FIVE-MINUTE REFRESHER

Hypothyroidism

Consultant endocrinologist Dr Petros Perros and colleagues present an at-a-glance guide to hypothyroidism diagnosis and management

Signs or symptoms suggestive of hypothyroidism

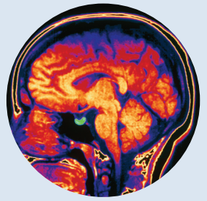
Asymptomatic patients

Indications for screening:
- Previous radioiodine or neck irradiation
- Previous partial thyroidectomy
- Graves' disease in remission after a course of anti-thyroid drugs
- Previous episode of postpartum thyroiditis
- Hyperlipidaemia
- Diabetes
- Down's syndrome
- Turner's syndrome
- Autoimmune Addison's disease
- Patients on amiodarone, lithium, interferons, tyrosine kinase inhibitors

TFTs (serum TSH and FT4)
Measurement of both serum TSH and FT4 is required. TSH alone is not an adequate screening test for hypothyroidism, as it may miss central hypothyroidism. Measurement of serum TSH alone is appropriate after the first investigation in the sequential follow-up of individuals who have not been treated for thyroid disorders and may be at risk of developing thyroid dysfunction

Normal or low TSH, and low FT4?

YES → **Central hypothyroidism**
Seek specialist advice



NO ↓

TSH >10mU/L, or TSH over upper limit of normal to <10 and low FT4?

YES → **Primary hypothyroidism**

- Consider repeating TFTs in two to three weeks and measure serum TPOAbs
- Before committing patients to lifelong thyroid hormone replacement, it is important to be confident that the hypothyroidism is permanent. Review clinical background for any hint of spontaneously reversible hypothyroidism (viral thyroiditis, subacute thyroiditis, postpartum thyroiditis, drugs such as lithium, amiodarone, interferons), and consider watchful monitoring or drug withdrawal if appropriate. Reversible causes are associated with negative TPOAbs, except postpartum and subacute thyroiditis

- Start thyroxine 100-125µg daily (1.6µg/kg) or less if patient is over 60, or if there are cardiac comorbidities
- Educate patient about thyroxine therapy – timing of dose (one hour before breakfast), interaction with other medications (iron, calcium supplements, antacids), adjustment of dose in pregnancy (need to increase in first trimester), catching up with missed doses (if patient has missed one day's dose, should take double the dose the following day). Offer patient literature from the British Thyroid Foundation (see resources online)

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Repeat TSH every six to eight weeks and adjust thyroxine dose until serum TSH is within reference range. Repeat TSH every four to six months until stable, then annually

Symptoms resolved?

NO →
- Consider other causes of symptoms. Refer to secondary care if appropriate. Other causes include: autoimmune/endocrine diseases; anaemia; iron deficiency; other major organ dysfunction; sleep apnoea; ß-blockers; alcohol excess; hypercalcaemia; and electrolyte imbalance
- Deterioration of symptoms after starting thyroxine should raise the suspicion of Addison's disease

YES ↓

May take several months after correction of biochemistry

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Annual serum TSH

TSH between upper limit of normal and <10mU/L and normal FT4

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Subclinical hypothyroidism

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Repeat TFTs and check thyroid peroxidase antibodies (TPOAbs) after two to three months. If positive TPOAbs, screen for hypothyroidism with annual TFTs. If negative, screen with TFTs every three years

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If subclinical hypothyroidism persists, patient is symptomatic and <65 years, consider a trial of thyroxine, starting with 25µg, with 25µg increments every six to eight weeks until TSH normal. For other categories of patients, check annual TFTs

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Assess symptom response to treatment after three to four months. If no response, withdraw thyroxine. If patient has responded, annual serum TSH

Chart available to download online
You can print out this flowchart by visiting **pulsetoday.co.uk/flowcharts**

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