Diabetes Review

An Overview for School Nurses

August 14th, 2025

Emily Lyro, RN, MSN, CDCES, BC-ADM
Melissa Stoliker, RN, CDCES

MultiCare
Mary Bridge Children's

Agenda

1. Diabetes Basics
2. Meal Times
3. Activity
4. Hypoglycemia
5. Hyperglycemia

MultiCare Mary Bridge Children's

Type 1 Diabetes

-Autoimmune disease

-Often diagnosed in adolescence

-There is nothing someone does to cause it

-The body has attacked and destroyed the beta cells in the pancreas.

-The role of beta cells is to produce insulin.

-Insulin is a hormone that regulates blood sugar.

-our goal is to help families think “like a pancreas”

MultiCare Mary Bridge Children's

Caring for kids who have type 1 diabetes

Insulin regimen typically includes:

ICR: insulin to carb ratio

Correction Scale/Sensitivity

Blood sugar target

Testing blood sugar or CGM check before meals and as directed by plan/parents

Monitor for hypoglycemia and hyperglycemia

Site rotation: abdomen, arms, legs, upper buttock. Should be rotating to avoid developing scar tissue

Scenario:

Student: Kaden is eating 56 grams of carbs and his blood sugar before lunch was 188. How much insulin does he need for lunch?

ICR: 1:15 and Correction 1:50 >150

MultiCare Mary Bridge Children's

Hypoglycemia on Shots:

Symptoms: Shaky, sweaty, irritable, lethargic, weak, tired, headache, hungry, dizzy.

Rule of 15: if glucose is < 70, give 15 grams simple sugar (4oz juice, 3-4 glucose tabs, fruit snacks)

Wait 15 minutes then recheck glucose

If it's not > 70, do the Rule of 15 until it is above 70.

If it's > 70 and next meal is not in the next 30 minutes, give small snack with protein. Parents should provide this.

MultiCare
Mary Bridge Children's

Hyperglycemia on Shots:

Symptoms: headache, hunger, irritable, increased urination, thirsty, blurry vision, and nausea.

- Check urine or blood ketones when blood sugar is > 300 or during illness
- Urine ketones: you should be dipping the stick in the urine, NOT the student.
- Blood ketone meter/strips are typically only ordered for patients who are not potty trained or are developmentally delayed.

MultiCare
Mary Bridge Children's

Omnipod 5

3 Simple Parts

To the Omnipod 5 Automated Insulin Delivery System

Pod and Dexcom G6 shown without the necessary adhesive.

Omnipod 5 App*

Take full control of the Pod from the Omnipod App on a compatible smartphone* or use the free controller, provided at no additional cost with your first prescription.

*For a list of compatible smartphone devices visit omnipod.com/compatibility.

Pod

Tubeless, wearable and waterproof, the state-of-the-art Pod, with built in SmartAdjust™ technology, sits right on your body and automatically adjusts insulin delivery for up to 3 days or 72 hours.

