

# Continuous Glucose Monitoring (CGM) Information Sheet (Adult and Pediatrics)

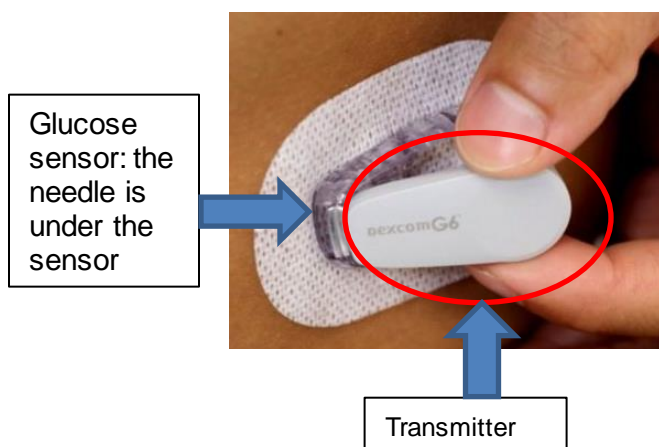
There is new technology to measure the sugar (glucose) levels in the fluid around your cells (also known as interstitial fluid).

## How does a Continuous Glucose Monitor (CGM) work?

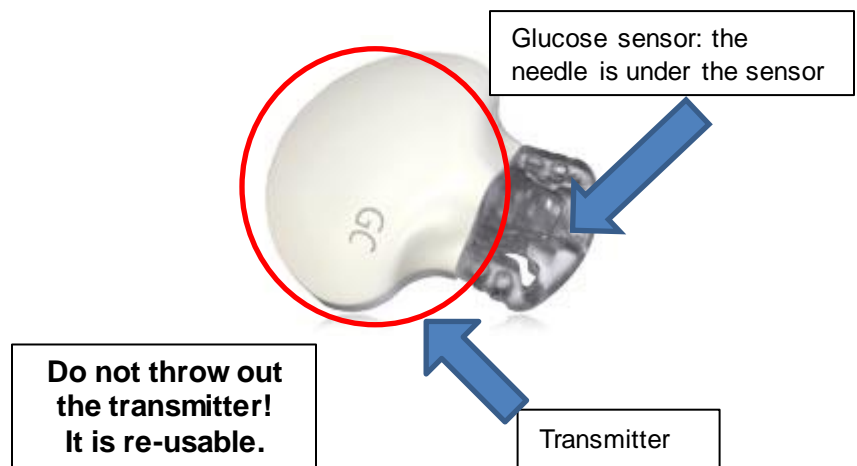
- A CGM measures the amount of glucose in the interstitial fluid.
- The sensor and transmitter on the monitor send the results to a receiver, cell phone, Smart watch, or insulin pump every 5 minutes.
- The interstitial fluid glucose reading may not exactly match the blood glucose reading. This is because a finger stick measures the glucose in your blood and a CGM measures the glucose in your interstitial fluid.
- It is important to know when you can trust the results from your CGM and when you should use a finger stick to measure your blood glucose.
- The sensor is changed every 7 to 10 days (depending on the device used).
- The transmitter is re-usable and lasts between 1 to 1.5 years.

## Examples of Continuous Glucose Monitors: Dexcom G6 and Medtronic Guardian 3

### Dexcom G6



### Medtronic Guardian 3



## What should you know when using a CGM?

- It takes time for the blood glucose to reach the interstitial fluid.
- There may be times when you will be asked to remove your CGM for diagnostic tests (see the Diagnostic Imaging Test List on page 7).

## What is the difference between the Dexcom G6 and Medtronic Guardian 3?

	<b>Dexcom G6</b>	<b>Medtronic Guardian 3</b>
Who can use it?	Those 2 years of age and older	Those 7 years of age and older
Where can you put the sensor?	Abdomen (ages 2 years and older) Upper buttocks (ages 2 to 17 years)	Abdomen and upper buttocks (ages 7 to 13 years) Abdomen and back of arm (ages 14 years and older)
Can you make treatment decisions without a finger stick confirmation?	Yes, except when your symptoms do not match the readings on your G6 or the G6 does not show a number, trend arrow or both	No. You must use a finger stick to confirm blood glucose
Do you need to calibrate the monitor?	No	Yes, at least every 12 hours (recommended 3 to 4 times per day)
How long can you wear the sensor?	10 days	7 days
What are the display options?	Receiver, Smartphone, Smartwatch, Tandem insulin pump (can be used alone or with the Tandem insulin pump)	It may be worn independent of the pump, but must still use a finger stick to make treatment decisions  The sensor glucose reading will show on a Minimed 670G pump

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Lag time: How long does it take the blood glucose to reach the interstitial fluid?	Up to 4 minutes	
Can you use it to check glucose before driving a motor vehicle?	Yes	No
When should you not use a CGM?	<p>If you are critically ill, have diabetic ketoacidosis, fluid overload, generalized swelling, an altered level of consciousness, general anesthesia (your physician will assess).</p> <p>If you are pregnant or on dialysis, you should consult your prescriber.</p>	
What medications can interact with my CGM?	Hydroxyurea, an anti-neoplastic drug used primarily in chemotherapy, falsely elevates glucose readings	<u>High doses of:</u> Acetaminophen (Tylenol®) Ascorbic acid (vitamin C)

**What are the possible risks of using your CGM while you are in the hospital? You can:**

- have false glucose results from your CGM depending on other medications you are taking or your health condition (example: dehydration).
- show high and low blood glucose readings on your CGM that may not be accurate. There can be up to an 11% difference between your CGM and a finger stick blood glucose result.
- develop an infection if the CGM is inserted under the skin during times of another active infection.

