Pathways for Prediabetes, Type 1, Type 2 and Gestational Diabetes

Developed by Department of Health - Loddon Mallee Region
Pathways for Prediabetes, Type 1, Type 2 and Gestational Diabetes

These evidence-based pathways have been developed to help guide clinicians in the Loddon Mallee region in the appropriate care and management of people with prediabetes and diabetes.

The pathways provide guidelines for the identification and management of prediabetes, type 1, type 2 and gestational diabetes, and are not intended to replace professional judgement or clinical expertise.

National and international guidelines have informed the development of these pathways and it is anticipated that they will be reviewed and updated as changes to national guidelines arise.

These pathways are endorsed by Diabetes Australia - Victoria.
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Design of the Loddon Mallee Regional Diabetes Pathways has been based on the collective contribution of all members of the working party. The working party consisted of clinical experts from within the region, who have freely given of their time to guide and direct the development of these four pathways. Their enthusiasm, expertise and willingness to participate has ensured successful development of the pathways.

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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADEA</td>
<td>Australian Diabetes Educators Association</td>
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<tr>
<td>ADIPS</td>
<td>The Australasian Diabetes in Pregnancy Society</td>
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<tr>
<td>ATSI</td>
<td>Aboriginal and Torres Strait Islander</td>
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<tr>
<td>AUSDRISK</td>
<td>The Australian type 2 diabetes risk assessment tool</td>
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<tr>
<td>BGL</td>
<td>Blood glucose level</td>
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<tr>
<td>BMI</td>
<td>Body mass index</td>
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<tr>
<td>BP</td>
<td>Blood pressure</td>
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<tr>
<td>CDE</td>
<td>Credentialled diabetes educator</td>
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<tr>
<td>CHO</td>
<td>Carbohydrate</td>
</tr>
<tr>
<td>CVD</td>
<td>Cardiovascular disease</td>
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<tr>
<td>DAA</td>
<td>Dietitians Association of Australia</td>
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<tr>
<td>DAFNE</td>
<td>Dose adjustment for normal eating</td>
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<tr>
<td>DAV</td>
<td>Diabetes Australia (Victoria)</td>
</tr>
<tr>
<td>DE</td>
<td>Diabetes educator</td>
</tr>
<tr>
<td>DMMR</td>
<td>Domiciliary medication management review</td>
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<tr>
<td>EPC</td>
<td>Enhanced primary care</td>
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<tr>
<td>FBG</td>
<td>Fasting blood glucose</td>
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<tr>
<td>GAD</td>
<td>Glutamic acid decarboxylase</td>
</tr>
<tr>
<td>GCT</td>
<td>Glucose challenge test</td>
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<tr>
<td>GDM</td>
<td>Gestational diabetes mellitus</td>
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<tr>
<td>GP</td>
<td>General practitioner</td>
</tr>
<tr>
<td>HbA1c</td>
<td>Glycated haemoglobin</td>
</tr>
<tr>
<td>HDL</td>
<td>High density lipoprotein</td>
</tr>
<tr>
<td>HMR</td>
<td>Home medicines review</td>
</tr>
<tr>
<td>Ht</td>
<td>Height</td>
</tr>
<tr>
<td>Hx</td>
<td>History</td>
</tr>
<tr>
<td>ICU</td>
<td>Intensive care unit</td>
</tr>
<tr>
<td>IFG</td>
<td>Impaired fasting glucose/glycaemia</td>
</tr>
<tr>
<td>IGT</td>
<td>Impaired glucose tolerance</td>
</tr>
<tr>
<td>K10</td>
<td>Kessler psychological distress scale</td>
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</tbody>
</table>

