

# Thyroid Hormone Administration: A Guide for Families

## What is thyroid hormone?

*Thyroid hormone* is the medication prescribed by your child's doctor to treat hypothyroidism, also known as an *underactive thyroid gland*. The body makes 2 forms of thyroid hormone, levothyroxine ( $T_4$ ) and triiodothyronine ( $T_3$ ). Generally, prescribed thyroid hormone comes in the form of  $T_4$ , which is converted by the body to the active form,  $T_3$ . This medication is available in generic form as *levothyroxine*. Brand names you may encounter for this medication include Levothroid, Levoxyl, Synthroid, and Unithroid. This medication comes in pill form. Babies who need thyroid hormone because of hypothyroidism must be given this medication on a regular basis so that their brains will develop normally. Babies and older children also need thyroid hormone for normal growth, among other important body functions.

## How should thyroid hormone be given?

For babies and small children, because there is no reliable liquid preparation, the pill should be crushed just before administration and mixed with a small volume of water, human (breast) milk, or formula. This mixture can be given to the baby or small child using a spoon, dropper, or infant syringe. The spoon, dropper, or syringe should be "washed through" with more liquid 2 more times until all the thyroid hormone has been given. Making a mixture of crushed tablets and water or formula for storage is not recommended because this preparation is not stable. Some pharmacies will prepare a compounded suspension of levothyroxine, but it is only guaranteed to be stable for a month and it is more expensive. Levothyroxine is tasteless and should not be a problem to give.

Older children and teens should be encouraged to swallow the pills whole or with water or to chew the pills if they cannot swallow them. In general, thyroid hormone should be given at the same time of day every day. Despite the instructions you may receive from your pharmacy, thyroid hormone does not need to be taken on an empty stomach. However, its absorption may be affected by food, so it should be taken consistently with or without food. However, please avoid consuming the following foods or supplements with the thyroid hormone because they may prevent the medicine from being fully absorbed:

- Soy protein formulas or soy milk
- Concentrated iron
- Calcium supplements, aluminum hydroxide
- Fiber supplements
- Sucralfate

You do not need to worry about thyroid hormones interacting with other medications, as the medicine simply replaces a hormone that your child is no longer able to make. A good way to keep track of your child's doses is to get a 7-day pillbox and fill it at the beginning of the week. If one dose is missed, that dose should be taken as soon as possible. If you find out one day that the previous dose was missed, it is fine to double the dose the next day.

## What are the side effects of thyroid hormone medication?

The rare side effects of thyroid hormone medication are related to *overdose*, or too much medication, and can include rapid heart rate, sweating, anxiety, and tremors. If your child experiences these signs and symptoms, you should contact the physician who prescribed the medication for your child. A child will *not* have these problems if the thyroid hormone dose prescribed is only slightly more than is needed.

## Is it OK to switch between brands of thyroid hormone medication?

Some endocrinologists believe that this may not always be a good idea. It is possible that different brands have different bioavailability of the "free" hormone; therefore, if you need to switch between name brands or switch from a name brand to generic levothyroxine, you should let your endocrinologist know so your child's thyroid functions can be checked if the endocrinologist feels it is necessary to do so. Once-daily administration and close follow-up with your endocrinologist is needed to ensure the best possible results.

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