

**AUTOIMMUNE THYROID DISEASE****Which patients with diabetes should be routinely screened for thyroid diseases?****BACKGROUND**

Autoimmune diseases occur when the immune system, which usually attacks germs and bacteria, gets confused and attacks our own bodies. Type 1 diabetes mellitus is an autoimmune disease where the insulin-producing cells in the pancreas are destroyed. Hashimoto's thyroiditis is an autoimmune disease where the thyroid cells are destroyed while Graves' disease is an autoimmune disease where the immune system turns on the thyroid cells. Patients with type 1 diabetes mellitus have a greater risk to develop autoimmune thyroid disease, especially Hashimoto's thyroiditis. However, the association between type 2 diabetes mellitus, which is not an autoimmune disease, and autoimmune thyroid disease is less clear. The goal of the study was to investigate the association between type 1 and 2 diabetes mellitus with hypothyroidism and hyperthyroidism.

**THE FULL ARTICLE TITLE**

Fleiner HF et al. Prevalence of thyroid dysfunction in autoimmune and type 2 diabetes: the population-based HUNT Study in Norway. *J Clin Endocrinol Metab*. November 19, 2015 [Epub ahead of print].

**SUMMARY OF THE STUDY**

The adult population of Nord-Trøndelag in Norway gets surveyed frequently through the HUNT study. Surveys of adults between 1995 and 1997 (HUNT2) and adults between 2006 and 2008 (HUNT3) were included. Participants reported whether they had diabetes mellitus, hypothyroidism or hyperthyroidism and provided a non-fasting blood sample. They also included data from the Norwegian Prescription Database, linking prescription refills with participants after 2004. Antibodies for autoimmune diabetes mellitus or autoimmune thyroid disease were obtained, as well as TSH measurement to evaluate thyroid function. For the analysis, patients older than 40 years were included. Both, the HUNT2 and

HUNT3 databases showed that women and men with type 1 diabetes had a significant increased risk to have hypothyroidism (about twice the risk). The HUNT3 database showed that men with type 1 diabetes had 4 times higher chance of having hypothyroidism, and women with type 1 diabetes had twice the chance of having this same condition. Also, women and men with type 1 diabetes had a higher risk to develop hyperthyroidism in the HUNT2 database, while in the HUNT3 database the association was only present in men. In addition, only men with type 2 diabetes had an increased risk of having hyperthyroidism in the HUNT2 database. There was no association between type 2 diabetes and hypothyroidism in both HUNT2 and 3.

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

This study confirms the importance of obtaining screening TSH level in men and women with type 1 diabetes mellitus, to screen for hypothyroidism and hyperthyroidism. In contrast, it is not necessary to obtain TSH levels in every patient with type 2 diabetes. However, it is interesting to note that men with type 2 diabetes seem to be at higher risk to develop hyperthyroidism, although this needs to be confirmed in other populations. In any event, this study shows that it is important for patients with diabetes to be aware of symptoms and signs associated with thyroid diseases.

— Liuska Pesce, MD

**ATA THYROID BROCHURE LINKS**

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

Hyperthyroidism: <http://www.thyroid.org/hyperthyroidism/>

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

**ABBREVIATIONS & DEFINITIONS**

**Autoimmune thyroid disease:** a group of disorders that are caused by antibodies that get confused and attack the thyroid. These antibodies can either turn on the

thyroid (Graves' disease, hyperthyroidism) or turn it off (Hashimoto's thyroiditis, hypothyroidism).

**AUTOIMMUNE THYROID DISEASE**, continued

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

**Hyperthyroidism:** a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

**Diabetes mellitus:** A condition where there is high blood sugar because of lack of insulin (type 1 diabetes) or inability of insulin to work properly (type 2 diabetes)

**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.

## Thyroid Awareness Monthly Campaigns

The ATA will be highlighting a distinct thyroid disorder each month and a portion of the sales for Bravelets™ will be donated to the ATA. The month of February is **Medullary Thyroid Cancer Awareness Month** and a bracelet is available through the **ATA Marketplace** to support thyroid cancer awareness and education related to thyroid disease.

