Omnipod 5

This is my booklet

Weight in kg

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Tasks to complete



Click to watch the video

Top Tips Look out for these

Numbers and useful websites

Dexcom

Dexcom technical support number: 0800 0315763 Mon – Friday – 07:00-18:00hrs, Sat & Sun – 8:30- 16:30hrs

Dexcom replacement sensors Online: www.dexcom.com/UKIETechsupport

Dexcom Customer services - 0800 0315761

Insulet

Insulet customer support number to order your supplies: 0800 011 6132

OMNIPOD-GB@INSULET.COM

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. What is Automated Insulin Delivery therapy
- 3. Infusion site management
- 4. Accuracy of Continuous Glucose monitoring and when to calibrate
- 5. Treating and preventing low glucose levels (hypoglycaemia)
- 6. Managing high glucose levels (hyperglycaemia)
- 7. Sick day rules
- 8. Homework to be ready for the next session





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 Glooko account for downloading and be linked to the Diabetes Team.
- 6. Have actioned your GP supplies and have them ready for the insulin start
- 7. Contact Dexcom or Insulet 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:
 - o Target % less than 4.0mmol/l
- HbA1c goal:

Г

=

- o Current Time in Range =
- o Target Time in Range =

Process goals to be achieved at all times:

1. Auto mode more then 90% of time

Т

- 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%	\odot \odot \odot \odot \odot	$\odot \odot \odot \odot \odot$
85%	42	6.0%	\odot \odot \odot	\odot \odot \odot
80%	48	6.5%	\odot	
60%	58	7.5%	\odot	\odot
50%	64	8.0%	(i)	(
45%	70	8.5%	\odot	$\overline{\otimes}$
35%	80	9.5%	88	88
25%	91	10.5%	888	888
15%	>102	>11.5%	8888	8888

т

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



The body digests and coverts food into nutrients including glucose



Injections versus Pumps So what are the differences? Basal Insulin



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 settings). However, the insulin delivery cannot respond to changing glucose levels
- Basal insulin from a **Automated Insulin Delivery (advanced hybrid closed loop) pump** speeds up when the glucose level is rising and slows down when the glucose is falling, 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 also still need to give the bolus 15 minutes before eating.

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

<u>DO NOT</u> 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

Тір

Use a wipe clean tray for your equipment

SAFETY

- Always wash hands before a Pod 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 Pod every 2 – 3 days

If you leave a Pod 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 Pod and reduced absorption

When to change?



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

WARNING!

Not Before Bed

If you change your Pod 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 **Pod** comes off easily, try applying an adhesive agent prior to insertion such as Cavilon. This is available on GP prescription. Deodorant works also!!



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

Step 1:



Step 2: Look at CGM in 20 minutes .

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



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 Pod 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

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:

	6
1	· · · · · · · · · · · · · · · · · · ·
2	
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.



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



What to do with a 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 to find total daily dose (TDD) and look at the average over the last 7-14 days. 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.



Homework





Set up Glooko for downloading (see below)

Make sure you have made a note of all the education session dates and times.

DO NOT FORGET TO GET YOUR GP SUPPLIES AND BRING YOUR INSULIN.



Have ½ your usual Lantus/Levemir dose on the night before insulin start education session Dose units

Review and assess your Carbohydrate Counting

Create a Glooko account to be able to link your Omnipod 5.

You can do this on your mobile phone but keep a note of your username and password.

a. Go to your APP store and search for Glooko

b. Create an account or link in with an exiting account (remember your username and password)

c. enter our Proconnect Code =

d. if you forget to enter the code, go to - Profile (top right) - Profile - ProConnect - enter our Code = enbchpaed

d. Write down your Glooko username and password



Create your Omnipod ID.

Check your emails for an email from Omnipod/Insulet and create an Omnipod ID and

password. You may need to call Insulet if the details you enter don't match what we sent on

the order - 0800 011 6132. If you cannot find the email, follow this link -

https://www.omnipod.com/en-gb/setup/united-kingdom

You can do this on your mobile phone but keep a note of your Omnipod ID and password.

Download the Omnipod 5 simulator and practice

a. Apple - https://apps.apple.com/us/app/omnipod-5-simulator/id1552469689

b. Android - <u>https://play.google.com/store/apps/details?</u> id=com.insulet.simulator&hl=en_GB&gl=US

Session 2

Aim of this session:

To successfully start Automated Insulin Delivery therapy

What we will work through:

- 1. Setting up the pump
- 2. Programming personal settings
- 3. Starting on insulin
- 4. Linking the Dexcom to the pump
- 5. Starting SmartAdjust
- 6. Top tips for success
- 7. Travel
- 8. Training checklist
- 9. Ready for the next session

Pre-start check

Have you:

- Got the Omnipod 5 starter box?
- Got Omnipod 5 Pods?
- Created an Omnipod 5 ID?
- Consented to share your data with Glooko or not?
 - (Consent is not a requirement to use Omnipod 5)

Are you:

- Using a Dexcom G6 sensor with the smartphone app on a compatible device
 - Dexcom receiver off?
 - Transmitter ID for G6?
- Taking NovoRapid[®], Humalog[®] insulin?



