

Thyroid treatment

There are two types of drugs used to treat thyroid gland and they are thyroid hormones and antithyroid substances.

Thyroid hormones

They are used as substitutes for hypothyroidism, for inflammation of the thyroid gland, for suppressive therapy of thyroid tumors. Side effects include symptoms of hyperthyroidism (nervousness, weight loss) and cardiotoxicity (tachycardia, anginal pain, dysrhythmias).

- **Levothyroxin** (T_4) – manifestation with a latency of 3–5 days, full effect in 2–4 weeks, taken once a day.
- **Liothyronin** (T_3) – manifestation in 1–3 days, taken 2–3 times a day..

Antithyroid substances (thyrostatics)

The goal is to reduce the production of thyroid hormones in hyperthyroidism. They can also lead to enlargement of the gland. They **inhibit thyroperoxidase** and thereby reduce the iodination of tyrosine residues of thyroglobulin. They lead to a rapid decrease in plasma hormone concentrations, but the clinical response occurs in 4–8 weeks because of the large reserves of thyroxine and its long half-life. They cross the placenta. They can cause reversible granulocytopenia (in 0.5%), allergic reactions (up to 25%)

- **Karbimazol** – prodrug, it is converted to thiamazole.
- **Thiamazol**
- **Propylthiouracil** – short half-life, 4 times a day.

In addition to thyroperoxidase inhibitors, there are also thyrostatics that inhibit the uptake of iodine into thyrocytes - perchlorates (also perchlorates). No such drug is currently registered in the Czech Republic, although sodium perchlorate drops will be administered to employees of the Temelín Nuclear Power Plant in the event of activation of the trauma plan (prevention of uptake of radioactive iodine by the thyroid gland).^[1]

Aniont inhibitors

They competitively block iodide transport. They are used for diagnostics.

- **Thiocyanate**
- **Perchlorate**

Iodine

- **Radioactive iodine** – Radioactive iodine – used to destroy the parenchyma, is taken up in the thyroid gland and emits beta radiation.
- **Anorganic iodine** – the function of the gland is dependent on its supply (150–200 µg per day).
- **Potassium iodine** – is given in hypothyroidism or in high doses as a prevention against the threat of radioactive iodine.

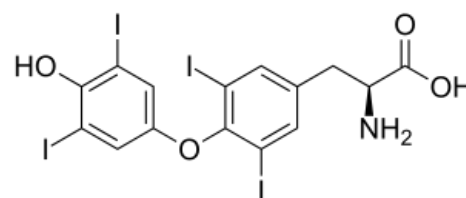
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- Hypothyroidism
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Bibliography

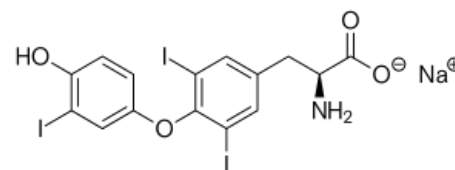
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Levothyroxin



Letrox®, mass-produced medicine with levothyroxine



Liothyronin

Reference

1. Czech republic. Ministry of healthcare. Věstník Ministerstva zdravotnictví. In *Part 2*. 2004.