Patient Training Module

t:slim X2™
Insulin Pump

Basal-IQ™ Technology

Predicts and helps prevent lows
with zero fingersticks*

*If glucose alerts and CGM readings do not match symptoms or expectations, use a blood glucose meter to make diabetes treatment decisions.

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Welcome to this training module, in this module you will learn about Basal-IQ technology which is available on the t:slim X2 Insulin Pump.

In the first section you will learn about the Basal-IQ Predictive Low Glucose Suspend Algorithm.

Then we will walk through the steps to setup and manage the Basal-IQ feature on your t:slim X2 Insulin Pump.

Lastly you will learn how to set the Basal-IQ alerts and how to respond to them.

Lets start by learning how Basal-IQ suspends basal insulin and resumes delivery automatically based on sensor glucose readings from a CGM system. The t:slim X2 has an algorithm that automatically turns insulin delivery off when either your CGM values are, or predicted to be, at a low threshold value.

Please note you must have an active CGM sensor session started on your pump before using Basal-IQ technology. Basal-IQ is turned on by default.

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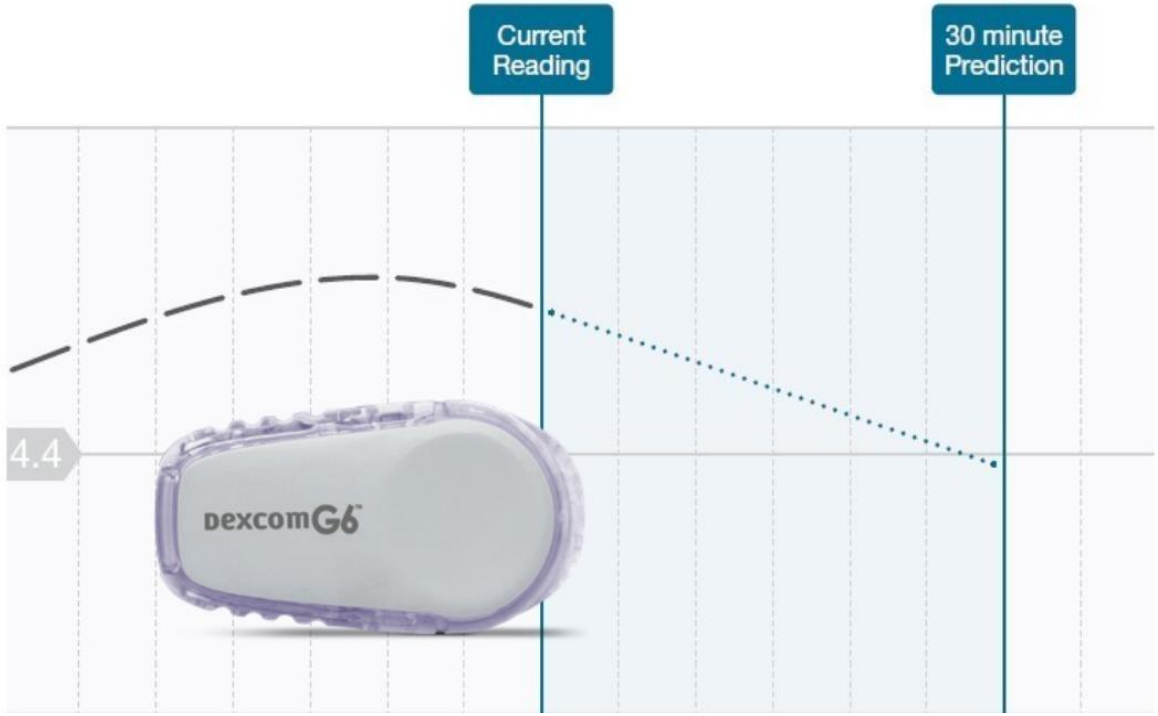
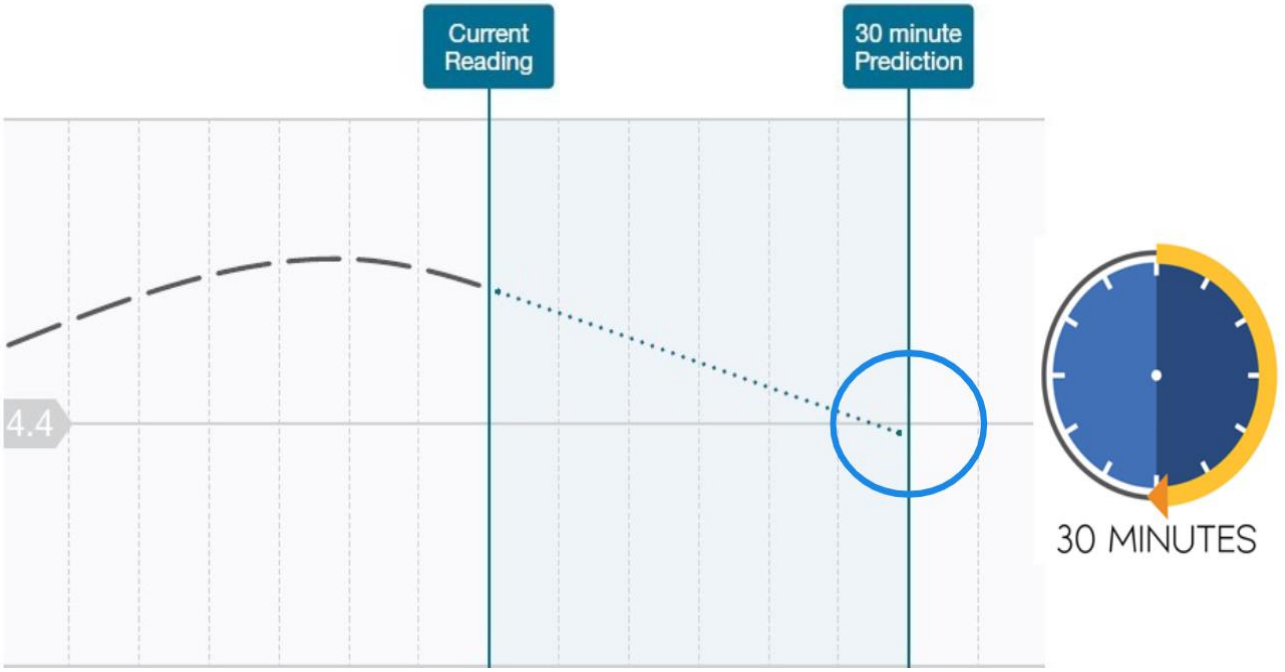
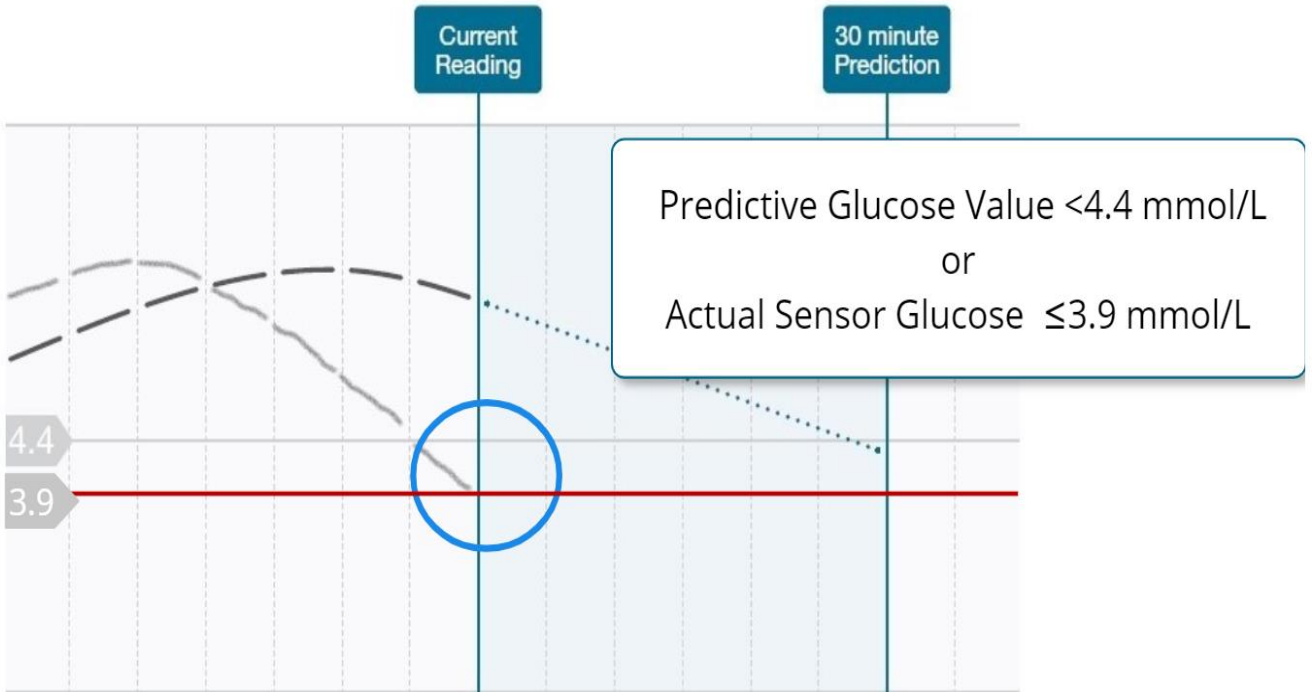
The t:slim X2 system uses the sensor readings from Dexcom G6 CGM to determine when to shut off and resume basal insulin delivery.



