MiniMed 780G

This is my booklet

Test

Weight in kg 30

Contents

Session 1:

Session 2:

Sessions 3 & 4:

Tasks to complete

Click to watch the video

Top Tips **Look out for these**

Numbers and useful websites

Medtronic

Medtronic Customer services to order supplies or technical support :
01923 205 167 Option 1 for customer services Mon – Friday – 09:00-16:30hrs and Product Support is Option 2 and is open 24 hours.

Online store to arrange deliveries**:** https://shop.medtronic-diabetes.co.uk/

Session 1

Aim of this session:
To learn about Automated Insulin Delivery therapy and what s required to be successful.

What we will work through:

1. Expectations
2. Setting up the pump
3. Entering personal settings
4. Starting on insulin
5. Highs, lows and sick day rules
6. Infusion site management
7. Homework to be ready for the next session

Setting expectations

Young person's expectation

1.

2.

3.

Parent/guardian expectations

1.

2.

3.

Diabetes Team Expectations

1. Attend all sessions and bring this workbook.
2. Be on time and be ready to learn.
3. We work through together at one pace.
4. Ask questions if you do not understand.
5. Set up a CareLink account for downloading and link to the Diabetes Team.
6. Have actioned your GP supplies and have them ready for the insulin start
7. Contact Medtronic if technical issues.
8. Share your experience during the sessions.
9. Be prepared to try new strategies.
10. We expect you to make some mistakes and learn from them.
11. We know everything will not work perfectly first time.

Setting goals for continuation

Outcome goals to be achieved at 6 months:

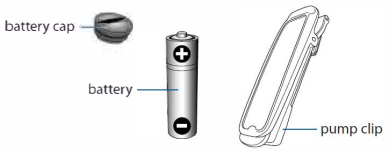
- Reduction in hypoglycaemia:
  - Target % less than 4.0mmol/l = less than 4%
- HbA1c goal:
  - Current Time in Range =
  - Target Time in Range =

Process goals to be achieved at all times:

1. SmartGuard more then 90% of time
2. Respond appropriately to high and low glucose alerts.
3. Review download information and make proactive adjustments to therapy every two weeks.
4. Try new skills and learn from real life practice and making mistakes.

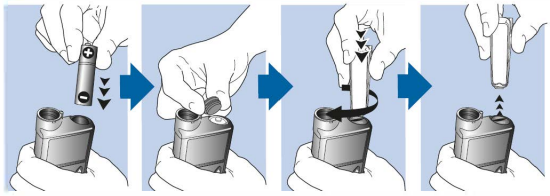
Time in range 3.9 - 10.0 mmol/L	HbA1c mmol/mol Clinic 3 month new measurement	HbA1c % Clinic 3 month old measurement	Diabetes effect on energy & mood	Diabetes effect on future health
90%	37	5.5%	☺☺☺☺	☺☺☺☺
85%	42	6.0%	☺☺☺	☺☺☺
80%	48	6.5%	☺☺	☺☺
60%	58	7.5%	☺	☺
50%	64	8.0%	😐	😐
45%	70	8.5%	☹	☹
35%	80	9.5%	☹☹	☹☹
25%	91	10.5%	☹☹☹	☹☹☹
15%	>102	>11.5%	☹☹☹☹	☹☹☹☹

Setting up the MinMed 780G



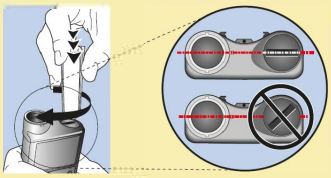
To insert the battery:

1. Insert a new or fully charged AA battery. Be sure to insert the negative end (–) first.



2. Place the battery cap onto the pump. Use the bottom edge of the pump clip or a coin to tighten the cap.

CAUTION: Do not overtighten or undertighten the battery cap. A battery cap that is too tight can cause damage to the pump case. A battery cap that is too loose can prevent detection of the new battery. Turn the battery cap clockwise until the cap slot is aligned horizontally with the pump case, as shown in the following example.



Startup settings

The Startup Wizard appears after a battery is inserted for the first time. Use the Startup Wizard to set the language, time format, current time and date, and to rewind the pump. To re-enter these settings later, see *Pump issues, on page 217*.

To use the Startup Wizard:

1. On the Select Language screen, select a language, and then press ◎.

The Select Time Format screen appears.

2. Select a time format, and then press ◎.

3. Enter the current time, and then select **Next**.

The Enter Date screen appears.

4. Enter the current date, and then select **Next**.

A "Rewinding" message appears. The piston returns to its start position in the reservoir compartment. This may take several seconds.

When rewinding is complete, a message appears to confirm the startup is complete.

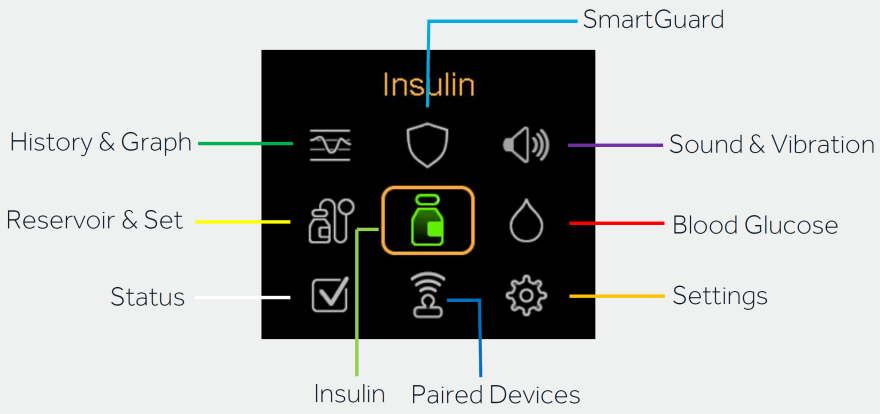
5. Select **OK** to go to the Home screen.

MiniMed™ 780G System

Icon Based Main Menu

- From home screen, press SELECT

- Insulin icon is highlighted
- Navigate to other menu icons & icon color & name displays at top of screen



MINIMED™ 780G SYSTEM
SIMPLIFIED MENU MAP

HISTORY & GRAPH
History
Sensor Glucose Review
Graph
Time in Range

SMARTGUARD
SmartGuard Checklist
Temp Target
SmartGuard Settings
SmartGuard On and Off

SOUND & VIBRATION
Silence Sensor Alerts
Volume
Sound
Vibration
Alert Settings Shortcut

RESERVOIR & SET
New Reservoir
Fill Cannula

INSULIN
Bolus
Basal
Suspend/Resume Basal Delivery
Delivery Settings Shortcut

BLOOD GLUCOSE
BG

STATUS
Suspend All Delivery
SmartGuard Checklist
Pump
Sensor

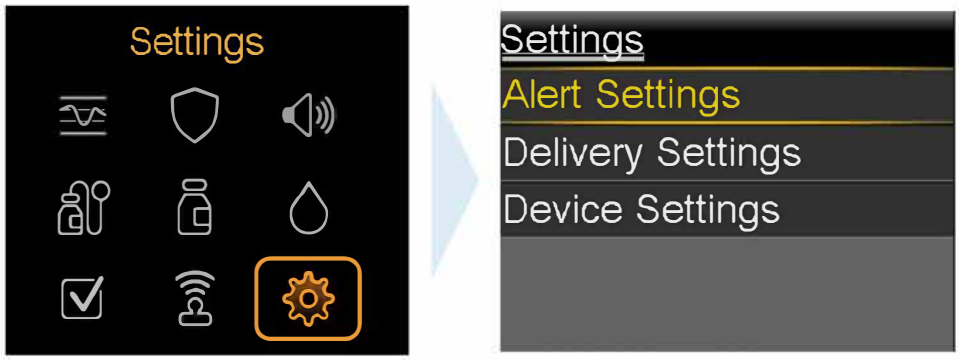
PAIRED DEVICES
Pair New Device
Pair CareLink
Sensor

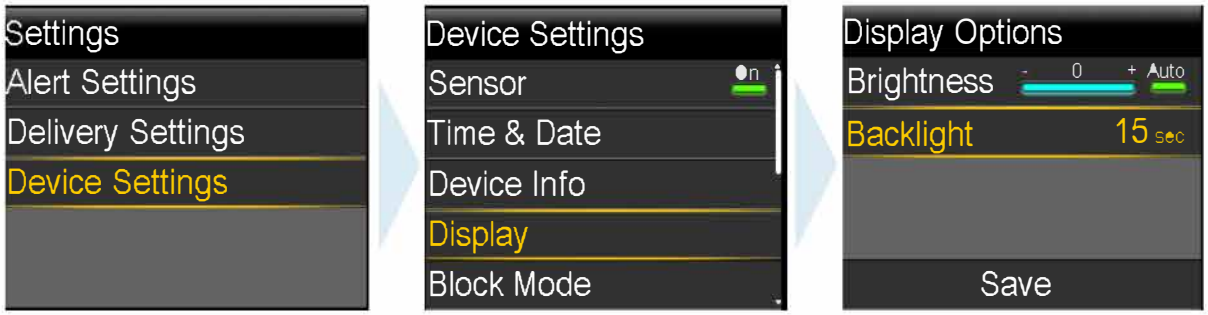
SETTINGS
Alert Settings
Delivery Settings
Device Settings

Status icons

The status icons on the Home screen provide the current status of the pump system. For information on viewing detailed status screens, see *Status screen, on page 43*.

Icon name	Description
Battery	The color and fill level of the icon indicate the charge level of the pump battery. As the battery is used, the icon changes from solid green in the following order:  • The battery is full. • The battery is low. • The battery can be used for less than 30 minutes and needs to be replaced.





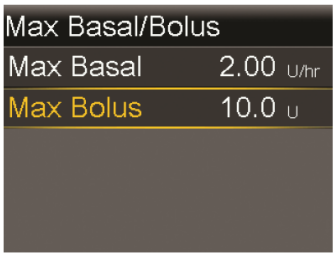
- **Alert Settings - Reminders - Low Reservoir (see settings sheet)**
- **Alert Settings - Reminders - Set Change (3 days)**
- **Device Settings - Display - Backlight = 3 min for the whilst training, 30 sec normally**

The insulin menu – probably what you'll use most frequently

To set the Max basal rate:

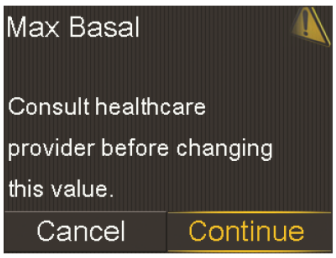
1. From the Home screen, press ◎, and then select ⚙.
2. Select **Delivery Settings** > **Max Basal/Bolus**.

   The Max Basal/Bolus screen appears.

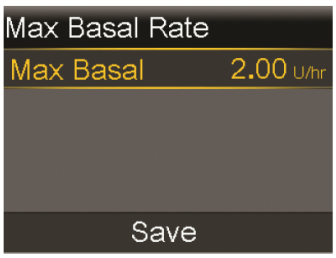


- Settings - Delivery settings - Max Basal/Bolus
  - Set Max Basal (see settings sheet)
  - Set Max bolus (see settings sheet)

3. Select **Max Basal**.



4. To continue to the Max Basal Rate screen, select **Continue**.
5. Select **Max Basal**, and then set the maximum number of basal insulin units per hour.



6. Select **Save**.

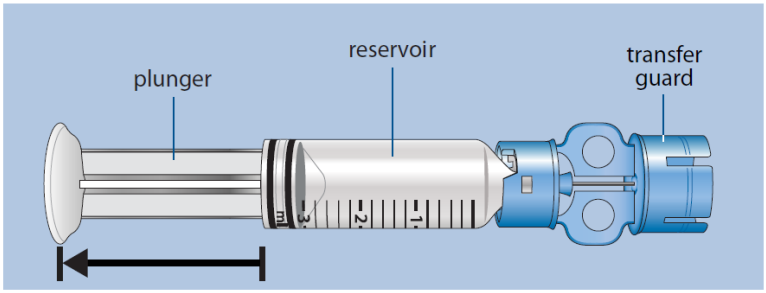
- Settings - Delivery settings - Basal Pattern Setup - Program basal settings (see settings sheet)
- Settings - Delivery settings - Bolus Wizard Setup - Program Bolus Wizard settings (see settings sheet)

It is time to get your infusion set on

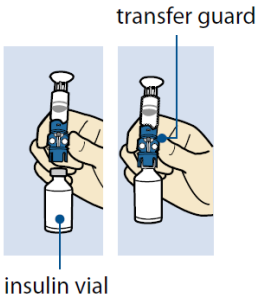
TIP
When you do future set changes, always remember to disconnect from the infusion set you are wearing before you start the process.

To fill the reservoir and connect it to the infusion set tubing:

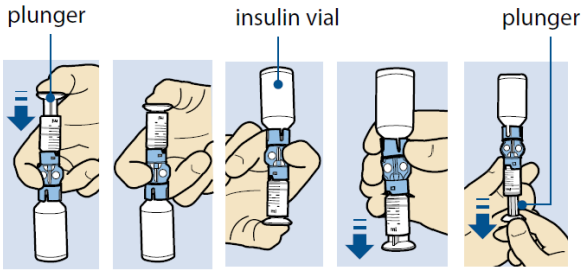
1. Remove the reservoir from the package and fully extend the plunger.



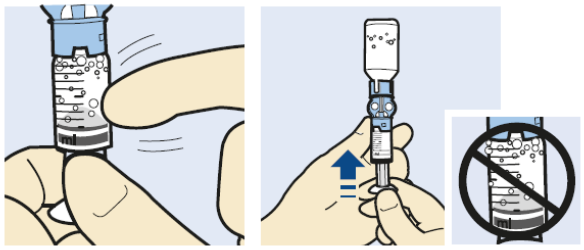
2. Swab the top of the insulin vial with alcohol (not shown).
3. Without pushing down on the plunger, firmly press the blue transfer guard onto the vial.



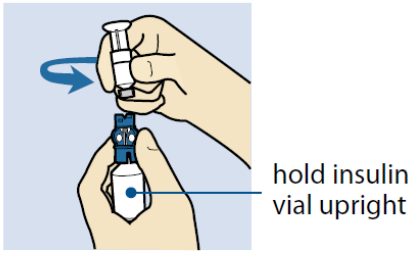
4. Push and hold the plunger down. This pressurizes the vial. While still holding down the plunger rod, flip the vial over so the vial is on top. Release the hold on the plunger rod and pull the plunger down to fill the reservoir with insulin.

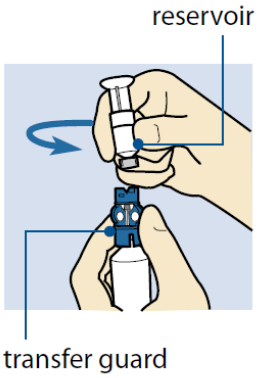


5. Gently tap the side of the reservoir to make any air bubbles rise to the top of the reservoir. Push the plunger up to move the air into the vial.

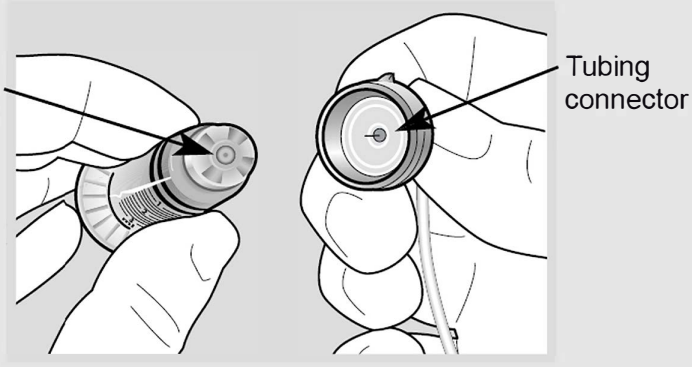


6. If needed, slowly pull the plunger back down to the amount of insulin needed.
7. To avoid getting liquid on the top of the reservoir, flip the vial over so that it is upright. Turn the reservoir counter-clockwise, then pull straight up to remove the reservoir from the transfer guard.



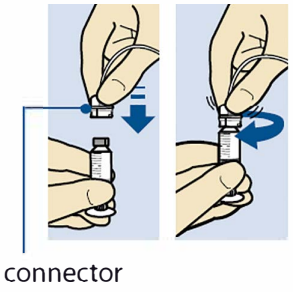


WARNING: **Do not use the reservoir or infusion set if any liquid gets on the top of the reservoir or inside the tubing connector, as shown in the image. Liquid may temporarily block the vents. This may result in the delivery of too little or too much insulin, which may cause hyperglycemia or hypoglycemia. If any liquid gets on the top of the reservoir or inside the tubing connector, start over with a new reservoir and infusion set.**



The reservoir is now ready to be connected to the infusion set tubing.

8. Follow the instructions in the infusion set user guide to access the infusion set tubing.
9. Place the infusion set tubing connector onto the reservoir. Turn the connector clockwise, pressing gently against the reservoir until it slides in. Push in and continue turning the connector until the reservoir and the connector lock together with an audible click.



10. If any air bubbles are present, tap the side of the reservoir to force the air bubbles to the top of the reservoir. Then remove the air bubbles by pushing up on the plunger until insulin is seen in the tubing.

MiniMed™ 780G System

USING BOLUS WIZARD™ FEATURE

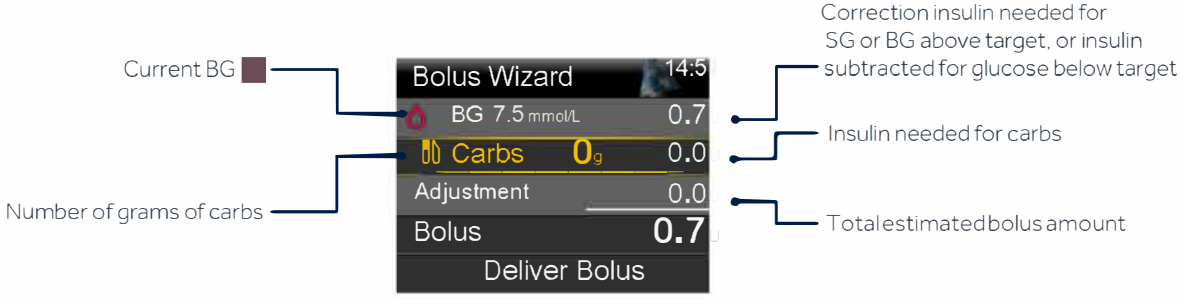
MiniMed™ 780G System

SmartGuard™ Bolus screen – Utilizing Sensor Glucose (SG)

Utilizing Sensor Glucose (SG)
When in SmartGuard™ and the user has not entered a meter blood glucose (BG) into the pump in the past 12 minutes, the SG value automatically populates the bolus screen and will be used for the bolus

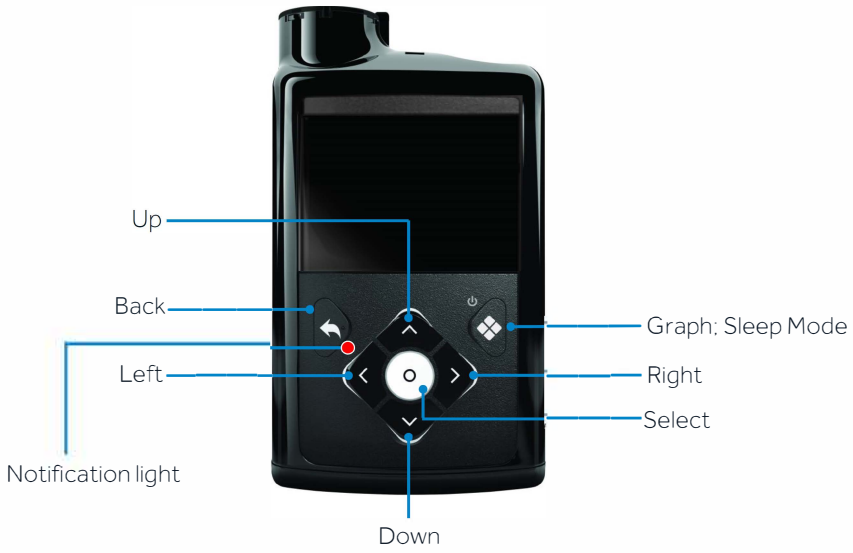
MiniMed™ 780G System

Bolus Wizard™ screen



1. **Take a finger prick Blood Glucose reading (not sensor glucose reading)**
2. **Enter the blood glucose into the "Blood Glucose" (red blood drop) icon**
3. **Bolus Wizard: Insulin - Bolus Wizard - Enter carbs to be eaten - Deliver**

MiniMed™ 780G System — Basic Navigation



SLEEP MODE

The pump enters Sleep mode after two minutes to conserve battery power. Press any button to wake up the pump. Press and hold sleep mode button for two seconds to manually enter Sleep mode.

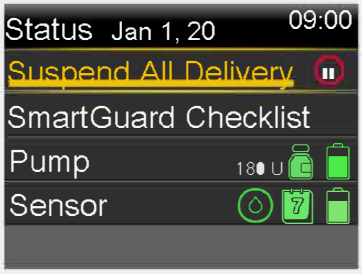
The notification light flashes when the pump has an alarm or alert. The notification light is not visible unless it flashes

MiniMed™ 780G System — Navigation Shortcuts

Press the UP arrow for shortcut to the Status Screen

Practice: You need to do this
EVERYTIME you take the pump off

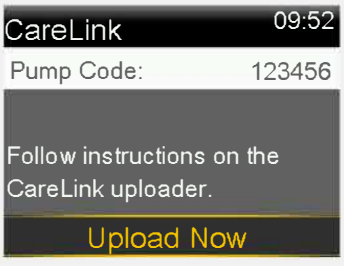
STATUS SCREEN



MiniMed™ 780G System — Navigation Shortcuts

Press and HOLD the DOWN arrow for shortcut for CareLink™ upload

(PRESS AND HOLD) CARELINK™ UPLOAD



SETTING UP & USING
THE MINIMED™ MOBILE APP

IS MY PHONE COMPATIBLE?
CLICK HERE TO FIND OUT.

