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# THE THYROID, PREGNANCY & INFANCY

## Thyroid conditions and pregnancy

Even before conception, thyroid conditions that have lingered untreated can hinder a woman's ability to become pregnant or can lead to miscarriage. Fortunately, most thyroid problems that affect pregnancy are easily treated. The difficulty lies in recognizing a thyroid problem during a time when some of the chief complaints — fatigue, constipation and heat intolerance — can be either the normal features of pregnancy or signal that something is wrong with the thyroid.

Although detecting a thyroid problem is important, it is equally necessary for those already diagnosed with a thyroid condition to have the thyroid checked if they are planning to become pregnant or are pregnant, as thyroid hormone is necessary for normal brain development, and in early pregnancy, babies get thyroid hormone from their mothers. As the baby's thyroid develops, it makes its own thyroid hormone. An adequate amount of iodine is needed to produce fetal and maternal thyroid hormone. The best way to ensure adequate amounts of iodine reach the unborn child is for the mother to take a prenatal vitamin with a sufficient amount of iodine. Not all prenatal vitamins contain iodine, so be sure to check labels properly.

## Who should be tested?

Despite the impact thyroid diseases can have on a mother and baby, whether to test every pregnant woman for them remains controversial. As it stands, doctors recommend that all women at high risk for thyroid disease or women who are experiencing symptoms should have a Thyroid Stimulating Hormone (TSH) test and if warranted, an estimate of free thyroxine blood tests and other thyroid blood tests. A woman is at a high risk if she has a history of thyroid disease, a family history of thyroid disease, type 1 diabetes mellitus, or any other autoimmune condition. Anyone with these risk factors should tell their OB/GYN or family physician. Ideally, these women should be tested prior to becoming pregnant, at prenatal counseling and as soon as they know they are pregnant.

## Hypothyroidism during pregnancy

When a woman is pregnant, her body needs enough thyroid hormone to support a developing fetus and her own expanded metabolic needs. Healthy thyroid glands naturally meet increased thyroid hormone requirements. If someone has Hashimoto's thyroiditis or an already overtaxed thyroid gland, thyroid hormone levels may decline further. So, women with an undetected mild thyroid problem may suddenly find themselves with pronounced symptoms of hypothyroidism after becoming pregnant.

## Risks of an underactive thyroid gland during pregnancy

In the U.S., most women who develop hypothyroidism during pregnancy develop a mild case of the disease and only mild symptoms or sometimes no symptoms. However, if you have a mild, undiagnosed condition before becoming pregnant, the condition may worsen. A range of signs and symptoms may be experienced that are sometimes mistaken for normal features of pregnancy. Untreated hypothyroidism, even a mild version, may contribute to possible pregnancy complications. Treatment with sufficient amounts of thyroid hormone replacement significantly reduces the risk for developing any of the following pregnancy complications associated with hypothyroidism:

- Abruptio placentae (separation of the placenta from the uterus)
- Premature birth
- Postpartum hemorrhage
- Preeclampsia (high blood pressure and protein in the urine usually seen during the second half of pregnancy)
- Anemia
- Miscarriage

## Treating hypothyroidism during pregnancy

There is no difference between treating hypothyroidism when a woman is pregnant than when she is not. Levothyroxine sodium pills are safe for use during pregnancy, and are prescribed in dosages that are aimed at replacing thyroid hormone so that the TSH level is kept within normal ranges. Once a woman begins taking thyroid hormone pills, she will be monitored closely until her TSH level is within normal ranges for pregnancy. Once it is, your doctor should check TSH levels every six weeks or so. The physician may also counsel patients to take their thyroid hormone pills at least one-half hour to one hour before or at least three hours after they take iron-containing prenatal vitamins or calcium supplements, both of which can interfere with the absorption of thyroid hormone.

## Hyperthyroidism during pregnancy

Graves' disease tends to strike women during their reproductive years. Reports on pregnancies lasting longer than 20 weeks suggest that Graves' disease occurs in 2 per 1,000 pregnancies or 0.2 percent of all pregnancies. Pregnancy may worsen a preexisting case of Graves' disease which can present for the first time, typically during the first trimester of pregnancy. The disease is usually at its worst during the first trimester then tends to improve in the second and third trimesters and flare up again after delivery.

