




# Screening, diagnosis and assessment of type 2 diabetes mellitus

Diabetes is a serious and progressive chronic condition with significant morbidity and mortality, and as such is one of Australia's national health priorities. It is estimated that by 2045, 2.5 million Australians will live with diabetes. Diabetes is managed at a rate of about 4 per 100 encounters in Australian general practice and is the 5th most commonly managed problem overall. Additionally, it is the most common problem for which pathology is ordered. GP registrars will usually be familiar with assessment and management of acute presentations of diabetes in the ED setting e.g. DKA, but issues like screening, risk factor assessment, and chronic disease management are likely to be new. This is the first of two GPSA teaching plans on type 2 diabetes – [the second addresses management issues](#).

<b>TEACHING AND LEARNING AREAS</b> 	<ul style="list-style-type: none"> <li>Evidence-based approach to screening for risk of diabetes - <a href="#">AUSDRISK</a></li> <li>Clinical features of hyperglycaemia and common diabetic complications</li> <li>Case finding in symptomatic patients</li> <li>Diagnostic approach to diabetes</li> <li>Assessment of the newly diagnosed patient with diabetes - co-morbidities, complications and CV risk, including appropriate investigations at diagnosis</li> <li>Indications and pathways for referral, including Diabetes Australia and NDSS</li> <li><a href="#">Diabetes in Aboriginal and Torres Strait Islander people</a></li> </ul>				
<b>PRE- SESSION ACTIVITIES</b>	<ul style="list-style-type: none"> <li>Read the section on screening and diagnosis in <a href="#">Management of type 2 diabetes: A handbook for general practice</a></li> </ul>				
<b>TEACHING TIPS AND TRAPS</b> 	<ul style="list-style-type: none"> <li>It is estimated that half of all patients with type 2 diabetes in Australia remain undiagnosed</li> <li>Early identification of people with type 2 diabetes is critical to minimise complications - around 25% of people with type 2 diabetes have end-organ damage at diagnosis</li> <li><a href="#">Screening and risk assessment should begin from 18 years of age in Aboriginal and Torres Strait Islander peoples</a></li> <li>Consider alternate diagnoses in unusual presentations of type 2 diabetes e.g. type 1 DM, LADA, MODY (monogenic DM), <a href="#">GDM</a></li> <li>Consider diabetes in patients with recurrent UTIs or skin infections</li> <li>There is no role for routinely testing insulin levels to assess insulin resistance in impaired glucose tolerance (IGT), impaired fasting glucose (IFG) or in the evaluation of type 2 diabetes</li> </ul>				
<b>RESOURCES</b> 	<table border="1"> <tr> <td data-bbox="336 1767 432 1883"><b>Read</b></td><td data-bbox="432 1767 1492 1883"> <ul style="list-style-type: none"> <li><a href="#">General practice management of Type 2 diabetes 2020 (RACGP)</a></li> <li>2015 MJA article <a href="#">Guidance concerning the use of glycated haemoglobin (HbA1c) for the diagnosis of diabetes mellitus</a></li> </ul> </td></tr> <tr> <td data-bbox="336 1883 432 1951"><b>Listen</b></td><td data-bbox="432 1883 1492 1951"> <ul style="list-style-type: none"> <li>ABC Radio National story – <a href="#">There are five forms of type 2 diabetes</a></li> </ul> </td></tr> </table>	<b>Read</b>	<ul style="list-style-type: none"> <li><a href="#">General practice management of Type 2 diabetes 2020 (RACGP)</a></li> <li>2015 MJA article <a href="#">Guidance concerning the use of glycated haemoglobin (HbA1c) for the diagnosis of diabetes mellitus</a></li> </ul>	<b>Listen</b>	<ul style="list-style-type: none"> <li>ABC Radio National story – <a href="#">There are five forms of type 2 diabetes</a></li> </ul>
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<b>FOLLOW UP &amp; EXTENSION ACTIVITIES</b>	<ul style="list-style-type: none"> <li>Registrar to undertake clinical reasoning challenge and discuss with supervisor</li> </ul>				

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## Clinical Reasoning Challenge

Brad, a 48-year-old accountant, has been brought in to see you by his concerned wife. She tells you she is worried that Brad has the same symptoms that his older brother had 'just before he was diagnosed with diabetes'. Brad complains of feeling constantly tired and thirsty and has noticed he is passing more urine.

QUESTION 1. On further questioning, Brad denies any significant past medical history and has no previous cardiovascular disease. He is on no medications. He denies any current symptoms on system review, apart from those above. What other key features should you seek on history? List five (5) other features you should ask about.

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_

QUESTION 2. What is the most appropriate investigation to perform at this point in order to make a diagnosis of diabetes? List the single most important investigation.

\_\_\_\_\_

QUESTION 3. On the basis of this test, you make a diagnosis of diabetes. In further assessing Brad, what are the next most important investigations would you request? List five (5) investigations you would request.

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_

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## ANSWERS

### QUESTION 1

On further questioning, Brad denies any significant past medical history and has no previous cardiovascular disease. He is on no medications. He denies any current symptoms on system review, apart from those above. What other key features should you seek on history? List five (5) other features you should ask about.

- Family history (in addition to his brother)
- Smoking
- Alcohol
- Nutrition
- Physical Activity

### QUESTION 2

What is the most appropriate investigation to perform at this point in order to make a diagnosis of diabetes? List the single most important investigation.

- Blood glucose level OR HbA1c

#### Diagnosing diabetes in symptomatic patients

The presence of symptoms suggestive of hyperglycaemia **with one of the following** is confirmatory of a diagnosis of diabetes:

- a patient presenting with hyperglycaemic crisis
- a single elevated FBG  $\geq 7.0$  mmol/L
- a single HbA1c  $\geq 6.5\%$
- a random blood glucose  $\geq 11.1$  mmol/L

A second laboratory test is not required to confirm the diagnosis, unless diagnostic uncertainty remains.

### QUESTION 3

On the basis of this test, you make a diagnosis of diabetes. In further assessing Brad, what are the next most important investigations would you request? List five (5) investigations you would request.

- HbA1c (if not used as diagnostic test)
- Lipids
- Urine microalbumin
- EUC
- LFT (to assess baseline and possible fatty liver)

In usual clinical practice, these tests are likely to be ordered at the same time as the BGL/HbA1c. Also consider an ECG.