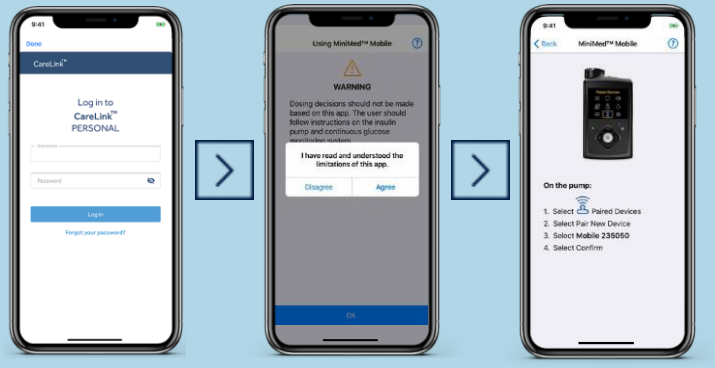
PREFER TO WATCH A VIDEO?
CLICK HERE

1 **DOWNLOAD THE MINIMED™ MOBILE APP** on the Apple® or Google Play™ app store

2 **FOLLOW THE PROMPTS** on the screen that explain how the app works

3 **CREATE OR SIGN INTO YOUR CARELINK™ PERSONAL ACCOUNT**

4 **TAP AGREE** To proceed through the end user agreements and consents

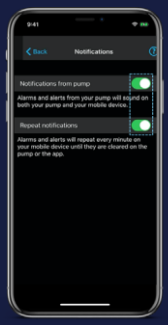


5 **PAIR THE APP WITH YOUR PUMP** by following the instructions

6 **READ THE DOSING DISCLAIMER** that states dosing decisions should not be made based on the app **then tap agree**

THE APP IS NOW READY TO USE

The app will automatically upload your data to your Carelink™ Personal account



NOTIFICATIONS

Notifications need to be on to receive alerts, alarms, messages and reminders. They will show as banners.

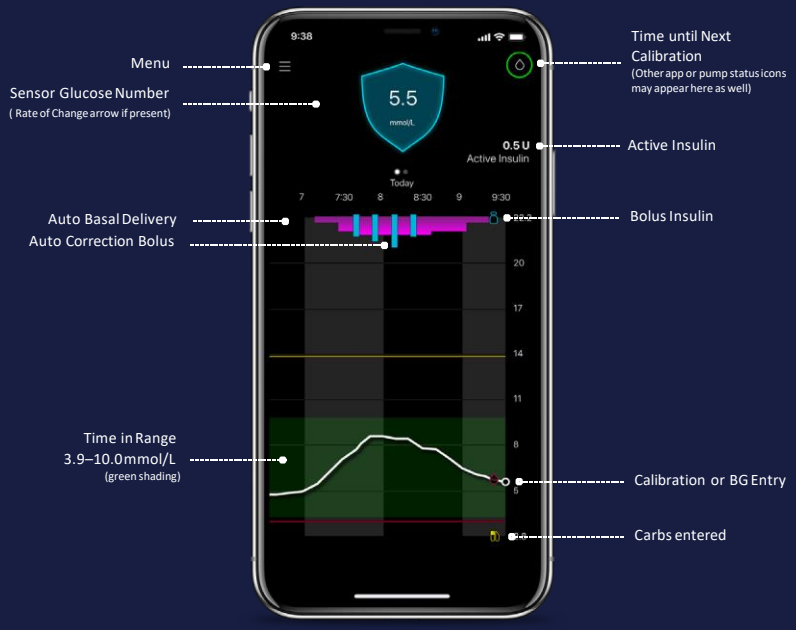
COLOUR CODED NOTIFICATIONS

RED - Alarm
ORANGE - Alert
GREY - Reminder
BLUE - Messages

SWIPE LEFT

App users using a pump and sensor can swipe left to access time in range (TIR) data and graphs for the last 24 hours.

HOME SCREEN VIEW



NOTE - WE RECOMMEND TO TURN OFF YOUR OPERATING SYSTEM AUTO UPDATES TO HELP ENSURE THAT YOU WON'T BE USING AN UNVERIFIED VERSION OF THE APP

SETTING UP & USING
THE CARELINK™ CONNECT APP

For Care Partners

IS MY PHONE COMPATIBLE?
CLICK HERE TO FIND OUT.

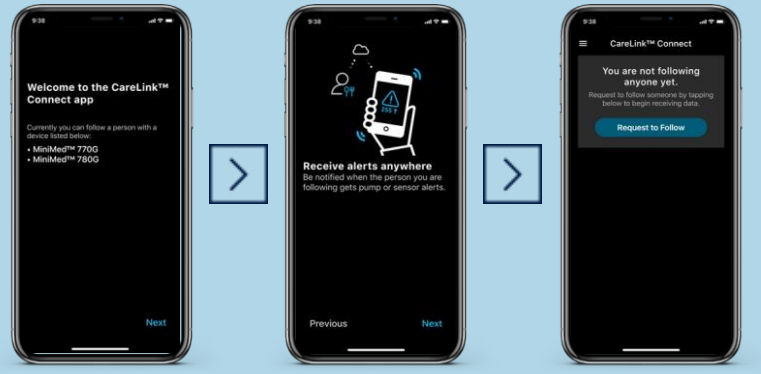
PREFER TO WATCH A VIDEO?
CLICK HERE.

1 **DOWNLOAD THE CARELINK™ CONNECT APP**
on the Apple® or Google Play™ app store

2 **FOLLOW THE PROMPTS**
on the screen that explain how the app works

3 **READ THE DOSING DISCLAIMER**
that states dosing decisions should not be made based on the app **then get started**

4 **TAP SET UP SCREEN LOCK**
during initial app start up to ensure data privacy

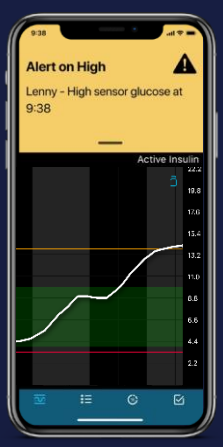


5 **SEND A FOLLOW REQUEST**
by inputting the CareLink™ Personal account username

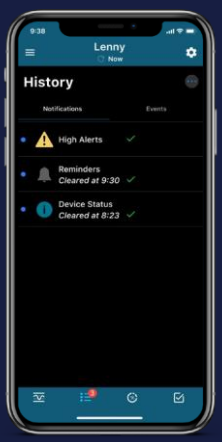
6 **PUMP USER APPROVES REQUEST**
via their CareLink™ Personal account **then you are connected**

THE APP IS NOW READY TO USE

You are now connected to your partner



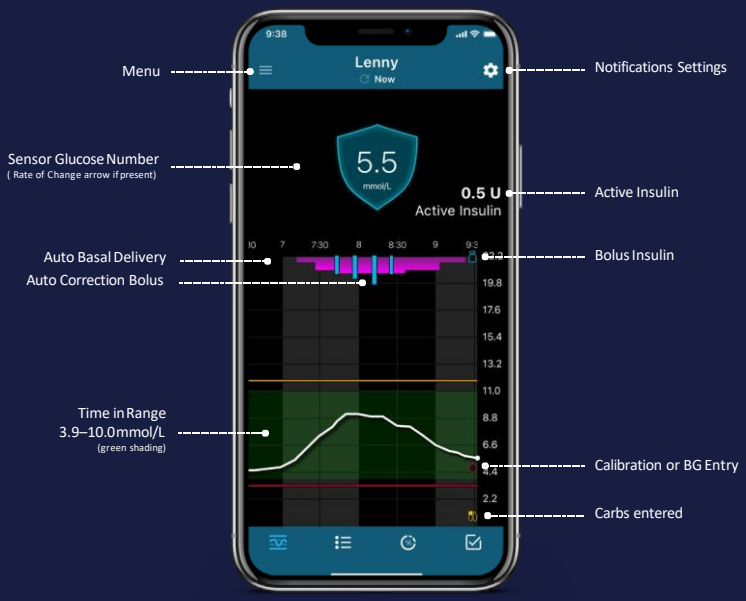
ALERTS



HISTORY

TIME IN RANGE

HOME SCREEN VIEW



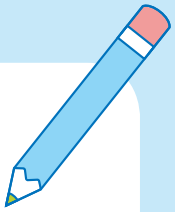
NOTE - WE RECOMMEND TO TURN OFF YOUR OPERATING SYSTEM AUTO UPDATES TO HELP ENSURE THAT YOU WON'T BE USING AN UNVERIFIED VERSION OF THE APP

Questions

Use the **survive and thrive guide** to answer these questions

- On waking the glucose is 16.0 and has been for 4 hours and ketones are 0.2, what should you do?
- Breakfast is at 09:00 and after breakfast at 10:00 the glucose is 15.2, with ketones 0.1 what should you do?
  - Then the Glucose at 12:00 is 22.2 with ketones 0.3, what should you do?
- Glucose at 14:00 is 16.5 with ketones of 0.9, what should you do?
- Glucose at 17:00 is 17.5 with ketones of 2.4, what should you do?
- Ketones are 2.4 and you need advice from the diabetes nurses and its 7pm:
  - How do you contact the nurses?
- If a sensor does not last the full life what should you do?
- If there is an issue with the pump who should you contact?
- Do you need to take background insulin whilst using the pump?

Homework



- [ ] Make sure you have made a note of all the education session dates and times.
- [ ] Review and assess your Carbohydrate Counting
- [ ] **Insure insulin pump for £3500:**

  Quote from current house insurance **or** http://insurance4insulinpumps.co.uk/
- [ ] Change back light from 3 minutes to 15 seconds (Settings, Device Settings, Display Settings, Backlight)
- [ ] Set up MiniMed Mobile APP - if the young person has a phone (we need username and password to link the account to our system)

  Set up CareLink Connect - if the parent/guardian is following

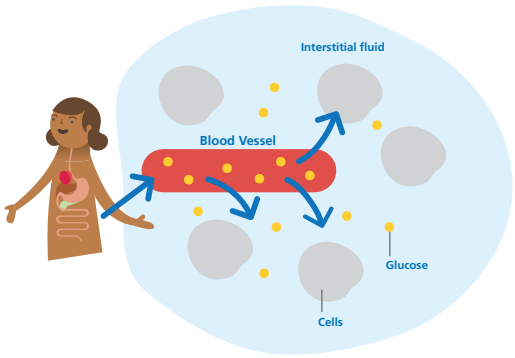
  If no phone, Create a CareLink Personal account (we need the username and password) Install uploader if using a computer - See the last 4 pages of the workbook

The Survival Guide:

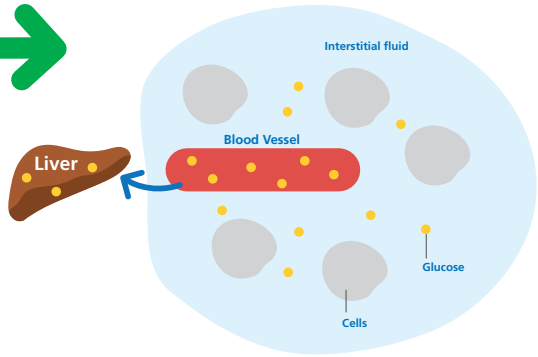
- **Work through the survival guide and watch all the videos**
- See all the pages left in session 1 explain the survival guide further
- Put the survival guide on your fridge
- Keep a PDF Copy in your phone with the video links

What is Type 1 Diabetes? Where do Pumps fit in?

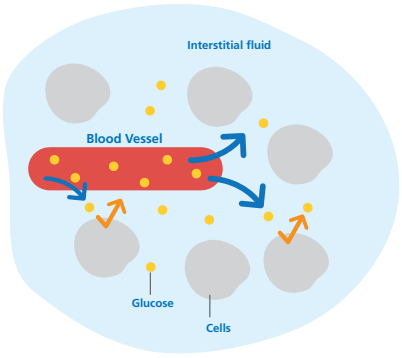
The body digests and coverts food into nutrients including glucose



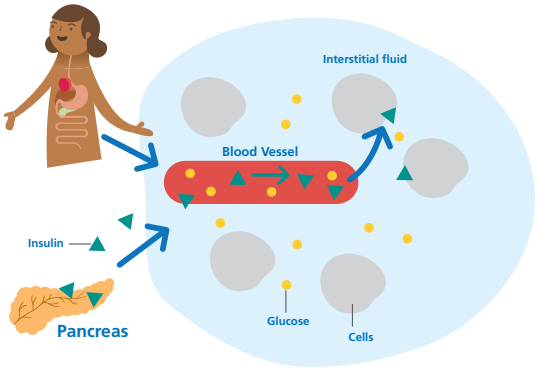
Glucose moves from the digestive tract into the bloodstream



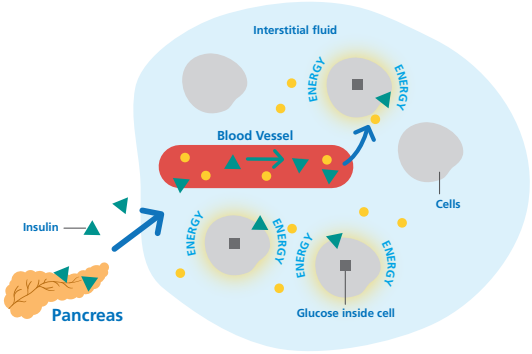
Just like a car stores extra gas in its tank, your body stores extra glucose in your liver



Glucose cannot move into the cell to make energy without insulin.



The pancreas releases insulin into the bloodstream. Insulin moves from the bloodstream into the tissues and attaches to the cell wall.

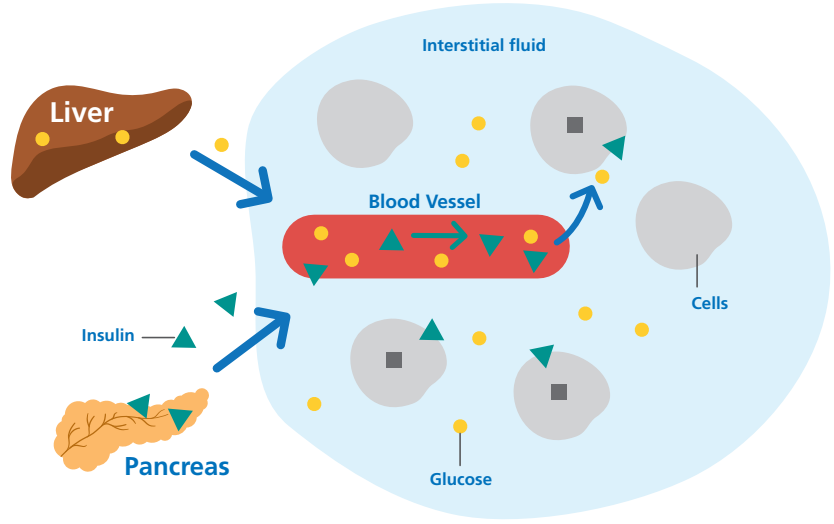


Insulin is the key!

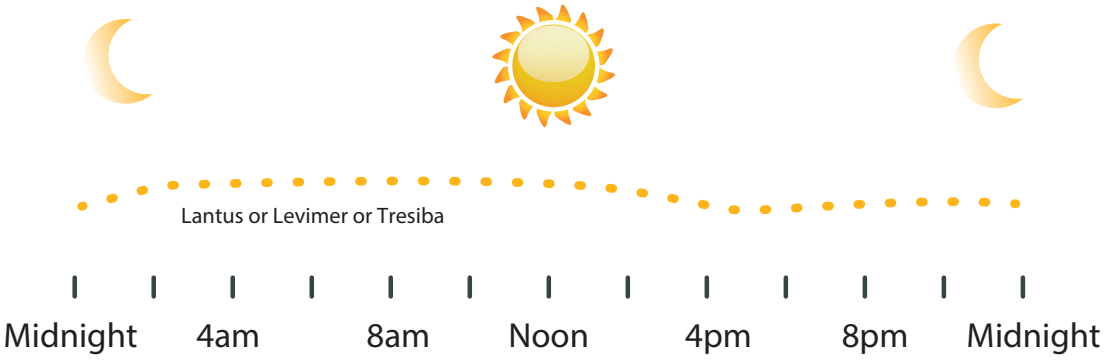
When insulin attaches to cell wall, glucose can move into the cell.

Injections versus Pumps So what are the differences?

Basal Insulin



Basal insulin moves glucose into the cells between meals and during sleep. Basal insulin covers the glucose that the liver releases back into the bloodstream.

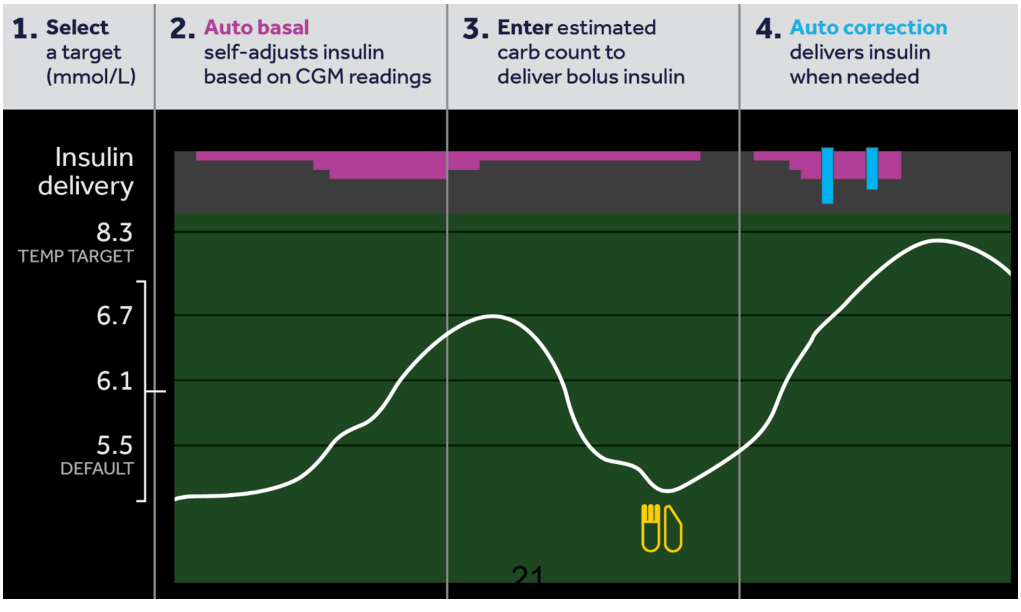


The pancreas produces tiny amounts of basal insulin every few minutes, 24 hours a day (above).

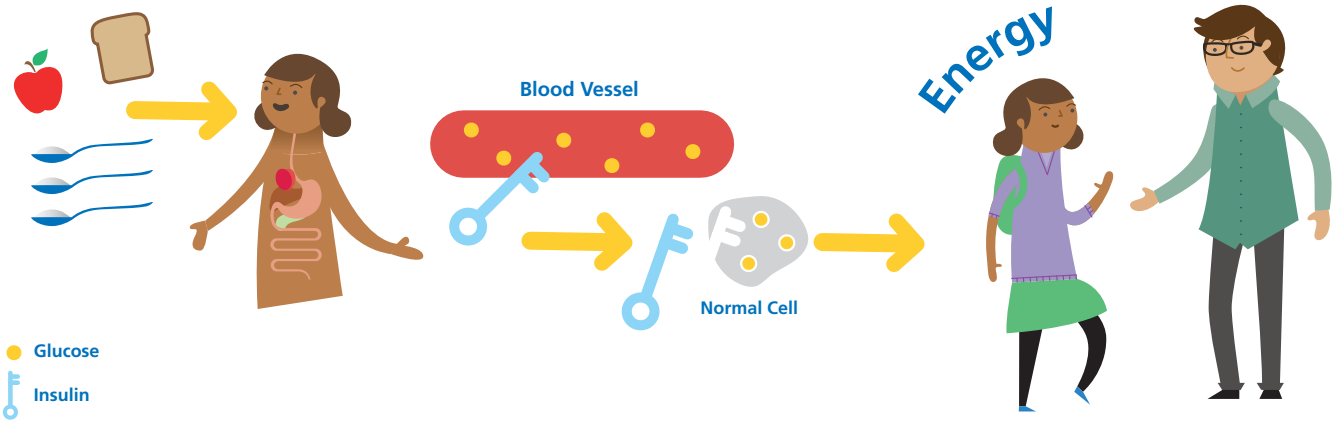
- Lantus/Levemir/Tresiba (graph above) cannot speed up or slow down the insulin like the pancreas does.

