

“Gestational diabetes is one of those conditions where we just can’t seem to decide how to define it and how we should screen for it.” ~ Michelle Williams, Chair of the Department of Epidemiology, Harvard School of Public Health, August 2013

Tests should be done on the basis of individual risk. It’s rare that a test needs to be universally done – meaning that everyone gets it, pretty much no matter what. And healthy women should not be bullied into getting tests, as many pregnant women report happens when the 24 week mark rolls around signaling their doctor or midwife that it’s time for glucose testing. But should all women get glucose testing in pregnancy?

This article explores just that...

Pregnancy is Natural; Diabetes is Rampant...So What Should a Pregnant Mom Do?

My strong belief in our ability to grow and birth healthy babies usually leads me to say less is more when it comes to pregnancy testing. In fact, if you’d asked me ten years ago, I’d have said, nope, routine glucose testing in pregnancy is just another example of the medicalization of a natural life process.

While **I still don’t recommend universal routine testing**, here’s an interesting twist on the subject that has caused me to revisit my opinion on the potential value of glucose testing: **The high rates of obesity, insulin resistance, and diabetes in our country, and our growing knowledge of the risks posed to the developing baby from chronic exposure to mom’s elevated blood sugar suggest that many pregnant women – and their babies – might actually benefit from knowing their blood sugar status** and adjusting their diets if their sugar is found to be chronically high. That said, there is uncertainty about whether glucose testing makes a difference in pregnancy outcomes, which glucose tolerance testing methods are best, and what results tell us that blood sugar is too high. There are also psychological, medical, and economic costs to women and society due to the over-medicalization of pregnancy. The decision regarding whether to get the routinely recommended glucose testing in pregnancy can be confusing, and is sometimes made even more difficult by the bullying behaviors many women report experiencing at prenatal visits when they question whether they need – or want – it done. This article dives into the pros and cons of glucose tolerance testing in pregnancy, helps you to identify your risks, and provides options for testing alternatives. I hope it helps you in making the best decision for you.

What is GDM and Why Is It Important to Identify?

Diabetes that first arises during pregnancy is called gestational diabetes (GDM). While self-limited to pregnancy, women who develop GDM have at least a 50% increased risk of becoming diabetic later in life. Current estimates in the US are that 5%-7% of pregnant women in the U.S. develop GDM. (Keep in mind that this means as many as 93% won’t.)

Undetected and untreated, GDM poses potentially serious consequences for the mother and baby both during the pregnancy and birth, as well as increased long-term health risks for the

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child. Even at levels lower than our current diagnostic threshold for GDM, chronically elevated blood sugar puts mom and baby at a higher risk of pregnancy and birth complications.

Furthermore, elevated blood sugar creates a condition in the body called “oxidative stress,” which causes chronic inflammation in the mother. Chronic inflammation in turn can lead to high blood pressure, preeclampsia, and preterm birth, as well as a higher lifetime likelihood of a child developing allergies, asthma, autism, autoimmune disease, obesity, diabetes, and cardiovascular disease.

One in three Americans is now overweight or obese. Women who enter pregnancy overweight are substantially more likely to either have undetected blood sugar problems, or to develop diabetes. Even women who are not overweight can develop gestational diabetes. While pregnancy is a healthy and natural process, most women are not living close to the rhythms of nature, and are subject to stress, poor food options, and all of the other vagaries of modern life that can have an impact on an optimally natural pregnancy.

The Obesity and Blood Sugar Problems

In the past ten years obesity rates in the general and pregnant populations have skyrocketed. So have insulin resistance, pre-diabetes, and diabetes, all of which can also occur in women who are not overweight, and who eat what they consider to be healthy diets. As a midwife and medical doctor working with pregnant women for 30 years, I’ve analyzed the food journals of thousands of pregnant women. In fact, **many of the food journals I’ve reviewed from “healthy eaters” were loaded with excess carbohydrates and sugar**, for example, oatmeal with raisins and honey for breakfast, a natural energy bar for a snack, a fruit and yogurt for lunch – all high in sugar.

There is a growing body of scientific literature demonstrating the serious short- and long-term health risks to the developing baby as a result of chronic exposure to excessively elevated maternal blood sugar.

So I am not sure that in this new milieu of rampant “diabesity,” a term my friend [Dr. Mark Hyman](#) often uses, that there isn’t some possible benefit to women receiving glucose screening in pregnancy – **but only if it serves as a catalyst for improved prenatal nutrition.**

However, **I do not believe that all pregnant women must receive universal screening for GDM.** We know that at least 30% of all GDM could be prevented if adults maintained healthy weight, and that as many as 93% of pregnant women will test negative. Most just don’t have GDM.

