Zinc Raises Testosterone and Improves Sexual Health

Many men are marginally zinc deficient, and supplementing with zinc raises testosterone and improves sexual health in parameters such as semen volume. Following are several studies that show the dramatic effects of zinc supplementation. (Note that if you have no zinc deficiency, then taking more zinc will not raise testosterone more.)

*Effects of dietary zinc depletion on seminal volume and zinc loss, serum testosterone concentrations, and sperm morphology in young men.*

Identification of the andrological variables most sensitive to zinc depletion would expedite the diagnosis of male reproductive pathology induced by zinc deficiency. Eleven volunteers living on a metabolic ward were fed a diet composed of a mixture of a semisynthetic formula and conventional foods supplemented with ZnSO4 to supply a total of 1.4, 2.5, 3.4, 4.4, or 10.4 mg Zn/d. After an equilibration period of 28 d (10.4 mg Zn/d), all treatments were presented for 35 d each, the first four in random order and the fifth last. Compared with when they were consuming 10.4 mg Zn/d, volunteers consuming 1.4 mg Zn/d exhibited decreased semen volumes (3.30 vs 2.24 mL) and serum testosterone concentrations (26.9 vs 21.9 nmol/L), and no change in seminal zinc concentrations. Compared with 10.4 mg Zn/d, treatments of 1.4, 2.5, and 3.4 mg Zn/d decreased the total semen zinc loss per ejaculate
(6.29 vs 3.81, 4.68, and 5.03 mumols/ejaculate). Seminal loss accounted for 9% of total body zinc loss when 1.4 mg Zn/d was consumed. Seminal phosphorus concentrations were elevated during all four phases of zinc depletion (28.4 vs 32.9, 31.0, 34.2, and 33.6 mmol/L). The findings suggest that serum testosterone concentrations, seminal volume, and total seminal zinc loss per ejaculate are sensitive to short-term zinc depletion in young men.

**Effect of Oral Zinc Therapy on Gonadal Function in Hemodialysis Patients: A Double-Blind Study**

Zinc deficiency may account for the persistence of gonadal dysfunction in a majority of uremic men despite adequate dialysis. Twenty stable patients having hemodialysis three times a week completed a double-blind trial using either 50 mg of elemental zinc as zinc acetate (10 patients) or placebo (10 patients), orally. At the end of the 6-month study period, a significant increase in the mean (± SE) plasma zinc (75 ± 2 µg/dL to 100 ± 2 µg/dL, p < 0.001), serum testosterone (2.8 ± 0.3 ng/dL to 5.2 ± 0.5 ng/mL, p < 0.001), and sperm count (30 ± 3 million/mL to 63 ± 5 million/mL, p < 0.001) occurred in the zinc-treated group, but not in those receiving the placebo. The zinc-treated group also had a significant fall in serum luteinizing hormone (92 ± 10 mIU/mL to 49 ± 26 mIU/mL, p < 0.005) and follicle stimulating hormone (45 ± 9 mIU/mL to 25 ± 7 mIU/mL, p < 0.05), not seen in the placebo group. Patients receiving zinc had an improvement in potency, libido, and frequency of intercourse not found in the placebo group. These results suggest that zinc deficiency is a reversible cause of gonadal dysfunction in patients having regular hemodialysis.

**Zinc status and serum testosterone levels of healthy adults.**

Zinc deficiency is prevalent throughout the world, including the USA. Severe and moderate deficiency of zinc is associated with hypogonadism in men. However, the effect of marginal zinc deficiency on serum testosterone concentration is not known. We studied the relationship between cellular zinc concentrations and serum testosterone cross-sectionally in 40 normal men, 20 to 80 y of age. In four normal young men (27.5 +/- 0.5 y), we measured serum testosterone before and during marginal zinc deficiency induced by restricting dietary zinc intake. We also measured serum testosterone in nine elderly men (64 +/- 9 y) who were marginally zinc deficient before and after 3 to 6 mo of supplementation with 459 mumol/ d oral zinc administered as zinc gluconate. Serum testosterone concentrations were significantly correlated with cellular zinc concentrations in the cross-sectional study (lymphocyte zinc versus serum testosterone, r = 0.43, p = 0.006; granulocyte zinc versus serum testosterone, r = 0.30, p = 0.03).
Dietary zinc restriction in normal young men was associated with a significant decrease in serum testosterone concentrations after 20 weeks of zinc restriction (baseline versus post-zinc restriction mean +/- SD, 39.9 +/- 7.1 versus 10.6 +/- 3.6 nmol/L, respectively; p = 0.005). Zinc supplementation of marginally zinc-deficient normal elderly men for six months resulted in an increase in serum testosterone from 8.3 +/- 6.3 to 16.0 +/- 4.4 nmol/L (p = 0.02). We conclude that zinc may play an important role in modulating serum testosterone levels in normal men.

The testosterone level in healthy elderly men doubled over the course of 6 months with zinc supplementation. This may be the explanation for lower T levels in elderly men.

Got zinc?

PS: Check out my Supplements Buying Guide for Men.