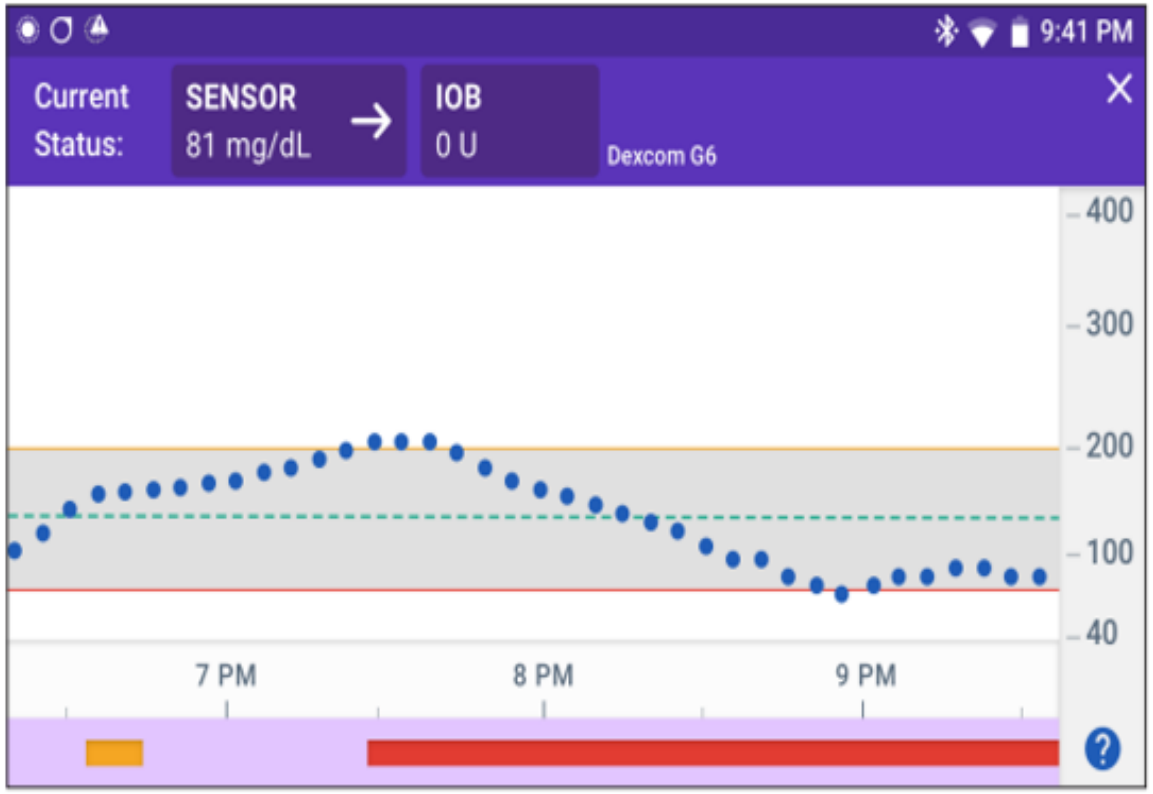
Dexcom® G6 CGM System

Continuously sends glucose readings to the Pod, so you can get real-time data without the fingersticks*. Dexcom G6 is sold separately.

*Fingersticks required for diabetes treatment decisions if symptoms or expectations do not match readings.

MultiCare Mary Bridge Children's

Omnipod 5



MultiCare Mary Bridge Children's

Tslim X2 and Mobi

Tslim X2:

-holds 300 units

-controlled from device or phone app

-Dexcom G6, G7 and Libre 2 plus

Mobi:

-controlled from iPhone

-Dexcom G6, G7

-holds up to 200 units

-as little as 5” of tubing

TANDEM DIABETES CARE

MultiCare Mary Bridge Children's

Control-IQ Technology
for the t:slim X2 Insulin Pump

QUICK REFERENCE

UNITS OF MEASURE | MG/DL

How Does Control-IQ Technology Work?

Control-IQ™ technology is designed to help increase time in range (70—180 mg/dL)* using Dexcom G6 continuous glucose monitoring (CGM) values to predict glucose levels 30 minutes ahead and adjust insulin delivery accordingly, including delivery of automatic correction boluses (up to one per hour).

		Control-IQ	Sleep Activity	Exercise Activity
Delivers	Delivers an automatic correction bolus if sensor glucose is predicted to be above ____ mg/dL	180	--	180
Increases	Increases basal insulin delivery if sensor glucose is predicted to be above ____ mg/dL	160	120	160
Maintains	Maintains active Personal Profile settings when sensor glucose is between ____ - ____ mg/dL	112.5 - 160	112.5 - 120	140 - 160
Decreases	Decreases basal insulin delivery if sensor glucose is predicted to be below ____ mg/dL	112.5	112.5	140
Stops	Stops basal insulin delivery if sensor glucose is predicted to be below ____ mg/dL	70	70	80

*As measured by CGM.

Control-IQ Technology Pump Icons

Symbol	Meaning
	Control-IQ technology is on but not actively increasing or decreasing basal insulin delivery.
	Control-IQ technology is increasing basal insulin delivery.
	Control-IQ technology is decreasing basal insulin delivery.
	Control-IQ technology has stopped basal insulin delivery.
	Control-IQ technology is delivering an automatic correction bolus (or an automatic bolus).
zzz	The Sleep Activity is enabled.

Symbol	Meaning
B	Control-IQ technology is delivering the normal Personal Profile basal rate.
B	Control-IQ technology is increasing basal insulin delivery.
B	Control-IQ technology is decreasing the basal insulin delivery.
0	Basal insulin delivery is stopped and a basal rate of 0 u/hr is active.
	Control-IQ technology is delivering an automatic correction bolus.
	The Exercise Activity is enabled.

MultiCare Mary Bridge Children's

The iLet Basics:

No more:

- ⊗ Carb Counting*
- ⊗ Carb Ratios
- ⊗ Correction Factors
- ⊗ Pre-set Basal Rates

or any of the other settings that might be overwhelming about other insulin delivery devices.

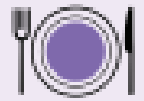
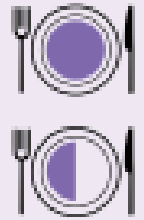
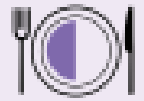
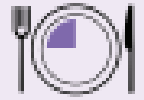
The iLet needs only one number - your child's weight.

**User must be carb aware.*
Image shown does not include required overpatch. Please be sure to follow instructions for using the overpatch.

