



## HYPOTHYROIDISM

### Using age-specific upper limit for normal TSH slightly reduces the incidence of subclinical hypothyroidism in the elderly

#### BACKGROUND

Subclinical hypothyroidism is a common form of hypothyroidism where the only hormone abnormality is an increased TSH level – thyroid hormone levels are normal. There is controversy as to whether or not subclinical hypothyroidism should be treated. It is known that TSH levels may also increase with age, even in those without thyroid disease. In addition, recent reports suggest that living longer may be associated with higher TSH levels, further advancing the possibility that a mildly elevated TSH may be normal and even beneficial in certain elderly patients. The aim of this study was to determine the age-specific TSH ranges from a statewide reference laboratory in Western Australia and to use this to estimate the normal upper limit of TSH in elderly patients.

#### THE FULL ARTICLE TITLE

Kahapola-Arachchige KM et al. Age-specific TSH reference ranges have minimal impact on the diagnosis of thyroid dysfunction. *Clin Endocrinol (Oxf)*. June 15, 2012 [E-pub ahead of print]. doi:10.1111/j.1365-2265.2012.04463.x.

#### SUMMARY OF THE STUDY

The authors examined values from 150,000 consecutive TSH tests from a laboratory in Western Australia. Most of the samples came from general practitioners' offices. The TSH data was sorted by patient age in 5-year intervals. A

total of 97.5% of patients up to the age of 55 years had TSH values less than 4.0 mU/L. Above that age the upper value for the 97.5th percentile gradually rose, reaching about 4.75 mU/L in those between 75 and 85 years and 5.0 mU/L in patients between 85 and 90 years of age. Thus, when applied to the study population, these age-specific TSH ranges would reduce the fraction of elderly patients who would be given a diagnosis of subclinical hypothyroidism by 2% for patients over 75 and by 5% for those over age 90.

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

TSH levels do increase with age and using age-specific reference TSH ranges does slightly reduce the fraction of elderly patients who would be otherwise be diagnosed with subclinical hypothyroidism and perhaps unnecessarily treated with thyroid hormone replacement. This study suggests that a mildly elevated TSH in elderly patients could be normal and does not necessarily require treatment with thyroid hormone.

— Philip Segal, MD

#### ATA THYROID BROCHURE LINKS

Hypothyroidism: <http://www.thyroid.org/what-is-hypothyroidism>

#### ABBREVIATIONS & DEFINITIONS

**Hypothyroidism:** a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

**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.

**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.