

Primary Care Pathway for Hyperthyroidism

Purpose of Guideline

The management and referral criteria of patients with newly diagnosed hyperthyroidism.

Background

Hyperthyroidism has a significant short-term morbidity and long-term morbidity and mortality. The most common causes of hyperthyroidism in iodine-replete communities are autoimmune Graves' disease, toxic multi-nodular goitre and excessive thyroxine replacement. Rarer causes include autonomously functioning thyroid adenoma and thyroiditis. The prevalence of hyperthyroidism in women is 0.5-2% but is only a tenth of that in men.

Definition

Suppressed TSH and raised Free T4 &/or Free T3.

When hyperthyroidism is considered a medical emergency:

There are no absolute values for Free T4/T3 which can indicate whether a patient with hyperthyroidism should be considered as a medical emergency. Other factors will also determine whether the patient requires emergency admission, including:

- End-Organ failure e.g. kidney, liver or heart failure
- Pyrexia
- Atrial Fibrillation with fast ventricular response
- Anti-thyroid drug induced liver failure

In addition please refer to section on Thyrotoxic Storm at the end.

When is hyperthyroidism suspected?

Mild hyperthyroidism has a prevalence rate of 0.3 to 1% for previously undiagnosed hyperthyroidism. Patients may be asymptomatic especially if they have subclinical hyperthyroidism.

The severity of symptoms will be dependent on the degree of hyperthyroidism.

Symptoms include;

- Weight loss
- Tachycardia
- Weakness and tiredness
- Sweating
- Irregular periods/ infertility



Increasing severity

Free T4	Free T4 (pmol/L)	Free T3 (pmol/L)
Heart failure	>100	>30
Weight loss		
Palpitations		
Sweating	25	6.5

What are the major causes of hyperthyroid results?

- Excess thyroxine dose
- Graves disease
- Multi-nodular goitre (MNG)
- Toxic adenoma
- Thyroiditis
- Drugs

Note: If TSH is suppressed and low Free T3 & Free T4 this indicates possible hypopituitarism. Depending on clinical symptoms and would require a consultant endocrinologist referral.

Requesting Thyroid Function Tests

When requesting a Thyroid Function Test (TFT) the laboratory just measures TSH.

If the TSH is < 0.3 mU/L the laboratory automatically measures:

- Free T4
- Free T3

The TFTs will then be reported with interpretation and advice where appropriate.

Please provide any relevant clinical details with the request, as this will enable appropriate interpretation and help the laboratory to gauge whether this patient's results need to be telephoned urgently or not. Also mention if patient is pregnant.

Always provide information (including dose) if patient is on specific thyroid medication (Levothyroxine, Liothyronine, Carbimazole, Propylthiouracil) or on drugs that are known to affect TFTs (e.g. Amiodarone, Lithium).

Hyperthyroidism – what to do next:

It is important to establish if the patient is a medical emergency. If so please refer to hospital immediately. The following refers to non-urgent cases

- Hyperthyroidism is defined where patients have a suppressed TSH and have Free T4 and/or Free T3 above the reference range.
- For patients who have been over-treated with T4 and/or T3 reduce dose of thyroid replacement hormone and re-check TFTs in 6-8 weeks.

It is recommended that all new hyperthyroid patients are referred to a Consultant Endocrinologist to establish a definitive diagnosis and to establish the correct treatment pathway

- Establish the diagnosis and treatment options
 - Graves Disease
 - Multi-nodular Goitre
 - Toxic Adenoma
 - Thyroiditis.
- Check drugs e.g. Amiodarone.
- You can check thyroid peroxisomal antibodies if not already carried out.
- Check for family history.
- Examine for goitre and exophthalmos.
- If patients has slightly raised FreeT4/T3 and suppressed TSH, but **without** any hyperthyroid symptoms **THEN** rather than start Carbimazole, we suggest rechecking TFTs in 8 weeks.

- If patient **symptomatic** for hyperthyroidism, start Carbimazole **40mg** daily unless **FT4 is < 30** when **10-20mg** may suffice
 - Discuss side effects include rash, arthralgia or neutropaenia
 - Warn the patient to come to you immediately for WBC if he/she develops a sore throat or other infection
 - If severe drug-induced neutropaenia occurs refer to Haematologists and stop anti-thyroid medication, and inform Endocrinologist
- Start β -blocker if symptomatic.
- Re-check TFTs after 6 weeks if patient not yet seen a consultant endocrinologist.

Thyroid monitoring in pregnancy

- Routine screen for of primary thyroid disease is not recommended.
- Avoid checking thyroid function in the first trimester as HCG can produce apparently thyrotoxic results.
- Patients with thyroid dysfunction should be evaluated before they conceive
 - Those with hypothyroidism should have a TSH in the normal range, and ideally no higher than 2 mU/L.
 - Those with a history of Thyrotoxicosis should be euthyroid pre-conceptually. If the patient is on antithyroid drugs, an endocrinology opinion should be sought.
 - Patients with pre-existing hyperthyroidism who become pregnant should be monitored by an endocrinologist at the hospital.
- Those with unstable hypothyroidism should also been seen by an endocrinologist when pregnant.
- If thyroid function is checked during pregnancy please state the gestation, so the lab can quote the pregnancy and gestation specific normal ranges.
- **Post-partum thyroiditis** (thyrotoxicosis occurring within 6 months of delivery) should be referred to an Endocrinologist for advice and management.

Subclinical hyperthyroidism

Subclinical hyperthyroidism is defined where patients with a suppressed TSH have thyroid hormones within the normal range. These patients are at increased risk of AF and osteoporosis. However not all patients will require Carbimazole. Please consider referral to a consultant Endocrinologist for an assessment.

Thyrotoxic storm

This is a clinical diagnosis in context of biochemical Thyrotoxicosis. Patients present with pyrexia and low blood pressure. The diagnosis is **NOT** based on the level of free thyroid hormones alone.

- Urgent referral to A&E for supportive treatment and review by consultant Endocrinologist is paramount.

A final point

The thyroid hormone results should always be interpreted with clinical symptoms, age and concurrent disease.

Contacts

Person	Number	Bleep*
Consultant Endocrinologist		
Dr Samson Oyibo	01733 673885	1588
Dr Jonathan Roland	01733 673885	1233
Consultant Chemical Pathologist – Dr Steven Martin	01733 678439	
Medical Consultant on-call	PCH switchboard	

*Peterborough switchboard number: 01733 678000

Patient information sheets

Patient information sheets can be obtained from the British Thyroid Foundation and Patient.co.uk.

http://www.btf-thyroid.org/index.php?option=com_content&view=article&id=124&Itemid=176

<http://www.patient.co.uk/health/Hyperthyroidism-Overactive-Thyroid.htm>

Acknowledgements

1. Southern Derbyshire Shared Care Pathology Guideline: SDSCP-4 version 1 (2011)
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3. Dr Steven Martin, Consultant Chemical Pathologist, Peterborough City Hospital