Therefore it is quite reasonable for testing to be done based on an individual woman’s well-educated preferences, risk factors, and ability to shift her diet and lifestyle to mitigate risks. I think we need to take the risks of high blood sugar in pregnancy seriously, and educate all

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women that a lower glycemic, Mediterranean-style diet is actually an optimal diet for all pregnant women.

Testing is also not a substitute for the lack of prenatal nutrition education, which should be provided to all pregnant women.

So Why Not Just Test Everyone?

According to [a recent report](#) by the Cochrane Collaboration, the value of GDM testing at all is questionable. While treatment for GDM improves health outcomes, testing, according to the Cochrane review, doesn't change outcomes. A smart doctor should tell you that if a test isn't going to change the outcome, then it shouldn't be done. To me, this suggests that **a strategy of optimal nutrition for all pregnant women is what should be routine, with testing done for those at higher risk.**

Further, within the medical community, there is a lack of clear evidence – and thus a lack of consensus – about the best way to test for and diagnose GDM. Current guidelines in the US recommend a “two step approach.” Step 1 is a glucose challenge test (GCT). Women are given a drink, “Glucola” which contains, among other things, 50 g of sugar.

Blood sugar level is measured 1 hour after drinking the stuff. This test is not done fasting. Women who screen positive go on to the second step, the glucose tolerance test (GTT), with either a 75-gram twohour test or a 100-gram three-hour test. Again, Glucola is the vector for the sugar. This GTT is known to be imprecise with poor reproducibility. It has a 76% sensitivity (false negative) rate – which means that many women who do have gestational diabetes will be missed by the test (and thus may not receive appropriate dietary counseling to reduce their risks). It also has a similar poor specificity (false positive) rate meaning that about 25% of women who test positive do not have the condition – but will be treated as if they have gestational diabetes – which puts them into a high-risk pregnancy category!

Many European and other countries use a one-step test that's easier for women to tolerate, but also more sensitive. This means that it results in higher rates of diagnosis. In fact, were European standards to be used in the US, as many as 15-20% of pregnant women would be found to have GDM. This might be a good thing allowing us to catch more women who are truly at risk of blood sugar problems that could impact their pregnancy health and their baby. But it also could mean that a lot more women – 2-3 times as many, in fact – could be labeled with a condition that changes the trajectory of their medical care entirely.

When a woman is categorized as high risk, she then becomes subject to a host of medical restrictions and interventions. Her place of birth may be curtailed to only the hospital (i.e. no birthing center, no homebirth). Her labor may be unnecessarily or prematurely induced. Perceptions of her risk status may lead to decreased tolerances in normal variations of labor,

for example, her length of labor may be limited and her likelihood of cesarean section increased just because of a diagnosis. **As we will see below, a diagnosis can also have a negative impact on her self-perception of being healthy, and can cause anxiety and depression.**

Are There Risks to Testing?

In my [previous blog](#), I discuss the risks of the gluco test, and offer alternatives. Aside from problems with food colorings and other potentially unhealthy ingredients in the gluco, which are actually small compared to the risks of untreated GDM, we need to consider the mental and emotional impact of a pregnant woman thinking of herself as having a “disease” rather than just emphasizing the importance of a healthy diet and appropriate follow-up, perhaps with the exception of women whose blood sugar cannot be controlled with diet alone and who require medications. Michel Odent, the French obstetrician who is a champion of natural birth and respect for the capacities of women’s bodies, states: “Gestational diabetes is a typical example of a term with a strong nocebo effect. It has the power to transform a happy pregnant woman into an anxious or depressed one... One of the side effects of the term ‘gestational diabetes’ is to transform the interpretation of the results of a test into a disease... The nocebo effect of the term ‘gestational diabetes’ is becoming a serious issue.” For those of you unfamiliar with the term nocebo, it’s a negative health outcome that is created by internalizing negative health comment told to you, usually by a health professional.

So here we are faced with a major dilemma – how do we address the potentially significant numbers of babies growing up in what Michelle Williams, a GDM specialist at the Harvard School of Public Health, calls, “a metabolic toxic environment” due to true chronic maternal blood sugar problems, while also respecting natural pregnancy, **avoiding the over-diagnosis that might happen** with the European testing standard, and the potential for the nocebo effect?

Nutrition Education and Individually Based Screening Decisions

We know that obesity and inadequate nutrition are common problems for pregnant moms. We can’t put our heads in the sand about this. We also know that what we eat in pregnancy is a set-up for lifelong health – or health problems – for our kids. So we need to take this seriously. Knowing that you have a blood sugar problem and addressing this head-on can help you to have a much healthier, safer pregnancy and birth, and a healthier baby. A healthy Mediterranean-style diet adapted for pregnancy and moderate exercise is the optimal approach for both prevention and treatment of GDM.

