When considering which insulin pump to choose, you have several options. In addition to choosing a pump with or without tubing, you should also consider which CGM devices the pump is compatible with.

Tubeless Pumps

- OmniPod: This is the only insulin pump without tubing available in the United States. It has two pieces: A "POD" and a Personal Diabetes Manager (PDM). The POD (disposable) is filled with insulin and attached to your body. It is fairly flat, easy to insert, and can be worn for 3 days. It's also waterproof, so it can be worn while showering or swimming. The PDM serves as a glucose meter and a is also used to calculate doses for meals and correction doses. At a touch of a button, the PDM can command the pump to delivery insulin doses. The pod delivers basal insulin continuously, but it will not deliver insulin to cover food or for corrections if the PDM is not nearby.

Pumps with Tubing

There are two pumps with tubing infusion sets that can be worn for up to 3 days.

- Tandem t:slim X2. The t:slim by Tandem is the only touch screen pump. It has a rechargeable battery and can hold up to 300 units of insulin. t:Slim has a partnership with Dexcom, and is integrated with the Dexcom G6. Newer t:slim pumps have a feature called "predictive low glucose suspend" that will stop insulin delivery if the sensor predicts glucose levels will drop below 80 mg/dL. The device can automatically resume insulin delivery when glucose levels are no longer dropping.
- MiniMed 670G pump and MiniMed 670 hybrid closed loop system. Medtronic MiniMed devices can be used as a traditional insulin pump. If you also use the Medtronic Guardian III sensor, you can use the device in "AutoMode." In Automode, the system will automatically adjusts insulin doses based on the CGM glucose readings and recent insulin delivery. It treats to a target of 120 mg/dL. The device can can suspend insulin for up to 2 hours if it senses a preset low limit and the user doesn't react to a low glucose alarm. For more information see the article on ***Hybrid Closed Loop***.

The Diabetes Forecast Consumer Guide has a table that allows you to easily compare details about different pumps and automated insulin delivery systems.

Future Insulin Delivery Systems

Bigfoot Biomedical and Beta Bionics are new companies developing automated insulin delivery systems. Bigfoot's system uses a combination of a pump, the Abbott Libre blood glucose monitoring system and a phone as the controller. The iLet from Beta Bionics delivers both insulin and glucagon to keep glucose levels in the target range. Both products are currently in the research phase.

Reviewed by Anastasia Albanese O'Neill, PhD, 7/15/19

This document is not intended to take the place of the care and attention of your personal physician or other professional medical services. Our aim is to promote active participation in your care and treatment by providing information and education. Questions about individual health concerns or specific treatment options should be discussed with your physician.

Recommended

Benefits of pumps

Hybrid Closed Loop

Automated Insulin Delivery

Sources

Product Websites

Omnipod

t:slim X2

Minimed 670G

Bigfoot Biomedical

Bionic Pancreas