

Dealing with glucose spikes from 8pm to midnight

Jenifer Simpson

Diabetes Dietitian


Sheffield Children's Hospital

Jenniferk.Simpson@nhs.net





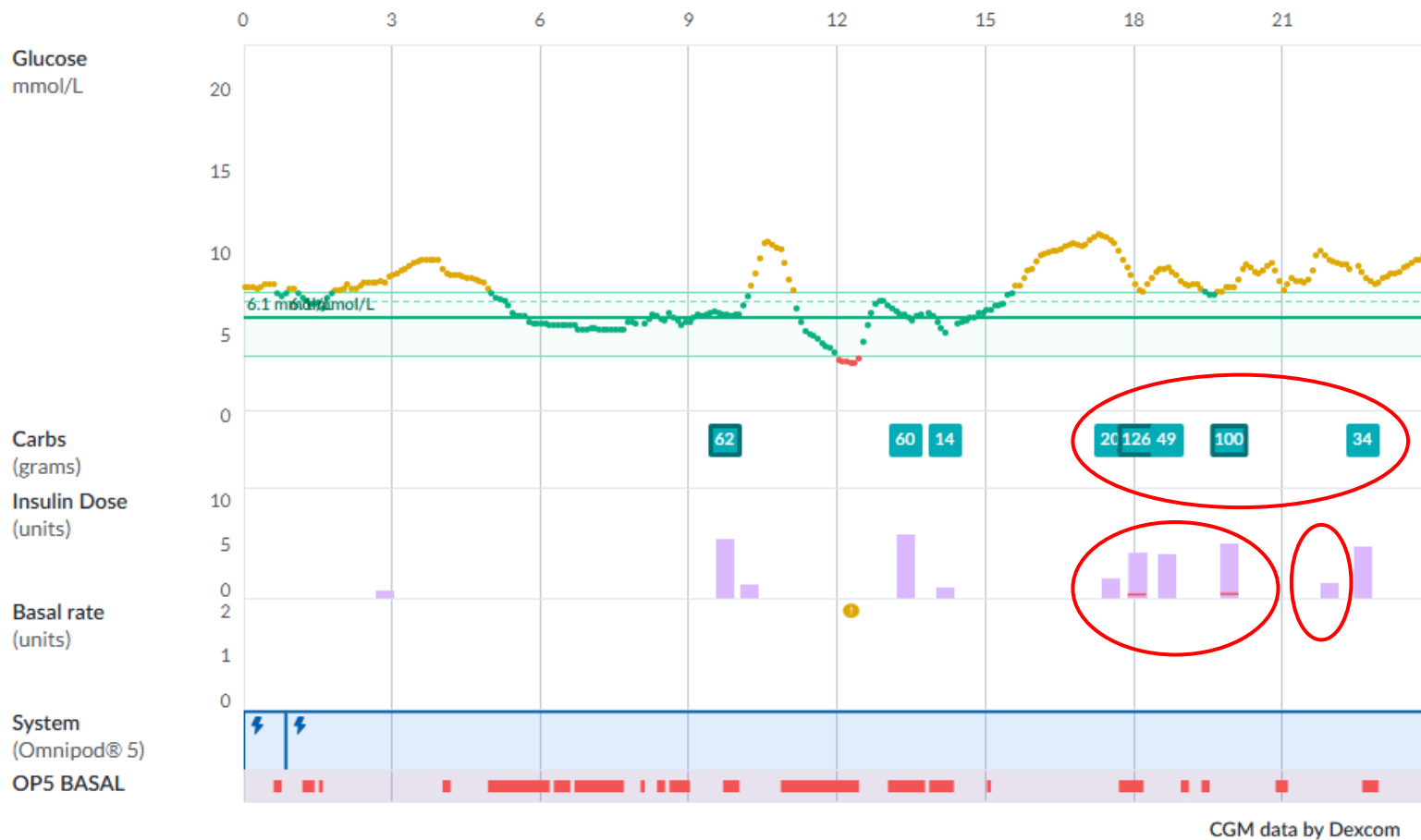
Case Study

- 17 years old
 - Diagnosed with type 1 diabetes in 2024
 - Now on Omnipod 5
 - ADHD
 - On MethylPhenidate
 - Eats late at night due to daytime appetite suppression
 - Good with inputting carbs
 - ++ Parental support
- 



