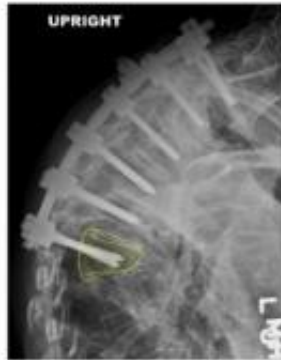


Low vitamin D common in spine surgery patients

3 November 2011

T-score: -1.2
Osteopenia



This is an X-ray of a compression fracture following spinal fusion surgery. Credit: Jacob M. Buchowski, MD

A new study indicates that many patients undergoing spine surgery have low levels of vitamin D, which may delay their recovery.

In a study of 313 patients undergoing spinal fusion surgery, orthopaedic surgeons at Washington University School of Medicine in St. Louis found that more than half had inadequate levels of vitamin D, including one-fourth who were more severely deficient.

The researchers report their findings today at the 26th Annual Meeting of the North American Spine Society. The study was chosen as one of the meeting's best papers.

"Our findings suggest it may be worthwhile to screen [surgery patients](#) for vitamin D," says Jacob M. Buchowski, MD, the study's principal investigator. "We think those with insufficient levels of vitamin D may benefit from taking 50,000 international units of the vitamin once a week for eight weeks before surgery as this may help the recovery after spinal fusion surgery."

Vitamin D helps with [calcium absorption](#), and patients with a deficiency can have difficulty producing new bone. They are at risk for a condition called osteomalacia. Unlike osteoporosis or osteopenia, which result from low [bone mineral density](#), osteomalacia interferes with new [bone formation](#).

All the patients in the study had spinal fusion surgery. In that procedure, surgeons remove discs between two or more vertebrae. The bones in the spine are then attached with hardware and treated with [growth factors](#). As the spine heals, new bone begins to form, and the vertebrae fuse together.

Buchowski became aware of the vitamin D problem when a patient in her 40s experienced a slow recovery after spinal fusion surgery.

"I was examining her and trying to figure out why the [vertebrae](#) didn't fuse," he says. "She mentioned that she had recently been diagnosed with [vitamin D deficiency](#), and it was like a 'light bulb' went off."

As a result, Buchowski, an associate professor of orthopaedic surgery and of [neurological surgery](#), and his Washington University colleagues at Barnes-Jewish Hospital, started routinely screening [spinal fusion surgery](#) patients for vitamin D deficiency.

Low vitamin D levels are known to be common in elderly patients. Surprisingly in this study, the patients most likely to have inadequate levels of the bone-building vitamin were younger.

"We rarely think about deficiency in younger patients," Buchowski says. "More of the older patients in this study had a history of taking supplements, and as a result, they had less risk for vitamin D deficiency than younger patients."

Although an earlier study had shown inadequate vitamin D levels in 43 percent of patients undergoing orthopedic procedures, this is the first

look solely at [spine surgery](#) patients.

Those in the study averaged 55 years of age, 56 percent were female, 41 percent were obese, and 95 percent were white. One quarter of the participants had taken vitamin D supplements in the past.

The researchers found that the main risk factors for inadequate vitamin D were smoking, obesity, disability prior to surgery and never having taken vitamin D or multivitamin supplements.

As a follow-up, Buchowski and his colleagues are planning a study to see whether there is a link between low vitamin D and poor outcomes following spinal fusion. In the meantime, he's recommending that patients having orthopedic surgery ensure they're getting enough vitamin D.

Sun exposure is one of the best ways to get the body to produce vitamin D. He also recommends that if they are not getting enough vitamin D, patients consume dairy products fortified with the vitamin and begin taking a vitamin D supplement prior to and following surgery.

"Vitamin D is inexpensive and easily stored in the body," Buchowski says. "My hunch is that having adequate levels may help the spine fuse following surgery."

To maintain bone health and normal calcium metabolism, the Institute of Medicine established a recommended daily allowance (RDA) for vitamin D of 600 international units. Buchowski says [patients](#) should work with their doctors to determine what supplemental level is appropriate for them.

Stoker GE, Buchowski JM, Bridwell KH, Lenke LG, Riew KD, Zebala LP, Vitamin D status of adults undergoing surgical spinal fusion. Presented Nov. 3 at the 26th Annual Meeting of the North American Spine Society in Chicago, Ill.

Provided by Washington University School of Medicine

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