

Insulin Delivery and Dosing Configuration

Automated insulin delivery (AID) systems—also known as hybrid closed-loop or closed-loop systems—use algorithms to continuously adjust insulin delivery based on CGM data and patient’s input at mealtimes. Most systems, excluding the Beta Bionics iLet, still require individualized settings (ICR, ISF, and basal rates) to be configured by healthcare professionals, pump trainers, or patients during setup and follow-up.

AID systems require precise carbohydrate counts to be entered for meal boluses, which are then processed through carb ratios or algorithms for insulin delivery. The exception is the iLet system which uses a bolus algorithm that adjusts insulin based on patient-estimated carbohydrate portions of a meal (e.g., “usual, less, or more than usual”).^{1,2,3,4}

Pump	CGM Integration	AID System	Basal Rates, ICR or ISF Required*	Meal Bolus
Omnipod® Dash	No	No	✓ ³	Carbs counted ³
Omnipod® 5	Dexcom G6**, Dexcom G7, FreeStyle Libre 2+ ³	✓	✓ ³	Carbs counted ³
Tandem Mobi	Dexcom G6**, Dexcom G7 ¹	✓	✓ ¹	Carbs counted ¹
Tandem t:slim X2	Dexcom G6**, Dexcom G7, FreeStyle Libre 3+ ¹	✓	✓ ¹	Carbs counted ¹
MiniMed™ 780G	Simplera Sync CGM Medtronic Guardian 4 CGM ⁴ Instinct Sensor by Abbott	✓	✓ ⁴	Carbs counted ⁴
Beta Bionics iLet	Dexcom G6**, Dexcom G7, FreeStyle Libre 3+ ²	✓	No, only patient’s weight required at start up ²	Meal announcements ²

* Insulin-to-Carbohydrate Ratio (ICR), Insulin Sensitivity Factor (ISF). **Sensor requires a transmitter (separate prescription required).

References:

1. Tandem Diabetes (<https://www.tandemdiabetes.com>)
2. Beta Bionics (<https://www.betabionics.com>)
3. Insulet Corporation (<https://www.omnipod.com>)
4. Medtronic Diabetes (<https://www.medtronicdiabetes.com>)

Helpful Tip: Choose infusion sets that align with the patient’s body type, activity level, and personal comfort preferences.

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