Continuous Glucose Monitoring (CGM)

Information about devices currently on the market and how they work

What is CGM?

A continuous glucose monitor (CGM) is a small electronic device worn on the body to measure glucose (sugar) levels on a continued basis. Unlike a glucometer, which measures glucose in your blood, the CGM measures the glucose level in the fluid around the cells, called interstitial fluid.

A CGM system contains a sensor (under the skin) and transmitter, plus a separate receiver worn outside the body. Sometimes it includes an insulin pump, too.
Continuous Glucose Monitoring

How does it work?
A tiny disposable sensor is placed under the skin with a small needle and attached to a small transmitter. The transmitter sends glucose information via radio frequency to a wireless handheld receiver or insulin pump. The sensor reads the glucose values every 1 to 5 minutes. You remove the sensor and replace it with a new one about once a week.

What can a continuous glucose monitor do for my child?

**C** *CGM*  **does:**
- Provide continuous “real time” interstitial glucose readings
- Give immediate feedback on how food choices, physical activity, stress, etc., affect your glucose values
- Have alarms to alert you of high sugars and low sugar levels
- Improve overnight control
- Give you the ability to recognize spikes in blood sugar (continuous access to data leads to more frequent insulin dosing.)
- Improve management of sugars when you are sick

**CGM does not:**
- Give insulin
- Replace blood glucose checks. Your child will need to check their blood sugar:
  - To confirm high or low glucose values
  - Before giving insulin for food or high blood glucose
  - When calibrating the CGM device (see information on calibration below)
  - Before driving

**CGM requires calibration**
Each CGM device requires calibration to make sure it’s tracking accurately. Calibration means entering a fingerstick blood glucose value into the CGM device several times a day. The number of required times you will need to do calibrations each day depends on the CGM device. Good calibration habits are essential to assure that the CGM will work properly.
How do I know if CGM is right for my child?

CGM may be most helpful if your child:

- Is already doing frequent fingersticks
- Has frequent low blood sugar (hypoglycemia), particularly during sleep
- Experiences large blood glucose variability (has lots of large dips in their sugar highs and lows)
- Is not aware when their blood sugar gets low
- Is interested in learning how factors like exercise, food, and growth impact blood sugar levels
- Is interested in learning more about how to make insulin dose adjustments

Potential challenges with CGM

- Your child needs to wear the device all the time. Research shows that those who wear it at least 6 days per week consistently get the most benefit. (However, intermittent use can also be helpful in some cases.)
- There will likely be more fingerstick blood glucose monitoring, especially when first starting.
- You may feel information (data) overload: seeing this amount of glucose information can be overwhelming to some.
- Occasionally the sensor may malfunction, lead to insertion site infections or cause skin irritation from the adhesive.

What CGM devices are available?

Please ask your provider or nurse for company-specific brochures and visit these websites for more information.

**Dexcom**
www.dexcom.com
1-877-339-2664
Continuous Glucose Monitoring

To Learn More
- Endocrinology
  206-987-2640
- Your child’s healthcare provider
- www.seattlechildrens.org

Medtronic MiniMed
www.medtronicdiabetes.com
1-800-646-4633

Sensor and transmitter
Receiver and insulin pump

Free Interpreter Services
- In the hospital, ask your child’s nurse.
- From outside the hospital, call the toll-free Family Interpreting Line
  1-866-583-1527. Tell the interpreter the name or extension you need.

What should I do if my child and I are interested in CGM?
Have a conversation with your diabetes healthcare provider. They may suggest a CGM trial (wearing a sensor for a few days) and/or CGM class offered by Seattle Children’s to help decide if the device is a good choice for your child.

Cost
The cost of the CGM device is determined by your insurance plan and CGM company. Contact your chosen company for information on pricing and assistance with insurance coverage.
There is no additional charge for the CGM class; however, the trial has a fee, which may or may not be covered by insurance. Your insurance company may ask you for this billing code for the trial: 95250.