Kg/m²         Kilograms/metres²
LDL           Low density lipoprotein
LSMP          Lifestyle modification program
MBS           Medical benefits schedule
mmol/L        Millimoles per litre
NCCCC         National Collaborating Centre for Chronic Conditions
NCCWCH        National Collaborating Centre for Women’s and Children’s Health
NDSS          National Diabetes Services Scheme
NHMRC         National Health and Medical Research Council
NHAPAC        National Health Priority Action Council
NICE          National Institute for Health and Clinical Excellence
OGTT          Oral glucose tolerance test
OHA           Oral hypoglycaemic agent
PD            Prediabetes
PG            Plasma glucose
PWD           Person with diabetes
RACGP         Royal Australian College of General Practitioners
RBG           Random blood glucose
SBGM          Self blood glucose monitoring
T1DM          Type 1 diabetes mellitus
T2DM          Type 2 diabetes mellitus
TCA           Team care arrangement
WHO           World Health Organisation
Wt            Weight
2hrG          2 hour OGTT

= Decision  = Action

- PREDIABETES
- TYPE 1 DIABETES
- TYPE 2 DIABETES
- GESTATIONAL DIABETES
Annual Cycle of Care

The Annual Cycle of Care (Diabetes) provides minimum guidelines of care for a person with diabetes. General practitioners working in an accredited practice, can apply for the Practice Incentive Program (PIP) with Medicare Australia and receive a Service Incentive Payment (SIP) for each cycle of care completed for a person with diabetes, within an 11 to 13 month period. It would be anticipated that most people with T1DM and T2DM require more frequent monitoring and review.1, 2

The minimum requirements include:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency / Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess diabetes control by measuring HbA1c</td>
<td>At least once every cycle</td>
</tr>
<tr>
<td>Ensure that a dilated fundus examination and visual acuity assessment is carried out by an ophthalmologist or optometrist</td>
<td>At least every two years</td>
</tr>
<tr>
<td>Measure weight, height &amp; calculate BMI</td>
<td>At least twice every cycle</td>
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<tr>
<td>Measure blood pressure</td>
<td>At least twice every cycle</td>
</tr>
<tr>
<td>Examine feet</td>
<td>At least twice every cycle</td>
</tr>
<tr>
<td>Measure total cholesterol, triglycerides and HDL</td>
<td>At least once a cycle</td>
</tr>
<tr>
<td>Test for microalbuminuria</td>
<td>At least once a cycle</td>
</tr>
<tr>
<td>Provide self-care education</td>
<td>Assess self-management practices (at least once a year) &amp; review feedback from diabetes educator</td>
</tr>
<tr>
<td>Review diet</td>
<td>Reinforce key messages from dietitian and review nutrition (at least once a year)</td>
</tr>
<tr>
<td>Review levels of physical activity</td>
<td>Reinforce importance of regular and appropriate levels of physical activity (at least once a year)</td>
</tr>
<tr>
<td>Review smoking status</td>
<td>At least once a year</td>
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<tr>
<td>Review medication</td>
<td>At least once a year and consider referral for DMMR / HMR</td>
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</table>

Diabetes Educators

Credentialled Diabetes Educators’ (CDE) are nationally accepted as providing quality assured provision of diabetes self-management education. An ADEA CDE is recognised as having met the following criteria:

- Authorisation to practice in an eligible health discipline
- Completion of an ADEA accredited graduate certificate course of study in diabetes education and care
- 1800 hours of experience in providing diabetes self-management education as defined by ADEA and in accord with the Standards of Practice identified by ADEA
- Submission of a refereed report by a CDE
- Completion of a mentoring program
- Evidence of continuing education across all domains of practice for CDEs
- Commitment to the ADEA Code of Conduct for Diabetes Educators 40

The following disciplines are eligible for recognition as a CDE

- Registered nurse (in Victoria this applies to division one registered nurses only)
- Accredited practising dietitian (APD)
- Registered medical practitioner
- Registered pharmacist who is also accredited by either the Australian Association of Consultant pharmacy (AACPI) or the Society of Hospital Pharmacists Australia (SHPA)

While recognising Credentialled Diabetes Educators (CDE) as the ‘gold standard’ in the provision of diabetes self-management education, the term diabetes educator for the purpose of these pathways is taken to mean a person who has successfully completed an ADEA accredited graduate certificate in diabetes education and management.

