



## THYROID AND PREGNANCY

### Thyroid status and risk of miscarriage

#### BACKGROUND

Inadequately treated hypothyroidism has been associated with negative pregnancy outcomes. Thyroid hormone requirements increase with pregnancy and many women with pre-existing hypothyroidism need an increase in their thyroid hormone doses in the first trimester of pregnancy. The Endocrine Society recommends that TSH levels be maintained between 0.2-2.5 mU/L in the first trimester of pregnancy and between 0.3-3 mU/L in the remaining trimesters. The aim of this study was to examine the relationship between TSH levels in early pregnancy and the risk of adverse pregnancy outcomes.

#### THE FULL ARTICLE TITLE

Taylor PN et al. TSH levels and risk of miscarriage in women on long-term levothyroxine: a community-based study. *J Clin Endocrinol Metab.* July 24, 2014 [Epub ahead of print].

#### SUMMARY OF THE STUDY

This study was an analysis of a historical primary care database of women treated with thyroid hormone during pregnancy in the United Kingdom. Women were included in the analysis if they were between the ages of 18-45 years and had thyroid hormone treatment started for primary hypothyroidism at least 6 months before pregnancy. A total of 1013 pregnancies were identified in 7978 women treated with thyroid hormone for primary hypothy-

roidism. Approximately 63% of pregnant women on thyroid hormone replacement had TSH levels above the recommended level of 2.5mU/L during the first trimester. These women had a higher risk of miscarriage during pregnancy than women whose TSH values were below 2.5mU/L. The risk of miscarriage increased with increasing TSH. Women with a TSH between 4.5-10 mU/L or TSH greater than 10 mU/L had an increased risk of miscarriage of 1.8 or 3.95 times respectively, compared to women who had a normal TSH (0.2-2.5mU/L) during early pregnancy. Women with a TSH between 2.51-4.5mU/L did not appear to have an increased risk of miscarriage.

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

Many women with hypothyroidism on thyroid hormone replacement therapy have TSH levels above the desired 2.5 mU/L level in early pregnancy. Higher TSH levels (TSH levels > 4.5 mU/L) are associated with increased risk for miscarriage and should be avoided in early pregnancy.

— Whitney Woodmansee, 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

**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.

**Miscarriage:** this occurs when a baby dies in the first few months of a pregnancy, usually before 22 weeks of pregnancy.