

[Ob.Gyn. News Home](#)[Back Issue Archive](#)[Search](#)[User
Pref](#)[Help](#)[Logout](#)[Table of
Contents](#)[Drug
Links](#)[<<
Article](#)[>>
Article](#)

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American Thyroid Association statement

ID Subclinical Hypothyroidism Before Conception

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Mid-Atlantic Bureau

ALEXANDRIA, VA. — A new statement published by the American Thyroid Association urges physicians to be aggressive in identifying and treating women with overt or subclinical thyroid dysfunction before they conceive.

The statement includes guidelines on identifying and treating women with thyroid insufficiency before and during pregnancy, as well as a research agenda for determining the risks and benefits of treating maternal subclinical hypothyroidism.

Until large trials assessing the impact of screening and treating maternal thyroid dysfunction are completed, clinicians can use this statement to guide management decisions for these patients, said Dr. Gregory Brent, who presented the document at a symposium sponsored by the American Thyroid Association.

“There is a lot we can do for these women while we're waiting for such trials,” commented Dr. Brent of the University of California, Los Angeles. “Women with known thyroid disease should be carefully monitored and their thyroxine dose adjusted prior to pregnancy. We also need to identify women who are at high risk for thyroid disorders. There are women in these risk groups who are not being tested.”

But some experts contend that the statement doesn't ask physicians, who are already identifying and treating women with active thyroid disease, to do anything new.

And many who attended the meeting pointed out that there's no proven evidence that widespread thyroid screening is necessary or that treating maternal subclinical hypothyroidism is beneficial for the patient.

“What physicians should do—and are already doing—is treat any woman who has a history or symptoms, screen those who have risk factors and treat those found to be abnormal,” said Dr. Catherine Spong, chief of pregnancy and perinatology at the National Institute of Child Health and Human Development. “That's nothing new,” she told this newspaper.

But the management guidelines also call for regularly monitoring pregnant women who have subclinical hypothyroidism, which is defined as a high thyroid stimulating hormone level and normal thyroxine level.

Although some small studies have suggested that subclinical hypothyroidism may increase risks to fetal health, no conclusive data have shown that screening women for this condition is beneficial and risk free, Dr. Spong noted during the symposium, also sponsored by the American Association of Clinical Endocrinologists.

“There is some evidence that a small number of women with subclinical hypothyroidism go on to develop overt disease later in pregnancy; however, it's a very small number,” she said.

“The fetus needs maternal thyroxine only in the first trimester, when the mother's levels are still normal. After 12 weeks, the fetus makes its own thyroxine. So if maternal thyroxine is within the normal range during the first trimester, does screening or treatment benefit either the mother or fetus? We just don't know.”

Dr. Laura Riley, chair of ACOG's Obstetrical Practice Committee, agreed with Dr. Spong.

“There's nothing in there that is really earth-shatteringly new. We've known for a while that there is some association between maternal hypothyroidism and low IQ in the offspring. The piece of information we are missing is whether treatment in the first trimester really makes a difference. If it doesn't, we just have to step back and ask ourselves, ‘Why are we even checking?’” said Dr. Riley of Harvard University, Boston.

Earlier this year, the U.S. Preventive Services Task Force found insufficient data to recommend for or against thyroid screening in asymptomatic adults, citing a poor amount of evidence that available treatments improve clinically important outcomes in asymptomatic adults who screened positive for thyroid disease (*Ann. Intern. Med.* 140[2]:125-27, 2004).

The USPSTF review did not specifically address screening in women who were pregnant or who intended to conceive.

In January, Dr. Martin I. Surks' review of 125 papers on thyroid dysfunction found that the consequences of subclinical thyroid disease were minimal, and found insufficient evidence to recommend population-based screening.

Dr. Surks of Montefiore Medical Center in New York did support the concept of “aggressive case finding” in pregnant women (*JAMA* 291[2]:228-38, 2004).