The pump uses these CGM values to predict what your glucose values will be 30 minutes in the future. Basal insulin will suspended when the predicted glucose value is less than or equal to 4.4 mmol/L.

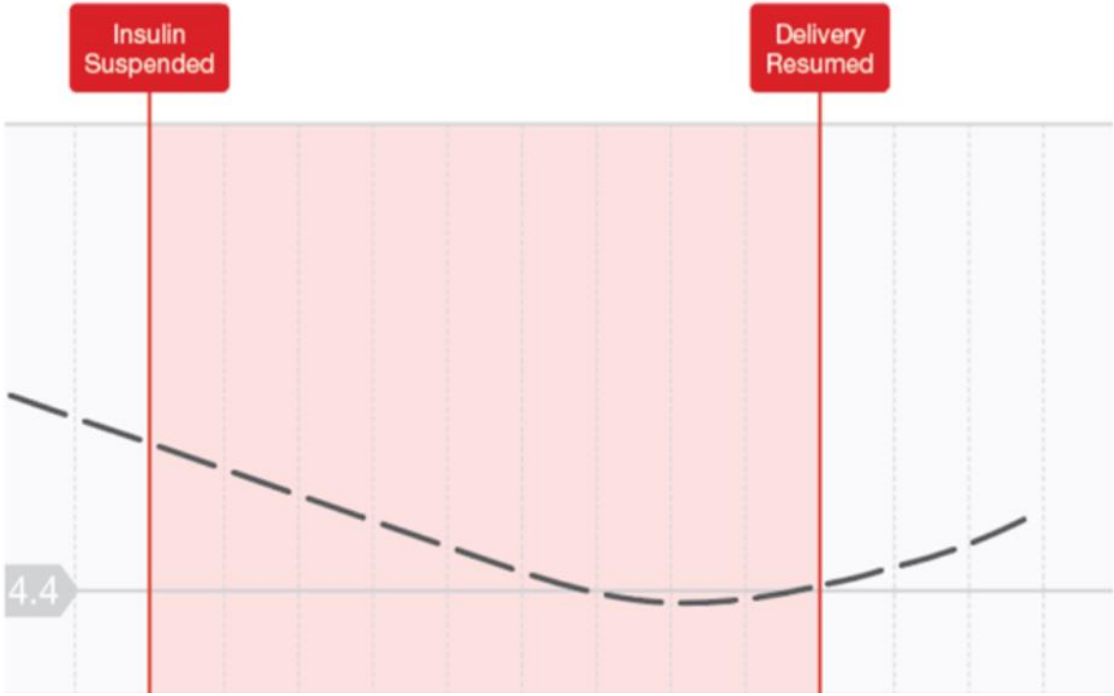


Or if the actual sensor glucose value is less than or equal to 3.9 mmol/L. These values cannot be customised or changed.



When insulin delivery resumes, it will be at the normal basal rate programmed in your active Personal Profile, or at the temporary rate previously running when the insulin was suspended. We will cover the temp rates in more detail later.

Insulin will resume when one of the following things happen: when either the CGM sensor value increases from the lowest point or if the prediction of going below 4.4 mmol/L in the future is no longer valid.



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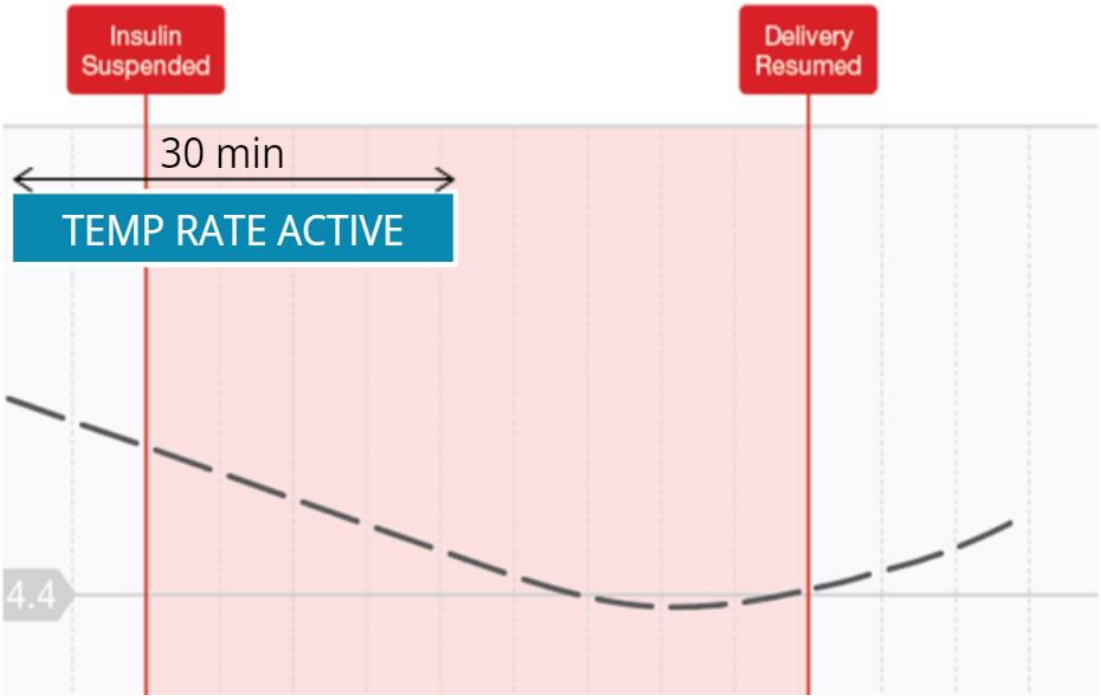
Or if the insulin delivery has been stopped for a cumulative two hours in the last two and a half hour period.

