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**Subclinical Hyperthyroidism Associated With an Increased Risk of Hip and Other Fractures**

In an analysis that included more than 70,000 participants from 13 studies, subclinical hyperthyroidism was associated with an increased risk for hip and other fractures including spine, according to a study in the May 26 issue of *JAMA.* Subclinical hyperthyroidism is a low serum thyroid-stimulating hormone concentration in a person without clinical symptoms and normal thyroid hormone concentrations on blood tests.

Overt hyperthyroidism is an established risk factor for osteoporosis and fractures. Associations between subclinical thyroid dysfunction and fractures are unclear and clinical trials are lacking, according to background information in the article.

Nicolas Rodondi, M.D., M.A.S., of the Bern University Hospital, Bern, Switzerland, and colleagues assessed the association of subclinical thyroid dysfunction with hip, nonspine, spine, or any fractures. The authors searched databases for studies with thyroid function data and subsequent fractures. Individual participant data were obtained from 13 prospective cohorts in the United States, Europe, Australia, and Japan. Levels of thyroid function were defined as euthyroidism (normal functioning) (thyroid-stimulating hormone [TSH], 0.45-4.49 mIU/L), subclinical hyperthyroidism (TSH <0.45 mIU/L), and subclinical hypothyroidism (TSH ≥ 4.50-19.99 mIU/L) with normal thyroxine (a hormone that is made by the thyroid gland) concentrations.

Among 70,298 participants, 4,092 (5.8 percent) had subclinical hypothyroidism and 2,219 (3.2 percent) had subclinical hyperthyroidism. In an analysis of the occurrence of fractures among study participants, the researchers found that subclinical hyperthyroidism was associated with an increased risk for hip, spine and nonspine fracture and any fracture. The highest risks were in individuals with suppressed TSH (<0.10 mIU/L) and in those with endogenous (from within ones own body [vs. exogenous - taking too much thyroid replacement]) subclinical hyperthyroidism. No association was found between subclinical hypothyroidism and fractures.

“Our pooled data analysis demonstrates that subclinical hyperthyroidism was associated with increased fracture risk and provides insight on defined subgroups,” the authors write.

“Current guidelines recommend that treatment of subclinical hyperthyroidism should be strongly considered if TSH is persistently lower than 0.1 mIU/L in all individuals aged 65 years or older and that treatment should also be considered if TSH is low but at least 0.1 mIU/L in individuals who are at least 65 years old. Our results from pooling data of all available prospective cohorts, showing increased fracture risk in subclinical hyperthyroidism with even higher risk for participants with TSH levels of less than 0.10 mIU/L, are consistent with these recommendations.”

The researchers note that further study is needed to determine whether treating subclinical hyperthyroidism can prevent fractures.

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