Excess Vitamin C May Worsen Osteoarthritis

Researchers Say Dietary Intake Should Not Be Above the RDA Recommendation

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June 3, 2004 -- It may be possible to get too much of a good thing when it comes to vitamin C and your health.

Although heralded as a powerful antioxidant that fights everything from the common cold to cancer, a new study shows that over a long period of time high doses of vitamin C is associated with worsening of one of the most common forms of arthritis -- osteoarthritis of the knee.

The study showed long-term use of vitamin C supplements worsened the severity of osteoarthritis of the knee in guinea pigs. In these animals, osteoarthritis of the knees is similar to the cartilage damaging disease in humans, the authors write.

Previous short-term studies in humans and guinea pigs have shown that vitamin C might protect against osteoarthritis of the knees. In contrast, this new study shows prolonged use of vitamin C supplements may aggravate osteoarthritis.

Osteoarthritis causes the progressive breakdown of joint cartilage -- a cushioning tissue layer that helps bone move against each other without causing friction and destruction of bone.

Researchers say the study highlights the potential drawbacks of long-term use of high-dose vitamin C supplements on joint health.

"Our findings suggest that dietary intake should not be supplemented above the currently recommended dietary allowance: 90 milligrams per day for men and 75 milligrams per day for women," writes researcher Virginia B. Kraus, MD, PhD, of Duke University Medical Center, and colleagues.

The study appears in the June issue of Arthritis & Rheumatism.

Vitamin C May Raise Arthritis Risks

In the study, researchers compared the effects of eight months of exposure to low, medium, or high doses of vitamin C in guinea pigs. Humans and guinea pigs are among the few animals that are unable to...
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synthesize vitamin C for themselves.

The low dose of vitamin C was less than 3 milligrams. The medium dose (30 milligrams) was the human equivalent of getting 200 milligrams of vitamin C from eating five servings of fruits and vegetables a day. And the high dose was five times higher than the medium dose and was the amount shown in a previous study to slow the progression of osteoarthritis that is surgically induced.

The study showed that the high-dose group developed the most severe osteoarthritis of the knee and showed the worse cartilage damage. In addition the level of vitamin C (as ascorbic acid) circulating in the blood correlated with the degree of joint damage with the animals with the highest levels showing the most damage.

Researchers say obesity is also a known risk factor for osteoarthritis of the knees caused by excess stress on the knee joints.

In the study the group that received the low dose of vitamin C weighed less than the groups that received either a medium or high dose during the latter part of the eight-month study. Therefore, they can't rule out that lower weight may have been partially responsible for the apparent protection from osteoarthritis in this group.

However weight differences did not account for differences in disease severity found in the medium- and high-dose groups, which had similar weights throughout the study. In these groups, higher blood levels of vitamin C were associated with worsening disease.


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