Levothyroxine

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Recommended Citation
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**Molar Mass:**

C₁₂H₁₄O₃·4H₂O = 300.9 g/mol

H₂O = 18.015 g/mol

Na = 22.989 g/mol

Literature Value: 275 g/mol

**Water Solubility:**

Levothyroxine is soluble in water (25 degrees)

About 35 mg/100 ml

**Chemical Names:**

Hydroxyl-3,5-diiodo-thyronine, 3,5-diodothyronine, 3,5-diiodothyronine

**Trade Names:**

Eltroxin

Levoxyl

Liothyronin

Synthroid

**Body’s Processing of Levothyroxine:**

The body takes in Levothyroxine orally (by mouth) or intravenously (administered into a vein). Levothyroxine is absorbed from the gastrointestinal tract and is gradually released into blood.

The body gets rid of Levothyroxine by being eliminated through the gastrointestinal tract within 6 to 7 days.

**Generic Drug Name:**

Levothyroxine

**Chemical Formula:**

C₁₂H₁₄O₃·4H₂O

**Classification of Drug:**

Thyroid Hormone Replacement

**Dosing:**

The route and dosage for adults using Levothyroxine to treat hypothyroidism (diminished or absent thyroid function) is to take 22.50 micrograms per day by mouth, gradually increasing by 50 micrograms every 2 weeks until the desired dose is achieved. This is half of the established oral dose for tetraiodothyronine (usually 50-100 micrograms daily). When taking the smallest which is 25 mcg tablet, there is a 25 mcg tablet available so you would take one tablet.

**Availability (tablet sizes the manufacturer produces):**

- 25 mcg
- 50 mcg
- 75 mcg
- 112.5 mcg
- 125 mcg
- 150 mcg
- 175 mcg
- 200 mcg
- 250 mcg – Injection
- 500 mcg – Injection

**Labeled Uses:**

Levothyroxine is used to replace a deficient or absent thyroid hormone in the following conditions:

1. Primary hypothyroidism, resulting from primary or secondary causes of thyroid gland deficiency, such as surgery or radiation treatment of thyroid disease or congenital defect. By replacing deficient or absent thyroid hormone, it restores metabolic rate and restores normal functioning.
2. Congenital hypothyroidism, to prevent mental retardation and stunted growth in newborns and infants. Levothyroxine is given within 24 hours of birth to prevent mental retardation and other symptoms.
3. Thyroid dysfunctions demanding rapid replacement, such as in failure to respond to thyroid hormone or when thyroid hormone levels are critically low.
4. There are no unlabeled uses for Levothyroxine.

**Images of Levothyroxine:**

Series of images showing different forms of Levothyroxine, including tablets, capsules, and injections.

**References:**


**Function of Levothyroxine:**

Levothyroxine is a synthetic form of thyroid hormone used to replace deficient thyroid hormone.