitamin B12, zinc, and TMG.



While TMG, folic acid, vitamin B6, and vitamin B12 help to lower homocysteine, it is impossible for any individual to know if he or she is taking the proper amount of nutrients without a blood test. The Foundation offers a homocysteine blood test to ensure that one's supplemental regime brings homocysteine down to a safe range. Please refer to the Cardiovascular Disease: Comprehensive Analysis protocol in Life Extension's *Disease Prevention and Treatment* book for more information.

**Q:** *My wife had breast cancer and has completed surgery, chemotherapy, and radiation. She is concerned about the breast cancer returning. Is modified citrus pectin helpful for cancer prevention?*

Studies show that modified citrus pectin interferes with galectin-3, a molecule expressed in various cancers, including breast cancer. Galectin-3 is responsible for building new blood vessels. Modified citrus pectin can interfere with this process and prevent the cancer cell from getting an adequate supply of blood, in effect "starving" the cancer cell. For more information and reference studies, please refer to the article, "Modified Citrus Pectin" (*Life Extension*, March 2004).

**Q:** *Why does your toothpaste contain folic acid? I thought this vitamin was to be taken orally for homocysteine and heart disease.*

Studies show that folic acid applied topically to the gum can help reduce gingivitis and inflammation. Furthermore, folic acid helps strengthen gums and makes them more resistant to disease. A double-blind study of 60 subjects showed that gingivitis symptoms improved in as little as four weeks when the participants rinsed with folic acid mouthwash twice a day.<sup>1</sup>

**Q:** *What is the optimum amount of creatine I can use to improve memory?*

A double-blind, placebo-controlled, crossover study showed that five grams of supplemental creatine had a positive effect on both working memory and intelligence in 45 adult subjects.<sup>2</sup>

**Q:** *I read your article on acetaminophen risks ("As We See It," Life Extension, May 2004) and was wondering if there are any other supplements besides N-acetylcysteine that your medical advisors recommend to offer protection when using acetaminophen.*

Several supplements may be helpful for chronic use of acetaminophen. To protect the liver, consider taking glutathione, vitamin C, and N-acetylcysteine with each dose of acetaminophen. Silibinin, the most biologically active ingredient found in silymarin, or milk thistle extract (contained in Silibinin Plus), and polyenylphosphatidylcholine, or PPC (contained in HepatoPro), are also helpful for proper liver function. The amino acid taurine helps support the kidneys, as does vitamin E succinate. Please refer to the Acetaminophen

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## Reference

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1. Pack AR. Folate mouthwash: effects on established gingivitis in periodontal patients. *J Clin Periodontol*. 1984 Oct;11(9):619-28.
2. Rae C, Digney AL, McEwan SR, Bates TC. Oral creatine monohydrate supplementation improves brain performance: a double-blind, placebo-controlled, cross-over trial. *Proc R Soc Lond B Biol Sci*. 2003 Oct 22;270(1529):2147-50.
3. Dennis and Company Research. Nexrutine® human trial report. Next Pharmaceuticals, Inc. 2002;13.

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