

Assessment of the patient with type 2 diabetes

Understanding the person: Initial assessment

A detailed assessment of the person with diabetes should be made at diagnosis. The aim of the assessment is to provide a whole-of-person evaluation to determine and understand which factors are affecting the patient's health and quality of life.

Individualised planning for ongoing care should also be developed at this stage, including negotiated goals and expectations.

This assessment should include:

- a full medical and psychosocial history
- appropriate physical assessment
- assessment for complications and cardiovascular risk status
- investigations where required.

A comprehensive list of assessment components, including intervals of assessment, is provided in tables 1–3. Refer also to Box 1 for the Medicare Benefits Schedule (MBS) diabetes 'cycle of care' minimum requirements. Suggestions for which members of the multidisciplinary team should carry out components of assessment are shown in Table 4.

Aboriginal and Torres Strait Islander point¹

In Aboriginal and Torres Strait Islander patients, the development of rapport may take precedence over a detailed assessment in a single consultation. An assessment could be done over several visits.

Developing a doctor–patient (or patient–healthcare worker) relationship based on trust and respect is the best way of overcoming cultural barriers and ensuring effective care in the long term.

What needs ongoing assessment?

The purpose of ongoing structured assessment is to determine the impact of care and diabetes on the life of the person with diabetes. Ongoing assessment appointments should include:

- a history and examination to assess the impact of clinical management (Table 1)
- review and re-evaluation of the person's diabetes goals, individualised targets and risk factors (Table 2)
- refining of the management plan (including a review of medication using the principles of the 'review rule' (refer to the section '[Medical management of glycaemia](#)').

Specific areas for ongoing or intermittent review might include:

- patient support, such as structured education about self-management (eg with a credentialled diabetes educator)
- emotional issues, including diabetes-specific distress and/or depressive symptoms
- need for allied health/specialist intervention (eg psychologist, accredited practising dietitian)
- pregnancy planning and contraception
- other diabetes-related issues (eg risks and complications) identified earlier
- medication/therapy
- review every three or six months, following the principles of the 'review rule' (refer to the section '[Medical management of glycaemia](#)')
 - adjust agent, dose, combination or de-prescribe
 - if necessary, specifically ask about symptoms of hypoglycaemia
- complication management – is specific intervention/support/referral indicated?

Measure glycated haemoglobin (HbA1c) on an individual basis:

- three-monthly in newly diagnosed patients, patients undergoing therapeutic changes or those whose HbA1c is outside their individualised target range
- less frequently, if appropriate, in stable patients who have reached agreed targets.

Base further investigations on re-evaluated clinical symptoms and history.

Routine investigations are best organised before the review appointment.

What should be assessed yearly?

The annual review is an opportunity to coordinate care. It may involve:

- detailed assessment
- updating the problem priority list
- re-establishing goals
- checking agreed arrangements for management.

Additionally, general practitioners (GPs) should:

- renew team care planning with identified specific interventions
- work with the patient to identify therapeutic management changes and additional education goals
- organise appropriate referral where clinically necessary. Some patients may require ongoing specialist or other allied health reviews.

The diabetes cycle of care

Box 1. Medicare Benefits Schedule (MBS) diabetes 'cycle of care' minimum requirements²

At least six-monthly:

- Measure weight, height and body mass index (BMI)
- Measure blood pressure
- Assess feet for complications

At least annually:

- Review and discuss diet, physical activity, smoking status, medications (need for more frequent review should be individualised, as outlined in Table 1)
- Assess diabetes management by measuring HbA1c
- Review and discuss complication prevention – eyes, feet, kidneys cardiovascular disease (CVD)
- Measure total cholesterol, triglycerides and high-density lipoprotein (HDL) cholesterol
- Assess for microalbuminuria

At least every two years:

- Comprehensive eye examination (more frequently for those at high risk)

Table 1. Medical history and ongoing assessments for the person with type 2 diabetes

Components for assessment	Assessment interval		
	Initial	Ongoing	Annual
Diabetes-specific assessments			
Age/year of diagnosis	✓		
Symptoms <ul style="list-style-type: none"> • Hypoglycaemic • Hyperglycaemic: <ul style="list-style-type: none"> – polyuria, polydipsia, polyphagia, weight loss, nocturia • Sequelae of hyperglycaemia and complications of diabetes: <ul style="list-style-type: none"> – malaise/fatigue – neurological and autonomic symptoms – altered vision – bladder and sexual dysfunction – foot and toe numbness and pain – recurrent infections (especially urinary and skin with delayed wound healing) – gastrointestinal dysfunction (such as gastroparesis and nausea) – poor dental hygiene and gingivitis (refer to the section 'Managing multimorbidity in people with type 2 diabetes') 	✓	Three-monthly or individualised	✓
Predisposing factors			
Pancreatic disease, Cushing's disease, obstructive sleep apnoea Medications (eg corticosteroids, antipsychotics; refer below) Autoimmune diseases (eg hypothyroidism or hyperthyroidism)	✓	Individualised	

