Some beginner's top tips

by: Matthhew Preston, Aug.2019

I'm now two months into 'looping' – using Accu-chek Insight pump, Dexcom G6, xDrip+ and AndroidAPS – and it's been fantastic. But I've also found it hard work to get to grips with, and I thought it might help others starting out if I set down some of what I've learned, focusing on **how to go about it** rather than on technical specifics.

> Some context first: I'm 46 years old, T1D for 16 years, 15 of them on MDI. I started pumping 15 months ago, and full-time with CGM 6 months ago. From there, looping was an obvious step and I don't regret it for a moment. But I'm not a doctor – well, not the sort of doctor who can help you – and YDMV, so your context and outcomes may well differ. Ditto your hardware and software. I've never had to grapple with the challenge of a diabetic child. So here are my top ten tips:

1. Looping requires a functioning and accurate pump and CGM

If your basal rates aren't right, your CGM isn't calibrated/accurate, your pump has air bubbles etc etc., looping will not solve these problems, and you might inadvertently choose settings for the loop that make them worse. So I feel I did the right thing using the pump for a year, and CGM for a couple of months, before starting to loop

2. If you're looking for an automatic pancreas-replacement, think again.

OK, lots of what the loop does is automated and superb, and it does it far better than I could ever do manually. But I think of it more as a self-regulating system than as an automatic one. It can greatly reduce the work and time you spend managing T1D, but it doesn't eliminate it, certainly at the beginning.

3. You don't need degrees in maths, computing, physiology and nutritional science …

But you need to develop some understanding of each of them. Maybe others have found it easier than I have, but I won't kid you: the rewards are easily worth it, but it's taken me time and effort to get my head round it all.

4. Learning is key

I tried to research, read and understand all the aspects and options of looping/AndroidAPS right from the start. I failed. There was just too much for me to understand as a theoretical exercise. But I have learned as I've gone along, and that learning has been key. The system

will pay you back ten times over if you understand how it all works, including the curves, the predictions, the various settings etc.

5. You still will see bg highs and lows

I have continued to have (some) bG highs and lows. But while there's more to get your head around than when just starting with a pump, physically I've found it much easier. Nothing to compare to those hammering hypos while getting the basals right, or getting used to wearing the pump. Conversely I've found the rewards – in terms of stable bGs – hugely gratifying and almost immediate.

6. Mindful approach to tuning (to adjusting settings)

Compared to MDI (multiple daily injections), and even to classical a pump therapy, there are LOTS of settings in AndroidAPS. So many opportunities to perfect your set-up, but also to get it wrong!

Take advice from the experts: read what all the settings do, and **only change one at a time** and see its effect before making another.

The big change for me was making my Carb Ratio more aggressive, to limit post-meal spikes, and letting the loop zero-temp (ie cutting off basal insulin) to avoid hypoing later on.

7. Use the Objectives to tweek your settings

It's frustrating how long it takes to work through the Objectives in AndroidAPS (almost 2 months), but they are (*edited:* for the most part) well thought through, (have to cover all relevant topics for all users,) and they exist for our and your safety.

Don't treat it as time in which you have to wait inertly. Rather use the time you spend in each Objective to tweak the settings that have been unlocked, and to make the new way of operating second-nature.

8. Looping requires some behaviour changes.

In my case, keeping my phone on or very near my person at all times, taking less sugar than before when going low, and regularly backing up my AndroidAPS settings were new rountines to learn. But on balance the changes have definitely improved my lifestyle: I can now pop to the shops just with my phone and emergency glucose gel; I no longer need a shoulder bag at all times; exercise is easier, and I can now just command everything from

the phone that I use in daily life, instead of the monstrosity that is/was the Insight handset etc. And that's even without the more stable bGs and reduced HbA1C.

9. Feed your loop all relevant info

You need to tell the loop almost everything. OK, maybe not everything, and you don't 100% need to. But the more you can tell it the better: the carbs in a snack you're taking to come out of a hypo, that you're disconnecting for a few minutes to take a shower etc.

The central calculation the loop is constantly making is how much active insulin you have in you, versus how many carbs you've eaten but not yet absorbed. The loop can't know if the insulin has been pumping onto your duvet while you're in the shower, or if you are into some sports. Or at least it can't know nearly as well or as quickly as if you tell it. So do. It's really very easy.

10. Seek advice, stay in touch

There's no comprehensive instruction manual for looping, or if there is, I haven't found it. Indeed, as an adaptive system I doubt it's possible to write an old-fashioned manual. But there are superb resources out there, amongst which you'll find the answer to almost every question. I particularly recommend the Wiki (readthedocs) for your software (e.g. AndroidAPS), Dana's ebook, and the relevant Facebook group(s).

The Search function on each Facebook (or Discord etc) group is particularly useful:

You're unlikely to be the first person facing the challenge you're having, so well worth looking up how others dealt with it (and the responses they got) before asking a new question yourself.

11. I said 'ten top tips', but here's a bonus, which I offer tentatively as I'm sure it's unnecessary. But: be nice, especially on social media! T1D makes us all angry at times, it's frustrating when something doesn't work, and the ecosystem we're working with (pump, CGM, loop software etc.) is complex and so liable to fall over from time to time. But the people who've developed this system are modern-day angels, if you ask me, and they deserve all the praise and warmth we can give them. (This is Open Source, remember...) Every night, and particularly every morning, I am more grateful to them than I can express. I hope you will be too.