

Gestational Diabetes Mellitus (GDM) and Diabetes in Pregnancy: Diagnostic Recommendations, NSLHD

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Summary	The purpose of this guideline is to provide consistent recommendations for clinicians for the testing and diagnosis of Gestational Diabetes Mellitus (GDM).
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Endorsed By	NSLHD Maternal, Neonatal & Women's Health Network
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Title: Gestational Diabetes Mellitus (GDM) and Diabetes Mellitus in Pregnancy: Diagnostic Recommendations, NSLHD

1. Preamble

The purpose of this guideline is to provide consistency in the screening and diagnosis of Gestational Diabetes Mellitus (GDM) and Diabetes Mellitus in Pregnancy.

Preconception testing is recommended prior to pregnancy for women with risk factors to diagnose any pre-existing diabetes or Impaired Glucose Tolerance (IGT).

Women with elevated HbA1c values that would be diagnostic of diabetes outside of pregnancy may be classified as having pre-existing Diabetes Mellitus in Pregnancy¹. An elevated HbA1c in early pregnancy may indicate undiagnosed/pre-existing diabetes but a definitive diagnosis of non-gestational diabetes cannot be made until the postpartum period.

GDM is one of the most common medical complications for women during pregnancy. Insulin resistance increases as pregnancy proceeds and if there is insufficient pancreatic insulin production, mild to moderate hyperglycaemia may result and lead to increased risk of a range of adverse maternal and fetal complications². Diagnostic testing for GDM should be offered to all pregnant women. Women with strong risk factors for GDM should be screened at the earliest opportunity in pregnancy by measuring HbA1c. All women should be offered a 75 g Oral Glucose Tolerance Test (OGTT) between 24-28 weeks, excluding those women already known to have pre-existing diabetes or those women diagnosed with GDM earlier in pregnancy. Women > 28 weeks gestation who may have missed the 75 g OGTT at 24-28 weeks should be tested at the earliest possible time with a 75 g OGTT.

All women not known to have pre-existing diabetes or hyperglycaemia in pregnancy should be provided with information on the reasons for screening blood glucose levels during pregnancy.

2. Scope of Practice

Maternity Clinicians

Diabetes Management Team (endocrinologists, dietitians, diabetes educators)

General Practitioners

3. Guideline

3.1 First Antenatal Appointment- All women with the following risk factors, who are not known to have pre-existing diabetes or hyperglycaemia in pregnancy, should have a HbA1c attended at the first opportunity after conception:

- Previous diabetes in pregnancy
- Previously elevated blood glucose level
- Maternal age ≥ 40 years
- Ethnicity: Asian, Indian subcontinent, Aboriginal, Torres Strait Islander, Pacific Islander, Maori, Middle Eastern, non-white African
- Family history DM (1st degree relative with diabetes or sister with GDM)
- Pre-pregnancy BMI $> 30 \text{ kg/m}^2$
- Previous macrosomia (baby with birth weight $> 4500 \text{ g}$ or > 90 th centile)
- Polycystic ovarian syndrome
- Medications: corticosteroids, antipsychotics²

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Action: Results are to be followed up by the requesting General Practitioner.

3.1.1 Results <5.4 %

Action: refer for 75 g OGTT at 24 - 28 weeks

3.1.2 Results ≥5.4% Diabetes Mellitus in Pregnancy

Action: Refer to routine GDM care according to local service.

At the time this Guideline was developed, there was no evidence to guide diagnostic testing performed in early gestation. A large multicentre study is currently underway examining the effect of instituting management for mildly raised blood glucose (based on current 75 g OGTT diagnostic values) entitled “The Treatment of booking Gestational diabetes Mellitus Study.” The results of this study may guide future recommendations related to early diagnosis of GDM³.

3.2 OGTT 24-28 Weeks - All women not known to have pre-existing diabetes or hyperglycaemia in pregnancy are recommended to undergo a 75 g OGTT at 24 - 28 weeks gestation.

Action: Discuss and provide referral prior to 24 weeks with the advice from 3.2.1 below.

