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Meal Management
T1D

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Disclosures

- NHS diabetes dietitian
- Dexcom advisory board; consultancy panel for Medtronic and MyLife diabetes care; received honoraria for speaker services from Insulet, Medtronic, Roche, SBK, and Diabetes MyWay. Delivered industry supported continuing medical education activities for Dexcom.
- ABCD DTN committee

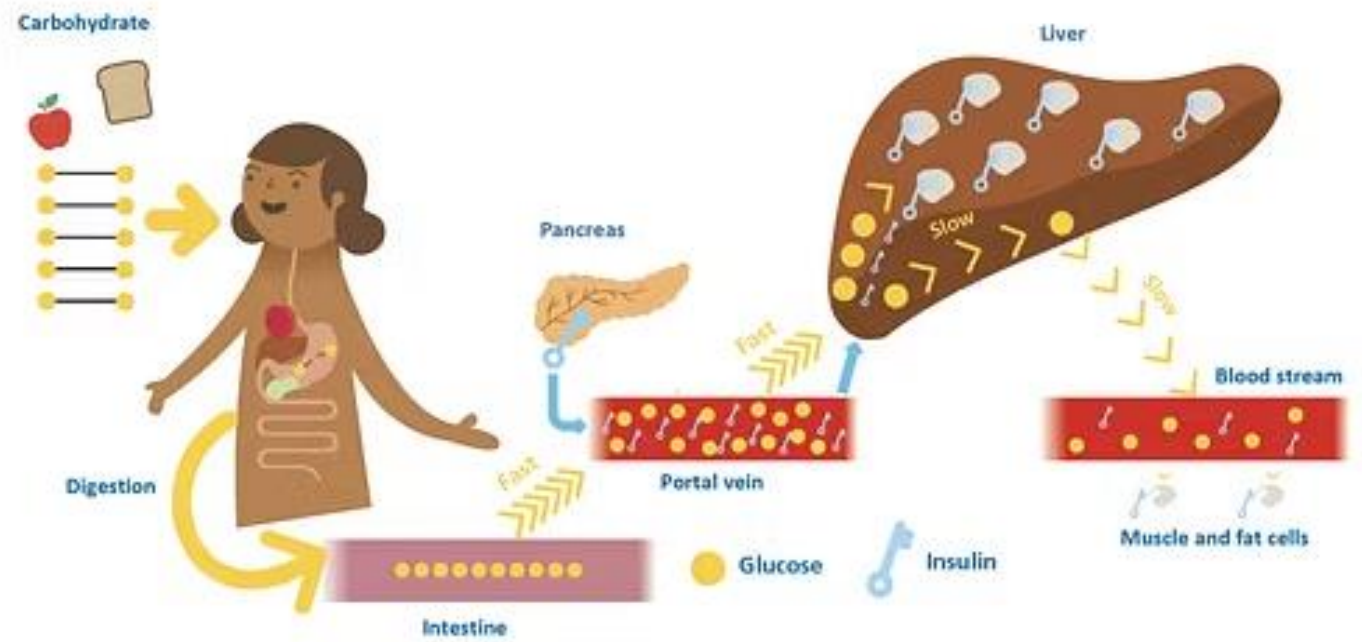
None of these activities are considered to be a conflict for this presentation.

Agenda

- The science behind glucose responses to food
- Staying in range: practical approaches for different meals
- Developing skills in carb counting, estimation, and AI tools
- Optimising insulin pump settings
- Summary and key takeaway messages

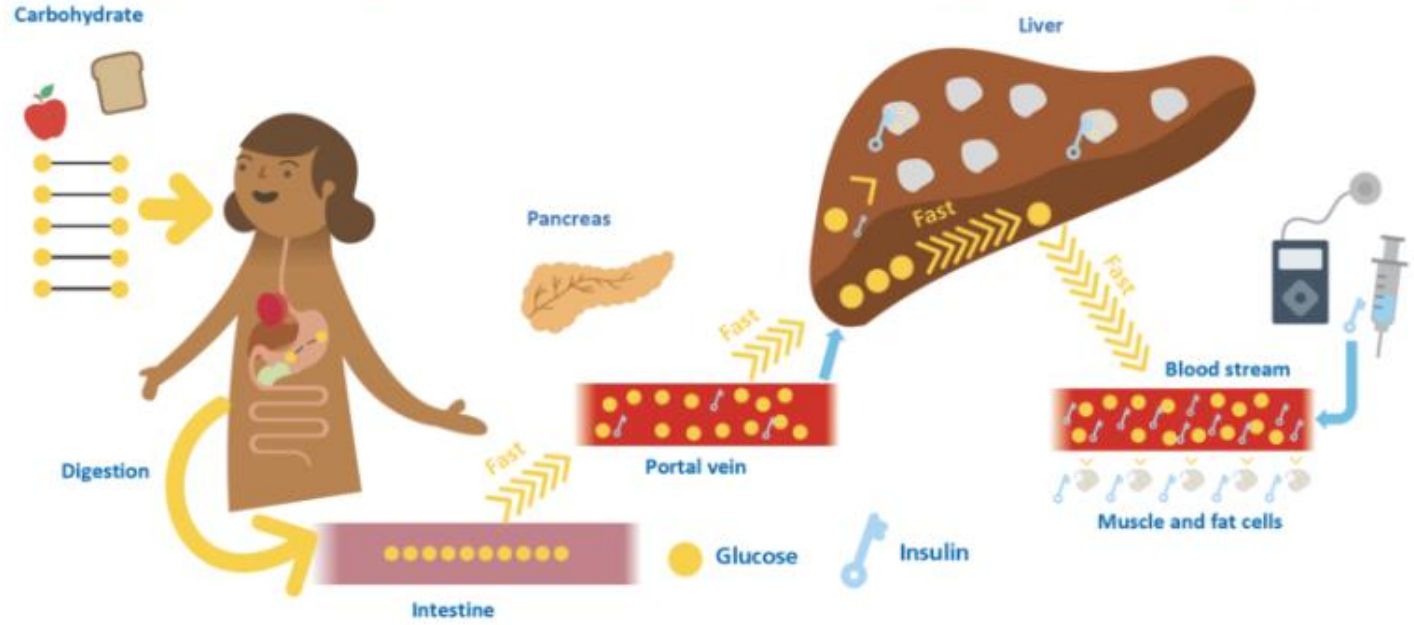
Why does glucose NOT spike after eating in people WITHOUT type 1 diabetes?

1. Pancreas delivers insulin into the portal vein
2. Most of the glucose from digested carbohydrate is stored in the liver
3. Small amount of glucose enters the bloodstream from the liver (no spike)
4. Minimal amount of insulin circulating in the blood stream (lower cardiovascular risk)
5. Small amount of glucose stored in muscle and fat cells (lower risk of storing fat)



Why does glucose SPIKE after eating in people WITH type 1 diabetes?

1. Injections or pump delivers insulin into the blood stream
2. Chance to store most of the glucose from digested carbohydrate in the liver is missed
3. Large amount of glucose enters the bloodstream from the liver (big spike)
4. Very high circulating insulin in the blood stream (higher cardiovascular risk)
5. Large amount of glucose stored in muscle and fat cells (higher risk of storing fat)



Types of meals

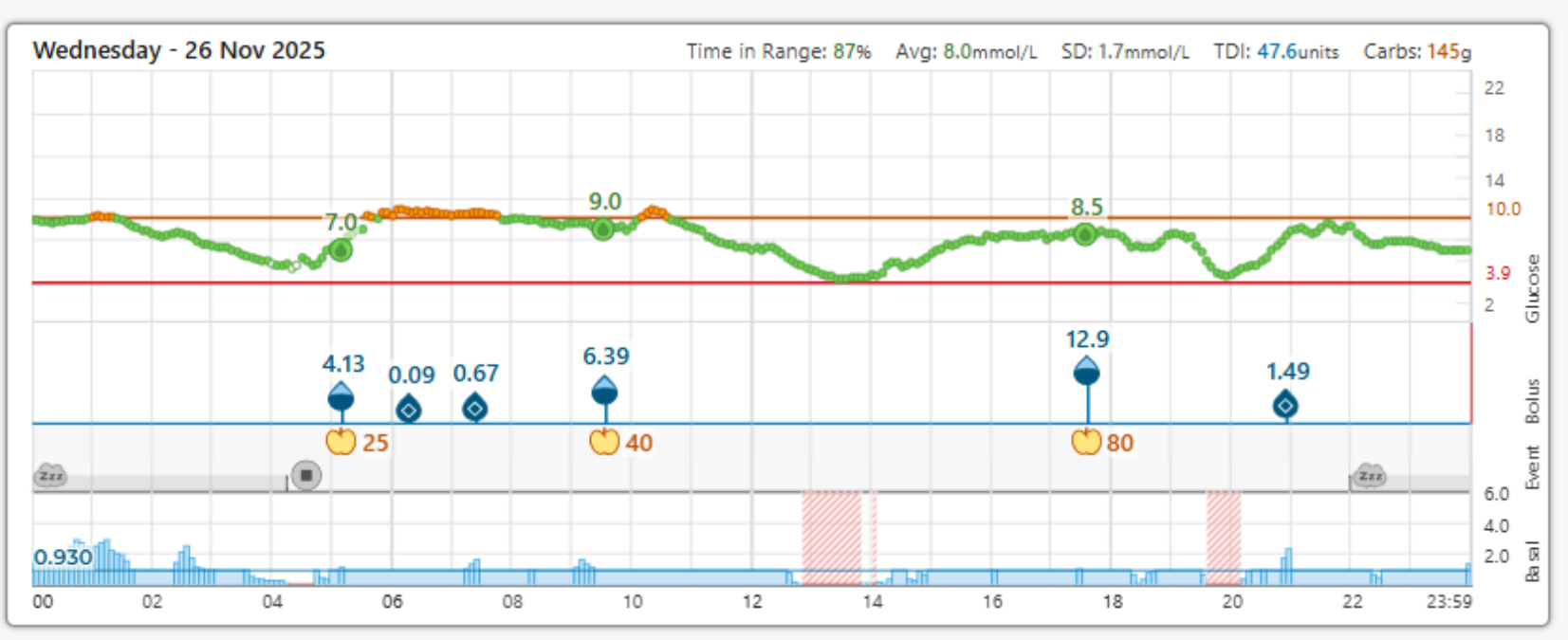
Balanced meals

- Slow digestion due to complex carbohydrates
- Remember – still limited insulin in portal vein, and slow absorption of insulin delivered from one site, therefore a rise in glucose will still occur