- Basal insulin from a standard pump can be set to speed up and slow down at different times of the day (see the settings sheet). However, the insulin delivery cannot respond to changing glucose levels

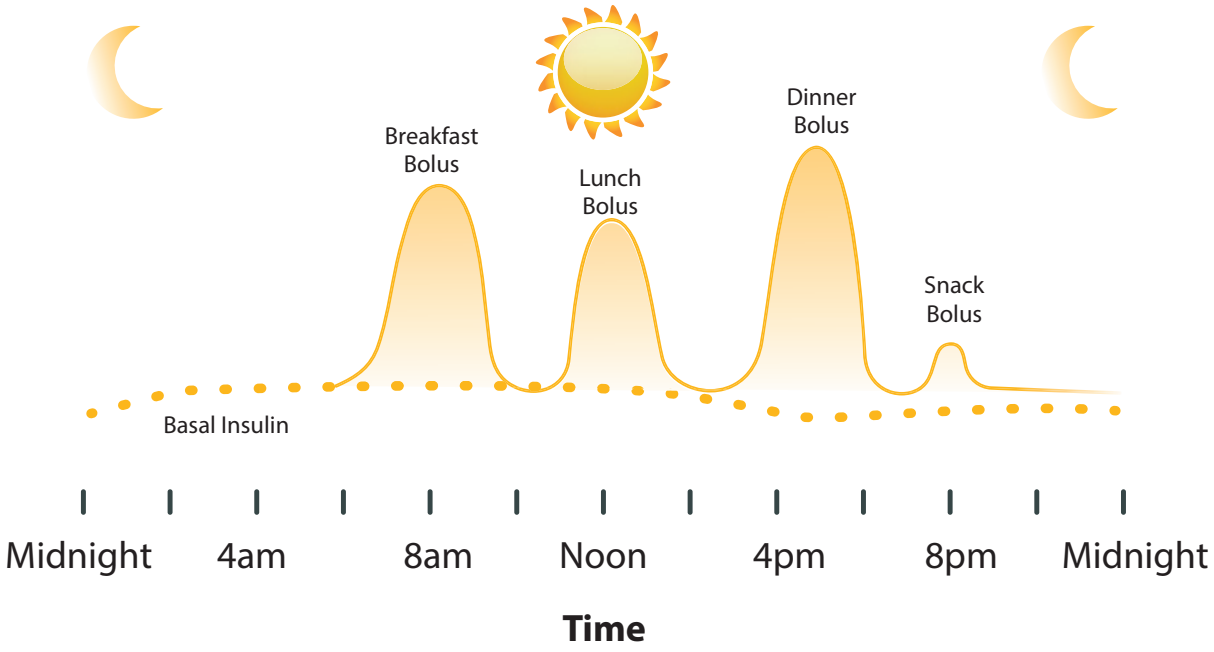
- Basal insulin from a **Automated Insulin Delivery (hybrid closed loop) pump** speeds up when the glucose level is rising and slows down when the glucose is falling, and gives auto corrections exactly like the pancreas!



Bolus insulin



The pancreas also produces larger (bolus) amounts of insulin when you eat.



Your mealtime, rapid acting insulin injection or the bolus on pump mimics the pancreas based on your insulin to carbohydrate ratio.

You will need to enter the carbohydrate into the pump bolus calculator at all meal and snack times. The **automated insulin delivery cannot cope with carbohydrates from meals without a bolus of insulin** given following at meal and snack time. This is with they are called hybrid closed loops and not fully closed loops.

You will still need to give the bolus **15 minutes before eating.**

How do pumps work ?

The pump delivers quick acting insulin in tiny drops, all day, every day

This is called the _____

The basal rate can be a different amount each hour of the day

The basal rate is instead of your _____ injection

The insulin is delivered through a _____ which sits in the fatty layer under the skin

The cannula can be put in your tummy, leg or top of your _____

The cannula is changed every _____

When you eat, you do a **bolus** of insulin to cover the carbohydrate you have eaten or drunk

A bolus is like your _____ mealtime or snack injection.

Answers

Cannula

Basal Rate

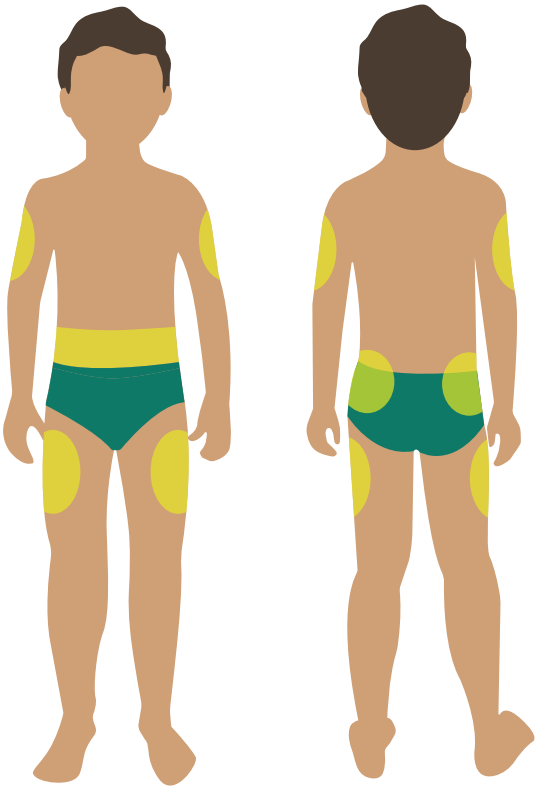
Bottom

Novorapid / Humalog

2-3 days

Lantus / Levemir

Insulin start
Infusion site management



Choosing a site

Recommended sites

- Abdomen
  - Not on the belt line
  - Away from belly button
- Hips and Buttocks
- Outer thigh
- Backs of arms

Safety and choosing a site ensures prevention of:

- Infection
- Scarring
- Lipodystrophy

Tip

DO NOT change your cannula directly after a shower or bath

Tip

Keep the current vial of Insulin that you are using in your blood glucose wallet/ kit. Ensure it's only kept for a maximum of 28 days and then throw it away

Tip

Use a wipe clean tray for your equipment

SAFETY

- Always wash hands before a cannula/set change
- Ensure Insulin is at room temperature before use to reduce risk of bubbles
- Ensure you have a clean space to prepare for the cannula set change
- Ensure you clean and dry the insertion site before any change

Cannula/reservoir change

You need to change the cannula and reservoir/infusion set every 2 – 3 days

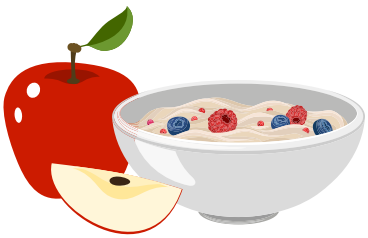
If you leave a cannula in longer than 3 days you will get lipohypertrophy (fatty lumps) and insulin will not be absorbed

Changing the cannula and reservoir/infusion set improves

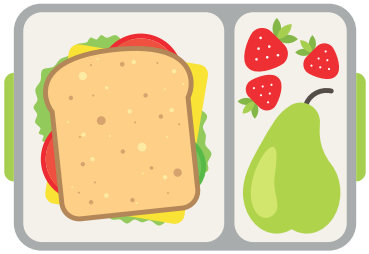
1. **Blood glucose control**
   At 3-5 days
   Blood glucose can increase by 33% therefore more time out of target blood glucose range

2. **Insulin activity**
   At 3-5 days
   Insulin requirement increases by 14% due to insulin binding to the reservoir/tubing and reduced absorption

When to change?



Before Breakfast



Before Lunch

Before Evening Meal

You will need to test your blood glucose 2-3 hours after the change.

WARNING!

Not Before Bed

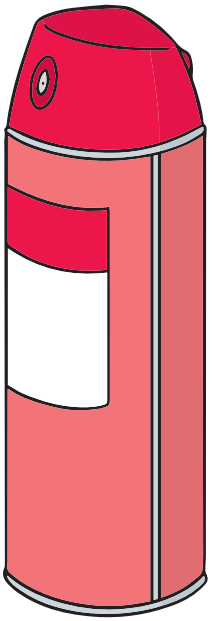
If you change your cannula at night and do not test your blood glucose until morning, you may wake up with ketones!

Top Tips

- Set a routine for changing three times a week
  Example
  Monday and Wednesday before evening meal
  Saturday before breakfast
- You can use Tea Tree cream or Calendula cream to help heal infusion sites
- If taking off your cannula hurts or leaves a sticky residue, you could try lift plus which is available on GP prescription
- If your cannula comes off easily, try applying an adhesive agent prior to insertion such as Cavilon. This is available on GP prescription. Deodorant works also!!

Baby oil will help with removing tape and sticky residue

Anti-perspirant deodorant sprayed onto the new infusion site helps the cannula to stick when inserted



Preventing or treating hypoglycaemia flow chart

('Hypo' or Low 'Blood Glucose')

In any of the below circumstances please refer to the **Mild Hypo** green box (as long as the child is conscious & cooperative):

1. Low glucose alarm sounds
2. Glucose value below 4.0mmol/L
3. Glucose 4.0-6.0mmol/L with a downward trending arrow at usual times of checking e.g. break-time, lunch, mid afternoon

Mild Hypo

The child can eat and drink and is cooperative

Step 1:

Using the glucose value and arrow, treat or prevent hypoglycaemia using **one** of the options from the table below (options can be changed)

Glucose mmol/L	Arrow	Treatment Glucose (grams)	Choose only one Dextrose (3g)	Lucozade
4.0 - 6.0	↓↓↓	9	3	100
	↓↓	7	2	75
	↓	5	2	50
Less than 4.0	↓↓↓	11	4	125
	↓↓	9	3	100
	↓	7	2	75
		5	2	50
	↑	2	1	25

Step 2: Look at CGM in 20 minutes .

Step 3: If CGM is still below 4.0mmol/L after 20 minutes, repeat 1& 2

Moderate Hypo

The child is conscious but not cooperative

Step 1: Give one tubes of GlucoGel® or equivalent

Step 2: Look at CGM in 20 minutes.

Step 3: If CGM is still below 4.0 mmol/L after 20 minutes repeat Steps 1 & 2.

Severe Hypo

The child is unconscious and/or having a seizure and so unable to swallow

Step 1: Place child in the recovery position.
Step 2: Ensure the airway is open and that the child is breathing.
Step 3: Call 999 and Stay with the child while someone waits to direct the ambulance and informs parents.

Hyperglycaemia (high blood glucose)

Troubleshooting high blood glucose levels & ketones

High blood glucose levels (hyperglycaemia) happen for lots of reasons not only if you are not having enough insulin. See if you can list some other reasons below:

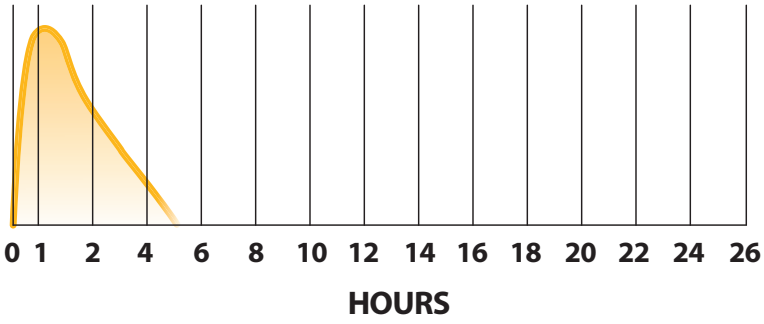
1. ----------
2. ----------
3. ----------
4. ----------

When you are getting your insulin from an insulin pump it is important to remember that hyperglycaemia can become a problem more rapidly than when using insulin injections.

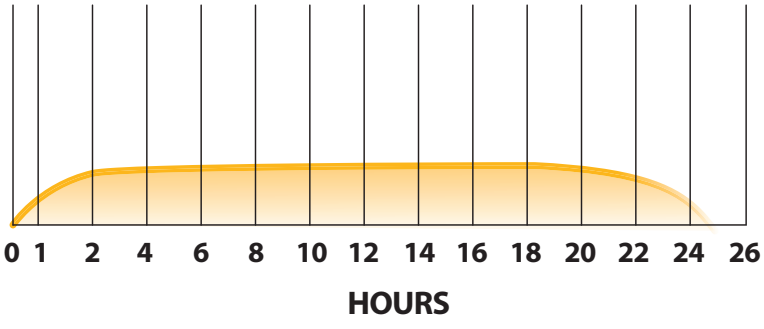
This is because after 4 hours of no pump delivery there is no active insulin in your body and therefore there is a risk of developing ketones rapidly.

On injections as long as basal insulin (Lantus or Levemir) has been given there is active insulin in your body for 24 hours. However a lack of boluses (Novorapid or Humalog) will mean ketones will develop.

Rapid-Acting (Humalog/Novolog)
Starts: 5-15mins
Peaks: 45-60mins
Lowers: Blood glucose most in 1-3hrs
Finishes: 3-5hrs



Long-Acting (Lantus/Levemir)
Starts: 1-2hrs
Peaks: no peak
Lowers: Blood glucose evenly 24hrs
Finishes: 24hrs



Hyperglycaemia will occur due to problems with insulin delivery from the pump or due to problems with the insulin in the pump. Can you think of some of these problems?

PROBLEMS DUE WITH INSULIN DELIVERY FROM THE PUMP	PROBLEMS WITH THE INSULIN IN THE PUMP
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

If YES to any of the above you must change the infusion set and insulin immediately

Hyperglycaemia Flowchart

('Hyper' or 'High blood glucose')

Step 1: Notified CGM above **14.0** mmol/l by first alert– clear the alarm & take action:

- Give a correction dose using the bolus calculator.

Step 2: Wait 90 minutes

Step 3: If alarm goes off again after 90 minutes and above 14.0mmo/L - Check for Ketones

When CGM is over 14mmol/L for 90 minutes Ketones must be checked.

CGM Over 14mmol/L for 90 minutes

Blood Ketones less than 0.6mmols

Step 1: Drink sugar free fluids

Step 2: Change the cannula, then give a correction insulin dose

Step 3: Check CGM in 90 minutes time – the alarm will go off if still above 14.0mmol/l.

CGM Over 14mmol/L for 90 minutes

Blood Ketones 0.6 – 1.5mmol/L Child well and no vomiting/child unwell

Step 1: Drink sugar free fluids

Step 2: Correct high CGM and ketone level with a corrective insulin dose of 10% of total daily insulin, **BY INJECTION.** Contact the Diabetes Home Care team if you need help in calculating this.

Step 3: change cannula and infusion set, **put into manual mode for 4 hours**

Step 4: Check CGM in 90 minutes time – the alarm will go off if still above 14.0mmol/l. Repeat the steps as needed based on CGM and ketone level.

CGM Over 14mmol/L for 90 minutes

Blood Ketones over 1.5mmol/L and/or unwell/ vomiting

Step 1: Drink sugar free fluids

Step 2: Correct high CGM and ketone level with a corrective insulin dose of 20% of total daily insulin, **BY INJECTION.** Contact the Diabetes Home Care team if you need help in calculating this.

Step 3: change the cannula and infusion set, **put into manual mode for 3 hours**

Step 4: Check CGM in 90 minutes time – the alarm will go off if still above 14.0mmol/l. Repeat the steps as needed based on CGM and ketone level.

What do I do if I have a raised ketone level at or above 0.6mmol/l AND my blood glucose level is over 14mmol/l?

Step 1: You need to know your Total Daily Dose (TDD).

Add these two together:

1. Your background insulin (Lantus or Levemir) dose or your total daily basal insulin if on a pump.
2. All of your mealtime insulin (Novorapid or Humalog)

Example

On injections: Tom is 14 years old. He takes 34 units of Lantus. Yesterday he had 10 units of Novorapid insulin with breakfast, 7 with lunch, 3 with a snack and 12 units with his evening meal, this totals 22 units. Adding all of this together 34 + 22 gives 56 units TDD

On a pump: Go int o the pump History - Summary - Choose 14 days to find total daily dose (TDD). In our example 56 units.

Step 2

To work out how much extra insulin he needs, he needs to know his ketone level.

Between 0.6 – 1.5mmol/l 10% of his TDD: 56 x 0.1 = 5.6 units (closest to 5.5 units)

Higher than 1.5mmol/l 20% of his TDD: 56 x 0.2 = 11.2 (closest to 11 units)

Now work out your own TDD so you are prepared in case this happens to you...

Background insulin dose _____

Typical Breakfast dose _____

Typical Snack dose (if eaten) _____

Typical Lunchtime dose _____

Typical Snack dose (if eaten) _____

Typical Teatime dose _____

Typical Snack dose (if eaten) _____

Total daily dose (TDD) _____

10% of TDD: TDD x 0.1 = _____

20% of TDD: TDD x 0.2 = _____

Sick day rules

If your blood glucose is above 14mmol, or you feel unwell, remember to test for ketones.

If ketones are above 0.6mmol with high blood glucose, you generally need more insulin.

Use the high blood glucose flow chart but if you need help contact Diabetes Home Care on 0121 333 9272 in office hours or 0121 333 9999 out of hours and we will help you calculate your sickness dose.

If you are vomiting or have diarrhoea you need to check your blood glucose and ketones more often, typically every 1-2 hours.

You need to replace lost fluid by sipping water and/or fluid containing glucose regularly. Do not drink lots of fluid quickly as this can make you vomit again.

It is important to take on carbohydrate. Remember to **SIP** frequently from one of the following: Sports drinks, Lucozade, full sugar Coca cola, full sugar squash.

Remember also to drink plenty of sugar free fluids and check blood glucose/ketone levels regularly.

You need to try to eat carbohydrate when you are not well, useful carbohydrates to have if you cannot eat properly are: Soup, Toast, Boiled rice, Banana, Yoghurt, Milk, Ice cream, Jelly.

Session 2

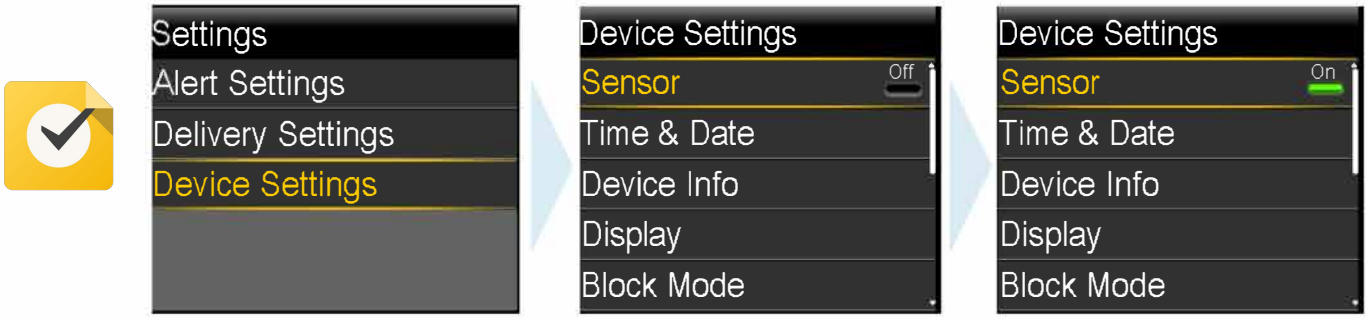
Aim of this session:
To successfully start Automated Insulin Delivery therapy

What we will work through:

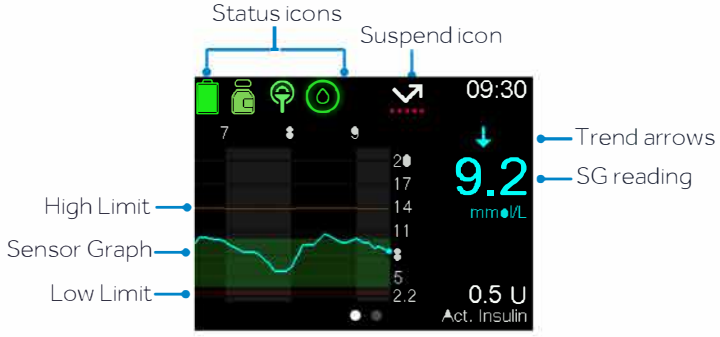
1. Linking the CGM to the pump
2. Starting SMARTGUARD
3. Accuracy of Continuous Glucose monitoring and when to calibrate
4. Treating and preventing low glucose levels (hypoglycaemia)
5. Managing high glucose levels (hyperglycaemia)
6. Sick day rules
7. Managing activity and exercise
8. Top tips for success
9. Training checklist
10. Ready for the next session

CONTINUOUS GLUCOSE MONITORING (CGM)

MiniMed™ 780G System — Settings Menu – Turn Sensor "ON"

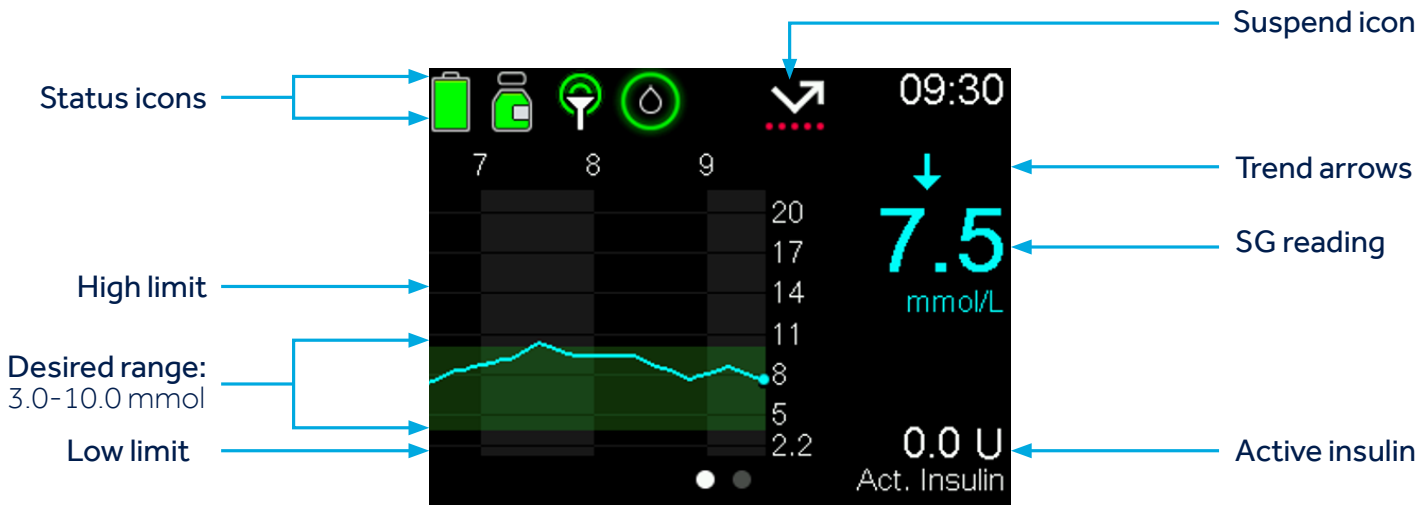


MiniMed™ 780G System — Home Screen with Sensor



↑ or ↓	SG has been rising or falling by at least 0.05 mmol/L but less than 0.11 mmol/L per minute
↑↑ or ↓↓	SG has been rising or falling by at least 0.11 mmol/L but less than 0.167 mmol/L per minute
↑↑↑ or ↓↓↓	SG has been rising or falling at least 0.167 mmol/L or more per minute

