



## HYPOTHYROIDISM IN THE ELDERLY

### Hypothyroidism is not associated with mild cognitive impairment in elderly patients

#### BACKGROUND

Symptoms of hypothyroidism in adults can include cognitive problems such as decreased memory, depressed mood and a general mental slowing. Treatment with thyroid hormone causes resolution of these symptoms if their only cause was hypothyroidism. In the elderly, there are multiple causes for cognitive problems other than hypothyroidism. Several studies have examined associations between hypothyroidism and cognitive problems in the elderly with mixed results. The aim of this study was to examine associations between mild cognitive impairment and hypothyroidism in an elderly population.

#### THE FULL ARTICLE TITLE

Parsaik AK et al Hypothyroidism and risk of mild cognitive impairment in elderly persons: a population-based study. *JAMA Neurol.* December 30, 2013 [Epub ahead of print]

#### SUMMARY OF THE STUDY

This was a population-based study that included 1904 eligible individuals from the 2004 Mayo Clinic Olmsted Study of Aging cohort, aged 70-89 years old on October 1, 2004. Baseline evaluations were conducted between 2004 and 2007, including demographics and presence of concomitant diseases. Mild cognitive impairment was diagnosed by consensus between the evaluating physician, nurse and neuropsychologist based on absence of dementia, memory concerns and impairment in one or more cognitive domains on psychological testing. Clinical hypothyroidism was defined as documentation of thyroid hormone replacement therapy and/or a TSH  $\geq 10$  mIU/L with a low free T<sub>4</sub>. Subclinical hypothyroidism

was defined as a TSH  $< 10$  mIU/L, normal free T<sub>4</sub> and no history of thyroid hormone replacement.

Of the 1904 patients included in the analyses, 316 were diagnosed with mild cognitive impairment, 313 with clinical hypothyroidism and 141 with subclinical hypothyroidism. No associations were found between either clinical or subclinical hypothyroidism and the presence of mild cognitive impairment.

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

This study showed no associations between hypothyroidism and mild cognitive impairment in this large population of elderly patients. However, the results are limited by a lack of information on adequacy of treatment in the group with clinical hypothyroidism, so many patients that would adequately treated were included in the hypothyroid group. Assuming that most patients are adequately treated, this study indicates that there is not permanent cognitive impairment in patients with hypothyroidism. In light of the conflicting results of observational studies to date, screening of patients with newly diagnosed cognitive impairment for hypothyroidism remains a reasonable approach.

— Maria Papaleontiou, MD

#### ATA THYROID BROCHURE LINKS

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

Thyroid and the Elderly: <http://www.thyroid.org/hypothyroidism-elderly>

#### DEFINITIONS AND ABBREVIATIONS

**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.



## **HYPOTHYROIDISM IN THE ELDERLY**, continued

**Thyroid hormone therapy:** patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to normal. Replacement therapy means the goal is a TSH in the normal range and is the usual therapy.

**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<sub>4</sub>):** the major hormone produced by the thyroid gland. T<sub>4</sub> gets converted to the active hormone T<sub>3</sub> in various tissues in the body.