

Study Reveals Gaps in Gestational Diabetes Diagnosis in Pregnant Women

Analysis by [Dr. Joseph Mercola](#)

January 16, 2025

STORY AT-A-GLANCE

- › Gestational diabetes mellitus (GDM) affects 10% of U.S. pregnancies, and rates continue to rise driven by lifestyle and obesity. Minority and low-income women face higher risks due to limited health care access and cultural barriers
- › Current GDM testing methods often fail to catch the condition early, with a recent study showing standard oral glucose tolerance tests (OGTT) miss many cases due to procedural flaws
- › Standard testing only identified GDM in 9% of cases, while an enhanced method with immediate sample cooling and processing found it in 22%, indicating significant underdiagnosis
- › Early GDM screening is also challenging because first-trimester glucose fluctuations don't align with traditional testing criteria, yet early hyperglycemia causes harmful metabolic imprinting in babies
- › Strategies to reduce your risk of GDM and protect your baby include minimizing exposure to phthalates and lead, optimizing vitamin D levels, maintaining a healthy weight, exercising regularly and consuming a nutrient-dense diet

Gestational diabetes mellitus (GDM) affects 10% of pregnancies in the U.S. and is rising due to lifestyle factors and obesity.¹ Women from minority and low-income communities face an even greater risk due to limited health care access, cultural barriers and food insecurity.²

Despite its prevalence, diagnosing GDM remains a significant challenge. The current testing methods often fail to catch the condition early – and sometimes miss it entirely. These diagnostic blind spots place both mother and baby at risk, increasing the likelihood of complications during delivery and setting the stage for long-term health issues, including Type 2 diabetes, recurrent GDM in future pregnancies, cardiovascular disease and other metabolic disorders.

Studies have highlighted these shortcomings in detecting and managing GDM. A recent one published in *Diabetic Medicine*³ revealed how current testing methods are unintentionally leaving some pregnant women unaware of the risks they face and without the care they need to protect themselves and their babies.

New Research Challenges Traditional GDM Diagnosis

Published in December 2024, the featured study⁴ evaluates the reliability of a standard oral glucose tolerance test (OGTT) in diagnosing GDM. The authors emphasized the limited accuracy, reproducibility and practicality of this procedure. It fails to identify a substantial number of cases due to flaws in the preanalytical processing of blood samples.

The OGTT involves taking a blood sample after an overnight fast, and then again two hours after consuming a sugary drink. However, delays in cooling or processing these blood samples cause glucose degradation, leading to falsely low readings and missed diagnoses.

To assess the impact of this issue, the study compared the standard OGTT procedure with an "enhanced" approach where blood samples were immediately cooled, processed and frozen to preserve glucose levels. Conducted across nine centers in the U.K., the researchers evaluated 1,308 women with an average age of 31.5 years and a BMI of 33 kg/m², ensuring a diverse sample size that reflects the broader U.K. population.

The findings showed that the rate of GDM diagnosis more than doubled using the enhanced method, increasing from 9% to 22%. Women identified with GDM using the

enhanced procedure also faced a significantly higher risk (37%) of delivering large-for-gestational-age (LGA) babies, compared to 22.3% among those diagnosed with the standard method.

LGA babies are more likely to experience complications during birth, such as shoulder dystocia or birth injuries, and are at increased risk of developing metabolic conditions later in life. The study also found that women with higher BMIs were particularly vulnerable to inaccuracies with the standard OGTT, which further exacerbates their already heightened risk of GDM-related complications.

Additionally, the researchers tested if HbA1c, a marker for measuring blood sugar, could serve as a reliable alternative to OGTT. However, analysis revealed that HbA1c is not a suitable predictor of GDM, further emphasizing the need to refine diagnostic methods to reduce adverse outcomes for both mothers and their babies. "Efforts to improve the accuracy of GDM diagnosis are warranted," the authors noted.⁵

For expectant mothers, this study serves as an important reminder to be proactive about their health. If you're pregnant and undergoing GDM screening, talk to your health care provider about comprehensive testing and follow-up care to ensure that no vital details are overlooked. By being informed and advocating for yourself, you'll be able to better protect your health and that of your baby.

Addressing the Gaps in GDM Diagnosis Early in Pregnancy

Screening for gestational diabetes mellitus (GDM) typically occurs between 24 and 28 weeks of pregnancy, a period when hormonal shifts significantly disrupt glucose tolerance. However, waiting until this stage overlooks an essential window in the first trimester, where early metabolic changes offer important warning signs.

A workshop by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), detailed in *Obstetrics and Gynecology*,⁶ specifically addressed this gap in early GDM diagnosis and the risks tied to delayed detection. One of the primary challenges discussed was the lack of clear criteria for diagnosing GDM early in pregnancy.