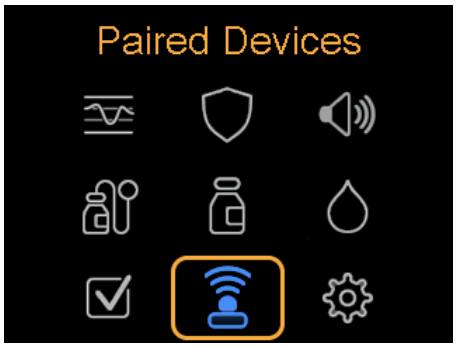
GET TO KNOW YOUR HOME SCREENS



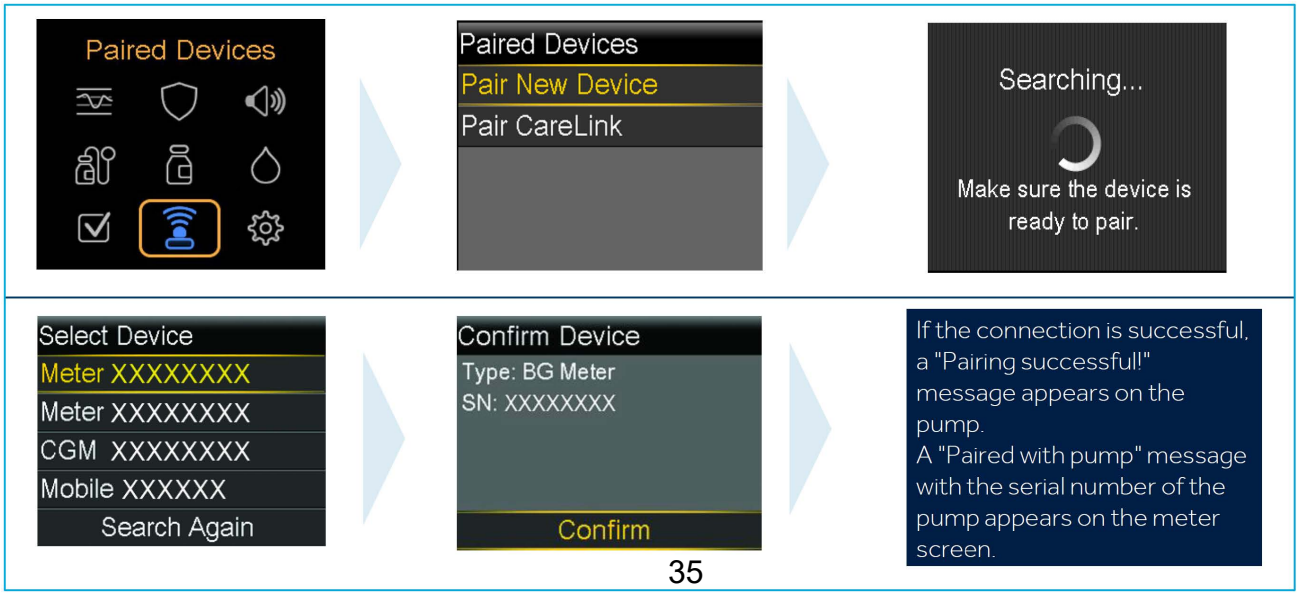
STEP 1

Let's check to make sure all devices are properly paired

Pair CGM transmitter



MiniMed™ 780G System — Paired Devices Menu



STEP 2

Let's insert the sensor

Watch the video and insert the sensor and connect the transmitter

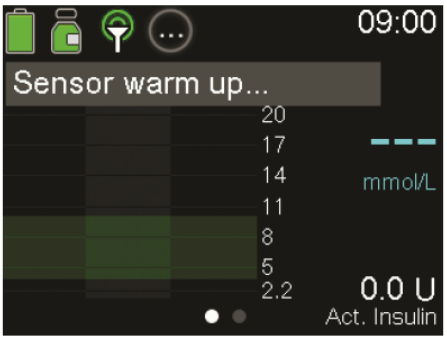
Starting the sensor

After the sensor is inserted and paired with the transmitter, the pump will display a Start New Sensor screen.

To start a new sensor:

1. Select **Start New Sensor** when it appears on the pump screen.

   The "Sensor warm up..." message appears.



Fixed warm up period of 2 hours and the sensor will automatically begin reading at the end of the warm up

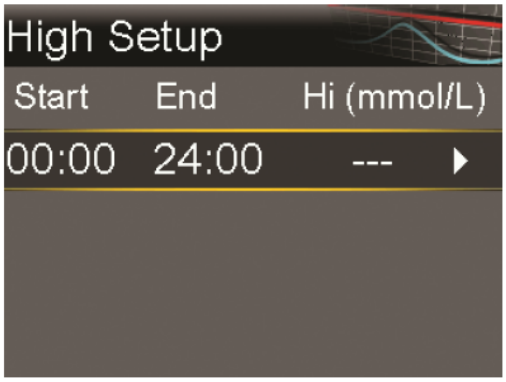
Setting up the High SG settings

For details about high SG settings, see *High SG settings, on page 103*.

To set up the high SG settings:

1. From the Home screen, press ◎, and then select ⚙.
2. Select **Alert Settings** > **High Alert**.

   The High Setup screen appears.



Set Alert on high at 14.0mmol/L

7. Set the following alerts, as desired:
   a. Select **Alert before high** to receive an alert before the high limit is reached.
   b. Set the **Time before high** option between 5 to 30 minutes to receive an alert before the high limit is reached.
   c. Select **Alert on high** to receive an alert when the high limit is reached.

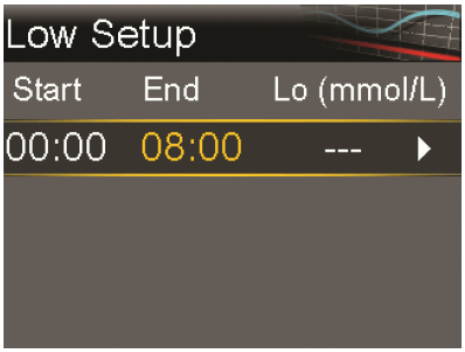
Setting up the low SG settings

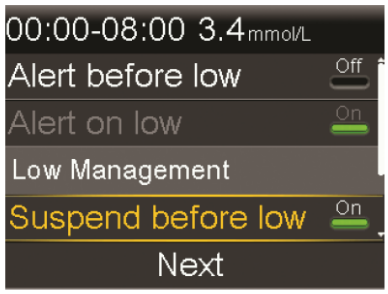
For information about the low SG settings, see *Low SG settings, on page 104*.

To set up the low SG settings:

1. From the Home screen, press ◎, and then select ⚙.
2. Select **Alert Settings** > **Low Alert**.

   The Low Setup screen appears.





Set Alert on low at 3.8mmol/L

7. Set the following alerts, as desired:
   a. Select **Suspend before low** to set the pump to suspend insulin delivery before the low limit is reached.
   b. Select **Alert before low** to receive an alert before the low limit is reached.
   c. Select **Suspend on low** to set the pump to suspend insulin delivery when SG reaches or falls below the low limit.
   d. Select **Alert on low** to receive an alert when SG reaches or falls below the low limit.
   e. Select **Resume basal alert** to receive an alert when basal insulin delivery resumes during a suspend event. When this alert is off, the Basal delivery resumed message still appears.

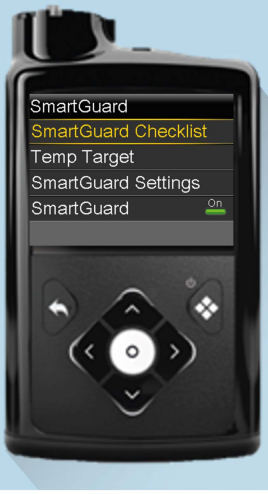
SMARTGUARD™ MENU
LET'S GET STARTED

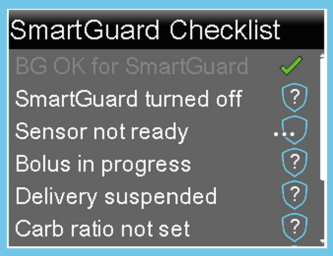
Set the Target according to Settings sheet

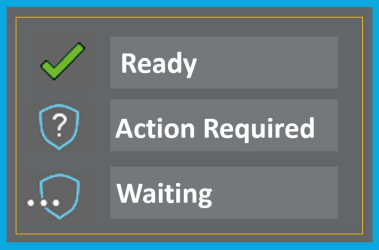
Go to the SmartGuard™ menu, scroll down and change to On

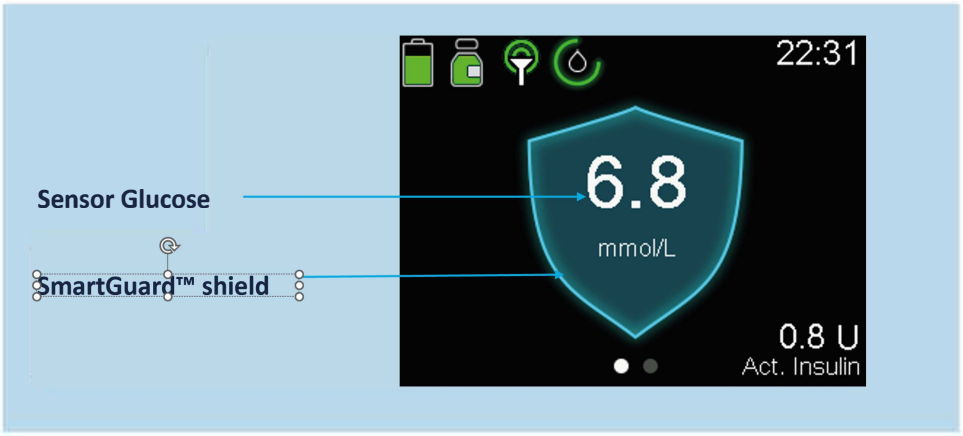
Go to SmartGuard™ settings, program & Save

SMARTGUARD™ MENU
REVIEW SMARTGUARD™ CHECKLIST









MiniMed™ 780G System | SmartGuard™ feature

SmartGuard™ Advanced Hybrid Closed Loop

SmartGuard™ technology
- Auto Basal (by SG)
- Auto Bolus (by SG)

- System requires at least 48 hours of insulin delivery data before the SmartGuard™ feature algorithm can be initiated
  - Timing begins at midnight

MiniMed™ 780G System | SmartGuard™ feature - How It Works

Auto Basal

- Basal insulin delivered every 5 mins, based on SG readings & recent insulin delivery needs
- Auto basal is designed to keep patient between 3.9 – 10.0 mmol/L to maximize Time in Range
- Manual Mode basal rates or Max Basal setting do not affect auto basal delivery

Auto basal adjustments are relatively small and not designed to correct errors in counting carbs or for a missed meal bolus

SmartGuard™ Target

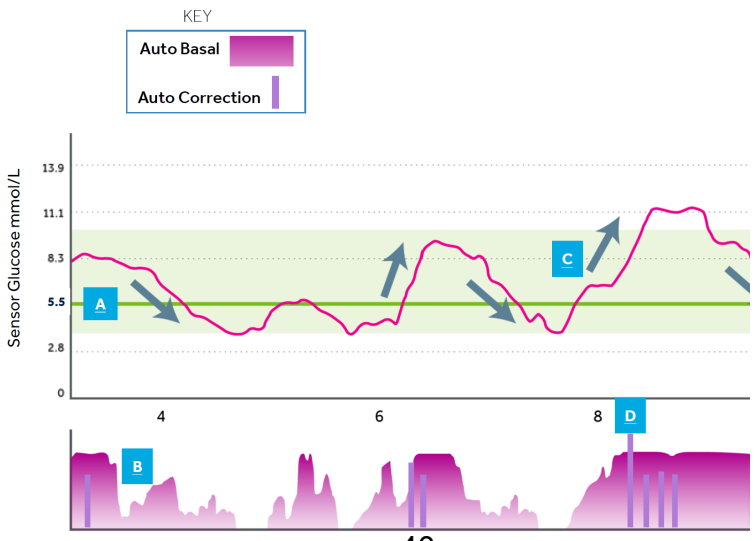
Options:
- 5.5 mmol/L (default)
- 6.1 mmol/L
- 6.7 mmol/L

Temp Target

- 8.3 mmol/L
- Available to use for exercise or any other time less insulin is desired.
- A Temp Target can be set for 30 minutes up to 24 hours

MiniMed™ 780G System | The SmartGuard™ feature - How It Works

Auto basal & auto correction bolus delivery



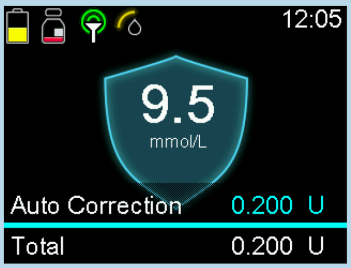
SUMMARY

- **A** Selection between the default setting of 5.5 mmol/L, and 6.1 mmol/L or 6.7 mmol/L.
- **B** Basal insulin adjusts every 5 mins based on SG values
- **C** The auto correction target is set at 6.7 mmol/L
- **D** Auto corrections delivered every 5 minutes if max basal reached and SG is above 6.7 mmol/L, as determined by the algorithm.
  NO automatic corrections if Temp Target is set.

Auto Correction

Bolus delivered automatically if algorithm determines it's needed.

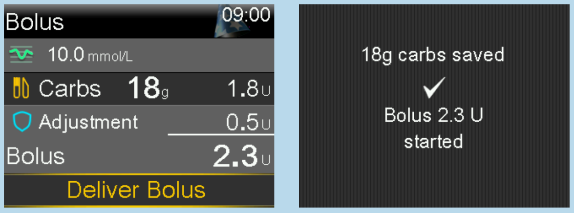
- System comes with Auto Correction set to ON
- Correction target set at 6.7 mmol/L
- Uses SG readings
- Can be delivered every 5 minutes
- Auto correction bolus occurs when:
  – maximum auto basal delivery is reached
  – SG is above 6.7 mmol/L
- Active insulin impacts auto corrections
- Auto correction boluses count toward Active Insulin Totals



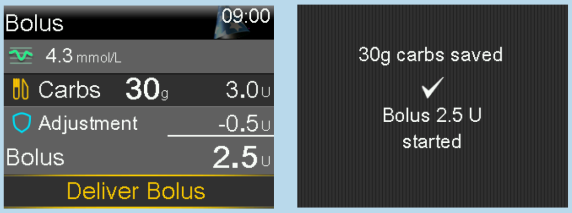
Auto correction will not be on when Temp Target is on

The SmartGuard™ feature calculates a bolus based on the current BG or SG reading and carbs.

- The bolus is adjusted higher if a correction bolus is calculated based on high glucose and low active insulin.
  - Correction bolus plus meal bolus

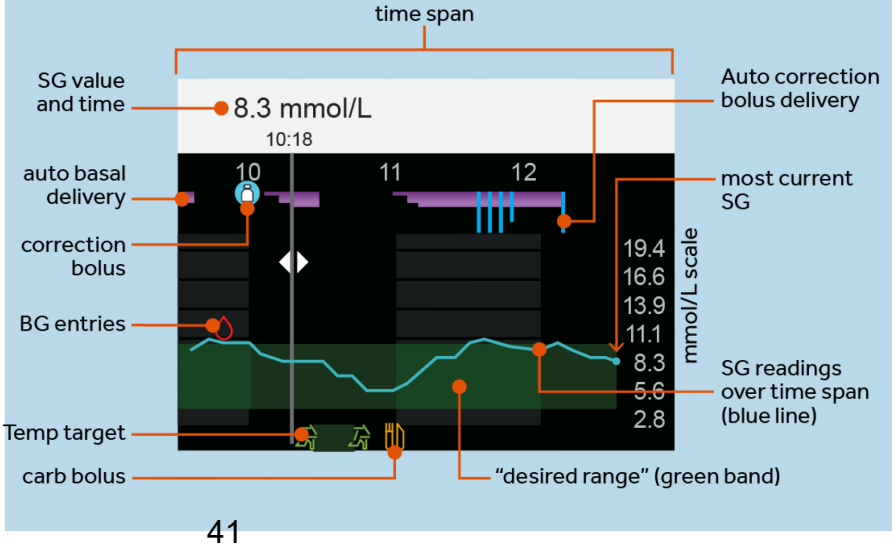


- The bolus is adjusted lower if the SmartGuard™ feature predicts a risk of hypoglycaemia after the meal.
  - Safe Meal Bolus: The meal bolus is reduced if a low is predicted



From Home screen or menu, press **diamond key** to view the sensor graph

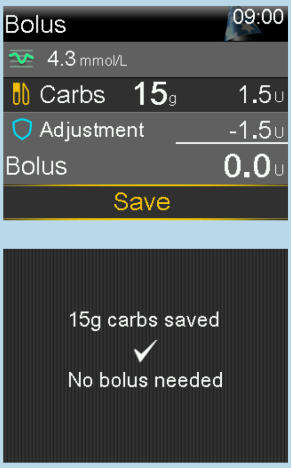
- Scroll backward on graph to view auto correction details
- Auto basal represented by horizontal lines showing relative amount



MiniMed™ 780G System — SmartGuard™ Feature - Bolus Adjustments

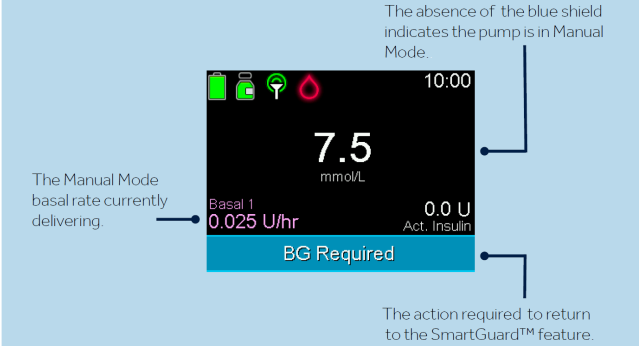
The SmartGuard™ feature calculates a bolus based on the current BG or SG reading and carbs.

- Safe Meal Bolus: The meal bolus can be reduced to zero if a low is predicted
- If the bolus is adjusted down to 0.0 for the bolus, no bolus is delivered
- Carbs are saved for future bolus adjustment calculations



MiniMed™ 780G System — What happens after the SmartGuard™ Exit

- The pump will exit SmartGuard™ feature if 4 hours pass without SG values, or if a BG for calibration or sensor verification has not been entered.
- The pump will indicate on the Home screen if an action is required to get back into the SmartGuard™ feature.
- Example: a BG entry or calibration is needed to return. Once the BG entered is used to verify or calibrate the sensor, the pump will automatically return to the SmartGuard™ feature within a few short moments.

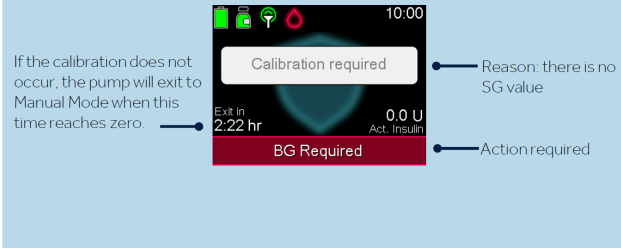


Suspend on low and Suspend before low will turn back on after a SmartGuard™ exit, if they were turned on Before entering the SmartGuard™ feature

MiniMed™ 780G System — Remaining in the SmartGuard™ feature

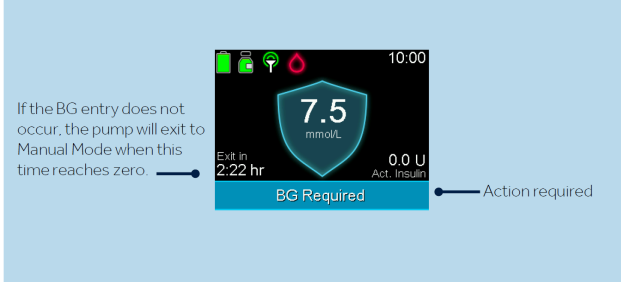
Calibration required

- If it's detected that a calibration is needed, even though SG values are available, the screen appears as shown.



BG entry is required

- SG values are available but a BG entry is requested by the algorithm.