The term diabetes resource nurse and Aboriginal health worker, applies to a person employed within a health care service who has undertaken an appropriate and recognised level of training in diabetes. A number of diabetes courses are available, including 2 day diabetes workshops conducted by Diabetes Australia (Victoria) and an online training course Diabetes Management in the General Care Setting, developed by the National Association of Diabetes Centres (NADC) a joint initiative between the Australian Diabetes Educators Association (ADEA) and the Australian Diabetes Society (ADS). Neither of these courses, on completion, entitles a person to use the title Diabetes Educator.

Kessler Psychological Distress Scale (K10)

A simple screening tool, which can be used during a consultation to assess the mental health state of a person with diabetes14
Prediabetes
Impaired fasting glucose (IFG) and impaired glucose tolerance (IGT) are conditions in which blood glucose levels are elevated but not high enough for a diagnosis of diabetes to be made. People with prediabetes are at increased risk of developing diabetes, cardiovascular and other macrovascular disease.\(^2\)

Self-Management
Self-management is the cornerstone of diabetes care. Actively encouraging, supporting and involving people with diabetes in their self-management, promotes health and well being, improves quality of life, reduces depression and anxiety, significantly increases satisfaction with their treatment and reduces utilisation of health services.\(^4\) Optimal and effective self-management of diabetes is best supported by an evidence-based and collaborative approach to care involving ongoing feedback and communication between all parties.

Systems for Care
People with diabetes require a systematic approach to their management, particularly annual review, from all members of a multi-disciplinary team. A systematic approach for GPs is facilitated by the use of:

- A disease register
- An active recall system to facilitate timely recall of all people when aspects of diabetes management require review (pathology, complication screening, monitoring, reviews and care planning).
- Flow charts
- Review charts

The RACGP and General Practice networks have resources to assist practices in establishing such systematic approaches to the care of their patients with diabetes.\(^6,7\)
The Australian Type 2 Diabetes Risk Assessment (AUSDRISK) is a questionnaire screening tool which accurately predicts a person’s risk of developing T2DM within the next five years. Everyone can be screened using AUSDRISK tool but people identified at high risk of T2DM should be screened.

**People at risk of developing T2DM and PD**
- A family history of T2DM
- Aged 55 years and over
- Aged 45 years and over with 1 or more associated CVD risk factor
- Aboriginal and Torres Strait Islanders (ATSI)
- From culturally and linguistically diverse backgrounds aged 35 years and over – Pacific Islanders, Maltese, people from the Middle East, North Africa, Indian sub-continent, China, Vietnam
- Overweight or obese (BMI > 25kg/m²). Waist circumference is an indicator of abdominal fat which increases risk of T2DM and CVD
- Women who have had GDM
- Women with Polycystic Ovarian Syndrome who are overweight
- Smokers
- Physical inactivity
- Those taking certain medications, antipsychotic medication & steroids

**Prediabetes Clinical Pathway**

1. Person performs self-assessment of T2DM risk using AUSDRISK tool
2. GP/health professional confirms AUSDRISK score
3. Perform FBG (laboratory tested) if not done in last 12 months. Results indicate:
   - < 5.5 (diabetes unlikely)
   - 5.5 – 6.9 (diabetes uncertain)
   - > 7.0 (diabetes likely)
4. Perform OGTT Results indicate:
   - FBG < 6.1 or 2hrG < 7.8 (diabetes unlikely)
   - FBG 6.1 – 6.9 or 2hrG < 7.8 (IFG)
   - FBG < 7.0 or 2hrG 7.8 – 11.0 (IGT)
   - FBG > 7.0 or 2hrG > 11.1 (diabetes)

**Low Risk**
- AUSDRISK score
  - Low risk < 5
  - Intermediate risk 6 – 14
  - High risk > 15

**Intermediate Risk**
- 6 - 14
- ≥ 15

**High Risk**
- ≥ 15

*People with AUSDRISK score of 15 or more with a FBG of < 5.5 are eligible for Life! Program*
**Prediabetes Ongoing Self-Management Pathway**

