Diabetes – Dietetic Advice and Hybrid Closed Loop systems - What is best practice and what does the research tell us? Summary of Q + A Chat

Q. If the pump is in exercise mode and you bolus for a meal will this change the bolus given compared to when out of exercise mode?

Q. What recommendations do you have for patients intensely exercising but eating pre activity?

Q. Any advice on post intensive exercise advice with glucose levels that crash very low with T slim

Q. Do you have any data for change in weight starting on a HCL using a Tandam

Q. With pre and post exercise reduced boluses, would you reduce the carbs entered or the insulin given?

A. Kathryn Fraser (Air Liquide)
Exercise activity purely lifts the floor so just raises the bottom treatment value - if you want a different ICR then create a new profile

I think for pretty much all the questions around exercise my answer would be to run with a different profile with a slacker CF

I am happy to answer specific questions though - kathryn.fraser3@nhs.net

Q. What works best for fussy toddlers with unpredictatable eating habits (where bolusing before for carbs is difficult?)

Audience comment: Bolus for a minimum amount before eating and top up if needed

Q. Any suggestions of what is considered small, medium, large carbs meals?

A. Kathryn Fraser (Air Liquide)
I think the role of the dietitian is to individualise what is a small, medium or large meal as that will be different for everyone and we can assess and teach each what their values are and what meals would be included

A. Emma Marcus (Medtronic):
 • Regular: TDC x 0.6 ÷ 3
• Large: TDC x 0.6 ÷3 x 1.5
• Snack: TDC x 0.6 ÷ 3 x 0.5
TDC = Total Daily Carbohydrate

Audience comment: These fixed meals are so important for inclusivity for those who are challenged educationally, socially and other diversities.

Q. Any guidance of specific amounts of protein/fat to add to meals to reduce glycaemic response?

Q. For breakfast spike prevention. Can you please just clarify when to include fat and protein in regards to the bolus being delivered i.e. before bolus, within 15min wait to eat or after 15min wait but before carbohydrate intake. Thanks.

A. Candice Ward (Cam APS FX)
Protein (chicken, egg, cheese) or fat (avo, nuts, etc) offered after bolus but before meal is eaten. above 5g or less depending on age

Q. For all HCL systems - how would you recommend alcohol is managed best on each unique algorithm?

A. Candice Ward (Cam APS FX)
We would recommend using ease-off for alcohol. programming it before going out to kick-in eg at midnight to midday if going out at night. Using ease-off will help reduce the risk of severe delayed hypos as a result of impact of alcohol. We would not recommend having a large uncovered bedtime snack as HCL will just ramp up to cover it.

A.Zoe Cholewa (Insulet)
For Omnipod 5, there is the option of Activity Feature which changes target glucose to 8.3- will discuss in a moment. Obviously this is worth looking at each individual.

Q. Should the carbs in alcohol be inputted into the system?

A. Candice Ward (Cam APS FX)
No I would not add CHO in bolus or add meal for 'nights out' esp if a large amount of alcohol is going to be consumed. if someone has one or 2 beers at the pub and notices a pattern, then made yes. But main aim is to keep people safe when they are drinking more alochol than usual

Q. any of the pump companies have any data of change in weight starting on a HCL? (to help support people with disordered eating transition to HCL)

A. Candice Ward (Cam APS FX)
CamAPS FX weight setting can be adjusted (1kg increments) in the app. weiught is one of the many factors used to support post-priandial insulin delivery form the algorhtm. Algorithm failry robust if this weight is incorrect. We recommend adjusting weight every 3 months in children, 6-12 months in weight stable adults and 4 weeks in pregnancy.

Q. What would each pump company recommend doing for illness/when a pen injection has been given e.g. ketones above 0.6 and BG above 14 - ketone dose given via pen and full pump change. Resume in normal HCL systems or put on temp targets/activity

(TSlim/pod)/manual modes if applicable. Recommend giving usual boluses with meals including correction.

A. Candice Ward (Cam APS FX)
CamAPS FX would recommend if ketone positive to come out of auto mode and follow-pump sick day rules. If ketone negative, use boost for 4-6 hours and then review and consider putting it on for longer. Can be set for max 13 hours at any one time. Of course always checking infusion set is working and considering doing change if glucose is running high.

A. Kathryn Fraser (Air Liquide)
Re sick days - In Control IQ if you are confident that the infusion set is working then Tandem would suggest using a sick day profile with a potentially higher basal rate for illness but decisions around ketones are always a clinical decision. When you treat with a pen, you can put that through the pump when disconnected so it updates the IOB

A-Zoe Cholewa (Insulet)
Sick day rules- DTN guidelines and refer to HCP and refer to page 83 in our userguide for flow and advice: Link: Omnipod-5_User-Guide-SoC_United-Kindgom_English.pdf

Q The exercise advise slide (Medtronic) said don't exercise if glucose >15mmol or ketosis-why? Surely starting aerobic exercise is safe unless ketones are present. This advice is not helpful for increasing activity levels.

A.Emma Marcus (Medtronic)
Agreed - It is ketones that are key here, this is a simplified slide specifically for you all today, I should have explained!