Optimising glucose time in range:

1. Count carbohydrates
2. Pre-bolus 20 minutes (can adapt per trend arrow)
3. Be physically active for 10-20 minutes after eating

Balanced meals in practice



- Three balanced meals across the day
- Pre-bolus observed ~5 minutes breakfast; 15 minutes lunch and dinner
- Activity included in the evening; daytime the person is desk based

High fat meals

Additional challenges beyond absent portal insulin and slow subcutaneous insulin absorption

- High fat delays digestion, sometimes causing an early glucose lowering
- 2-3 hours later glucose levels rise as nutrients enter circulation
- Fat molecules bind to insulin receptors on cells, reducing insulin efficiency

This results in increased insulin requirements for the same volume of carbs OR potentially a high amount of exercise to metabolise the fat on receptor cells (diacylglycerol)

High-fat Meals? Tip – keep it simple

- Can the system manage meals higher in fat?

Why not find out first?

Studies have shown 42-125% dose increases may be needed to stabilise glucose levels post-meal.

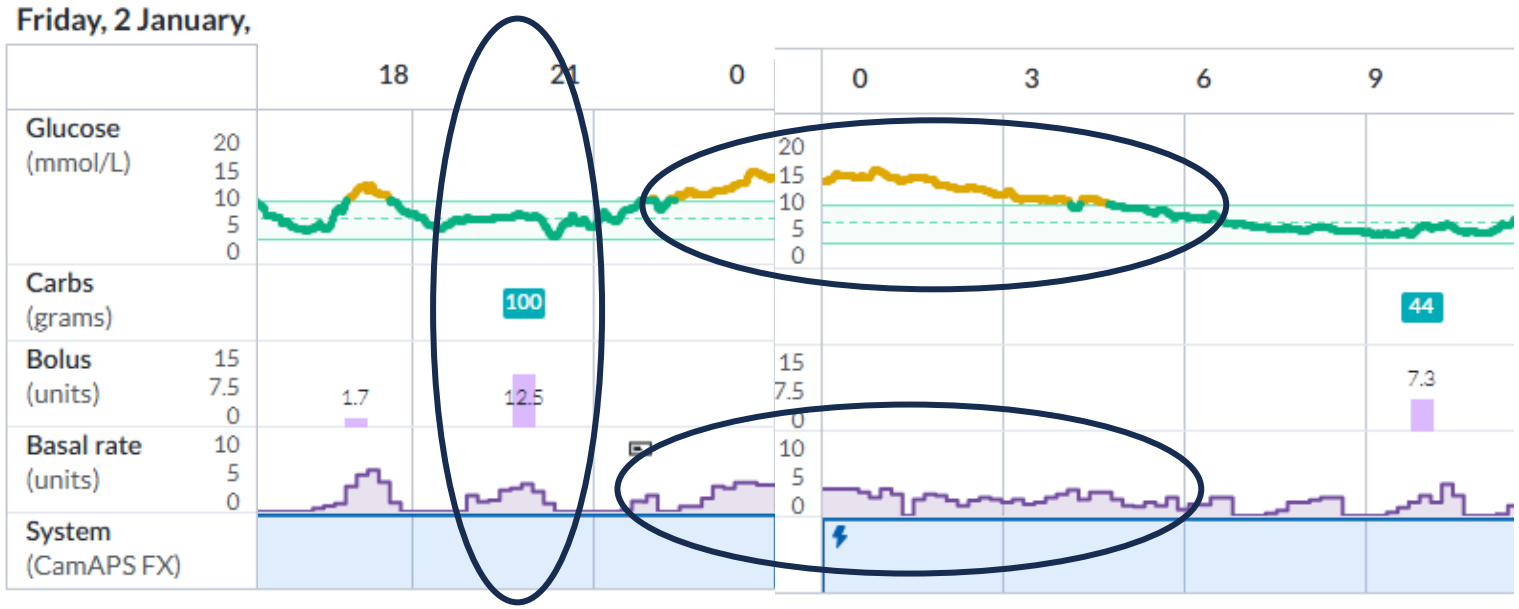
- Can 15 minutes of moderate activity two hours after eating be enough to manage the delayed rise in glucose?

Basic advice (expand later on)

Optimising glucose time in range:

1. Count carbohydrates
2. Pre-bolus 10-20 minutes (can adapt per trend arrow)
3. Be physically active 2-3 hours after eating

High fat meal in practice



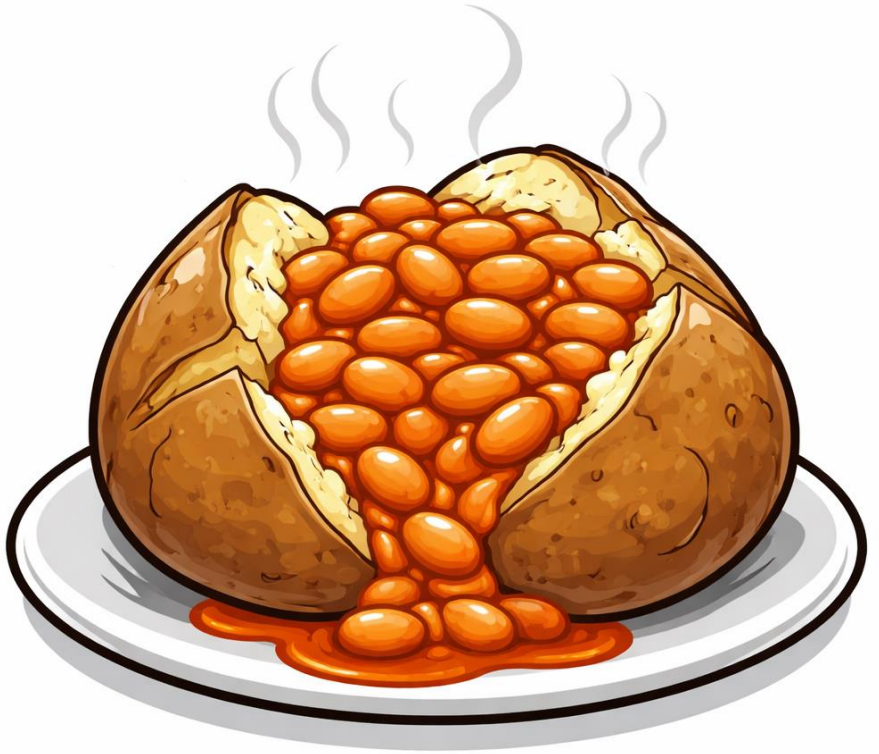
- Programmed 100g carbs for a take-away
- Initial glucose response – remains in target
- 2-2.5hours later rise begins
- Goes to bed no further action
- Algorithm delivering automated insulin consistently across the next 8 hours **but** glucose remains above target

Very high-carb meals

- Digestion is quick, faster than exogenous insulin can work.
- Absorption of insulin is from one site and these meals need big doses in one go

Optimising glucose time in range:

1. Slow absorption by increasing complexity i.e. add vegetables
2. Count carbohydrates
3. Pre-bolus 20 minutes (can adapt per trend arrow)
4. Be physically active for 10-20 minutes after eating
5. Eat these meals less often



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Very high-carb meal in practice

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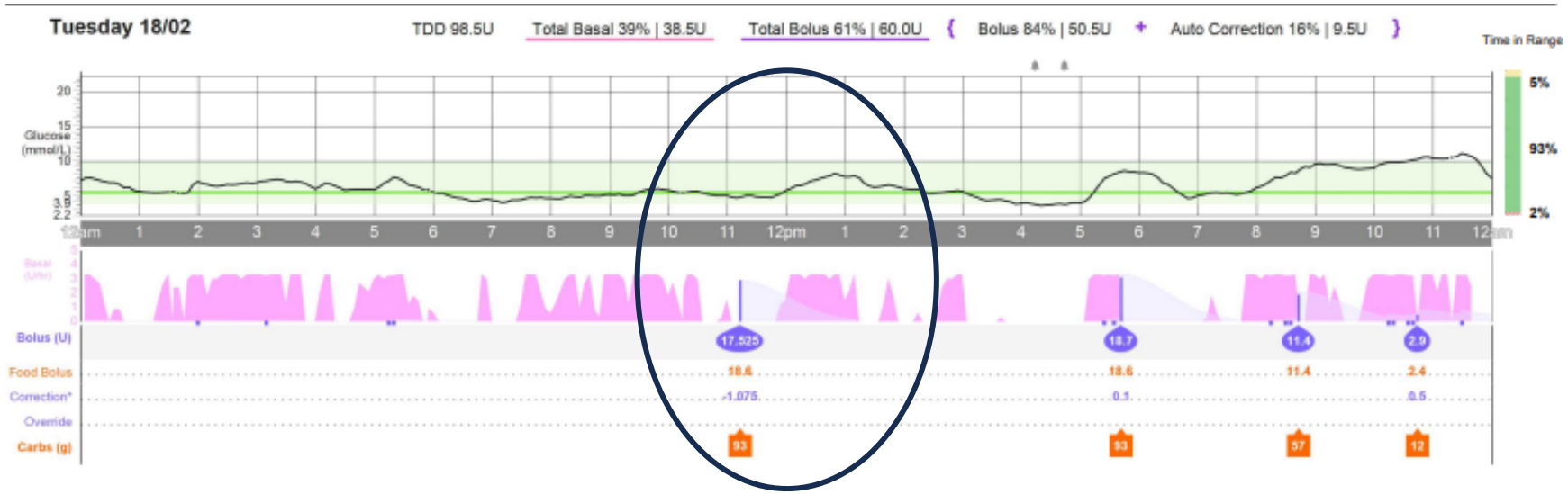