**Desired Outcomes**
- Identify and screen for T2DM & PD
- Diagnosis and early intervention for people diagnosed with PD
- Prevent and delay progression to T2DM with intensive, evidence based lifestyle modification programs
- Annual screening for T2DM and CVD

**Role of GP:**
- Provide a systematic approach to PD management with systems for care
- Annual review of modifiable lifestyle risk factors for T2DM and CVD
- Annually perform a clinical CVD risk assessment including BMI, waist circumference, BP, FBG & fasting lipids
- Consider referral to other allied health professionals based on local community availability and person’s need
- Psychosocial stress may increase individual risk of developing T2DM. Screening with K10 tool can identify people with depression and anxiety
- Support and promote self-management practices

**People with Prediabetes should receive same target goals of BP and lipid management as people with T2DM.**
Consider using these MBS Item numbers

- **Item 710**
  - ATSI adult health check if person is aged 15 - 54 years (inclusive)

- **Item 713**
  - T2DM Risk Evaluation if aged 40 - 49 years (inclusive).

- **Item 717**
  - 45 year old health check

Refer to MBS for full item descriptor and explanatory notes on all these item numbers.

**Role of Dietitian**
Assess nutritional needs, develop personalised eating plans, offer nutritional counselling, support, weight management and specific nutritional advice for people with PD, dyslipidaemia & hypertension.

**Role of Exercise Physiologist/Physiotherapist**
Provide individual assessment, exercise prescription and behaviour-change counselling
- Regular physical activity is a key message, and should be provided by all members of the multidisciplinary team.
- Exploring individual preference for physical activity and providing information about local exercise interventions, and advise appropriate to the person’s age and level of fitness.

**Role of LMP Facilitator/Diabetes Educator**
Provide evidence-based interventions which promote and support healthier lifestyle change & choices in prevention of T2DM.
LSMPs promote self-management and self-determination by addressing modifiable lifestyle risk factors for T2DM using behaviour change techniques, counselling and goal setting.
- The Life! Program
  - Diabetes educators (based on local agreement)
  - Other community based diabetes self-management groups and LSMP’s available in the Loddon Mallee region

**Contact Local Division of General Practice and Community Health Centres for available programs in your area**

**Role of Aboriginal Health Worker**
Provide culturally appropriate support and counselling to promote understanding of PD and T2DM prevention.

**Feedback and Communication**
Between all parties is crucial to achieving optimal health and well being for a person with prediabetes.

**References:**
12. Twigg et al 2007

Score 14 & less
Lifestyle Modification Program
- Not eligible for Life! Program.
- Consider referral to other locally available LSMPs
- Consider “Life on Line” or telephone coaching

Score 15 & over
Lifestyle Modification Program
- If aged 40 years & over, eligible for subsidised LSMP eg. Life! Program.
- An ATSI adult person aged 15 – 54 years is also eligible for Life! Program.
- A person of any age is also eligible for Life! Program, under WorkHealth initiative
- Consider referral to other locally available self-management interventions & LSMPs

A person with prediabetes requires referral for intensive LSMP by GP

- Reassess AUSDRISK score – Prediabetes adds 6 points to initial AUSDRISK score.

A person with PD understands T2DM may be prevented or delayed by adopting healthier lifestyle modifications

T2DM has been excluded with recent FBG.
Person with initial diagnosis of T1DM requires immediate referral to medical practitioner.

Refer to diabetes educator
Person seen 1-2 hrs daily over 4-5 days

Refer to mental health worker/social worker
If assessed at high priority, to be seen within one week. If at low priority, within one month of diagnosis. Up to 1 hr consultations several sessions over first month and then annually unless indicated more frequently.

Refer to endocrinologist/physician (adults) and paediatric endocrinologist/paediatric physician (children and adolescents)

Refer to dietitian
Initial contact within first week then 4-6 sessions over first month.