- Omnipod 5 Controller with the App pre-loaded
- Gel skin
- Plug plus charging cable (full charge lasts 48 hours)
- Omnipod 5 Account welcome card plus instructions on how to create an account
- User start guide



Omnipod 5 System Communication

Omnipod 5 App on the Controller

- Sends and receives insulin delivery info
- Receives sensor info from Pod
- Displays alerts/alarms
- Delivery of bolus

<u>Omnipod</u> 5 Pod

- Receives sensor values which SmartAdjust™ technology uses to automatically adjust insulin delivery
- Sends sensor values to Omnipod 5 App



- The Omnipod 5 App does not have to be near the Pod for basal insulin delivery in both Manual or Automated Mode. It is recommended to keep the Omnipod 5 App nearby as it displays important information such as alerts and alarms
- The Omnipod 5 App does not communicate directly with the Dexcom app



Knowledge Check

- 1. What are the 3 main components of the Omnipod 5 System?
- 2. How does the Omnipod 5 System use sensor values?
- 3. If the controller is out of range to receive sensor values on the Omnipod 5 App, should it be moved closer to the transmitter or closer to the Pod?
- 4. Can you use the Dexcom receiver with Omnipod ?
- 5. If you need to start a sensor session, which app would you go to?
- 6. The controller may one reading behind the **G6** App, why is that?

Setting Up Your Account



Create your Insulet ID

- Setup or log into Omnipod account
- If you already have an Omnipod account, use the same username and password to sign into your controller
- If you need to create an Omnipod account, go to Omnipod.com/setup and follow the on-screen instructions
- Link Glooko data management accounts
- Ensure Glooko is linked to the hospitals ProConnect code



Welcome to Omnipod[®] 5!

To get started, create an account, enter therapy and insurance information, and schedule your training at: www.omnipod.com/setup



For quicker access, scan this QR code with your smartphone.

ок

BACK

<text>

(1) Select language



(2) Select country



(4) Select background



(5) Create pin



(3) Enter contact details in case of lost controller



(6) Select set up profile



- Always identify that the Omnipod 5 Controller is yours before using it
- Always keep your Omnipod 5 Controller secure and within your control to ensure others cannot make changes to your insulin therapy. Do not share your Controller PIN or with anyone.
- Connect ONLY to trusted Wi-Fi Networks with your Omnipod 5 controller. DO NOT connect to public Wi-Fi networks during first time setup of your Omnipod 5 System

Lock screen security	Notifications
Your PIN (or other security method you use on your phone) will be required to open the Domipod 5 App.	To use the Omnipod 5 App, keep Notifications on. Notifications alert you when an issue needs your attention.
fou cannot use the app if you turn off your phone's security.	You cannot use the app if you turn off Notifications.
IUNDERSTAND	IUNDERSTAND
JAUK	BAUK



Basal Settings

Basal settings are used to deliver basal insulin while in Manual Mode

- Max Basal
- Basal Programs
- Temporary Basal Turn On (for manual mode, guidance later)



Enter basal rates and Max basal from the settings sheet



Bolus Settings

Bolus settings are used to calculate a bolus in the SmartBolus Calculator

- Target Glucose and Correct Above
- Insulin to Carb (IC) ratio
- Correction Factor
- Duration of Insulin Action
- Maximum Bolus
- Extended Bolus

22:55 🔹 💭 🕲	\$ 🕂 🐨 🛙 100%
Deliverin	g Bolus
Approx 18U of 3	J delivered
CANCEL	
INSULIN ON BOARD	SENSOR INFO
() L Units	6.7 9 mmol/L



Enter bolus settings from the settings sheet.

Set Correct above to the target gulcose level

Leave Extended Bolus Off to start as it only works in manual mode

Pod Activation



Gather the following:

- An unopened Omnipod 5 Pod
- Vial of U-100 rapid-acting insulin compatible for use with Omnipod 5 System
- Omnipod 5 Controller





Pod Site Selection

- Rotate infusion sites with each Pod change
- Ideal sites have a layer of fatty tissue
- New site should be >1" away from previous site
- Do not apply Pod if cannula is sticking out, or if Pod is wet or dirty
- Do not apply Pod within 2" of navel or over a mole, scar, tattoo, or where it will be affected by folds of skin
- Pod site should be 3" away from the sensor/transmitter
- Tap RECORD POD SITE to use the optional Pod Site Map





Instructions for Drawing Insulin from Vial into Syringe

Use proper clean technique while performing the following:

C

From 40 seconds

 Inspect the needle and syringe package for any signs of damage.
 Discard any damaged product.