Testing for GDM is not necessarily problematic. It can be educational for women to see their blood sugar numbers and learn to adjust their diets accordingly. I’ve had many pregnant and non-pregnant patients turn their diabetes around using initial testing followed by at home blood sugar monitoring. Testing itself does not have to alter the course of a natural pregnancy –

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and for some women with blood sugar problems, it can lead to dietary changes that keep the pregnancy on a more natural course.

The best approach would be to teach all women how to eat well during pregnancy to achieve and maintain optimal weight, and completely prevent GDM. It is entirely possible. But it is not part of routine prenatal care in the medical world. Most physicians get less than one hour of total nutrition training in all of medical school and residency! Often the extent of medical education in prenatal nutrition is to make sure pregnant women are taking a prenatal vitamin, or 2 Flintstones chewables daily if they can't stomach a regular prenatal multi. That level of training is hardly going to allow doctors to prevent GDM.

Is GDM Testing Required?

I have heard from so many pregnant women or new moms that they were bullied into GDM testing at prenatal visits with threats about their health – or their baby's health. One thing that I know for sure is that you can't be forced to have GDM testing, and nobody should bully or "guilt" you into it. Autonomy is one of the foundational principles of modern medicine – patients, including pregnant women, have the right to choose what is best for them. Bullying does happen to pregnant women too often in prenatal encounters. It is unacceptable. We all have the right to stop and consider tests and procedures on an individual basis; medicine would be a much better profession if more doctors did so!

So should you get the test? It really comes down to a practical and personal choice. If you are high risk for diabetes then yes, in my opinion, you should get tested, make the appropriate dietary adjustments, and track your progress with periodic home glucose testing.

Who's At Risk and Who's Not?

According to the American Dietetic Association, pregnant women with any of the following characteristics appear to be at increased risk of developing gestational diabetes; the risk increases when multiple risk factors are present:

- Personal history of impaired glucose tolerance or gestational diabetes in a previous pregnancy
- Member of one of the following ethnic groups, which have a high prevalence of type 2 diabetes: Hispanic American, African American, Native American, South or East Asian, Pacific Islander
- Family history of diabetes, especially in first-degree relatives
- Pre-pregnancy weight $\geq 110\%$ of ideal body weight or BMI >30 kg/m², significant weight gain in early adulthood and between pregnancies, or excessive gestational weight gain
- Maternal age >25 years of age
- Previous delivery of a baby >9 pounds (4.1 kg)
- Previous unexplained perinatal loss or birth of a malformed infant
- Maternal birth weight >9 pounds (4.1 kg) or <6 pounds (2.7 kg)

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- Glycosuria at the first prenatal visit
 - Medical condition/setting associated with development of diabetes, such as metabolic syndrome, polycystic ovary syndrome (PCOS), current use of glucocorticoids, hypertension
- Women meeting the following characteristics are considered low-risk:
- Age <25 years
 - Weight normal before pregnancy
 - Member of an ethnic group with a low prevalence of GDM
 - No known diabetes in first-degree relatives
 - No history of abnormal glucose tolerance
 - No history of poor obstetric outcome

If you are low risk, then you can probably safely avoid the test but should still eat a healthy, low glycemic diet.

Many of you will have at least one high-risk characteristic, i.e., age >25 years old, but will otherwise be low risk. Do an honest self-assessment of your risks, your current diet, and have a heart to heart with your care provider about your concerns around testing. And ultimately, **make the decision that makes the most sense and feels most comfortable to you.**

Regardless of whether you choose to test there is no substitute for an optimally healthy diet before and during pregnancy to keep you and your baby healthy. And there's also no substitute for a prenatal care provider who respects your decisions and prioritizes your nutrition as the cornerstone of a healthy pregnancy, birth, and baby!

Are There Testing Alternatives?

Many women are unable to tolerate or don't want to use the typical oral glucose drink but do want to get tested. The following are possible alternatives:

- Serial glucose monitoring – Periodic random fasting and blood glucose testing 2 hours after a meal is a monitoring option for women at high risk for gestational diabetes who are unable to tolerate an oral glucose load.
- A fasting plasma glucose – In a systematic review of screening tests for gestational diabetes, a fasting plasma glucose level less than 85 mg/dL by 24 weeks gestation was effective in identifying women who did *not* have gestational diabetes. A fasting plasma glucose 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, if confirmed on a subsequent day, and precludes the need for any glucose challenge.
- The “Jelly Bean Test” which is described [here](#).
- A Glucola brand that doesn't contain artificial colors and is BVO-free can be obtained from [Azer Scientific](#).

Part 3 of this series will explore optimal nutrition for preventing (and even reversing) GDM.

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