Person well – ambulatory service provision
Criteria include:
- BGL elevated
- no acute illness
- no signs of ketoacidosis
- 24 hr access to clinical advice

Person well – acute hospital admission
Criteria includes:
- geographically isolated
- physical/mental disability which may impede self-management
- no telephone available in the home
- language or communication difficulties
- profound grief reaction in family
- individual dependent on a carer who is unable to take responsibility for safe insulin administration

Person acutely unwell – emergency department admission
Criteria includes:
- BGL ≥11.1mmol/L
- ketoacidosis
- admission to ICU/acute setting

Clinical findings
- polyuria
- polydipsia
- weight loss
- abdominal pain
- weakness
- vomiting
- confusion

Clinical signs
- dehydration
- deep sighing (kussmaul) respirations
- smell of ketones
- lethargy, drowsiness

Biochemical signs
- ketones in urine or blood
- acidaemia pH<7.3

Link to Type 1 Diabetes Clinical Pathway

Link to Type 2 Diabetes Clinical Pathway

Link to Type 1 Diabetes Ongoing Self-Management Pathway
Type 1 Diabetes Ongoing Self-Management Pathway

**Role of Endocrinologist/Physician/Paediatrician**
- **Review** - 3 monthly for children and adolescents & minimum of annually for adults.
- **Initial contact** - assessment of client including medical history, complications, recent diabetes history, family history, vascular risk factors, foot/eye/vision examination, urine albumin excretion, urine protein, serum creatinine, BP & fasting lipids.
- insulin initiation and adjustment as required

**Ongoing contact**
- HbA1c measurements based on individual need.
- screening for microvascular and macrovascular complications.
- assess sexual health, discuss contraception and provide pre-conception advice as needed.

Microvascular complications screening is critical for person with T1DM.

**Role of Exercise Physiologist/Physiotherapist**
- the link between physical activity and arterial risk
- exercise in relation to insulin, nutritional needs pre and post exercise
- establish and maintain a system of recall and review

**Role of Podiatrist**
- annual structured foot surveillance as minimum for adults, children and adolescents
- check for skin conditions, shape and deformity, shoes, impaired sensory nerve function and vascular supply
- establish and maintain a system of recall and review

**Role of Ophthalmologist/Optometrist**
- on diagnosis and yearly assessment for adults. adolescents after 2 years of diabetes and 5 years for children
- assess visual acuity, new vessel formation
- urgent referral to ophthalmologist if sudden changes occur

**Role of Medical Ob/Gyn**
- initial contact - survival education
- describing the diabetes disease process and treatment options
- monitoring blood glucose, urine/blood ketones (when appropriate) discuss and demonstrate
- insulin initiation and skill acquisition
- preventing, detecting and treating acute complications eg. hyper/hypoglycaemia
- VicRoads notification
- NDSS registration
- on-going self-management plan
- peer support
- sick day management

Ongoing contact - minimum of annual review
- pathophysiology of diabetes
- agreed self-management plan
- insulin adjustment
- long term complications
- glycaemic control
- effects of physical activity
- hypoglycaemia
- travel and diabetes
- promoting pre-conception care and management during pregnancy (if appropriate)
- children & carers (discuss childcare, preschoool and school sick day management)
- age-appropriate education on sexuality, smoking, alcohol and drugs, employment, fitness to drive
- re-assess education requirements
- establish and maintain a system of recall and review

**Role of Pharmacist**
- conduct an annual medication review
- management planning, TCA & mental health care plan (as needed)
- ensure recommended annual screening completed
- assess sexual health, discuss contraception and provide pre-conception advice as needed
- support for family & carers
- ATSI people should receive culturally appropriate interventions
- assess oral health & refer to oral health professional under available Medicare Australia dental items

**Role of Mental Health Worker**
- initial contact
- assess for client adjustment issues, limited social supports, needle phobia, depression, anger, anxiety.
- assess the typical range of emotional reactions to the diagnosis of T1DM
- guilt and grief
- marital/personal stress
- treatment adherence
- anxiety and depression assessment and increased risk factors
- children and adolescents need age-related assessment
- establish and maintain a system of recall and review
- provide support for family & carers

Feedback and communication between all parties is crucial to achieving optimal health and well being for a person with T1DM, their family and carers.

