Niacin raises homocysteine levels

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The Arterial Disease Multiple Intervention Trial, a multicenter randomized, placebo-controlled trial, examined the effect of niacin compared with placebo on homocyst(e)ine (Hcy) levels in 52 individuals (mean age, 68 years) with peripheral arterial disease. Increasing the niacin dose from 100 mg/day to 1,000 mg/day resulted in a 17% increase in mean plasma Hcy level from 13.1 to 15.3 micromol/L (p < 0.0001). Increasing the niacin dose further, to a maximum of 3,000 mg/day, further increased plasma Hcy levels to 55% above baseline values (p = 0.0001).

Comment: This study demonstrated that supplementation with niacin substantially increased plasma Hcy levels, which could potentially counteract the beneficial effects of niacin on lipid levels. On the other hand, a primary prevention trial from the 1970s showed that supplementation with niacin reduced heart disease-related mortality. Evidently, the lipid-modulating effects of niacin are more important than its effects on homocysteine levels. A logical assumption is that adding vitamin B6, folic acid, vitamin B12, and possibly betaine, to niacin therapy would reverse the Hcy-raising effect of niacin. Although clinical trials are needed to confirm that assumption, it is noteworthy that B vitamins occur together in nature and appear to work together in certain ways in the body.