Sun, 11 May, 2025

90 days > 1 week > 1 day



20+63+49+50+34=
216g Carbs

Overrides bolus
for large
amounts of
carbs/ doses

Correction from
meal 2 hours
after

LEGEND [Show less](#)

System (Omnipod® 5) ⓘ

⚡ Automated Mode

Glucose

Before Meal Target Range (3.6 - 7.2 mmol/L)

After Meal Target Range (3.6 - 7.8 mmol/L)

Above Range

In Target Range

Types of Readings

CGM Readings

Carbs

Multiple carb entries

Insulin Dose

Bolus (Delivered)

Suspended

Basal

Advisory Alert



Mon, 12 May, 2025

90 days > 1 week > 1 day



Overrides bolus suggestion to correct

12 May, 2025

Insulet OmniPod@ 5 System 00:01

Glucose (CGM)	10.2 mmol/L
Correction	0.1 u
IOB	(1.5 u)
Suggested	0.1 u
Delivered	1 u

12 May, 2025

Insulet OmniPod@ 5 System 02:16

Glucose (CGM)	8.8 mmol/L
Correction	0.45 u
IOB	(0.6 u)
Suggested	0.45 u
Delivered	0.45 u

LEGEND [Show less](#)

System (OmniPod@ 5) ⓘ

- ⚡ Automated Mode
- ⚡ Automated: Limited
- ⚡ Manual

Glucose

- Before Meal Target Range (3.6 - 7.2 mmol/L)
- After Meal Target Range (3.6 - 7.8 mmol/L)
- Above Range

Types of Readings

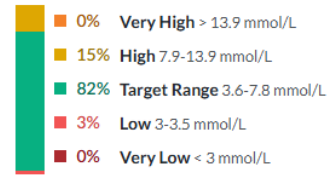
- ● Pump BG
- CGM Readings
- Carbs

Insulin Dose

- Bolus (Delivered)
- ⬇️ Override
- ⚡ Basal
- ⚡ Set/Size Change

< > Fri, 02 May - Thu, 15 May, 2025
2 weeks

Glucose (CGM)



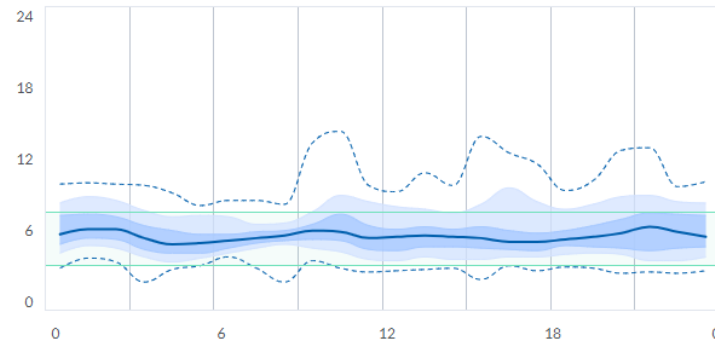
GMI ?	5.9% (41.2 mmol/mol)
Average	6.1 mmol/L
SD	1.6 mmol/L
CV	27%
Median	5.8 mmol/L
Highest	14.2 mmol/L
Lowest	LO mmol/L

% Time CGM Active **93.9% (13.1 days)**

AGP

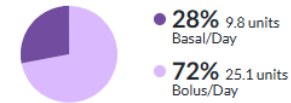
Glucose (mmol/L)

[What is AGP?](#)



Insulin - Device ?

From Insulin Pump



Insulin/day	34.8 units
Overrides (%)	8% (9 boluses)
# Bolus/Day	7.8

System Details

Insulet Omnipod® 5 System (13d 9h)

Automated Mode	100% (13d 8h)
Automated: Limited	1% (4h)
Automated: Activity	0%
Manual Mode	0% (1h)