3.2.1 The 2-hr 75 g OGTT requires referral and an appointment in a pathology collection facility. No special diet is required prior to the test and in particular, carbohydrate loading for 3 days prior to test is **not** required. The OGTT should be performed in the morning, after fasting from 10:30pm the night prior. During the fasting period, water may be consumed but smoking must be avoided. During the 2-hr test, the woman should ideally sit quietly in a comfortable and unstressed environment and must avoid strenuous exercise⁴. The OGTT should be attended prior to the routine 28 week antenatal appointment to ensure the results are reviewed at that appointment if not actioned prior.

Action: The clinician at the 28 week antenatal appointment is responsible to review the results of the OGTT. The results are to be documented in eMaternity.

3.2.2 Results- A diagnosis of GDM should be based on any one of the following values;

Fasting glucose ≥ 5.1- 6.9 mmol/L

1-hr glucose ≥ 10.0 mmol/L

2-hr glucose ≥ 8.5- 11.0 mmol/L

Action: Refer to routine GDM care according to local service.

A presumptive diagnosis of pre-gestational diabetes can be assumed if:

Fasting plasma glucose ≥7.0 mmol/L

2-hr plasma glucose ≥ 11.1 mmol/L

OR

A random plasma glucose ≥11.1 mmol/L in the presence of diabetes symptoms

There are no established criteria for the diagnosis of pre-gestational diabetes based on the 1-h post-load value².

The diagnosis must be confirmed in the postpartum period by a diagnostic 75 g OGTT.

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Action: Refer to routine GDM care according to local service.

3.3 Follow up in the postnatal period- Women with GDM should be referred for a 75 g OGTT at 6-12 weeks after the birth of the baby.

Action: Results are to be followed up by the requesting General Practitioner.

3.3.1 Results- A diagnosis of:

Impaired Fasting Glucose

Fasting plasma glucose 6.1-6.9 mmol/L

Impaired Glucose Tolerance

2-hr plasma glucose ≥ 7.8 mmol/L but less than 11.1 mmol/L

Type 2 diabetes

Fasting plasma glucose ≥ 7.0 mmol/L or

2-hr plasma glucose ≥ 11.1 mmol/L

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Flow Chart: Screening and Diagnosis of GDM