Please note – If the Basal-IQ technology is active and insulin delivery has been suspended, and you turn the feature off, insulin delivery will be resumed at the basal rate programmed in your active Personal Profile.

If you had an active Temp Rate when insulin delivery was suspended, the Temp Rate timer will continue to run whether insulin was suspended or not. So for example, if a Temp Rate was set up for 30 minutes, and insulin is suspended for 45 minutes, the Temp Rate would expire during the insulin suspension. When the insulin resumes, the basal insulin will return to the profile rate.

However, if there is still time remaining on a Temp Rate, insulin will resume at the Temp Rate.



When insulin delivery is suspended an active bolus will be unaffected and continue.

However, if an extended bolus is active, the remaining portion of the extended bolus will be cancelled when suspension begins.

Basal-IQ technology uses CGM data, and its status has been directly integrated into the CGM screens. When Basal-IQ is on, the CGM trend graph will have an additional diamond icon in the top left corner. This is called the Basal-IQ status icon.

When Basal-IQ has been turned on, but is not actively modifying basal insulin delivery, the diamond icon is grey.

When Basal-IQ technology has suspended basal insulin delivery, the bottom half of the diamond icon is red. In the upper right hand corner of your screen, you will notice the status icon will have the letter “S” displayed in a red box if the Basal-IQ is currently active and insulin deliveries have been suspended.
Red shading on the CGM graph indicates a period where Basal-IQ has suspended insulin delivery. In this graph, the red shading is active at the current time. In addition, when Basal-IQ has suspended delivery, the Bolus menu will not be accessible, and you will see ALL DELIVERIES STOPPED at the bottom of the screen.

If you wish to view the Basal-IQ activity on your pump, you can access that information in the Pump History.

90 days of data can be viewed.

When you select a date, the Basal-IQ history shows the log of the Basal-IQ status, including when the feature was enabled or disabled, as well as the time that insulin was suspended and resumed.

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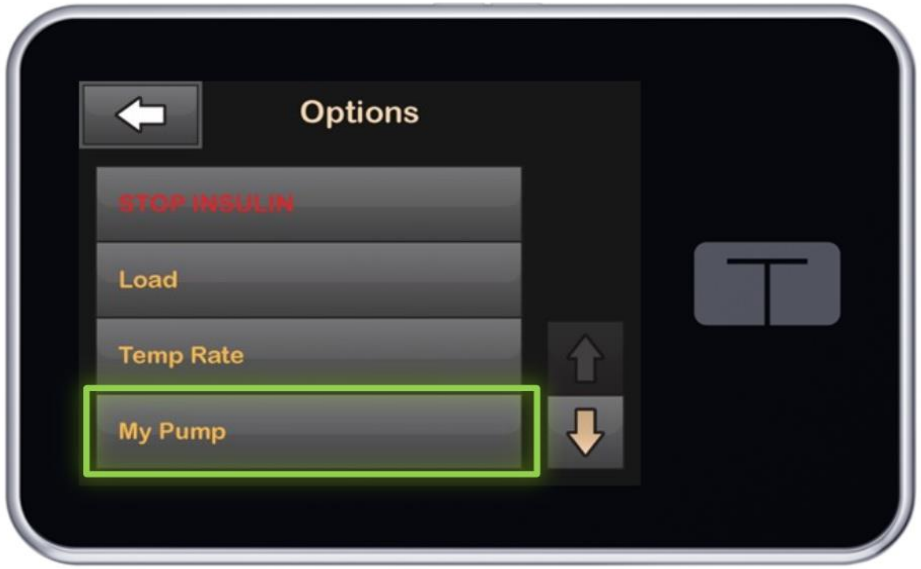
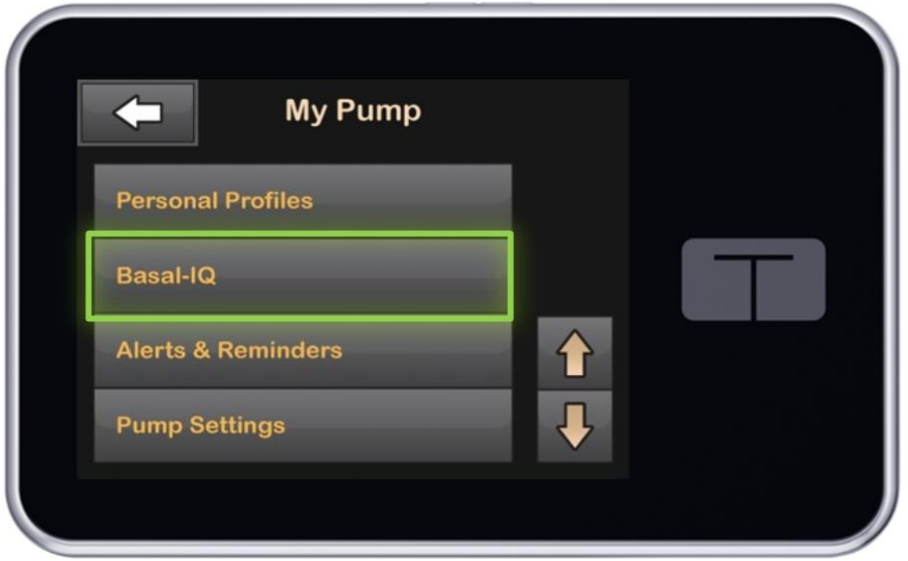
The Basal-IQ menu is located in the My Pump menu.