MultiCare Mary Bridge Children's

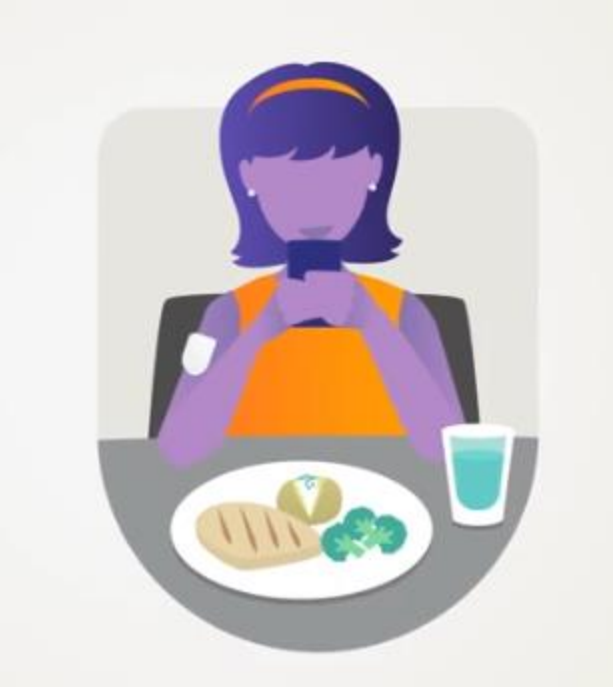
iLet Meal Time:

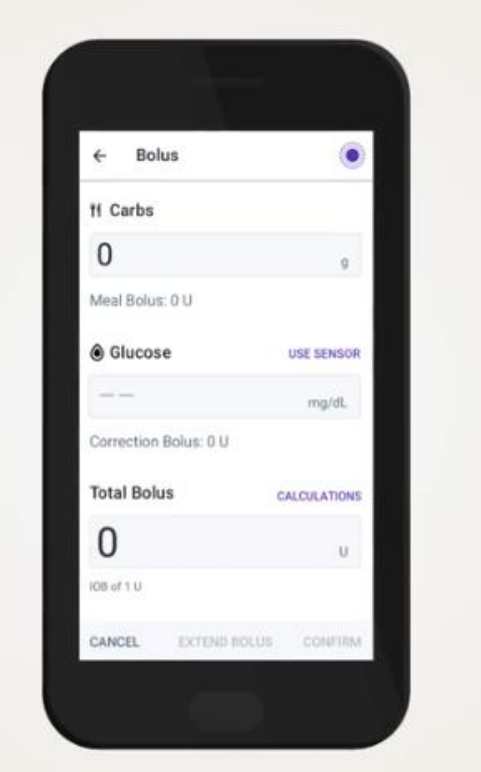
- Be consistent
- Only announce meals that have carbs-when in doubt announce a USUAL
- If eating between meals, low carb foods are the best option
- Announce meals before or right when you start to eat
- If it has been more than 30 minutes after a meal-do NOT announce it
- The pump doesn’t give all of the insulin upfront 75%/25%

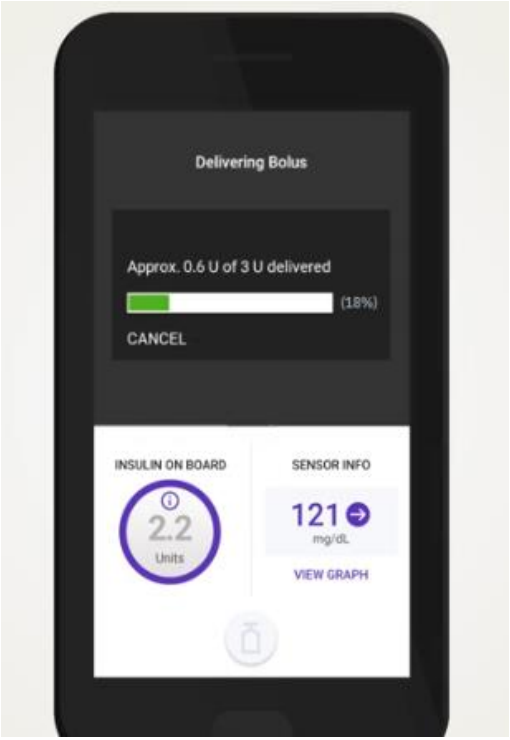
Carb Amount	Example	
“Usual for me” Carb Amount		This is the usual amount of carbs you would typically eat for that meal.
“More" Carb Amount		This is around 50% more carbs than your "Usual for me" meal (1.5 times as many carbs as your "Usual for me" meal).
“Less” Carb Amount		This is about half as many carbs as your "usual for me" meal (50% of your "Usual for me" meal)
DO NOT ANNOUNCE		If the meal or snack you are eating has less than one quarter (25%) of the carbs in your "Usual for me" meal, you do not need to announce.