The physiological changes during the first trimester, such as fluctuating glucose levels and shifts in insulin sensitivity, make it difficult to apply the same thresholds used later in pregnancy. In fact, early elevations in glucose levels in the first trimester often do not persist into later trimesters, meaning a GDM diagnosis made before 24 weeks will not align with traditional testing criteria.

The NIDDK workshop noted that hyperglycemia in the first trimester leads to harmful metabolic imprinting, predisposing babies to developmental challenges as well as obesity or diabetes later in life. However, attempts to treat GDM before 24 weeks have yet to consistently improve outcomes, underscoring the limitations of current diagnostic tools.

Similar to the findings from the Diabetic Medicine study,⁷ the workshop noted that HbA1c, while commonly used to detect pre-existing diabetes, fails to reliably predict GDM during the first trimester. Newer biomarkers, such as plasma glycated CD59, show promise, but their role in early detection is still under investigation.⁸ The findings concluded:

"The workshop participants concluded that potential diagnostic criteria using glycemic or other measures before 20 weeks but ideally at 12 to 14 weeks should be evaluated for association with GDM-associated adverse perinatal outcomes."⁹

Other Factors That Play a Role in Inaccurate GDM Diagnosis

Another study published in Diabetes Spectrum¹⁰ identified additional risk factors that complicate GDM diagnosis. One major issue is the heavy reliance on traditional risk factors, such as a history of GDM, impaired glucose tolerance or a family history of Type 2 diabetes. While these indicators are helpful, they miss a significant portion of women at risk. In fact, nearly 44% of women diagnosed with GDM do not exhibit any of these established risk factors.

Ethnic and racial differences also complicate diagnosis, as the risk factors and biochemical markers for GDM vary significantly across populations. For example, Southeast Asian women with GDM are more likely to have elevated triglycerides, while white women often present with higher leptin levels. Current diagnostic methods fail to consider these differences, leading to disparities in care and outcomes.

Further inconsistencies arise from disagreements among medical societies about the most effective testing approach. The one-step glucose challenge test is faster and more convenient for women with demanding schedules, especially those in hourly-wage jobs, but the requirement to fast discourages participation. On the other hand, the two-step method is more thorough but demands additional time and resources, limiting accessibility for many women.

Financial and logistical barriers also hinder accurate diagnosis. In areas where patients are responsible for the cost of testing, diagnosis rates tend to be lower. However, studies show that when screening is provided free of charge, more women, particularly those from disadvantaged backgrounds, receive accurate diagnoses and proper care.

The challenges extend beyond diagnosis, continuing postpartum when follow-up is essential to detect impaired glucose tolerance and reduce the risk of Type 2 diabetes. Unfortunately, testing rates remain alarmingly low. At one medical center, fewer than 25% of women were tested for glucose issues within six months of delivery, and only 7% completed the OGTT.¹¹

The lack of awareness about the importance of postpartum testing is a significant issue. However, systemic barriers such as food insecurity, unstable living conditions and limited social support make it even harder for women to adhere to recommended dietary and lifestyle changes during and after pregnancy.

Without addressing these gaps, the health care system continues to leave many women vulnerable to undiagnosed or poorly managed GDM, putting mothers and their babies at risk of preventable complications.

Helpful Strategies to Lower Your Risk of GDM

While some GDM risk factors, such as age and genetics, are beyond your control, making targeted adjustments to other aspects like diet, lifestyle and environment makes a meaningful difference in your health and pregnancy outcomes. Here are tips to reduce your GDM risk and protect your baby's health:

- 1. Reduce your phthalate exposure** — Found in plastics, personal care products and several household items, phthalates have been linked to hormone disruption, which impairs glucose metabolism and increases the risk of GDM.¹² To minimize exposure, avoid plastic containers for food storage, opt for phthalate-free personal care products and reduce your use of processed and packaged foods.
- 2. Lower your lead exposure** — Lead exposure, even at low levels, has been associated with impaired glucose tolerance and increased risk of GDM.¹³ Lead is found in old paint, contaminated soil and some water supplies. Minimize your exposure by ensuring your home's water is filtered and avoiding lead-based paints, particularly in older buildings.
- 3. Optimize your vitamin D levels** — Vitamin D is essential during pregnancy, with research showing it reduces the risk of preeclampsia by 60%, GDM by 50% and preterm delivery by 40%.¹⁴ Sun exposure is the best way to optimize your levels, but it must be approached carefully, especially if your diet is high in vegetable oils (rich in [linoleic acid](#)).

