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The effect of chromium picolinate on serum cholesterol and apolipoprotein fractions in human subjects.

Press RI, Geller J, Evans GW.

Department of Medical Education, Mercy Hospital and Medical Center, San Diego.

Chromium has been implicated as a cofactor in the maintenance of normal lipid and carbohydrate metabolism. A deficiency of chromium results from diets low in biologically available chromium. Picolinic acid, a metabolite of tryptophan, forms stable complexes with transitional metal ions, which results in an improved bioavailability of the metal ion chromium. To determine whether or not chromium picolinate is effective in humans, 28 volunteer subjects were given either chromium tripicolinate (3.8 micromol [200 micrograms] chromium) or a placebo daily for 42 days in a double-blind crossover study. A 14-day period off capsules was used between treatments. Levels of total cholesterol, low-density lipoprotein (LDL) cholesterol, and apolipoprotein B, the principal protein of the LDL fraction, decreased significantly while the subjects were ingesting chromium picolinate. The concentration of apolipoprotein A-I, the principal protein of the high-density lipoprotein (HDL) fraction, increased substantially during treatment with chromium picolinate. The HDL-cholesterol level was elevated slightly but not significantly during ingestion of chromium picolinate. Only apolipoprotein B, of the variables measured, was altered significantly during supplementation with the placebo. These observations show that chromium picolinate is efficacious in lowering blood lipids in humans.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

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