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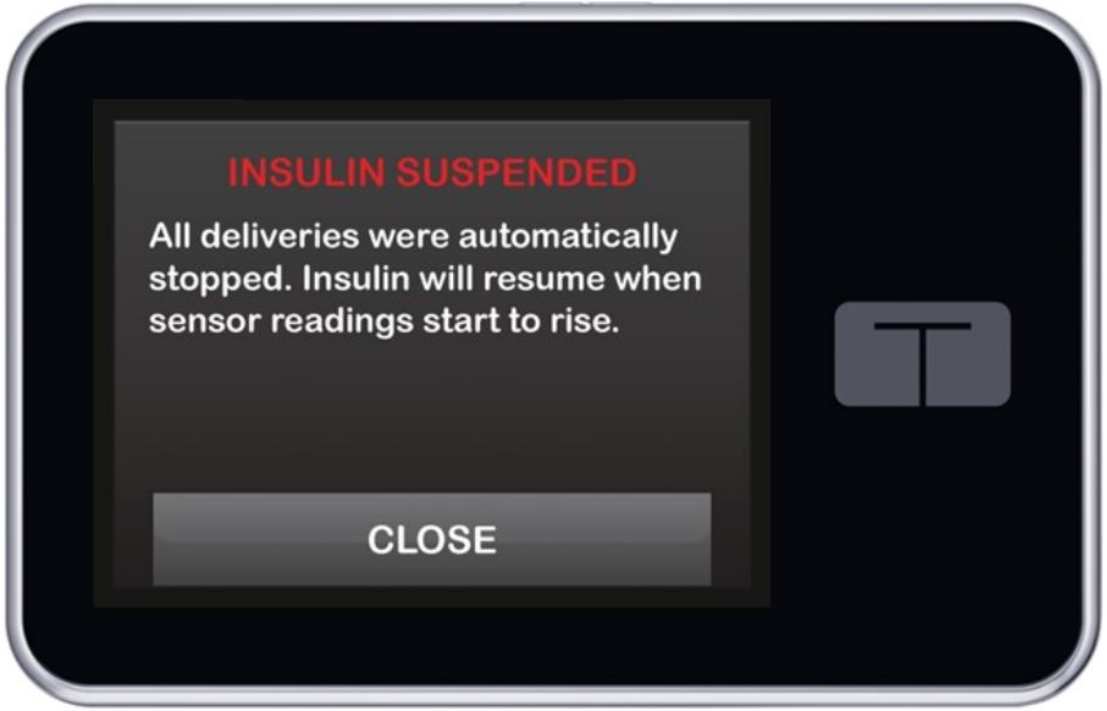
This is the main menu for all of the Basal-IQ features. Here is where you can turn on or off the Basal-IQ function. You can also turn on or off the two Basal-IQ alerts: one that alerts you that your insulin delivery has been suspended and the other to let you know that your basal insulin delivery has resumed. These alerts are set to OFF by default.

Once you have customised your Basal-IQ options, select the blue checkbox to save any changes.

If you turn on the Suspend Alert in the Basal-IQ menu, an alert message will appear every time insulin has been automatically suspended.
When this occurs, the message shown here will be displayed indicating that insulin will automatically resume once the CGM sensor readings begin to increase or when your CGM values are no longer predicted to be less than 4.4mmol/L in 30 minutes time, or when the 2 hour suspension limit in 2.5 hours has been reached. This message must be closed manually.



Insulin will automatically resume if one of the following occur:

- CGM sensor readings begin to increase
- CGM values are not predicted to be lower than 4.4 mmol/L 30 min in the future
- 2-Hour Suspension occurred within the last 2.5 hours

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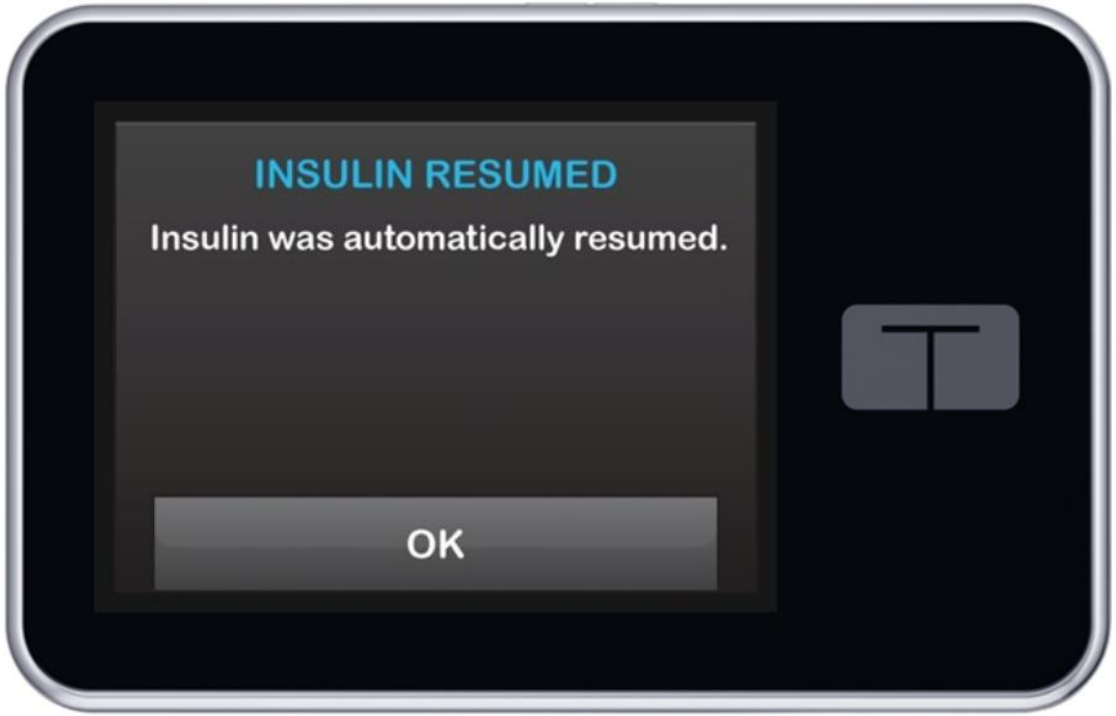
If you turn on the Resume Alert in the Basal-IQ menu, an alert message will appear every time insulin has been automatically resumed.

This message must be closed manually.



As mentioned, the Basal-IQ alerts are optional and are defaulted to be off.

When the alerts are tuned off, as depicted here, neither of the alert messages we just looked at will be displayed.

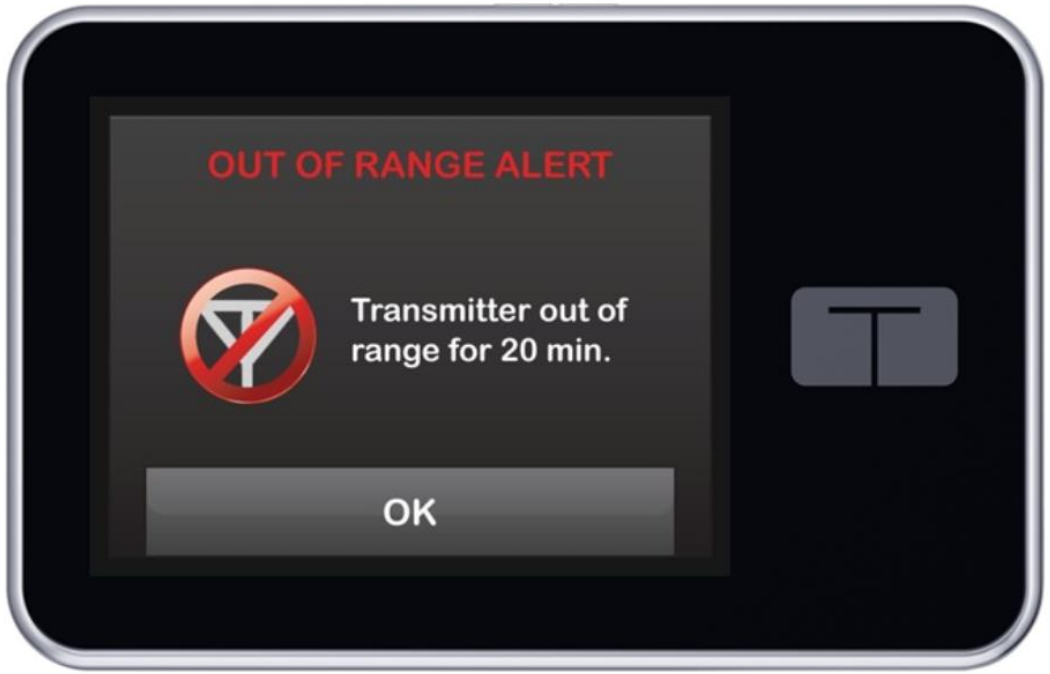
The Out of Range Alert lets you know when your transmitter and pump are not communicating with each other. Its important to keep the transmitter and the pump within six metres of each other without obstruction. It is also ideal to keep the touchscreen of the pump facing out to help with communication.

