



A new trial reports...

B-Vitamins *Reverse*

Atherosclerosis

Over thirty years ago, after reading the case records of *children* who, because of inherited defects in their ability to metabolize the toxic amino acid **homocysteine (Hcy)**, had died with advanced **arteriosclerosis** – one of them a two-month-old infant! – Dr. Kilmer McCully alerted the medical world to the possibility that homocysteine might be a major factor in the development of hardened arteries¹. Through the '70s and '80s, McCully continued to sound the homocysteine alarm, despite the ridicule of the medical establishment, until powerful epidemiology – published in such paragons of medical orthodoxy as The Journal of the American Medical Association², The Lancet³, and The New England Journal of Medicine⁴ – began to prove McCully right. These studies found that **people with high homocysteine are approximately three times as likely to experience heart attack, stroke, or a cardiovascular death** as those with the lowest levels. This was a dramatic breakthrough, because controlled trials clearly show that **homocysteine levels can be safely and quickly lowered using some common B-vitamins and B-vitamin-like compounds: folic acid, pyridoxamine (vitamin B6), cobalamin (vitamin B12 – in the form of methylcobalamin (see writeup for ThinkWell)), and trimethylglycine (TMG – see writeup)**. Exactly because of this research, all of these nutrients are represented in **Jarrow Formulas' advanced methylation formula, Methyl Donors** (see our writeup on this product). The conclusion seemed obvious: **taking these nutrients represents a safe, inexpensive way to dramatically reduce a major independent risk factor for cardiovascular disease (CVD)**.

Skeptics

Still, there were skeptics in the medical establishment. Perhaps high homocysteine did not actually *cause* cardiovascular disease, they suggested: perhaps vascular disease caused elevated homocysteine, rather than vice-versa; or perhaps Hcy was a *marker* for arterial disease, but not a cause, and lowering Hcy would not affect the development of disease.

The Ravages

It is hard to take these arguments seriously. **Homocysteine impairs healthy dilation of the arteries by nitric oxide (NO)⁷, speeds the aging of blood vessel cells⁸, causes growth of smooth muscle cells in the arteries¹⁰, increases formation of blood clots¹¹, and directly damages the endothelium¹²**, as well as possibly **increasing oxidative stress** in blood vessels⁹ (ie. the balance between free radicals and antioxidant protector-molecules). Yet to be *absolutely certain* of the association, one thing is clearly missing: a randomized, double-blind, placebo-controlled prospective trial of B-vitamins and TMG against arteriosclerosis. And, indeed, Dr. Meir Stampfer of Harvard, lead investigator in one of the first truly conclusive studies on homocysteine and heart attacks², has been crying for an immediate trial for years now⁵. But with the risks so small and the potential benefits so great, few health-conscious people – especially those with a family history of CVD – have been willing to wait for final, unarguable proof of a causal connection.

The Trail

Now, a new open trial⁶ brings us dramatically closer to final certainty. Scientists in the Stroke Prevention and Atherosclerosis Research Center in London, Ontario administered high-dose **folic acid, B6, and B12** daily to 101 cardiovascular disease patients with both high and more “normal” Hcy levels, and then monitored the progression of their atherosclerosis. Before entering the trial, these patients were all

experiencing increases in plaque area on the artery leading from the heart to the brain, despite having been treated aggressively for standard risk factors with diet, exercise, cholesterol-lowering drugs, and having been helped to quit smoking. **B-vitamins not only slowed, but reversed, the progression of atherosclerotic plaque** – not just in the high-homocysteine group, but also in those with “normal” Hcy. The high-Hcy group, who had been experiencing yearly increases in plaque area of 0.21 cm², had *decreases* of 0.049 cm² after vitamin therapy; but **even those with “normal” Hcy levels showed reductions in plaque size**, going from annual spread of plaque area averaging 0.13 cm² to a yearly *disappearance* of 0.024 cm²!

Granted these astounding results, it is unfortunate that the trial was not a “gold standard” double-blind trial. For although the patients who received B-vitamins instead of placebo are surely grateful for getting “the real thing,” many *other* patients will not hear about this low-risk, low-cost, simple solution to a deadly problem from their conservative physicians until the unarguable, conclusive proof of a large double-blind trial arrives. It's also too bad that the investigators did not include **trimethylglycine** in their homocysteine-fighting cocktail, since **TMG** is an extremely potent homocysteine-lowering agent, which even works in patients for whom other vitamins are ineffective because of enzyme deficiencies^{13, 14}. Despite these limitations, however, this trial powerfully suggests two important conclusions. Firstly, as Dr. McCully has been predicting for a generation, **B vitamins lower homocysteine and reverse cardiovascular disease**. Secondly, and perhaps more surprisingly, **even persons with Hcy levels usually considered “safe” stand to benefit from these supplements**.

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References

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Eyes wide open



Did you know?

Lipoic acid (ALA) is a rising superstar in the antioxidant field because of its role in recycling the "antioxidant network" and its ability to help reduce warping of proteins by blood sugar. But ALA is quickly flushed from the body- its half life is only 20 - 40 minutes! Thiotene SR is a pharmaceutical-grade sustained-release ALA system, providing six hours of continuous ALA production.



As the earth's protective ozone layer thins, cases of blindness from cataracts are beginning to skyrocket, while macular degeneration is already the leading cause of blindness in adults. Free radical damage, poor circulation in the retina, and AGEs (sugar-warped proteins) play roles in these diseases. Vision optimizer is specially formulated to provide nutritional support for healthy eye function.

- Potent antioxidants.
- Vascular protection.
- Inhibition of AGEs.
- As much lutein as three cups of spinach.