

**Congenital Hypothyroidism**  
**Division of Pediatric Endocrinology and Diabetes**  
**Stanford University School of Medicine**

**Introduction**

Congenital hypothyroidism is a common disorder detected in 1: 3,500 infants in California. The problem is usually detected by the newborn blood test done at birth to screen for a number of inherited disorders. In 95% of the cases, the hypothyroidism (under active thyroid gland) is permanent; in 5% or less of cases, babies can “outgrow” the need for thyroid hormone later in childhood. This can be tested AFTER the baby is 2-3 years old but not before.

Thyroid hormone is essential for normal body and brain growth. It is critically important that babies with hypothyroidism received thyroid hormone replacement in the proper amount as soon as the diagnosis is made. Typically, doctors begin therapy with 37.5 to 50 micrograms of thyroxine daily (Synthroid, Levothroid, Eltroxine or levothyroxine). The doses are then adjusted depending on the results of blood tests.

**Giving Thyroid Hormone**

Congenital hypothyroidism is treated by giving back the missing hormone in pill form. Thyroxine is identical to the body’s own thyroid hormone. The thyroid hormone tablets should be crushed in a small amount of water, breast milk or formula and spooned into the baby’s mouth. It should NOT be delivered in a bottle, syringe, etc. It should NOT be given at the same time as iron or soy as this can interfere with its absorption. When the child is older, he can chew it or swallow it directly. The pill should be taken EVERY DAY. If a pill is missed by accident, the dose should NOT be doubled up the next day. However, compliance is essential to helping your baby have normal brain development.

**Blood Tests to Determine the Right Dose of Thyroid Hormone**

Blood tests are essential to determine if the thyroid replacement is too much, too little or just right. Both too much and too little thyroid hormone can be harmful to the developing brain. The American Academy of Pediatrics recommends that blood tests be done very often in infants with less frequency as children get older

1. At 2 -4 weeks after starting
2. Every 1 - 2 months until age 6 months
3. Every 3-4 months between 6 months and 3 years
4. Every 6 – 12 months until growth is completed
5. A month after any change in the thyroid dose
6. AND more frequently if compliance or absorption is a concern

The goal of the treatment is to have the total T4 or free T4 (thyroxine) levels in the upper half of the normal range (10 – 16 for total T4, 1.4-2.3 for free T4), and the TSH in the lower part of the normal range (usually 0.5 – 2.0 mU/L). If the TSH is high, the dose of thyroid hormone should be increased. If the TSH is suppressed below 0.5, your doctor may reduce the thyroid dose.

If your pediatrician is monitoring your baby’s blood tests and has questions, he or she can consult with the Pediatric Endocrinologists at (650) 721-1811 or fax (650) 725-8375.