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DIABETES TECHNOLOGY @ ADCES

Information is specific to use of each pump's AID features

CALCULATE

	Basal automation?	Bolus automation?	Algorithm target glucose / target range?	Which insulin does the user give?
MiniMed™ 780G 	"Auto Basal" calculated from total daily insulin, which is updated each day at midnight. Auto Basal is adjusted every 5 min based on recent CGM glucose trends, aiming for the target glucose value.	Auto correction boluses (max. every 5 min) if glucose is > 120 mg/dL. Auto corrections can be turned on or off.	3 Target options: 100, 110, 120 mg/dL User can set 1 target for 24 hr. period	User gives boluses for meals by entering total grams of carbs in the bolus menu.
t:slim X2™ & Mobi 	Adjusts the programmed basal rates every 5 minutes based on a 30 min prediction of CGM glucose, aiming for the target glucose range.	Auto correction boluses (max once/hr) if glucose is predicted to be >180 mg/dL in 30 min.	Target range: 112.5-160 mg/dL	User gives boluses for meals by entering total grams of carbs in the bolus menu. User can deliver correction boluses as needed.
Omnipod® 5 	"Adaptive Basal" calculated from total daily insulin, which is updated at each Pod change. Adaptive Basal is adjusted every 5 min based on a 60 min prediction of CGM glucose, aiming for the target glucose value.	No automated boluses. Algorithm will increase basal doses up to 400% of the adaptive basal rate to help correct hyperglycemia.	5 target options: 110, 120, 130, 140, 150 mg/dL Can set multiple target settings throughout 24 hr period	User gives boluses for meals by entering total grams of carbs in the bolus menu. User can deliver correction boluses as needed.
twiist™ 	Adjusts the programmed basal rates every 5 minutes based on a 6-hour predicted CGM glucose, aiming for the correction target (middle of correction range).	No automated boluses. Algorithm will increase basal doses up to the max basal rate programmed in the pump to help correct hyperglycemia.	Target range (called "Correction Range"), can set any range between 87-180 mg/dL. Algorithm targets middle of the range. Can set multiple ranges throughout 24 hour day.	User gives boluses for meals by entering total grams of carbs in the bolus menu. User can deliver correction boluses as needed.
iLet Bionic Pancreas 	Insulin Automation is initialized by entering user's weight. Basal insulin delivery adjusts every 5 minutes based on CGM glucose trends and adapts over time based on the iLet's analysis of the user's daily glucose patterns.	All meal bolus doses and correction bolus doses are automated. Auto correction boluses max. every 5 minutes as needed if glucose > CGM target setting.	3 target options: Usual (120 mg/dL), Lower (110 mg/dL), Higher (130 mg/dL) Can set up to 2 target settings per 24 hr period	User completes a meal "announcement" to prompt the iLet to deliver a meal bolus, which involves estimating the carbohydrate amount for each meal ("Usual for Me"/ "More" than usual /"Less" than usual).

ADJUST

When using AID:	Can you adjust basal rates?	Can you adjust I:C ratios?	Can you adjust correction factor (sensitivity)?	Can you adjust active insulin time?	What are the special features in automated insulin delivery?	Which pump settings impact automated insulin delivery (insulin delivered by the algorithm)?
MiniMed™ 780G 	**No**	**Yes**	**No**	**Yes**	Temp Target: Changes target glucose to 150 mg/dL to reduce auto-basal delivery for chosen duration (30 min – 24 hr) and disables auto correction boluses.	Auto Basal Target Active Insulin Time (2 hrs for most aggressive insulin delivery)
t:slim X2™ & Mobi 	**Yes**	**Yes**	**Yes**	**No**	Exercise Activity: Changes target range to 140-160 mg/dL to reduce basal delivery. Sleep Activity: Narrows target range to 112.5-120 mg/dL to increase basal delivery and disables auto correction boluses.	Basal rates Correction factor
Omnipod® 5 	**No**	**Yes**	**Yes**	**Yes**	Activity Feature: Changes target glucose to 150 mg/dL and decreases the doses by ~50% to reduce adaptive basal delivery for chosen duration (1–24 hrs).	Target Glucose
twiist™ 	**Yes**	**Yes**	**Yes**	**No**	Pre-Meal Preset (correction range for up to 1 hour before meals, 67-130 mg/dL, typically set lower than general correction range). Workout Preset (set a correction range to use for exercise, 87-250 mg/dL).	Basal rates Maximum Basal Rate (used as max basal for basal automation). Recommended to set at 3-4x highest basal rate. Correction Range
iLet Bionic Pancreas 	N/A There are no pump settings programmed into the iLet.				Pause Insulin Feature: Users can pause (suspend) insulin delivery for a specified timeframe.	CGM Target

