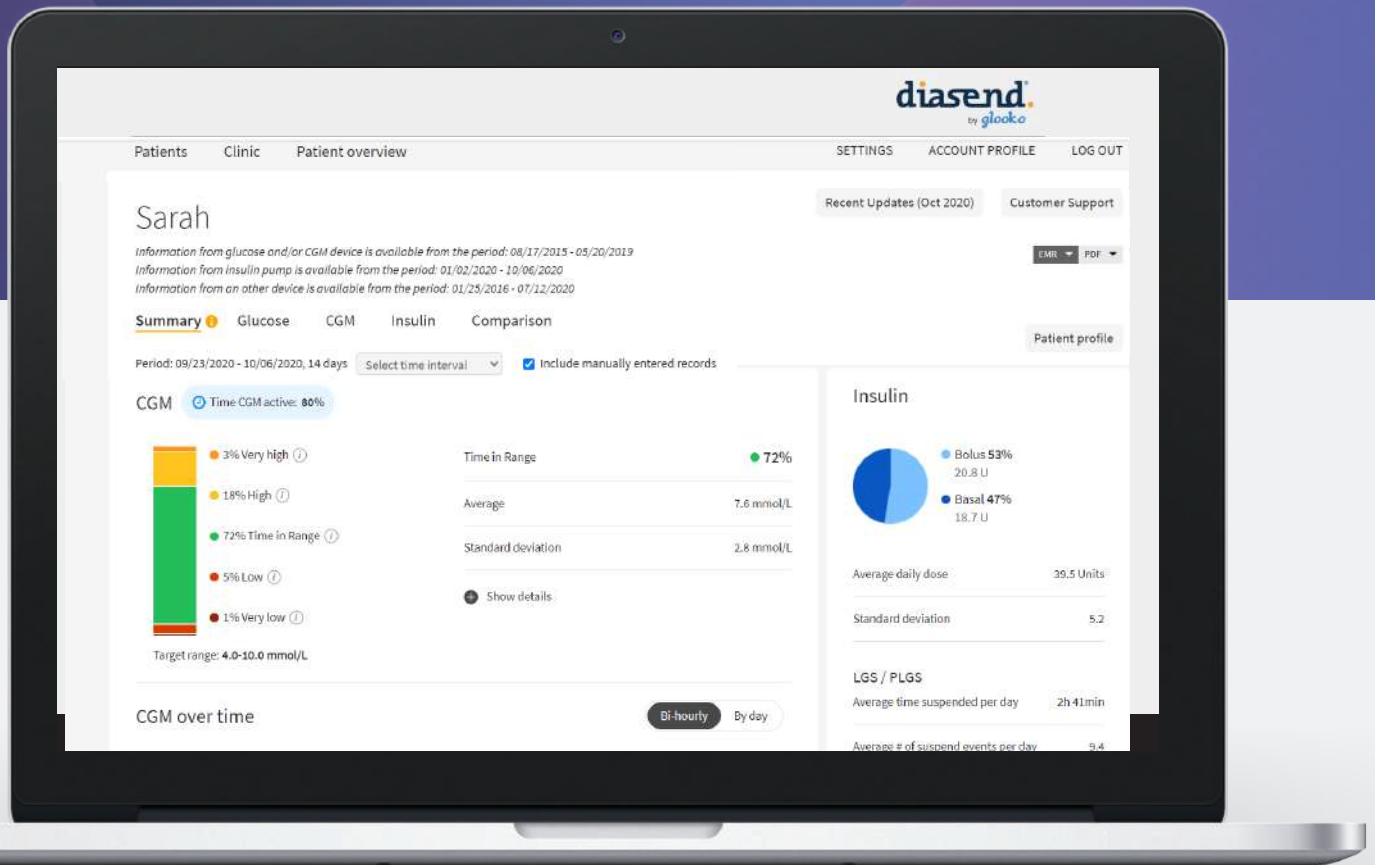# Analysing Diasend Reports

A step-by-step approach

diasend® by Glooko is a cloud-based, stand-alone system for easy uploading and integration of information from insulin pumps such as the Tandem™ t:slim X2™ insulin pump, Continuous Glucose Monitoring (CGM) devices and blood glucose (BG) meters.

