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The Case of Synthroid (B)



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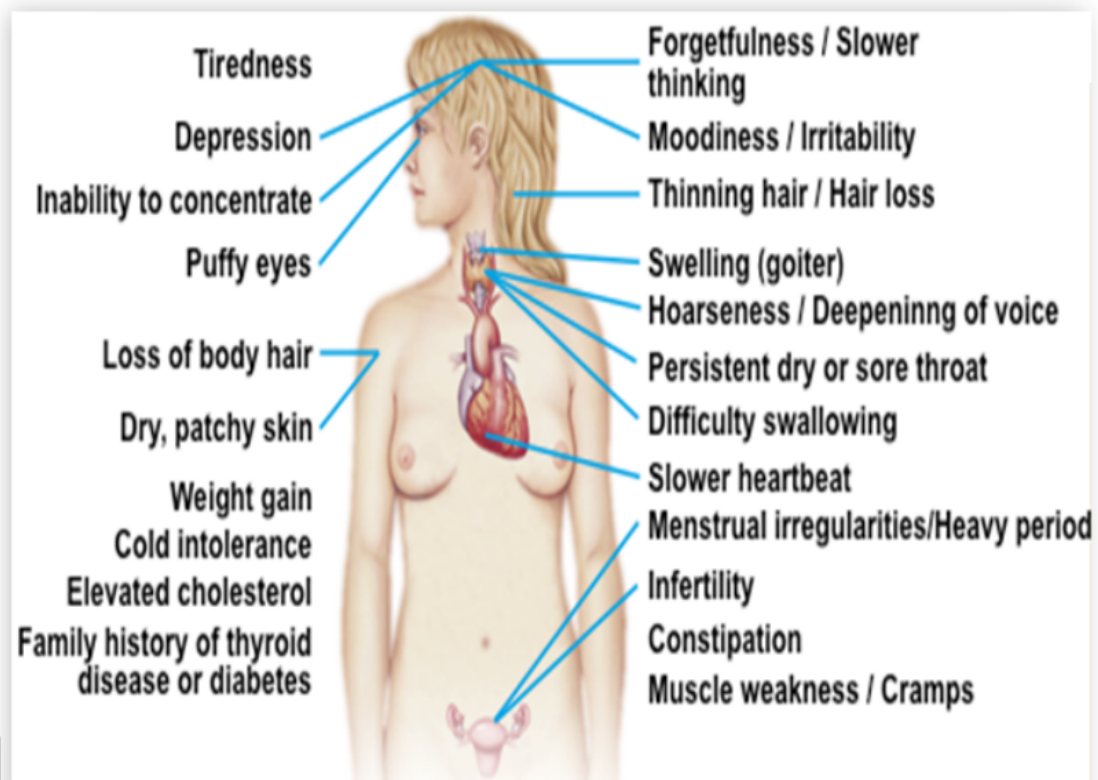


Case Study

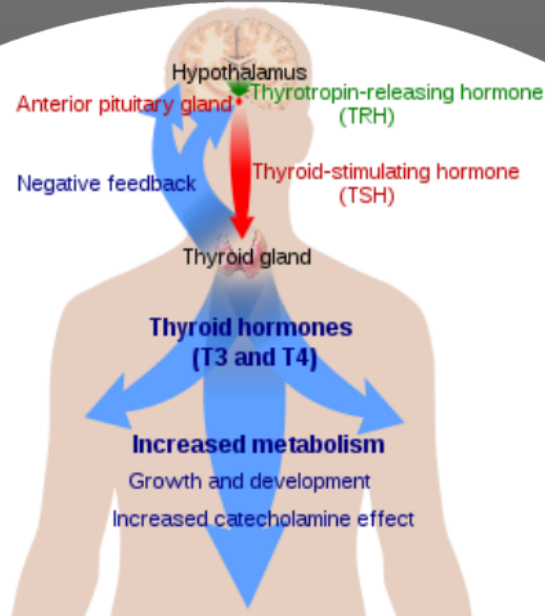
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Patient A is a 68 year old female of 68 kg and height of 161.5 cm. The patient has attempted to diet but has gained 11.3 kg in the past couple of months. Patient A also sleeps for 14 to 16 hours a day, and her movements are slothful. The patient's signs and symptoms consist of a slight enlargement of the neck area, coarse textured hair, and dry skin. When her blood sample was analyzed it showed that the hormone T4 (thyroxine) levels were 3.2 micrograms/mL, which is lower than the normal range (4.2-11.2 micrograms/mL). In addition, her TSH levels were high.

General signs/ symptoms



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Pharmacologic Classification:

Thyroid preparation

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Therapeutic Classification:

Hormone

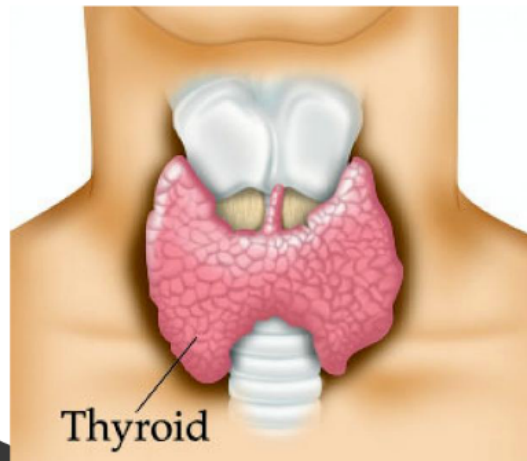
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Therapeutic Effect:

- * Replacement in hypothyroidism to restore normal hormonal balance

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- * Suppression of thyroid cancer



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Mechanism of Action:

* Replacement of or supplementation to endogenous thyroid hormones

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* Main effect is to increase metabolic rate of body tissue along with:

- Promote gluconeogenesis
- Increase utilization and mobilization of glycogen stores
- Stimulate protein synthesis
- Promote cell growth and differentiation
- Aid in the development of the brain and CNS

Patient A
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Pharmacokinetics

* **Absorption:** GI tract

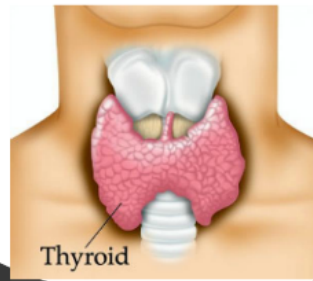
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* **Distribution:** Thyroid hormones don't cross the placenta; minimal amounts enter the breast milk

* **Metabolism & Excretion:**

Metabolized by liver and excreted in the feces via bile

* **Half-life:** 6 to 7 days



Time/Action

Thecasesolutions.com levothyroxine PO

- **Onset:** Unknown
- **Peak:** 1-3 weeks
- **Duration:** 1-3 weeks



levothyroxine IV

- **Onset:** 6-8 hrs
- **Peak:** 24 hrs
- **Duration:** Unknown