REVERT

	Is there a limited automation mode the system may revert to if there is a loss of CGM communication or other reasons?	When will the system automatically revert to manual mode (conventional pump therapy using programmed basal rates — no insulin dose automation)?
MiniMed™ 780G 	Yes, Safe Basal: the pump will deliver a basal rate determined by the algorithm, but without glucose-dependent basal adjustments and no auto correction boluses. May activate due to max/min insulin delivery constraints, loss of CGM data or system concerns about sensor accuracy. User needs to enter a BG value into the pump before the "time to exit" expires to prevent SmartGuard exit.	If the "time to exit" expires without a BG entry, the pump will revert to manual mode. User must enter a BG value into the pump to return to SmartGuard following an exit to manual mode.
t:slim X2™ & Mobi 	No, there is no limited automation mode. If there is loss of CGM data, the pump will deliver the programmed basal rates without glucose-dependent basal adjustments and no auto correction boluses (manual mode).	If there is no CGM data ≥ 20 min, the pump will revert to manual mode. When CGM data returns, Control-IQ will automatically turn back on.
Omnipod® 5 	Yes, Automated Limited: the Pod will deliver a basal rate determined by algorithm, but without glucose-dependent basal adjustments. May activate for two reasons: 1. If no CGM data for ≥ 20 min. Pod will resume full insulin automation once CGM data returns. 2. If there is an "Automated Delivery Restriction" alarm (if insulin has been suspended too long or if max delivery too long). Will remain in Automated Limited until the user clears the alarm.	If there is an "Automated Delivery Restriction" alarm, the user will be prompted to confirm CGM accuracy, and then will have to switch to manual mode. The user must switch back to automated mode after 5 min in manual mode (the Pod will not return to automated mode on its own).
twiist™ 	No, there is no limited automation mode. If there is loss of CGM data for >15 min., Loop will revert to programmed basal rates within 30 minutes.	When there is no CGM data for >15 min., the pump will revert to manual mode within 30 min. Loop automation resumes automatically when CGM data returns.
iLet Bionic Pancreas 	Yes, BG-run mode: If the iLet loses communication with the CGM, it will prompt the user to enter BG values periodically. As long as the user enters BG values into the iLet, it will continue to automate all insulin delivery based on the entered BG values and previously stored information on the user's basal insulin needs. The user can continue to announce meals in BG-run mode to receive meal boluses from the iLet. iLet can operate in BG-run mode for up to 72 hrs.	There is no option for manual mode in the iLet. After 72 hours in BG-run mode, the iLet can no longer deliver insulin. It will resume insulin delivery once the CGM is re-connected. The iLet will display total daily insulin dose, basal insulin and meal insulin doses, which could be used to inform multiple daily injection doses, if needed.