**The physician or nurse practitioner will need to write an order for you to continue to use your CGM while in hospital.**

**You will need to provide all of the supplies for your CGM device including:**

- CGM (sensor, transmitter, receiver, cell phone app, insulin pump)
- Battery charging cables and supplies
- Dressings, tape (if used)

**You will need to change the sensor according to the manufacturer's instructions (depending on the device) or sooner as needed for:**

- skin problems
- an infection
- a CGM result that is more than a 20% difference from the hospital laboratory glucose result (for example, when the CGM reads 10.0 mmol/L, the blood glucose result should be between 8.0 – 12.0 mmol/L)

Contact the customer care number listed on the box of your device for possible replacement of the sensor.








**Dexcom G6** – The nurse may use the result from your Dexcom G6 monitor to give you medications or insulin (except when your symptoms do not match the readings on the monitor or the monitor does not show a number, trend arrow or both).

**Guardian 3** – The nurse must use your blood glucose result using the hospital blood glucose meter. The Guardian 3 must use a confirming finger stick blood glucose.

**What do the trend arrows mean on the device?**

Trend arrows tell you the direction your blood sugar is heading. This is important information to see the result of your diet, activity, and medication. It also allows you to take action to prevent a high blood glucose and treat a low blood glucose before they happen.

## Dexcom G6

Symbol	Rate of glucose change (mmol/L per minute)
 Steady	No more than 0.06
  Slowly rising      Slowly falling	0.06 to 0.1
  Rising      Falling	0.1 to 0.17
  Rapidly rising      Rapidly falling	More than 0.17
No arrow	Cannot determine trend








The glucose sensor and transmitter come apart. The entire sensor and transmitter need to be removed from the body. To release the transmitter, fold the sensor base in half. Discard the sensor in a sharps container. **The transmitter is saved as it is costly to replace.**



**Do not throw out transmitter! It is re-usable.**

Transmitter

## Guardian 3

Symbol	Rate of glucose change (mmol/L per minute)
	Rising by 0.056 to 0.111
	Rising by 0.111 to 0.167
	Rising by 0.167 or more
	Minimal change
	Falling by 0.056 to 0.111
	Falling by 0.111 to 0.167
	Falling by 0.167 or more

Transmitter

**Do not throw out the transmitter! It is re-usable**



The glucose sensor and transmitter come apart by pinching the levers on the gray base. Discard the sensor in a sharps container. **The transmitter is saved as it is costly to replace.**

**You may be asked to remove your CGM in the hospital if you:**

- are not able to take care of your device because you are tired or ill
- have physical limitations that prevent you from using the device
- are having a diagnostic test that does not allow for devices to be worn (as it may damage the device or metal is not allowed)  
(see list of diagnostic tests on page 7)
- do not have enough supplies to continue using the device
- see the device is reading a blood sugar that differs by more than 20% different from the hospital glucose meter
- receive any of the following types of medication in large amounts (as decided by your healthcare provider). These medications may change your CGM result:

Dexcom G6	Medtronic Guardian 3
None	<ul style="list-style-type: none"> <li>• Ascorbic acid (vitamin C) – falsely raises a glucose reading</li> <li>• Acetaminophen (Tylenol®) – falsely lowers a glucose reading</li> </ul>

**Why will you be asked to remove the device during a diagnostic test?**

- It could be a safety risk to you or the testing equipment
- It could damage the CGM sensor and transmitter and not read accurate glucose results

**You may be asked to remove your CGM device if you are having any test listed on the next page. Some tests can be done with a lead apron covering the device.**

## Diagnostic Imaging Tests List

A CGM will be removed for the following tests:

- MRI
- CT scan (including a nuclear medicine spec-CT)
- Whole-body bone density scan

A CGM can remain on during the following tests and procedures that use lower doses of ionizing radiation. A lead shield that completely covers the sensor and transmitter must be worn.

- X-ray (including portable X-rays)
- Body fluoroscopy
- Electrophysiology (placement or reprogramming of a pacemaker or automated implantable cardioverter defibrillator (AICD))
- Bone density lumbar and hips
- Endoscopic procedures

Sensors and transmitters can remain on with no lead shield during:

- Surgeries, procedures, and scopes without ionizing radiation
- ECG or EEG
- Laser surgery
- Ultrasound