5 - Mastering Omnipod 5 – The Iron Man of AID Systems

John Pemberton (00:09.944)

Welcome to the Glucose Never Lies podcast where science meets real life experience to empower diabetes management. I'm John Pemberton. I've lived with type 1 diabetes since 2008 and have spent nearly 20 years mastering both the science and art of managing it. Through personal experimentation, published research and my work as a diabetes specialist dietician, I've gained deep insights into what truly makes a difference. When my son Jude tested positive for type 1 diabetes antibodies,

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That experience taught me the power of giving and this podcast is my way of giving back. My co-host Louise is a highly experienced diabetes nurse with over 20 years in the field. She brings a wealth of knowledge and her superpower is making complex diabetes science accessible and practical for everyday life. She is the best diabetes nurse I have ever worked with and there have been some good ones. Most importantly, she keeps me in check and keeps the podcast on point. So if you're living with diabetes or supporting someone who is,

We want to make things easier, clearer, and importantly, more enjoyable. We hope you enjoy the content. If you do, please share it with those who may like it too. As a disclaimer, the information shared on the Glucose Nebulize podcast is for informational and educational purposes only. While we discuss strategies and insights for diabetes management, this podcast is not a substitute for professional medical advice. Always consult your healthcare team before making any changes to your diabetes plan.

That done with, let's get into the content.

John Pemberton (02:14.222)

podcast episode five, and this is all about the Omnipod 5 system with smart adjust. What we like to think of as Ironman, sleek, sexy, and everything happens within the package. So just as a bit of recap on previous episodes, in the first episode, we discussed automated insulin delivery systems, what they are, and some of the decision-making criteria you may consider. And then we worked through the other systems and now it's the time of the Omnipod 5 system.

And I guess really the thing about this is it's probably the most simple and easy to use system. It has some advantages, it has some disadvantages, and we'll kind of walk through those as we go through. So just as a component part, you've obviously got the pod, which is about the size of two small matchboxes where you fill that up with insulin every three days. And then that is where the insulin is delivered from, and that is also where the algorithm sits within the pod. So it means that

When you put the sensor on, which can either be a Dexcom G6, a Dexcom G7, or a freestyle Libre 2 system, that talks directly to the pod, and all the automated adjustments happen between the communication between those two. Saying that, you want to make sure that they're fairly close together so the communication can happen. And it seems to be that Libre 2 needs to be a little bit closer than the Dexcom sensor, it seems. But that all happens between those two component parts.

The third or fourth component part is, well, the third component part is the controller for the Omnipod 5 system. And that's where you do anything to do with the insulin. So that's where you program your carbohydrate entries in and you look at anything with system adjustments there. If you're using a Freestyle Libre 2, that's the only extra thing that you need because the Freestyle Libre 2 talks to, well, yeah, directly to the controller. You don't need a phone, which is good because you only need one bit of kit.

The downside to that is you can't have followers. So if you've got someone who wants to follow the user to five or 10 people, let's say, then obviously you are unable to do that. So you would need a Dexcom system for that. If you have a Dexcom system, though, you will need a compatible phone because you need to start and stop the sensor, the Dexcom sensor from a phone and have the low and high alerts. But as an advantage for that, you can have the followers. So again, it's

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All systems are good in terms of their ICGM approved. It might just depend on you as the user as to whether you prefer Dexcom or a freestyle Libre Sensor. So just to confirm, so if we're using an Omnipod with a Dexcom, you're going to have a controller which you're going to need to bolus with, et cetera, and set your pod up. And then you need a phone to receive the high or low alert, which is your Dexcom.

However, if you're using a Libre, you don't need that phone because that all comes through on the reader. But one of the big advantages is that the pod and the sensor will continue to communicate whether you've got the reader or the phone close by. So that all the smart adjust technology will happen regardless. That's really important to be aware of and to also advise your families or your service users.

Cool, glad you were listening. Okay. So the algorithm is called SMART Adjust. That is little microboluses every five minutes. It doesn't distinguish between basal and bolus insulin. It's just microboluses and it can give up to four times what they call the adaptive basal rate, which is essentially the basal rate it works out that you need. Up to four times that as the kind of maximum that it will go. It has a target glucose level.

that you can set in up to eight segments across the day, but most people only have three or four at maximum. And that can go as low as 6.1 millimoles per liter or as high as 8.3 millimoles per liter. And it goes up in sort of a graded fashion. You can't go up in 0.1s. It's kind of like 6.1 to 6.7, then 7.2, 7.8, 8.3. So.