2. Wash your hands thoroughly.

- 3. Wipe the rubber septum of the insulin vial with an alcohol swab.
- Remove the needle and syringe from their packaging. Securely twist needle onto syringe. Safely remove protective cap from needle by pulling outward.
- 5. Draw air into syringe up to the amount of insulin desired (see image A).
- 6. With insulin vial upright, insert needle into vial. Inject air from syringe into vial.

Maintain pressure on syringe plunger (see image B).

- 7. With needle still inserted into vial, turn vial and syringe upside down. Release syringe plunger. Insulin will begin to flow from the vial into the syringe.
- 8. Slowly pull back the plunger to the desired amount of insulin (see image C).
- 9. While the filling needle is still in the vial and upside down, tap the syringe so that any air bubbles rise to the top (see image D). Then slowly push the plunger upwards, forcing any air bubbles back into the vial.
- 10. Check the syringe for air bubbles and do one of the following:
 - If there are air bubbles present, repeat step 9.
 - If no air bubbles are present, remove the filling needle from the vial.

maximum 200 units

Minimum 85 units

Aiming for 3 days of insulin











Pod Activation



- Fill Pod's reservoir 85-200 units
- Pair/Prime
- Apply Pod to site
- Insert cannula
- Confirm correct insertion* (delivery begins!)



*ALWAYS check the infusion site after insertion to make sure the cannula is properly inserted and secured to the Pod. Verify that there is no wetness or scent of insulin, which may indicate that the cannula has dislodged. An improperly inserted cannula could result in under-delivery of insulin which could lead to hyperglycemia

Omnipod 5 System Communication Distances



*It is recommended to keep the Omnipod 5 App nearby as it displays important information such as alerts and alarms



Connect Dexcom G6 sensor to Omnipod 5 Pod









Switch to Automated Mode: It may take up to **20** mins for the G**6** transmitter to connect to the P**0**D and onto the controller after a P**0**D change

Knowledge Check

- In what mode does the SmartAdjust™ technology use sensor values and prediction to adjust insulin delivery?
- 2. Up to how long can it take for the sensor to connect?
- 3. For best communication between sensor and Pod describe some examples of where should they be placed.

Omnipod 5 Controller Home Screen



Pod Deactivation



ISULIN LEFT IN POD iO+ Units updated Today, 19,00) oo status ixpires: Thursday 8 Jul (19 00) eminders col status	
iO+ Units updated Today, 19.00) DD STATUS Expires: Thursday 8 Jul (19.00) eminders col Extilements	
applated Toriay, 19,00) DD STATUS (xpires: Thursday 8 Jul (19,00) eminders cel Extiliation: All	
DD STATUS (xpires: Thursday 8 Jul (19 00) eminders od Extinuion (19 00)	
(xpires: Thursday 8 Jul (19 00) eminders	
eminders	
eminders	
ord Expiration All	
CHECKIPHERIPHERIPHERIPHERIPHERIPHERIPHERIPHER	WAYS ON
emind 4 hours before	
ow Pod Insulin AL	WAYS ON
emind when 10 units remain	
CHANGE POD	

After 3 days or using 200 units

Home screen POD INFO Tab
View Pod Details
Change Pod
Change Pod
Pod
Pod
Pod

Change low Pod Insulin to setting on your sheet



Set Low Pod Insulin (see settings sheet) Settings - Reminders - Low Pod Insulin

Turn off Open Access Wifi Setting

Settings - General - Wifi - More options - Turn off open access ³⁴

Sensor Graph on the Omnipod 5 Controller



18:11 💿 🤇	0		\$ ‡♥ 🖬 1009
Current Status:	Sensor 6 7 mmol/L	→ 10B 0.25 U D	excom G6
•••••	•••••	••••	-22 -18 -14 -10
-	17:00	18:00	-6 19:00
Glucose Upper L	: Goal Range	Automated Mode	ed Karl
Target G	lucose	Insulin paused (Automat	ted)
CGM Va	lues	6 Bolus	unningen)

Automated Manual ★ ♥ 90% ■ 9:41 PM Bolus ← ۲ 11 Carbs 0 g Meal Bolus: 0 U Glucose USE CGM mg/dL Correction Bolus: 0 U **Total Bolus** CALCULATIONS 0 U IOB of 0 U EXTEND BOLUS CANCEL CONFIRM



