



## HYPOTHYROIDISM

### Quality of life associated with treated hypothyroidism

#### BACKGROUND

Hypothyroidism causes many symptoms related to low thyroid hormone levels, including feeling tired, feeling cold, dry skin and weight gain. Treating hypothyroidism by replacing thyroxine, the main hormone produced by the thyroid gland, resolves the symptoms of hypothyroidism in the majority of patients. However, many patients with a diagnosis of hypothyroidism report a decreased quality of life compared to people without hypothyroidism. This has been reported in patients on treatment as well as those untreated. However, changes in quality of life over time and the effects of the initiation of therapy on quality of life have not been done. Therefore, this study measured quality of life with a validated thyroid-specific questionnaire before and at various time points after the initiation of therapy for treatment of hypothyroidism to see if treatment improved quality of life and, if so, what was the time course of treatment to see improvement.

#### THE FULL ARTICLE TITLE

Winther KH et al. Disease-specific as well as generic quality of life is widely impacted in autoimmune hypothyroidism and improves during the first six months of levothyroxine therapy. *PLoS One* 2016;11:e0156925.

#### SUMMARY OF THE STUDY

Adult patients referred to Copenhagen University Hospital from 2008-2012 for treatment of newly diagnosed primary hypothyroidism were recruited for the study. Patient's TSH had to be > 4.0 mIU/L and had to have positive antibodies to their thyroid (ie Hashimoto's). They completed a thyroid-specific quality of life questionnaire (THYPRO) and generic quality of life assessment (SF-36) before treatment with levothyroxine was started, at 6 weeks, and 6 months after starting levothyroxine. A group of randomly selected Danish citizens with normal thyroid function also completed both of the questionnaires for comparison.

Most of the patients that participated with healthy, middle-aged women. Approximately 2/3 of the patients

had TSH in the normal range at 6 months, but 1/3 still had mild hypothyroidism, meaning that their levothyroxine dose was too low. Before starting levothyroxine, quality of life was lower in patients with hypothyroidism compared to healthy Danish controls on all measured scales, with the largest difference in the degree of tiredness. Most quality of life scores improved by 6 weeks after starting medication, and scores for depression and cosmetic concerns continued to improve over the entire 6 months. However, at 6 months, many quality of life measures were still worse than the healthy population controls. There was no association between quality of life and thyroid hormone blood levels.

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

Patients with untreated hypothyroidism had worse quality of life, predominantly fatigue, compared to healthy patients without hypothyroidism. Quality of life improved after treatment but remained not as good as the control population. There are many reasons for this, including having to take a pill every day and having a medical diagnosis. Also, there is consideration as to whether levothyroxine therapy alone is the best treatment for hypothyroidism. None of these possibilities were addressed by this study and should be examined in the future. Although the way the study was done could be improved upon, patients and their physicians should set realistic goals for improvement at the start of treatment, and especially discuss that some level of decreased quality of life may remain beyond 6 months despite adequate treatment.

— Melanie Goldfarb, MD

#### ATA THYROID BROCHURE LINKS

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

Thyroid Hormone Treatment: <http://www.thyroid.org/thyroid-hormone-treatment/>

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



**HYPOTHYROIDISM**, continued

**ABBREVIATIONS & DEFINITIONS**

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

**Hashimoto's thyroiditis:** the most common cause of hypothyroidism in the United States. It is caused by antibodies that attack the thyroid and destroy the gland.

**Levothyroxine (T<sub>4</sub>):** the major hormone produced by the thyroid gland and available in pill form as Synthroid™, Levoxyl™, Tyrosint™ and generic preparations.

**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. Suppressive therapy means that the goal is a TSH below the normal range and is used in thyroid cancer patients to prevent growth of any remaining cancer cells.

**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

September 21-25, 2016

**86<sup>th</sup> Annual Meeting of the  
American Thyroid Association**

DENVER, COLORADO  
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