

Prenatal Testing of Thyroid Is Debated

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When women think about pregnancy, the thyroid gland is seldom the first thing that leaps to mind. Nestled in the neck, the gland makes hormones that govern metabolism, helping to regulate body weight, heart rate and a host of other factors.

But if the thyroid malfunctions, it can produce too little or too much of these hormones. During pregnancy those conditions, known as hypothyroidism and hyperthyroidism, respectively, may lead to miscarriage, premature birth and pre-eclampsia — and in the case of hypothyroidism, impaired intelligence in the child.

A decade and a half of research has now brought the cumulative evidence of these risks to a critical mass. Clinical guidelines call for vigilant monitoring and treatment of patients to keep thyroid reserves normal and to safely guide women through pregnancy and early motherhood.

But because thyroid problems can easily go undiagnosed, the hazards have also set off a debate over whether every woman who is pregnant or planning to be should have a blood test to check her thyroid. That test measures for thyroid-stimulating hormone, or T.S.H., which spurs the gland's hormone production.

Most doctors' groups have not endorsed universal prenatal thyroid screening, citing uncertainties over whether it would yield health benefits justifying the expense of testing in roughly 6.4 million pregnancies each year and educating doctors to read results that are tricky to interpret.

But the big unanswered question — and crux of the debate — is whether treatment would help women with a mild, common form of thyroid deficiency, called subclinical hypothyroidism. For now, medical societies advise testing only high-risk women.

As a matter of policy, Dr. Kenneth D. Burman, the president of the American Thyroid Association, agrees with that stance for now. Yet like more and more endocrinologists, he offers T.S.H. pregnancy testing in his practice, at Washington Hospital Center in Washington.



Scala/Art Resource
DEPICTION Renaissance artists unwittingly captured links between motherhood and thyroid trouble by showing goiters.

“Every patient I see who’s considering getting pregnant or is pregnant gets a thyroid function test,” he said. “And I think that’s the right thing to do.”

He and others say they expect more and more doctors and medical societies to support universal screening after weighing all the evidence. The thyroid association is holding a symposium this Thursday and Friday in Washington to discuss the most recent research.

Symptoms of a wayward thyroid can be subtle, and pregnancy can mask them. Fatigue, weight gain and dry skin — all typical in pregnant women — can also result from hypothyroidism, said Dr. Alex Stagnaro-Green, an endocrinologist at Touro University College of Medicine in Hackensack, N.J.

The opposite condition, hyperthyroidism, affects roughly 2 in 1,000 pregnancies. But again, its symptoms — poor sleep, weight loss and nervousness after childbirth — could result from other postpartum conditions. (Renaissance painters unknowingly depicted the link between thyroid problems and pregnancy by showing women with goiters from an overactive thyroid after childbirth.)

Hypothyroidism, which usually arises from underlying autoimmune disease, is the more frequent and worrisome concern. As many as 10 to 20 percent of reproductive-age women test positive for antibodies that attack the thyroid gland and may eventually destroy it. Their risk of miscarriage is doubled.

Three to five out of 1,000 women of childbearing age suffer from overt hypothyroidism, in which thyroid hormone, or T4, is low and T.S.H. is abnormally high. But the most common thyroid dysfunction is subclinical hypothyroidism, in which T4 is normal but T.S.H. is slightly elevated. That condition affects 2 to 3 percent of women but often goes undiagnosed when it causes no obvious symptoms.

Hypothyroidism may harm fetal brain development. Ten years ago, researchers in Maine analyzed blood samples from 25,216 pregnant women and identified 62 with hypothyroidism. Their children, by then 7 to 9 years old, were given intelligence tests. Nineteen percent of the children born to women with an untreated underactive thyroid had an I.Q. of 85 or lower, compared with 5 percent of those whose mothers had a healthy thyroid. “At about 85 or below, that’s where you begin to have trouble in school and in life in general,” said Dr. James E. Haddow, a pediatrician at Brown University who was an author of the study. But if mothers had their hypothyroidism treated, their children’s intelligence was not impaired.

In reaction, the American Association of Clinical Endocrinologists endorsed routine T.S.H. testing in all women considering pregnancy. But other organizations, including the American College of Obstetricians and Gynecologists, have said wide-scale screening is premature until more data prove that treating subclinical hypothyroidism would prevent adverse effects in women and their offspring.

Studies do suggest that T4-replacement therapy is protective. But few large clinical trials have rigorously tested this intervention in mildly thyroid-deficient women. So far, promising results

have come from one major, well-designed Italian study that showed miscarriage and preterm delivery rates dropped sharply when thyroid hormone pills were given to pregnant women who tested positive for thyroid antibodies.

Experts are now looking to the outcomes of two other major clinical trials under way in Wales and the United States. Both aim to confirm the I.Q. effects and the ability to avert them by studying pregnant women with underactive thyroids who receive hormone therapy or no treatment.

Pregnancy is such a critical time that “to expose a baby to a medication without known benefit may not be the best thing, unless we truly know that it’s helpful,” said Dr. Catherine Spong, the chief of pregnancy and perinatology at the National Institute of Child Health and Human Development, which is sponsoring the American trial.

That study will track 1,170 expecting mothers, including women with subclinical hypothyroidism, and their children will undergo I.Q. testing at age 5. Results are expected in 2015.

Advocates of routine testing see no need to wait for more answers, though. Dr. Terry F. Davies, an endocrinologist at the Mount Sinai School of Medicine in New York, finds the evidence “overwhelming” that a shortage of maternal thyroid hormone harms intellectual function in babies. “Once you believe that,” he said, “it would seem to me illogical not to be sure that all women have normal thyroid function during pregnancy.”

And Dr. Hadow said universal prenatal testing could be justified on the grounds of benefiting a woman’s general health. In the Maine study, 58 percent of the pregnant women who had hypothyroidism but did not know it eventually did have it diagnosed, but it took an average of five years. Pregnancy is “an optimal time” for T.S.H. testing, he said.

Most medical societies endorse only selective screening. Two years ago, the Endocrine Society released recommendations for testing T.S.H. in women at high risk for thyroid disorders, including anyone with symptoms of a goiter or sluggish thyroid, or a family history of thyroid problems, as well as those with Type 1 diabetes or autoimmune disease or previous miscarriage or premature delivery.

But research since then has revealed flaws in that strategy. “The problem is, it’s not good enough,” Dr. Stagnaro-Green said. A British study found that such testing missed 30 percent of those with hypothyroidism and 69 percent of those with hyperthyroidism.

For now, until there is confirmation that treatment truly helps, Dr. Stagnaro-Green said he still favored selective thyroid screening. But he added, “My belief is that data will be forthcoming that will push us towards universal screening.”