Exit will also occur for the following reasons:

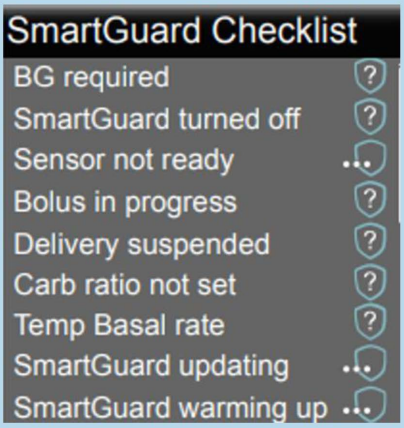
- The sensor option has been turned off
- Insulin delivery has been manually suspended for more than 4 hours

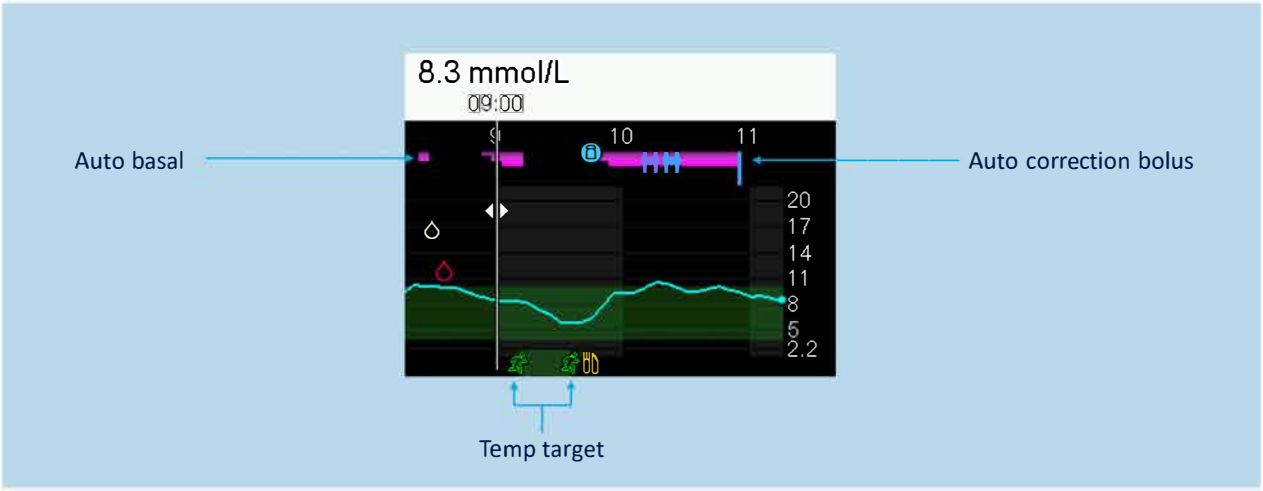
"Alarms" do not cause SmartGuard™ exits; however, some alerts do - i.e. calibrate, enter BG

Reasons an action may be needed to stay in SmartGuard™ feature

- A SG reading is not available because the calibration has expired or the transmitter and pump are not communicating (Lost sensor)
- The sensor might be reading lower than the actual glucose values (sensor underread)
- SmartGuard™ feature has been at the personal minimum auto basal delivery
- SmartGuard™ feature has been at the personal maximum auto basal delivery

Entering a BG usually returns system to the SmartGuard™ feature.



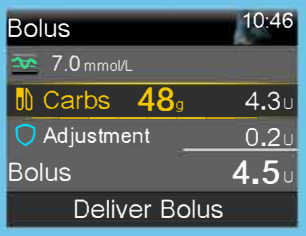


From the Home screen or the menu, press ✥ to view the sensor graph

SMARTGUARD™ TECHNOLOGY
BOLUSING

SHORTCUT

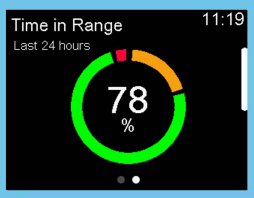
Press the **DOWN** arrow for shortcut to the Bolus™ feature

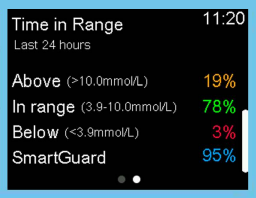


SMARTGUARD™ TECHNOLOGY
TIME IN RANGE (TIR)

SHORTCUT

Press the **RIGHT** arrow for shortcut to Time in Range





- Time in Range = percentage of time SG between 3.9-10 mmol/L
- See your data for the past 24 hours:
  - Time spent below, above and within TIR
  - Percentage of time in SmartGuard™ feature

SMARTGUARD™ TECHNOLOGY
TEMP TARGET

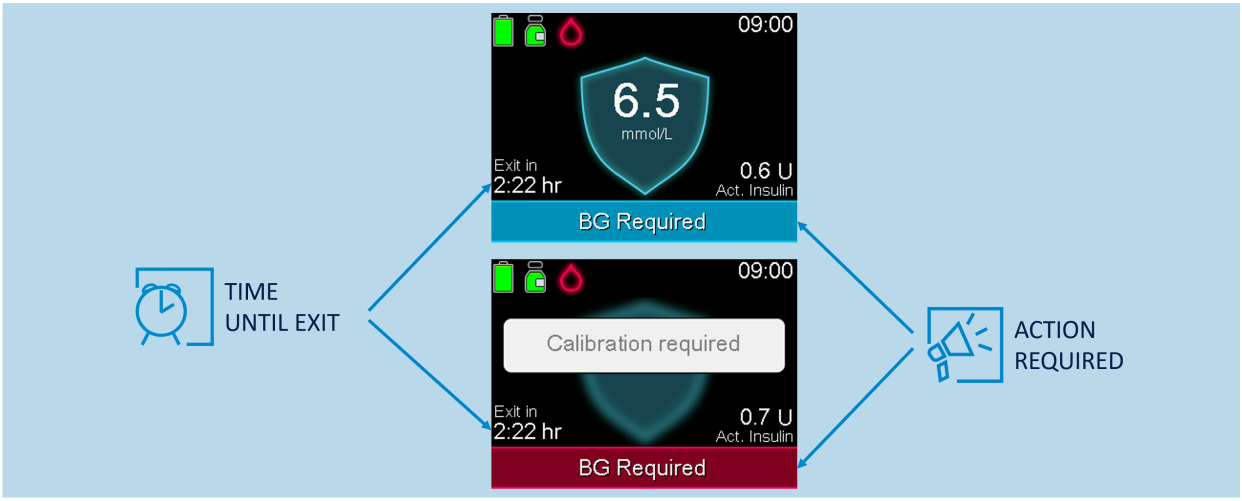
WHAT
A temporary fixed target of 8.3 mmol/L is available to use any time you may be concerned about hypos, such as when exercising

HOW
Set the duration of time for Temp target

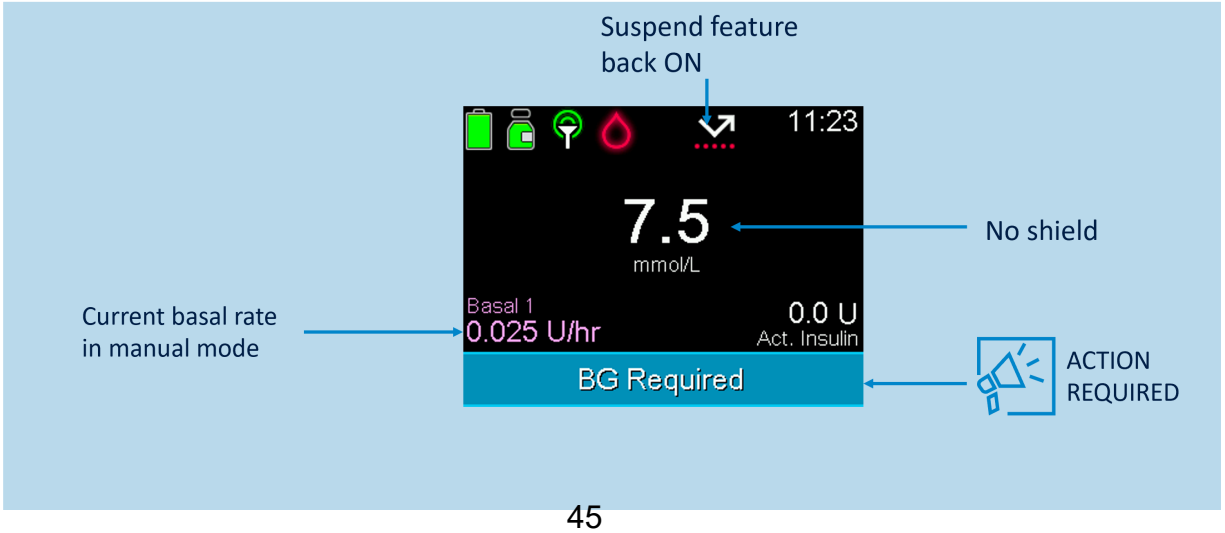
WHEN
Consider starting Temp target 1-2 hours before you begin exercising

When Temp target is set, Auto correction boluses are not delivered

SMARTGUARD™ TECHNOLOGY
STAYING IN THE SMARTGUARD™ FEATURE



SMARTGUARD™ TECHNOLOGY
WHAT HAPPENS WITH A SMARTGUARD™ EXIT



Accuracy of CGM

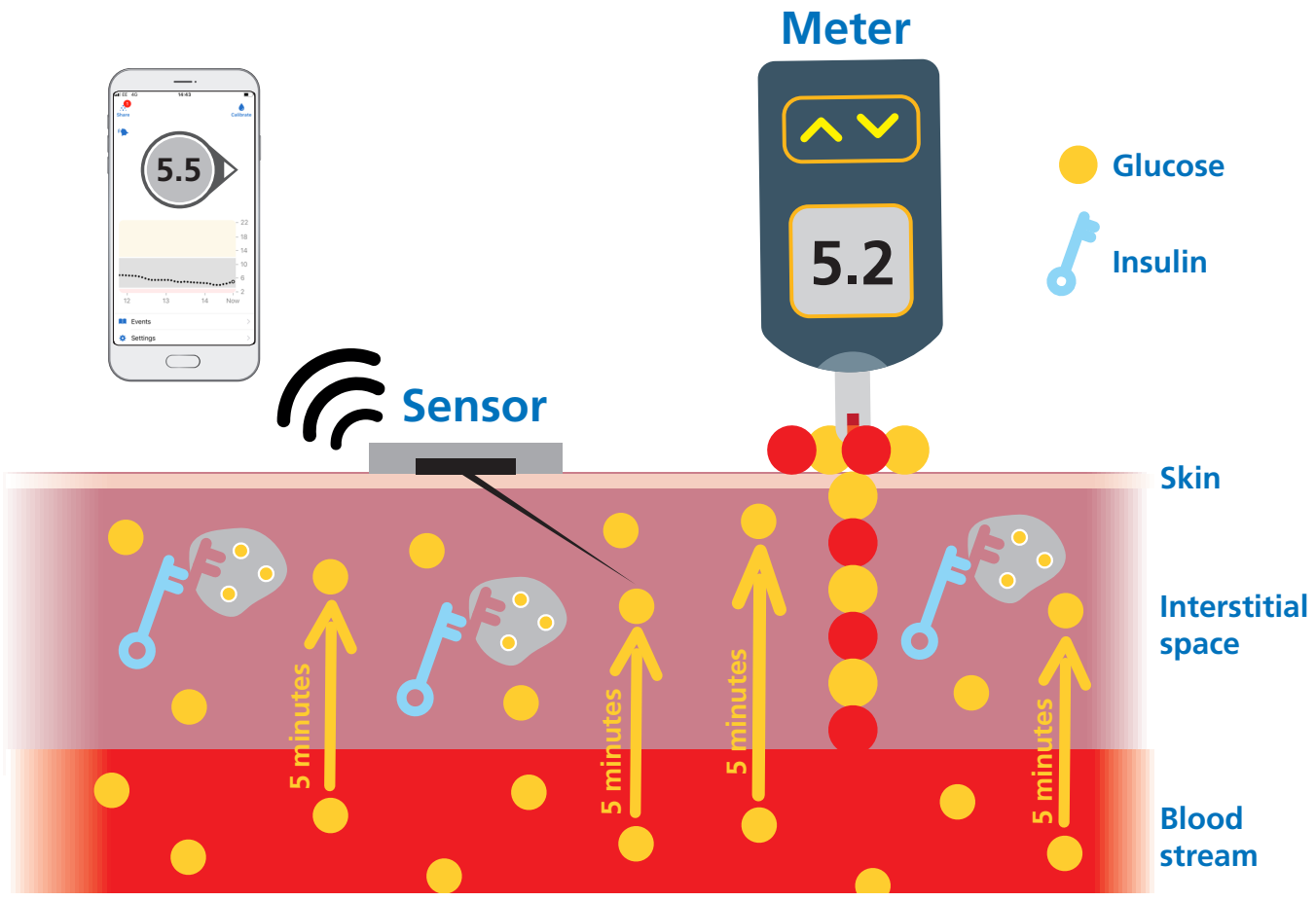
- The finger prick measures the glucose in the blood.
- The CGM measures the glucose in the fat tissue (interstitial space).
- The CGM reading will be 5 minutes behind the blood glucose.
- The CGM reading and blood glucose reading will never be the exactly the same.
- The usual difference depends on the CGM level:

  The below table shows what the usual difference is 90% of the time. Occasionally the difference will be larger, but this should only be less than 10% of the time.

  If the sensor is more than 20% different to the blood glucose, **you may need to calibrate the sensor**

CGM	Blood glucose	Accuracy
3.5mmol/l	3.0 - 4.0mmol/l	usually within 0.5mmol/l
7.0mmol/l	5.5 - 8.5mmol/l	usually within 1.5mmol/l
10.0mmol/l	8.0 - 12.0mmol/l	usually within 2.0mmol/l
15.0mmol/l	12.0 - 18.0mmol/l	usually within 3.0mmol/l
20.0mmol/l	16.0 - 24.0mmol/l	usually within 4.0mmol/l
This level of accuracy is good enough to replace the need to do blood glucose readings		

Sensors and meters measure glucose in different places



What do the trend arrows mean?

- The CGM device will tell you how fast the glucose is moving by trend arrows
- The trend arrows allow you to predict where the glucose will be in 10 minutes
- You can use the trend arrows to:
    - Predict and prevent hypos.
    - Change carbohydrate amounts for exercise.
    - Give peace of mind that no highs are lows are coming up.
    - Decide when to give meal-time insulin.
    - And much more.

Trend arrow	Description	Where the glucose will be in 10 minutes
↑↑↑	**Rapidly rising**	**more than 2.0mmol/l higher**
↑↑	**Rising**	**1.5mmol/l higher**
↑	**Slowly rising**	**1mmol/l higher**
	Stable	**Same**
↓	**Slowly falling**	**1 mmol/l lower**
↓↓	**Falling**	**1.5 mmol/l lower**
↓↓↓	**Rapidly falling**	**more than 2.0mmol/l lower**

Top Tips for accurate CGM readings

- Place the sensor on a clean and dry area where there is enough fat to prevent inserting into the muscle.
- Avoid using an area that gets banged a lot e.g. side of arm on door frames.
- Avoid using an area you sleep on e.g. back of buttocks if back sleeper, or right arm if a right side sleeper
- The sensor is taped down if required
- Calibrate if more than 20% different from blood glucose, BUT
    - Make sure the blood glucose test was obtained using a meter that s accurate
    - Hands were clean and dry
    - The arrows on the CGM are steady on only slowly rising or falling
    - Consider a second blood glucose test just to be sure there is more than a 20% difference

Activity and exercise management

Children and adolescents should do:

- 60 min per day of activity equivalent to fast walking
- 3 days a week of activities that strengthen the muscles and bones e.g., sports and PE.
- Limit screen time to two hours per day

This table guides how to make insulin and carbohydrate adjustments for activities and exercise.

Start by using the **"Starting plan"** suggestions in grey for before, during and after exercise

Adapt the plan if the glucose level goes less than 5.0mmol/L or above 15.0mmol/L during or after exercise, using the chart below for activity and exercise management

		Before activity & exercise		During	After activity & exercise	
		Mealtime insulin	**Temp target**	**Carbohydrate**	**Temp target**	**After exercise meal insulin**
	Plan execution	**If meal is consumed within 2 hours** of exercise, adjust amount of carbohydrate entered into the bolus calculator	Ideally start Activity target **90-120 minutes before** exercise BUT start just before if 90-120 mins is not possible	Consume quickly absorbed carbohydrate based on sensor value and trend arrow every 20-30 minutes		
	>15.0mmol/L using starting plan	100% of carbohydrate eaten	Off	**Follow carbohydrate suggested on the chart and only have enough for 20-30 minutes to avoid sending the glucose too high**	Off	100% of carbohydrate eaten
	Starting plan	**75% of carbohydrate eaten**	**On**		**Off**	**75% of carbohydrate eaten**
	<5.0mmol/L using starting plan	50% of carbohydrate eaten	On		On for 6 hours	50% of carbohydrate eaten

How to work out 75% of carbs to be eaten? carbs x 0.75 e.g. 50g x 0.75 = 40g

How to work out 50% of carbs to be eaten? carbs x 0.5 e.g. 50g x 0.5 = 25g

Please remember to suspend the pump if taking off for to exercise, such as swimming or contact sports. Furthermore, resume the pump and re-attach on completion.

Contact the Diabetes Dietitians if planning exercise this way does not work for you. We will be able to create more individualised plans to meet the needs of any sports or activities.

Activity Carbohydrate Guide for MiniMed 780G

1. Start **Temp Target** before activity, ideally 90 minutes before, and set for the duration of the activity
2. Check glucose just before and every 20-30 minutes during exercise and follow the chart below

Sensor glucose Levels	Rate of glocose change trend arrow & action to take	Carbohydrate needed for 20-30 minutes (g)	Lucozade	Glucotab (4g)
less than 4.0 mmol/l	No exercise: Treat hypoglycaemia			
4.0 - 6.4 mmol/l	↓↓↓	10	111	3
	↓↓	8	89	2
	↓	7	72	2
		5	56	1
	↑	4	39	1
	↑↑	2	22	1
	↑↑↑			
6.5 - 9.9 mmol/l	↓↓↓	8	89	2
	↓↓	7	72	2
	↓	5	56	1
		4	39	1
	↑	2	22	1
10.0 - 13.9 mmol/l	Ok to exercise with any arrow			
>14.0mmol/l	Check ketones: If less than 0.6mmol/l	Ok to exercise		
	Chck ketones: If 0.6mmol/l or above	No exercise until the ketones have been corrected and are less than 0.6mmol/l		

Questions

Use the **survive and thrive guide** to answer these questions

- On waking the glucose is 16.0 and has been for 4 hours and ketones are 0.2, what should you do?
- Breakfast is at 09:00 and after breakfast at 10:00 the glucose is 15.2, with ketones 0.1 what should you do?
  - Then the Glucose at 12:00 is 22.2 with ketones 0.3, what should you do?
- Glucose at 14:00 is 16.5 with ketones of 0.9, what should you do?
- Glucose at 17:00 is 17.5 with ketones of 2.4, what should you do?
- Ketones are 2.4 and you need advice from the diabetes nurses and its 7pm:
  - How do you contact the nurses?
- If a sensor does not last the full life what should you do?
- If there is an issue with the pump who should you contact?
- Do you need to take background insulin whilst using the pump?

Homework

- [ ] Make sure you have made a note of all the education session dates and times.
- [ ] Set up MiniMed Mobile APP and make sure "Sync to Carelink" is turned "On"
- [ ] See how you can select "Upload Now" in the "Sync to Carelink" in the up CareLink Connect APP
- [ ]
  - Work through the **Thrive guide** and watch all the videos
  - Put the Thrive guide on your fridge
  - Keep a PDF Copy in your phone with the video links

- [ ]
  - **Before next session**
  - Make sure data is uploaded via the MiniMed Mobile APP
  - Watch the videos from Survive Guide when changing insulin and sensor

Session 3 & 4

Aim of this session:
To successfully review progress and update sesstings

What we will work through:

1. Reviewing control with download reports
2. Setting a Time in Range target
3. Making changes to settings
4. Check following top tips
5. Changes to lifestyle
6. Using GAME SET MATCH
7. Mealtime Insulin Guide

1 REVIEW THERAPY GOALS

Assessment & Progress Report

REVIEW THERAPY GOALS:

Time in Ranges[1]	mmol/L	Goal
Time Above	13.9	<5%
Time Above	10.0	<25%
Time In Range (TIR)	3.9 - 10	>70%
Time Below	3.9	<4%
Time Below	3.0	<1%

HbA1c Goal[2]:

ADULTS: **<7%** (<53 mmol/mol)

PAEDS: **<7.5%** (<58 mmol/mol)

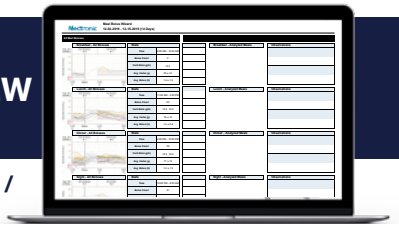
Coefficient of variation (CV)[3] GOAL: **<36%**

SmartGuard™ use	Calibrations/day	Sensor usage[4]
≥85%	2-3	≥85%

- Time in Ranges are international consensus goals[1]
- Personalised patient goals may be different
- Action may not be required if personalised goals are met - consider as well the level of diabetes control before starting with the MiniMed™ 780G system.

2 IF GOALS ARE NOT MET REVIEW THERAPY

Meal Bolus Wizard & Weekly / Daily Review Report



REVIEW AUTO BASAL TARGET & AIT

- Is Auto basal target set to 5.5 mmol/L? AIT set to 2-3 h?
- If no, are higher settings warranted?