Q. Can you share the written guidance (Medtronic) re activity?
A.See attachment

Q: Max bolus on 780 is 25units. If person needs much more than this (insulin resistant) how do you suggest managed

A.Emma Marcus (Medtronic)
We don't see it being an issue too often, but it is suggested that you deliver as many boluses as required to get the amount of insulin needed for those on higher doses. I hope that this helps.

Audience Comment: Thanks, have experienced a few with this problem (teens living with obesity) but they don/t always deliver follow up boluses , try to counsel about meal balance and not having excessive carbs, keeping active to avoid the problem in the 1st place but difficult sometimes!

Q. I've come across a few people reporting leaking pods when giving large meal boluses. They have been reverting to manual mode to give an extended bolus rather than splitting the dose - would you recommend this or not?

A.Zoe Cholewa (Insulet)
If there are any issues with leaking pods, please do report this.
Extended bolus is only possible in manual mode so they can go into manual mode to do this if they find this works, however the system is designed to be able to give the doses in automated mode and our suggestion would be to remain in automated mode for as much of the time as possible.
Max bolus is 30 units

Q. With Omnipod, is there any way to see what is happening to the basal insulin on the download beyond reaching max delivery or being suspended?
A.Zoe Cholewa (Insulet)
In the history detail settings> Auto Events you can see the insulin amount delivered every 5 minutes. In the event area on the graph a red line during the time that SmartAdjust technology has paused insulin and an orange line during time that the maximum amount of basal insulin was delivered by the Omnipod 5 System.
In the history you can also view daily totals of insulin, total of basal insulin and total bolus insulin.

Q. hi, would you suggest reducing the carbs at the meal before exercise?

A.
Audience Comment: We haven't found we needed to with using activity mode
Audience Comment: Sometimes depends on the activity and the person - risks actually increases insulin delivery and IOB during the activity. Individual assessment needed

Audience Comment: We used high GI meals during an all day football gala. Using fast acting carbs as needed based on arrows between meals. This worked well alongside the activity mode

Audience Comment: So far on O5 we have found some don't need this and some do...I'd say less have needed reduction in bolus than on 780

Audience Comment: I like time in happiness but for parents we see 'time asleep' as the best marker of success

Audience Comment: As someone living with type 1 D and diabetes dietitian. The biggest quality in life is sleep! I haven't slept in for years, trying to catch the 6 am rise and the dawn phenomenon. Closed loop is life changing. I love going to a restaurant and not have to rush to the loo! Love closed loop!

Q. Any suggestions on how to manage snacking on Omnipod 5, (other than grouping snacks together) as the BG always seems to stay high with multiple entries in 1-2 hours.

A.Zoe Cholewa (Insulet)
Would suggest ideally bolusing using the smart bolus calculator (And use sensor value) for each snack. The calculator suggested bolus dose based on carbohydrates, Sensor value and trend and Insulin on Board

Q. what correction and carb rules do you use for O5 and insulin action time

A.Zoe Cholewa (Insulet)
We would advise to follow HCP advice and use the DTN guidelines or existing settings on previous pump/ MDI. The basal insulin should be 50% of the TDD when starting the system (reduction from MDI dose in normal)
Great video here to show starting settings: SmartAdjust™ Technology 101: How the Omnipod® 5 Works | Omnipod UK

Q. For tethered pumps, how long can people be safely disconnect and then how long do they need to be reconnected. E.g. teen playing a 90 minute football match who doesn't want to wear the pump.

Q. Just to remind myself, is it only the CAMaps FX which uses the 'small, medium and large' meal options for boluses in the settings, in addition to standard carb counting does anyone know (for use with Ypsomed and Dana pumps)?

A: Yes – the principle can be used with the other pumps but would need to manually enter the carb amount for each meal

Q. Are there any tips for managing steroids in HCL or would you recommend going back into manual mode? We have found strengthening ratios etc often isn't enough.

A. Candice Ward (Cam APS FX)
CamAPS FX - use Boost for steroids as a good first option

Check DTN guidance
Zoe Cholewa (Insulet)Agree manual mode is often needed.

Q. Any tips for managing continuous enteral feeding on Omnipod 5?

A. Zoe Cholewa (Insulet)
No specific advice I am afraid, however as discussed during the webinar, Candice ofFered some great advice on basal and bolus as required. This is not something at this stage we have researched. Would however be great to hear of any experience

Q. Asking on behalf of somebody else - some reports with O5 of dropping out of automode when PDM not close enough - any suggestions

A. Zoe Cholewa (Insulet)
Delivery of insulin in Manual/Automated Mode continues if you move away from the Controller, however it is recommended to keep the Omnipod 5 Controller (and the smart device with the Dexcom G6 App if using Dexcom G6) nearby for the alarms, notifications and glucose values.
Omnipod® 5 System Communication Distances
For daily commands: Within 5 feet (1.5m) range for boluses, edits, status
For daily wear: No min. distance to Omnipod 5 Controller for basal delivery in either Manual or Automated Mode*

Q.Does it work best with pod and sensor on the same arm?

A. Zoe Cholewa (Insulet)
As close as possible.... see advice on line of sight leaflet- attached.
We recommend same side of body, as close as possible (2.5cm Libre 2 Plus and 8cm Dexcom G6)

Please feel free to contact: zcholewa@insulet.com,
For further information: https://www.omnipod.com/en-gb