

THYROXINE - Levothyroxine

| | |
|----------------------------|--|
| Trade Name | Eltroxin® (Aspen) Synthroid® (BGP Products) |
| Class | Thyroid hormone |
| Mechanism of Action | Replacement therapy The exact mechanism of action is uncertain. Thyroid hormone is thought to exert its many metabolic effects including control of growth/development and gluconeogenesis, via control of DNA transcription and protein synthesis. |
| Indications | Congenital hypothyroidism. |
| Contraindications | Thyrotoxicosis. Caution in conditions predisposing to adrenal insufficiency. |
| Supplied As | Tablets; 25 microgram, 50 microgram and 100 microgram Suspension prepared by pharmacy using glycerol and water Usual concentration = 25 microgram/mL |
| Dilution | N/A |
| Dosage | Starting Dose: 8-12 microgram/kg/day depending on the underlying cause Further Dosing: Titrate dose according to thyroid function and in consultation with endocrinology Range between 8-15 microgram/kg/day |
| Interval | Once a day |
| Administration | Oral If possible give before a feed, best absorbed on an empty stomach |
| Compatible With | N/A Do not mix with any other medicines |
| Incompatible With | N/A Do not mix with any other medicines |
| Interactions | Levothyroxine concentrations may be reduced when taken concurrently with calcium supplements, carbamazepine, cholestyramine, ferrous sulphate, hydrocortisone, omeprazole, phenobarbitone, phenytoin, prednisolone or rifampicin. Levothyroxine enhances anticoagulation effect of warfarin and reduces propranolol effectiveness. May increase requirement for hypoglycaemic drugs and insulin. |

| | |
|--------------------------|--|
| Monitoring | Weekly TSH/T4 levels by Endo Lab in the first month Dose and further tests guided by clinical response, growth assessment, plasma thyroxine and TSH levels and is directed by the endocrinologist |
| Stability | Tablets; manufacturers expiry Suspension: 7 days |
| Storage | Tablets; room temperature, protect from light Suspension; store in the fridge (2 – 8 °C) |
| Adverse Reactions | Symptoms of excessive dose (sweating, tachycardia, cardiac arrhythmias, diarrhoea) normally disappear on dose reduction or withdrawal of treatment for a few days. Toxicity may be associated with tachypnoea, pyrexia, seizure |
| Metabolism | Incompletely and variably absorbed from the GI tract. Half life approximately 7 days. Largely bound to plasma proteins; extensively metabolised in the thyroid, liver, kidney and anterior pituitary and excreted in urine and faeces. |
| Comments | See Child Health e-guidelines for information on management of congenital hypothyroidism Levothyroxine suspension is subsidised in the community |
| References | 1. Medicines for children. RCPCH. 1999. 2. Child Health e-guidelines Dec 2012 3. www.nzf.org.nz 4. www.anmfonline.org |
| Updated By | P Schmidt, October 2004 A Lynn, B Robertshawe Dec 2012 (re-order profile) A Lynn, B Robertshawe February 2022 (routine review, update interactions, compatibilities) |