

Continuous Glucose Monitoring and Flash Glucose Monitoring

Continuous Glucose Monitoring (CGM) and Flash Glucose Monitoring (FGM) systems are new technologies that enhance standard blood glucose monitoring. Both systems can provide many more glucose readings per day than finger pricking with a meter and both can uncover patterns in blood glucose levels that were previously unknown.

Why use CGM or FGM?

CGM and FGM can be used in both type 1 and type 2 diabetes. Both systems measure the glucose in the fluid that is in and around the body's cells (interstitial fluid). Finger prick blood glucose monitoring tests the glucose in the blood.

In combination with a food, drink and a physical activity diary, CGM and FGM can offer a chance to make lifestyle and diabetes medication changes to fine tune diabetes management and reduce the amount of time spent with blood glucose levels out of your target range (eg hyperglycaemia and hypoglycaemia).

CGM works 24 hours a day, so it can test glucose levels even while you sleep. FGM also works 24 hours a day but requires you to scan the sensor with the reader to obtain glucose readings.

Both systems can be very useful if you are worried about:

- > hypoglycaemia unawareness (don't feel the low)
- > night time hypoglycaemia
- > sports related hypoglycaemia
- > your HbA1c result not matching with blood glucose levels taken at home
- > unstable blood glucose control.

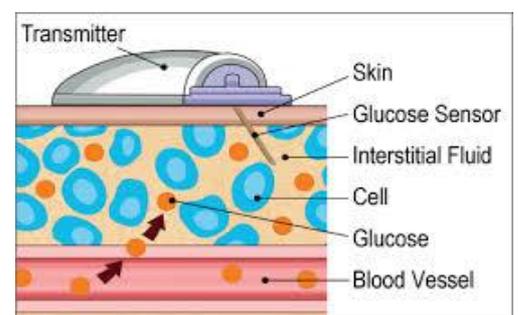
What does it involve?

With CGM and FGM, the credentialed diabetes educator will insert a small sterile subcutaneous needle just under the skin using an applicator. The needle will be removed leaving an even smaller plastic (teflon) electrode (tube) in place. At the end of the electrode is a 'glucose sensor'.

The CGM sensor is then attached to the transmitter, covered by an adhesive see through dressing and worn for up to 7 days.

The interstitial glucose level is tested every 10 seconds and the average glucose level noted every 5 minutes.

The results can be seen immediately (in real-time) or after it is removed (in retrospect).



Some CGM systems can be linked wirelessly to blood glucose meters, smart phones and/or insulin pumps. When linked to a specific smart phone, you or a family member can be alerted before the glucose is above or below your glucose target. When linked to some insulin pumps, the insulin delivery via the pump can be suspended to avoid hypoglycaemia.

In FGM, each sensor can be worn for up to 14 days. When you use the reader to scan the sensor, a current glucose reading and the last 8 hours of glucose history is displayed. A trend arrow showing if glucose is going up, down, or changing slowly is also offered.



Is CGM & FGM accurate?

CGM and FGM systems are accurate but the level of glucose in interstitial fluid reacts slower than the level of glucose in the blood. The interstitial glucose result lags approximately 10 minutes behind the blood glucose result.

When wearing a CGM, you will need to continue testing your blood glucose levels with your blood glucose meter for calibration and for both CGM and FGM, you will need to test when glucose levels are rapidly changing (eg low and higher than target glucose levels).

If you require an admission to hospital, you can continue to wear CGM or FGM but the blood glucose results provided by the hospital blood glucose meter will be used to make changes in your diabetes management.

What are the risks?

Apart from minor discomfort at the time of insertion of the sensor, there is no expected discomfort when wearing the CGM or FGM.

There is a small risk of infection but this risk is reduced by using a sterile technique when inserting the electrode and protecting the skin site with the dressing.

Normal daily activities are encouraged, although swimming and contact sports should be minimised.

How do I get one?

CGM and FGM systems are more expensive than your blood glucose meter. The electrodes can only be used once and are an additional cost.

However, if you are under 21 years of age, you can apply for fully subsidised CGM products through the National Diabetes Services Scheme. For more information on eligibility, or to apply for the subsidy, go to NDSS website <https://www.ndss.com.au/CGM>. If you have private insurance, you may receive some assistance.

You may also be able to loan a CGM or FGM system for a short time. If you are keen to try one or are planning to obtain your own CGM or FGM system, you will need some extra training and practice to use the technology correctly.

Talk to your credentialed diabetes educator, doctor or diabetes specialist.

For more information

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