It is designed as a universal report system, and can be used by anyone with diabetes and their healthcare team, to assist diabetes management. The diasend by Glooko clinic and personal reports are identical, so that the same information can be seen by the healthcare professional and the person living with diabetes.

Identifying patterns using diasend reports

This document is designed to help pump trainers use diasend reports to spot trends and analyse data. While it does not include all diasend reports, it identifies and explores the most common reports used for analysis.

Review Summary Report

This report provides insight into the patient's current diabetes management.

Continuous Glucose Monitoring (CGM)	Time in Range (TIR) %: Aim for 70%.[1]
Average daily dose	Compare this with patient's body weight to gauge their insulin sensitivity.
Average of carbs/day	Assess the patient's carbohydrate intake in relation to their energy requirements. This may also shed light on the patient's understanding of carb counting.
CGM Chart	% in, above and below target. Remember that 1% = 15 mins per day.
Basal/Bolus pie chart	% of basal/bolus.
Insulin doses summary Average days between cannula fills	View how often the patient is changing their infusion set. Note: TruSteel™ set does not have a cannula fill.
Low Glucose Suspend (LGS)/Predicted Low Glucose Suspend (PLGS) summary: Basal-IQ™ technology summary	Average time (hours/minutes) suspended per day and average of suspended events per day. In the Real-World Data Analysis,[2] the average time suspended per day was 106 minutes and the average number of suspended events per day was six.

Review CGM/Standard Day tab (AGP)

This report helps to assess overall glycaemia and identify patterns/trends of hypoglycaemia or hyperglycaemia.

Period: 10/13/2020 - 10/26/2020, 14 days Select time interval ▾   ☑ Include manually entered records

AGP / Box plot / Modal   **Midnight-to-midnight** / Noon-to-noon   🖶 Print to PDF ▾

Tell me more about AGP

Very low	Low	Time in Range	High	Very high	Time CGM active
< 3.0 mmol/L	3.0 - 3.9 mmol/L	3.9 - 10.0 mmol/L	10.0 - 13.9 mmol/L	> 13.9 mmol/L	
1 %	**6 %**	**74 %**	**15 %**	**4 %**	**80 %**

Period average: **7.4 mmol/L**		Standard deviation (SD): **3.0 mmol/L**
Highest value: **18.6 mmol/L** (10/20/2020 07:58)		Coefficient of variation (CV): **40 %**
Lowest value: **2.4 mmol/L** (10/17/2020 09:13)		Glucose management indicator (GMI): **47.7 mmol/mol**

To easily look for overnight trend, change the view to "Noon-to-noon."

Show active profile. Note: if you clicked on "Noon-to-noon" the active profile will still show "midnight-to-midnight."

Look at the dark blue graph area because this is where 50% of the CGM values lie.

Dotted lines are only the outliers.

Very low, Low, TIR, High. Note: Make sure to add "Very low & Low" to know the real % below 4.0 mmol/L.

According to Battelino & Associates in 2019[1], target percentages are:
- Time Above Range: <5% above 13.9 mmol/L
- Time Above Range: <25% above 10 mmol/L
- Time in Range: >70% between 3.9-10.0 mmol/L
- Time Below Range: <4% below 3.9 mmol/L
- Time Below Range: <1% below 3 mmol/L

