



## Overview of the Gestational Diabetes Educational Gap

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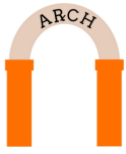
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### Learning Objectives

- To express the importance of education in the prevention of gestational diabetes mellitus
- To recognize common barriers with pregnant and postpartum women in receiving appropriate care and education regarding gestational diabetes mellitus and type 2 diabetes mellitus

### Abstract

A holistic approach to preventing gestational diabetes mellitus (GDM) in pregnant women may decrease the incidence of recurring GDM and type two diabetes mellitus (T2DM) postpartum. The American College of Obstetricians and Gynecologists state that a glucose screening test is generally given to women between 24 and 28 weeks, unless the woman has a history of GDM. Education on preventing GDM for women early in their pregnancy is not standardized, and GDM may not be discussed unless diagnosed. There are few published studies on education for prevention of GDM and its impact on the incidence of T2DM. In addition, postpartum follow-up for blood glucose screening is not well-documented. Further research on these topics may have global impacts.



**G**estational diabetes mellitus (GDM) refers to pregnant women who did not have diabetes prior to pregnancy, but develop high blood sugar levels prior or during the 24<sup>th</sup>-28<sup>th</sup> week of pregnancy.<sup>1,2</sup> The prevalence of GDM is up to 14% of all pregnancies and the rate is increasing.<sup>2</sup> This makes GDM the most frequent medical complication of pregnancy, presenting risks for both the mother and newborn.<sup>2</sup> Maternal risks include difficult labor, vaginal trauma, cesarean delivery, or uterine rupture.<sup>2</sup> Newborn risks include fetal macrosomia, hypoglycemia, polycythemia, or metabolic syndrome.<sup>2</sup> Although monitoring of GDM is undertaken during prenatal visits to prevent short-term complications, there is a lack of education given to convey the importance of prevention and post-partum follow-up. This gives room to long-term complications, such as developing T2DM.

The presented literature investigates prevention of GDM and T2DM. The literature reveals that the incidence rate of diagnosed T2DM is growing, and women diagnosed with GDM have a higher risk of T2DM diagnosis when compared to women without GDM.<sup>3</sup> The condition may remit after delivery, however, 40 to 80% eventually progress to T2DM.<sup>2</sup> With that known, it is all the more important to educate on prevention of GDM and the risks of T2DM. Some literature also addresses the lack of proper follow-up care for women with GDM during the postpartum period. The 2018 ADA guidelines for GDM recommend that reclassification of maternal glycemic status should be performed 4 to 12 weeks postpartum using oral glucose

tolerance test (OGTT) and then monitored every three years after that.<sup>2</sup> However, there are several barriers preventing women from returning for follow-up and women with GDM often do not receive postpartum blood glucose screening.<sup>4</sup> Through review of the following articles, it is clear that GDM is a major factor that places women at a higher risk of developing T2DM. This suggests that education on GDM and T2DM should be emphasized and there needs to be improvement in postpartum follow-up procedures. Implementing both may help patients to receive better care in prevention and treatment.

To decrease the incidence of GDM and T2DM, education to women who are trying to become pregnant or who are pregnant is an important factor. Most individuals have heard or known of someone with diabetes mellitus. However, many lay-people do not comprehend the seriousness of developing the disease. The lack of awareness in T2DM complications may be an additive factor in the increasing incidence of GDM. Forty-two studies from various countries were systematically reviewed and included 7,949 women.<sup>5</sup> It was noted that there was a broad range of experiences of antenatal GDM care and management. The women in these studies had experienced GDM and reported on knowledge and attitudes toward GDM, attitudes toward postpartum follow-up, and potential barriers in healthcare to reach this population of patients. Some patients felt that GDM care was segmented, and many noted that the information and education available for GDM care was deficient.<sup>5</sup> There was a barrier commonly due to poor knowledge of risk for developing T2DM and putting the





infant's needs first. Therefore, there may be a need for a proactive approach to postpartum GDM care, which would include diabetes screening test, self-blood glucose monitoring, and making follow-up appointments.<sup>5</sup> A greater emphasis of education on GDM and prevention of GDM and T2DM may be beneficial. Knowledge of GDM and T2DM may decrease the incidence of GDM, which should in return decrease the incidence of T2DM.

Minooee et al. conducted a study aimed to confirm that there is a higher risk of developing type II diabetes mellitus (T2DM) when a woman is diagnosed with gestational diabetes compared to pregnant women without GDM.<sup>6</sup> There were 15,005 individuals that were invited to join the study from the Tehran Lipid and Glucose Study that started in 1998.<sup>6</sup> There were follow-up visits every three years.<sup>6</sup> Of this study population, 4,076 women of reproductive age, that had at least one term pregnancy, were eligible to be in the analysis of diabetes incidence between women with a history of GDM and without a history of GDM.<sup>6</sup> Women that had experienced GDM had a higher rate of developing diabetes and a shorter survival time.<sup>6</sup> Family history of T2DM and an elevated BMI were additional risk factors for women.<sup>6</sup> It was estimated that GDM affects about 16.9% of all pregnancies, and the diagnosis greatly increases the risk of developing T2DM within the following ten years by 13-fold.<sup>6</sup> Aiming to prevent new cases of GDM and managing the postpartum health of the mother that was diagnosed with GDM should decrease the new cases of T2DM. This would create more effort upfront from healthcare workers, which

would increase costs. However, preventing a case of T2DM and managing the disease for a lifetime should overall decrease time needed from healthcare workers and healthcare costs.



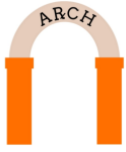
Knowledge Check: True or False?

True or False: A diagnosis of GDM does not have a significant impact on developing T2DM.

Answer: False

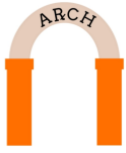
Since the incidence of T2DM is much higher in patients with GDM, it is vital to get proper follow-up care. Ying et al. claims in their study, that 50% of women with GDM will develop T2DM within 5 years of delivery if there is no intervention.<sup>4</sup> However, in the study there were several barriers that prevented women from returning for follow-up care and blood glucose screening. In this study, postpartum women who delivered at Tianjin Obstetrics and Gynecology Hospital from 2008 to 2010 were phone interviewed by 30 obstetricians to evaluate awareness and importance of follow-up.<sup>4</sup> The study included 2152 women who had GDM. Of the 2152 women, only 282 (13.1%) were screened for blood glucose levels postpartum and 8 of the 282 (2.8%) were diagnosed with diabetes.<sup>4</sup> The study then investigated reasons for failed blood glucose screening and the top three reasons included not being informed by their physicians, believing that GDM would disappear after delivery, and being occupied





with the baby.<sup>4</sup> Since the top reason was due to no notification from doctors, the 30 obstetricians were interviewed and 25 were aware of the need for postpartum blood glucose screening for women with GDM, but only 15% had informed their patients.<sup>4</sup> This again ties into the importance of education on GDM and T2DM risks. Education may help with adherence to obtain follow-up care and blood glucose screening for the prevention and reduction of GM and T2DM.

Overall, the incidence of gestational diabetes mellitus has been increasing worldwide and is a multifactorial problem. However, education about the disease state and follow-up appointments are two ways of impacting the incidence positively. Since many of the aspects of GDM are controllable, it is reasonable for healthcare professionals to take action in educating women planning to become pregnant or women who are pregnant on ways to prevent and manage gestational diabetes mellitus.



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