

# Boron Surprised Me

*"The addition of boron and its anti-inflammatory properties in such a short time was a big surprise to me."*

After 40 years of being in this field, I am more convinced than ever that the first step to any chronic disease condition is to fix digestion and heal the gut. It doesn't matter what the name of the disease is from chronic pain to autoimmunity, the gut is involved.

I believe that's one of the reasons studies done with isolated nutrients often have discrepancies. Either they use the wrong dose, don't apply the protocols long enough or completely disregard the gut. Having said all that, once you have addressed digestion and the gut, the right nutrient can be the key to unlocking complex issues.

One of my mentors Dr. Harry Eidenier has emphasized the benefits of boron for bone health and arthritis for years. But until recently, I didn't know about its rapid anti-inflammatory and hormone facilitation properties.

Here's an overview of the studies before we get to therapeutic considerations.

1) In areas of the world where boron intakes are 1.0 mg



or less per day, the estimated incidence of arthritis ranges from 20 - 70%, whereas in areas of the world where boron intakes are 3 to 10 mg, the estimated incidence of arthritis ranges from 0 - 10%.

2) Lower boron concentrations in femur heads, bones, and synovial fluid are present in people with arthritis than from those without arthritis. Patients using boron supplements possess bones that are much harder to cut than those of patients not supplemented.

3) A double-blind placebo-boron supplementation trial with 20 subjects with osteoarthritis showed a significant favorable response to a 6 mg boron per day supplement; 50% of subjects receiving the supplement improved compared to only 10% receiving the placebo.

Boron plays a strengthening role in the cell walls of all plants and is involved in calcium metabolism in both plants and animals. The United States Department of Agriculture conducted an experiment in which postmenopausal women took 3 mg of boron a day. The results

showed that supplemental boron reduced urinary excretion of calcium by 44%, and activated both estrogen and vitamin d.

In a brief 7 day trial, with 8 healthy males, researchers displayed how the effects of boron supplementation show up quickly. After 6 hours of supplementation there was a significant decrease on sex hormone binding globulin (SHBG), high sensitive CRP and TNF- $\alpha$  level. After one week, the mean plasma free testosterone increased and the mean plasma estradiol decreased significantly. Dihydrotestosterone, cortisol and vitamin D were elevated. Concentrations of all three inflammatory biomarkers decreased after supplementation.

In a larger 14 day trial, 60 participants with self-reported knee discomfort were randomized into two groups receiving a form of boron chelated with calcium or a placebo. Initial levels of knee discomfort were evaluated by Western Ontario and McMaster Universities Arthritis Index (WOMAC) and McGill Pain Questionnaire (MPQ). Results showed that supplementation with the boron calcium complex significantly improved knee discomfort in the study subjects at day 7 and day 14.

Another study combined glucosamine, chondroitin sulfate and the calcium boron complex vs. glucosamine and chondroitin alone or placebo. The calcium boron chondroitin/glucosamine group resulted in a statistically significant 24% reduction of mean WOMAC score and a 25% reduction of mean McGill index at day 14 over baseline.

Treatment with placebo or with glucosamine and chondroitin material did not result in significant improvement of the conditions. In this short period, treatment with glucosamine and chondroitin were not effective.

Those of us who have used the chondroitin/glucosamine supplements know that results often take 30-90 days due to the poor blood supply to the chondrocytes. But the

addition of boron and its anti-inflammatory properties in such a short time was a big surprise to me.

Naturally we get boron from unrefined foods that are grown in healthy soil that contains boron. Sadly, boron is rarely added back into the soil. Dried fruits like raisins, apricots, prunes, and dates are excellent sources of boron. So are almonds, hazel nuts, Brazil nuts, walnuts, peanuts, cashews, avocados, lentils and beans.

To further increase boron levels add Osteo B II developed by Dr. Harry Eidenier. Osteo B II meets all the requirements needed to re-mineralize healthy bones and provides 3 mg of a calcium boron complex called calcium borogluconate. Also contained is calcium and magnesium in a 1 to 1 ratio. In addition, zinc, manganese, phosphorylated b vitamins, emulsified vitamin D and emulsified vitamin K, an anti-stiffness factor derived from a sugar cane shoot, as well as purified chondroitin sulfates. Use 2 tablets tid for a 3 mg dose and 4 tablets tid for a 6 mg dose.

Keep in mind the studies we discussed were using isolated nutrients for short periods of time. Using all the bone and joint repair factors in smaller physiologic doses long term as food makes more sense.

To replicate one of the studies we discussed for joint pain and repair add Gluco-Syn-Amine, 1 tid. And if pain is part of the equation, I would also add Sculacia, 2 tid and reduce to 1 bid as pain subsides.

So while you are fixing digestion and gut issues on patients with bone and joint issues, don't forget about boron and its therapeutic cousins.

Thanks for reading this week's Tuesday Minute edition. I'll see you next Tuesday.