Study Suggests Zinc May Help Heart Health

By Greg Arnold, DC, CSCS, May 14, 2010, abstracted from “Zinc decreases C-reactive protein, lipid peroxidation, and inflammatory cytokines in elderly subjects: a potential implication of zinc as an atheroprotective agent” published online April 28, 2010 in the American Journal of Clinical Nutrition

Cardiovascular diseases, including heart disease and stroke, which are the first and third leading causes of death for both men and women in the United States, account for 1 in 3 of all U.S. deaths. Heart disease and stroke are expected to cost our healthcare system $473 billion in 2009. If all major types of cardiovascular disease were eliminated, U.S. life expectancy would increase by nearly 7 years (1).

The early stage of cardiovascular disease is marked by the damage of cholesterol by free radicals which are taken up by white blood cells called macrophages. These accumulate in the walls of blood vessels and form the “foam cells” that are the beginnings of atherosclerosis and cardiovascular disease (2). Now a new study (3) suggests that zinc may help heart health by affecting inflammation and foam cell formation.

In the study, 40 healthy elderly patients (aged 56–83 years) received either 45 mg zinc as zinc gluconate per day or placebo for 6 months. Before and after the study, blood samples were taken to compare levels of inflammatory proteins that included:

- C-reactive protein: a risk factor that is independent of traditional risk factors, such as total cholesterol, HDL cholesterol, age, smoking, body mass index, and hypertension (4).
- IL-6: a 2008 study found increased levels over an extended period of time increases heart disease risk (5)
- MCP-1: shown to increase foam cell formation (6)
- VCAM-1: shown to increase clotting (7)
- MDA+HAE: whose increased levels play “an important role” in heart disease (8)

By the end of 6 months, those in the zinc group all incurred significant decreases versus the placebo group regarding c-reactive protein (23% decrease (2.46 to 1.90 micrograms/Liter) vs. a 14% increase (2.14 to 2.49 microgm/L), MCP-1 (5% decrease (531.5 to 506.8 picograms/milliliter) vs. a 13% increase (496.5 to 570.4 pg/mL), VCAM-1 (8% decrease (2208 to 2035 nanograms/milliliter) vs. a 9% increase (2102.9 to 2297.6 ng/mL), and MDA+HAE (19% decrease (1.59 to 1.29 microMolar) vs. a 2% increase (1.66 to 1.68 microMolar).

For the researchers, this study showed that zinc decreased CRP, inflammatory cytokines, adhesion molecules, and oxidative stress markers in elderly subjects and these findings suggest that the anti-inflammatory functions of zinc may have a protective effect in atherosclerosis.

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Reference:
1. “Cardiovascular Disease at a Glance” posted on www.cdc.gov/

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