MultiCare Mary Bridge Children’s

Mealtime for Omnipod

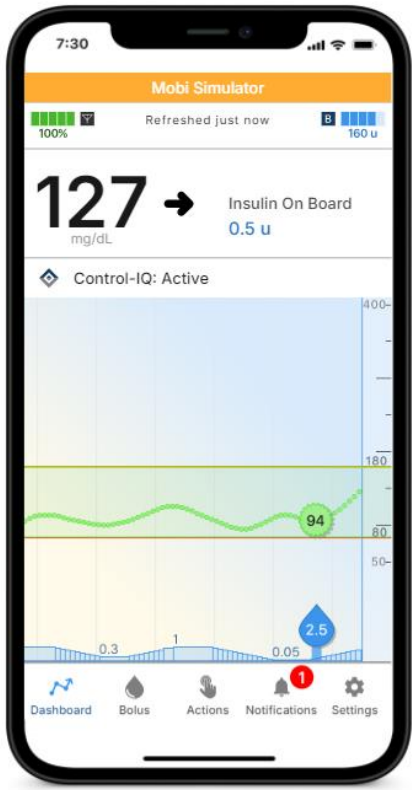


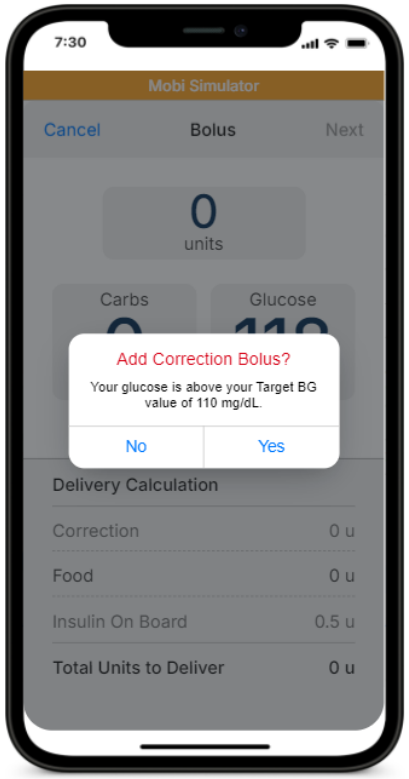


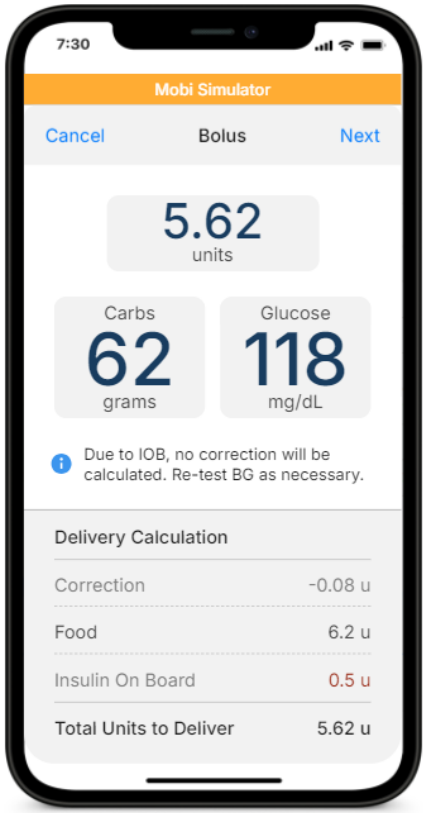


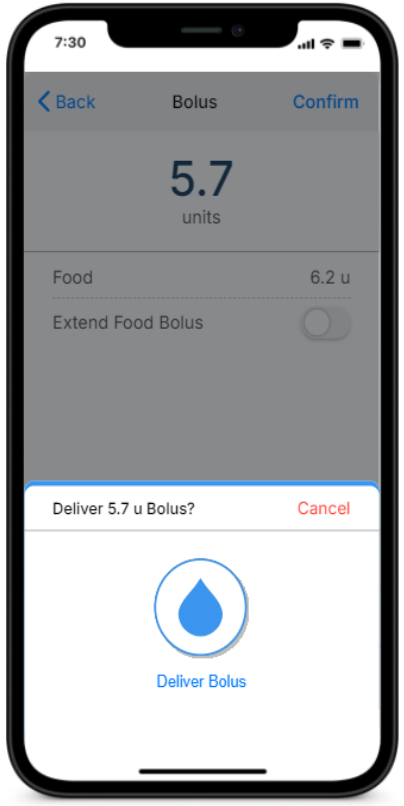
MultiCare Mary Bridge Children's

Mealtime for Tandem:





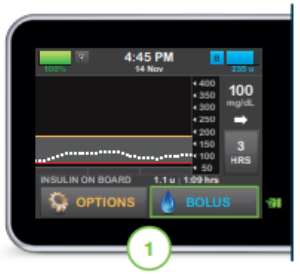




MultiCare Mary Bridge Children's

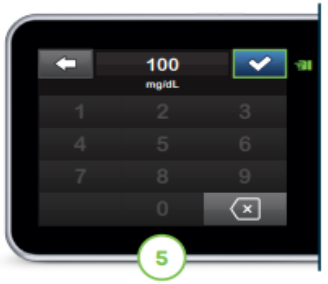
Tandem X2

Pump Tip: The minimum bolus size is 0.05 units. The maximum bolus size is 25 units. A message will appear on the screen if the user attempts to deliver a bolus that is larger than the amount of insulin in the cartridge.