When the transmitter and pump are not communicating, you will not get sensor glucose readings or alerts on your pump. Since Basal-IQ needs these sensor readings, without them, it wont be able to adjust basal insulin until communication resumes. In this event, the insulin will resume at the current profile rate.

If the transmitter and the t:slim X2 become out of range of one another during a suspension, insulin will automatically be resumed. Once the connection is re established the Basal-IQ can use the CGM values to determine if insulin should be suspended again.

Often the transmitter and the pump are not communicating because they are not close enough to each other. For example if you take your pump off to go swimming.

The Out of Range Alert shown here lets you know when your pump and transmitter are not communicating with each other. The amount of time also shows on the alert screen.
The default setting is ON and the default value is to alert you after 20 minutes, its advisable to have this set at 20-30 minutes.



If the transmitter and pump are not communicating, you will see the ‘Out of Range’ symbol on the CGM screen instead of a glucose reading. In addition the antenna icon next to the battery level will be greyed out. If you see the Out of Range icon for more than 10 minutes, see the t:slim X2 user guide for troubleshooting tips.

Please note – If you have just started a new sensor session, your pump will not display CGM values until the end of the two hour start up period.

In this second section we will look at the CGM integration, starting a sensor sessions and sensor calibration as well as ending a sensor session.

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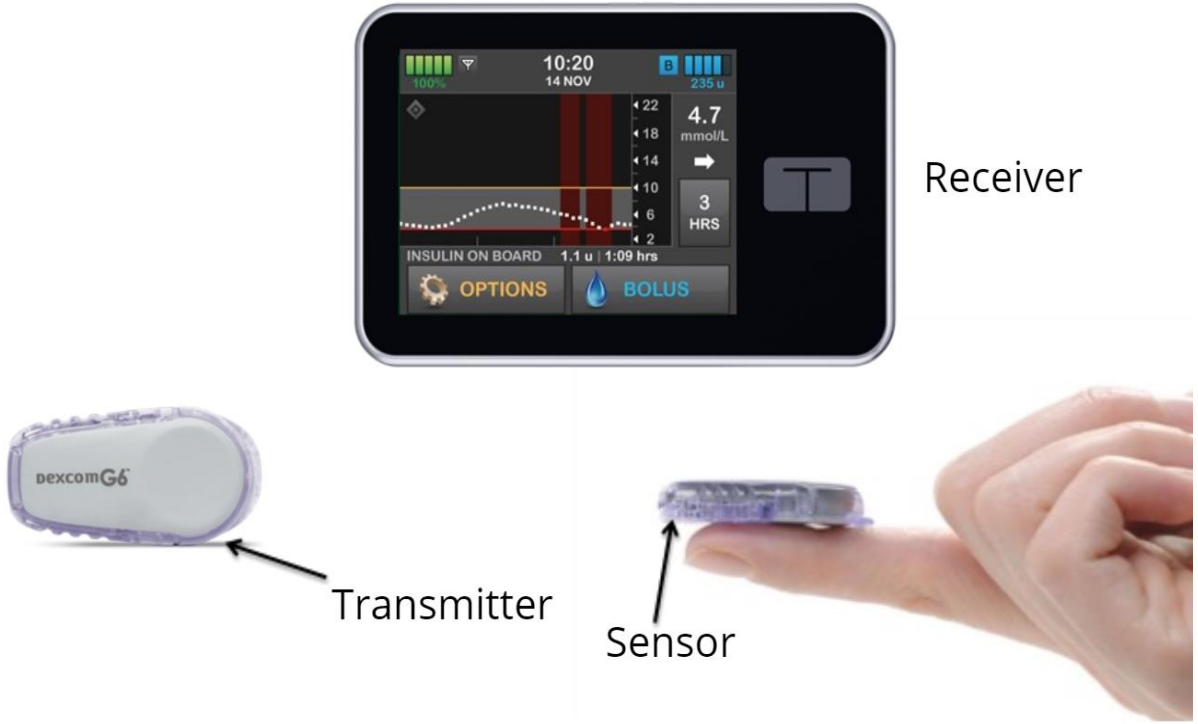
CGM systems have three components: a sensor, a transmitter and a receiver.

The Dexcom G6 sensor is a disposable device that is inserted under the skin to continuously monitor glucose levels for up to 10 days.

The receiver is a standalone device, or a mobile device or integrated pump. The t:slim X2 acts as a receiver for the Dexcom G6 CGM.



The Dexcom G6 transmitter connects the sensor and when electronically paired, wirelessly sends readings to the t:slim X2 pump’s display every five minutes. They pair together using Bluetooth communications.

This allows the pump and transmitter to communicate securely.

Once paired, your insulin pump displays the sensor glucose readings and Basal IQ (if enabled)uses readings to adjust your insulin delivery.

To activate your pump and G6 communications, you need to enter the unique transmitter ID into your pump.

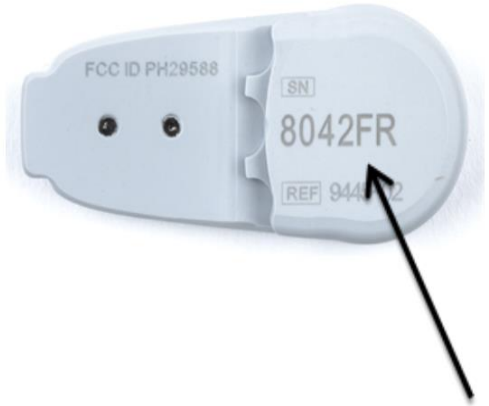
The Dexcom G6 CGM may only work with your pump OR your Dexcom receiver, not both.

Ensure your CGM transmitter is not connected to the Dexcom receiver before pairing with the pump by doing the following: before entering the ID into the pump, turn off the Dexcom receiver and wait at least 15 minutes. This allows the Dexcom G6 transmitter to forget the connection currently with the Dexcom receiver.
If you have never used a Dexcom receiver please ignore this part.

The G6 transmitter ID is stored in the pump’s software. It doesn’t need to be entered again unless you receive a new transmitter or a new pump.

