



Diagnosis of GDM

Diagnosis and Classification of Diabetes Mellitus

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Diagnosis of GDM

- Diagnosis of GDM At the time of publication of this statement, the criteria for abnormal glucose tolerance in pregnancy are those of Carpenter and Coustan (11). Recommendations from ADA's Fourth International Workshop-Conference on Gestational Diabetes Mellitus held in March 1997 support the use of the Carpenter/Coustan diagnostic criteria as well as the alternative use of a diagnostic 75-g 2-h OGTT.



Diagnosis of GDM

Testing for gestational diabetes.

- Previous recommendations included screening for GDM performed in all pregnancies. However, there are certain factors that place women at lower risk for the development of glucose intolerance during pregnancy, and it is likely not costeffective to screen such patients. Pregnant women who fulfill *all of these criteria* need not be screened for GDM.



Diagnosis of GDM

This low-risk group comprises women who:

- are 25 years of age
- are a normal body weight
- have no family history (i.e., first-degree relative) of diabetes
- have no history of abnormal glucose metabolism
- have no history of poor obstetric outcome
- are not members of an ethnic/racial group with a high prevalence of diabetes (e.g., Hispanic American, Native American, Asian American, African American, Pacific Islander)



Diagnosis of GDM

- Risk assessment for GDM should be undertaken at the first prenatal visit.
- Women with clinical characteristics consistent with a high risk of GDM
 - marked obesity,
 - personal history of GDM,
 - glycosuria, or
 - a strong family history of diabetesshould undergo glucose testing as soon as feasible.
- If they are found not to have GDM at that initial screening, they should be retested between 24 and 28 weeks of gestation.
- Women of average risk should have testing undertaken at 24 –28 weeks of gestation.



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- An FPG level 126 mg/dl (7.0 mmol/l) or a casual plasma glucose 200 mg/dl (11.1 mmol/l) meets the threshold for the diagnosis of diabetes. In the absence of unequivocal hyperglycemia, the diagnosis must be confirmed on a subsequent day.
- Confirmation of the diagnosis precludes the need for any glucose challenge.
- In the absence of this degree of hyperglycemia, evaluation for GDM in women with average or high-risk characteristics should follow one of two approaches.



Diagnosis of GDM

One-step approach.

- Perform a diagnostic OGTT without prior plasma or serum glucose screening. The one-step approach may be cost-effective in high-risk patients or populations (e.g., some Native- American groups).



Diagnosis of GDM

Two-step approach. Perform an initial

- Screening by measuring the plasma or serum glucose concentration 1 h after a 50-g oral glucose load (glucose challenge test [GCT]) and perform a diagnostic OGTT on that subset of women exceeding the glucose threshold value on the GCT.
- When the two-step approach is used, a glucose threshold value 140 mg/dl (7.8 mmol/l) identifies 80% of women with GDM, and the yield is further increased to 90% by using a cutoff of 130 mg/dl (7.2 mmol/l)



Diagnosis of GDM

- With either approach, the diagnosis of GDM is based on an OGTT. Diagnostic criteria for the 100-g OGTT are derived from the original work of O'Sullivan and
- Mahan (12) modified by Carpenter and Coustan (11) and are shown at the top of Table .
Alternatively, the diagnosis can be made using a 75-g glucose load and the glucose threshold values listed for fasting, 1 h, and 2 h (Table 4, bottom); however, this test is not as well validated as the 100-g OGTT.



Diagnosis of GDM with a 100-g or 75-g glucose load

	mg/dl	mmol/l
100-g glucose load		
Fasting	95	5.3
1-h	180	10.0
2-h	155	8.6
3-h	140	7.8
75-g glucose load		
Fasting	95	5.3
1-h	180	10.0
2-h	155	8.6

Two or more of the venous plasma concentrations must be met or exceeded for a positive diagnosis. The test should be done in the morning after an overnight fast of between 8 and 14 h and after at least 3 days of unrestricted diet (150 g carbohydrate per day) and unlimited physical activity. The subject should remain seated and should not smoke throughout the test.



Diagnosis of GDM

- Results of the Hyperglycemia and Adverse Pregnancy Outcomes study (13), a large-scale (25,000 pregnant women) multinational epidemiologic study, demonstrated that risk of adverse maternal, fetal, and neonatal outcomes continuously increased as a function of maternal glycemia at 24 –28 weeks, even within ranges previously considered normal for pregnancy. For most complications, there was no threshold for risk.



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- These results have led to careful reconsideration of the diagnostic criteria for GDM. The IADPSG recommended that all women not known to have prior diabetes undergo a 75-g OGTT at 24 –28 weeks of gestation. The group developed diagnostic cut points for the fasting, 1-h, and 2-h plasma glucose measurements that conveyed an odds ratio for adverse outcomes of at least 1.75 compared with women with the mean glucose levels in the HAPO study.



Diagnosis of GDM

- At the time of publication of this update, ADA is planning to work with U.S. obstetrical organizations to consider adoption of the IADPSG diagnostic criteria and to discuss the implications of this change. While this change will significantly increase the prevalence of GDM, there is mounting evidence that treating even mild GDM reduces morbidity for both mother and baby (14).



References

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