Action

- Left office for pre-lunch walk – 20 minutes in total
- Bought lunch whilst out – large pasta salad and portion of fruit
- Counted carbs
- Pre-bolus (11.10am) whilst walking back to office with lunch; ate at 11.30am

Result

- Glucose remained in target post-meal and all afternoon (slightly below target on finishing work)
- No auto-corrections delivered, modulated basal only adjusted as per usual algorithm needs

Summary

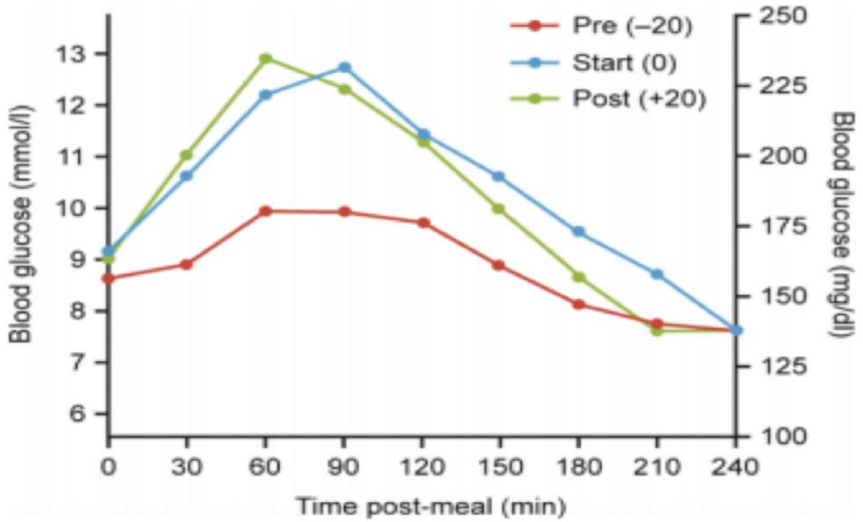
- Pre-bolus 20 minutes

  (Slattery, Amiel and Choudhary et al, 2017)

- Carb counting ideal method to programme bolus with

- Activity with meals 10-20 minutes

  (Pemberton et al, 2025)



(Cobry et al, 2010)

How can we support PWD to implement the advice for meal management?

What skills do PWD have for meal management?

- NICE guidance recommends structured education pre-pump start to learn/refine carb counting skills

Options

Face to face

- DAFNE/diabetes service own course
- Carb counting workshops
- 1-1 support in clinical setting

Online

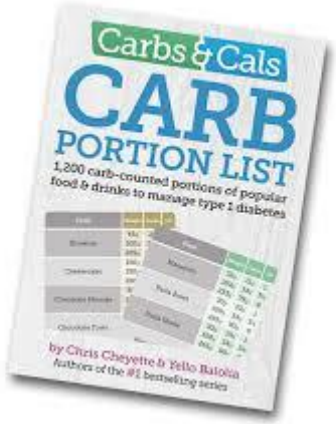
- BERTIE, Diabetes MyWay, DAFNE remote

Barriers

- Time commitment
- Cost to person with diabetes
- Ability to learn in group setting/focus
- Access to device to learn on/access course

Carbohydrate counting and Carbohydrate Awareness

Determining ratios, meal estimation, and fixed doses requires skills in assessing carbohydrate content of typical meals eaten by the person and their insulin sensitivity.
Diabetes specialist dietitians work closely with people with diabetes to create this assessment through various methods.



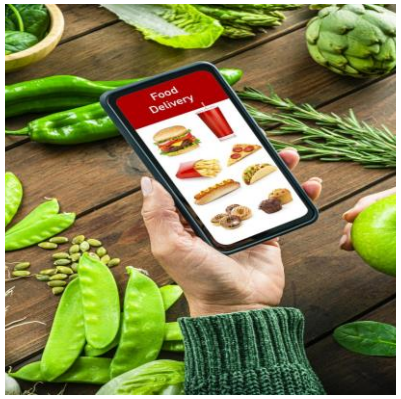
This is used as the starting point to create settings for bolus calculators alongside estimated insulin sensitivity based on body weight, duration of diabetes, or current established TDD as well as age.

AI Use in Diabetes Care

AI-Assisted Diabetes Management

AI tools can help with carbohydrate counting and analysing glucose data, streamlining daily diabetes management tasks.

Don’t rely on AI for critical, time-sensitive medical decisions, especially insulin adjustments, due to the potential for dangerous errors.



Potential Limitations

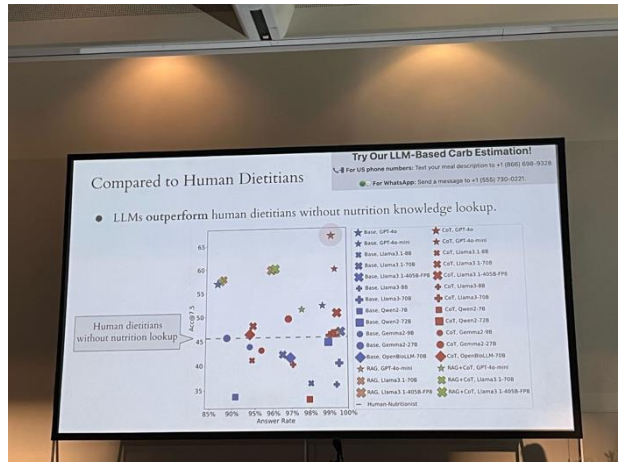
Generic AI apps may provide unreliable results, especially if the device lacks advanced features or up-to-date resources.
Some tools like Snaq only provide the best results on high end iPhones with specific hardware.

Importance of Verification

Always double-check AI suggestions with trusted sources and consult with professionals before making any treatment changes.

Be aware that Generic Ais like ChatGPT and Grok are designed to keep the conversation going which can lead to incorrect responses that appear confident and correct.

DTN statement on LLMs

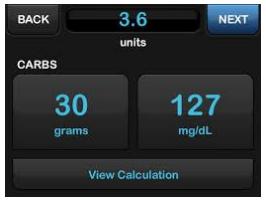


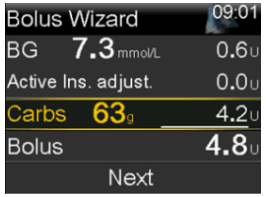
Summary
The future of AI in diabetes management is exciting, but for now, remember:

- LLMs may support carb estimation and glucose pattern recognition
- They are not a substitute for medical expertise or insulin advice
- Outputs can be inaccurate, inconsistent, or unsafe
- AI provides estimates only and requires human sense-checking
- Insulin or pump changes must always be reviewed by patients and clinicians
- Regular diabetes care cannot be replaced by AI tool

Carb counting

- Proven to achieve a reduction in HbA1c for people using **MDI therapy**
- All HCL systems have bolus calculators
- Studies show increased treatment satisfaction reported (and lower HbA1C) from those who carb count (Laurenzi, 2011) – pre-HCL use

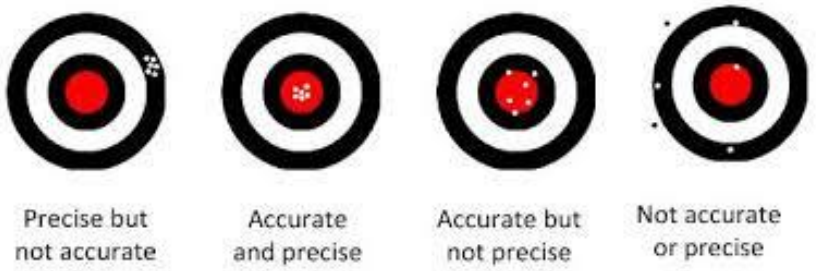




Accuracy into Outcomes

- **Carb Counting Accuracy and Outcomes**
- **Patient accuracy:**
  - Studies in MDI and CSII users with 1–5 days of education show carb counting accuracy ranges **38–67%** (within ±20% of actual carb value).
  - Most inaccuracies are **overestimations**, averaging around **40%.**

  (Meade, 2016; Shapiro, 2010; Deeb, 2016; Keaver,2020)

