



A guide to...

Continuous Glucose Monitoring

Patient information

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What is Continuous Glucose Monitoring?

CGM is a system of glucose monitoring. It consists of a sensor which senses the glucose level in the fluid that surrounds your body cells (called interstitial fluid). A transmitter is attached to the sensor and transmits the level every few minutes to a receiver or a smart device.

You can see the direction of the glucose levels by an arrow displayed and the speed at which they are changing.

Some systems require blood glucose testing for confirmation of blood glucose level, or calibration of the device, while others do not. For the system that does not require blood glucose testing, you may require a blood glucose test to allow you to estimate your insulin dose calculation. There will be exceptional times when you will need to measure a blood glucose level, for example, during “sensor warm up” period or if your symptoms do not match the readings.

The sensor can be worn on the lower abdomen or upper buttocks. The Dexcom CGM system has also approved use on the upper arm as well. Sensors are changed every 7 to 10 days dependent on the system.



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Above image reproduced with permission of Dexcom, Inc.

Driving with CGM

The DVLA does consider CGM readings to be sufficient monitoring for Group 1 drivers since February 2019, but finger prick glucose testing is still required under certain circumstances (for example if your blood glucose level is 4.0 mmol/L or below, or you have symptoms of hypoglycaemia).

Please read the DVLA's [Guide to Insulin-treated Diabetes and Driving](#) for further information:

Who is eligible for NHS Funding for Continuous Glucose Monitoring?

Since CGM is a very involved method of monitoring and is costly, national guidance has been devised to ensure the most appropriate patients are selected for NHS funding. The National Institute for Health and Care Excellence (NICE) has set you the following criteria for CGM:

It should be offered to children and young people who:

- have frequent, severe hypos;
- have hypo unawareness with serious consequences (e.g. fits, anxiety); or
- cannot recognise or tell somebody about hypo symptoms (e.g. because of developmental or neurological issues).

It should be considered for children and young people who:

- are under school age;
- play high levels of sport (e.g. compete at regional or national or international level);
- have other issues that make diabetes management more difficult (e.g. anorexia nervosa or steroid treatment); or
- have high blood sugar levels despite a lot of support and insulin adjustment.

Full details of NICE guidelines criteria can be found at: www.org.uk/guidance/ng-18

The diabetes team will provide you with the training and support to use the system. NHS funding is usually provided for 12 months, then reapplication is submitted after clinical review.

Advantages of using a CGM

- You can track your glucose levels all through the day and night.
- You can see what your levels are like at times when you wouldn't normally check, for example during the night.
- You can see trends: when your levels are starting to rise or drop, so you can take action earlier.
- You may not need to do carry out as many blood glucose level checks, depending on which CGM system you use.
- It can help improve your HbA1c level as you can tailor your insulin doses more carefully.
- It can help reduce hypos as you can see a downward trend before you actually go hypo.
- You can set it to alarm at high and low levels.

Challenges of using a CGM

- You can get overloaded with data, which can confuse or worry you.
- You still need to do blood glucose levels (this can be discussed in more detail with your diabetes team).
- You may find wearing the sensor irritating or unsightly.
- You need to be motivated to review the data and understand it to be able to use it to achieve the best diabetes management.

What are the differences between CGM and Flash Glucose Scanning System (e.g. the FreeStyle Libre[®])

- CGM monitors glucose level continuously and sends data to your display device (a phone /a hand held receiver /insulin pump). So you can set alerts for high, low levels or rate of change of glucose.
- The Flash Glucose Scanning System shows current glucose level and the previous eight hours of glucose levels (measured at 15 minute intervals) when you scan your sensor with the handset or phone.
- CGM monitors alarm when it detects that the glucose levels are outside the target range, or if changing rapidly. The Flash Glucose Scanning System sensor does not alarm to indicate that glucose levels are outside the target range.

If I self-fund, how much does CGM Cost?

You can expect to pay around £1,000 for a standalone system or about £500 if you already have a pump and want an integrated system that works with that. Sensors cost approximately £60 each. Please speak to the diabetes team about how CGM would help you and whether you're eligible for it under the NICE criteria before you buy one for yourself.

Further information

Please speak to any member of the diabetes team for further information.

Dexcom continuous glucose monitoring system;

<https://www.dexcom.com/en-GB>

Medtronic continuous glucose monitoring system:

<https://www.medtronic-diabetes.co.uk/about-diabetes/continuous-glucose-monitoring>