## The risks of an overactive thyroid during pregnancy

A woman with hyperthyroidism while pregnant is at an increased risk for experiencing any of the signs and symptoms of hyperthyroidism. And unless the condition is mild, if it is not treated promptly, a woman could miscarry during the first trimester; develop congestive heart failure, preeclampsia, or anemia; and, rarely, develop a severe form of hyperthyroidism called thyroid storm, which can be life threatening.

If left untreated, hyperthyroidism can lead to stillbirth, premature birth, or low birth weight for the baby.

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Women with Graves' disease have antibodies that stimulate their thyroid gland. These antibodies can cross the placenta and stimulate a baby's thyroid gland. If antibody levels are high enough, the baby could develop fetal hyperthyroidism with tachycardia – an abnormally fast pulse – or neonatal hyperthyroidism.

## Diagnosing hyperthyroidism during pregnancy

As with hypothyroidism, diagnosing hyperthyroidism based on symptoms can be tricky because pregnancy and hyperthyroidism share many features. For instance, feeling a heart flutter or suddenly becoming short of breath, both symptoms of hyperthyroidism, can be normal in pregnancy, but a doctor still may want to investigate these symptoms. An individual with any risk factors for thyroid disease should make certain they are tested.

While hyperthyroidism can be easily diagnosed through blood tests it may require scanning tests as well, that use minimal amounts of radioactive iodine. However, if a woman is pregnant, scanning tests are not done because small amounts of radioactivity may cross the placenta and become concentrated in the baby's thyroid gland. Antibody tests can be used to distinguish Graves' disease from other causes of hyperthyroidism. A physical exam can help diagnose or distinguish a toxic adenoma or toxic multinodular goiter.

## Treating hyperthyroidism during pregnancy

Very mild hyperthyroidism usually does not require treatment, only routine monitoring with blood tests to make sure the disease does not progress. More serious conditions require treatment which includes drug therapy and surgery. However, treatment options are limited for a pregnant woman. While methimazole (MMI) is the drug of choice, propythiouracil (PTU) should be used during the first trimester of pregnancy due to an increased risk for rare birth defects. (Other situations in which PTU would be used include when a patient is allergic to or intolerant of MMI, or when life-threatening thyrotoxicosis occurs.) Due to its potential risks, the goal of treatment is to use the minimal amount of antithyroid drugs possible to maintain a patient's T4 and T3 levels at or just above the upper level of normal, while keeping TSH levels suppressed. When hormones reach the desired levels, drug doses can be reduced. This approach controls hyperthyroidism while minimizing the chances of a baby developing hypothyroidism.

Radioactive iodine cannot be used during pregnancy because it easily crosses the placenta, potentially damaging the baby's thyroid gland and causing hypothyroidism in the baby.

## Thyroid diseases in children

Thyroid problems are much less common in children than adults, but can be worrisome because of their potential effect on children's growth and developing brains.

In adults, treatment usually reverses the effects of thyroid diseases, even when they go undetected for years. Yet in early childhood, hypothyroidism can lead to permanent mental deficiencies and short stature if it is not treated promptly. Hyperthyroidism can lead to accelerated growth in children, and when it affects infants, it can be fatal.

Thanks to screening programs that test all newborns for hypothyroidism, the condition can be treated immediately if detected. Each year, in North America alone, more than 5 million newborns are screened annually, and hypothyroidism is detected and treated in approximately 1,500 of these infants.

A child may be born with a thyroid condition or may develop one during childhood. Diagnosing thyroid diseases in children can be especially tricky, since it is up to the parent to recognize when something is wrong. This isn't always easy when dealing with young children who aren't talking yet or with older children who may not be able to describe what they feel or even know what they are feeling isn't normal.

If you or someone in your family has a thyroid condition, your child may be at a higher risk for developing a thyroid disorder.