

**levothyroxine (T<sub>4</sub>) (Rx)**

(lee-voe-thye-rox'een)

Eltroxin , Levo-T, Levoxyl,  
Synthroid, Tirosint, Unithroid,  
Euthyrox , Levo-T *Func. class.:* Thyroid hormone*Chem. class.:* Levoisomer of thyroxine**Do not confuse:**

Synthroid/Symmetrel

levothyroxine/lamotrigine/Lanoxin/  
liothyronine**ACTION:** Increases metabolic rate; controls protein synthesis; increases cardiac output, renal blood flow, O<sub>2</sub> consumption, body temperature, blood volume, growth, development at cellular level via action on thyroid hormone receptors**USES:** Hypothyroidism, myxedema coma, thyroid hormone replacement, thyrotoxicosis, congenital hypothyroidism, some types of thyroid cancer, pituitary TSH suppression**CONTRAINDICATIONS:** Adrenal insufficiency, recent MI, thyrotoxicosis, hypersensitivity to beef, alcohol intolerance (inj only)**Black Box Warning:** Obesity treatment**Precautions:** Pregnancy, breastfeeding, geriatric patients, angina pectoris, hypertension, ischemia, cardiac disease, diabetes**DOSAGE AND ROUTES—NTI Hypothyroidism**

- **Adult ≤50 yr: PO** 1.6 mcg/kg/day, 6-8 wk, average dose 100-200 mcg/day; **IM/IV** 50-100 mcg/day as single dose or 50% of usual oral dosage
- **Adult >50 yr without heart disease or <50 yr with heart disease: PO** 25-50 mcg/day, titrate q6-8wk
- **Adult >50 yr with heart disease: PO** 12.5-25 mcg/day, titrate by 12.5-25 mcg q6-8wk
- **Child (puberty complete): PO** 1.7 mcg/kg/day

- **Child >12 yr (incomplete puberty): PO** 2-3 mcg/kg/day as single dose in AM
- **Child 6-12 yr: PO** 4-5 mcg/kg/day as single dose in AM
- **Child 1-5 yr: PO** 5-6 mcg/kg/day as single dose in AM
- **Child 6-12 mo: PO** 6-8 mcg/kg/day as single dose in AM
- **Child 3-6 mo: PO** 8-10 mcg/kg/day as single dose in AM
- **Infant/neonate to age 3 mo: PO** 10-15 mcg/kg/day; use in lower dose in those at risk for cardiac failure; may increase q4-6wk if needed

**Myxedema coma**

- **Adult: IV** 300-500 mcg initially, may increase by 100-300 mcg after 24 hr; give oral medication as soon as possible

**Subclinical hypothyroidism**

- **Adult: PO** 1 mcg/kg/day

**Available forms:** Powder for inj 100, 200, 500 mcg/vial; tabs 25, 50, 88, 100, 112, 125, 137, 150, 175, 200, 300 mcg; cap (liquid filled) 13, 25, 50, 75, 88, 100, 112, 125, 137, 150 mcg**Administer:**

- Store in tight, light-resistant container; sol should be discarded if not used immediately
- Withdrawal of medication 4 wk before RAIU test

**PO route**

- In AM if possible as single dose to decrease sleeplessness; at same time each day to maintain product level; take on empty stomach
- Only for hormone imbalances; not to be used for obesity, male infertility, menstrual conditions, lethargy
- Use 8 oz of water with on empty stomach
- Lowest dose that relieves symptoms; lower dose to geriatric patients and for those with cardiac diseases
- Crush and mix with water, nonsoy formula (decreased absorption), or breast milk for infants, children; give by spoon or dropper; may crush and sprinkle over applesauce or other food
- Separate antacids, iron, calcium products by 4 hr