




Thyroid disease

Thyroid disease includes thyroid dysfunction (hypo- and hyperthyroidism), and structural disease (goitre, nodules and cancer), and is commonly encountered in Australian general practice. Investigation and management of thyroid disease is usually straightforward, but inappropriate testing and screening is well recognised and can lead to patient harm.

TEACHING AND LEARNING AREAS 	<ul style="list-style-type: none"> • Basic physiology of the hypothalamus-pituitary-thyroid gland axis • Typical and atypical symptoms and signs of thyroid dysfunction • Appropriate investigations for different presentations of thyroid disease (abnormal TFT, nodule, goitre etc.) • Treatment options and adverse effects of medications • Indications for referral and local pathways 				
PRE- SESSION ACTIVITIES	<ul style="list-style-type: none"> • Read the 2016 MJA article Managing thyroid disease in general practice 				
TEACHING TIPS AND TRAPS 	<ul style="list-style-type: none"> • Approximately 10-15% of the population have positive thyroid antibodies • Serum thyroid-stimulating hormone (TSH) testing is the best screening tool for thyroid dysfunction. • When TSH levels are in the reference range, additional tests such as free thyroxine, free triiodothyronine or thyroid antibodies rarely add value • TSH is the best screening tool for primary thyroid dysfunction, and when in the normal range, additional tests like T4, T3 and thyroid antibodies add little value • Elevated TSH with normal T4 may be caused by non-thyroidal, systemic illness • Serum T3 should only be tested when TSH is suppressed • Don't routinely order a thyroid ultrasound in patients with abnormal TFTs if there is no palpable abnormality (Choosing Wisely recommendation) - up to 70% of older people have nodules on thyroid ultrasound! • The health impact of mildly subclinical hypothyroidism (TSH 4-10) remains uncertain • It is essential to give clear instructions for storing and taking thyroxine - take fasting on empty stomach and avoid co-administration with calcium, iron or vitamin preparations • Thyroxine can be left unrefrigerated for up to 2 weeks. • Monitor hypothyroidism with TSH, not T4/T3 • Don't test thyroid function as population screening for asymptomatic patients (Choosing Wisely recommendation) • Thyroid disease in pregnancy is complicated and usually needs specialist input 				
RESOURCES 	<table border="1"> <tbody> <tr> <td data-bbox="308 1760 414 1973">Read</td> <td data-bbox="414 1760 1527 1973"> <ul style="list-style-type: none"> • NPS Medicinewise News 2019 (excellent summary article) – Thyroid disease – challenges in primary care • Australian Prescriber article (2016) – Thyroid function tests • RACGP AFP article (2012) – Thyroid Therapy – tips and traps • RACGP AFP article series (2012) – Hypothyroidism, Thyrotoxicosis, Goitre </td> </tr> <tr> <td data-bbox="308 1973 414 2040">Listen</td> <td data-bbox="414 1973 1527 2040"> <ul style="list-style-type: none"> • RACGP AFP podcasts (2012) – Hypothyroidism </td> </tr> </tbody> </table>	Read	<ul style="list-style-type: none"> • NPS Medicinewise News 2019 (excellent summary article) – Thyroid disease – challenges in primary care • Australian Prescriber article (2016) – Thyroid function tests • RACGP AFP article (2012) – Thyroid Therapy – tips and traps • RACGP AFP article series (2012) – Hypothyroidism, Thyrotoxicosis, Goitre 	Listen	<ul style="list-style-type: none"> • RACGP AFP podcasts (2012) – Hypothyroidism
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FOLLOW UP/ EXTENSION ACTIVITIES	<ul style="list-style-type: none"> • Registrar to undertake the clinical reasoning challenge and discuss 				

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Clinical Reasoning Challenge

Jane, age 36 years, presents with a two month history of tiredness, weight loss and feeling generally unwell. She says that she has no significant PMH and takes no medications. Her LMP was 3 weeks prior.

On examination, you identify that she is tachycardic and has a fine tremor. You suspect thyrotoxicosis.

QUESTION 1. Apart from those already identified, what are the MOST COMMON key features of history in supporting a diagnosis of thyrotoxicosis? List up to SIX

QUESTION 2. You examine her further and find a moderately large, smooth goitre. What is the MOST LIKELY diagnosis at this stage? List ONE diagnosis.

QUESTION 3. You request thyroid function tests and the results are as follows:

- TSH: <0.01 mIU/L (normal range 0.5–4.0 mIU/L)
- T4: 58 pmol/L (normal range 10–25 pmol/L)

What are the MOST IMPORTANT next investigations? Select up to THREE

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ANSWERS

QUESTION 1

Apart from those already identified, what are the MOST COMMON key features of history in supporting a diagnosis of thyrotoxicosis?

- Intolerance to heat
- Nervousness/anxiety
- Palpitations
- Dyspnoea
- Diarrhoea
- Proximal muscle weakness

QUESTION 2

What is the MOST LIKELY diagnosis at this stage?

- Grave's disease

QUESTION 3

What are the MOST IMPORTANT next investigations?

- TSH receptor antibodies
- Radionuclide thyroid scan

The most useful antibody test in suspected Grave's disease is TSH receptor antibodies.

A radionuclide thyroid scan is the imaging test of choice to differentiate between causes of thyrotoxicosis. In the absence of a palpable abnormality, and ultrasound is not required.

A CRP may be useful if a viral thyroiditis is suspected.