View CGM/Day by Day

This report is very useful if you are suspecting a pattern and would like to have a "clean" vision of the daily CGM trending.
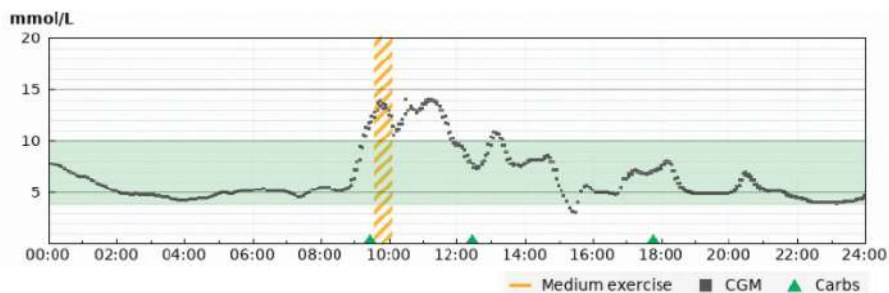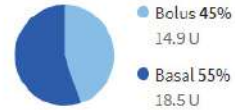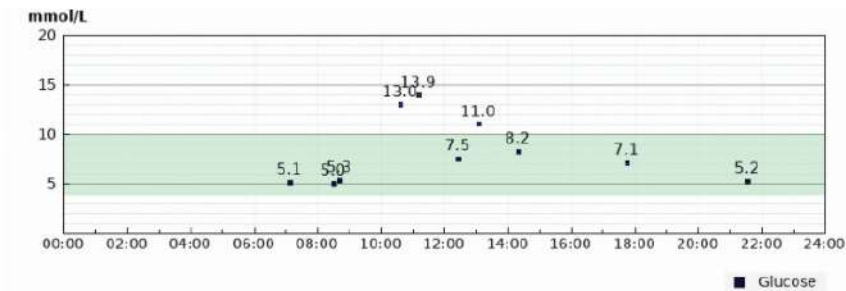

View the day-by-day CGM tracing to identify patterns/trends. Carb intake and exercise is also displayed.
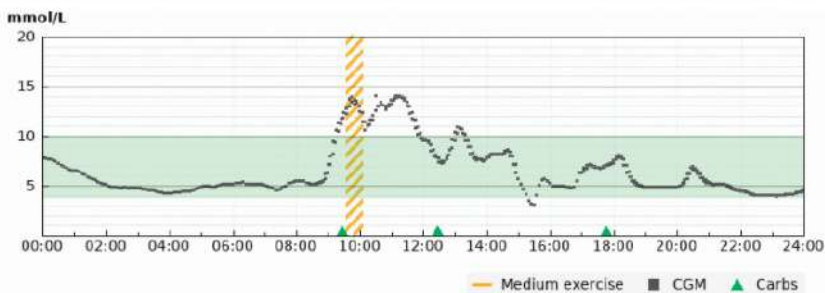
Review Comparison Day by Day

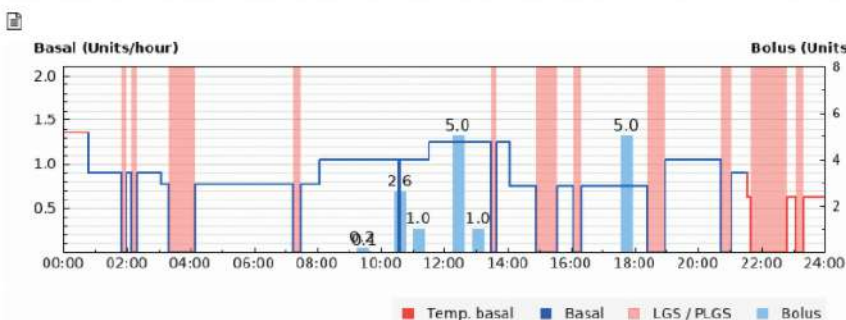This report helps explore the potential reasons for the patterns/trends identified in the CGM/Day by Day.

Sunday 10/25

Consider CGM graph and analyse bolus timing & carbs (green triangle) to match CGM graph. If it does not match, review the bolus timing with the patient.

Recording Carbs to treat hypoglycaemia: Diasend will report carb grams entered into the bolus calculator when a bolus was not actually completed.

Steps:
- Tap "Bolus"
- Enter Grams of Carb
- Tap blue check mark in upper right corner
- Tap white arrow in upper left corner to exit the bolus calculator to avoid incomplete bolus alert

This will record the grams of carbohydrate but the bolus will not be delivered. On the same note: a patient that entered extreme amount of carbs without bolus could simply be doing the same thing (above). Remember that diasend is a "Read Only Program" so any time a value is entered into the pump, you will see it captured on the report, even if a bolus was not given.