TIME ABOVE RANGE IS HIGH

- Bolus timing: pre-meal glucose rise -> consider earlier timing of bolus
- Boluses omitted?
- Insulin to carb ratio: 2-hour post-prandial glucose is >10.0 mmol/L and bolus timing is appropriate -> consider strengthening ICR (e.g. change ICR from 10 to 9 g/U)

TIME BELOW RANGE IS HIGH

- Bolus timing?
- Overestimation of carbs (avg carbs/meals are listed)?
- ICR: Smaller meal bolus may be needed (e.g. change ICR from 9 to 10 g/U)
- Persistent lows without a bolus: consider higher target
- Persistent lows after Auto correction boluses: consider lengthen AIT (e.g. change from 2.0 to 2.5 hours)
- Exercise: temp target used?
- Low during sleep? Smaller meal/ snack bolus may be needed prior to bed or program higher target or even temp target

Consistent highs or lows post-meal
- Adjust carb ratio down or up by 10-20% respectively

Inconsistent highs or lows post-meal
- Discuss and assess carb counting skills and consider bolus timing

SmartGuard™ use	Calibrations/day	Sensor usage[4]
<85%	<2	<85%
Educate on sensor wear (primary issue); Ensure calibrations occur at least every 12h, preferably before bedtime	Ensure calibrations occur at least every 12 hours; Explore calibration timing	Educate on sensor use and care; explore reasons for underuse

3 UPDATE MANUAL MODE SETTINGS

Device Settings Report / Assessment & Progress Report

BEST PRACTICE

- Evaluate Manual mode settings 1–2 weeks after starting SmartGuard™ feature & at every office visit
- Adjust settings to mirror SmartGuard™ settings

RECOMMENDATIONS

- **Adjust BG Target**: 5.5 – 6.7 mmol/L to match how the SmartGuard™ algorithm is working
- **Adjust ISF** 100 Rule: 100 ÷ Current Total Daily Dose (TDD)
- **Basal Rates:** Ensure Manual mode 24-hr. basal total < 50% of total daily dose (TDD) – check Statistics section Assessment & Progress Report and compare with Manual mode basal rate on Device Settings Report
- **Suspend before low 'ON'**

- After each intervention, allow system time to adapt before making further adjustments. Generally 2 weeks unless issue with hypoglycaemia exists
- Consider changing only one or two settings or behaviours at the same time
- **In general:** The system needs time to adapt and it might need a few days, but maybe also several weeks

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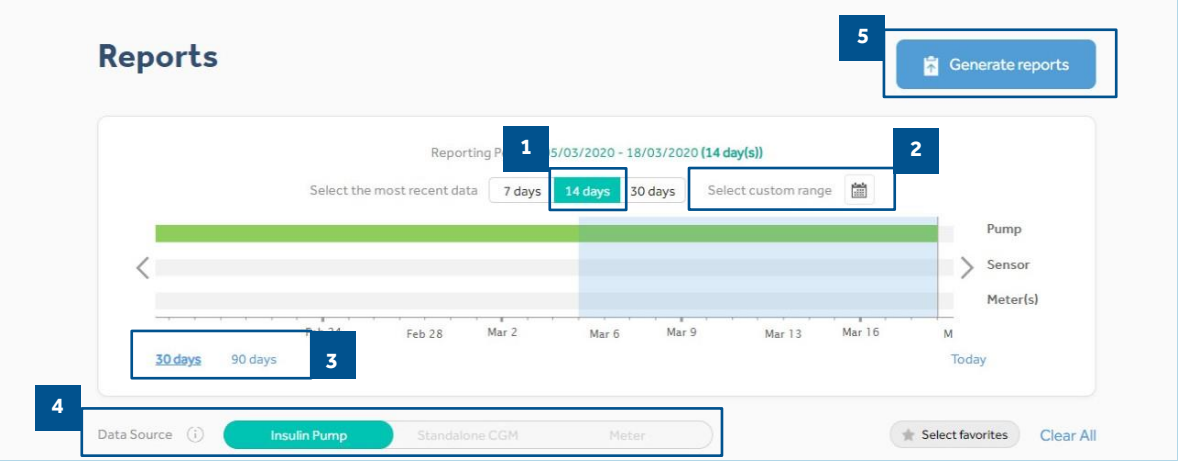
GENERATING
YOUR REPORTS

Generating reports to manage your diabetes is made simple and accessible with CareLink™ Personal software.



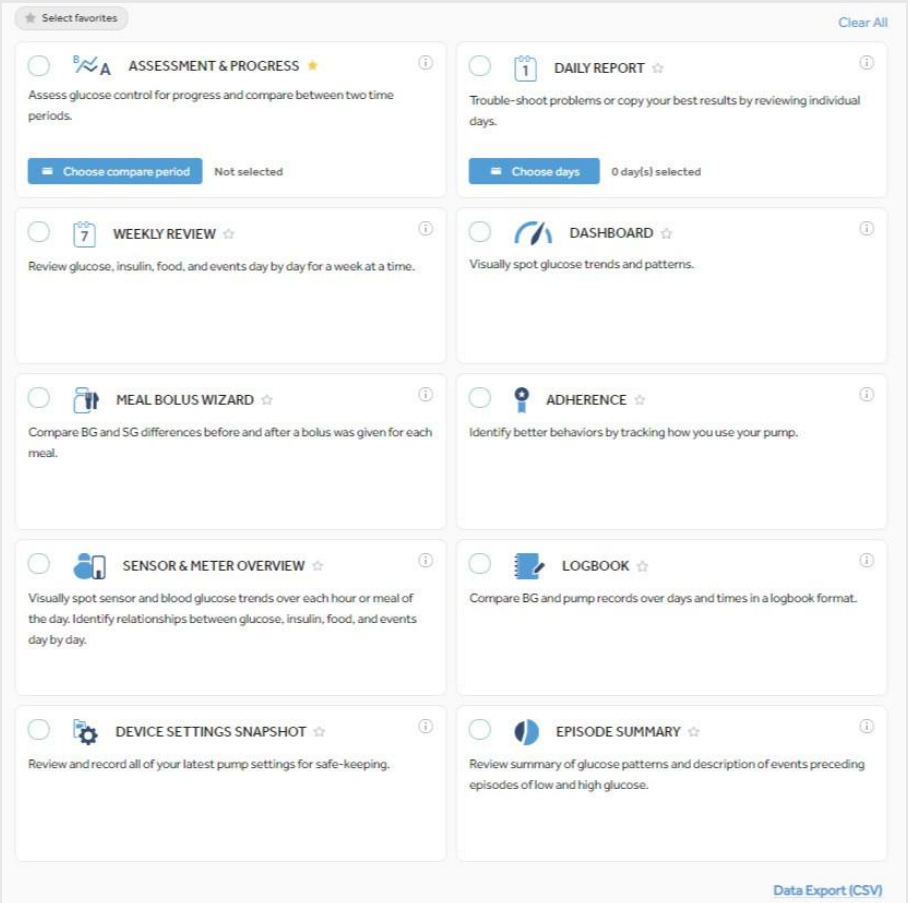
1 Time selection. How many days to look back.

2 Set custom date range.

3 Switch between 30 days and 90 days view.

4 To see which reports you can generate with your device data, please select here. Unavailable reports will be grayed out.

5 Click to generate reports. Popup will be shown.



To generate your reports click on the circles in the top left of the boxes to select the reports you wish to see.

When you know which are your favourites, click the star next to the report name and then you can click "Select Favourites" in the top left to automatically select all starred reports.

READING YOUR GENERATED REPORTS

HOW DO I READ MY REPORTS?

Reading and understanding the CareLink™ software reports is an important aspect of managing your diabetes and improving your ability to make neccessary adjustments. The following reports are explained in detail, providing you with personalised insights to empower your diabetes therapy decisions.

Page 13 - ASSESSMENT & PROGRESS REPORT - Video Guide Here
This report is a one stop shop for any MiniMed™ 780G system users. You can view your sensor trace with time in range and compare it to how you have in done in the past. You will also be able to see how long you stayed in the SmartGuard™ feature, the reasons you exited SmartGuard™ and how often you changed your infusion set and reservoir.

Page 14 - WEEKLY REVIEW REPORT - Video Guide Here
This report generates data from your selected date range. It shows your sensor, insulin delivery and events information. 7 days are displayed on each page to easily assess any trends and patterns over the week period.

Page 15 - DAILY REVIEW REPORT
This report can help you by showing your selected days in much more detail. It can be used to see when you have had SmartGuard™ exits so that you can identify any patterns and minimise your time in Manual Mode.

Page 16 - MEAL BOLUS WIZARD REPORT - Video Guide Here
This report is designed to help you understand how your meals and carbohydrate intake can impact your time in range and overall glycaemic control. To effectively make use of this report, it is important that your preferences for meal times have been set correctly. Please see the preferences section if you have not done so.

Page 17 - LOG BOOK REPORT
This report shows information on carbohydrate intake, bolus information and blood glucose levels day by day and hour by hour. It is in a table instead of a graph if this is how you prefer your information.

Page 18 - ADHERENCE REPORT
This report is a quick information table for you to assess your sensor wear, blood glucose monitoring, bolus details and set change information. It can be used to see if you have any behavioral patterns that could be changed.

ASSESSMENT & PROGRESS REPORT

Medtronic CareLink™ Personal software

Representative patient profile

1 These are you selected data date ranges. Data A (blue) is the your most recent selected date range i.e. the past 2 weeks. Data B (orange) is your previous data range to make comparison easy.

2 This graph represents all of your sensor readings over 24hrs (midnight to midnight). The darker solid areas represent where most of your SG (sensor glucose) reading fell during this period. The coloured dotted line represents your high and low variability in this time period. A narrower band would indicate less variability.

3 The dark dotted line represents your average SG levels for data A only.

4 This is your time in range (TIR) data between 3.9 -10 mmol/L (70-180 for mg/dl). You can easily compare this information between columns A and B to easily track any changes.

NOTES

5 This section explains how many times you have exited the SmartGuard™ feature and the reasons for those exits.

6 These figures show how long you spent in the SmartGuard™ feature. You can also review your number of high and low alarms. Your glucose management indicator (GMI) may be similar to your laboratory HbA1c but it is an approximate so could be slightly different.

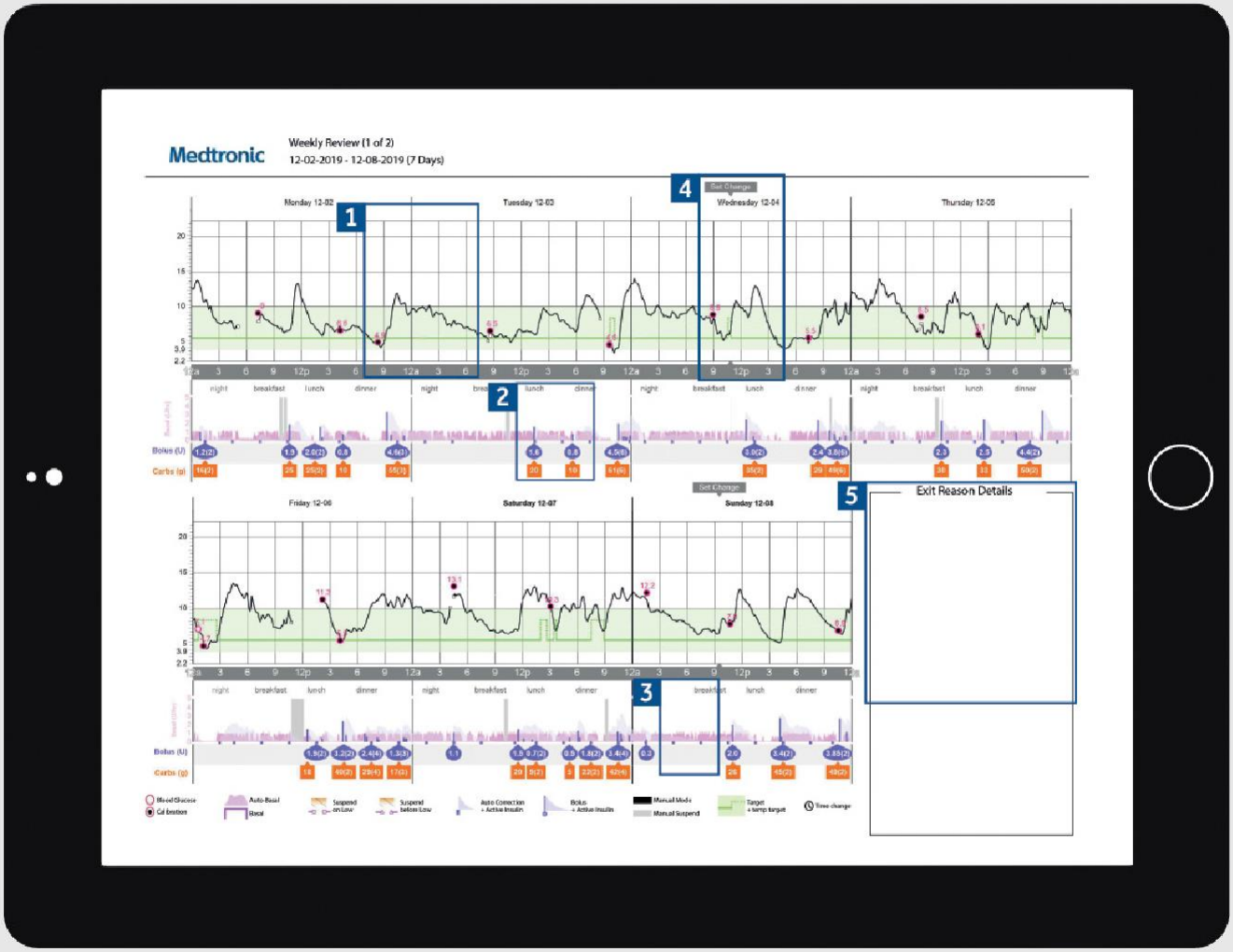
7 This is your daily average blood glucose and calibration data.

8 This is your insulin use data. How much you are using altogether, how much is basal and how much is bolus. You can also check how much Auto Correction insulin you are getting and how often you have been changing your infusion set and reservoir.

9 This section covers your meals. You can review how many meals and carbohydrates you are eating on average per day.

WEEKLY REVIEW REPORT

Medtronic CareLink™ Personal software



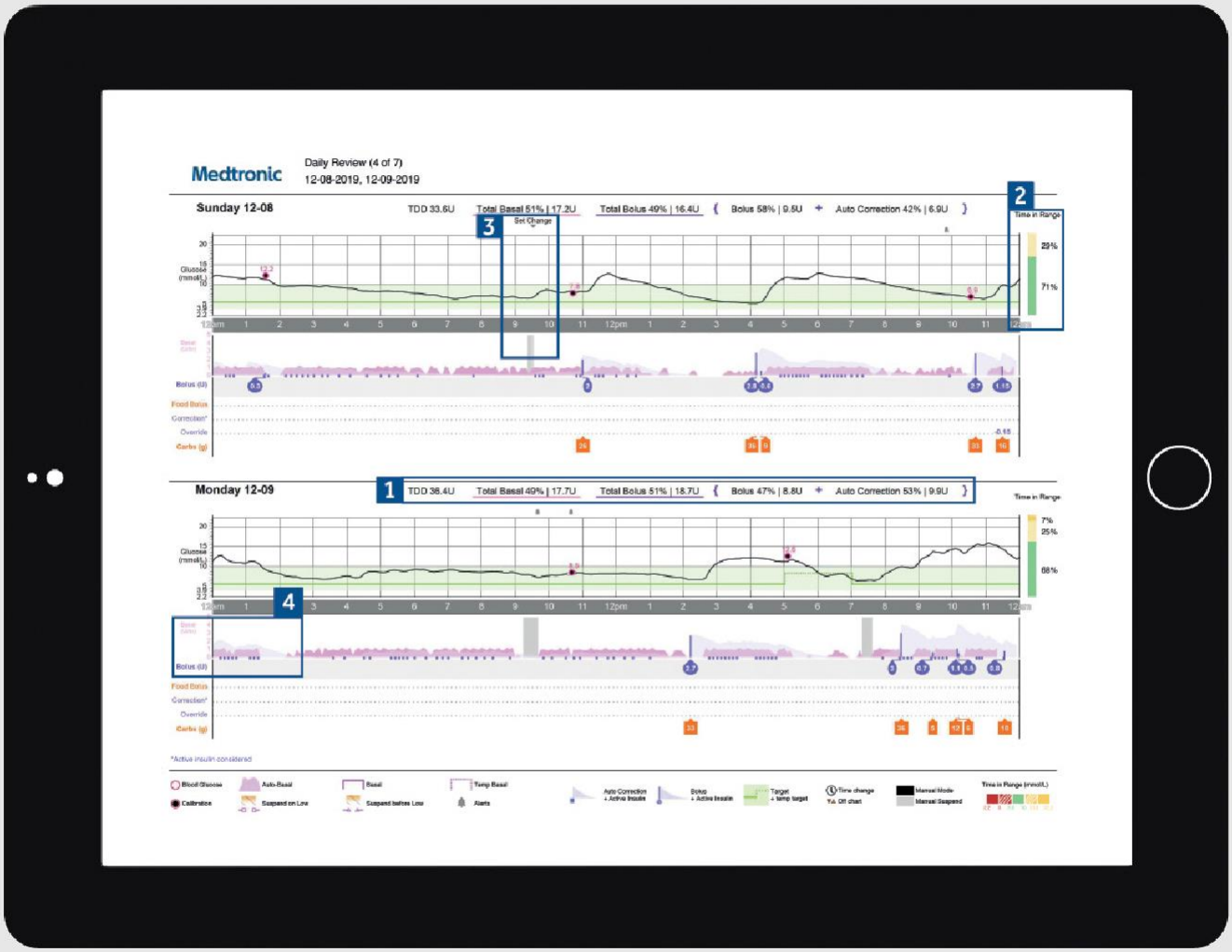
Representative patient profile

1. The solid black line is your sensor trace and the small circles represent blood glucose (BG) values entered. Each BG entered and confirmed is used as a calibration.
2. This area represents your insulin delivery. The pink shading represents your Auto Basal delivery. If you deliver a manual bolus, insulin is in a purple drop and carbohydrate in a orange box
3. The purple notch shows when your pump has delivered an Auto Correction bolus in SmartGuard™ feature.
4. This report will also show you when you changed your infusion set.
5. If your MiniMed™ 780G system exits SmartGuard™ then the reasons for exit will be listed here. On your sensor trace you will see these exits as numbered black boxes.

NOTES

DAILY REVIEW REPORT

Medtronic CareLink™ Personal software



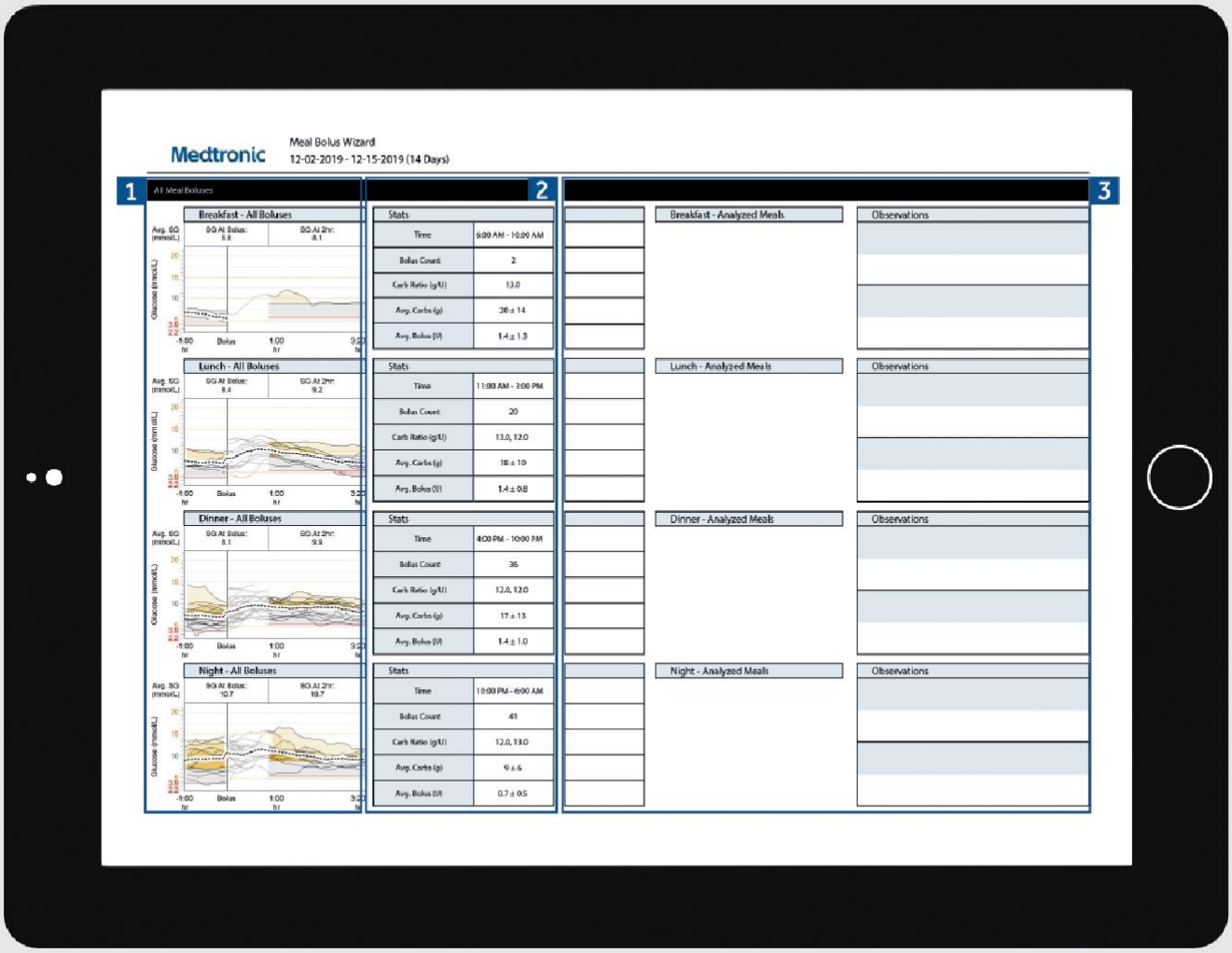
Representative patient profile

1. The total insulin delivery for the day and the split between basal and bolus.
2. Time in range data for that particular day.
3. An example of a set change – your pump suspends insulin delivery while you change your infusion set and reservoir. TIP: We recommend changing your infusion set and reservoir every 2-3 days.
4. The purple notches represent where SmartGuard™ is delivering Auto Correction bolus' to help keep you in range.

