

TSH Assay

What It Is

The Thyroid Stimulating Hormone (TSH) test is a common blood test used to evaluate how well your child's thyroid gland is working. This gland, located at the lower front of your child's neck. The TSH test measures your child's response to the thyroid stimulating hormone in the blood. When the thyroid gland is underactive and not producing enough thyroid hormone, the body produces more TSH to stimulate the gland and increase its activity. This results in what is known as hypothyroidism. If the gland is overactive and producing too much thyroid hormone, the body produces less TSH, resulting in hyperthyroidism.

Why It's Done

The thyroid gland produces the hormones that control metabolism and is also a critical element in maintaining body temperature. The thyroid gland also controls heart rate, appetite, and digestive functions.

The TSH testing is used to:

- Diagnose a thyroid disorder in a person with symptoms
- Screen newborns for an underactive thyroid
- Help evaluate the function of the pituitary gland (no larger than a pea and located at the base of the brain)

Your doctor may order a TSH test when your child has symptoms of hyper- or hypothyroidism, or if your child shows signs of an enlarged thyroid gland. The TSH test may also be ordered at regular intervals to monitor the effectiveness of treatment, if your child is being treated for a known thyroid disorder.

TSH tests are also routinely ordered for newborns as part of each state's newborn screening program.

Preparation

Fasting or limiting your child's activity before the test is unnecessary. However, many medications, including aspirin, may affect the test results, so your doctor may ask you to discontinue these medications in your child before the test. Extreme stress and acute illness may also affect TSH test results.

Procedure

The blood test for a TSH test is relatively painless. After the skin surface is cleaned with antiseptic, an elastic band is placed around the upper arm to apply pressure and cause the vein the swell with blood. A needle is inserted into a vein (usually in the arm inside of the elbow or the back of the hand) and blood is withdrawn and collected in an airtight vial or syringe. During the procedure, the elastic band is removed to restore circulation to the arm. Once the blood has been collected, the needle is removed and the puncture site covered with cotton or a band-aid to stop the bleeding. The entire test will just take a few minutes.

What to Expect

Collecting a sample of blood is only temporarily uncomfortable and can feel like a gentle pinprick. Afterward, there may be some throbbing or bruising, which should go away in a day or so.

Getting the Results

You will meet with your doctor a few days after the test to receive the results. Because test results depend on many factors, including age, gender, and test method, TSH test results can have different meanings in different labs. Generally speaking, a high TSH result often means an underactive thyroid gland that is not responding well enough due to a possibility of acute or chronic thyroid function. In rare cases, a high TSH result can indicate a problem with the pituitary gland. A low TSH result can indicate an overactive or hyperactive thyroid, known as hyperthyroidism, or excessive amounts of thyroid hormone. In rare cases, a low TSH result may indicate damage to the pituitary gland that prevents it from producing adequate amounts of TSH.

Whether your child's results are high or low, an abnormal TSH indicates an excess or deficiency in the amount of thyroid hormone available to the body. It does not, however, indicate why. To determine the cause, your child's doctor will usually do additional testing.

Risks

While the risks associated with a TSH test are low, some risks may be present. These can include:

- Excessive bleeding
- Infection (a small risk whenever the skin is broken)
- Fainting or feeling light-headed
- Hematoma (blood accumulating under the skin)
- Pain associated with multiple punctures to locate a vein

Helping Your Child

Getting a blood test is relatively painless. Still, many children are afraid of needles. Explaining how the test will be conducted, and why it is being done, can help reduce some of your child's fear. Allow your child to ask the technician any questions he or she might have. Tell your child to try and relax during the procedure, as tense muscles can make it harder and more painful to draw blood. It also helps to relieve anxiety sometimes if your child looks away when the needle is being inserted into the skin.

If You Have Questions

If you have questions about the TSH test procedure, contact your doctor. You can also talk to the blood-drawing technician before the exam concerning any questions you may have.

Sources

<http://labtestsonline.org/understanding/analytes/tsh/test.html>

http://www.med.umich.edu/1libr/aha/aha_thystiho_crs/htm