



THYROID AND PREGNANCY

Should the upper limit of TSH vary by gestational age during early pregnancy?

BACKGROUND

Thyroid hormone is important for normal brain development. This is particularly important during early pregnancy, when the developing baby is entirely dependent on the mother to provide thyroid hormones through the placenta. Severe hypothyroidism in the mother can cause brain development problems in the baby. However, the consequences of subclinical hypothyroidism (an increased TSH with normal thyroid hormone levels) in the mother are less clear. In any event, the American Thyroid Association recommends that TSH levels be less than 2.5 mIU/L during the first trimester of pregnancy. While it is clear that the normal range of the thyroid hormones changes during pregnancy, it is unclear if similar changes occur with TSH levels. The aims of this study were to determine if the normal range of TSH changes according to gestational age during the first trimester and to determine the upper limit of TSH to define subclinical hypothyroidism in pregnant women.

THE FULL ARTICLE TITLE

Li C et al. Assessment of thyroid function during first-trimester pregnancy: what is the rational upper limit of serum TSH during the first trimester in Chinese pregnant women? *J Clin Endocrinol Metab* 2014;99:73-9. doi: 10.1210/jc.2013-1674. Epub December 20, 2013.

SUMMARY OF THE STUDY

This was a study of nearly 7,000 women in China who were either considering a pregnancy or already pregnant during the first trimester. Women who had a history of thyroid disease, including thyroid antibodies, were not

included. The women had TSH levels measured at various times during their pregnancy. The results showed that pregnant women between 4-6 gestational weeks had TSH levels that were similar to those of nonpregnant women, while those between 7-12 gestational weeks had lower TSH levels. Using the slightly higher upper limit of TSH derived from this group of Chinese women (4.87 mIU/L), much fewer women were defined as having subclinical hypothyroidism, compared to if the standard recommendation of 2.5 mIU/L was used.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that the nonpregnant upper limit for TSH can be used in women between 4-6 weeks of pregnancy and that a lower TSH upper limit can be applied to first-trimester women after 7 weeks gestation. In addition, authors show that the normal upper limit for TSH during the first trimester among Chinese women is higher than that treatment goal recommended by the American Thyroid Association (2.5 mIU/L). If these results are confirmed with additional research, fewer pregnant women in China will be diagnosed with subclinical hypothyroidism and may not be require treatment.

— Angela Leung, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism: <http://www.thyroid.org/what-is-hypothyroidism>

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

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.