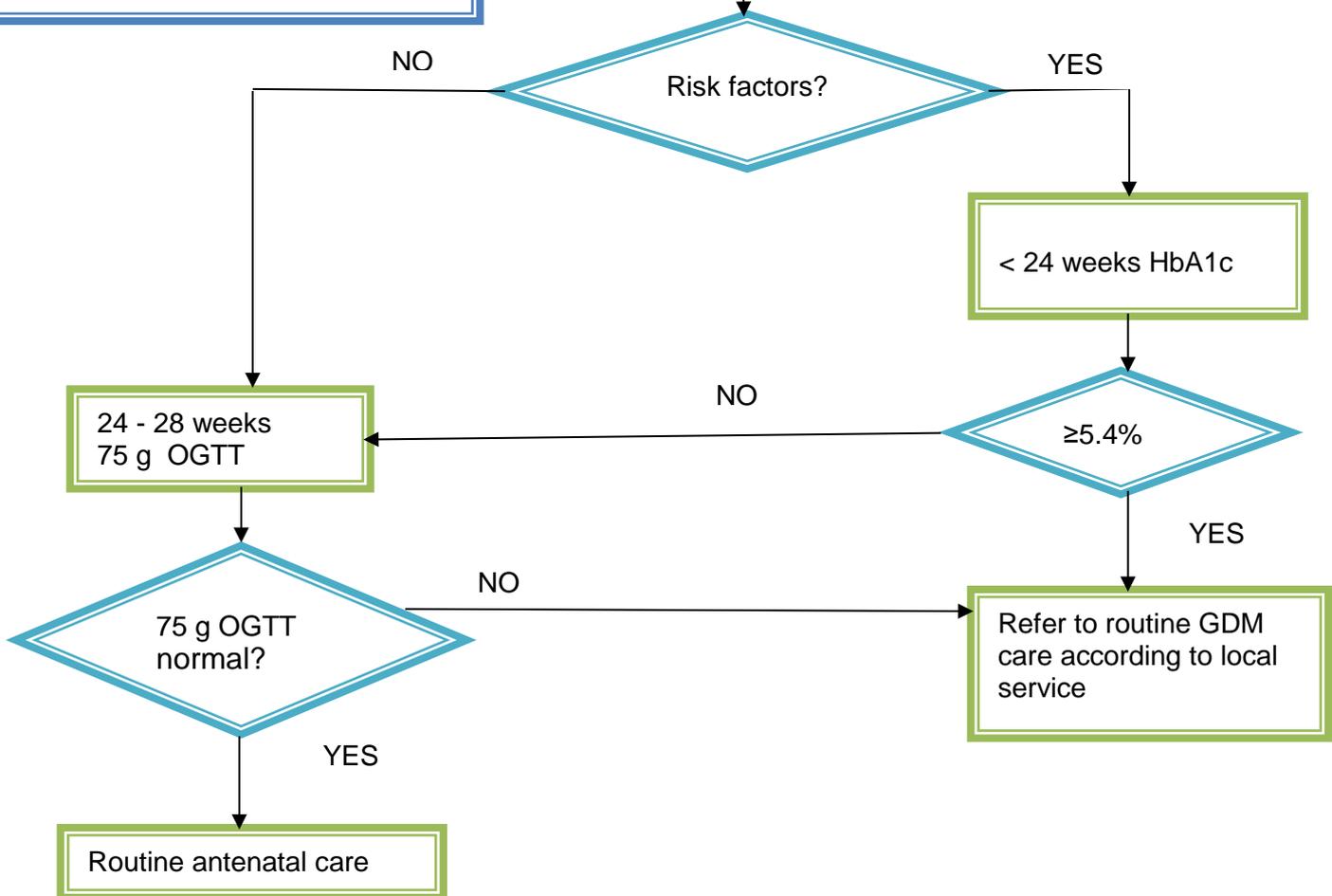
Risk Factors

- Ethnicity: Asian, Indian subcontinent, Aboriginal, Torres Strait Islander, Pacific Islander, Maori, Middle Eastern, non-white African.
- Previous GDM
- Previously elevated blood glucose level
- Maternal age ≥ 40 years
- Family history DM (1st degree relative with diabetes or a sister with GDM)
- BMI $> 30 \text{ kg/m}^2$
- Previous macrosomia (baby with birth weight $> 4500 \text{ g}$ or $> 90\text{th}$ centile)
- Polycystic ovarian syndrome
- Medications: corticosteroids, antipsychotics²

75 g OGTT abnormal results include any one of the following;

Fasting glucose $\geq 5.1 \text{ mmol/L}$
 1-hr glucose $\geq 10.0 \text{ mmol/L}$
 2-hr glucose $\geq 8.5 \text{ mmol/L}^2$

Assess all women without pre diabetes for Risk Factors



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4. References

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2. Nankervis A, et al 2014, ADIPS Consensus Guidelines for the Testing and Diagnosis of Hyperglycaemia in Pregnancy in Australia and New Zealand (modified November 2014) http://adips.org/downloads/2014ADIPSGDMGuidelinesV18.11.2014_000.pdf
3. Trial registered on Australia New Zealand Clinical Trials Registry (ANZCTR) (2015) Pilot study evaluating the impact on obstetric outcomes of immediate versus delayed care for gestational diabetes diagnosed at booking <https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?id=369100> (accessed 27/10/2016)
4. Pathology North Royal North Shore Hospital North Sydney Local Health District, Collection Instructions, Patient Information, Intranet Site accesses 07/09/2016 http://10.27.6.95/php/labinfo-2/info_index.php?tab=3
5. QLD Health, Queensland Clinical Guideline: Gestational Diabetes Mellitus. Guideline No: MN15.33-V1-R20- Flow Chart Template.

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