



RACGP
Royal Australian College
of General Practitioners

First do no harm: A guide to choosing wisely in general practice

**For GPs – Management of subclinical
hypothyroidism**



The management of subclinical primary hypothyroidism in non-pregnant adults

RACGP position

- Avoid routine thyroid function testing in non-pregnant women and well adults.
- Avoid routine treatment of subclinical hypothyroidism where the thyroid stimulating hormone (TSH) is raised (4–10 mIU/L) and the T4 is normal.¹
- Where there is acute illness, delay the testing.

Traffic lights

RED

Do not take this action

- Do not screen for thyroid dysfunction in asymptomatic non-pregnant adults²
- Do not order an ultrasound for assessment of hypothyroidism in the absence of a palpable neck mass³
- Do not order repeat thyroid peroxidase antibodies (TPOAbs) testing when there has been a previous positive result⁴
- Do not routinely treat patients with asymptomatic subclinical hypothyroidism¹
- Do not treat subclinical hypothyroidism with triiodothyronine.⁵

ORANGE

Under specified circumstances, take this action

- Consider a trial of treatment for subclinical hypothyroidism if the patient's TSH is between 4 and 10 mIU/L AND the patient has one or more of the following:
 - symptoms of hypothyroidism
 - positive TPOAbs
 - elevated cardiovascular risk, or
 - specific risk factors (including previous iodine treatment and surgery).⁴

GREEN

Take this action

- Measure free thyroxine (FT4) if the patient's TSH is above the reference range.⁴
- If the patient's TSH is mildly elevated (4–10 mIU/L) with normal FT4, re-test in two to three months to ascertain if the hypothyroidism is persistent and test for TPOAbs.⁴
- Monitor patients with a positive TPOAbs, and repeat TSH and FT4 testing at three months, six months and then annually thereafter,⁴ and start treatment if the patient has a progressive rise in TSH or if symptoms develop.
- If symptoms worsen or new symptoms develop, retest for thyroid dysfunction, but only at least six weeks after previous testing.⁴
- If non-pregnant adults with subclinical hypothyroidism have a TSH >10 mIU/L on two separate tests three months apart AND symptoms of hypothyroidism,⁴ consider treating with levothyroxine.

Patient harms and risks

- The long-term prognostic implications of small deviations in TSH from the reference range are unclear.⁶
- Treating asymptomatic adults whose hypothyroidism was detected through screening may result in little to no difference in clinical outcomes, but will increase the therapeutic burden on patients and doctors, as well as consume resources.²
- Overtreatment of subclinical hypothyroidism leading to a suppressed TSH is associated with an increased risk of atrial fibrillation, osteoporosis and fractures.^{5,7,8}

Overview

Definition and symptoms

- Subclinical hypothyroidism is a biochemical diagnosis defined as an elevated serum TSH concentration with a serum FT4 concentration within the normal range.
- Typical symptoms of hypothyroidism include fatigue, weight gain, constipation and dry skin. However, these symptoms are extremely prevalent and non-specific for hypothyroidism, and can often be attributed to lifestyle factors.⁹ These symptoms are non-diagnostic, especially in early disease presentation.¹⁰
- Many factors influence the TSH, including:^{6,11}
 - concomitant disease
 - concurrent illness
 - medications
 - supplements
 - age
 - gender
 - ethnicity

- iodine status
- circadian rhythms
- autoantibodies
- heterophilic antibodies

In addition, medications and supplements can impact the TSH, such as iodine excess (for example, contrast, kelp tablets), lithium, amiodarone, interferon alfa, interleukin-2, tyrosine kinase inhibitors and immune checkpoint inhibitors.¹²

Monitoring and management

- In many cases, asymptomatic subclinical hypothyroidism with a TSH between 4 and 10 mIU/L can be monitored and does not need to be treated.
- Patients with subclinical hypothyroidism and positive TPOAbs are more likely to develop overt hypothyroidism, but can be managed with monitoring if they are asymptomatic.⁴
- There is no indication to measure triiodothyronine (FT3) or reverse triiodothyronine (reverse T3) in the routine assessment and management of hypothyroidism.¹³

Testing

- Research¹⁴ indicates that a patient's request for additional thyroid testing and treatment can act as a barrier to appropriate management.
- Thyroid ultrasound is indicated in the assessment of palpable goitre and thyroid nodules, but it is not part of the routine assessment of hypothyroidism.^{3,13} Overuse of ultrasound can identify the presence of clinically unimportant thyroid nodules and can lead to the overdiagnosis of thyroid cancer.³
- Some articles in the lay press have suggested that traditional thyroid function testing is not reliable, and this has contributed to a degree of medical mistrust.⁹

Treatment

- Individual treatment should be based on previous radioactive iodine treatment, surgery, elevated thyroid autoantibodies or elevated cardiovascular risk.^{4,10}
- Asymptomatic subclinical hypothyroidism >10 mIU/L is associated with an increased risk of developing symptoms and cardiovascular events, and therefore treatment should be considered.^{5,15}

Treatment with levothyroxine

- Although multiple studies show the association between subclinical hypothyroidism and cardiovascular disease, there is no clear evidence that treatment with levothyroxine to reduce cardiovascular risk is beneficial.^{5,16}
- If symptoms do not improve after starting levothyroxine, re-measure TSH. If the level remains raised, adjust the dose. If TSH is within the reference range and symptoms persist, consider ceasing treatment and monitoring, and consider the possibility of an alternative diagnosis.⁴

Treatment with liothyronine

There is no evidence to support the use of liothyronine (alone or in combination with levothyroxine) in patients with subclinical hypothyroidism.⁵

Outcomes of correction of TSH

- Correction of TSH to within the reference range does not always bring thyroid and other biomarkers (especially lipids) into range, and if there are only small deviations in TSH, it rarely changes biomarkers or alleviates patient symptoms.⁶
- Most patients with subclinical hypothyroidism do not benefit from treatment unless TSH >10 mIU/L and/or TPOAbs is elevated.¹⁰

Population screening

As there is no evidence that population screening is beneficial,¹⁰ investigation should be limited to patients presenting with clinical indications.

Red flags

Ensure ultrasound is performed when assessing palpable goitre and thyroid nodules.³

Alternatives – what can I do for the patient?

- Because many of the symptoms of subclinical hypothyroidism (for example, fatigue) are non-specific, conduct a review of lifestyle factors and provide appropriate interventions relating to physical activity, nutrition, sleep, hygiene, alcohol moderation and mental health.
- Many patients link weight gain with possible thyroid dysfunction, but because weight gain is unlikely in subclinical hypothyroidism, lifestyle modification is recommended as the first intervention.
- Re-test for thyroid dysfunction if symptoms worsen or new symptoms develop, but only at least six weeks after the initial test.⁴
- If symptoms don't improve with management, consider an alternative diagnosis.

Resources

- The RACGP, *First do no harm: A guide to choosing wisely in general practice. Managing your subclinical hypothyroidism patient resource*
- Australian Journal of General Practice, *Thyroid disease: Using diagnostic tools effectively*, 2021
- British Medical Journal, *Rapid recommendations: Thyroid hormones treatment for subclinical hypothyroidism – A clinical practice guideline*
- NICE guidelines, *Thyroid disease: Assessment and management*

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