



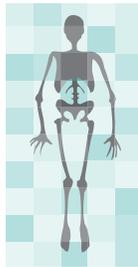
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Magnesium Effects on Osteoarthritis

Magnesium (Mg) performs a variety of required bodily functions including being a cofactor with over 325 enzymes. Correct Mg levels are required for muscle relaxation, blood vessel dilation, nerve signaling, heart rhythm, bone integrity, blood sugar regulation and immune response – is there a process not requiring Mg? Deficiency leads to serious physical complications which can often be reversed by proper diet and supplementation. A recently published, short review explains how magnesium also plays a role in osteoarthritis₁.

What is Osteoarthritis?

Osteoarthritis (OA) is a progressive degradation of joint cartilage accompanied by misdirected, new bone formation and results in joint function loss and pain. OA is considered an inflammatory condition with the important breakdown of collagen, which acts as scaffolding holding bone minerals in place. Many risk factors, especially age, trauma, joint strain from constant overuse, genetic disposition and obesity all contribute to OA.



What happens in tissues that causes OA?

The disease process is not fully understood, but several cytokines are involved in the OA process. Cytokines are small proteins important in cell to cell signaling but are not considered hormones or growth factors. Cytokines are released by cells under stress and affect the behavior of most other cell types, unlike hormones which have targeted cell types. Magnesium deficient tissues release inflammatory cytokines that signal surrounding cells, beginning a cascade of tissue debilitation and destruction.

How does Mg affect osteoarthritis?

Studies show that low dietary intake of Mg is associated with OA and high levels of tissue necrosis factor, a deleterious cytokine which induces the inflammatory response cascade. Elevated tissue necrosis factor activates other necrosis factors which promotes the release of other deleterious cytokines and more inflammation. Mg deficiency also induces the synthesis of nitric oxide and elevated substance P; a pain causing neuropeptide. Substance P is elevated in fibromyalgia as well.

Can Mg help preserve joint cartilage?

Mg

Mg supplementation can decrease joint cartilage lesions. A combination of vitamin E and Mg better protect cartilage than Mg alone.

What else does Mg do for arthritis?

Many forms of arthritis are related to painful calcium deposits in the joints. Low serum Mg levels are associated with high

phosphate which binds calcium in joint deposits. A low Mg state also increases the risk of hypercalcemia by stimulating destructive cytokines as explained above.

Does Mg help OA pain?

Magnesium supplementation reduces substance P and can relieve some pain for those suffering from low or hypomagnesemia₂. Two week intravenous Mg infusion followed by 4 weeks of oral magnesium supplementation reduced pain intensity and improved lumbar spine mobility for 6 months in patients with chronic low back pain.

Is there a test for Mg levels?

A red blood cell (RBC) test for Mg levels is considered best₃. If testing low, supplement with Fibro-Care™ (organic Albion® plus glycine) to help pain relief.



What is the DRI for Mg?

The DRI (Dietary Reference Intake) for Mg is 400 mg/day for adults, so if your RBC result for Mg is low, consider taking a supplement. Supplementation with magnesium glycinate has been shown effective in a clinical study for pain and depression, too_{4,5}.

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