Practice giving a bolus on the Omnipod 5

Simulator on your phone

Bolus Delivery

	B	olus Tip	S		
	✤ ♥ 90%		22:55 💿 🔵 🕲	¥ 🕶 🕈 🎔 🕯 100%	
	← Bolus		Delivering	g Bolus	
	†1 Carbs			-	
	30 g	• • •	Approx 1811 of 31	l delivered	
	Meal Bolus: 0 U	0 0 0		(60%)	Always look for the progress bar
	() CGM (1:23 pm)		CANCEL		to confirm bolus
	121 mg/dL				navigating away
ulations" a	Correction Bolus: 3 U				from the Omnipod 5 App
al of the	Total Bolus CALCULATIONS		insolin on board	6 7 6	
olus	3 u		1.9	mmol/L	
	Adjusted for IOB of 1 U		Units		
	CANCEL EXTEND BOLUS CONFIRM		đ		

Tapping "calc will provide a mathematica breakdown o suggested bo

SmartBolus Calculator

- Suggested bolus dose based on
 - Carbohydrates
 - sensor value **and trend** •
 - Insulin on Board

 Includes option 	Glucose Glucose	USE SENSOR	
When sensor values are	The <u>SmartBolus</u> Calculator	Correction Bolus: 0 U	mmol/L
Trending up (increasing)	Adds more insulin to the suggested bolus	Total Bolus	CALCULATIONS
Trending down (decreasing)	Subtracts insulin from the suggested bolus	0 IOB of 0.1 U	U
Steady	No adjustment to the suggested bolus	CANCEL	CONFIRM

← Bolus

Meal Bolus: 0 U

†1 Carbs

0

۲

g

Insulin on Board (IOB)

IOB is insulin that is still active in the body.

Example: IOB without a recent bolus



Last bolus delivered at 7:32pm yesterday evening



Slept 8 hours



Wakes up and finds IOB of 2.75 U IOB upon opening Omnipod 5 App



Suggested bolus is reduced for breakfast

System constantly tracks IOB from basal delivery in Manual or Automated Mode



Edit Bolus Settings – Example: Target Glucose



Omnipod 5 System: Adjustable Settings

Automated Mode

Target Glucose is the **ONLY** setting that directly impacts Automated Mode:

- 6.1- 8.3 mmol/L (0.6 mmol/L increments)
- Up to 8 segments in 24hrs
- Target Glucose used for AID and correction boluses

SmartBolus Calculator Automated & Manual Mode

SmartBolus Calculator settings impact suggested **bolus** doses in **BOTH** modes:

- Target Glucose & Correct Above
- Insulin to Carb Ratio
- Correction Factor
- Duration of Insulin Action
- Reverse Correction
- Minimum Glucose for Calculations

Activity Feature

Activity feature sets the target glucose to 8.3 mmol/L AND reduces automated insulin delivery

- Optional feature in Automated Mode
- Ideal during times of anticipated decrease in insulin needs
- Duration can be set from 1-24 hours in 1-hour increments
- Upon cancellation or expiration, full automated insulin delivery resumes and SmartAdjust[™] technology returns to using the defined Target Glucose
- Recommended starting the Activity feature 60-120 minutes prior to activity



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 managment.

	Before activity & exercise		During After activity &		ty & exercise
	Mealtime insulin	Activity Feature	Carbohydrate	Activty Feature	Post 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 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	arrow every 20-30 minutes Follow carbohydrate suggested on the chart and only have enough for 20.30 minutes to	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	avoid sending the glucose too high	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.

Carbohydrate Guide for Omnipod 5 with SmartAdjust

1. Start Activity Feature 90 minutes before activity, or just before if forgot. Home screen Menu button Activity 2. Set to finish at the end of activity 3. Check glucose just before and every 20-30 minutes during exercise and Scroll to START CONFIRM duration follow the chart below Sensor Rate of glocose Carbohydrate needed change trend arrow glucose for 20-30 minutes (g) Levels & action to take less than No exercise: Treat 4.0 mmol/l hypoglycaemia 4.0 - 6.4 $\uparrow \uparrow$ mmol/l $\mathbf{1}$ Л \rightarrow 7 个 6.5 - 9.9 $\mathbf{1}\mathbf{1}$ mmol/l $\mathbf{1}$ Л \rightarrow 7 Ok to exercise 10.0 - 13.9 mmol/l with any arrow >14.0mmol/l **Check ketones: If less** Ok to exercise than 0.6mmol/l Chck ketones: If No exercise until the ketones have been 0.6mmol/l or above corrected and are less than 0.6mmol/l



Practice starting the Activity Feature for 2

hours, then canceling

Knowledge Check

Describe and known states of slip

- Describe the Home screen briefly. Identify and/or tap on the Bolus button, Menu button, & System Mode indicator
- 2. Do you need to bolus in Automated Mode? In Manual Mode?
- 3. What is the benefit of tapping USE SENSOR when bolusing?
- 4. Explain when you might use the Activity Feature.

