

CONTINUOUS GLUCOSE MONITORING (CGM) #1: THE BASICS

Continuous glucose monitoring (CGM) is a tool for diabetes management. It can be used alone or as part of an integrated insulin pump system. CGM provides real-time continuous glucose monitoring. It consists of a transmitter and a sensor, inserted separately from a pump site, as well as a receiver. The receiver can be a handheld device or a phone, or it can be an insulin pump. CGM measures glucose in the interstitial fluid under the skin, rather than in the blood. It displays and updates a glucose value every 5 minutes.

CGM can assist in identifying glucose trends and patterns. CGM can show what the glucose was in the past, what it is now, and it can predict what direction it is heading with the use of graphs and trend arrows. The Dexcom G4® and G5® and Medtronic Enlite® systems need to be calibrated every 12 hours using a blood glucose meter.

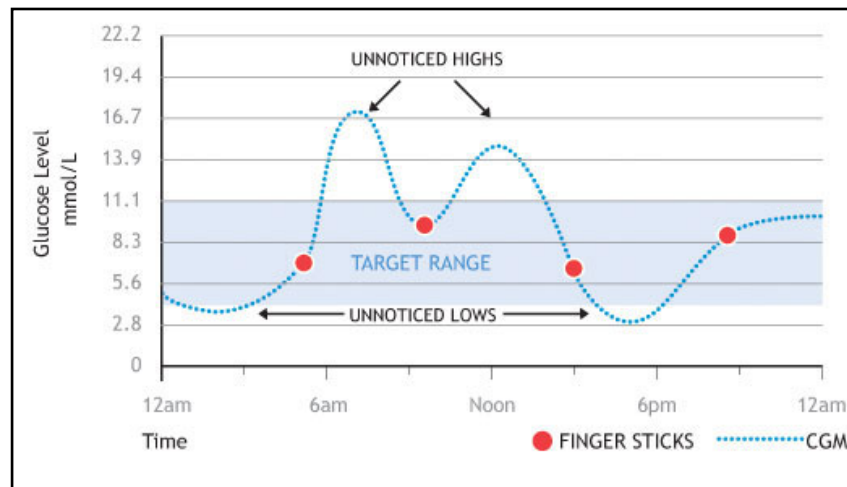


Figure 1 (courtesy of Animas.ca)

Glucose monitoring with a meter provides the blood glucose reading at exactly the moment it is checked. For most people, this is 4-6 times a day. CGM provides more information. It can "fill in the blanks" of what is happening between meals and how the body reacts to food, insulin and activity.

CGM has two main types of benefits:

- Reactive: setting alerts to catch the highs and lows before they happen
- Preventative: looking back at the upload for patterns and trends to make changes to prevent the highs and lows

It is important to look at this information regularly and use it correctly to help plan treatment decisions. *CGM* data should be looked at in a logical order, using what we call the **TAG** system—**T**rend-**A**rrow-**G**lucose:

- **T**rend: view the graph on the screen to see where the glucose has been and is going
- **A**rrows: 1, 2 or 3 arrows tells you how fast the glucose is changing
- **G**lucose: the current glucose at that moment

Example: A meter blood glucose of 6.8 mmol/L at bedtime is within target range. With *CGM*, look at what the graph and trend arrows are predicting. Is the 6.8 mmol/L flat and steady? Are there arrows pointing up or down because the glucose is changing rapidly? This extra information is used to make decisions on what action or treatment is needed.

For more information on Continuous Glucose Monitoring:

- **Dexcom:** dexcom.com/en-CA or Canada toll-free number: 1-844-832-1810
Dexcom G4® and G5® continuous glucose monitoring systems.
Contact: Anthony Petrovich (anthony.petrovich@dexcom.com), phone 604-363-8776.
Training webinars: dexcom.com/en-CA/dexcom-webinars-canada
- **Medtronic Diabetes:** www.medtronicdiabetes.ca or Canada toll-free number 1-800-284-4416.
MiniMed® 630G insulin pump with SmartGuard™ technology.
Contact: Brenda Heaney (brenda.heaney@medtronic.com), phone 604-312-7101
Online product training courses: www.medtronicdiabetes.ca/mylearning

Flash glucose monitoring (FGM) with the Freestyle® Libre is Health Canada approved for those 18 years and older. FGM is not continuous. The Libre is calibrated at the factory and so does not require meter calibrations. The handheld device must be swiped over the sensor at least once every 8 hours to obtain intermittent glucose data. **Note: FGM has arrows on the screen, but alerts cannot be programmed.**

- **Freestyle Libre:** <https://myfreestyle.ca/en/>

For more information on using *CGM*, see our handout

[*Continuous Glucose Monitoring \(CGM\) #2: Getting Started*](#)