From the Home screen, tap **BOLUS.**

Tap **Add BG** to enter the user's blood glucose (BG).



Enter the value. Tap ✓ to continue.

Verify the dose and tap ✓ to continue.

Tap ✓ to deliver the bolus immediately.

Note: These instructions are provided as a reference tool for pump users and caregivers who are already familiar with the use of an insulin pump and with insulin therapy in general. Not all screens are shown. For more detailed information on the operation of the t:slim X2 pump, please refer to its user guide.

Note: If certain advanced features are being used, the current sensor reading may auto-populate to the bolus calculator.

Note: Be sure "mg/dL" is displayed above keypad when entering blood glucose values.

Note: Calculations are based on preset insulin-to-carb ratios and correction factors, which may be set in Personal Profiles.

Tap **0 grams** to enter the carbs for the user's bolus.

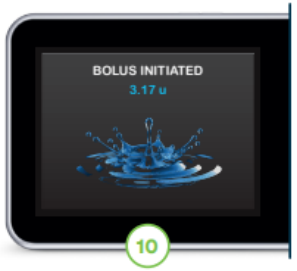
Note: If this area reads "units," the carb feature is turned off in the active profile.

Enter desired value. Tap ✓ to continue.

Note: Be sure "grams" is displayed above keypad when entering food boluses.

If a BG is entered that is below the target, but above 70 mg/dL, the option to reduce the bolus amount will appear. Tap ✕ or ✓ to continue.

Tap ✓ to continue.



The BOLUS INITIATED screen will appear to confirm delivery has started.

To cancel the undelivered portion of a bolus, tap ✕ next to BOLUS on the Home screen, then tap ✓ to confirm.

