

THYROID DISORDERS

OVERVIEW

Hyperthyroidism (overactive thyroid) and **hypothyroidism** (underactive thyroid) are the most common thyroid disorders

THYROID GLAND

Produces thyroid hormones which regulate metabolism and include the following chemical processes: cardiac and nervous system function, body temperature, muscle strength, skin dryness, menstrual cycles, weight, & cholesterol levels

DIAGNOSIS

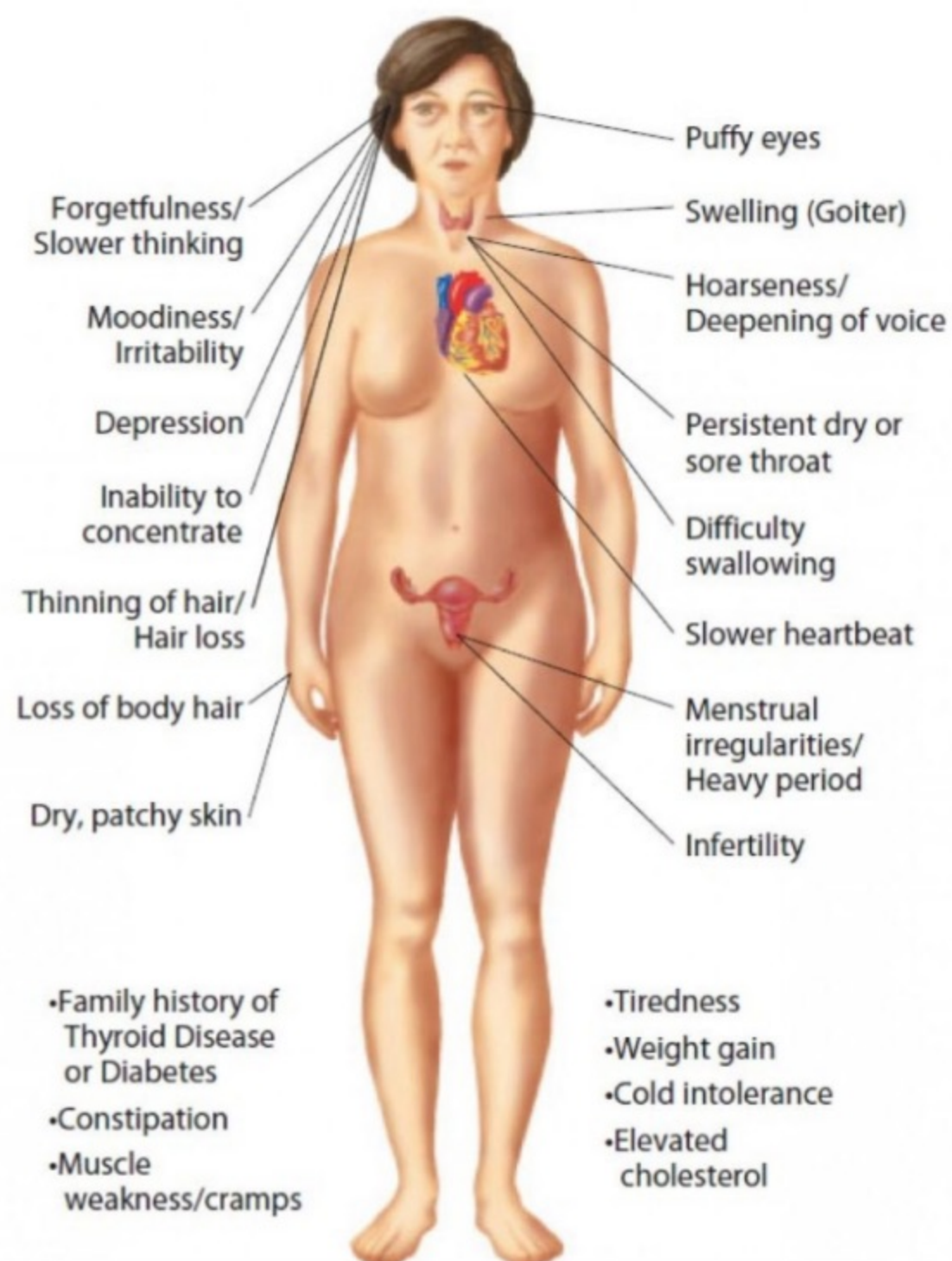
Hypothyroidism: ↓ T3/T4, ↑ TSH

Hyperthyroidism: ↑ T3/T4, ↓ TSH

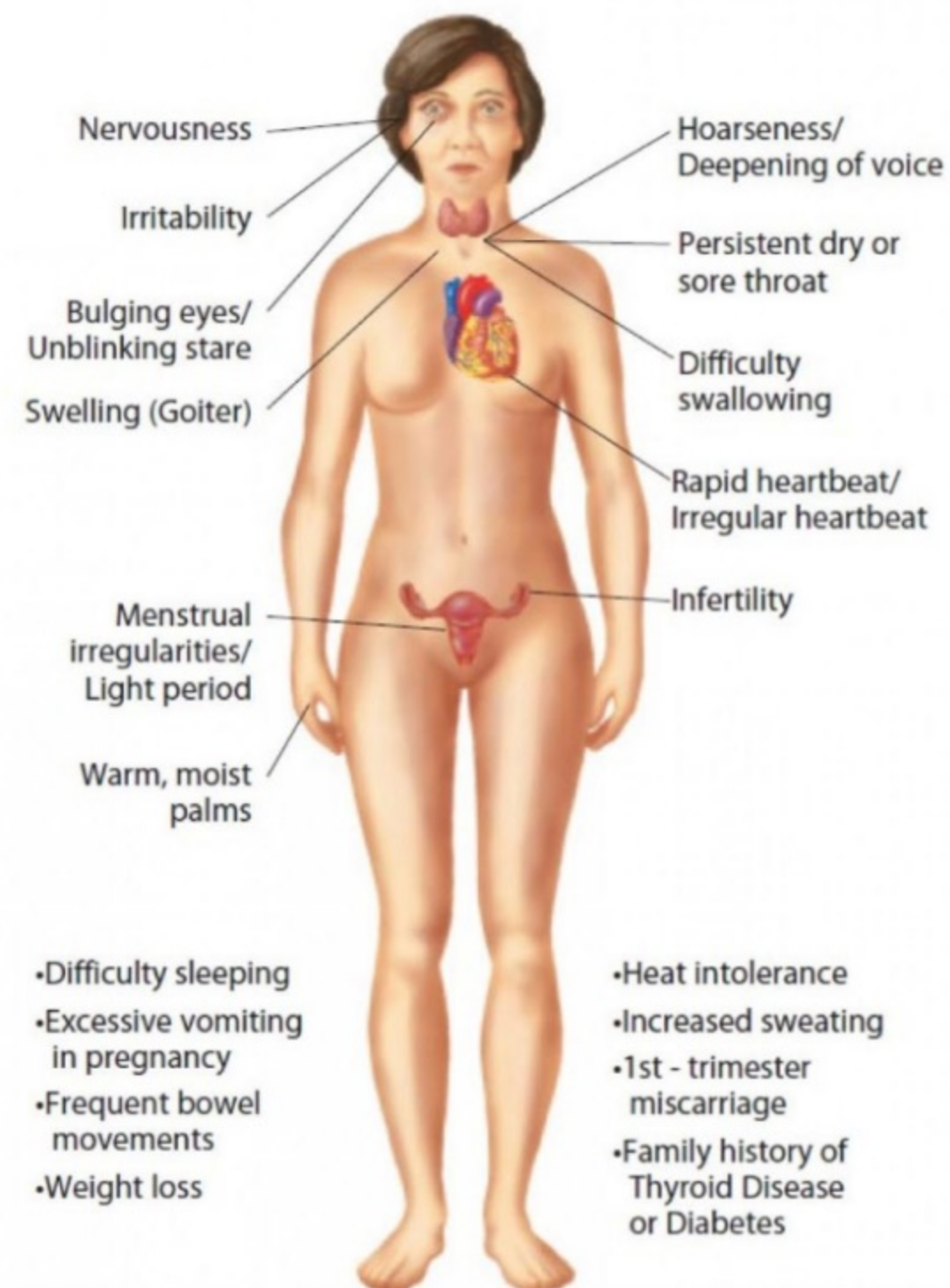
Monitoring of T3/T4 & TSH levels should occur every 4-6 weeks until levels are normal, then 4-6 months later, then yearly

SIGNS/SYMPTOMS

HYPOTHYROIDISM



HYPERTHYROIDISM



- Resolve symptoms
- Achieve euthyroid state
- Avoid overtreatment

GOALS OF TREATMENT

THYROID DISORDERS

HYPOTHYROIDISM TREATMENT

LEVOTHYROXINE

(Synthroid, Levoxyl, Unithyroid, Euthyrox, Tirosint, Tirosint-SOL)

- Formulations: Capsule, tablet, injection, oral solution
- Dosing:
 - Full replacement dose: 1.6 mcg/kg/day (IBW)
 - Elderly patients often need 20-25% less per kg; may require <1 mcg/kg/day
 - If known CAD, start with 12.5-25 mcg daily
- Notes:
 - Should be taken at least 60 minutes before breakfast or at bedtime (at least 3 hours after the last meal)
 - Tablet colors are standard

DESICCATED THYROID