History Detail: Summary and Auto Events



Alarms and Notifications



Hazard Alarms

High priority alarms that indicate a serious problem has occurred and a Pod change may be needed



Advisory Alarms

Lower priority alarms that indicate a situation exists that needs attention



Reminder Notifications

Reminder of an action that should be performed

"Check Alarms" within Settings verifies that the Omnipod 5 App and Pod's alarms and vibration functions are working properly. This also helps to distinguish between the alarm types. This can be done in Manual Mode when insulin is paused.



No Pod Communication

 Pod communication was not established with the Omnipod 5 Controller

What should you do?

- Depending on the communication issue, the Omnipod 5 Controller offers you options to help you resolve it. It is in your best interest to leave any options to DISCARD or DEACTIVATE POD as the last choice after trying the other option(s)
- Move the device with the Omnipod 5 Controller closer to the Pod
- Tap MORE INFORMATION for potential causes and suggested actions

Missing sensor Values in Omnipod 5

≡	4	🔮 💼 Limited		
DASHBOARD	INSULIN	POD INFO		
IOB 0.15 U				
AUTOMAT	ED MODE: LII	MITED		
	• • •			
LAST BOLUS	•••	CGM INFO		
LAST BOLUS	•••	CGM INFO		
LAST BOLUS 6.05 Units	 Ф	CGM INFO		
LAST BOLUS 6.05 Units Feb 10 (7:32 pm)	L Feb	CGM INFO SEARCHING ast Reading 10 (9:38 pm)		

- Pod is no longer receiving sensor values
- After 20 minutes, system shows "Automated Mode: Limited" and is not fully automating basal delivery
- When the System enters Limited state, <u>SmartAdjust</u>[™] technology never gives more than the Basal Program that would be active in Manual Mode
- When sensor communication is restored, full automated insulin delivery resumes

What should you do?

- Make sure the Pod and sensor are in direct line of sight
- Check the Dexcom G6 app to see if sensor values are still being received

Automated Delivery Restriction Advisory Alarm



- Only occurs in Automated Mode
- Insulin has been paused for too long, or delivering the maximum amount for too long

What should you do?

- Confirm your BG using a meter
- Follow screens and confirm your blood glucose
- Switch to Manual Mode for at least 5 minutes

Importance of Alerts and Alarms

- Keep the Omnipod 5 Controller and Dexcom G6 app close by in order to respond to alerts and alarms
- AVOID setting your Controller to Silent, Vibrate or any other setting that prevents you from hearing alarms and notifications.
 - IF you do not hear alarms and notifications from your Controller, you might not make the changes you need to make to your insulin therapy in a timely manner.

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 5-10 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		
which a define the formation of the second				

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:
 - o Predict and prevent hypos.
 - o Change carbohydrate amounts for exercise.
 - o Give peace of mind that no highs are lows are coming up.
 - o Decide when to give meal-time insulin.
 - o And much more.

Trend arrow APP	Description	Where the glucose will be in 10 minutes
	Rapidly rising	more than 2.0mmol/l higher
^	Rising	1.5mmol/l higher
N	Slowly rising	1mmol/l higher
\rightarrow	Stable	Same
И	Slowly falling	1 mmol/l lower
	Falling	1.5 mmol/l lower
↓ ↓	Rapidly falling	more than 2.0mmol/I 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;
 - o Make sure the blood glucose test was obtained using a meter that's accurate
 - o Hands were clean and dry
 - o The arrows on the CGM are steady on only slowly rising or falling
 - o Consider a second blood glucose test just to be sure there os more than a 20% difference

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 10 days what should you do?
- If there is an issue with the Controller who should you contact
- Do you need to take Background insulin whilst using the pump?

Homework

- Work through Survive and Thrive guide and add 10 + 20% total daily dose
- Set up on the home Wifi as soon as you get home
- Order three-month supply of Pods using survive guide
- Make up your new important things bag
- Put on Activity mode until 8pm tonight

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. Exercise management
- 6. Using GAME SET MATCH
- 7. Mealtime Insulin Guide

PANTHERTOOL[™] for

OMNIPOD[®] 5 Automated Insulin Delivery System



INSTRUCTIONS FOR USE

- 1 Download user's device to My.Glooko.com → Set report settings to Target Range 3.9-10.0 mmol/L
- 2 Create reports → 2 weeks → Select: a. CGM Summary;
 b. Week View; and c. Devices
- **3** Follow this worksheet for step-by-step guidance on clinical assessment, user education and insulin dose adjustments.

