



Healthcare  
Improvement  
Scotland

**SHTG**  
Advice on health  
technologies

# Continuous Glucose Monitoring in pregnant women with type 1 diabetes

Plain Language Summary | SHTG Adaptation 01 | November 2020

## What is type 1 diabetes?

Type 1 diabetes is a chronic condition in which the pancreas produces little or no insulin. Insulin is a hormone needed to allow sugar (glucose) to enter cells to produce energy. There is no cure for type 1 diabetes. People with type 1 diabetes have to get insulin into their body by injecting it, or by using an insulin pump.

Women with type 1 diabetes can have a healthy pregnancy, but their risk of complications is higher. This is because high blood sugar levels can be harmful to a developing baby and managing blood sugar levels may be harder during pregnancy. High blood sugar levels can cause babies to be larger at birth, increasing the risk of complications during labour.

## What is Continuous Glucose Monitoring?

Blood sugar levels are most commonly monitored either by finger-prick self-monitoring or by “flash” monitoring, where a sensor is read by a scanner which shows the blood sugar level. In Scotland, most pregnant women with type 1 diabetes currently use flash monitoring.

Continuous glucose monitoring gives a continuous display of blood sugar levels that can be seen straight away and used to guide treatment. It has the potential to make it easier to manage blood sugar levels and reduce the risks and complications that come with diabetes in pregnancy.

## Why is this important?

The Scottish Government have said that continuous glucose monitoring should be available to pregnant women with type 1 diabetes. However, it is currently only used by about 5-10% of pregnant women with type 1 diabetes.

## What we did

An organisation from Wales, called Health Technology Wales (HTW), published guidance on this topic in September 2019. HTW follow very similar processes to SHTG to develop advice, and have the same function in Wales as SHTG does in Scotland.

We used, and built on, the work that HTW did to produce recommendations for Scotland. We used an internationally-recognised adaptation process. We also consulted with 12 Scottish experts to ensure that the guidance was relevant and meaningful to NHSScotland.

## What we found

HTW's guidance supports the use of continuous glucose monitoring in pregnant women with type 1 diabetes. The evidence shows that compared with finger-prick self-monitoring, it improves control of blood sugar levels and reduces the complications linked to high blood sugar levels in pregnancy. Using continuous glucose monitoring is also predicted to save money, because the cost of some complications is avoided.

The adaptation process we followed suggested that the HTW Guidance was suitable for adaptation in Scotland. We consulted with Scottish experts who largely agreed with the HTW Guidance and felt that a similar recommendation in Scotland was needed.

## What SHTG considered when developing the recommendation for NHSScotland

We considered whether the HTW Guidance was good quality, and whether it was applicable to Scotland. We thought about what additional information was needed, and what changes would be required, to make the recommendation work for NHSScotland. For example, we needed to: find out the number of pregnant women with type 1 diabetes per year in Scotland; consider what barriers there may be to implementing the recommendation in Scotland; and identify current relevant policy in Scotland.

## What is our recommendation to NHSScotland?

Continuous glucose monitoring should be made available to all pregnant women with type 1 diabetes. Continuous glucose monitoring should be started in the first trimester (first 3 months) of pregnancy.

## Future work

The outcome of this SHTG Adaptation will be used by the Scottish Diabetes Group, particularly the Type 1 and pregnancy subgroups.

Additional research and data collection will be helpful so that we can learn more about optimal use of glucose monitoring technologies in pregnant women with type 1 diabetes.

This is a plain language summary of SHTG Adaptation 01, November 2020.