MultiCare Mary Bridge Children's

Activity on a pump

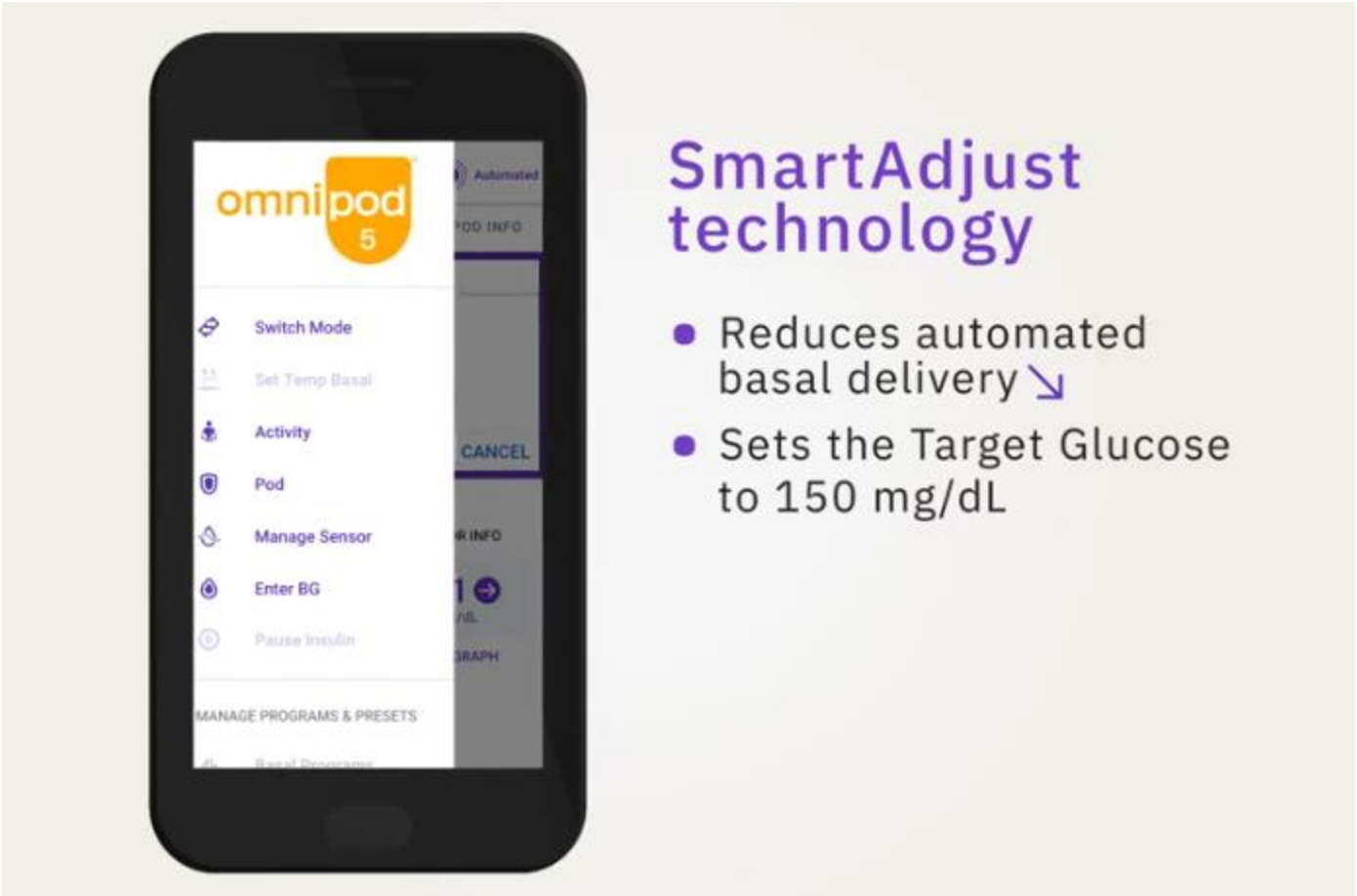
-Toggle on the activity/exercise tab

-Best practice is 1 hour prior to activity and through risk for lows.

-This is an individual and case by case decision

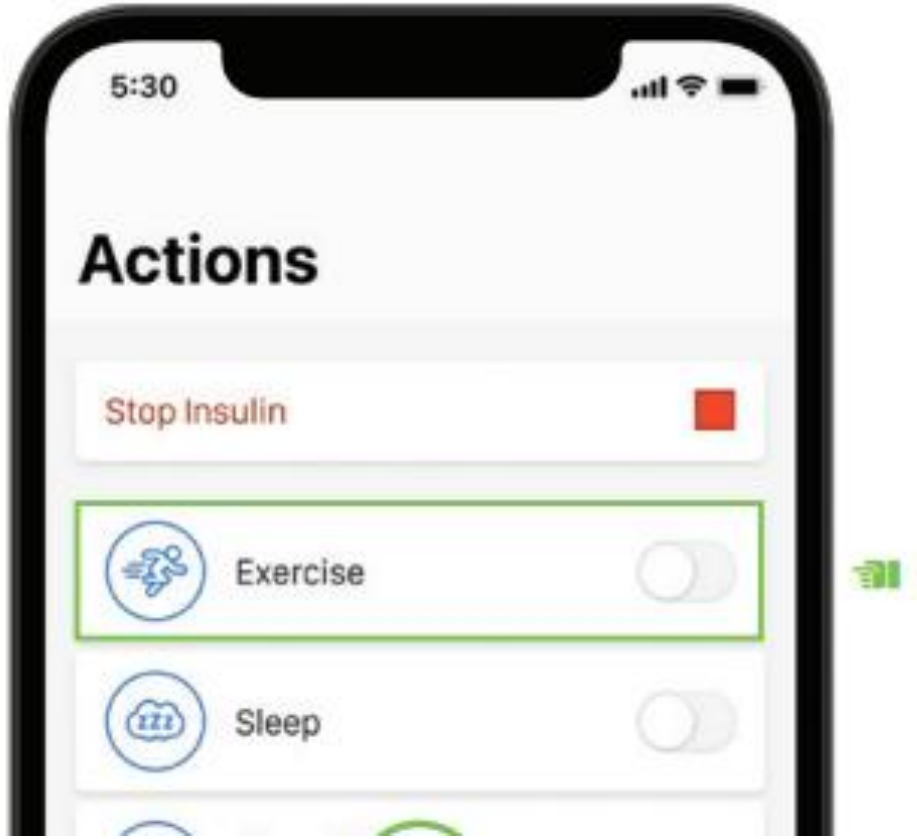
MultiCare Mary Bridge Children's

Activity on Omnipod:



MultiCare Mary Bridge Children's

The Tandem Mobi:



MultiCare
Mary Bridge Children's

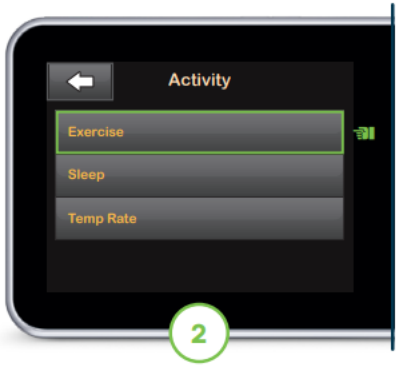
Tandem X2 Pump Exercise tab

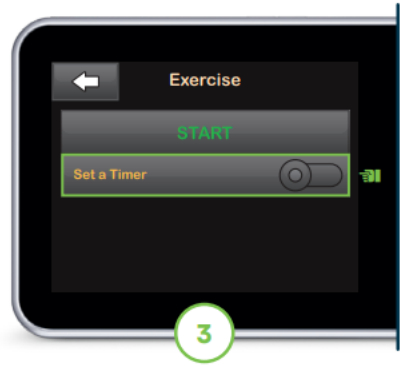
MultiCare
Mary Bridge Children's

Users can program their t:slim X2 insulin pump to automatically switch off the Exercise Activity by setting a custom duration with the Exercise timer.

