

3 MEDICAL DISORDERS ASSOCIATED WITH PREGNANCY

3.1 DIABETES

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3.1.1 Screening for diabetes in pregnancy
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3.1.1 SCREENING FOR DIABETES IN PREGNANCY

SCREENING PROCESS

Any woman may be tested for diabetes at any time in pregnancy if there is clinical suspicion based on symptoms or other factors such as heavy glycosuria, obesity, macrosomia, hydramnios, etc.

In absence of such factors, screening is recommended at certain standard gestations. The complexity of the screening test depends on the degree of risk, with those at increased risk being screened more than once.

The screening instruments utilised are:

- Random venous plasma glucose level (PGL) taken at any time at the clinic visit or elsewhere.
- Glucose Challenge Test (GCT) – performed at a laboratory, fasting or non-fasting.
- Glucose Tolerance Test (GTT) – performed at a laboratory, fasting.

FIRST ANTENATAL VISIT

At the initial antenatal visit obtain a medical and obstetric history. The method of diabetes screening is dependent on risk factors as outlined in the table below.

	Pre 24 weeks*	24 - 28	29 - 32
LOW RISK		GCT	GCT <i>If no prior testing</i>
Medium Risk <ul style="list-style-type: none"> • Maternal age of > 30 years • Women with a family history of diabetes • In cases of maternal obesity • Hypertension prior to 20 weeks • Previous macrosomic baby (> 4000 grams) 	1. Perform a random blood glucose (RBG)* Interpretation of RBG <ul style="list-style-type: none"> • If > 5.5 mmol/L proceed to a GTT. 	GCT If abnormal proceed to GTT Or >11 = GDM	GTT <i>If no prior testing</i>
High Risk <ul style="list-style-type: none"> • All of the above • History of unexplained stillbirth • Previous baby with congenital anomalies • Previous Gestational Diabetes • Ethnicity - Aboriginal, Asian, Indian and Middle Eastern groups. 	<ul style="list-style-type: none"> • If ≤ 5.5 mmol/L repeat RBG every 6 -8 weeks and request GTT at 26 -28 weeks 	GTT	GTT <i>If no prior testing</i>



REPEAT SCREENING

*If initial (early) screening is negative for women at medium or high risk, then they should undergo a repeat GTT at 26 – 28 weeks.

SCREENING PROCESS - GLUCOSE CHALLENGE TEST (GCT)

KEY POINTS

- All women who have a low to medium risk of diabetes will be offered a Glucose Challenge Test (GCT) between 24 – 28 weeks gestation.
- Women at high risk for GDM, should omit the 50g GCT and have a Glucose Tolerance Test.
- A GCT is a non fasting blood test following a 50g glucose load
- A positive result is deemed as a BG ≥ 7.8 mmol/L and < 11 mmol/L one hour post the 50g glucose load which requires further testing via a GTT.
- A BGL ≥ 11 mmol/L indicates a Glucose Tolerance Test (GTT) is NOT necessary and gestational diabetes is assumed.

PROCEDURE	ADDITIONAL INFORMATION
1. Provide an explanation to the woman, the GCT is a screening test only, to detect increased risk of GDM. If the test is positive she may be asked to return for a GTT.	Forewarns the woman further tests may be required to diagnose GDM.
2. A laboratory request form signed by medical/ midwifery staff is required.	Women may attend any laboratory for the test.
3. Women are advised to make their appointment at the laboratory.	The laboratory staff will then give instructions concerning arrival time.
4. Inform the woman: <ul style="list-style-type: none"> • she may eat and drink as usual before the test • she will be asked to consume a 50g glucose drink within 5 minutes • one hour after the 50g load, a venous blood sample is taken • If the test is positive a Glucose Tolerance Test (GTT) to diagnose gestational diabetes will be required. 	<p>This is a standard measure used only in pregnancy screening for diabetes.</p> <p>This test indicates the speed of the body's response to ingested glucose.</p> <p>POSITIVE TEST</p> <p>ONE HOUR BLOOD GLUCOSE ≥ 7.8 MMOL/L (ON A 50G LOAD)</p> <p>ONE HOUR BLOOD GLUCOSE ≥ 11 MMOL/L WARRANTS MANAGEMENT AS A GDM (NO GTT IS REQUIRED)</p>
NOTE: IF BGL 11 OR OVER, NO FURTHER LABORATORY TESTING REQUIRED.	



DIAGNOSTIC PROCESS - GLUCOSE TOLERANCE TEST (GTT)

KEY POINTS

- All women who have a high risk of diabetes or who have a positive Glucose Challenge Test result will be offered a Glucose Tolerance Test (GTT) between 26 – 30 weeks gestation (optimal).
- The Glucose Tolerance Test (GTT) is the diagnostic test for Gestational Diabetes
- A fasting glucose ≥ 5.5 mmol/L and/or a 2 hour post 75g glucose load of ≥ 8 mmol/L confirms diagnosis of gestational diabetes (GDM).
- Women at a high risk for gestational diabetes, should proceed straight to a glucose tolerance test.
- The 75gram GTT is recommended in Australasia, although some laboratories may use alternative glucose loads.

PROCEDURE	ADDITIONAL INFORMATION
1. Explain to the women that the GTT is a diagnostic test for GDM and the reasons for seeking GDM.	The end points differ from those in the non-pregnant range.
2. Obtain verbal consent for the test after giving the woman the following information.	
3. Inform the woman: <ul style="list-style-type: none"> • she should fast from midnight the night prior to the test (water is allowed). • the test involves three venipunctures and takes two hours to complete. • a fasting venous blood glucose will be obtained and the result checked before proceeding. • she will be asked to consume a 75g glucose drink within 5 minutes – this may result in nausea and vomiting. • one hour and two hours after the 75g load, a venous blood sample is taken. • if the test is positive there are changes to antenatal care. An information session on gestational diabetes and loan / purchase of a blood glucose meter will be arranged. 	<p>If the fasting result is ≥ 7mmol/L, the procedure is complete. No glucose load or further blood tests are required.</p> <p>This is the recommended glucose load used in pregnancy to diagnose gestational diabetes</p> <p>This test indicates the speed of the body's response to ingested glucose.</p> <p>Positive test: (on a 75g load) Fasting: ≥ 5.5 mmol/L 2 hour blood glucose: ≥ 8 mmol/L</p>
4. A laboratory request form signed by medical staff / nurse practitioner – diabetes is required.	Women may attend any laboratory for the test.
5. Women to make their own appointment at the laboratory.	The laboratory staff will then give instructions concerning arrival time. Refer to patient instruction sheet from the KEMH laboratory.



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REFERENCE

Hoffman L, Nolan C, Wilson D, et al. 1998. The Australasian Diabetes in Pregnancy Society Consensus Statement on gestational diabetes mellitus-management guidelines. Medical Journal of Australia 169:93-97.