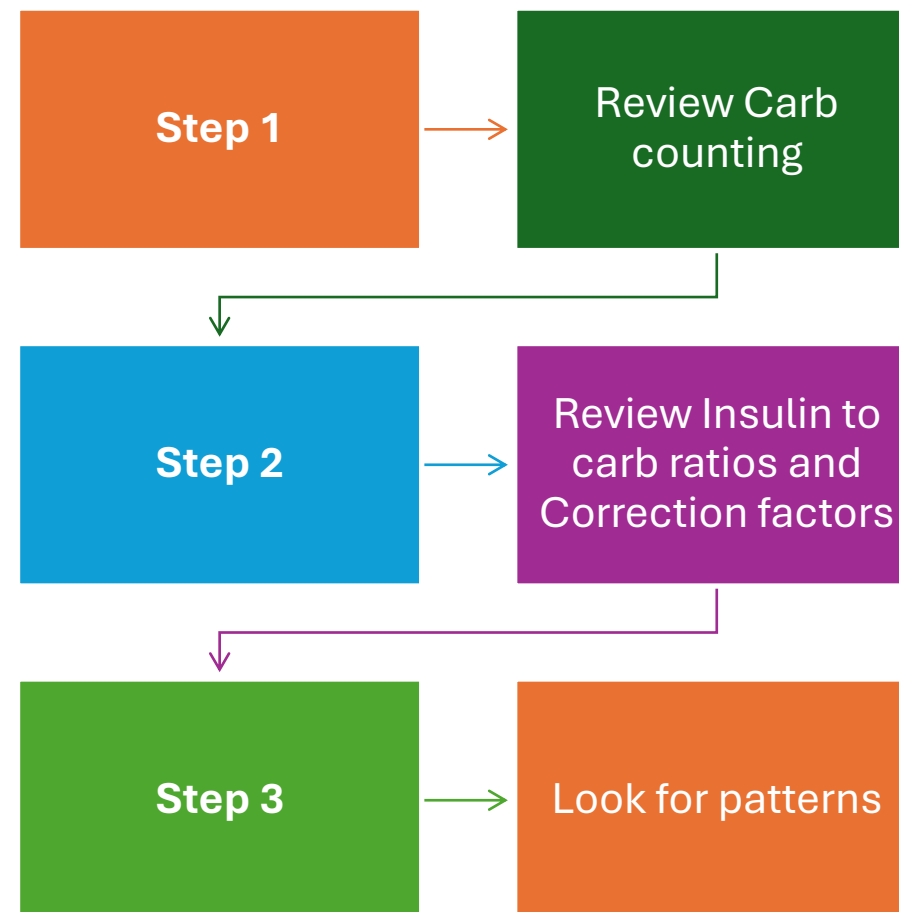
Diet

2 May - 15 May, 2025

251.7 g	6.9
Carbs/Day	Entries/Day

Activity

No activity data available





Top Tips


Omnipod 5 in Automated mode

- If you are giving a second bolus at mealtimes, for second helpings or a dessert, do not use the sensor glucose for the second bolus. This will ensure the pump delivers the insulin for the carbs you are going to eat.
- If your glucose is above target in the hours after eating, you can give a correction bolus using the bolus calculator in the Controller. Initially I would tell patients to follow the bolus advice. If it doesn't offer a correction, it is because the system has worked out that there is enough insulin on board. However, you may need to adjust if you are still rising after meals.
- If you are going to be active after meals, doing something that you know causes low glucose or hypos, then start the Activity function prior to the meal.



Top tips


Tandem T Slim with Control IQ

- You still have the option to use an extended bolus (Max 2 hours). We suggest that you try to give all the insulin at the beginning to see if Control IQ can manage the glucose. If you decide to use the extended bolus, start with at least 60-70% upfront.
 - If that doesn't work...
 - Split bolus (60-70% upfront, but may need 50:50) and leave 3-4 hours before giving the second one.
- 



Top tips


Medtronic 780G with Smart Guard

- There is a safe meal feature which adjusts your meal bolus if the glucose is low or going down. The adjustment is made using the insulin delivery in the hours before you eat including corrections, autocorrections and any increased basal. It is important to follow the bolus calculator to avoid hypos.
 - If that doesn't work...
 - Split bolus (60-70% upfront, but may need 50:50) and leave 3-4 hours before giving the second one.
- 


Top tips

Ypsopump with CamAPS

- This system learns how to manage your glucose after meals, and it is normal to see the insulin delivery increase after eating.
- If the system suspends after you eat, this can lead to a glucose rise. In this situation, your carbohydrate ratio could be too strong.
- For high fat and/or high protein meals you can enter 60-70% of the insulin 10-15 minutes before eating. You can let the system manage the glucose after eating or you can add the rest into the Add Meal function.



Other things
to think
about...

- Healthy eating and glycaemic index
 - Motivation
 - Hypo phobia
 - Trial and error
- 



Thank you for
Listening!