**REFERENCES:**
Type 2 Diabetes Clinical Pathway

Person with initial diagnosis of T2DM

Does person have T2DM?

First visit to GP

Assess modifiable lifestyle risk factors

Explore and identify psychosocial issues, reaction to diagnosis, factors affecting coping, adjustment & barriers to learning. Screen for depression

Clinical assessment & screening for CVD risk factors

Assess for 3 month trial of lifestyle modification only, with assistance from multi-disciplinary team. Are there symptoms of hyperglycaemia with BGL > 20mmol/L?

NO

Refer to dietitian within one month of diagnosis. Based on priority of need should be seen within 6 weeks. May require earlier appointment

Refer to ophthalmologist/optometrist

Refer to dietitian within one month of diagnosis

Refer to exercise physiologist/physiotherapist

Refer to podiatrist

Refer to mental health worker/social worker

Smoking cessation program

Aboriginal health worker

Oral health professional (based on individual need assessment)

Consider commencing Metformin as first line OHA of choice

YES

Ongoing multi-disciplinary review based on clinical assessment and individual need, with feedback between PWD, GP & multi-disciplinary team.

Review by GP following 3 months trial of lifestyle modification. Recheck HbA1c, BMI, waist circumference and other investigations based on clinical assessment and individual need. Review medication management - consider referral for DMMR/HMR

Are individualised, agreed goals of management being achieved?

YES

NO

Link to Type 1 Diabetes Clinical Pathway

Link to reverse for Type 2 Diabetes Clinical Pathway

Agreed individualised target goals of weight management, BGLs, BP and lipid management. Identify individual health priority and needs. Information resources should be current, consistent and consider culture, language, literacy, age and special learning needs.

Ignoring age & BGL, are there symptoms of:

- ketonuria (may be absent)
- polyuria, polydipsia & weight loss
- no other features of the metabolic syndrome & BMI < 25
- family hx of autoimmune disease
- in 80% of people GAD & IA2 antibodies will be present

YES

Children & adolescents with T2DM need referral to paediatric endocrinologist/physician.

Provide information and registration/notification forms for NDSS & VicRoads

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Type 2 Diabetes Ongoing Self-Management Pathway

**DESIRED OUTCOMES:**
- achieve optimal target management goals of BGLs, BP and lipid control
- support optimal psychosocial adjustment to diabetes
- prevent/early detection of macrovascular and microvascular complications with screening
- promote self-management practices
- quality of life

**Role of DIABETES EDUCATOR**
- provide & consolidate knowledge and understanding of diabetes.
- identify and address gaps in learning and provide ongoing support and counselling, facilitating optimal adjustment to living with diabetes.
- annual review is part of care and a minimum requirement.
- establish and maintain a system of recall and review.

**Role of PHARMACIST**
- conduct an annual Domiciliary Medication Management Review (DMMR) for people with diabetes living at home, who meet eligible criteria, using MBS item 990.

**Role of COMMUNITY HEALTH NURSE**
- promote and support optimal health and well being and assist with optimal adjustment to living with diabetes.
- establish and maintain a system of recall and review.

**Role ofaboriginal health worker**
- provide culturally appropriate practical support and counseling to promote understanding of T2DM amongst Aboriginal people.
- establish and maintain a system of recall and review.

**Role of GP**
- provide continuity and coordination of care
- annual cycle of care
- management planning & TCA
- multi-disciplinary referrals using allied health service MBS items
- review metabolic control (HbA1c, self-monitoring of BGLs)
- surveillance and screening for macrovascular & microvascular complications, annual fasting lipids, U&E's & microalbuminuria
- explore psychosocial issues, particularly depression, social isolation, sexual health, family stress. Screen using K10 screening tool and refer to appropriate allied mental health professional.
- people with an Hba1c > 8% for 6 months should be referred to an endocrinologist/physician for assessment and management.

**Role of PRACTICE NURSE**
- establish & maintain systems for care, and under direction from GP assist with GP management planning, TCA and annual cycle of care.
- conduct annual nursing review.