STEP 1 BIG PICTURE (PATTERNS)

→ STEP 2 **SMALL PICTURE** (REASONS) → STEP 3 **PLAN** (SOLUTIONS)

OVERVIEW using CARES Framework

C How it CALCULATES

- Automated basal insulin delivery calculated from total daily insulin, which is updated with each Pod change (adaptive basal rate).
- Calculates dose of insulin every 5 min based on glucose levels predicted 60 minutes into future.

A What you can ADJUST

- Can adjust the algorithm's Target Glucose (6.1, 6.7, 7.2, 7.8, 8.3 mmol/L) for adaptive basal rate.
- Can adjust I:C ratios, correction factors, active insulin time for bolus settings.
- Cannot change basal rates (programmed basal rates are not used in Automated Mode).

R | When it **REVERTS** to manual mode

- System may revert to Automated Mode: Limited (static basal rate determined by system; not based on CGM value/trend) for 2 reasons:
 - 1. If CGM stops communicating with Pod for 20 min. Will resume full automation when CGM returns.
 - 2. If an Automated Delivery Restriction alarm occurs (insulin delivery suspended or at max delivery too long). Alarm must be cleared by user and enter Manual Mode for 5 min. Can turn Automated Mode back on after 5 minutes.

E How to EDUCATE

- Bolus before eating, ideally 10-15 minutes prior.
- Tap Use CGM in bolus calculator to add glucose value and trend into bolus calculator.
- Treat mild hypoglycaemia with 5-10g carb to avoid rebound hyperglycaemia and WAIT 15 min before re-treating to give glucose time to rise.
- Infusion site failure: Check ketones and replace Pod if hyperglycaemia persists (e.g. 16.7 mmol/L for > 90 min) despite correction bolus. Give syringe injection for ketones.

S SENSOR/SHARE characteristics

- Dexcom G6 which requires no calibrations.
- Must use G6 mobile app on smartphone to start CGM sensor (cannot use Dexcom receiver or Omnipod 5 Controller).
- Can use Dexcom Share for remote monitoring of CGM data.

PANTHER**POINTERS**[™] FOR CLINICIANS



Focus on behavior: Wearing the CGM consistently, giving all boluses, etc.



When adjusting insulin pump settings, focus primarily on Target Glucose and I:C ratios.



To make system more aggressive: Lower the Target Glucose, encourage user to give more boluses and intensify bolus settings (e.g. I:C ratio) to increase total daily insulin (which drives the automation calculation).



Avoid overthinking the automated basal delivery. Focus on the overall Time in Range (TIR), and optimising system use, bolus behaviors and bolus doses.



This <u>PANTHER Program</u>[®] tool for Omnipod[®] 5 was created with the support of <u>Insulet</u>. CGM Summary Report to assess system use, glycemic metrics, and identify glucose patterns.



- Due to gaps in CGM data?
 - Review device placement: wear Pod and CGM on same side of body / in "line of sight" to optimise Pod-CGM communication
- Due to automated delivery restriction (min/max delivery) alarms?
 - Educate user to clear alarm, check BG as needed, and after 5 minutes switch mode back to Automated Mode (will not return to Automated Mode automatically)

B) Is the user giving meal boluses?

Number of Diet Entries/Day?

Is the user giving at least 3 "Diet Entries/Day" (boluses with CHO added)?

→If not, ASSESS for missed meal boluses

PANTHER**POINTERS**[™] FOR CLINICIANS

- The goal of this therapy review is to increase Time in Range (3.9-10.0 mmol/L) while minimising Time Below Range (<3.9 mmol/L)
- Is the Time Below Range **more** than 4%? If **YES**, focus on reducing patterns of **hypoglycaemia** If **NO**, focus on reducing patterns of **hyperglycaemia**



C) Is the user meeting Glycemic Targets?

Time in Range (TIR)		Goal is >70%
3.9-10.0 mmol/L "Target Rang	e"	
Time Below Range (TBR)		Goal is <4%
<3.9 mmol/L "Low" + "Very Lo)W"	
Time Above Range (TAR)		Goal is <25%
>10.0 mmol/L "High" + "Very H	ligh"	

D What are their patterns of hyperglycaemia and/or hypoglycaemia?

Ambulatory Glucose Profile compiles all data from reporting period into one day; shows median glucose with the blue line, and variability around the median with the shaded ribbons. Wider ribbon = more glycaemic variability.

Identify the overall patterns by primarily focusing on the dark blue shaded area.

