



THYROID AND WEIGHT

Thyroid function and weight gain

BACKGROUND

The thyroid hormones are important for regulating weight. It is well-known that hypothyroidism (an underactive thyroid gland) can lead to slower metabolism, weight gain, and a higher body-mass index (BMI). However, not much is known about how the thyroid hormones may be related to other measures of obesity, such as waist size, the ratio of waist to hip sizes, and the ratio of waist size to height. In particular, it is unclear if thyroid hormone levels that are either within the normal range or just mildly abnormal may be related to these measurements. This study was done to help answer these questions using the data of 5 preexisting research subject groups in Europe.

THE FULL ARTICLE TITLE

Tiller D et al. Association of serum TSH with anthropometric markers of obesity in the general population. Thyroid (ePub ahead of print)

SUMMARY OF THE STUDY

This was an analysis of 5 large studies that had available thyroid hormone blood test results. Participants in all of these studies were from the general population in Europe. The researchers then measured the subjects' BMI, waist and hip sizes, and heights. These measurements of body weight were analyzed according to their thyroid hormone blood test results. The main thyroid function test that was studied was thyroid stimulating hormone (TSH) levels in the blood. In total, the 5 studies contained 16,902 subjects from the general population, of which 48.5% were men. The average BMI values ranged from 25.6-27.9, the average TSH levels ranged from 0.66-1.40 mIU/L, and subjects' ages were from 20- 95 years.

In one of the studies that had data for a single point in time, blood TSH levels were related to waist size and the ratio of waist to height sizes. For example, high blood TSH levels in this study (indicating a more underactive thyroid gland) were related to more weight gain. However, the opposite was found in the other four studies, which had data of subjects followed for up to 6 years. From these studies, higher blood TSH levels (indicating a more underactive thyroid gland) were related to actually better measures of weight gain. In all of the studies, these findings remained true whether only normal blood TSH levels were considered or even those which were slightly abnormal.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In this collection of 5 studies, thyroid function (as measured by blood TSH levels) was inconsistently related to various measures of body weight. The study highlights some of the complexities regarding how the thyroid may be related to weight gain and obesity. Additional research in this field will continue to help us understand how the thyroid hormones, even when not in the abnormal range, may be important in regulating metabolism, weight, and the development of obesity.

— Angela M. Leung, MD, MSc

ATA THYROID BROCHURE LINKS

Thyroid Function Tests: <http://www.thyroid.org/thyroid-function-tests/>

Thyroid and Weight: <http://www.thyroid.org/thyroid-and-weight/>

ABBREVIATIONS & DEFINITIONS

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

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.

Body-mass index (BMI): A standardized measure of obesity calculated by dividing the weight in kilograms by the square of the height. A normal BMI is 18.5-24.9, overweight is 25-30 and obese is >30.