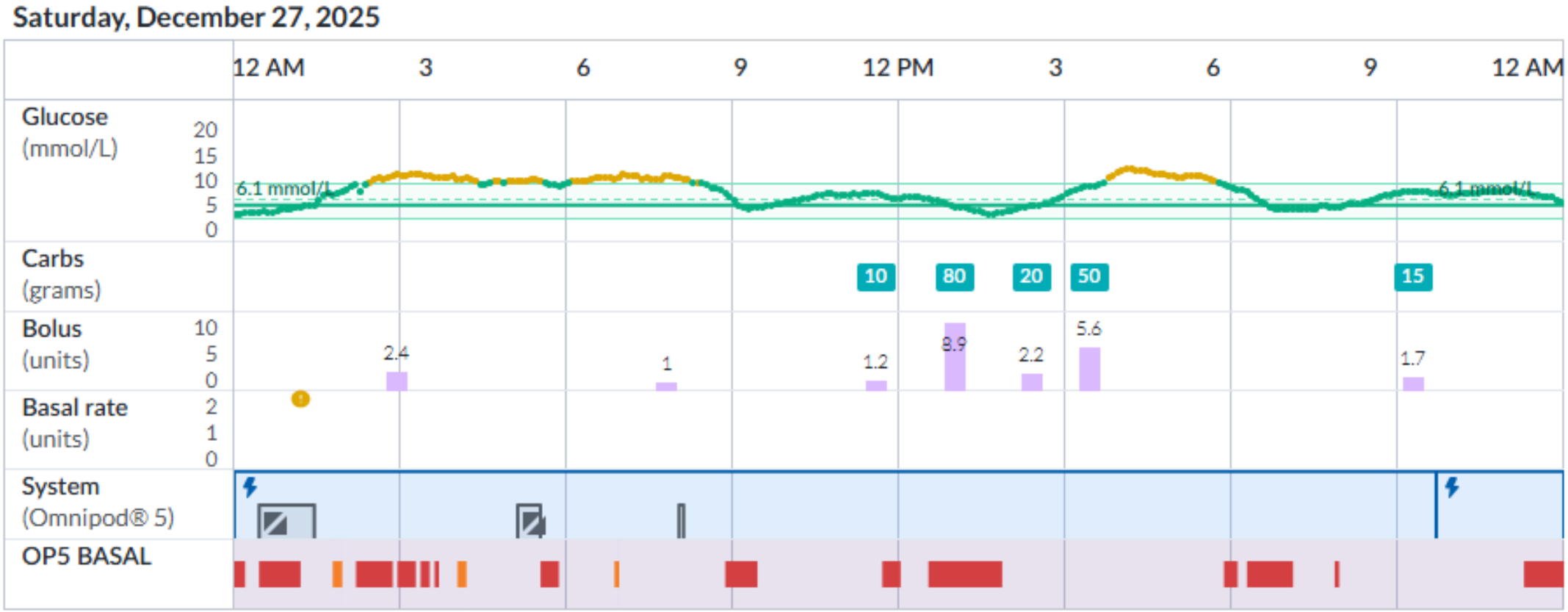


- **Impact on glucose outcomes:**
  - Accurate counts improve post-prandial glucose: **55% of correctly counted meals hit target levels (Deeb, 2016)**

Implication:

Even with education, many patients struggle to count carbs precisely, but when done accurately, it meaningfully improves post-meal glucose control OR it suggests insulin alone not enough for all types of meals.

Carbohydrate counting in practice



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Wed, Oct 8th, 2025 - Mon, Jan 5th, 2026
90 days (by week)

Glucose (CGM)

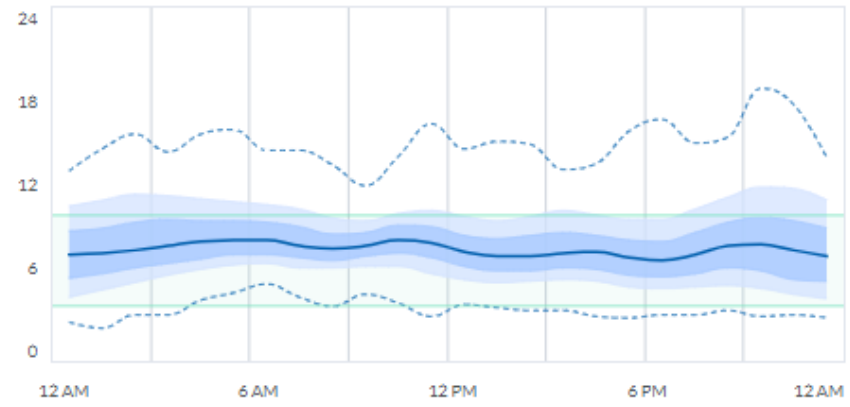
0%	**Very High**	> 13.9 mmol/L
17%	**High**	10.1-13.9 mmol/L
82%	**Target Range**	3.9-10 mmol/L
1%	**Low**	3-3.8 mmol/L
0%	**Very Low**	< 3 mmol/L

% Time CGM Active	100% (7 days)

GMI	N/A
Average	8 mmol/L
SD	2.1 mmol/L
CV	25.9%
Median	7.9 mmol/L
Highest	14.5 mmol/L
Lowest	3.3 mmol/L

AGP

Glucose (mmol/L) What is AGP?



Insulin - Device

From Insulin Pump

52% 21.1 units Basal/Day

48% 19.1 units Bolus/Day

Insulin/Day	40.2 units
Overrides (%)	2% (15 boluses)
# Bolus/Day	7

System Details

Insulet Omnipod® 5 System (89d 21h)

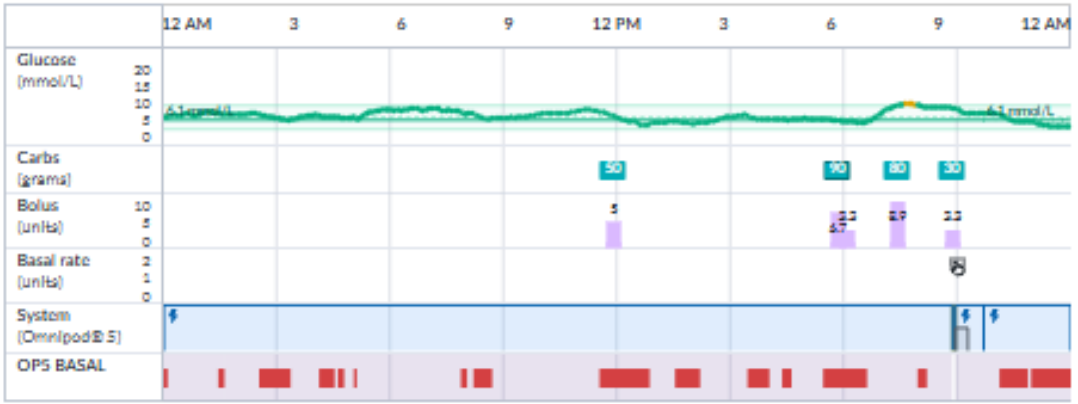
Automated Mode	100% (89d 17h)
Automated: Limited	2% (1d 15h)
Automated: Activity	0% (5h)
Manual Mode	0% (3h)

Diet

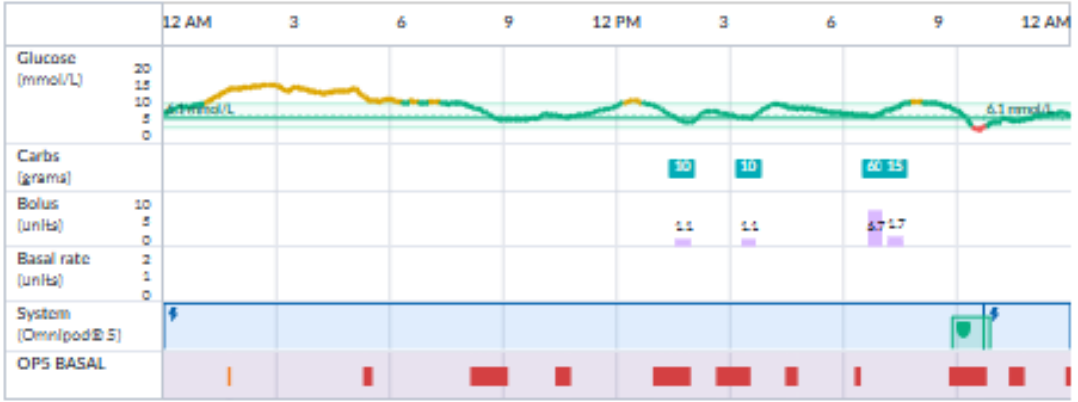
Oct 8, 2025 - Jan 5, 2026

145.6 g Carbs/Day	4 Entries/Day

Friday, December 26, 2025



Thursday, December 25, 2025



Meal estimation

- the process of approximating the size or carbohydrate content of a meal
- often done by visually judging portion sizes as small, medium or large.

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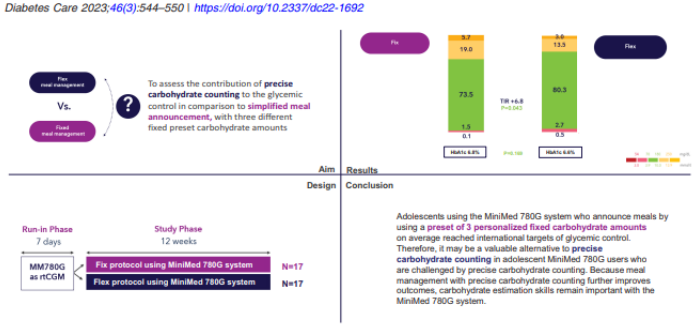
Simplified Meal Announcement Versus Precise Carbohydrate Counting in Adolescents With Type 1 Diabetes Using the MiniMed 780G Advanced Hybrid Closed Loop System: A Randomized Controlled Trial Comparing Glucose Control

Goran Petrovski, Judith Campbell, Maheen Pasha, Emma Day, Khalid Hussain, Amel Khalifa, and Tim van den Heuvel

Diabetes Care 2023;46(3):544–550 | https://doi.org/10.2337/dc22-1692



ARTICLE HIGHLIGHTS

- Adolescents using the MiniMed 780G system that announces meals by using a preset of three personalized fixed carbohydrate amounts on average reached international targets of glycemic control.
- This method may be a valuable alternative to precise carbohydrate counting in adolescent MiniMed 780G users who are challenged by precise carbohydrate counting.
- Meal management with precise carbohydrate counting further improves outcomes, and carbohydrate estimation skills remain important with the MiniMed 780G system.