EDUCATE

All Pumps	Treat mild hypoglycemia with less carbohydrates (5-10 g) than the traditional rule of 15g. If hypoglycemia occurs, the algorithm will have already decreased or suspended insulin delivery and treating with too many carbs may result in large rebound hyperglycemia. Check ketones and replace infusion set if unexplained hyperglycemia persists (e.g., > 300 mg/dL for > 2 hours)
MiniMed™ 780G 	Pre-bolus for all meals and snacks, ideally 10-15 min before eating. The sensor glucose value auto-populates into the bolus menu for correction bolus calculation. SmartGuard will adjust the bolus dose based on the CGM value and insulin on board. The user is not able to change or override the suggested dose. Follow system prompts for “BG Required” to stay in SmartGuard. Do not enter “fake carbs” to try to get more insulin from the system. This will result in an increased risk of hypoglycemia, and greater glucose variability.
t:slim X2™ & Mobi 	Pre-bolus for all meals and snacks, ideally 10-15 min before eating. Program the sleep schedule to ensure Sleep Activity activates each day automatically. It is best NOT to override the bolus calculator’s suggested dose (although there may be exceptions). The bolus calculator will subtract IOB from increased automated insulin delivery, helping to reduce the chance of hypoglycemia. t:slim X2: can give bolus doses remotely from a cell phone when using the t:slim mobile app. Mobi: requires Mobi app on personal cell phone (iOS only) for pump control. Control-IQ allows programming of more than 1 personal profile, where different basal rates, carb ratios and correction factors can be used. Use additional profiles to help with changing insulin needs (e.g., menstrual cycle, illness, long sporting events, etc.).
Omnipod® 5 	Pre-bolus for all meals and snacks, ideally 10-15 min before eating. Tap “Use Sensor” to add the sensor glucose value and trend into the bolus. The bolus calculator may adjust the recommended correction bolus dose based on the CGM trend arrow. It is best NOT to override the bolus calculator’s suggested dose (although there may be exceptions). The bolus calculator will subtract IOB from increased automated insulin delivery, helping to reduce the chance of hypoglycemia. Insulin suspension may occur if glucose is trending down, even if the glucose level is above the programmed Target Glucose. This is expected and will be short in duration (e.g. 5-15 min) if the glucose level does not continue to drop. Wear Pod and Dexcom in “line of sight” to optimize Bluetooth communication.
twiist™ 	Pre-bolus for all meals and snacks. Can bolus late for meals by changing the time of the meal in the bolus menu. Use the pre-meal preset up to 1 hour before meals to get more aggressive basal insulin and reduce post-prandial hyperglycemia. Indicate carbohydrate absorption for meals to better match insulin delivery to food type and help algorithm track active carbohydrates more accurately. • Emoji options: Lollipop: Fast (30 min), Taco: Medium (3 hours), Pizza: Slow (5 hours); or manually enter absorption time 30 min - 8 hours It is best NOT to override the bolus calculator’s suggested dose (although there may be exceptions). The bolus calculator will subtract IOB from increased automated insulin delivery, helping to reduce the chance of hypoglycemia. twiist app only compatible with iOS. Must have an iPhone to use twiist system. User should respond to Line Block alarms by replacing infusion set if no tubing disconnection is identified
iLet Bionic Pancreas 	User should “announce” meals at the start of the meal by indicating meal type (“Breakfast” “Lunch” or “Dinner”) and meal size (“Usual for me”, “More” than usual, or “Less” than usual) relative to the user’s typical carbohydrate intake for each meal type. Do not announce the meal if > 30 min. after eating. In the first week of using iLet, space meals at least 4 hours apart and eat primarily “Usual for me” meals to help the iLet learn meal bolus doses. The iLet is designed to automate all insulin delivery, and continuously adapts with no user interaction except for meal announcements. Users cannot give a manual bolus. A hands-off approach is necessary. Don’t use meal announcements to try to correct high glucose levels; this will disrupt the system’s adaptation and increase the chance of hypoglycemia. It’s important to carry a BG meter at all times so the user can use the BG-run mode if there are unexpected problems with the CGM at any time. BG-run mode lasts max. 72 hours, so if CGM wear is interrupted for longer, a backup insulin delivery plan is vital.

SENSOR/SHARE

	Which CGM is compatible? **CGM options may vary by region*	Can user see real-time data on personal cell phone?	Can others see data remotely?	Is data automatically stored in the cloud?
MiniMed™ 780G 	Guardian 4 Simplera Sync Instinct	MiniMed mobile app (pump + CGM data)	CareLink Connect app (pump + CGM data)	Automatic uploads to CareLink via MiniMed mobile app
t:slim X2™ & Mobi 	Dexcom G6 and G7: Use of Dexcom G6 or G7 mobile app is optional; cannot use the Dexcom receiver. FreeStyle Libre 2 Plus or 3 Plus (t:slim only): Must connect CGM to the pump via t:slim mobile app. Cannot use FreeStyle Libre apps or reader.	Dexcom G6/G7 mobile app (CGM data) t:slim = t:slim mobile app (pump + CGM data) Mobi = Mobi app (pump + CGM data)	Dexcom Follow app (CGM data) *If using FreeStyle Libre 2 Plus, there is no option for remote data sharing	Automatic uploads to Source via t:slim mobile app or via Mobi app
Omnipod® 5 	Dexcom G6 and G7: Must use Dexcom G6/G7 mobile app (on personal cell phone) to use Automated Mode. Cannot use the Dexcom receiver. FreeStyle Libre 2 Plus: Must start sensor on Omnipod 5 controller; cannot use FreeStyle Libre apps or reader.	Omnipod 5 app (pump + CGM data, also used to operate pump; availability of app varies by region) Dexcom G6/G7 mobile app (CGM data)	Dexcom Follow app (CGM data) *If using FreeStyle Libre 2 Plus, there is no option for remote data sharing	Automatic uploads to Glooko or Discover after linking device
twiist™ 	FreeStyle Libre 3+: Must pair on twiist app, cannot use Libre apps or reader Eversense 365: CGM is started on Eversense app and then linked to twiist app after the first 2 calibrations are completed	twiist app (pump + CGM data)	twiist insiight app for remote pump and sensor data sharing	Automatic uploads to Tidepool Data Platform
iLet Bionic Pancreas 	Dexcom G6 and G7: Use of Dexcom G6 or G7 mobile app is optional; cannot use the Dexcom receiver. FreeStyle Libre 3 Plus: Must pair on iLet app only; cannot use FreeStyle Libre apps or reader.	Dexcom G6/G7 mobile app (CGM data) iLet Mobile app (pump + CGM data)	Dexcom Follow app (CGM data) Bionic Circle app (pump + CGM data)	Automatic uploads to the Beta Bionics portal via iLet app