



## THYROID AND PREGNANCY

### Thyroid function in newborns at birth is related to mothers' thyroid function during early pregnancy

#### BACKGROUND

Normal thyroid function is needed during pregnancy in both the mother and the baby for normal brain development in the baby. This is especially important early in pregnancy before the baby's thyroid starts working when all of the thyroid hormone comes from the mother. If the mother is hypothyroid, it can affect the baby even though the baby's thyroid function is normal. The most common cause of hypothyroidism is Hashimoto's thyroiditis and this can be tested for by measuring thyroid antibodies (TPO antibodies) in mothers' blood. This study was done to see if mothers' thyroid function in early pregnancy is related to their baby's thyroid function at birth. The study also measured how many women were hypothyroid and how many had TPO antibodies in their blood.

#### THE FULL ARTICLE TITLE:

Medici M et al. Maternal early pregnancy and newborn thyroid hormone parameters: the Generation R Study. *J Clin Endocrinol Metab* 2011;97(2):646-52.

#### SUMMARY OF THE STUDY

This was a study of over 5000 women in the Netherlands who delivered a healthy baby between 2002-2006. Thyroid tests were measured in mothers' blood during early pregnancy and in their newborns' umbilical cord blood at birth. The results show that newborn thyroid

function was strongly related to their mothers' thyroid function in pregnancy. Also, almost 9% of the women were hypothyroid during early pregnancy. Since hypothyroidism is frequently related to having TPO antibodies in the blood, women who have known TPO antibodies (such as in a prior diagnosis of Hashimoto's thyroiditis) may benefit from having thyroid function checked when planning a pregnancy.

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

This study shows that early in pregnancy, thyroid function of the developing baby is directly related to their mothers' thyroid function. This is important since early pregnancy is a crucial period of brain development. The results suggest that pregnant women need to maintain normal thyroid function, especially during the first trimester. This may be even more important for women with TPO antibodies in the blood, who are at higher risk of developing hypothyroidism than women without TPO antibodies.

— Angela Leung, MD

#### ATA THYROID BROCHURE LINKS

Hypothyroidism: [http://thyroid.org/patients/patient\\_brochures/hypothyroidism.html](http://thyroid.org/patients/patient_brochures/hypothyroidism.html)

Thyroid and Pregnancy: [http://thyroid.org/patients/patient\\_brochures/pregnancy.html](http://thyroid.org/patients/patient_brochures/pregnancy.html)

#### ABBREVIATIONS & DEFINITIONS

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

**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.

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