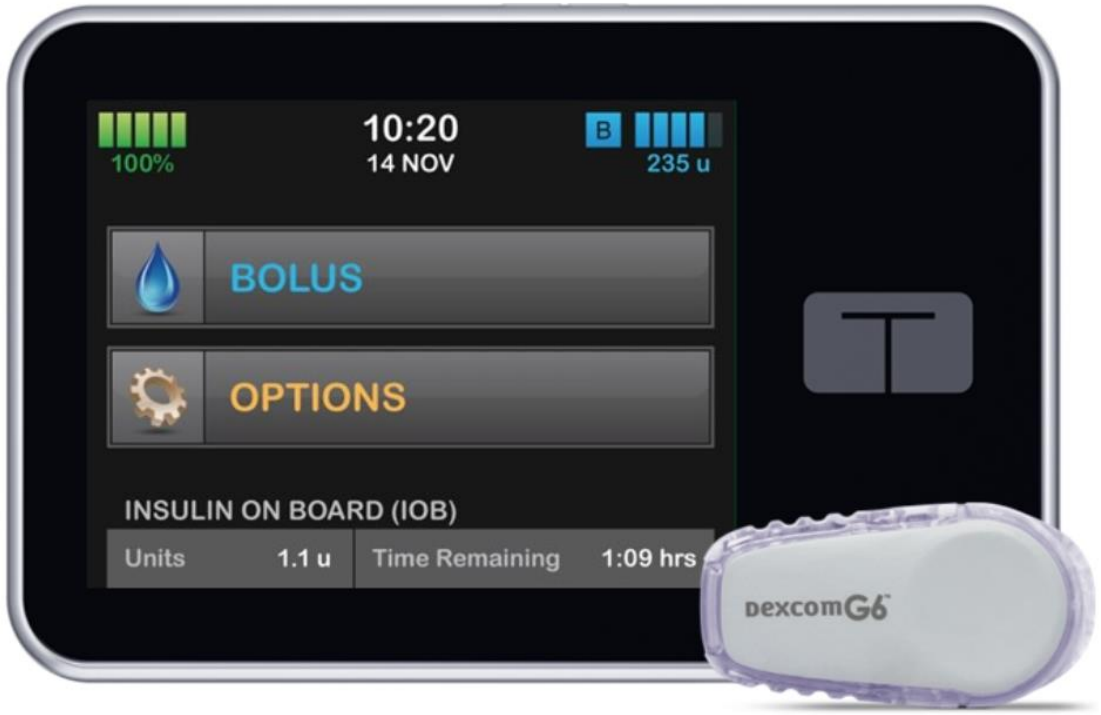
You can find the transmitter ID on the flat side of the transmitter. Enter the ID before you snap the transmitter onto the holder.

Enter the Transmitter ID into pump before snapping into sensor

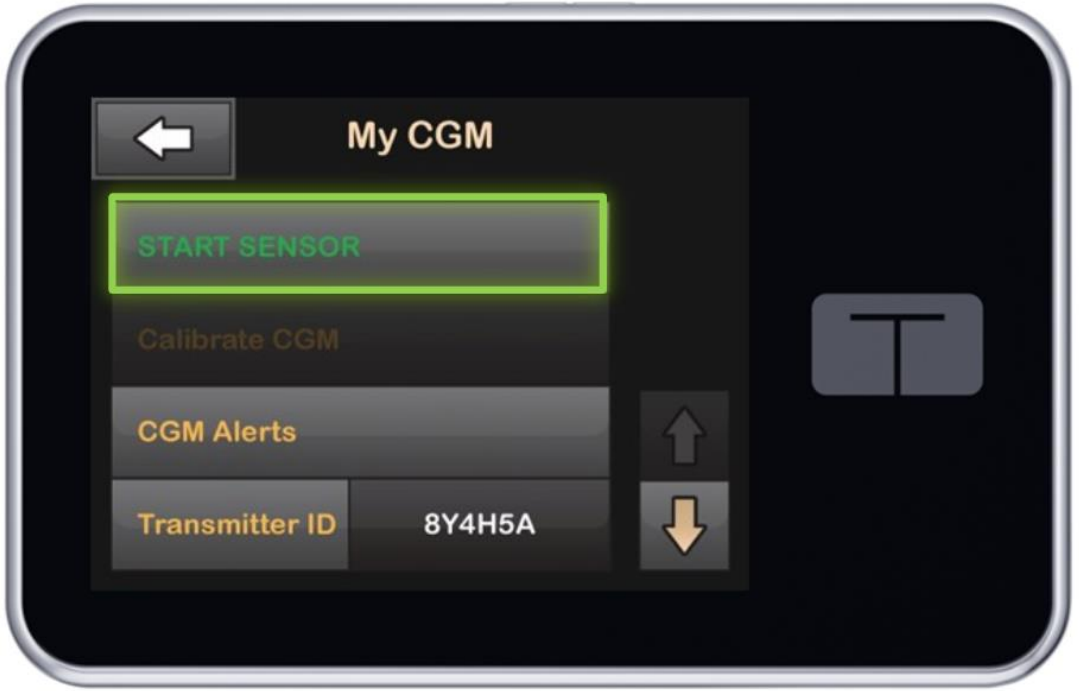


ID is located on the flat side of the transmitter

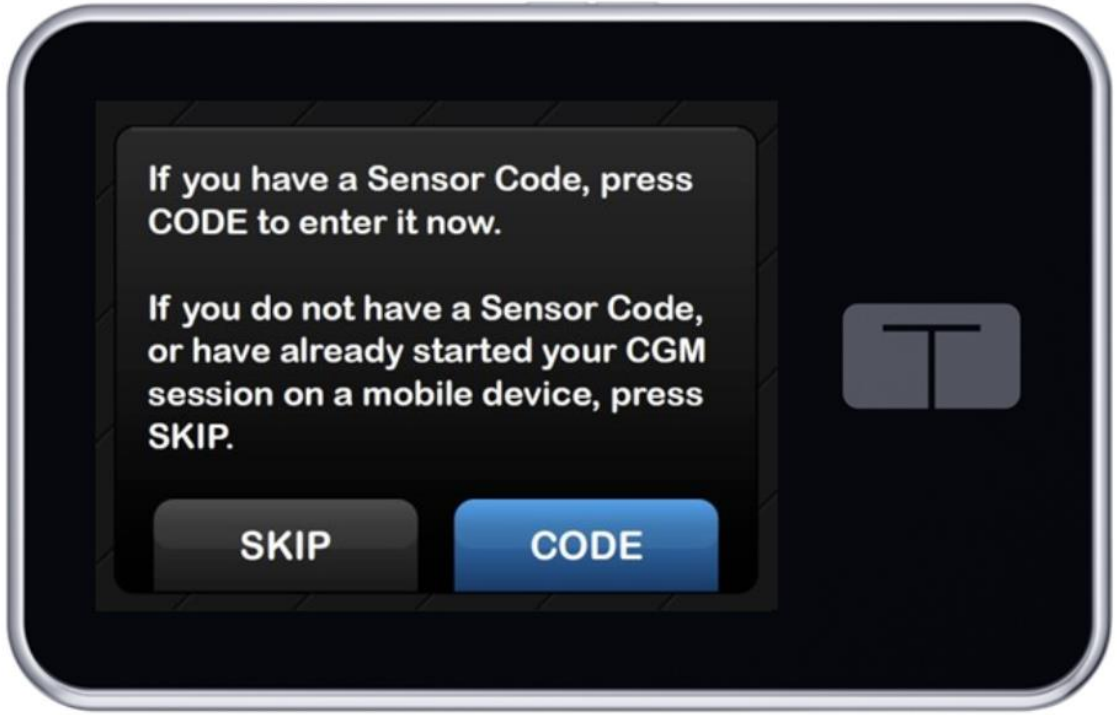
Once you have entered your transmitter ID, inserted your sensor, and attached your transmitter, you are ready to start a CGM session.

