



HYPOTHYROIDISM

Some elderly patients with subclinical hypothyroidism apparently do not need treatment

BACKGROUND

Hypothyroidism, caused by an underactive thyroid gland, is characterized by a high thyroid stimulating hormone (TSH) and a low free thyroxine (T_4) hormone. Subclinical hypothyroidism occurs when the TSH is elevated but the free T_4 is normal. It has been observed that healthy elderly patients often have TSH levels slightly above the upper limit of normal. Previous reports from the Leiden Longevity Study on some 400 Dutch families with at least two siblings in their 90s have indicated that the middle-aged children of these elderly siblings tend to have a higher TSH and lower free T_3 and free T_4 levels than their spouses/partners. This study examines the metabolism and the thyroid function in some children of the 90+ year old siblings and their partners.

THE FULL ARTICLE TITLE

Jansen SW et al Human longevity is characterised by high thyroid stimulating hormone secretion without altered energy metabolism. *Sci Rep* 2015;5:11525.

SUMMARY OF THE STUDY

A total of 135 children of the 90+ year old siblings and their partners were studied at the Leiden University Medical Center for 5 days between 2012 and 2013. All subjects had their body composition estimated and also ingested a capsule that measured their temperature every 5 minutes. Thyroid function tests were obtained and TSH bioactivity was measured.

The children of 90+ year old siblings had higher TSH levels, whereas the free thyroid hormone levels, resting metabolic rate and core body temperature did not differ from the levels in the children's partners. The TSH levels were higher both during the day and the night in the children as compared to their partners. There was no significant difference in TSH bioactivity between the two groups.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that TSH levels are slightly higher in subjects who have a genetic tendency for living longer, as compared with their partners from the general population. The free thyroid hormone levels were not significantly different in the two groups, which may suggest that the TSH in the elderly is less effective in stimulating secretion of thyroid hormone. These data suggest that mild hypothyroidism in patients with a history of long life in their family may not necessarily need to be treated. However, it still remains unclear whether a small but persistent increase in TSH in older patients from the general population without very old parents needs to be treated.

— Maria Papaleontiou, MD

ATA THYROID BROCHURE LINKS

Thyroid and the Elderly: <http://www.thyroid.org/thyroid-disease-patient>

Hypothyroidism: <http://www.thyroid.org/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.

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.

Triiodothyronine (T_3): the active thyroid hormone, usually produced from thyroxine.

Bioactivity: Being biologically active, having an effect on a living organism.