From the Home screen, tap **OPTIONS** and then **Activity.**

Note: These instructions are provided as a reference tool for pump users and caregivers who are already familiar with the use of an insulin pump and with insulin therapy in general. Not all screens are shown. For more detailed information on the operation of the t:slim X2 pump, please refer to its user guide.





iLet Activity

There are 2 options:

1. Disconnect from the pump OR pause pump (ideally 30-60 minutes prior)
2. Preload with 10-15 grams of CHO, keep pump out of range of student/dexcom during this time
3. Reconnect or unpause after activity

OR

Stay connected to the pump and do NOT preload with carbs

Family will help with deciding which approach to take

MultiCare Mary Bridge Children's

Hypoglycemia

- Treat lows with 5-15 grams of carbs (family will direct on amount)
- Recheck BG in 15 minutes
- Repeat if BG not >70 or meal is not with the next 30 minutes

MultiCare Mary Bridge Children's

Scenario:

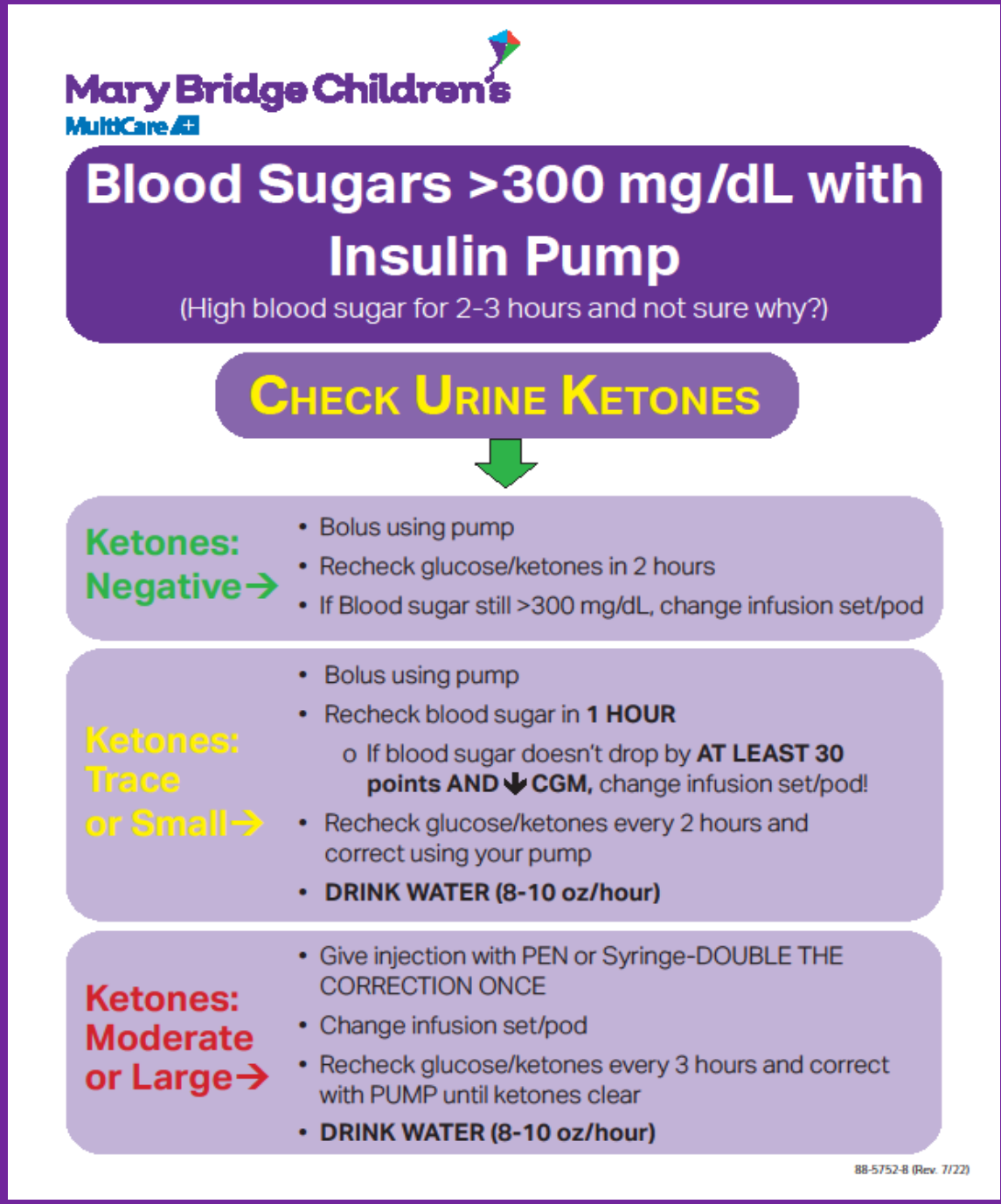
A student comes to the office with an expired pod. Is it still delivering insulin?