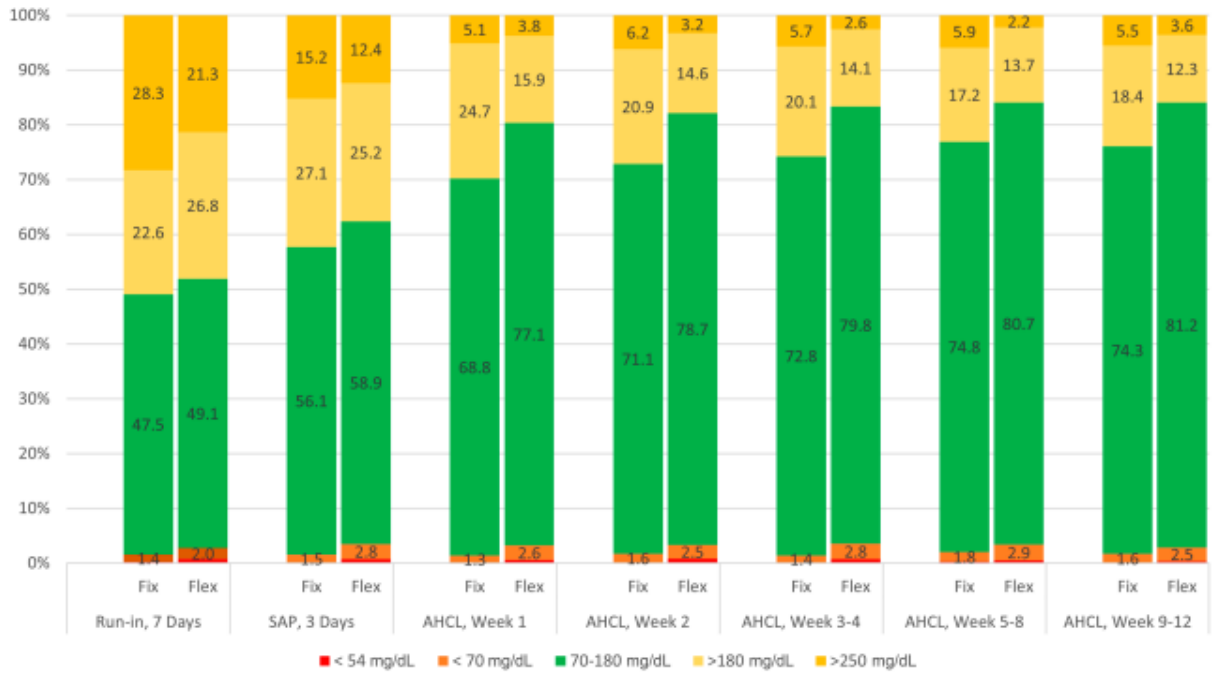


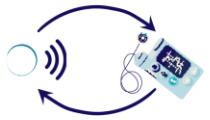
Figure 2—TIR during different study periods. Data are percentage of TIR during the interval. Glucose values <54 mg/dL are not shown on the graph. Baseline data were collected using the Guardian 4 sensor with the MiniMed 780G system for a 1-week period of training. AHCL, advanced

From: **A Randomized Crossover Trial to Compare Automated Insulin Delivery (the Artificial Pancreas) With Carbohydrate Counting or Simplified Qualitative Meal-Size Estimation in Type 1 Diabetes**

Haider et al 2023 Diabetes Care. 2023;46(7):1372-1378. doi:10.2337/dc22-2297

Is qualitative meal-size estimation noninferior to carbohydrate counting in automated insulin delivery for people living with type 1 diabetes?

QMSE
(e.g., low CHO, high CHO)



AID

vs.

CHO Counting
(e.g., 56 g CHO)

This study is funded by NIH National Institutes of Health

Methods

A Randomized Crossover Trial

- 30 adults living with T1D
- 3-week intervention periods
- A median washout period of 6 days in between

Legend
QMSE Qualitative meal-size estimation
CHO Carbohydrate
AID Automated insulin delivery
T1D Type 1 diabetes
TIR Time in range
TBR Time below range

Results

QMSE vs. CHO Counting

Mean TIR (3.9–10 mmol/L)
70.5% (vs. 74.1%)

Median TBR (<3.9 mmol/L)
1.6% (vs. 1.4%)

Conclusion

- **QMSE achieved high time in range and low time below range; however, noninferiority was not confirmed for QMSE vs. carbohydrate counting.**
- **Further improvements to QMSE might reduce diabetes management burden in T1D.**

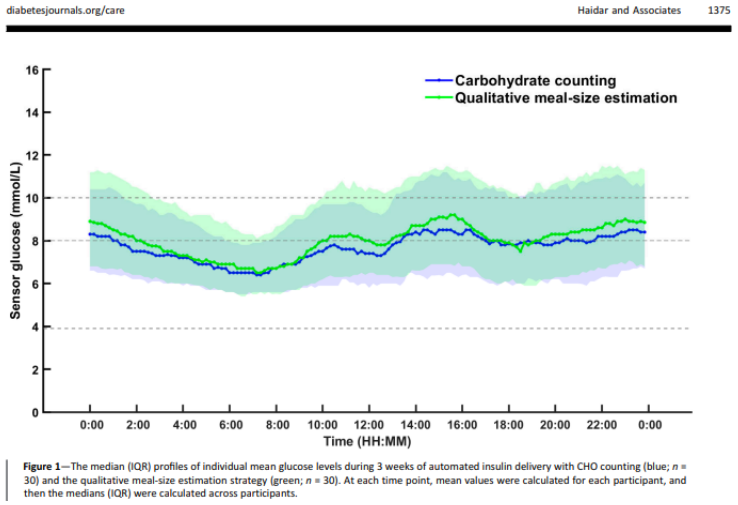


Figure 1—The median (IQR) profiles of individual mean glucose levels during 3 weeks of automated insulin delivery with CHO counting (blue; *n* = 30) and the qualitative meal-size estimation strategy (green; *n* = 30). At each time point, mean values were calculated for each participant, and then the medians (IQR) were calculated across participants.

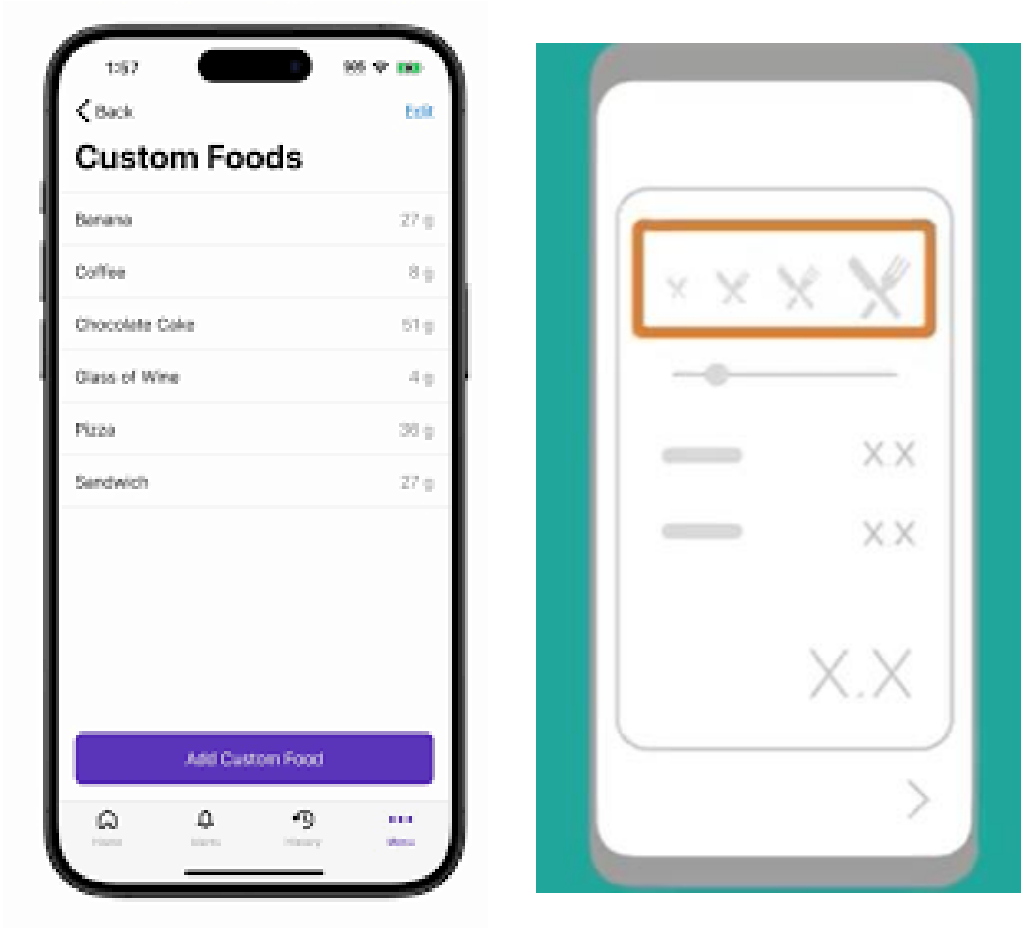
American Diabetes Association®

Meal estimation

- How do we set it up?
- How does the patient implement it?

