



Gestational Diabetes Screening ("blood sugar" or Glucose Tolerance Testing)

What is Diabetes?

Diabetes is a serious disease that impairs the body's use of glucose, taxes the pancreas, and causes long-term damage to tiny capillaries in the body. Diabetes begins when too much glucose, the energy molecule that comes from our food, is present in circulation. The pancreas is required to produce insulin, the hormone responsible for making sure cells get glucose when they need it and for balancing the amount of glucose in the blood, in great quantities and in irregular spurts. Basically, this wears the pancreas out and makes the body's cells less responsive to insulin over time. Additionally, the extra circulating glucose causes capillaries to burst, impeding blood flow and tissue repair. Type I diabetes is the result of infection in the pancreas, is irreversible, and often attacks during childhood. Type II diabetes is the most common today, is largely caused by diet and lifestyle, and is affecting adults and children alike.

What is Gestational Diabetes?

During pregnancy, the body is required to change its glucose metabolism a little bit so that the baby is constantly supplied with adequate levels of glucose. This is a normal and healthy physiological reaction. However, when a mother has pre-existing glucose metabolism problems, this normal physiological change can be too much for her body. Her pancreas is forced to produce insulin too often, her glucose levels fluctuate widely, and, over time, her body "resets" itself to this irregular glucose/insulin level. Therefore, Gestational Diabetes Mellitus (GDM) is the onset of Type II diabetes during pregnancy. It can be mild or severe and it can go away after pregnancy. It may occur in one pregnancy but not again in a later pregnancy. It sometimes resolves with targeted nutritional supplements.

Problems caused by GDM

GDM can cause problems for both the mother and the baby, during and after pregnancy. The mother increases her risk of pre-eclampsia (extreme rise in blood pressure), hypertension, and polyhydramnios (too much amniotic fluid). The baby is at higher risk of birth injury or trauma due to being macrosomic (larger than normal). The baby may also suffer from low blood sugar (hypoglycemia) just after birth, increasing the likelihood of breathing difficulties, resuscitation, and hospitalization. Additionally, the mother's risk of developing Type II diabetes in the years after pregnancy increases substantially, thus causing all the health problems associated with diabetes.

A very important but minimally understood negative effect of GDM is the "resetting" of the baby's own metabolism that occurs as the baby's pancreas, brain chemicals and body cells react to the high levels of glucose during pregnancy. The child is pre-programmed to crave sugar, have radical swings in insulin levels and gain weight. This vastly increases risk of the baby developing Type II as a *child, teenager, or adult*. Diabetes can be intergenerational; that is, if you have GDM (or Type I or II) and your baby is a girl who goes on to have her own children, the risk of *her children* developing diabetes is increased.

What are the risk factors for GDM?

Pregnancy itself is not a cause of GDM, but rather a situation in which a metabolic problem may become apparent. GDM is largely associated with certain lifestyle and genetic factors:

- Overweight, obesity and/or high body mass index;
- Older than 25-years-old, and especially older than 45-years-old;
- Family members with diabetes, especially parents or siblings;
- GDM or a large baby in a previous pregnancy;
- Member of a high-risk ethnic group, including Native American, Asian, Hispanic, and Pacific Islander.

While a person cannot change her ethnic group or family members, each mother can positively impact her glucose metabolism with education and changes in diet and exercise patterns.

Can we test for GDM?

Currently, the standard of care is to provide a glucose load and then take blood samples over a 1-3 hour period to test a woman's ability to metabolize glucose. This is called the Glucose Tolerance Test (GTT). It is done between 24-28 weeks in order to identify which mothers are at risk of GDM and then have time to positively affect the pregnancy with diet and exercise counseling and/or medication. I have several options and methods available for this, including the option for you to eat an extra-large meal of normal food and draw your blood 2 hours later; please ask me for details.

How does my midwife treat GDM?

First, pregnancy is normal and it normally progresses in a state of health. The key to a healthy pregnancy is a healthy diet full of nutrients, exercise and adequate rest. Processed foods and fast foods are discouraged. From your first visit with me, I assess these aspects of your lifestyle and provide counseling. My intention is not to be the "diet police" but to offer a careful assessment of how you might get more nutrition with less impact on your metabolism.

I offer all versions of the GTT in my office. In my practice, all mothers receive extensive diet, nutrition and exercise counseling, but especially those with abnormal GTT results. After an abnormal result, intensive diet counseling is done and clients have the option of trying to maintain normal blood sugars through diet alone. However, I will refer clients to dietitians, CNMs, or physicians as necessary. Clients diagnosed with GDM and high sugars that do not fully resolve with diet need to be transferred from my care during pregnancy, according to homebirth protocols.

Unfortunately, the GTT is only partially effective in identifying those mothers who are at risk of developing GDM and it tends to over-diagnose the problem. Additionally, when all women are tested for GDM, it does not take into account the individual woman's diet and lifestyle, it moves the focus of therapy from effective diet and exercise management to numbers on a lab report, and it causes an overall view of pregnancy as one of pathology rather than health. The studies upon which the standard guidelines were based did not differentiate between mothers with good or bad diets or glucose metabolism problems before pregnancy; did not differentiate between different degrees of glucose intolerance; and did not take into account women who had normal tests after a previous abnormal test.

How can I avoid developing GDM in the first place!?!?

The key to overall health and to dealing with problems in glucose metabolism is, not so surprisingly, daily intake of fresh foods with high nutritional density, aerobic and weight-bearing exercise, **appropriate supplements**, and healthy food choices! Of course, the longer you have done this prior to pregnancy the better your general health will be. During your care with us, we discuss how a healthy balanced diet and exercise plan, prenatal vitamins, customized herbal or nutritional supplements and lifestyle changes can be incorporated into your pregnancy and family life. Some women will develop GDM regardless of risk factors or lifestyle choices, however.

By selecting and initialing your options on the Informed Choice Checklist for this document you agree that:

I understand that I have choices regarding GDM testing, testing is not 100% accurate, diet and exercise may not manage my blood sugars, and my midwife may determine that hospital is safer for me. I also understand that by choosing to not test, I am not following the standard recommendations for achieving a healthy pregnancy outcome. I have had the opportunity to review this information, ask questions and have them answered to my satisfaction, and I know that I can change my mind at any time and request a different course of treatment. I choose the following (please note your selections here for your own records to match those in your midwives' chart);

_____ I **decline** glucose tolerance testing in pregnancy

_____ I will **test my own blood sugars** during pregnancy with a glucometer

_____ I **choose** glucose tolerance testing in pregnancy, using:

standard test with Glucola

2-hour post-prandial (after a meal)