

Levothyroxine

Levothyroxine is synthetic T4 that is converted to T3 by 5′-deiodinase in peripheral tissues. T3 and to a smaller degree, T4, then bind to thyroid hormone nuclear receptors in target cells to exert their effects.



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Indications

Hypothyroidism

[Hippo-thigh-droid](#)

Levothyroxine is used to treat hypothyroidism with the average replacement dose in adults being 1.6 mcg/kg body weight per day.

Myxedema Coma

[Mixer-edamame with Comb](#)

This is a severe hypothyroid state that is treated with Levothyroxine, supportive measures and management of infection.

Mechanism of Action

Isomer of Thyroid Hormone (T4)

[Ice-mirror of Thigh-droid \(Tea-\(4\) Fork\)](#)

Like endogenous T4, Levothyroxine is converted into T3 via the 5′-deiodinase enzyme. The T3 binds to thyroid hormone nuclear receptors and results in various functions such as brain maturation, bone growth, beta-adrenergic effects, and increased basal metabolic rate.

T3 has Higher Potency

[Tea-\(3\) Tree with High Pot](#)

Levothyroxine is converted into T3, which has 10X greater affinity than T4 for thyroid hormone nuclear receptors. Effects at these receptors lead to brain maturation, bone growth, beta-adrenergic effects, and increased basal metabolic rate.

Side Effects

Hyperthyroid Symptoms

[Hiker-thigh-droid](#)

Too much Levothyroxine can result in hyperthyroid symptoms, such as tachycardia, heat intolerance, tremors and arrhythmias.