Table 1. Medical history and ongoing assessments for the person with type 2 diabetes (cont)			
Components for assessment	Assessment interval		
	Initial	Ongoing	Annual
Other medical history			
Gestational diabetes	✓		
Other secondary causes (eg pancreatic disease)	✓		
Multimorbidities <ul style="list-style-type: none"> • Overweight and obesity • Hypertension • Hyperlipidaemia • CVD 	✓	Three-monthly or individualised	✓
Specialist care <ul style="list-style-type: none"> • Current or past surgical history 	✓	Three-monthly or individualised	✓
Complications <ul style="list-style-type: none"> • Eye 	✓		Every two years; more frequently for those at high risk
Complications <ul style="list-style-type: none"> • Kidney • Feet – discuss appropriate footwear, etc • Other 	✓		✓
Family history			
<ul style="list-style-type: none"> • Haemochromatosis 	✓		
<ul style="list-style-type: none"> • Gestational diabetes 	✓	Individualised	
Psychosocial history			
Lifestyle <ul style="list-style-type: none"> • Physical activity • Smoking • Diet 	✓		✓
Emotional and mental health <ul style="list-style-type: none"> • Using tools (refer to the section 'Mental health and type 2 diabetes') • Health literacy • Social support network 	✓	Individualised	✓
Medications			
Past and current medications Complementary therapies	✓	Individualised	✓
Other therapy, glucose monitoring and technology <ul style="list-style-type: none"> • Role of routine and non-routine SMBG • Use of technology 	✓		✓
Immunisations*			
Influenza Pneumococcal Tetanus			

Table 1. Medical history and ongoing assessments for the person with type 2 diabetes (cont)

Components for assessment	Assessment interval		
	Initial	Ongoing	Annual
Pregnancy and contraception			
Pregnancy planning Contraceptive use	✓	Individualised	✓
Other			
Assess where applicable <ul style="list-style-type: none"> • NDSS enrolment and services • Driving (interval depends on Assessing fitness to drive guidelines) • Occupational factors • Diving 	✓	Individualised	✓
<p><i>CVD, cardiovascular disease; NDSS, National Diabetes Services Scheme; SMBG, self-monitoring of blood glucose</i></p> <p>*For more information, refer to the discussion of 'Immunisations' in the section 'Managing risks and other impacts of type 2 diabetes'.</p>			

Table 2. Medical examinations to assess the person with type 2 diabetes

Components for examination	Examination intervals		
	Initial	Ongoing	Annual
Physical			
General <ul style="list-style-type: none"> • BMI • Waist circumference (cm) • Blood pressure • Central and peripheral vascular systems • Absolute CVD risk assessment (this may require calculation and investigations) 	✓	Three-monthly or individualised	✓
Complications of diabetes <ul style="list-style-type: none"> • Feet – stratify the risk of developing foot complications (refer to the section 'Microvascular complications: Foot care') – sensation and circulation, skin condition, pressure areas, interdigital problems, abnormal bone architecture • Peripheral nerves – tendon reflexes, sensation (touch [eg 10 g monofilament] and vibration [eg 128 Hz tuning fork]), existence of peripheral neuropathic changes • Heart – ECG for symptomatic disease or dysrhythmia • Sexual dysfunction – both male and female sexual dysfunction • Eyes – acuity, retinopathy, etc (refer to the section 'Microvascular complications: Diabetes-related eye disease') • Skin – for example, lipohypertrophy or dystrophy, acanthosis nigricans, mycotic infections 	✓	Three-monthly or individualised	✓ (Eyes every two years)
Psychological			
Depressive symptoms <ul style="list-style-type: none"> • PHQ-2 • If PHQ-2 score ≥ 3, progress to PHQ-9 Diabetes distress <ul style="list-style-type: none"> • Problem Areas in Diabetes (PAID) • Diabetes Distress Scale (DDS) Refer to the section ' Mental health and type 2 diabetes '	✓	Six-monthly or individualised	✓
<i>BMI, body mass index; CVD, cardiovascular disease; ECG, electrocardiogram</i>			