NOTES

MEAL BOLUS WIZARD REPORT

Medtronic CareLink™ Personal software



Representative patient profile

1 All meals for the selected time frame will be displayed in each meal section. For example, if breakfast is set for 06:00 to 08:00, all boluses between these two times will have data displayed in the breakfast section.
TIP: Make sure your times are set wide enough to accommodate different meal times at weekends.

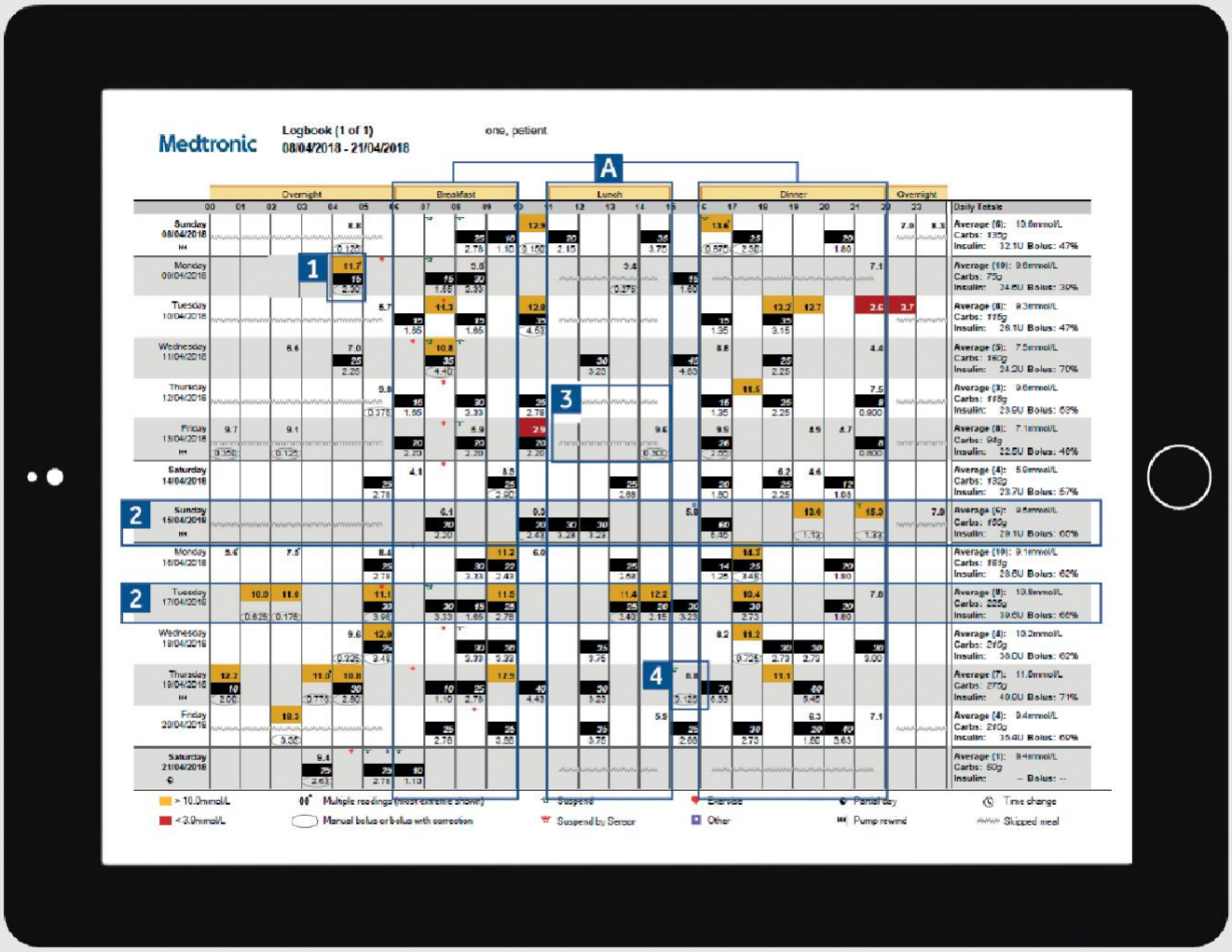
2 Stats show your carbohydrate ratio for easy review and how many boluses you are taking. You can also see what your current meal time preferences are.

3 This section of the report is left blank so if you print your report, you have somewhere to take notes.

NOTES

LOG BOOK REPORT

Medtronic CareLink™ Personal software



Representative patient profile

1 Each bolus event corresponds to the time and date taken and contains blood glucose information (red if low, no colour if in range and orange if above range), carbohydrate entered (in black) and insulin delivered.

2 These examples allow you to view sudden increases/ decreases in carbohydrate intake to help identify any patterns.

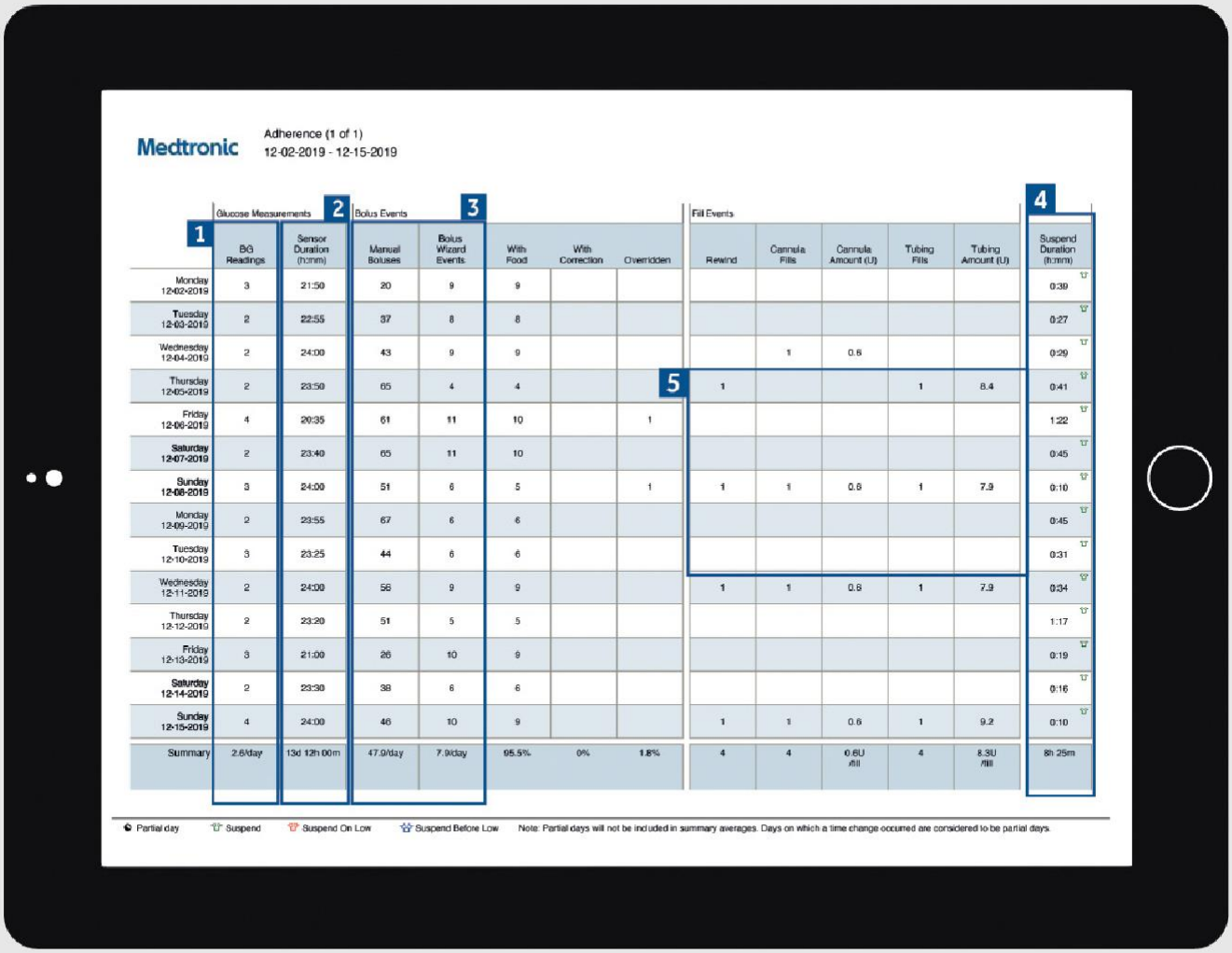
3 This shows a meal time has been set (highlight A) but no meal bolus was given. The report counts this as a missed meal and puts in a zigzag line.

4 Shows an example of a bolus with no carbohydrates. This could be a correction or a manual bolus.

NOTES

ADHERENCE REPORT

Medtronic CareLink™ Personal software



Medtronic

Adherence (1 of 1)
12-02-2019 - 12-15-2019

	Glucose Measurements (1)		Bolus Events (2)	(3)				Fill Events (5)					(4)
	BG Readings	Sensor Duration (h:mm)	Manual Boluses	Bolus Wizard Events	With Food	With Correction	Overridden	Rewind	Cannula Fills	Cannula Amount (U)	Tubing Fills	Tubing Amount (U)	Suspend Duration (h:mm)
Monday 12-02-2019	3	21:50	20	9	9								0:39
Tuesday 12-03-2019	2	22:55	37	8	8								0:27
Wednesday 12-04-2019	2	24:00	43	9	9				1	0.6			0:29
Thursday 12-05-2019	2	23:50	65	4	4			1			1	8.4	0:41
Friday 12-06-2019	4	20:35	61	11	10		1						1:22
Saturday 12-07-2019	2	23:40	65	11	10								0:45
Sunday 12-08-2019	3	24:00	51	6	5		1	1	1	0.8	1	7.9	0:10
Monday 12-09-2019	2	23:55	67	6	6								0:45
Tuesday 12-10-2019	3	23:25	44	6	6								0:31
Wednesday 12-11-2019	2	24:00	58	9	9			1	1	0.8	1	7.9	0:34
Thursday 12-12-2019	2	23:20	51	5	5								1:17
Friday 12-13-2019	3	21:00	26	10	9								0:19
Saturday 12-14-2019	2	23:30	38	6	6								0:16
Sunday 12-15-2019	4	24:00	46	10	9			1	1	0.6	1	9.2	0:10
Summary	2.6/day	13d 12h 00m	47.9/day	7.9/day	95.5%	0%	1.8%	4	4	0.6U /fill	4	8.3U /fill	8h 25m

Partial day · Suspend · Suspend On Low · Suspend Before Low · Note: Partial days will not be included in summary averages. Days on which a time change occurred are considered to be partial days.

Representative patient profile

1 This lists how many blood glucose checks you have done each day with an average over the whole time selection at the bottom per day.

2 This column shows what duration per day you have worn a sensor, with a total time at the bottom. If you have not worn a sensor, this field will be blank.

3 These columns show how many manual and how many Bolus Wizard Bolus' you have given. Your Auto Correction boluses are included in the Manual Bolus numbers.

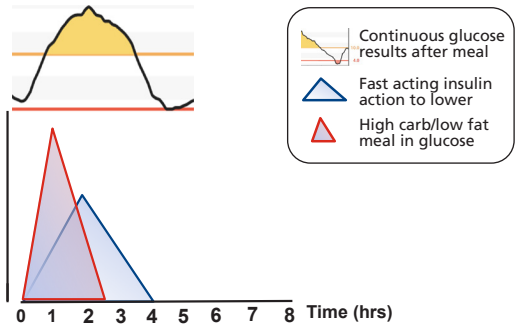
4 This column shows how long per day your pump was in suspend and the coloured symbols denote what kind of suspend it was.There is a key at the bottom of the report to explain the symbols.

5 These columns show details on when the pump registered reservoir rewinds and cannula fills. You should be aiming to change your infusion set and reservoir every 2-3 days.

NOTES

Mealtime Insulin Guide

High carbohydrate meal with low fat



Meal is almost all carbohydrate

Breakfasts:
- Cereal with light milk
- Toast and jam or honey
- Fruit bread

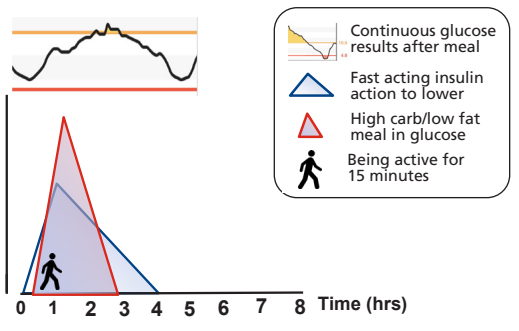
Meals:
- Jacket potato & beans
- Super noodles
- Waffles & hoops

Snacks:
- Cereal bars
- Biscuits
- Rice crackers

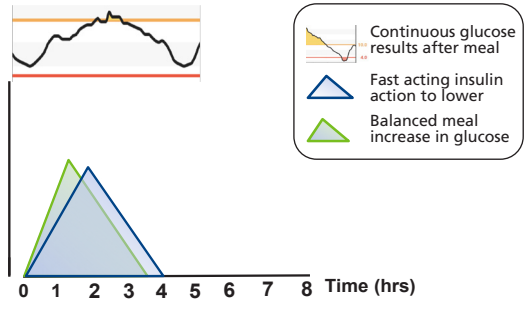
How to keep the glucose in target?

1. Count carbs accurately
2. Choose wholefood carbohydrate
3. Add some vegetables
4. Normal bolus 20 minutes before eating
5. Do 15 minutes activity after eating

High carbohydrate meal with low fat



Balanced meal



Meal is balanced

Breakfasts:
- Porridge with semi or full milk & nuts
- Egg or fish on toast with mushrooms
- Cheese on toast with tomatoes

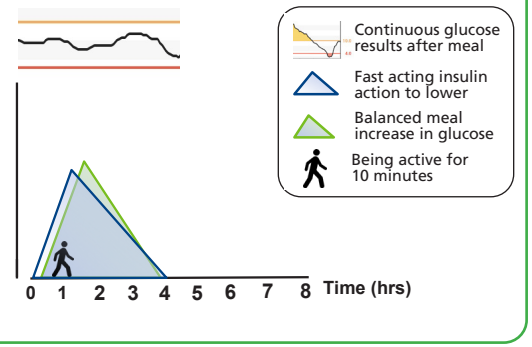
Meals:
- Meat/fish/beans with potatoes & veg
- Jacket potato with cheese & salad
- Rice with curry and salad

Snacks:
- Whole fruit with nuts
- Nut butter on toast
- Whole yoghurt with nuts

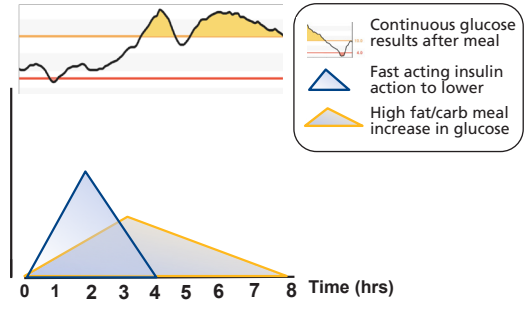
How to keep the glucose in target?

1. Count carbs accurately
2. Choose wholefood carbohydrate
3. Add more vegetables
4. Normal bolus 15 minutes before eating
5. Do 10 minutes activity after eating

Balanced meal



High fat meal with carbohydrate



Meal is very high in fat with carbs

Breakfasts:
- Full English breakfast
- Pancakes with maple syrup
- Thick slices of cheese on toast

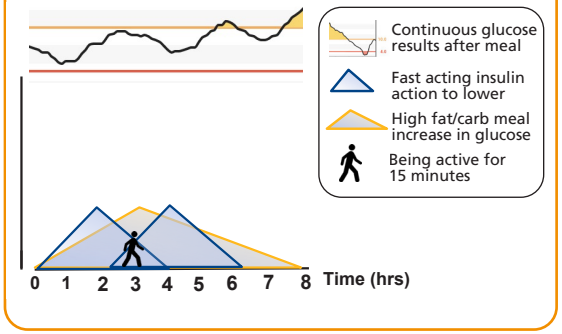
Meals:
- Takeaway fish and chips
- Heavily cheesed pizza
- Pasta with creamy sauce
- Creamy curry with rice & naan bread
- Fast food burger, fries and dessert
- Sunday roast with trimmings
- Lasagna with chips and garlic bread

How to keep the glucose in target?

1. Count carbs accurately
2. Give 100% of carbs eaten
3. Let Smart Guard deal with the delayed rise
4. If you go hypo in the first 3 hours, next time, only enter 75% of the carbs eaten

   e.g. 100g x 0.75 = 75g

High fat meal with carbohydrate



Dynamic Glucose Management

GAME-SET-MATCH

Combine glucose values and trend arrows with proactive diabetes management

Stop highs
GAME

G = Glucose time in range desired

A = Alert on high set accordingly

Time in range desired? 4.0-10.0mmol/L	Set high alert mmol/L	Predicted HbA1c mmol/mol (%)	Daily energy & future health
50%	No alert	64 (8.0)	☹
60%	14.0	58 (7.5)	😐
70%	12.0	52 (7.0)	☺
75%	11.0	50 (6.8)	☺☺
80%	10.0	48 (6.5)	☺☺☺
85%	9.0	45 (6.2)	☺☺☺☺
90+%	8.0	42 (6.0)	☺☺☺☺☺

M = Mode of exercise that can be done

E = Exercise when high alert sounds

Glucose mmol/L	Trend arrow			How many minutes
	Libre	Dexcom	Medtronic	
8.0 - 9.9	↗		↑	5
	↑		↑↑	10
			↑↑↑	15
10.0 - 14.0	→			15
	↗		↑	20
	↑		↑↑	25
			↑↑↑	30
More than 14.0	↓		↓↓	15
	↘		↓	20
	→			25
	↗		↑	30
	↑		↑↑	40

Stay in target
SET

S = Start insulin before eating

Glucose mmol/L	Trend arrow			Minutes to bolus before meal
	Libre	Dexcom	Medtronic	
4.0 - 5.9			↓↓↓	Prevent hypo
	↓		↓↓	Prevent hypo
	↘		↓	Prevent hypo
	→			15
	↗		↑	20
	↑		↑↑	25
			↑↑↑	30
6.0 - 9.9			↓↓↓	0
	↓		↓↓	10
	↘		↓	15
	→			20
	↗		↑	25
	↑		↑↑	30
			↑↑↑	35
10.0 - 14.0			↓↓↓	15
	↓		↓↓	20
	↘		↓	25
	→			30
	↗		↑	35
	↑		↑↑	40
			↑↑↑	45
More than 14.0	↓		↓↓	25
	↘		↓	30
	→			40
	↗		↑	45
	↑		↑↑	50

E = Eat three balanced meals

T = Ten minutes activity after eating

Prevent lows
MATCH

M = Measure weight to calculate hypo treatment

Weight (kg)	Grams of glucose	Dextrose 3g tablets
10	3	1
20	6	2
30	9	3
40	12	4
50	15	5
60+	18	6

A = Always use glucose only, not sugar

T = Try to prevent lows

C = Change amount according to glucose value & arrow

Glucose mmol/L	Trend arrow			Percent of hypo treatment
	Libre	Dexcom	Medtronic	
4.0 - 6.0	↓		↓↓↓	100%
			↓↓	75%
	↘		↓	50%
Less than 4.0	↓		↓↓↓	125%
			↓↓	100%
	↘		↓	75%
	→			50%
	↗		↑	25%

H = Have patience and wait 20 mins

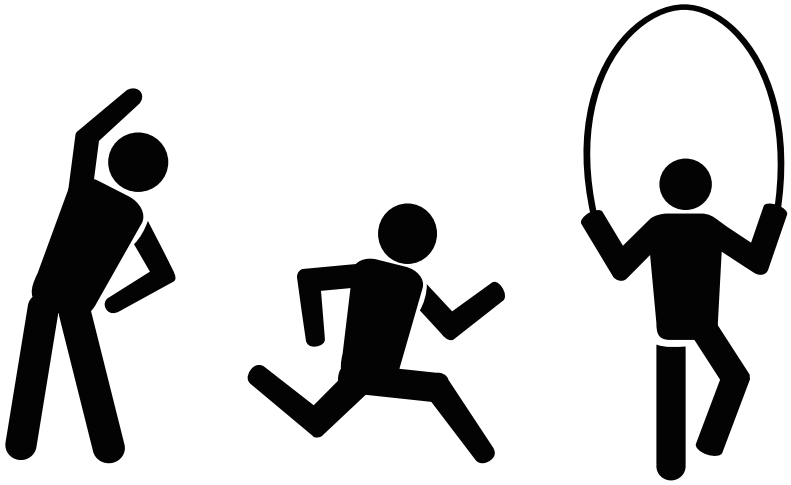
Stop Highs GAME

G = Glucose time in range desired

A = Alert on high set accordingly

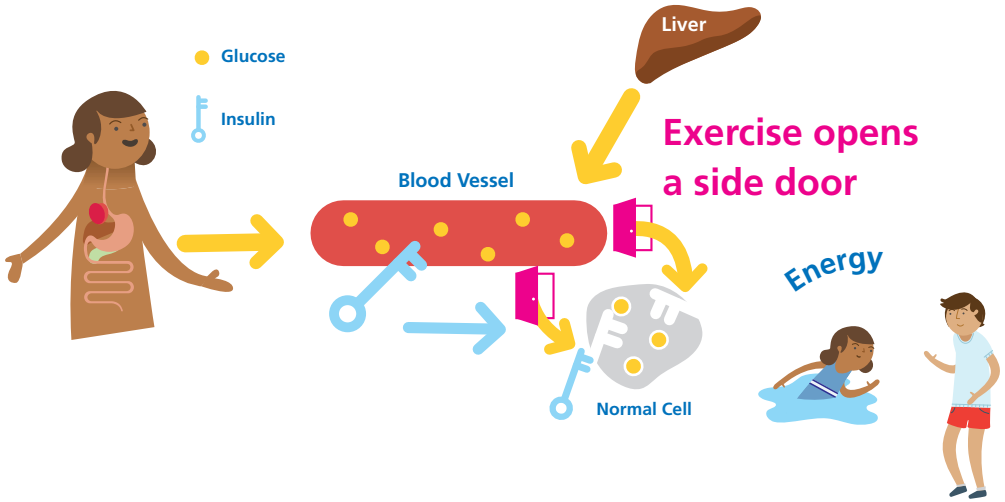
Time in range 4.0-10.0mmol/L	Set high alert mmol/L	Predicted HbA1c mmol/mol (%)	Daily energy & future health
50%	No alert	64 (8.0)	☹
60%	14.0	58 (7.5)	😐
70%	12.0	52 (7.0)	🙂
75%	11.0	50 (6.8)	🙂🙂
80%	10.0	48 (6.5)	🙂🙂🙂
85%	9.0	45 (6.2)	🙂🙂🙂🙂
90+%	8.0	42 (6.0)	🙂🙂🙂🙂🙂