**Role of ORAL HEALTH PROFESSIONAL**
- provide optimal dental care for people with chronic and complex care needs who require assistance with oral health. Medicare dental items (85011 – 87777) are currently available for people with diabetes using the EPC program.

**Role of SOCIAL WORKER**
- assist a person with T2DM address social, emotional, financial and practical issues that may affect daily living.
- establish and maintain a system of recall and review.

**Role of DIETITIAN**
- provide nutritional assessment and nutrition prescription, education, goal setting and ongoing reviews
- annual review is part of care
- establish and maintain a system of recall and review.

**Role of EXERCISE PHYSIOLOGIST/PHYSIOTHERAPIST**
- provide individual assessment, physical activity advice, exercise prescription and behaviour-change counselling
- annual review is part of care
- establish and maintain a system of recall and review.

**Role of PODIATRIST**
- perform initial foot assessment, at diagnosis
- following initial assessment, a podiatrist may consider a PWD at “low risk” of foot complications and able to receive ongoing foot screening from an appropriately trained health professional
- people with ‘high risk’ feet should be managed and assessed by a podiatrist
- annual foot assessment should be conducted by a podiatrist, and is part of ongoing care.
- establish and maintain a system of recall and review.

**Role of OPHTHALMOLOGIST / OPTOMETRIST**
- ensure all PWD receive a dilated fundus examination and visual acuity assessment at initial diagnosis and at least every 2 years.

**Role of ENDOCRINOLOGIST / PHYSICIAN**
- ensure all people with complicated problems related to their diabetes receive expert clinical advice and management.
- reviews are based on clinical judgment and individual need.

**Role of ALLIED MENTAL HEALTH PROFESSIONAL**
- provide psychological assessment and therapy from eligible clinicians using Medicare GP mental health care items and better outcomes in mental health care program.
- establish and maintain a system of recall and review.

Feedback and communication between all parties is crucial to achieving optimal health and well being for a person with T2DM.

**REFERENCES:**
This pathway is not designed for women with pre-existing T1DM or T2DM

**Gestational Diabetes Clinical Pathway**

**Perform Risk Screening for GDM**
- GDM in previous pregnancy
- Previous baby > 4.5kg
- Previous unexplained stillbirth
- BMI > 30kg/m²
- Over 30 years
- Indigenous Australians
- Certain high risk ethnic groups (Chinese, Vietnamese, North African, women from Indian sub-continent, Polynesian & Middle Eastern)
- Prediabetes (IFG & IGT)

**Risk factors identified**

**At 12 - 16 weeks gestation**
- Woman requires OGTT (75g glucose load) if F > 5.5 or 2hr PG > 8.0, confirms diagnosis.

**Is diagnosis confirmed?**

**YES**
- Follow up with GP/obstetrician for routine care during pregnancy.

**NO**
- Refer to dietitian

**At 26-28 weeks gestation**
- Woman requires GCT (50g oral glucose load) if PG > 7.8 at 1 hr indicates an elevated result.

**Is GCT elevated?**

**YES**
- Persistant hyperglycaemia (on more than 2 occasions) FBG > 5.5 or 2 hour postprandial > 7.0
- Woman referred to obstetrician/endocrinologist for initiation of insulin.

**NO**
- Elevated SBGM
- Woman to continue with diet and exercise management.

**A woman with GDM is considered a high risk pregnancy**

**Refer to diabetes educator**

**Refer to obstetrician**

**If FBG < 5.5 and 2 hrs postprandial < 7.0**
- Woman to continue with diet and exercise management.

**Clinically uncomplicated**
- Usual pregnancy care with close BGL and clinical monitoring.

**Clinically complicated**
- Obstetric management and consider delivery < 38 weeks.

**Good control and no macrosomia or complications - consider delivery full term**

**Poor control**
- Macrosomia or complications - consider delivery < 38 weeks.

**Refer to dietitian**

**Refer to obstetrician**

**Woman requires BGL monitoring in the first 24 hrs post delivery and an appointment with GP at 6 weeks. Essential part of hospital discharge plan - provide woman with OGTT pathology request form with results to be followed up with GP at first postnatal appointment.**

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**Role of OBSTETRICIAN & MIDWIFE**

All women with GDM are considered to have a high risk pregnancy. Manage and monitor a woman through pregnancy. Timing and frequency of foetal monitoring depends on other complications such as pre-eclampsia, hypertension, ante-partum haemorrhage, intrauterine growth retardation. Ultrasonography should be considered at around 34 weeks gestation to detect abnormalities of foetal growth and polyhydramnios. Encourage breast feeding. Consider referral to a lactation consultant.