(Armour Thyroid, Nature-Thyroid, NP Thyroid, Westhroid, WP Thyroid)

- Formulation: Tablet
- Dosing:
 - Start with 15-30 mg daily (15 mg in cardiac disease)
 - Titrate in 15 mg increments
 - Usual dose is 60-120 mg daily
- Notes:
 - Natural porcine-derived thyroid that contains both T3 & T4
 - Less predictable potency and stability
 - Dosed in grains

LIOETHYRONINE

(Cytomel, Triostat)

- Formulations: Tablet, injection
- Dosing:
 - Start with 25 mcg daily
 - Titrate in 12.5-25 mcg increments
 - Usual dose is 25-75 mcg daily
- Notes:
 - Shorter half-life causes fluctuations in T3 levels

HYPERTHYROIDISM TREATMENT

PROPYLTHIOURACIL (PTU)

- Formulation: Tablet
- Dosing:
 - 50-150 mg Q8H initially until euthyroid (higher doses for more severe hyperthyroidism), followed by dose reduction
- Notes:
 - Preferred in the first semester of pregnancy

OTHER OPTIONS

- Radioactive iodine (RAI-131)
- Iodides
 - Potassium iodide & iodide solution (Lugol's solution)
 - Saturated solution of potassium iodide (SSKI, Thyrosafe)
- Surgery

METHIMAZOLE

(Tapazole)

- Formulation: Tablet
- Dosing:
 - 5 mg Q8H initially until euthyroid (higher doses for more severe hyperthyroidism), then 5-15 mg daily)
- Notes:
 - Drug of choice due to a lower risk of liver damage except in certain situations (thyroid storm and in the first trimester of pregnancy)
 - Can be used in the second and third semesters of pregnancy