



Gestational diabetes mellitus (GDM) occurs in 1 in 20 pregnancies and typically affects women in their third trimester. Many hormonal changes occur in pregnancy, in particular insulin-resistant hormones such as oestrogen and progesterone increase, causing elevated blood glucose levels. In order to deal with increased blood glucose, the body needs to produce more insulin. GDM occurs when the body is unable to produce enough insulin to meet the demand.

GDM increases the risk of complications in pregnancy for both the mother and baby, for example: pre-eclampsia, premature birth and stillbirth. GDM can develop in any pregnant woman, but those with a BMI above 30 or with a family history of diabetes are at an increased risk. In most cases, blood glucose levels return to normal post-pregnancy, however within 5 years of giving birth 50% of women with GDM will develop type 2 diabetes.

## Dietary Modifications

Dietary and lifestyle changes are recommended for treatment of GDM in order to reduce blood glucose levels. Dietary recommendations include: encouraging consumption of starchy and low glycaemic index foods, eating lots of fruits and vegetables, avoiding food and drink items high in sugar and reducing portion sizes.

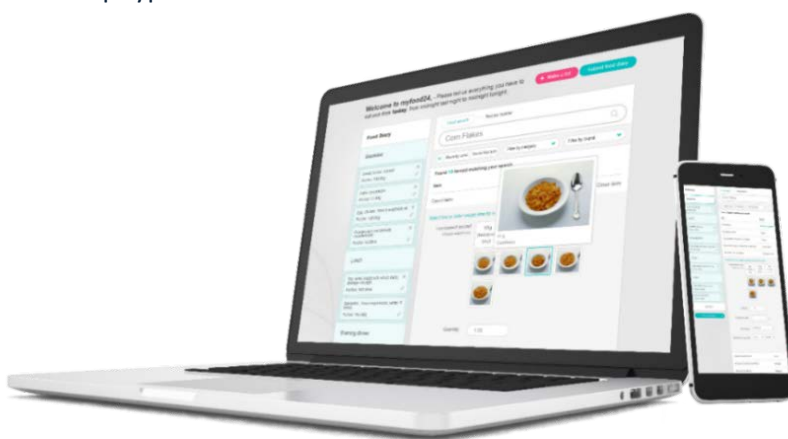
If after 2 weeks of modifications blood glucose levels are still not within the target range (fasting: <5.3 mmol/L, 1hr after meal: <7.8 mmol/L), medication, for example metformin and insulin, will be required for the rest of the pregnancy.

The self-management of diet and glucose monitoring can be demanding and lead to increased levels of distress.

## Dietary Assessment Challenges

Dietary assessment by a dietitian forms part of the standard care at diagnosis to support education and dietary modifications. Follow up appointments with more dietary assessments may be made to review progress.

Typical methods used to assess diet include 24hr recalls and paper-based food diaries. Such forms of dietary assessment can be time-consuming and cumbersome for both the dietitian and mothers-to-be and can be subject to limitations such as reporting bias and misinterpretation, leading to inaccurate results.



## About myfood24<sup>®</sup>

In a [recent study](#) looking to improve the dietary habits of women newly diagnosed with GDM, myfood24 was used to assess dietary intake alongside glucose monitoring.

The women were asked to self-complete their dietary intake using myfood24 as part of the standard antenatal care. Alongside this care, the women were asked to complete a user questionnaire to assess the usability of myfood24, including: user experience, ease of understanding and ease of use.

## Using myfood24<sup>®</sup> to Assist Diet

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## Ease of Use

The study found that most women thought myfood24 was 'straightforward' to use. The portion images were highlighted as a particularly useful feature, as were the reminder prompts. The women felt that these features led to a more accurate account of that they'd eaten compared to traditional methods.

*"I thought that [myfood24] made me remember things. It was more specific. I think it was easy to forget when you're writing it down. You know because it reminded you – have you remembered to put a drink down here, have you remembered to put a snack down there"*

## Improving Health Literacy

The daily nutritional feedback produced by myfood24 was found to increase the women's knowledge of dietary intake and enabled them to understand which dietary choices and portion sizes would be more suitable.

*"I was like 'ooh I shouldn't have eaten that, or oh, I've had a really good day today'"*

## Conclusion

In summary, myfood24 helped to increase mothers-to-be's knowledge and understanding of dietary intake while motivating them to make better dietary choices. This increase in knowledge also led them to feel a greater sense of control.

myfood24 could be used by women with gestational diabetes to improve their health literacy, leading to increased self-efficacy and self-management skills, and to improve their dietary choices and behaviours. Health practitioners could also benefit from myfood24 through a reduction in workload; this would allow more time to be spent on education and support for patients to enhance the service provided.

The study concluded that:

*"myfood24 can be used as an online food record in a clinical population, and has the potential to support self-management in women with gestational diabetes"*

## Study Reference

Study reference: Gianfrancesco, C., Darwin, Z., McGowan, L., Smith, D., Haddrill, R., Carter, M., Scott, E., Alwan, N., Morris, M., Albar, S. and Cade, J., 2018. [Exploring the feasibility of use of an online dietary assessment tool \(myfood24\) in women with gestational diabetes](#). *Nutrients*, 10(9), p.1147.

## Dietary Changes

The study found that recalling daily food intake in combination with the corresponding nutritional feedback led the mothers-to-be to consider possible dietary changes. Other studies have shown that this improves the uptake of self-monitoring and does lead to changes in diet.

*"A week's worth of days in front of you, it does make you think about what you're eating, and how much"*

## Increasing Sense of Control

Not only did the feedback motivate women to make better choices in the future but they also felt it provided them with the reassurance they needed to make these choices, reducing their dependence on the dietitian and increasing their sense of control.

*"Once you can see it in numbers and can see the picture of it, it's harder to just shrug off and think I'm fine... I just can't go with it"*