



## DIAGNOSING DIABETES

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Diabetes is one of the major causes of early illness and death worldwide. Type 2 diabetes accounts for over 90% of these patients and approximately 14% of U.S. healthcare expenditures, at least one-half of which are related to vascular complications like MI, stroke, end-stage renal disease, retinopathy, and foot ulcers. In addition to the obvious impact on quality of life and economics, there are also adverse effects on employment, absenteeism, and work productivity. The following addresses recommendations regarding the screening of individuals (including pregnant women) for type 2 diabetes.

For the general population, the most common tests used to screen for type 2 diabetes are fasting plasma glucose, glycolated hemoglobin (A1C), and the two-hour oral glucose tolerance test, the latter of which has become somewhat less popular of late. When both fasting glucose (<100 mg/dl) and A1C (<5.7%) are within normal range, follow-up testing is recommended every three years. With borderline elevated results (fasting glucose 100-125 mg/dl and A1C 5.7 - 6.4 mmol/l), annual testing is recommended. Diabetes is confirmed with two elevated A1C levels (>6.5%) and/or two consecutive fasting glucose levels (>126 mg/dl).

In pregnant women with high risk factor, screening is performed at the first prenatal visit. In the absence of early screening, universal screening is recommended after 24 weeks. The testing has been categorized as a one- or two-step approach.

- The one-step approach omits screening (with 50 gram oral glucose challenge test) and proceeds with a 75 gram, two hour GTT.
- The two-step approach (actually most widely used in the U.S. and supported by ACOG and the ADA) involves a glucose challenge test of a 50 gram oral glucose load without regard to time elapsed since the last meal, and the glucose level is measured one hour later. If >140 mg/dl, an oral glucose tolerance test is ordered. For this, the patient must be fasting (other than a few water sips) for 8-14 hours. Blood will be drawn before drinking a 100 gram glucose solution, then again every hour after drinking it, up to three hours total. Abnormal results would be a fasting level >95 mg/dl; one hour >180 mg/dl; two hour >155 mg/dl, and three hour >140 mg/dl. Two elevated blood results would be indicative of gestational diabetes.

### References:

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