Table 3. Investigations for diabetes and multimorbidity			
Components for assessment	Assessment interval		
	Initial	Ongoing	Annual
HbA1c	✓	Three- to six-monthly	✓
Lipids LDL-c, HDL-c, TC, TG	✓	Six-monthly	✓
Urinalysis <ul style="list-style-type: none"> Urine ACR at least annually: <ul style="list-style-type: none"> microalbuminuria ACR ≥ 2.5 mg/mmol (men) or ≥ 3.5 mg/mmol (women), or albumin concentration ≥ 20 mg/L proteinuria (macroalbuminuria) ACR ≥ 25 mg/mmol (men) or ≥ 35 mg/mmol (women) 	✓	Individualised	✓
eGFR <ul style="list-style-type: none"> Normal levels are reported as >90 mL/min/1.73m², and as specific values below; refer to the section 'Microvascular complications: Nephropathy' for criteria of CKD stages 	✓	Individualised if abnormal	✓
Other as appropriate for symptomatic presentation or existence of comorbidity or multimorbidity (eg B12 deficiency if on prolonged metformin therapy)			
<i>ACR, albumin-to-creatinine ratio; CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; HDC, high-density lipoprotein cholesterol; LDC, low-density lipoprotein cholesterol; TC, total cholesterol; TG, triglyceride</i>			

Table 4. Suggested actions and health professionals to provide treatment or service	
Suggested actions	Suggested team resource – Who?*
Ask	
Symptoms	GP
Goal-setting supporting self-management	GP/practice nurse/CDE
Cardiovascular issues (eg BP measurement)	GP/practice nurse
Glycaemic control	GP/practice nurse/CDE
Assess (inclusive within an annual cycle of care)	
Risk factors for modification	GP/practice nurse/CDE
Weight, height	GP/practice nurse
Cardiovascular disease risk assessment	GP/practice nurse
Foot examination	GP/podiatrist/practice nurse

Table 4. Suggested actions and health professionals to provide treatment or service (cont)

Suggested actions	Suggested team resource – Who?*
Presence of other complications, especially hypoglycaemia risk with insulin or sulfonylureas	GP/practice nurse/endocrinologist
Psychological status	GP/psychologist
Eye examination	GP/optometrist/ophthalmologist
Dental review	GP/dentist
Consider other assessments where appropriate (eg cognitive impairment, obstructive sleep apnoea)	GP/endocrinologist/other specialist (where indicated)
Advise	
Review smoking, nutrition, alcohol, physical activity (SNAP) profiles, including specific issues	GP/practice nurse/CDE
Nutrition	GP/APD
Physical activity levels	GP/AEP/physiotherapist
Pregnancy planning and contraception, including NDSS six-month blood glucose strip access	GP/endocrinologist/obstetrician/CDE/APD
Driving	GP/endocrinologist/other specialist
Immunisation	GP/practice nurse/CDE
Sick day management	GP/practice nurse/CDE
Medication issues	GP/pharmacist/CDE/endocrinologist
Self-monitoring blood glucose	GP/CDE/practice nurse
Insulin/injectable management	GP/CDE/registered nurse/accredited nurse practitioner/endocrinologist
Psychological issues	GP/practice nurse/CDE/psychologist
Assist	
Register for NDSS	GP/CDE/nurse practitioner
NDSS six-month blood glucose strip access, as appropriate, for people not on insulin, particularly during pregnancy planning	GP/CDE/nurse practitioner
General practice management plan and chronic disease management plan	GP/practice nurse
Cultural and psychosocial issues	GP/Aboriginal health worker/social worker/CDE/psychologist
Arrange	
Addition to the practice's diabetes register and recall	GP/practice nurse/practice staff
Organise reviews, including pathology and annual cycle of care	GP/practice nurse
Driver's licence assessment	GP/practice nurse/endocrinologist (when indicated)
<p><i>AEP, accredited exercise physiologist; APD, accredited practising dietitian; BP, blood pressure; CDE, credentialed diabetes educator; GP, general practitioner; NDSS, National Diabetes Services Scheme</i></p> <p>*An Aboriginal health worker is recommended to assist with all actions regarding Aboriginal and Torres Strait Islander people.</p>	

References

1. McBain-Rigg KE, Veitch C. Cultural barriers to health care for Aboriginal and Torres Strait Islanders in Mount Isa. *Aust J Rural Health* 2011;19(2):70–74.
2. Department of Health. MBS Online: Medicare Benefits Schedule – Item 2517. Canberra: DoH, [date unknown]. Available at www9.health.gov.au/mbs/fullDisplay.cfm?type=item&q=2517&qt=item [Accessed 1 April 2020].

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