System use:

- OP5 Custom foods
- CamAPS Fx Meal size
- Control IQ and SmartGuard need a fixed carb amount the person enters

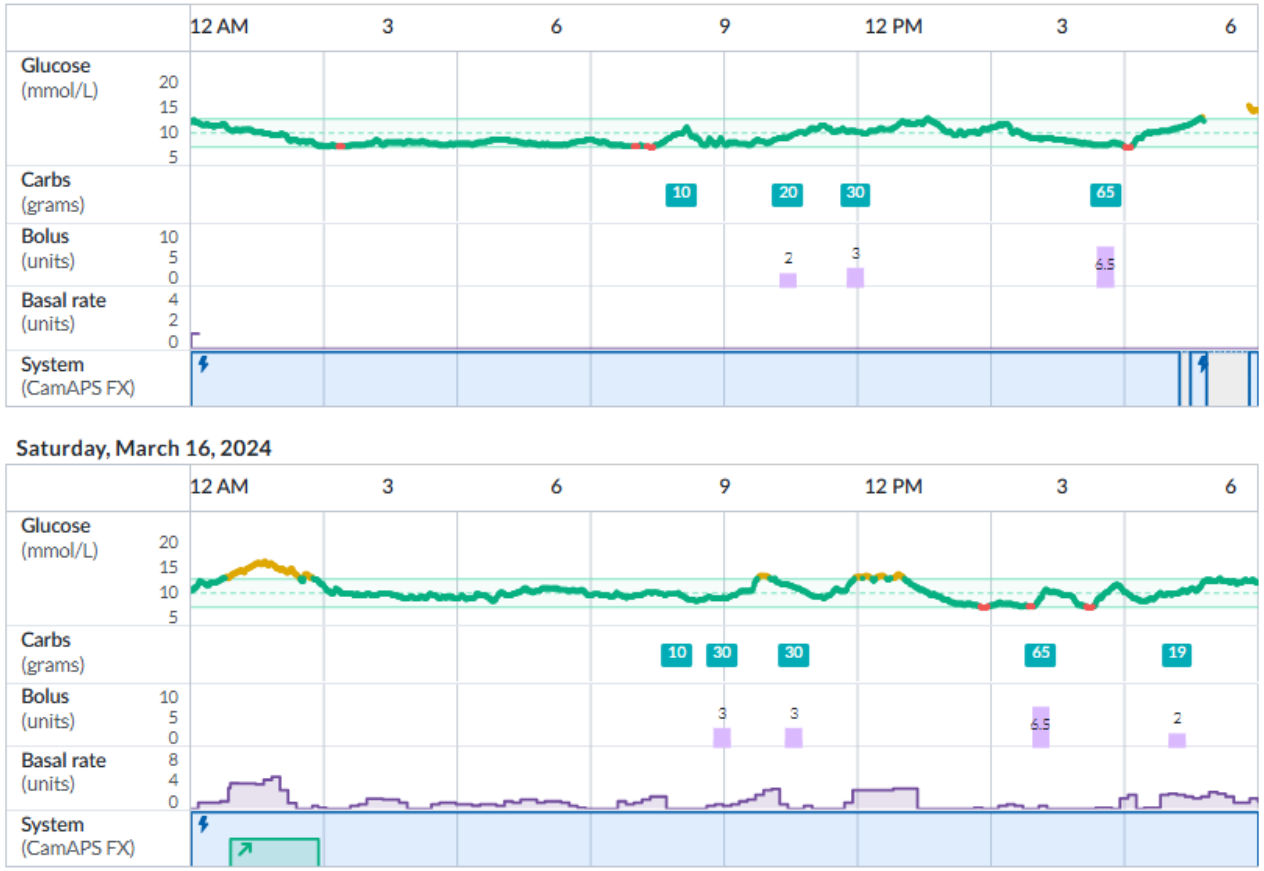


Meal estimation in practice

- Young adult with additional learning needs
- Referred on BD mix insulin with HbA1c 110 mmol/mol. Transitioned to fixed-dose SMDI achieving a HbA1c of 77 mmol/mol.

- Informed team of plans for pregnancy -

- Provided tailored carbohydrate awareness education before onboarding to hybrid closed-loop therapy with meal size programmed 20/30/50/65
- Achieved pre-conception HbA1c 46 mmol/mol.



Glucose (CGM)

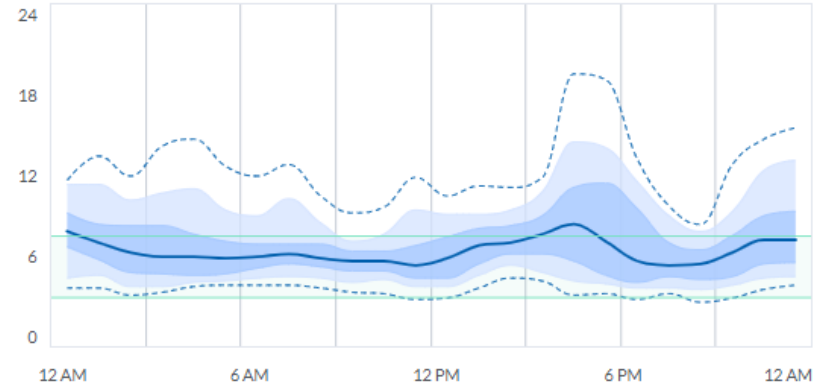
2%	**Very High** > 13.9 mmol/L	
28%	**High** 7.9-13.9 mmol/L	
69%	**Target Range** 3.5-7.8 mmol/L	
1%	**Low** 3-3.4 mmol/L	
0%	**Very Low** < 3 mmol/L	

% Time CGM Active	**97.2% (6.8 days)**

GMI	N/A
Average	7.1 mmol/L
SD	2.5 mmol/L
CV	35.1%
Median	6.6 mmol/L
Highest	19.2 mmol/L
Lowest	3.1 mmol/L

AGP

Glucose (mmol/L) What is AGP?



Insulin - Device

From Insulin Pump

58% 16.8 units Basal/Day

42% 12.3 units Bolus/Day

Insulin/Day	29 units
Overrides (%)	0% (0 boluses)
# Bolus/Day	5.6

System Details

CamAPS FX (7d)

Auto mode 'On'	96% (6d 17h)
Boost	6% (10h)
Ease-off	0%
Auto mode 'Off'	2% (4h)
Auto mode 'Attempting'	2% (3h)

Diet

Mar 12 - Mar 18, 2024

134.3 g Carbs/Day	5.6 Entries/Day

2%	**Very High** > 13.9 mmol/L
10%	**High** 10.1-13.9 mmol/L
86%	**Target Range** 3.9-10 mmol/L
2%	**Low** 3-3.8 mmol/L
0%	**Very Low** < 3 mmol/L

GMI	N/A
Average	7.1 mmol/L
SD	2.5 mmol/L
CV	35.1%
Median	6.6 mmol/L
Highest	19.2 mmol/L

Delivered a healthy baby boy at 36 weeks with no complications.

Demonstrates how personalised education and diabetes technology can reduce inequalities and widen access, shown in this individual with no formal qualifications or employment history.

Summary

- **Carbohydrate counting** is the preferred approach for dosing mealtime insulin in people with diabetes.
- **Considerations:**
  - The complexity and burden of daily diabetes self-management can limit an individual's capacity to consistently count carbohydrates.
  - For some, simplified **meal estimation** offers a more practical and sustainable alternative to formal carbohydrate counting and has shown effectiveness in achieving optimal glucose outcomes.

Pump settings – optimising meal response

What have we learned about the algorithms to influence our set up and optimising practice?

Omnipod 5

HCL Mode	Optimal Settings	Setting used by algorithm, bolus calculator or both
Carb ratio	300-350/TDD	Bolus calculator
Correction factor	83/TDD	Bolus calculator
Glucose Target mmol/l	6.1	Used by algorithm and bolus calculator
Active insulin time	2-4 hours	Bolus calculator

Key strategies:

- Pre-bolus 20 minutes (adjustable for trend arrow)
- Eating additional carbs within AIT – do not use sensor glucose in calculation

Mealtime insulin strategies for SmartAdjust

Balanced meal	Very High Carb meal	High-fat meal
• Count carbohydrates • Pre-bolus 20 minutes (can adapt per trend arrow) • Be physically active for 10-20 minutes after eating For tight glucose goals: check glucose level and automated insulin delivery 2 hours post meal and consider if correction dose required	• Count carbohydrates • Pre-bolus 20 minutes (can adapt per trend arrow) • Be physically active for 10-20 minutes after eating • Check glucose and automated insulin delivery 2 hours post meal and consider if correction dose required *strongly advise if glucose target >6.1mmol/l Eat these meals less often	• Count carbohydrates • Pre-bolus 10-20 minutes (can adapt) • Do 15 minutes of moderate activity two-three hours after eating. • Check glucose and automated insulin delivery 2 hours post meal, consider if correction dose required Advanced advice: 1. Glucose target > 6.1mmol/l? Lower target pre-meal up to 6hrs post meal 2. Pre-meal increase the calculated insulin dose by 25% and split dose manually 50% now and 50% in 1 hour Goal is to stay in automated mode therefore do not want HCL delivering max automated insulin over many hours if can avoid this.

