



## THYROID AND PREGNANCY

### Pregnant women of African descent have a lower TSH concentration and a lower rate of thyroid autoimmunity

#### BACKGROUND

Thyroid hormone is important during pregnancy in both the mother and the developing baby. Thyroid hormone levels in the mother often change during pregnancy, with the serum level of TSH generally being lower in pregnancy. Finding the normal range of TSH in healthy pregnant women is important and it may have significant implications for diagnosis of thyroid disorders in pregnancy. Subclinical hypothyroidism is a mild state of hypothyroidism and is diagnosed when the TSH level is increased but thyroid hormone level is still within the normal range. Lots of attention has been given on how to diagnose and treat subclinical hypothyroidism in pregnancy as some clinical studies have shown problems with pregnancy outcomes related to this condition.

Autoimmune thyroid disease is the most common cause of thyroid problems in the United States. This occurs when the body makes antibodies that attack the thyroid and either block, stimulate or destroy the gland. The serum marker for autoimmune thyroid disease is TPO (thyroid peroxidase) antibodies.

Many endocrinology clinics now serve a multiethnic population. Previous research done in the United States and Netherland has shown differences in the range of thyroid tests and TPO antibodies between healthy women of different ethnic groups. This study has been done to investigate the range of TSH in pregnant women of different ethnic groups.

#### THE FULL ARTICLE TITLE

Veltri F et al Maternal thyroid parameters in pregnant women with different ethnic backgrounds: do ethnicity-specific reference ranges improve the diagnosis of subclinical hypothyroidism? Clin Endocrinol (Oxf). March 27, 2017. Epub ahead of print.

#### SUMMARY OF THE STUDY

The current study was done in CHU Saint-Pierre, a large referral center in Brussels, Belgium. Between 2013 and

2014, blood test for TSH, free T<sub>4</sub> and TPO antibody were obtained from 2261 pregnant women visiting in their first visit in Obstetric Clinics. Also information about age, Body mass index (BMI), smoking, drug use and parity as well as ethnicity (reported by patient) was collected. A total of 481 women from Sub-Saharan Africa, 754 women from North African descent, and 448 Caucasian women were entered into the study.

The study found that Caucasian women were younger, had a lower BMI but were more often smokers. Sub-Saharan and North African women had a slightly lower average TSH (1.3 mU/L for Sub-Saharan, 1.4 mU/L for North African and 1.5 mU/L for Caucasian women). Caucasian women had a higher rate of positive TPO antibodies.

Based on the TSH results obtained in this study, the authors calculated the normal range of TSH for each ethnic group. They compared the rate of diagnosis of subclinical hypothyroidism in each group once based on the normal range of TSH they had for their institution and once based on the normal range of TSH found in this study for each ethnic groups. No difference in the number of women diagnosed with subclinical hypothyroidism was found between the two groups.

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

In this study of Belgian pregnant women, TSH level was lower in women of African decent. Also they had a lower rate of positive TPO antibodies. However, these changes did not lead to an increased risk of hypothyroidism. These result are interesting and further research is needed to determine the implication of these changes during pregnancy.

— Shirin Haddady, MD, MPH

#### ATA THYROID BROCHURE LINKS

Thyroid and Pregnancy: <https://www.thyroid.org/thyroid-disease-pregnancy/>

Hypothyroidism (Underactive): <https://www.thyroid.org/hypothyroidism/>





## THYROID AND PREGNANCY, continued

### ABBREVIATIONS & DEFINITIONS

**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.

**TPO antibodies:** these are antibodies that attack the thyroid instead of bacteria and viruses, they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States.

**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.

**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).

**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.