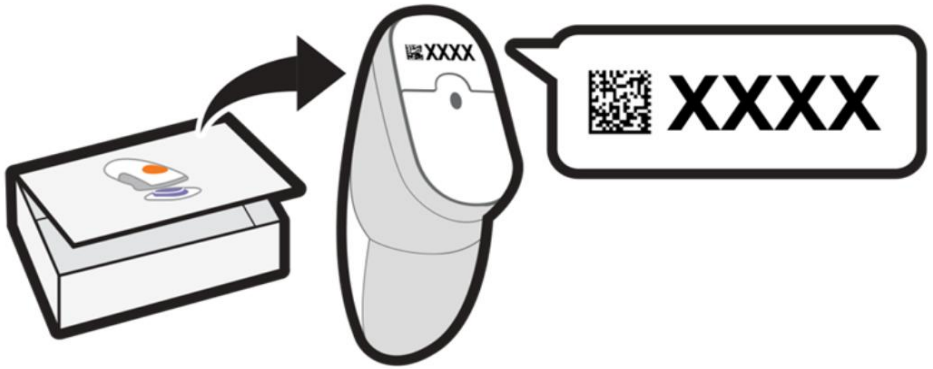


To start a sensor session on your pump, navigate from the options screen to the My CGM menu and select START SENSOR.



You will get a prompt to enter a sensor code. The sensor code is a four digit code found on the bottom of the applicator on the adhesive strip. This is different from the transmitter ID that is entered into the pump when using a new transmitter.



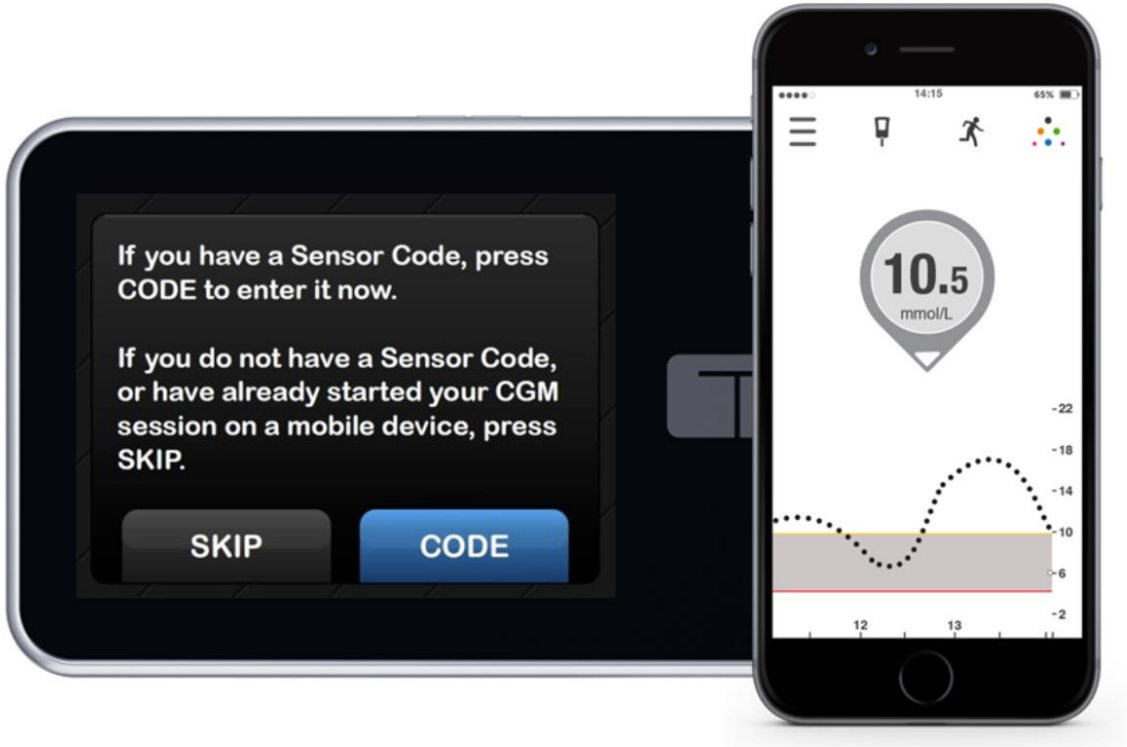


Please note – If you are wearing a sensor and have entered the sensor code into your mobile phone already, you do not need to re-enter the sensor code into your pump.

If that's the case select skip.

Lets assume that you have NOT paired the sensor with your mobile phone.

Select CODE to continue to see the steps for entering the code.

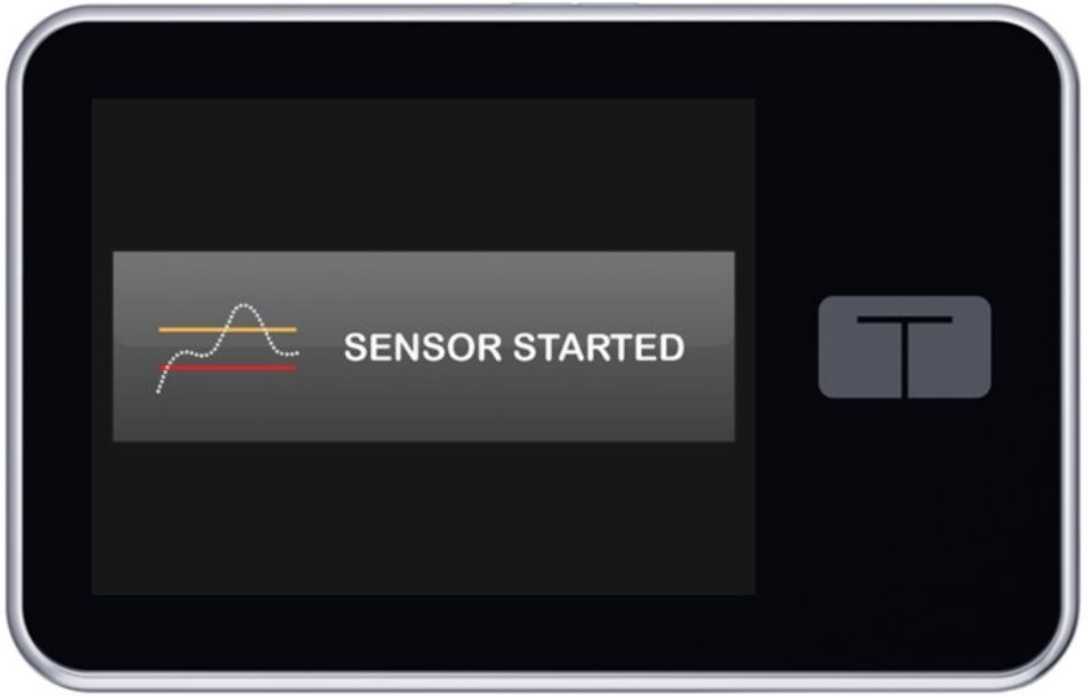


You will get a numeric keypad to enter the four digit sensor code found on the bottom of the Dexcom G6 applicator.