Pre-bolus in practice

College student

- During the day independent managing OP5:

- post-meal bolus

- No input for snacks

- Evening meal supported by parent:

- Pre-meal bolus 15-20 minutes

Medtronic 780G

HCL mode	Optimal Settings	Setting used by algorithm, bolus calculator or both
Carb ratio	360/TDD	Bolus calculator
Correction factor	100/TDD	Bolus calculator
Glucose Target mmol/l	5.5	Used by algorithm and bolus calculator
Active insulin time	2 hours	Used by algorithm and bolus calculator

Key strategies:

- Pre-bolus 20 minutes (adjustable for trend arrow)

Important information:

- Algorithm will determine correction bolus insulin every 5 minutes; determines own ISF from TDD updates every 24 hours
- Safe bolus mode

Mealtime insulin strategies for SmartGuard

Balanced meal	High Carb meal	High-fat meal
• Count carbohydrates • Pre-bolus 20 minutes (can adapt per trend arrow) • Be physically active for 10-20 minutes after eating	• Count carbohydrates • Pre-bolus 20 minutes (can adapt per trend arrow) • Be physically active for 10-20 minutes after eating Eat these meals less often	• Count carbohydrates • Pre-bolus 10-20 minutes (can adapt) • Let the algorithm deliver auto corrections every 5 minutes as needed • Do 15mins moderate activity 2-3hrs after meal. • Check glucose & automated insulin 2-6hrs post meal, consider if correction dose required Advanced advice: 1. Glucose target > 5.5mmol/l or AIT >2hours? Lower values pre-meal up to 6hrs post meal 2. Pre-meal increase the calculated insulin dose by 25% and split dose manually 50% now and 50% in 1 hour. Goal is to stay in SmartGuard therefore do not want HCL delivering max automated insulin over many hours if can avoid this.

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High-fat meal in practice

Action

- Counted carbs
- Pre-bolus 10-15 minutes (3.30pm)
- Walk at 5.30pm for 30 minutes

Result

- System delivered automated insulin as calculated and several correction doses 2 hours after eating
- Activity and system supported remaining in target range when rise occurred at 2 hours post-meal
- No additional insulin calculation needed/action from PWD

CamAPS Fx

HCL mode	Optimal Settings	Setting used by algorithm, bolus calculator or both
Carb ratio	350/TDD	Bolus calculator
Correction factor	120/TDD	Bolus calculator
Glucose Target mmol/l	5.8	Used by algorithm and bolus calculator
Active insulin time	2-4 hours	Bolus calculator

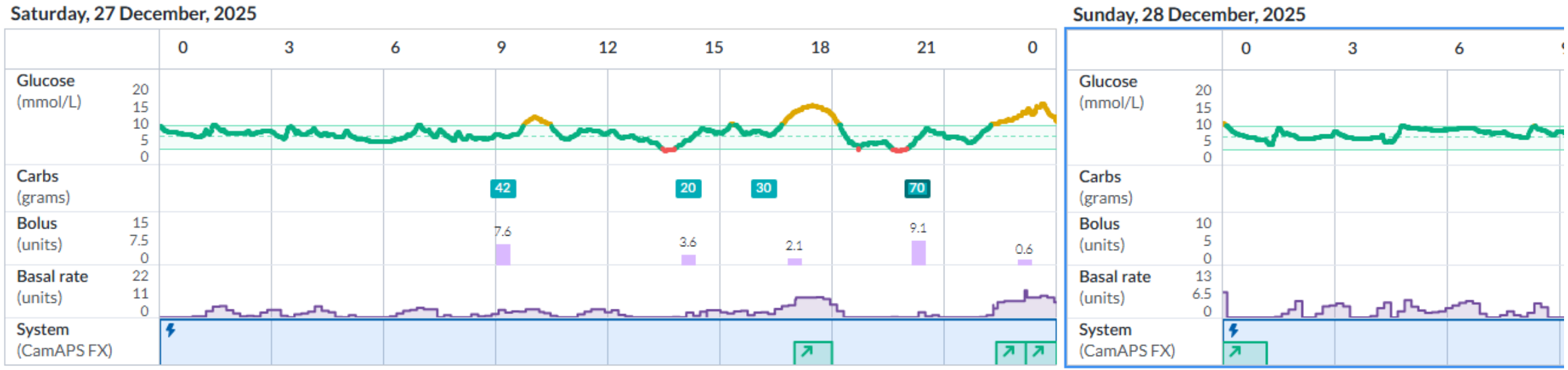
Key strategies:

- Pre-bolus 20 minutes (adjustable for trend arrow)
- Use add meal to announce hypo treatment, exercise snacks, and for very large complex meals to split dose (like extended bolus)
- Can adjust glucose target higher or lower depending on needs

Mealtime insulin strategies for CamAPS Fx

Balanced meal	High Carb meal	High-fat meal
• Count the carbohydrates • Pre-bolus 20 minutes (can adapt per trend arrow) • Be physically active for 10-20 minutes after eating	• Count the carbohydrates • Pre-bolus 20 minutes (can adapt per trend arrow) • Be physically active for 10-20 minutes after eating Eat these meals less often	• Count the carbohydrates • Let the algorithm deliver auto corrections every 8-12 minutes as needed • Do 15 minutes of moderate activity two hours after eating. Advanced advice: 1. Pre-programmable BOOST option for high-fat meal delayed hyperglycaemia 2-6 hours post-meal 2. Calculate a +25% dose. Programme the additional 25% in add meal menu. • If glucose is still high six hours later, next time increase the extra insulin by a further 25% and deliver as above.

High fat meal in practice – CamAPS Fx



Action

- Counted carbs
- Bolus as started eating due to stable but under target glucose pre-meal (8pm)
- Pre-programmed Boost – 1 hour initially – for 2 hours post meal
- Reviewed at 11pm; calculated correction via calculator on app and delivered 50% of recommended amount; extended Boost for further 2 hours

Result

- Glucose above target for 2-2.5 hours

Next steps

- In addition to above, consider activity options (walk dog/high knees at home) OR increase dose calculated by 25% and deliver the additional 25% in slowly absorbed meal

T Slim X2

HCL mode	Optimal Settings	Setting used by algorithm, bolus calculator or both
Carb ratio	400/TDD	Bolus calculator
Correction factor	95/TDD	Used by algorithm and bolus calculator
Glucose Target mmol/l	Non-customisable 6.25-8.9	Used by algorithm and bolus calculator
Active insulin time	Non-customisable 5 hours	Used by algorithm

Key strategies:

- Pre-bolus 20 minutes (adjustable for trend arrow)
- Sleep mode at least 2 hours since last bolus for carbs; ideally 4-6 hours for high-fat meals
- Extended bolus option over 2 hours
- Profile switch for stronger/weaker settings

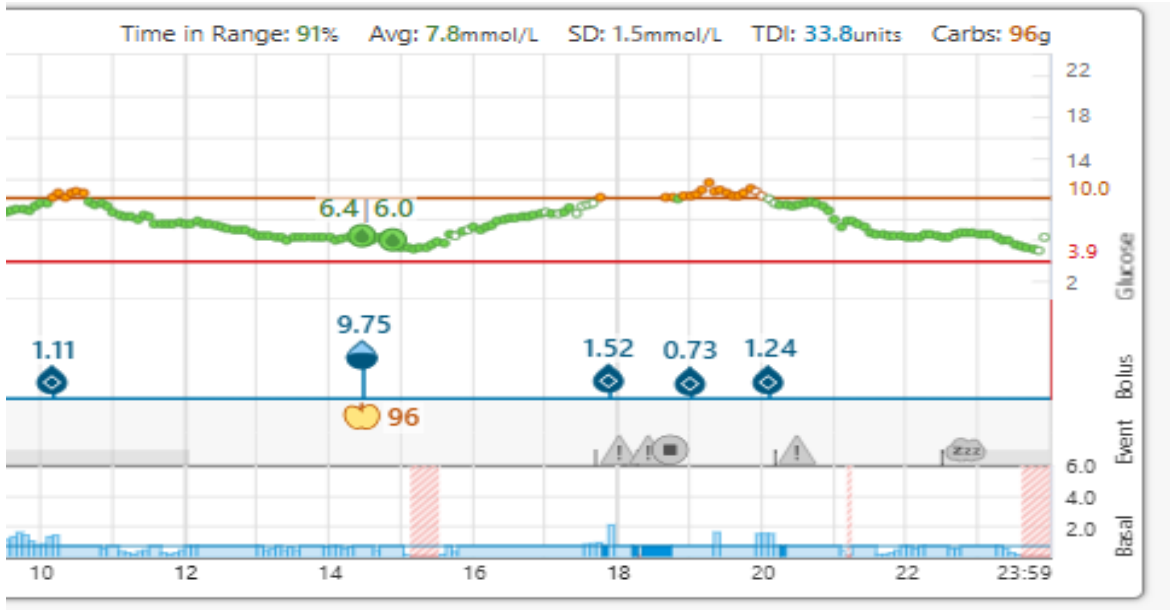
Important information:

- Algorithm will determine correction bolus insulin a minimum of 60 minutes since last bolus insulin and every 60 minutes thereafter if glucose predicted to be >10mmol/l