In the "Bolus" tab, view Meal, Correction, and IOB to assess if the bolus calculation were over-ridden.

If you require more information, simply click the "pump alarm icon" and/or the "events icon" on the left side of the graph.

Analysing Diasend Reports

View Insulin/Bolus Adherence

This report will show all the deviating boluses (overrides) detected in the bolus calculator.

Period: 10/06/2020 - 10/19/2020, 14 days [Select time interval ▾]   🖨 Print to PDF ▾

10 deviating boluses detected out of **81** bolus calculator assisted boluses (out of **81** boluses in total)

Date	Time	Delivered (U)	Calculated (U)	Bolus Type	Duration (min)	Pre-Bolus BG (mmol/L)	Post-Bolus BG (mmol/L)
10/09/2020	19:32	1.73	3.73		162	10/09/2020 19:31 : 6.6	10/09/2020 21:05 : 9.2
10/11/2020	11:19	0.32	3.02		9	10/11/2020 11:18 : 5.2	10/11/2020 11:28 : 5.8
10/11/2020	11:29	1.00	0.00			10/11/2020 11:28 : 5.8	10/11/2020 11:55 : 9.9
10/12/2020	22:45	2.00	0.72			10/12/2020 22:45 : 14.4	10/12/2020 23:21 : 11.7
10/13/2020	19:30	0.73	0.00			10/13/2020 19:30 : 6.4	10/13/2020 20:06 : 9.1
10/17/2020	17:22	1.36	3.40		4	10/17/2020 17:21 : 3.6	10/17/2020 18:01 : 5.8
10/17/2020	18:02	2.00	0.00			10/17/2020 18:01 : 5.8	10/17/2020 19:16 : 8.2
10/18/2020	16:17	0.10	0.02			10/18/2020 16:17 : 9.2	10/18/2020 17:36 : 9.4
10/18/2020	22:22	0.80	0.46			10/18/2020 22:22 : 10.3	10/19/2020 08:54 : 6.7
10/19/2020	08:55	0.60	0.36			10/19/2020 08:54 : 6.7	

> It is useful to review before thinking about changing Correction Factor and I:C ratios.

Review Insulin/Pump Settings

This can also be viewed as a PDF BEFORE and AFTER your assessment.

Period: 10/06/2020 - 10/19/2020, 14 days [Select time interval ▾]

Insulin pump settings for device: 658468 (Tandem t:slim X2)

Select pump settings from upload date: [10/19/2020 10:53 (Australia/Sydney) ▾]

🖨 Print comparison of pump settings to PDF ▾   🖨 Print to PDF (compressed) ▾   🖨 Print to PDF ▾

Bolus

Setting	Value
Max Bolus	6 U

Basal

Setting	Value
Active basal program	Sarah

Basal-IQ settings

Setting	Value
Basal-IQ	On
Suspend Alert	Off
Resume Alert	Off

General

Setting	Value
Pump Volume: Button	Vibration
Pump Volume: Quick Bolus	Vibration
Pump Volume: Bolus	Vibration
Pump Volume: Reminders	Vibration
Pump Volume: Alerts	High
Pump Volume: Alarms	Vibration
Low reservoir level	20 U
Cannula Prime Size	0.7 U
Auto-Off Enable	Disabled
Auto-Off Timeout	12 h
Feature Lock	Off
Last Keypress to display timeout	15 s
Insulin action	240 min

CGM Settings

Setting	Value
Glucose High Alert Limit	9 mmol/L
Glucose Low Alert Limit	4 mmol/L
Glucose Rise Alert Limit	0.2 mmol/L
Glucose Fall Alert Limit	0.2 mmol/L
Transmitter Out of Range Alert Snooze Time	20 min
Glucose High Enable	Enabled
Glucose Low Enable	Enabled
Glucose Rise Enable	Disabled
Glucose Fall Enable	Disabled
Transmitter Out of Range	Enabled

> Confirm with patient their most used Personal Profile (name).

Note: Insulin Duration is in minutes, not hours.