This review, combined with a recent Texas study of pregnancy outcomes in women with subclinical hypothyroidism, helped garner support for the new guidelines among members of the American Thyroid Association and American Association of Clinical Endocrinologists. Both groups feel that evidence is accumulating that maternal thyroid dysfunction has an untoward impact on fetal and childhood development.

The study of subclinical hypothyroidism, conducted at Parkland Health and Hospital System in Dallas, compared pregnancy outcomes in 436 women with subclinical hypothyroidism with outcomes in 15,689 women with normal TSH levels.

The study found a prevalence of maternal subclinical hypothyroidism of 2.2%-2.5%. There were increases in the relative risk of placental abruption (3.0), preterm birth (1.8), neonatal intensive care admission (1.8), and neonatal respiratory distress syndrome (1.8) in the group with subclinical hypothyroidism, compared with euthyroid women.

The Texas study also postulated that maternal subclinical hypothyroidism contributes to poor long-term neurobehavioral outcomes in children because of its association with preterm birth.

Dr. Brent and Dr. Spong agree that only large-scale randomized trials looking at long-term neurodevelopmental outcomes in children will really solve the issue of when to screen and whom to treat.

Although no such trials are planned in the United States, one is underway in Wales.

The Controlled Antenatal Thyroid Screening (CATS) study aims to enroll 22,000 women with singleton pregnancies of less than 16 weeks' gestation. The women are being randomized to screening or no screening. Women with abnormal screens will be treated early in pregnancy.

Unscreened women will be screened after delivery and treated if they have abnormal results. The study's end point is

the child's neurodevelopment at ages 2 and 5.

So far, the study has recruited about 5,000 women. Of the 2,455 randomized to screening, 106 were abnormal: 56 had low free T4, 51 had high TSH, and 3 women had both findings.

No childhood neurodevelopmental data are available yet.

Physicians should identify women at high risk for thyroid disorders and urge them to get tested, the document says. *Lynda Banzi*



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Statement on Early Maternal Thyroidal Insufficiency

Top of Page

Here are some key points of the interim management guidelines and research agenda put forth by the American Thyroid Association. The full statement is scheduled to be posted this month at www.thyroid.org.

► Physicians should optimize the treatment of women with overt hypothyroidism before they conceive and monitor their thyroxine levels through the pregnancy.

Because a surge in thyroxine production usually occurs at about week 8 in gestation, women on thyroxine should be counseled to increase their intake 30%-50% when they become pregnant.

► Physicians should screen women who are at risk for thyroid disease before they become pregnant and shortly after they conceive.

Risk factors include personal or family history of thyroid disease, thyroid autoimmunity, type 1 diabetes, or other autoimmune disorders, including rheumatoid arthritis and systemic lupus erythematosus.

► Women with subclinical hypothyroidism should have their thyroid status monitored during pregnancy.

► Physicians should counsel women about adequate iodine intake during pregnancy and lactation.

Although most women in the United States already receive adequate iodine nutrient, pregnant women are vulnerable to deficiencies because they need and excrete more iodine than nonpregnant women. Pregnant women should be

counseled to take prenatal vitamins that include adequate iodine levels—at least 200 mg/day. A recent Boston University study found that only 15% of prenatal vitamins contain more than 150 mg/day.

▶ A public education campaign should be instituted to teach women and clinicians about the importance of thyroid health, thyroid testing for high-risk individuals, and iodine nutrition.

Over-the-counter pregnancy detection kits should include a recommendation for pregnant women to immediately begin taking a prenatal vitamin with iodine. They should also include a list of risk factors for maternal thyroid dysfunction with a recommendation to seek a TSH test if those risk factors are present.

▶ A future research agenda should include studies of the prevalence of overt and subclinical maternal hypothyroidism and the pregnancy outcomes associated with each; the prevalence of iodine deficiency in women in the United States; possible revision of iodine dietary guidelines; and the impact of iodine nutrition on breast-feeding.

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