Mealtime insulin strategies for Control IQ

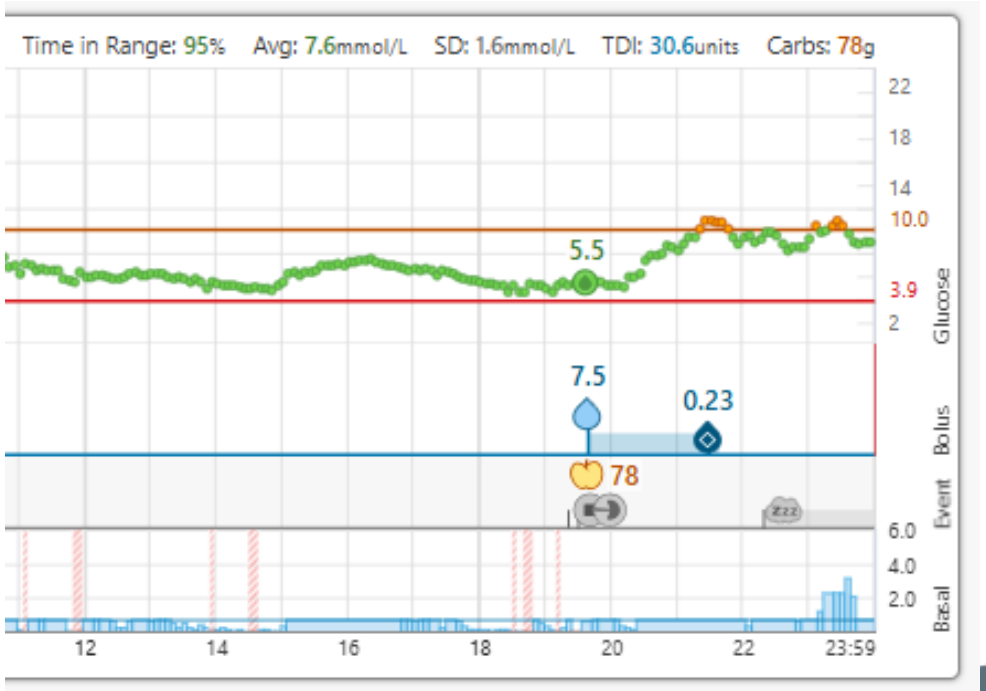
Balanced meal	High Carb meal	High-fat meal
• Count the carbohydrates • Pre-bolus 20 minutes (can adapt per trend arrow) • Be physically active for 10-20 minutes after eating	• Count the carbohydrates • Pre-bolus 20 minutes (can adapt per trend arrow) • Be physically active for 10-20 minutes after eating Eat these meals less often	• Count the carbohydrates • Let the algorithm deliver auto corrections every 60 minutes as needed • Do 15 minutes of moderate activity two hours after eating. Advanced advice if needed: 1. Increase the dose by 25%. Select extended bolus 50% now & 50% over two hours. 2. Create pump profile for high-fat meals with carb ratio 20% stronger; use extended bolus as above • If glucose is still high six hours later, next time increase the extra insulin by a further 25%/carb ratio 40% stronger.

High fat meal in practice – Control IQ



1. Autocorrections to manage the delayed rise in glucose

2. Extended bolus with additional insulin + autocorrection



What about missed bolus?

Saving lives, Improving lives

Managing missed pre-bolus

NHS
Salford Care Organisation
Northern Care Alliance
NHS Foundation Trust

Within 30 minutes of pre-bolus time

- Cover whole meal bolus but be aware of risk of hypoglycaemia in the 1-2 hours post meal

30-60 minutes since pre-bolus time

- Cover 50% of the meal; some systems may need more than this and others less depending on size and composition of meal

60 minutes +

Use bolus calculator for correction only

Non-bolus behaviour in practice – Control IQ

Pump Profile settings - Normal

Time	Basal Rate (units/hr)	Correction Factor (units:mmol/L)	Carb Ratio (units:grams)
00:00	1.200	1:1.5	1:5.0

Total Daily Basal: 28.800 units Insulin Duration: 5 hrs Carbohydrates:On

Insulin summary

Average daily dose		55.82 units
Basal	56 %	31.30 units
Bolus	44 %	24.52 units
Average daily boluses		13 boluses
Manual	17 %	2 boluses
Control-IQ	83 %	11 boluses
Average daily carbs		10 g

Bolus review (daily average)

Type		
Food	8 %	2.00 units
Correction	12 %	2.85 units
Override	0 %	0.00 units
Control-IQ	80 %	19.67 units
Delivery Method		
Standard	20 %	4.85 units
Extended	0 %	0.00 units
Quick	0 %	0.00 units
Control-IQ	80 %	19.67 units

PWD Profile

T1D 10 years HbA1c >100mmol/mol

MDI therapy + CGM

SMART MDI

HCL approved

Used strong correction ratio to support automatic bolus ISF 85/TDD

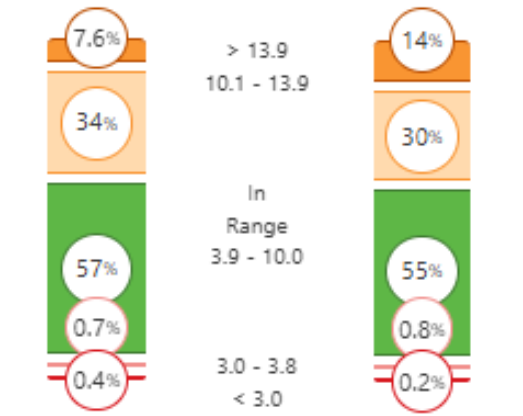
Carb ratio 300/TDD

Basal 50% TDD

CGM summary

Average reading	9.6 mmol/L
Time in range	57 %
Time CGM in use	98 %
Standard deviation	3.0 mmol/L
Coefficient of variation	31 %
GMI	7.5 %

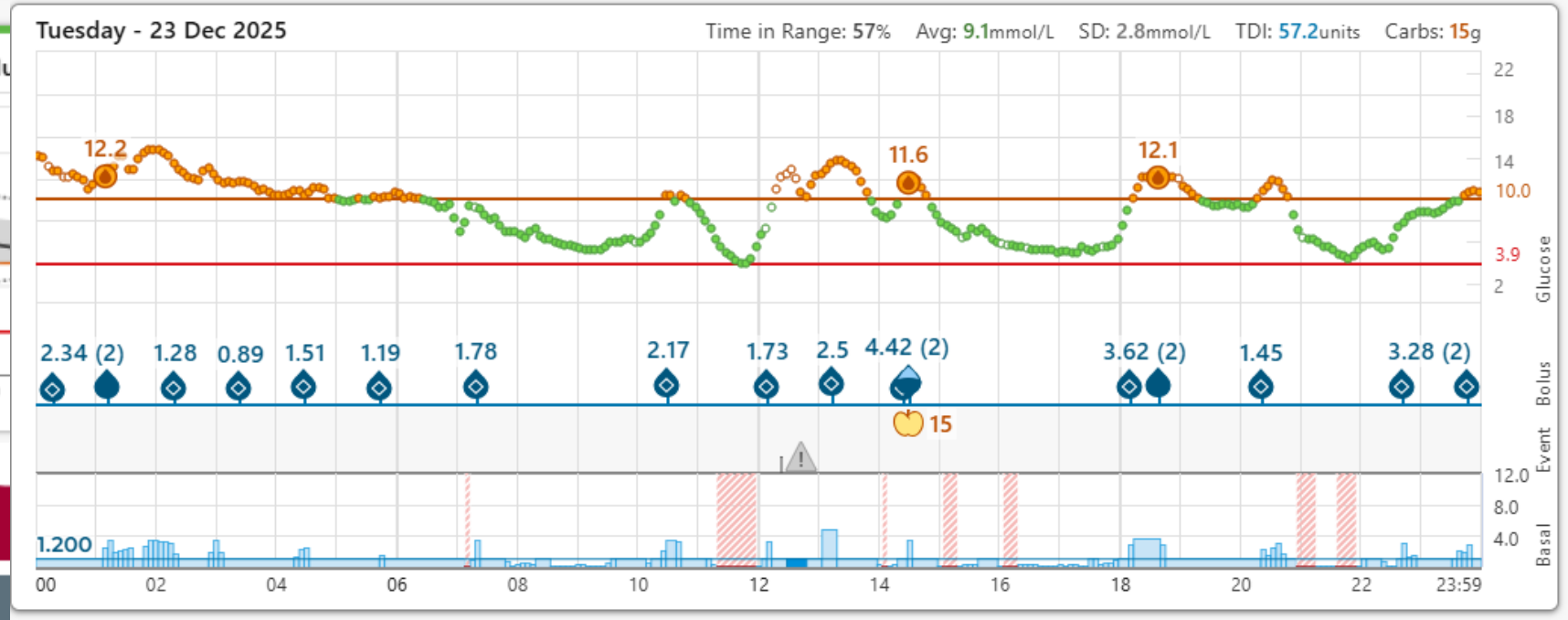
Time in range comparison



Control-IQ summary

Time active	94 %	12 d 19 hrs
Control-IQ off	0 %	0 hrs 0 mins
CGM inactive	6 %	19 hrs 32 mins
Pump inactive	0 %	1 hr 19 mins

Average sleep		Average exercise	
Duration	0 hrs	Duration	0 hrs
Weekly	0 times	Weekly	0 times



Key messages

- People with T1 diabetes will continue to have glycaemic mealtime challenges due to the insulin delivery site and speed of action currently available
- Aim to get ahead of post-prandial rise with 20-minute pre-bolus (adjustable with rend arrow 0-30minutes)
- Normalise including activity at mealtimes (for all!)
- Balanced meals simpler to manage; high carb and high fat added complexity therefore ideally limit these meal types
- System specific benefits and options to optimise time in target range
- Keep advice simple to maximise time in happiness!

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