The difference with this system is it looks 60 minutes into the future. So it's probably a bit more safety conscious than some of the other systems because it's looking further ahead, which is good for preventing hypoglycemia. But then also it may be sometimes a bit too protective by thinking that hypos are going to happen long term in the future. So that's the pros and cons. And again, a nice thing about the Omnipod 5 is when you put the

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glucose value in and the carbohydrates at meal times, it's got a smart bolus calculator that will add extra insulin on if the glucose level is rising and reduce insulin if the glucose level is dropping. And just a couple of pro tips when you're setting this thing up, you want to turn the reverse correction off because what that means if you don't do, if you have a glucose target, say set at 7.2 and at the meal time, the glucose level is 7.1 and there is

four units of instant on board, it will take all of that four units off the predicted bolus. So if you were meant to be bolus in six units, you will only get two, which is not what you want. So if you want tighter control, get the reverse correction off. And the other thing is, if you can set the active instant time down as low as two hours, that will mean when the user comes to give corrections, if they so choose to, they'll be more aggressive. And just as we've said, this algorithm is

very safety minded so you can get away with a shorter active insulin time, more aggressive corrections because it's looking 60 minutes into the future. That's probably something we've learned. Yeah definitely that's definitely a way of optimizing time and range and if you think about it you don't want a load of insulin taken off for the food that you're about to eat, you need the insulin if you think about what a pancreas would be doing we'd be giving insulin or producing insulin for the food that we're about to eat so I think that's a good way of

sort of explaining it to families. It's not about what's happened in the past as well. Yeah. And it updates, it's called adaptive basal rate, where it kind of starts from, where it starts the increases or decreases insulin from every pod. And I think it looks at about four to five pods in the past. So

just to discuss some of the other systems, it works on your average insulin sensitivity over the last 15 to 20 days.

which is great if you're going to have the same instance sensitivity in the future. But again, if you're going from a very lazy holiday to a very active school or work life, you might want to up that target level just for a short period of time so you don't end up with two aggressive corrections. On the flip side, if you go from a very, very active time to a very less active time, you'll want to lower that target level during those times. So again, you've got some kind of options from that perspective. But the personal glucose target is something that you can optimize.

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And I guess thinking from a settings perspective, something that you can consider is when the user goes through a bolus at meal times, it actually takes into account this correction factor that you set. So the algorithm won't consider the correction facts that you set, but when you as a user go to do boluses at meal times or in between times as a correction, it will take into account the correction facts that's in there. So if you want aggressive corrections, you can make that stronger. Absolutely. So it's just...

I was just going to say about that. So when you, if you're slightly higher meal time, the, whatever the programmed in that time block correction factor in is, it will use that to work out the insulin to be given. So it's a key point in terms of ensuring that those are all today and optimized when we're looking at downloads or you're looking at your own download. Cool. And it also has an activity feature.

which can be set by the user, obviously, and that will then generally will put the glucose high go to 8.3 and directionally reduce the aggressiveness of the algorithm by about half, which is obviously particularly useful for managing activity and exercise, given on 90 minutes before, but also as we're finding out extremely useful when people are out having a drink and making sure that it's on overnight because you don't want the algorithm going at full speed overnight when you've got alcohol on board.

Yeah, and we've used it with some of our younger ones as well. Not when they went out drinking. Absolutely not. So obviously, the obvious advantage of this is it doesn't have a tube, which a lot of people find beneficial because they don't want to be tethered to something. So it does provide some feeding flexibility. Certainly as a user, it's very simple and intuitive set up. The handset is nice and easy to follow. And as a health care professional, it's

super easy to put someone on this system, it's fair to say, once you've got an Omicron ID sorted and linked to Glucco account. After those teething problems in the first initial days. Yeah. Obviously from the con side, you've got limited customization in terms of compared to a control

IQ, for example, you don't have the ability to have different profiles, but you do have some nice personalization with the personal glucose target, get the active insulin time down short.

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and the correction factors at meal time. So there is some optimization allowed. And there's some other tips in terms of the pod side. Obviously you want to rotate there and an ideal will get the sensor on the same side of the body as the pod. But more so for the Freestyle Libre 2, you want it fairly close because I think they work off different Bluetooth channels with the Dexcom being a slightly stronger Bluetooth channel. want it to be bit closer. definitely found that, but not found that it's as significant in terms of

you know, we were trained that it needed to be in the same line of sight or the same side of the body, which isn't always possible when you got little people and things, but it's not caused too much of a problem having them on different sides, as I wouldn't have said. So I guess also to consider if you're on high doses of insulin, this one only holds 200 units. So if you're getting up above 70, 80, 100, 110 units of insulin a day, number one, you're going to have to change the pod more frequently, potentially every two days.

which can be personally quite annoying compared to having to change it every three days, but also from a cost perspective from a healthcare provider, that may be prohibitive for some people if the cost obviously doubles or triples because you're using two pods every three days instead of one. So it's just something to be mindful of if your total daily doses getting above 70 certainly above a hundred units per day to consider.

Yeah, absolutely. And it's just really important as well in terms of if your pod sort of becomes dislodged or you've got a fault that it's making sure that report all of those things so that you're not running out and stuff. That's something that we found with some of our Omnipod users. So that's kind of the deep dive of the force system. So our next episode is really going to be digging into

Regardless of whichever system you've used, what are our top 10 tips to optimize time in range when using the AID system? So please come along to that podcast because that will be really where we go from getting on one of these systems to get you 50 % in range. the closer you want to get to 90%, the more of these things you'll need to do and you'll decide what's kind of a useful trade off for yourself or not.

John Pemberton (13:30.242)

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