Hyperglycaemia patterns: (eg: high glycemia at bedtime)

Hypoglycaemia patterns:

STEP 2 SMALL PICTURE (REASONS)

Use the **Week View** and discussion with the user to identify causes of the glycaemic patterns identified in STEP 1 (hypoglycaemia or hyperglycaemia).



Identify the predominant 1-2 causes of the hypo- or hyperglycaemia pattern.



Hypoglycaemia		Hyperglycaemia
SOLUTION	PATTERN	SOLUTION
Raise Target Glucose (algorithm target) overnight (highest is 8.3 mmol/L)	Fasting / Overnight	Lower Target Glucose overnight (lowest is 6.1 mmol/L)
Assess carb counting accuracy, bolus timing, and meal composition. Weaken I:C Ratios by 10-20% (e.g. if 1:10g, change to 1:12g)	Around mealtime (1-3 hours after meals)	Assess if meal bolus was missed. If yes, educate to give all meal boluses prior to eating. Assess carb counting accuracy, bolus timing, and meal composition. Strengthen I:C Ratios by 10-20% (e.g. from 1:10g to 1:8g)
If due to bolus calculator over- rides, educate user to follow the bolus calculator and avoid overriding to give more than recommended. There may be a lot of IOB from AID that user is not aware of. Bolus calculator factors in IOB from increased AID when calculating correction bolus dose. Weaken correction factor by 10-20% (e.g. from 3mmol/L to 3.5 mmol/L) if hypos 2-3 hours after correction bolus.	Where low glucose follows high glucose	Educate to treat mild hypoglycaemia with fewer grams of carbs (5-10g)
Use the Activity feature 1-2 hours before exercise begins. Activity feature will temporarily reduce insulin delivery. It can be used during times of increased risk of hypoglycaemia. To use Activity feature, go to Main Menu -> Activity	Around or after exercise	
	After a correction bolus was given (1-3 hours after correction bolus)	Strengthen correction factor (e.g. from 3 mmol/L to 2.5 mmol/L)

ADJUST insulin pump settings** and EDUCATE.

Most impactful insulin dose settings to change:

- 1. Target Glucose (for adaptive basal rate) Options: 6.1, 6.7, 7.2, 7.8, 8.3 mmol/L Can program different targets for different times of day
- 2. I:C Ratios It is common to need stronger I:C Ratios with AID
- 3. Correction Factor & Active Insulin Time These will only influence bolus calculator doses; has no impact on automated insulin

** **BEFORE making changes** to insulin delivery settings, please confirm insulin settings within the user's Omnipod 5 controller.

To change settings, tap the main menu icon \equiv in top-left corner of **Omnipod 5** controller: \rightarrow **Settings** \rightarrow **Bolus**



AFTER VISIT SUMMARY Great job using **Omnipod**[®] **5**!

Using this system may help you achieve your diabetes goals.

The American Diabetes Association suggests aiming for **70%** of your glucose levels to be between **3.9–10.0 mmol/L**, called **Time in Range** or **TIR**. If you are not currently able to reach 70% TIR, don't be discouraged! Start from where you are and set smaller goals to increase your TIR. Any increase in your TIR is beneficial to your lifelong health!



REMEMBER...

Don't overthink what the Omnipod 5 is doing in the background. Focus on what *you* can do. See helpful tips below...

TIPS for Omnipod 5

- HYPERGLYCAEMIA >16.7 mmol/L for 1-2 hours? Check ketones first! If ketones, give <u>syringe</u> injection of insulin and replace Pod.
- Bolus before eating, ideally 10-15 minutes before all meals and snacks.
- **Do not override the bolus calculator**: Correction bolus doses may be smaller than expected due to insulin on board from the adaptive basal rate.
- **Give correction boluses for hyperglycaemia**: Tap Use CGM in bolus calculator to add glucose value and trend into bolus calculator.
- **Treat mild hypoglycaemia with 5-10g carb** to avoid rebound hyperglycaemia and WAIT 15 min before re-treating to give glucose time to rise. System will have likely suspended insulin, resulting in little insulin on board when hypoglycaemia occurs.
- Wear Pod and CGM on same side of body so they don't lose connection.
- Clear Delivery Restriction alarms immediately, troubleshoot hyper/hypo, confirm CGM accuracy and switch back to Automated Mode.