Once you have correctly added a valid sensor code, you will see this screen prompting you to confirm that you want to start a new CGM sensor session.

The Dexcom G6 CGM is approved to make diabetes treatment decisions without confirmatory finger stick calibrations. By entering in your session code, you will not be prompted to calibrate your sensor at regular intervals.

Please note – if your glucose alerts and readings do not match your symptoms or expectations, use a blood glucose meter to make a diabetes treatment decision.



Your t:slim X2 will return to the home screen, but during this two hour time period you will not see sensor glucose readings on the pump screen.

The pump will display the countdown symbol to show how much time is left before the pump is ready to display the current CGM value. The countdown symbol is a green pie graph in the upper right hand corner of the pump screen. Check the pump screen 10 minutes after starting the sensor session to make sure the pump and transmitter are communicating. The antenna symbol should be to the right of the battery indicator and should be white.

It is important to note that during the two hour start up period for a new sensor, you will not receive any high or low glucose value alerts from the system. In addition, during the sensor start up period, Basal-IQ will not suspend insulin. The sensor must be actively providing readings for Basal-IQ to operate.

Remember that if you enter the sensor code when you start a sensor session, you will not be prompted to calibrate the Dexcom G6 sensor.

However, if you do not enter a sensor code when starting a sensor session your t:slim X2 will prompt you to calibrate at these times.

2 hours after you start the sensor session.

12 hours after the 2 hour start up calibration.

24 hours after the 2 hour start up calibration.

After Starting a New Sensor Session

After 2-Hr Start Up Calibration

After 2-Hr Start Up Calibration

*If no Sensor Code was entered when starting sensor session.

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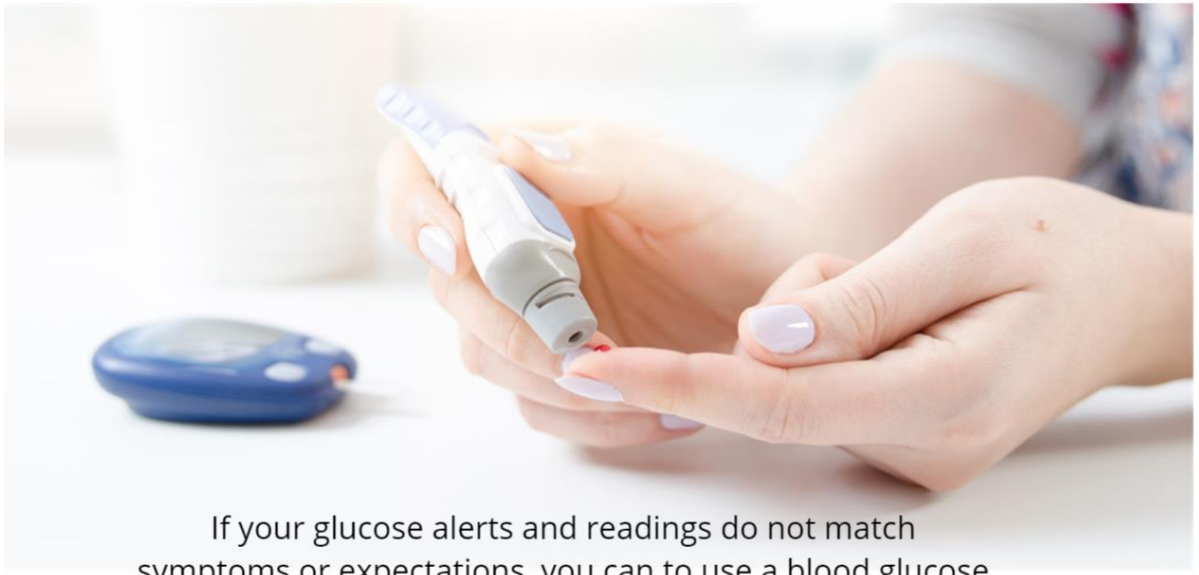
After completing the initial calibration event when starting a new sensor session, you will be prompted to calibrate every 24 hours thereafter. Please see your t:slim X2 user guide for information on how to calibrate your CGM sensor.

Please note – if you need to calibrate your sensor, Basal-IQ technology requires three new CGM sensor values to make a prediction to suspend insulin after a sensor calibration.



If your glucose alerts and readings do not match symptoms or expectations, you can to use a blood glucose meter to calibrate your sensor.

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Your disposable CGM sensor gives you sensor glucose readings for up to 10 days.

When your session ends, your t:slim X2 continues to deliver insulin, but the touchscreen display will not show new sensor glucose readings.

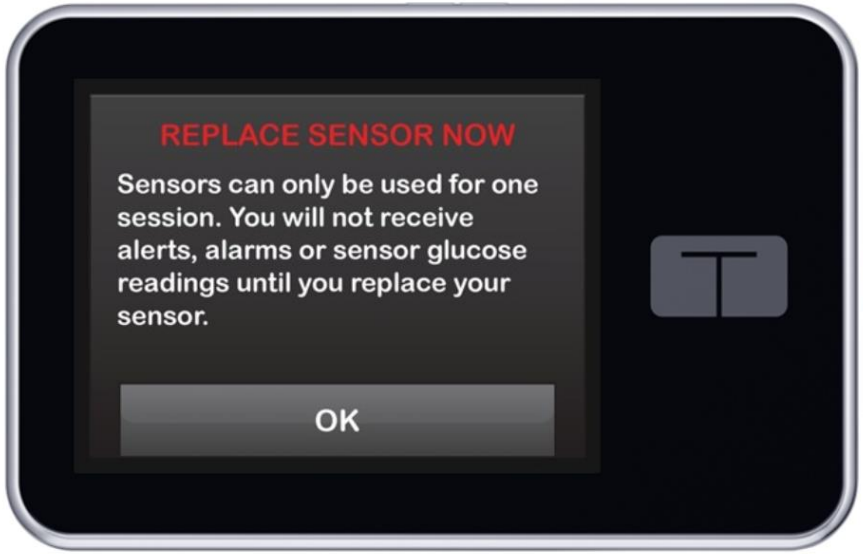
When you stop your current CGM session, you will see an icon in place of the most current reading.

In addition, the glucose alerts and alarms will not be displayed and Basal-IQ will not suspend basal insulin after the sensor session ends.

To restore the flow of sensor glucose information, you must remove your sensor and insert a new sensor.

You can choose from two ways of ending a sensor session:

You can wait for the systems automatic sensor shut off or…….



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You can end the session yourself at any time before the automatic sensor shut-off. To end a sensor session before it expires, navigate to the My CGM menu and tap Stop Sensor.

Please note – if you end a sensor session with the Dexcom G6 sensor, you cannot restart the session. You will not be able to use the sensor again if you end the session early.

The sensor must be replaced every 10 days. If you try to use a sensor after stopping a session or after 10 days of use, you will get this alert when you try to start a new sensor session, letting you know the sensor cannot be used.

Thank you for completing this training module, if you need any further assistance or support please call our Customer Care Team.

Telephone : 0800 012 1560

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