**Role of DIETITIAN**

Dietary therapy is the primary therapeutic strategy for the achievement of acceptable glycaemic control in GDM and should:
- conform with the principles of dietary management of diabetes in general
- meet the nutritional requirements of pregnancy
- be individualised for each person depending on maternal weight and BMI
- be culturally appropriate
- moderate exercise is an adjunct therapy with benefits, when used with dietary modifications and/or insulin

**Role of DIABETES EDUCATOR**

Provide information, advice, support and assist with diabetes management. Important aspects of education for the woman and her partner include:
- the implications of GDM to herself and her baby
- the dietary and exercise recommendations
- SBGM is the optimal choice of monitoring glycaemic control with one fasting and one postprandial BGL obtained daily as a minimum.
- the frequency of testing can be increased or decreased depending on results and progress of pregnancy
- insulin initiation and skill acquisition
- survival skills and sick day management
- contraception and pre-conception advice for future pregnancy
- peer support

**Minimum goals of SBGM:**
- Fasting capillary BGL < 5.5
- 1hr postprandial capillary BGL < 8.0
- 2hr postprandial capillary BGL < 7.0

**Role of PRACTICE NURSE**

- establish & maintain systems for care to ensure recommended ongoing follow up & screening.
- at first postnatal visit ensure OGTT has been performed and results reviewed. If OGTT normal, rescreen with FBG in 3 years. If OGTT abnormal rescreen FBG annually and link to appropriate pathway
- screen with AUSDRISK tool to determine risk of T2DM. Link to appropriate pathway
- provide contraception advice and pre-conception counselling and consider OGTT prior to future conceptions

**Role of ENDOCRINOLOGIST / PHYSICIAN**

- Medically manage and monitor diabetes during pregnancy. Initiate insulin if blood glucose goals are exceeded on 2 or more occasions within a 1–2 week period, particularly in association with clinical or investigational suspicion of macrosomia

**Role of PAEDIATRICIAN**

- BGL should be checked 1 hour post delivery then before the first 4 feeds for up to 24 hours.
- a paediatrician should be present at delivery if significant neonatal morbidity is suspected

**Role of LSMP/SELF-MANAGEMENT INTERVENTION**

- address modifiable lifestyle risk factors using behaviour change techniques, counselling and goal settings to prevent T2DM
- refer to locally available community health self management and LSMP’s

**Role of ABORIGINAL HEALTH WORKER**

- provide culturally appropriate practical support and counselling to promote understanding of GDM and long term prevention of T2DM amongst indigenous people

**Role of ENDOCRINOLOGIST / PHYSICIAN**

- Medically manage and monitor diabetes during pregnancy. Initiate insulin if blood glucose goals are exceeded on 2 or more occasions within a 1–2 week period, particularly in association with clinical or investigational suspicion of macrosomia

**Role of DIABETES EDUCATOR**

Provide information, advice, support and assist with diabetes management. Important aspects of education for the woman and her partner include:
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- Fasting capillary BGL < 5.5
- 1hr postprandial capillary BGL < 8.0
- 2hr postprandial capillary BGL < 7.0

**ROLE OF DIABETIC NURSE PRACTITIONER**

- Perform SBGM to optimise glycaemic control
- Use the SMBG tool to determine risk of T2DM
- Provide education and support for those with diabetes
- Implement the principles of SBGM

**REFERENCE:**

References used for Prediabetes, Type 1, Type 2 and Gestational Diabetes Pathway Design


25. MIMS Australia 2008
References