>10.0 mmol/L

Aim for

less than 25%

mmol/L

13.0

12.0



od and Dexcom G6 shown without the necessary adhesive





Have questions about the Omnipod 5?

omnipod.com

Omnipod customer support **0800 011 6132**

Have questions about your CGM?

dexcom-intl.custhelp.com

Dexcom customer support 0800 031 5761

Dexcom technical support 0800 031 5763

Mealtime Insulin Guide



Dynamic Glucose Management GAME-SET-MATCH

Combine glucose values and trend arrows with proactive diabetes management



- **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)	\odot
60%	14.0	58 (7.5)	
70%	12.0	52 (7.0)	\odot
75%	11.0	50 (6.8)	\odot
80%	10.0	48 (6.5)	\odot
85%	9.0	45 (6.2)	$\odot \odot \odot \odot \odot$
90+%	8.0	42 (6.0)	$\bigcirc \bigcirc $

- **M** = Mode of exercise that can be done
- **E** = Exercise when high alert sounds

Glucose	Icose Trend arrow		v	How many
mmoi/L	Libre	Dexcom	Medtronic	minutes
	7		1	5
8.0 - 9.9	↑	Ô	↑ ↑	10
		\bigcirc	个个个	15
	\rightarrow	\bigcirc		15
10.0 - 14.0	7		1	20
	↑	Ô	↑ ↑	25
		٢	$\uparrow\uparrow\uparrow$	30
	\downarrow	\bigcirc	$\downarrow\downarrow$	15
More than	Ŕ		\downarrow	20
14.0	\rightarrow	\bigcirc		25
	7	Ő	1	30
	1	Ô	$\uparrow\uparrow$	40
		·		



S = Start insulin before eating

Glucose		Trend arrow		Minutes to bolus
mmoi/L	Libre	Dexcom	Medtronic	before meal
			$\uparrow \uparrow \uparrow$	Prevent hypo
	\downarrow	Ó	$\downarrow\downarrow$	Prevent hypo
	Ŕ	Q	\downarrow	Prevent hypo
4.0 - 5.9	\rightarrow			15
	7		↑ (20
	1	٢	11	25
		٢	$\uparrow\uparrow\uparrow$	30
			$\downarrow \downarrow \downarrow$	0
	\downarrow	\bigcirc	$\downarrow\downarrow$	10
	Ŕ		\downarrow	15
6.0 - 9.9	\rightarrow	\bigcirc		20
	7		↑	25
	1	Ô	11	30
		٢	$\uparrow\uparrow\uparrow$	35
			$\uparrow \uparrow \uparrow$	15
	\downarrow	\bigcirc	$\downarrow\downarrow$	20
	Ŕ		\downarrow	25
10.0 - 14.0	\rightarrow			30
	7		↑	35
	1	٢	1 1	40
		Ô	$\uparrow\uparrow\uparrow$	45
	\downarrow		$\downarrow\downarrow$	25
Moro than	Ŕ		¥	30
14.0	\rightarrow			40
	7		Ŷ	45
	↑	Ô	↑ ↑	50

E = Eat three balanced meals

T = Ten minutes activity after eating





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	Trend arrow		Trend arrow		Percent
mmoi/L	Libre	Dexcom	Medtronic	treatment	
	\downarrow	\bigcirc	$\uparrow\uparrow\uparrow$	100%	
4.0 - 6.0		\bigcirc	$\uparrow\downarrow$	75%	
	Ŕ		\downarrow	50%	
	\downarrow	\bigcirc	$\uparrow\uparrow\uparrow$	125%	
Loss than		\bigcirc	$\uparrow\downarrow$	100%	
4.0	Ŕ		\downarrow	75%	
	\rightarrow	\bigcirc		50%	
	7	\bigcirc	Ŷ	25%	

H = Have patience and wait 20 mins



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)	\odot
60%	14.0	58 (7.5)	
70%	12.0	52 (7.0)	\odot
75%	11.0	50 (6.8)	\odot
80%	10.0	48 (6.5)	\odot
85%	9.0	45 (6.2)	$\odot\odot\odot\odot\odot$
90+%	8.0	42 (6.0)	$\odot\odot\odot\odot\odot\odot$



E = Exercise when high alert sounds

Glucose mmol/L	Trend arrow			How many
	Libre	Dexcom	Medtronic	minutes
8.0 - 9.9	7		1	5
	↑	Ô	$\uparrow\uparrow$	10
		Ô	$\uparrow\uparrow\uparrow$	15
10.0 - 14.0	\rightarrow	\bigcirc		15
	7		1	20
	Ŷ	Ô	↑↑	25
		Ô	$\uparrow\uparrow\uparrow$	30
More than 14.0	\downarrow	\bigcirc	$\downarrow\downarrow$	15
	Ŕ		\downarrow	20
	\rightarrow	\bigcirc		25
	7		1	30
	↑	Ô	$\uparrow\uparrow$	40





Resting = Blood moving slow



Exercise make insulin **STRONGER**



Glucose Insulin

longer LONGER













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 (Advanced hybrid closed loop) An insulin pump that automatically speeds up or slows 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 sensor 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.