



Patient Care + Research + Clinical Trials

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Loop installation in-house at BCDiabetes

[Artificial Pancreas Systems](#) (APS, also termed “automated insulin delivery” AID systems) are here and we are not waiting! On 2020-Aug-1 BCDiabetes began supporting in-house installations of DIYAPS with the tubeless Omnipod Eros-Dexcom G6-Riley link-iPhone master branch "Loop" system. Although not Health Canada approved, BCDiabetes considers this version of Loop to be the best DIY APS available. It uses a conservative algorithm that has been installed by our estimates on more than 20,000 individuals worldwide & is more affordable (\$20/day) given coverage by BC Pharmacare of both the Omnipod system & Dexcom G6.

For those who are looking for a tubed system or who are not willing to use a non-health Canada approved solution, we strongly recommend the Tandem T-slim with Control IQ. As of today we do not currently recommend the Medtronic 770G system because its algorithm currently only supports temporary basal rate - once Medtronic’s microbolus algorithm is available to users (it is currently being considered by Health Canada), we will again recommend Medtronic APS. The Ypsopump is expected to come to market with CamAPS in 2023. If you wish to start with either the Medtronic or Tandem systems [email us](#) & we will support you by filling in the necessary forms and continue to work with you afterwards. For a CAD\$ cost comparison of the various APS options in British Columbia see rows 7-9 of [this spreadsheet](#). It assumes no BC Pharmacare subsidy & that the up-front cost of the pump is amortized over 5 years.

BCDiabetes has to-date installed "Loop" in its various flavors (Loop, freeAPSX =FAX, AndroidAPS =AAPS) on 192+ clients (including the youngest at 18 months of age, on 15 children under 10 years of age, and in 13 adults older than 70). Below are our summary stats (calculated on 2022-Jun-15) on 168 BCDiabetes clients with Type 1 diabetes who have been Looping for a minimum of 4 weeks. All clients had been using CGM for a minimum of 3 months prior to starting to Loop. All clients signed an informed consent. There were no episodes of severe hypoglycemia or DKA. All but 2 are still Looping - the 2 who stopped lost their Orangelinks & have yet to restart.

	n	female	avg age	age range	avg duration	range
Loop	57	42%	33	2-77	20	1-66
FAX	99	45%	37	8-74	19	1-53
AAPS	12	42%	39	12-64	25	3-53
combined	168	44%	36	2-77	20	1-66

In case you want to build, install & configure one of these offerings yourself, here are the links: [Loop master branch](#), [freeAPSX](#) & [androidAPS](#). If you have built it but would like help with installation and configuration check out youtube "how-tos" for [Loop](#), [freeAPSX](#) and [AAPS](#) (a better version with normal aspect ratio will follow shortly). See also this instructive 55 minute youtube [powerpoint from our 2020-May-20 webinar](#) from The Weekly webinar focussed on closed-loop pump systems in general, and a 55 minute lecture on the fascinating [history of Looping](#) given by Ben Mammon.

Because Loop, freeAPSX & androidAPS are not Health Canada approved, we require an online signed consent & waiver including an undertaking that users will not copy or distribute the installation to others without our consent. Adult BCDiabetes clients should complete [this adult consent & waiver](#); guardians of minor BCDiabetes clients should complete [this consent & waiver for minors](#).

At the time of your Loop installation appointment (in-person preferred) you need to be wearing a Dexcom G6
EITHER

iPhone 6S or newer & Omnipod "Eros" pod up & running with PDM (with spare pod) plus [Orangelink Pro](#)
OR

Android phone (OS 9+) & Omnipod "Eros" pod up running with PDM plus [Orangelink Pro](#) or

Android phone (OS 9+) & Omnipod "Dash" pod up & running with PDM

the Dexcom G6 sensor should be up and running, not under the usual Dexcom G6 app from the Google play store (which must be uninstalled) but with either [BYODA](#) (preferred) or [xDrip](#).

If you have an iPhone, enable Apple Health & install TestFlight from the App store (if you don't know how, be sure you know your Apple ID so that we can do it for you) and disable automatic iOS updates. This is to prevent Dexcom failures which sometimes occur after iOS updates (Dexcom is typically 3 months behind).

Regardless of whether you have an iPhone or Android, or an Eros or Dash pump, you need a [Looping Safety/Emergency kit](#) in case of component failure.

For iPhone users we will share a link to either the Loop app (Master branch), freeAPSX (Master branch), or freeAPSX (Next Gen branch) from BCDiabetes' account on TestFlight, Apple's beta-test app store); or Android users we will share androidAPS (3.1.0.2) from our own cloud source both at no charge. If you are not a BCDiabetes client you first need to [register online](#), get a referral from any Canadian Physician (click [here](#) for quick referral form), and be seen for a regular appointment either in-person or virtually. Once we have the referral you will be seen within 2 weeks. The cost of the appointment and follow up will be covered in full by your Canadian provincial medical plan with the exception of Quebec. For Quebec residents the fee is \$1200 (initial appointment plus up to two weeks of daily follow-up).

BCDiabetes does not routinely offer care to non-Canadian residents. If a non-Canadian resident has a letter from their referring physician asserting that BCDiabetes' level of care is not readily in their country of residence, BCDiabetes may offer its services on a case-by-case basis.

When you are ready to try Loop, freeAPSX or AAPS [email us](#) requesting an appointment - Loop installation is typically a three-step process: the first appointment is an introductory session; the second appointment is to set up a Nightscout account (provided at no cost to you by BCDiabetes) and to review Nightscout to learn how to - it allows interpretation & analysis of your CGM and Looping data); the third appointment is for the Loop installation itself & lasts 90 minutes. The first and second appointments may be virtual; whether the main

installation appointment can be done remotely/virtually will depend on a number of factors - the final decision rests with BCDiabetes staffers. Please note, currently all AAPS installations are done in-person. After Loop installation we will follow-up with you on a daily basis until you are independently able to make adjustments (for most users 2 weeks is sufficient) and then see you every 6-12 months.

If you are not trained on the Omnipod Eros or Dash pump & are a BC resident we will fill out & email a [Medical Necessity form](#) to Insulet (the manufacturer). A starter kit with 2 pods will be delivered to your home within a week: once you have been trained online (2 sessions 3 days apart) & been certified, you are ready to Loop.

For the Omnipod pump system setup, request that a BCDiabetes staff member complete paperwork (Letter of Medical Necessity) or email [Andrew Muirhead](#) phone +1--604-754-6195.

Omnipod pods, both Eros & Dash, can also be purchased directly in Canada from [Diabetes Express](#) phone 1 866-418-3392 fax 1-855-233-3146 & from the US [here](#).

For the Dexcom G6, request that a BCDiabetes staff member complete Special Authority & prescription or [order online](#) or email [Anthony Petrovich](#) phone +1-604-363-8776, Dexcom G6 can be obtained [here](#).

OrangeLink Pro [order online from the manufacturer](#) (pick up at BCDiabetes).

Medtronic 770G pump email [Brenda Heaney](#) phone +1-604-312-7101.

Tandem Control IQ email [Teri Currie](#) phone +1-778-995-1268

[MiaoMiao bluetooth transmitter](#)

Online Loop Support

After Loop installation and initial 2 week intensive support in-house, we encourage BCDiabetes Loopers to join the BCDiabetes Loop support Slack channel (78 members). Other options include

<https://www.facebook.com/groups/TheLoopedGroup/>

<https://www.loopnlearn.org>

<https://loop.zulipchat.com>

Short URL = <https://bit.ly/3lbeWKC>