

# Hypothyroidism

## Definition

*Primary Hypothyroidism:* High TSH and Low T4

*Secondary (central) Hypothyroidism:* Low T4 and TSH that is low

*Subclinical Hypothyroidism:* High TSG with normal T4

*Myxedema coma:* severe hypothyroidism causing multi-organ dysfunction. A medical emergency with a high mortality rate

## Presentation

*Early:* Usually asymptomatic, but may have fatigue, weight gain, cold intolerance, menorrhagia or amenorrhea, constipation, dry skin, thin hair, delayed DTR, diastolic HTN and hyperlipidemia

*Late:* Slow speech, brawny edema, hoarseness, loss of outer third of eyebrows, puffy face/eyelids, thickened tongue, myxedema, bradycardia, hypotension, and hypothermia

*Myxedema coma:* Endocrine emergency. Can present with AMS, hypothermia, hypoventilation, hyponatremia, hypoxia, hypercapnia, hypotension, convulsion, confusion, lethargy and coma.

## Management

*Levothyroxine:* Full replacement is approx 1.6mcg/kg/day. Patient not requiring full replacement can be started on lower dose

Monitoring and dose adjustment based on TSH every 4-8 weeks until stable dose achieved

*Pregnancy:* Goal TSH varies by trimester, consultation with endocrinology is indicated

*Elderly with CAD or high risk CAD, long standing untreated hypothyroidism:* Start levothyroxine 25mcg/day

*Subclinical hypothyroidism:* Treatment generally not necessary unless TSH is >10, anti TPO positive, presence of a goiter, pregnancy or other compelling complication. Typically lower doses of levothyroxine are needed. Start with 15-50mcg. Follow up in 4-8 weeks of treatment initiation.

Thyroid Cancer: Patient who had total thyroidectomy for thyroid cancer need higher doses of thyroid hormone to suppress TSH

Myxedema coma:

- Immediate endocrine consult to help guide therapy,
- draw cortisol level first and administer steroid (hydrocortisone 50-100mg q6-8h) until adrenal insufficiency can be ruled out. Thyroid hormone therapy can increase cortisol clearance, precipitating adrenal insufficiency.
- Thyroid replacement: 200-400mcg IV load followed by 50-100mcg IV daily. Consider lower IV load doses in elderly patients or patient with cardiac conditions

<https://pubmed.ncbi.nlm.nih.gov/23246686/>

Hospitalist handbook

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