


Hybrid Closed Loop (HCL) Systems Comparison Chart*

	Medtronic	Tandem	Advanced Therapeutics	Ypsomed	Insulet**
HCL algorithm	SmartGuard	Control IQ	CamAPS FX	mylife Loop (powered by mylife CamAPS FX)	SmartAdjust
Location of algorithm	Pump-integrated	Pump-integrated	App based (Android)	App based (Android)	Pod-integrated
Pump	Medtronic 780g	T-slim X2	DANA-i	mylife YpsoPump	Omnipod 5
Pump type	Tethered (tubed)	Tethered (tubed)	Tethered (tubed)	Tethered (tubed)	Patch (tubeless)
Continuous glucose monitor (CGM)	Guardian 4 (no calibration)	Dexcom G6	Dexcom G6	Dexcom G6, Freestyle Libre 3	Dexcom G6
Control & bolus delivery operation	Pump	Pump	Android smartphone	Android smartphone	Omnipod 5 Controller
Pump charging mechanism	AA battery	Rechargeable	AAA battery	AAA battery	Battery within each pod Controller is rechargeable
Target glucose	5.5, 6.1 or 6.7 mmol/L (default 5.5)	6.25-8.9 mmol/L	Customisable from 4.4 to 11.1 (default 5.8)	Customisable from 4.4 to 11.1 (default 5.8)	6.1, 6.7, 7.2, 7.8, or 8.3 mmol/L
Exercise mode target glucose	8.3 mmols/L	7.8-8.9 mmol/L	No specific target. Ease off mode can be used for exercise	No specific target. Ease off mode can be used for exercise	8.3 mmol/L & delivery of less insulin
Sleep mode target glucose	No	6.25-6.7 mmols/L	Customisable glucose target can be adjusted overnight	Customisable glucose target can be adjusted overnight	Customisable glucose target or exercise feature (see above)
Bolus calculator based on	CGM value, glucose trend data and bolus calculator settings	CGM value only with bolus calculator settings	CGM value only with bolus calculator settings	CGM value only with bolus calculator settings	CGM value, glucose trend data and bolus calculator settings
Automated correction bolus settings	If predictive glucose > 6.7 mmols/L and if max basal rate is reached	If predicted glucose in 30 mins >10 mmols/L & increasing/max delivery is reached	Incorporated into continuous insulin delivery. Adjusts insulin delivery every 8-12 minutes	Incorporated into continuous insulin delivery. Adjusts insulin delivery every 8-12 minutes	Automated micro-boluses every 5 mins. Plus user initiated correction bolus
Active insulin time	Adjustable	Not adjustable (set at 5 hrs)	Adjustable	Adjustable	Adjustable
Set up requirements	Basal rates, ICR, ISF & active insulin time	TDD, body weight, basal rates, ICR & ISF	TDD & body weight	TDD & body weight	Basal rates, ICR, ISF & active insulin time
Learning mechanisms	Uses TDD over past 2-6 days. Requires 48 hours of manual mode to learn user profile	Uses body weight & TDD. Predicts glucose 30 mins ahead	Overall insulin needs, diurnal, post meal.	Overall insulin needs, diurnal, post meal	Adapts with each pod using previous TDDs. Predicts glucose 60 mins ahead
Remote monitoring for parents/carers	Glucose and insulin data via CareLink Connect app	Glucose data via Dexcom follow app.	Glucose data via Dexcom follow app	Glucose and insulin data via 'companion' in mylife CamAPS FX app	Glucose data via Dexcom Follow app
Data share with HCPs	CareLink (via app in real-time)	Glooko (download needed)	Glooko (real-time)	Glooko (real-time)	Glooko (real-time)
Minimum and maximum daily dose	8-250 units per day	10-100 units per day	5-350 units	5-350 units	Min 5 units per day Min 85 units to activate pod
Pump capacity	300 units	300 units	300 units	160 units	200 units
Insulin compatibility	NovoRapid & Humalog	NovoRapid & Humalog	Any rapid and ultra rapid acting	NovoRapid, Humalog, Fiasp, Apidra & Lyumjev	NovoRapid, Humalog & Admelog
Licensed in pregnancy	No	No	Yes	Yes	No
Age Range	7-80 years	6 years & over	1 years & over	1 years & over	2 years & over
Demo pump app/simulator	Yes	Yes	?	Yes	Yes

Adapted for health care professionals from Tim Street's Hybrid closed loop systems: Version 2.0 April 2023

*Availability of systems will be dependent on agreement with NHS England work, led by Prof Partha Kar **expected mid 2023

ICR – insulin carbohydrate ratio
TDD – total daily dose of insulin
ISF – insulin sensitivity factor