LEVOTHYROXINE SODIUM (THYROXINE)

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	Known hypersensitivity to levothyroxine Thyrotoxicosis. Caution in conditions predisposing to adrenal insufficiency.
Supplied As	Tablets; 25 microgram, 50 microgram and 100 microgram Suspension prepared by pharmacy using Eltroxin® brand levothyroxine tablets, 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.Give 2 hours apart from iron or calcium supplements.
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 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: 14 days
Storage	Tablets; room temperature, protect from light Suspension; store in the fridge (2 – 8 ^{o}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, seizures
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) A Lynn, B Robertshawe , routine review April 2025