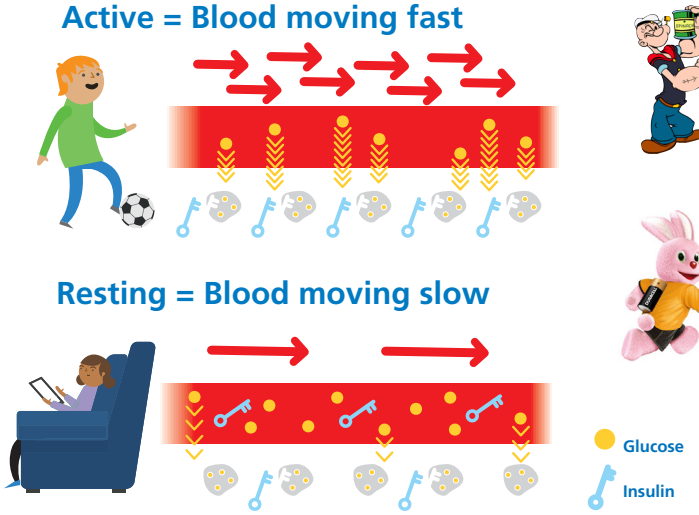
M = Mode of exercise that can be done anywhere



E = Exercise when high alert sounds

Glucose mmol/L	Trend arrow			How many minutes
	Libre	Dexcom	Medtronic	
8.0 - 9.9	↗		↑	5
	↑		↑↑	10
			↑↑↑	15
10.0 - 14.0	→			15
	↗		↑	20
	↑		↑↑	25
			↑↑↑	30
More than 14.0	↓		↓↓	15
	↘		↓	20
	→			25
	↗		↑	30
	↑		↑↑	40





Exercise make insulin STRONGER

Exercise makes insulin last longer LONGER

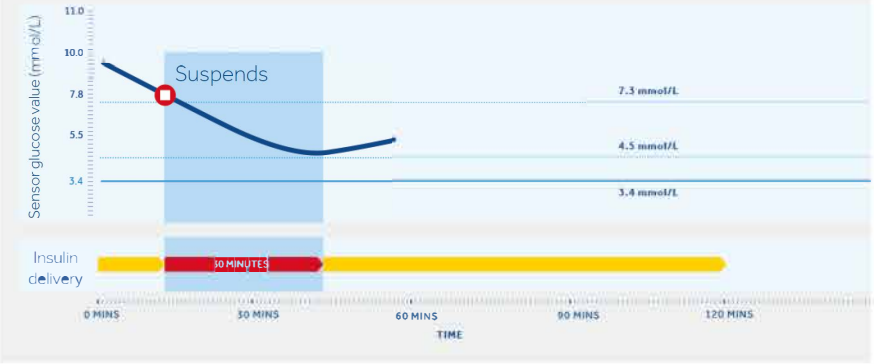
MiniMed™ 780G System — Suspend before low

Suspend before low

Insulin delivery stops IF...

- SG is at or within 3.9 mmol/L of the pre-set low limit ...AND
- Predicts SG will be 1.1 mmol/L above low limit or less within 30 minutes

In this example:
Low limit is set at 3.4 mmol/L, insulin suspends when SG reaches 7.3 mmol/L AND is predicted to reach 4.5 mmol/L within 30 minutes



MiniMed™ 780G System — Basal Delivery Resume

Basal delivery resumes after a minimum of 30 minutes and if:

SG is ≥ 1.1 mmol/L above pre-set low limit AND predicted to be >2.2 mmol/L above the low limit in 30 min.

In this example:
Low limit is set at 3.4 mmol/L.
Insulin resumes at 90 min. when SG reached 4.5 mmol/L AND
is predicted to reach 5.6 mmol/L within 30 mins

If 2 hour suspend limit is reached insulin resumes regardless of SG value Once basal resumes, suspend cannot be triggered again for ≥ 30 mins

MiniMed™ 780G System — Automatic Basal Resumes - Notes

- Any bolus that was delivering at the time the suspend occurred will **not restart** when insulin delivery resumes.
- The basal pattern active at the time the suspend occurred will **restart** when insulin delivery is resumed.
- If a Temp Basal was running the Temp Basal will resume if there is still time remaining.

MiniMed™ 780G System: Manual Mode features

Please tick the box if training has been provided on the topic, an empty box indicates that training has not been provided.

BASIC FEATURES

- ☐ Button Functions & Short Cuts
- ☐ Battery Type/Insertion
- ☐ Startup Wizard
- ☐ Home Screen without using CGM
- ☐ Sleep mode
- ☐ Status bar icons
- ☐ Menu Review
- ☐ Audio Options
- ☐ Display Options
- ☐ Status Screens
- ☐ Use Device Options to connect pump and meter

HOME SCREEN WHEN USING CGM

- ☐ Additional Status Bar Icons
- ☐ Trend Arrows: respective rate per minute
- ☐ Sensor Graph
- ☐ Most recent SG reading
- ☐ Suspend Icon
- ☐ Time in Range (TIR)

BASAL

- ☐ Enter Basal Pattern & change within a Pattern
- ☐ Temp. Basal
- ☐ Max Basal
- ☐ Suspend Delivery / Resume

BOLUS

- ☐ Bolus Wizard™ Calculator
- ☐ Manual Bolus
- ☐ Dual Wave™ / Square Wave™ Bolus
- ☐ Pre-set Bolus
- ☐ Max Bolus
- ☐ Easy Bolus

INFUSION SET MANAGEMENT

- ☐ Infusion Set Selection
- ☐ Infusion Set Insertion
- ☐ Using Medtronic Extended wear infusion set and reservoir
- ☐ Site Selection and Rotation
- ☐ When to Change Infusion Set

RESERVOIR AND TUBING

- ☐ New Reservoir
- ☐ Fill Cannula

ALERTS AND ALARMS

- ☐ Notification light and Audio indication type
- ☐ Steps to take to address and clear Alerts and Alarms

ADDITIONAL FEATURES / REMINDERS / OTHER SETTINGS

- ☐ Summary / Daily History / Alarm History
- ☐ Bolus BG Check: Off / On
- ☐ Missed Meal Bolus
- ☐ Low Reservoir
- ☐ Set Change
- ☐ Preset Temp Setup
- ☐ Bolus increments
- ☐ Bolus Speed
- ☐ Self-Test
- ☐ Block
- ☐ Auto Suspend

MINIMED™ 780G SYSTEM

Technical Training Checklist for Healthcare Professionals

MiniMed™ 780G System: Manual Mode features

Please tick the box if training has been provided on the topic, an empty box indicates that training has not been provided.

SENSOR GLUCOSE ALERTS AND SUSPEND SETTINGS

Low settings

- ☐ Time Periods & Limits
- ☐ Alert before low
- ☐ Alert on low
- ☐ Low SG fixed alert
- ☐ Suspend before low/on low
- ☐ Low Snooze

High settings

- ☐ Time Periods & Limits
- ☐ Alert/Time before High
- ☐ Alert on high
- ☐ High SG fixed alert
- ☐ Rise Alert/Rise Limit
- ☐ High Snooze

CONNECTING PUMP AND TRANSMITTER & SENSOR INSERTION AND TAPING

- ☐ Connecting Pump, Transmitter and Sensor
- ☐ Site Selection, Rotation, and Preperation
- ☐ Steps to insert the Sensor & Taping

STARTING THE SENSOR

- ☐ Starting New Sensor & Warm-up
- ☐ Home Screen and Icons
- ☐ Reading the 3, 6, 12, and 24-hour sensor graphs
- ☐ Sensor Status Screen
- ☐ Trend Arrows

BG MEASUREMENTS/CALIBRATION

- ☐ System does not require fingerpricks for calibration
- ☐ Every BG confirmed on the pump is used to calibrate the sensor
- ☐ Situations that require a BG meter value

SENSOR ALERTS

- ☐ Responding to Alerts/Alarms
- ☐ Home screen during suspend
- ☐ Alert Silence
- ☐ Auto resume based on SG
- ☐ 2 hours max suspend
- ☐ Steps to manually resume delivery
- ☐ Suspend unavailable

TREATMENT DECISIONS

- ☐ Using SG for treatment decisions
- ☐ Adjusting doses based on SG trend arrows

Set Backlight in Device Settings - Display to 30 seconds

Additional topics reviewed:

- ☐ Charging/Cleaning the Transmitter
- ☐ X ray, CT Scan or MRI

Continuation of training scheduled: ☐ Yes ☐ No Date of follow-up training: _____

Please list follow-up actions: _____

Healthcare Professional's Name and Signature: _____ Date: _____

Trainer's Name and Signature: _____ Date: _____

Medtronic

MINIMED™ 780G SYSTEM

Technical Training Checklist for Healthcare Professionals

MiniMed™ 780G System: SmartGuard™ feature

Please tick the box if training has been provided on the topic, an empty box indicates that training has not been provided.

READINESS SMARTGUARD™ FEATURE

- ☐ Time before SmartGuard™ activation
- ☐ Steps before Starting SmartGuard™ feature
- ☐ Carb Ratio
- ☐ Active Insulin time
- ☐ No active Temp Basal, Manual Suspend or active bolus when starting SmartGuard™ feature

START SMARTGUARD™ FEATURE

- ☐ Turn on SmartGuard™ feature
- ☐ SmartGuard™ Targets
- ☐ BG entry
- ☐ Auto Correction
- ☐ SmartGuard™ Readiness Screen

USING SMARTGUARD™ FEATURE

- ☐ SmartGuard™ Home Screen/Graphs
- ☐ Bolus Management when using SmartGuard™ feature
- ☐ Situations that require a BG meter value
- ☐ Common Alerts
- ☐ Temp Target
- ☐ Baseline Insulin Delivery
- ☐ Steps to stay in SmartGuard™ feature

Tips for success with SmartGuard™ technology

- ☐ BG entry: needed upon request to stay in SmartGuard™ feature (all confirmed BGs will be used to calibrate the sensor)
- ☐ Encourage patients to announce carbs before every meal to increase TIR
- ☐ Optimise Insulin-to-carb ratio as needed
- ☐ Regular CareLink™ system uploads and follow-up with patient

Comments: _____

_____

_____

_____

_____

_____

Please list follow-up actions: _____

Healthcare Professional's Name and Signature: _____ Date: _____

Trainer's Name and Signature: _____ Date: _____

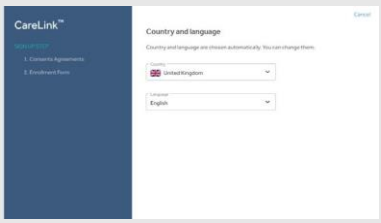
Medtronic

REGISTERING
YOUR ACCOUNT

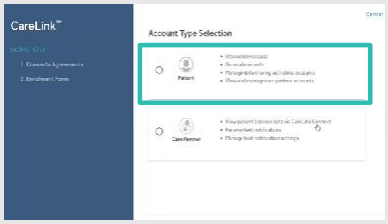
SIMPLE PROCESS TO REGISTER YOUR ACCOUNT

OR WATCH OUR VIDEO HERE

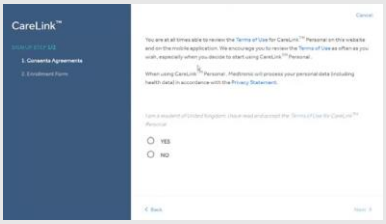
1 Go to Carelink.minimed.eu
Select your country and prefered language and click on 'Create an account'.



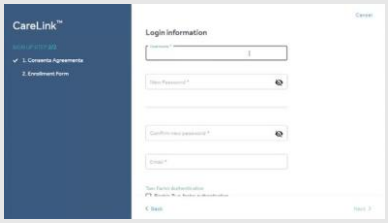
2 Confirm your language and country.



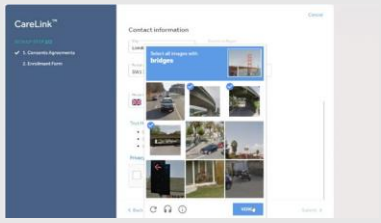
3 Select 'Patient' as your account type and click 'Next'.



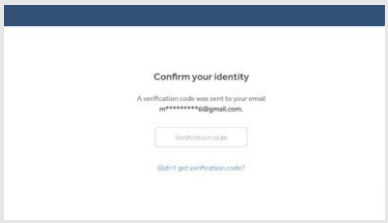
4 You will be taken through the consent process and your consent is required for account set up. Please ensure you scroll down to the bottom of the pages and make your selection.



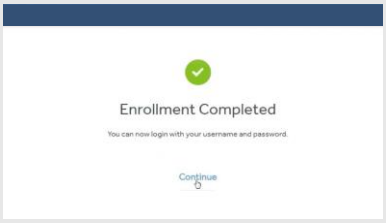
5 Please fill in the information in the fields provided. Tip: the password must be at least 8 characters.
You must have access to the email entered for account verification.



6 Confirm 'You are not a robot' by selecting the images as instructed.



7 Enter the verification code you received via email.



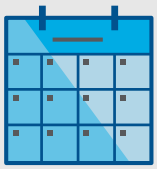
8 Your enrollment is now complete.

INSTALLING THE CARELINK™ PERSONAL UPLOADER

If MiniMed™ Mobile app cannot be used

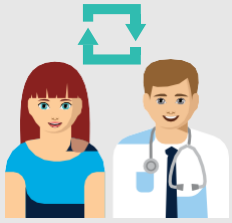
PREFER TO WATCH A VIDEO? CLICK HERE.

IMPROVE YOUR CLINIC VISITS BY UPLOADING TO CARELINK™ SOFTWARE



Upload regularly.

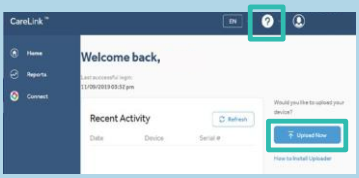
Understand your glucose pattern.



Collaborate with your diabetes team

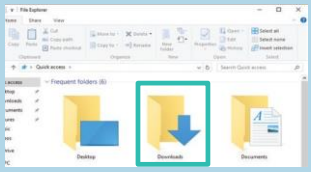
GET STARTED BY DOWNLOADING THE NEW UPLOADER INSTALL FILE

A one-time download per computer where you wish to upload your device.



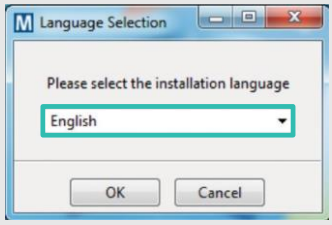
1
- Log in to CareLink™
- Click "How to install Uploader" OR
  Click on the "?" and then "How to install Uploader".

2 Click the download link and select a location to save the uploader file.

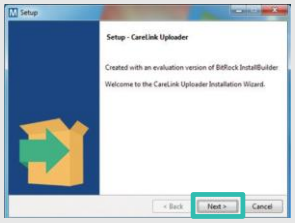


3 Find the downloaded file. Open the file and select "Run".

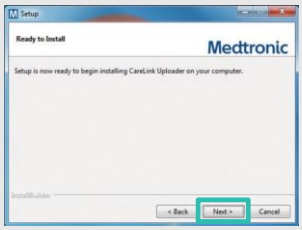
AFTER DOWNLOADING, INSTALL THE UPLOADER



1 Choose your language.



2 Click "Next".



3 Click "Next".

4
- Make sure your CareLink™ blue USB adapter or meter are not plugged in and click "OK"
- Click "Finish" to complete the installation.

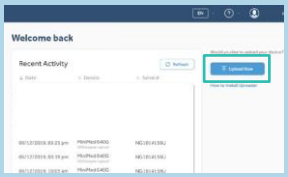
NOW, YOU'RE READY TO UPLOAD

Return to your CareLink™ Personal software homepage when you are ready to upload data from your pump.

UPLOADING
YOUR PUMP OR METER

PREFER TO WATCH A VIDEO? CLICK HERE.

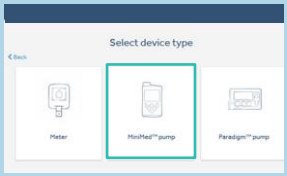
CONNECT YOUR PUMP



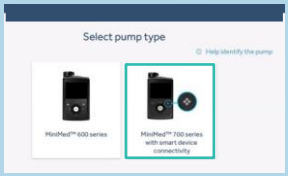
1 Click "Upload now" and wait for uploader screen to show. If you have not yet installed the CareLink™ uploader the software will prompt you to do so before proceeding.

FIRST UPLOAD

2 Select 'Add new device'.



3 Select 'MiniMed™ pump'.

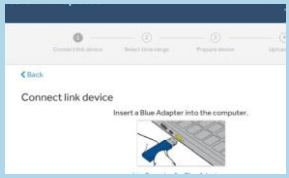


4 Select your pump type. If you are unsure of your pump type please click on 'Help identify the pump'.

5 Connect the blue adapter and follow the 'Upload your data' section below.

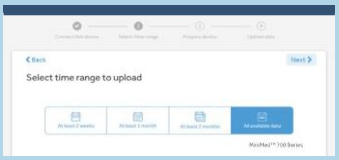
FUTURE UPLOADS

2 Select the device you wish to upload on the 'Select your device type' screen.

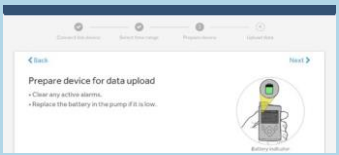


3 Connect the blue adapter to upload your data using the 'Upload your data' section below.

UPLOAD YOUR DATA

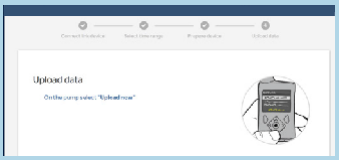


1 Select time range to upload.



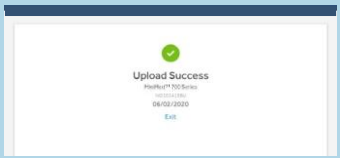
2 Follow on screen instructions to prepare device for data upload.

3 Enter your pump serial number. Pairing is required on first upload only.



4 Select 'Upload now' on the pump.

5 Wait for upload to complete.



6 Upload success.

CONGRATULATIONS

You have completed all the education. These things will help you stay in control.

1. Download your pump every 2 weeks and review time in range, aiming for 70% or more
2. Download your pump prior to clinic or any other diabetes appointments
3. If you have made changes to your settings then make a note of them and the dates they were made
4. Make a list of questions from the events that have affected control and you need a solution for.

Glossary of Terms

Automated Insulin Delivery (Hybrid closed loop) An insulin pump that automatically speeds up or sloes down insulin delivery based on continuous glucose monitoring readings and trend arrows.

Background/basal insulin: is needed to keep blood glucose levels under control, and to allow the cells to take in glucose for energy. It is usually taken once or twice a day depending on the insulin, or delivered hourly from an insulin pump as a basal rate.

Blood glucose: the main sugar found in the blood and the body's source of energy.

Bolus: an amount of insulin taken to cover a rise in blood glucose from a meal or snack, and may also include a correction dose.

Continuous Glucose Monitoring (CGM): Glucose monitored continuously in the interstitial space, measured by an indwelling sensor.

Correction dose: The amount of insulin required to bring the blood glucose from a high level back to target and is determined by the insulin sensitivity/correction factor.

Dynamic glucose management(DynamicGM): Combining glucose and trend arrow information with proactive diabetes management strategies to maximise time in range.

HBA1c: a test that measures your average blood glucose level over the last 2-3 months. Also called Haemoglobin A1C.

Hyperglycaemia: higher than normal blood glucose. Fasting hyperglycaemia is blood glucose above a desirable level after not eating for at least 8 hours. Postprandial hyperglycaemia is blood glucose above a desirable level 1 to 2 hours after eating.

Hypoglycaemia: also called low blood glucose, a condition that occurs when one's blood glucose is lower than normal. Signs include hunger, nervousness, shakiness, perspiration, dizziness or light-headedness, sleepiness, and confusion. If left untreated, hypoglycaemia may lead to unconsciousness.

Interstitial space: The space between the cells of the fat tissues where the indwelling sen-sor measures the glucose level.

Insulin to carbohydrate ratio: A ratio that specifies the number of grams of carbohydrate covered by each 1 unit of rapid- or short-acting insulin.

Insulin sensitivity/correction factor: refers to the number of mmol/l 1 unit of rapid acting insulin lowers your blood glucose.