

How the Tandem Control-IQ technology works

Welcome to this video, where we will discuss how Tandem Control-IQ technology works.

The t:slim X2 insulin pump with Control-IQ technology offers two choices of operation: Automatic insulin delivery through Control-IQ technology and Manual pump, each providing distinct features and functions for diabetes management. Let's explore both modes in detail.

1 Control-IQ technology

Starting Control-IQ technology

To activate the Control-IQ technology, ensure your pump is connected to Dexcom and that carbohydrates are enabled in your personal profile's bolus settings. Access the Control-IQ technology feature by selecting "My Pump" in the options menu, then choose "Control-IQ technology." Here, you will input your total daily dose of insulin and weight. The adjustable values start from a minimum of 10 units of insulin and 25 kilogram or 55 pounds, aligning with Control-IQ's indications.

Once Control-IQ technology is enabled, you will notice a gray rhombus and a blue "B" icon on the home screen. The colors of these icons will change based on basal insulin rate adjustments made by Control-IQ technology:

- If a predicted drop in glucose levels is detected, the basal insulin rate decreases, and an orange rhombus and orange "B" icon appear.
- In the event of a predicted hypoglycemic episode, the basal insulin is temporarily paused. The rhombus turns red, and the "B" becomes a red "0." The CGM graph displays a red zone. Basal insulin resumes if the predicted glucose level is expected to exceed 70 mg/dl or 3.9 mmol/l within the next 30 minutes.
- For predicted hyperglycemia, the basal insulin rate increases. The rhombus turns blue, and the "B" changes to white on a blue background.
- If a glucose level above 180 mg/dl or 10 mmol/l is anticipated, an automatic correction bolus is delivered, and an insulin drip symbol appears. The active bolus can be seen in the insulin-on-board status section.

Pressing the sensor chart button displays a 3-hour sensor chart. The sensor graph doesn't provide specific information about basal insulin adjustments, but insulin and autocorrect boluses will be represented by blue icons at the bottom.

To monitor your current insulin delivery, you can press the status icon located at the top right of the home screen. The status screen will display your current basal rate and your last insulin bolus.

Using Sleep & Exercise Activity

Via Activity under the options menu, you can explore three additional settings: Activity, Sleep, and Sleep schedules.

- Exercise: Activating this activity increases the treatment values to 140-160 mg/dl (7.8-8.9 mmol/l). A movement icon is displayed alongside the window on the home screen. Please note that Exercise Activity cannot be scheduled and can for now only be activated or deactivated on the go.

- Sleep: By enabling Sleep Activity, the treatment values are adjusted to 112.5-120 mg/dl or 6.25-6.7 mmol/l. A "zzz" icon appears next to the window on the home screen. You can manually toggle sleep mode on or off or set specific sleep schedules. Two schedules can be configured for fixed days of the week, such as weekdays and weekends, ensuring they don't overlap.

Adjusting Parameters

In Tandem Control-IQ technology, you have the ability to customize the basal rate, carb ratio, and correction factor settings. To access these options, navigate to the Options menu on your Tandem pump and select "My Pump." From there, you can choose "Personal Profiles" to switch between different profiles or adjust the parameters within each profile within the "Timed Settings". This allows you to fine-tune your insulin delivery according to your specific needs and preferences.

Giving an insulin bolus

When delivering an insulin bolus, the process remains the same with or without Control-IQ technology enabled. However, it's generally recommended to follow the pump's bolus suggestions. At the end of a bolus, you can choose to convert it into

an extended bolus. Pay close attention to the pump's bolus recommendations, as adjustments may be suggested based on your current glucose levels.

Suspending insulin

To temporarily stop the pump, like during showers or swimming, you can access the options menu and choose "Stop Insulin." You will receive an alarm indicating that insulin delivery is suspended, and you can set a delay of 15 to 60 minutes before receiving the alarm. Restarting basal insulin delivery can also be done via "Options".

2 Manual pump

In manual mode, you have full control over the basal insulin rate and bolus calculator settings. The instructions for this are covered in the module about the Tandem t:slim X2 insulin pump.

Throughout your Tandem Control-IQ technology journey, it's important to maintain open communication with your healthcare provider for personalized guidance and support. They will be able to help you adjust settings and make necessary changes based on your individual needs. It may require some trial and error during your consultations to find the optimal settings for your insulin delivery. By working together with your healthcare provider and staying resilient, you can effectively manage your diabetes and lead a fulfilling life. Stay empowered and prioritize your health and well-being.