What should you do if a controller device has no charge or says lost signal?

MultiCare Mary Bridge Children's

Hyperglycemia on most pumps:

MultiCare
Mary Bridge Children's



Hyperglycemia on a pump:

-verify that pump is working

-is set kinked

-is there insulin in the pump

-if student sick or BG >300 to check students ketones

-you do not need to check ketones if BG >300 and last insulin dose was less than 3 hours ago

MultiCare Mary Bridge Children's

KETONES:

-Trace/Small: correct BG using pump, drink 8 oz water every hour, ok to return to class and call parent

-Moderate/Large: call parents to pick up student as soon as possible. OK to double correction dose using pen. No activity. Family will follow the Pump Hyperglycemia Plan.

MultiCare Mary Bridge Children's

Hyperglycemia with the iLet

- Basically, you wait it out-Alerts user after >300 for 90 minutes
- Drink water (8-10 oz/hour)
- corrections cannot be given
- Verify that there is still insulin in the pump
- Fight the urge to announce a fake meal to help bring a BG down
- Family to change out set if BG >300 for more than 2-3 hours and ketones moderate/large

MultiCare Mary Bridge Children's

Senarios

A student who is wearing the iLet, has a high A1C and does not announce meals at home, they come to school and the school nurse follows the protocol and announces meals. This causes daily lows in the afternoon

What should we do to help decrease this risk for lows?

Another Question:

Is it OK to correct between meals when you are on a pump?

MultiCare Mary Bridge Children's

What you see	What you should do and why	Follow up
Connor got a LOW alert Sensor shows 80 with one arrow down	Action: Check glucose using meter to confirm. Why: If Connor is wearing a pump that is integrated with his sensor, his pump has likely suspended insulin already and he may not need juice/snack to treat the low the sensor is predicting.	If the glucose is low (< 70), treat as directed in HCP. If it's not low and student is not symptomatic, they can return to class.
Alexis is about to go to PE and sensor shows 130 with two arrows down	Action: She is wearing a pump so you should turn Activity/Exercise mode on Why: This will keep her blood sugar target between 140-160. Her pump will suspend insulin in attempt to prevent low glucose.	This is an option written in our orders that can be discussed with parent/guardians
Jasmine feels low but sensor shows 145 with steady arrow	Action: Check glucose using meter to confirm. Why: The sensor can be off. Anytime a student is symptomatic, you should test using a glucometer to confirm.	If the sensor is off, it can be calibrated using the glucose reading. Treat the glucose as directed by HCP.
Logan arrived to school and sensor shows 300 with double arrows up	Action: Ask if he had breakfast and when he received his insulin Why: His blood sugar will rise after his meal and it usually takes 1.5-2 hours for the glucose to come back down.	As long as he received his insulin, you do not need to do anything. If his blood sugar is still > 300 before lunch, check ketones

SCENARIOS:

Ethan is wearing a pump with sensor and is in automation. He comes to the nurses office and reports he ate a snack bag of chips (18 grams of carbs) about 45 minutes ago but didn't bolus. What would you do?

A: Bolus by entering only the carbs into the pump

B: Nothing, it's too late to do anything

C. Bolus by entering carbs and BG into the pump

D. Bolus by entering only the BG into the pump

True or False

Benji's mother called in to let the school nurse know he had moderate ketones when he woke up. She brought him back to school a couple of hours later once the ketones have cleared. Since his ketones are clear, he's allowed return to school.

True or False

Students are not allowed to eat anything between meals.

MultiCare Mary Bridge Children's

FRIENDLY REMINDER

- One study estimated that people with **T1D** make 120 or more additional **decisions** each **day** compared to people who don't have T1D.
- Some students may arrive to school with a high glucose and appear exhausted - You don't know what their night might have looked like. Maybe pump failed and they've been pushing fluids and correcting all night. Their glucose is only high now because they just ate breakfast. They are exhausted because they spent the night waking up to check and clear ketones.
- They do not have any diet restrictions. They can eat like their peers without any judgement.

MultiCare Mary Bridge Children's

Questions:

Thank You!

MultiCare

Mary Bridge Children's