I recommend avoiding high-intensity sun exposure until you've been off vegetable oils for four to six months. Gradually increase sun exposure as you reduce your LA intake. Eventually, you will be able to enjoy an hour or more of peak sunlight hours.

If you're unable to get adequate sun exposure, vitamin D3 supplementation is necessary. To determine how much vitamin D3 you need to take, measure your vitamin D level, ideally twice a year. When supplementing, always balance vitamin D3 with magnesium, vitamin K2 (MK-7) and calcium to support overall health. Then,

remember to retest in three to four months to make sure you've reached your target level.

- 4. Maintain a healthy weight** — Being overweight or obese increases the likelihood of insulin resistance, leading to GDM. Maintaining a healthy weight before and during pregnancy reduces this risk. Research shows that for every 1 kilogram of weight lost before pregnancy, the risk of GDM recurrence is reduced by 24%.¹⁵
- 5. Eat a healthy diet** — Prioritize a nutrient-dense diet of whole, unprocessed foods to support stable blood sugar. Avoid refined carbohydrates, added sugars and highly processed foods, particularly those containing inflammatory vegetable oils, as they disrupt insulin sensitivity and lead to blood sugar imbalances. Use traditional fats instead, such as grass fed butter, tallow or coconut oil.
- 6. Exercise regularly** — Exercise improves insulin sensitivity, helping your body regulate blood sugar more effectively. Low-impact activities like walking, swimming or prenatal yoga are especially beneficial to reduce your risk of GDM.¹⁶ Aim for at least 30 minutes of moderate-intensity exercise at least three times a week,¹⁷ but be sure to consult your OB-GYN before starting or modifying your routine.
- 7. Manage stress** — Chronic stress elevates cortisol levels, which in turn interferes with insulin sensitivity.¹⁸ Practice stress-reducing techniques such as meditation, deep breathing exercises or mindfulness to manage stress and support healthy blood sugar levels.
- 8. Get enough sleep** — Poor sleep disrupts blood sugar control and increases insulin resistance.¹⁹ Aim for seven to nine hours of quality sleep each night. There are [many ways to improve your sleep](#), such as establishing a calming bedtime routine, avoiding blue light-emitting screens before bedtime and ensuring your bedroom is quiet, dark and comfortable.
- 9. Quit smoking** — Smoking remains a known risk factor for various pregnancy complications, including GDM.²⁰ Seek support to quit; doing so benefits your and your baby's health.

- 10. Avoid alcohol intake** – Consuming alcohol during pregnancy disrupts glucose metabolism and raises the risk of GDM as well as other serious complications.²¹ To minimize these risks and promote a healthy pregnancy, avoid alcohol completely.
- 11. Get regular checkups** – Routine prenatal care helps identify risk factors and monitor blood sugar levels throughout your pregnancy. It also allows for timely intervention, helping prevent complications for you and your baby.
- 12. Take prenatal vitamins** – Prenatal vitamins help fill nutritional gaps and support a healthy pregnancy. Nutrients like folate, magnesium, vitamin D, zinc, probiotics and Myo-inositol have been shown to promote blood sugar regulation during pregnancy.^{22,23,24}

Sources and References

- ¹ Contemporary Clinical Trials Volume 131, August 2023, 107237
- ^{2, 10, 11} Diabetes Spectr. 2019 Nov;32(4):317–323
- ^{3, 4, 5, 7} Diabet Med. 2024 Dec 17:e15476
- ^{6, 8, 9} Obstet Gynecol. 2018 August; 132(2): 496–505
- ¹² Diabetol Metab Syndr. 2024 Apr 26;16:95
- ¹³ Science of The Total Environment. Volume 656, 15 March 2019, Pages 870-876
- ¹⁴ The Journal of Clinical Endocrinology & Metabolism, Volume 103, Issue 8, August 2018, Pages 2936–2948
- ¹⁵ American Journal of Obstetrics and Gynecology. Volume 229, Issue 2, August 2023, Pages 158.e1-158.e14
- ¹⁶ Life (Basel). 2024 Jun 13;14(6):755
- ¹⁷ World J Diabetes. 2015 Jul 25;6(8):1033–1044
- ¹⁸ Frontiers in Neuroendocrinology Volume 65, April 2022, 100972
- ¹⁹ Cureus. 2022 Mar 26;14(3):e23501
- ²⁰ Tob. Induc. Dis. 2023;21(September):115
- ²¹ Sci Rep. 2020 Jun 22;10:10054
- ²² BMC Endocrine Disorders volume 21, Article number: 106 (2021)
- ²³ Front Nutr. 2022 Apr 8;9:867099
- ²⁴ Arch Gynecol Obstet. 2021 Jun;303(6):1381-1391