

**SUBCLINICAL THYROID DYSFUNCTION****Does subclinical thyroid dysfunction contribute to the frailty syndrome in men over 65 years of age?****BACKGROUND**

Frailty is a condition seen in older adults and is defined when three or more of the following components are present: loss of muscle mass and strength, weakness, exhaustion, slowness and low activity. Subclinical thyroid dysfunction, which represents mild thyroid abnormalities, also increases with age and can cause similar problems. This study evaluated the potential association between subclinical thyroid dysfunction and frailty.

**THE FULL ARTICLE TITLE**

Virgini VS et al; Osteoporotic Fractures in Men (MrOS) Research Group. Subclinical thyroid dysfunction and frailty among older men. *J Clin Endocrinol Metab.* October 23, 2015;jc20153191 [Epub ahead of print].

**SUMMARY OF THE STUDY**

A total of 1455 men  $\geq 65$  years of age from the Osteoporotic Fractures in Men Study (MrOS) were included in the study. TSH and free  $T_4$  levels were measured. A frailty assessment was based on the following five components: loss of muscle mass and strength, weakness, exhaustion, slowness and low activity. Participants with three components were classified as “frail,” those with 1 to 2 components as “intermediate,” and those with no component as “robust.” After 5 years, the participants who were still alive were reassessed.

The mean age of the study population was 73.6 years. A total of 1327 (91.2%) participants had normal thyroid

function, 26 (1.8%) had subclinical hyperthyroidism (a mildly overactive thyroid) and 102 (7.0%) had subclinical hypothyroidism (a mildly underactive thyroid). The study found that more patients with normal thyroid function were robust (45.5%), as compared with those with subclinical hyperthyroidism (15.4%) or hypothyroidism (37.3%). Patients aged 64-75 years old with subclinical hyperthyroidism were more likely to be frail when compared with participants who had normal thyroid function. There was no difference between thyroid groups in the five individual frailty components. The follow-up analysis revealed similar results.

**WHAT ARE THE IMPLICATIONS OF THIS STUDY?**

This study showed that subclinical hyperthyroidism was associated with increased odds of frailty. The association between subclinical hyperthyroidism and frailty at baseline was particularly strong among individuals who were between 65 and 74 years of age. In contrast, subclinical hypothyroidism was not associated with an increased risk of frailty. Even though further confirmatory studies are needed, the results of this study are important for both physicians and patients. There may be a need for closer follow-up of men aged 65-74 in terms of thyroid function and frailty assessment.

— Maria Papaleontiou, MD

**ATA THYROID BROCHURE LINKS**

Thyroid Disease in the Older Patient: <http://www.thyroid.org/thyroid-disease-older-patient/>

**ABBREVIATIONS & DEFINITIONS**

**Subclinical Hypothyroidism:** a mild form of hypothyroidism where the only abnormal hormone level is an increased TSH. There is controversy as to whether this should be treated or not.

**Subclinical Hyperthyroidism:** a mild form of hyperthyroidism where the only abnormal hormone level is a decreased TSH.

**TSH: thyroid stimulating hormone** — produced by the pituitary gland that regulates thyroid function; also

the best screening test to determine if the thyroid is functioning normally.

**Thyroxine ( $T_4$ ):** the major hormone produced by the thyroid gland.  $T_4$  gets converted to the active hormone  $T_3$  in various tissues in the body.

**Frailty:** a term used to determine the degree of function in elderly individuals. A frailty assessment is based on the following five components: loss of muscle mass and strength, weakness, exhaustion, slowness and low activity.