



THYROID AND PREGNANCY

Smoking during pregnancy increases risk of subsequent hyperthyroidism in mothers

BACKGROUND

Cigarette smoking has been shown to have several effects on the thyroid. Many studies have shown that cigarette smoking is associated with hyperthyroidism, specifically Graves' disease. The association between smoking and hypothyroidism is less clear. Normal thyroid hormone levels are especially important during and after pregnancy for both the mother and her baby. This study was done to determine the risks of smoking during pregnancy on mothers' thyroid function (hyperthyroidism and hypothyroidism) following pregnancy.

THE FULL ARTICLE TITLE

Andersen SL et al. Smoking reduces the risk of hypothyroidism and increases the risk of hyperthyroidism: evidence from 450,842 mothers giving birth in Denmark. *Clin Endocrinol (Oxf)*. July 1, 2013 [Epub ahead of print].

SUMMARY OF THE STUDY

This was a study using the medical charts of women in the national birth, hospital, and prescription registries in Denmark from 1996-2008. Of over 450,000 mothers, almost 20% smoked cigarettes during their first pregnancy. After delivery, women who had smoked were more likely to develop hyperthyroidism, especially in mothers over 30 years old and less likely to develop hypothyroidism. In particular, smoking during pregnancy increased the risk of developing two common forms of hyperthyroidism, Graves' disease and toxic nodular goiter.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This was a very large study and confirms previous data showing that smoking is associated with hyperthyroidism. However, the results suggesting that smoking protects against hypothyroidism are surprising since cigarettes contain substances which increase the risk of hypothyroidism. One potential explanation might be that the study did not look at the level of thyroid antibodies, which may affect hypothyroidism. Also, the study did not determine the possible risks of mothers' smoking on babies' thyroid function. It is well known that smoking during pregnancy has been associated with complications such as low birthweight babies, preterm delivery and infant death. This study suggests that the increased risk of developing hyperthyroidism is yet another reason to counsel women not to smoke during pregnancy. Finally, clinicians should follow women who smoked during pregnancy closely for possible thyroid dysfunction, especially in the first 2 years after delivery.

—Angela Leung, MD

ATA THYROID BROCHURE LINKS

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

Hyperthyroidism: <http://www.thyroid.org/what-is-hyperthyroidism>

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ABBREVIATIONS & DEFINITIONS

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.

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

Graves' disease: the most common cause of hyperthyroidism in the United States. It is caused by antibodies that attack the thyroid and turn it on.