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The full report is titled “Serum 25-Hydroxyvitamin D Concentrations and Risk for Hip Fractures.” It is in the 19 August 2008 issue of *Annals of Internal Medicine* (volume 149, pages 242-250). The authors are J.A. Cauley, A.Z. LaCroix, L. Wu, M. Horwitz, M.E. Danielson, D.C. Bauer, J.S. Lee, R.D. Jackson, J.A. Robbins, C. Wu, F.Z. Stanczyk, M.S. LeBoff, J. Wactawski-Wende, G. Sarto, J. Ockene, and S.R. Cummings.

Do Low Vitamin D Levels Increase Risk for Hip Fracture?

What is the problem and what is known about it so far?

Vitamin D helps bones form and harden. It is created in the skin in response to sunlight and is also absorbed from some foods. Older people tend to have lower vitamin D levels in their blood and their bones tend to break more often than those of younger people. However, it is unclear whether lower vitamin D levels in the blood are related to a greater risk for fractures.

Why did the researchers do this particular study?

To see whether low vitamin D levels in the blood increase the risk for hip fractures in older women.

Who was studied?

800 women 50 to 79 years of age.

How was the study done?

The researchers initially took blood and gathered information about fracture risk factors from a large group of women. They then followed the group for up to 9 years to see who developed hip fractures. The researchers selected 400 women who had had hip fractures and another 400 women of the same age and race but who had not had any fractures. The researchers then measured the vitamin D levels in the blood samples of those women. The researchers compared the vitamin D levels between the 2 groups and did tests to see whether lower vitamin D levels increased the risk for fracture.

What did the researchers find?

Women with hip fractures had lower vitamin D levels. The very lowest vitamin D levels seemed to increase the risk for fractures independently of other factors known to increase that risk.

What were the limitations of the study?

Nearly all of the women were white, so the findings may not apply to women of other races or ethnicities. Low bone mineral density is commonly and easily measured, and it is an important risk factor for hip fractures. The researchers did not measure bone mineral density, so they could not tell whether measuring vitamin D levels gives important information beyond that gained by measuring bone mineral density.

What are the implications of the study?

Low vitamin D levels in the blood seem to increase risk for hip fractures in older women.

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