> You can look for a comparison of the pump settings from the last 8 downloads. The changes will appear highlighted in yellow.

Reminder:
- The patient can use tab to link Dexcom G5 Mobile or Dexcom G6.
- Customise PDF wizard in order to print desired diasend report in 1 click.
- The last two weeks of data are shown as default. It can be customised colour or black and white.

Assess the Basal-IQ technology suspensions by looking at the red bars:

Basal-IQ technology Related Content

✓ Look for patterns — are the suspensions happening at the same time of the day frequently?

✓ Look at the length of time of the suspensions.

✓ Short suspensions are 5-30 minutes.

✓ Long suspensions are more than 30-45 minutes.

✓ Treatment of hypoglycaemia with Basal-IQ technology: Consider treating hypoglycaemia with less carbohydrate when Basal-IQ technology is active in order to help prevent rebound hyperglycaemia. The suggestion is to use 5-10 grams of carbohydrate and evaluate. If the patient has already experienced a suspension of basal insulin delivery, the full carbohydrate treatment may not be necessary.[3]

Scenario #1:
Short suspensions with no hypoglycaemia
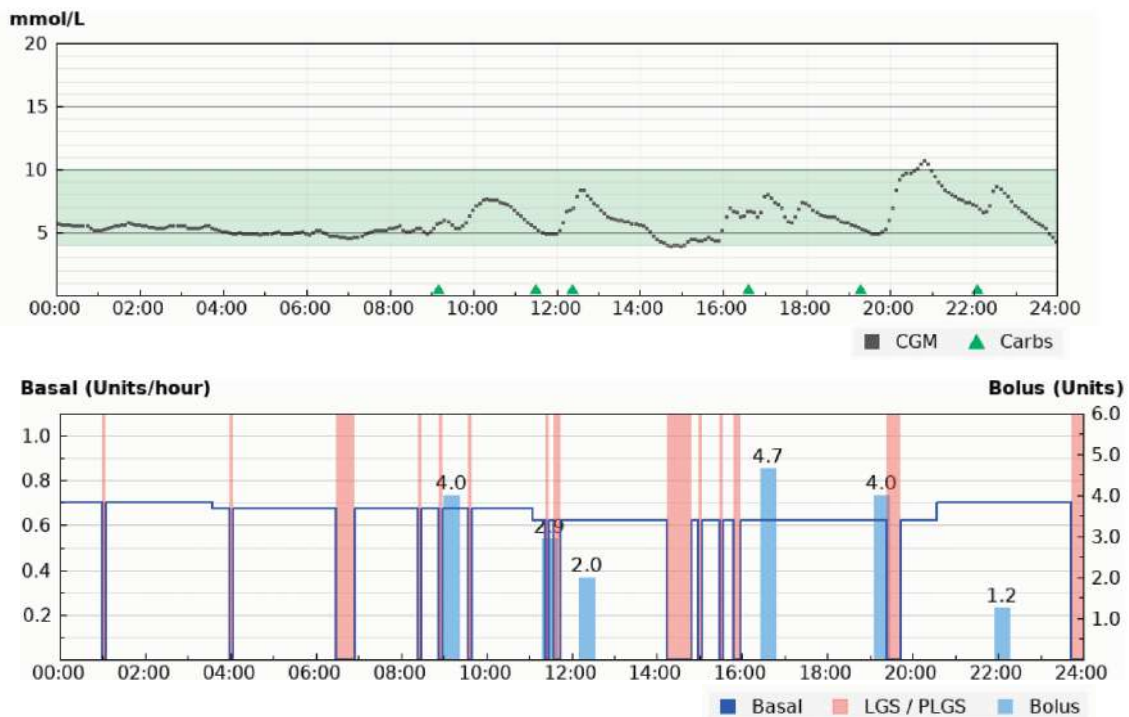
There are short suspensions occurring throughout the day but Basal-IQ technology is working as intended to keep the glucose values within target range.

Frequent suspensions do not necessarily indicate hypoglycaemia or indicate a need for a change in therapy. What is relevant here is the pattern and/or duration of the suspensions as they relate to the blood glucose outcomes.

