Magnesium improves athletic performance

Magnesium status and the physical performance of volleyball players: effects of magnesium supplementation

The aim of this study was to test the hypothesis that magnesium supplementation influences the physical performance of volleyball players, as the efficacy of this approach remains questionable. Twenty-five professional male volleyball players were assigned randomly to experimental (350 mg Mg · d⁻¹, 4 weeks) and control groups (500 mg maltodextrin · d⁻¹, 4 weeks) maintaining inter-group homogeneity of urinary magnesium. Erythrocyte, plasma and urinary magnesium levels, plasma creatine kinase activity, lactate production, maximal oxygen uptake (VO₂ max) and plyometric (squat jump, countermovement jump, countermovement jump with arm swing) and isokinetic (peak torque, potency and total work) performances were evaluated before (T₀) and after (T₁) supplementation. Levels of erythrocyte and urinary magnesium and creatine kinase activity and VO₂ max remained within normal ranges in both groups. Plasma magnesium decreased significantly only within the experimental group. Significant decreases in lactate production and significant increases (of up to 3 cm) in countermovement jump and countermovement jump with arm swing values were detected in the experimental group following magnesium supplementation, but not in the control group at T₁. It is concluded that magnesium supplementation improved alactic anaerobic metabolism, even though the players were not magnesium-deficient.

Sounds as if the researchers started out with doubts, but ended up convinced. They state that the players were not deficient at the start, but if they used a simple blood test for that determination, it’s not reliable, as blood tests are a poor determinant of overall magnesium status. In any case, performance improved with magnesium.

How can you know whether you truly need magnesium? It’s tough, since more than a simple blood test is required. Usually, doctors will order a red cell magnesium level, which is better than a simple serum magnesium test, but it’s a test that most labs do not do in-house and hence is more expensive.

However, magnesium consumption in this country is relatively low, and it’s been estimated at up to 60% of Americans don’t get enough. It used to be that most people consumed magnesium through drinking hard water, but that doesn’t happen much any longer.

A simple way to determine whether magnesium will improve your athletic performance may be simply to try supplementation with magnesium citrate and
see.