

ASK THE DOCTOR

Question: Recently my daughter's annual thyroid blood work came back as follows: TSH 9.74 (normal: 0.3 - 5.0), T3 27.8 (normal: 25.0 - 35.0), Free T4 1.7 (normal: 1.0 - 4.3), and T4 6.2 (normal: 4.5 - 12.5). A repeat test six weeks later was similar except the TSH was 6.2. What is the significance and what do you recommend?

TSH is a hormone produced by the brain to stimulate the thyroid gland to produce thyroid hormone. TSH is elevated when the brain senses that there is not enough thyroid hormone. Thyroid hormones are measured as Free T4, T4 and T3. Thyroid hormones regulate the metabolism of the tissues in the body. In a sense, the thyroid supports the function of all the other body systems. In addition, thyroid hormone is necessary for the development of the nervous system in the first few years of life and is necessary for growth and development. When one has an underactive thyroid (hypothyroidism), treatment consists of replacement of the thyroid hormone by taking the hormone in pill form.

The picture of elevated TSH with normal thyroid hormones (as in your daughter) is called compensated hypothyroidism. It may be the first stages of hypothyroidism (with elevated TSH and low thyroid hormones). However, sometimes in persons with Down syndrome, the TSH will fluctuate without an apparent change in thyroid hormones.

Since the TSH has declined in the intervening 6 weeks, in your daughter, talk to your doctor about rechecking the levels in about 3 - 4 months. If the TSH remains elevated, consider evaluation by an endocrinologist and/or treatment with thyroid replacement.

Consider also checking the thyroid antibodies, which, are elevated in many people with Down syndrome who have an underactive thyroid. They signify an auto-immune thyroid condition in which the body's own immune system damages the thyroid gland and often leads to hypothyroidism (underactive thyroid). If they are elevated, the elevated TSH may signify the early stages of an underactive thyroid gland. The presence of the antibodies may make your doctor more likely to treat.

Recently, there have been some who advocate providing thyroid hormone for T4 levels in the lower normal range, even if the TSH is normal. The normal TSH indicates that the brain is receiving the message that there is enough thyroid hormone. Therefore, without clear studies that support keeping the T4 in the high normal range (i.e.: greater than 8), it does not appear to be necessary. Furthermore, too much replacement can lead to hyperthyroidism (overactive thyroid) which has its own symptoms and problems.

Brian Chicoine, MD.