Scenario #2:
Short suspensions with hypoglycaemia
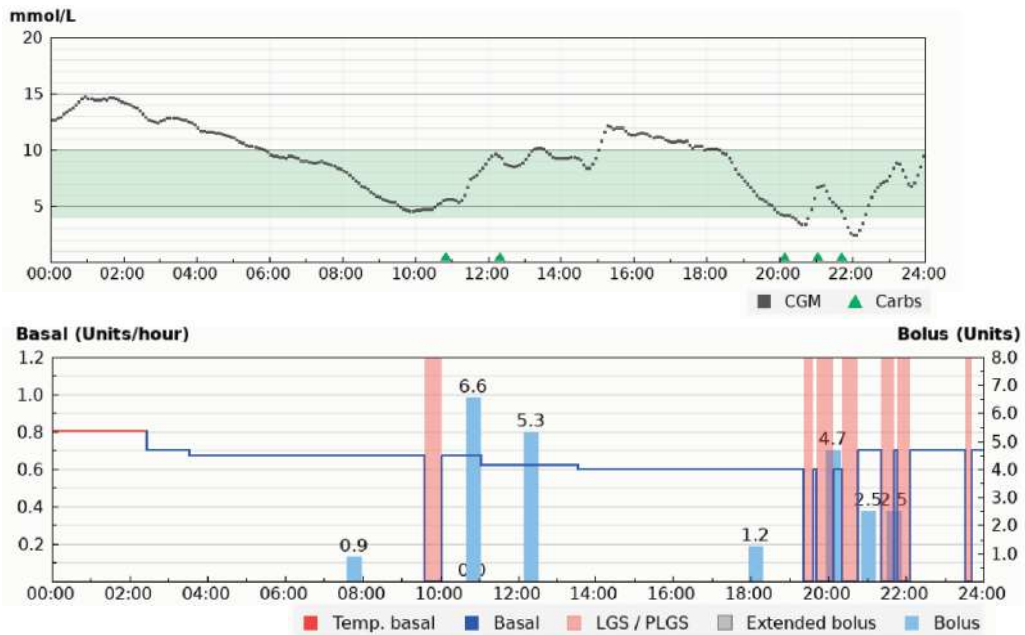
Basal-IQ technology can help to quickly identify hypoglycaemia events. Discuss periods of hypoglycaemia and review insulin to carb ratio(s), bolus timing, consider correction factor & target BG or if exercise contributed to events.

Only after considering these factors, adjustments to settings may help. In this example, the hypoglycaemia periods were occurring mainly after meal (bolus).

Scenario #3:
Long suspensions with no hypoglycaemia
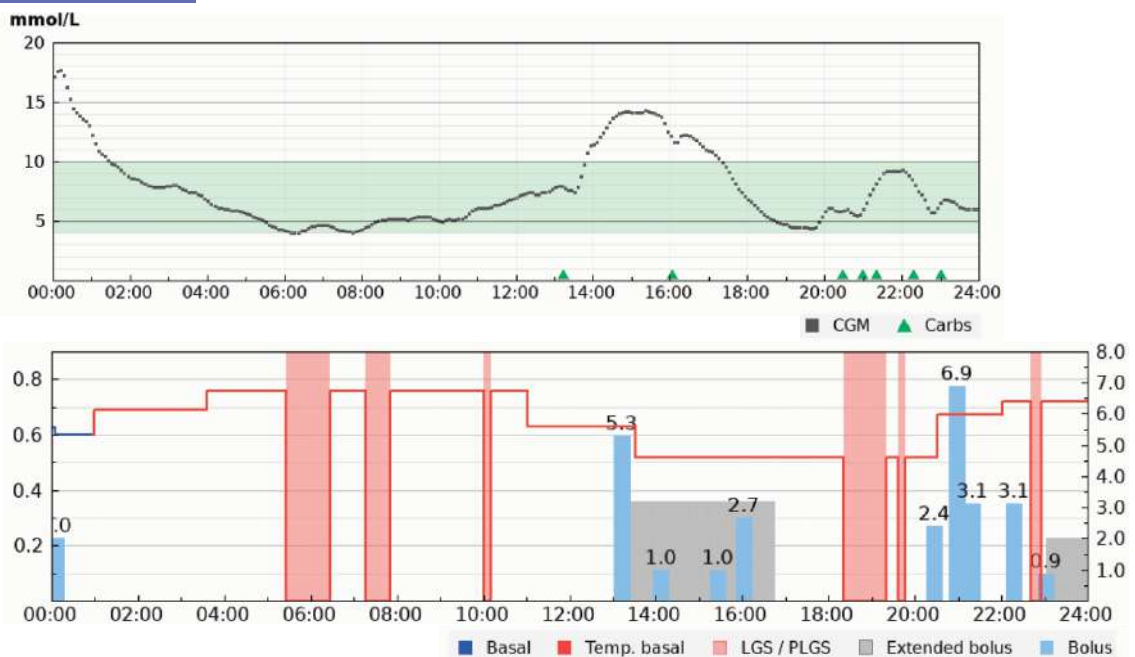
In this example, the long suspensions did prevent hypoglycaemia with no hyperglycaemia rebound effect.

Remember to always look for patterns before doing insulin adjustment and pump education.

Shop

Events

Resources

amsldiabetes.com.au

For more information on diasend by Glooko, please contact us on **1300 851 056** or at **diabetes@amsl.com.au**

amsldiabetes.com.au

References: 1. Battelino T, Danne T, Bergenstal RM, et al. Clinical targets for continuous glucose monitoring data interpretation: Recommendations from the international consensus on time in range. Diabetes Care. 2019;42(8):1593-1603. 2. Muller, L, Habif S, Leas S, Aronoff-Spencer E. Reducing hypoglycaemia in the real world: A retrospective analysis of predictive low-glucose suspend technology in an ambulatory insulin-dependent cohort. Diabetes Technol Ther.2019;21(9):478-484 3. Messer LH, Berget C, Forlenza GP. A clinical guide to advanced diabetes devices and closed-loop systems using the CARES paradigm. Diabetes Technol Ther.2019;21(8):462-469. Important Safety Information: The t:slim X2 insulin pump with Basal-IQ technology (the System) consists of the t:slim X2 insulin pump, which contains Basal-IQ technology, and a compatible continuous glucose monitoring system (sold separately). The t:slim X2 insulin pump is intended for the subcutaneous delivery of insulin, at set and variable rates, for the management of diabetes mellitus in people requiring insulin. The t:slim X2 insulin pump can be used solely for continuous insulin delivery and as part of the System. When used with a compatible CGM, the t:slim X2 insulin pump with Basal-IQ technology can be used to suspend insulin delivery based on CGM sensor readings. The pump and the System are indicated for use in individuals six years of age and greater. The pump and the System are intended for single patient use. The pump and the System are indicated for use with NovoRapid or Humalog U-100 insulin. The System is not indicated for use in pregnant women, people on dialysis, or critically ill patients. Users of the pump and the System must: be willing and able to use the insulin pump, CGM, and all other system components in accordance with their respective instructions for use; test blood glucose levels as recommended by their healthcare provider; demonstrate adequate carb-counting skills; maintain sufficient diabetes self-care skills; see healthcare provider(s) regularly; and have adequate vision and/or hearing to recognise all functions of the pump, including alerts. The t:slim X2 pump, transmitter, and sensor must be removed before MRI, CT, or diathermy treatment. For additional important safety information, visit tandemdiabetes.com/safetyinfo. © 2020 Tandem Diabetes Care, Inc. All rights reserved. Tandem Diabetes Care, t:simulator, Basal-IQ, and t:slim X2 are either registered trademarks or trademarks of Tandem Diabetes Care, Inc. in the United States and/or other countries. Dexcom, Dexcom G5 Mobile, and Dexcom G6 are registered trademarks of Dexcom, Inc. in the United States and/or other countries. Apple and the Apple logo are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc. Google Play and the Google Play logo are trademarks of Google LLC. All other third-party marks are the property of their respective owners. ARTG 304681. PR-100-424 September 2021