Diabetes

2026 McLane School Nurse Conference

McLane Children's
BaylorScott&White

Diabetes Technology

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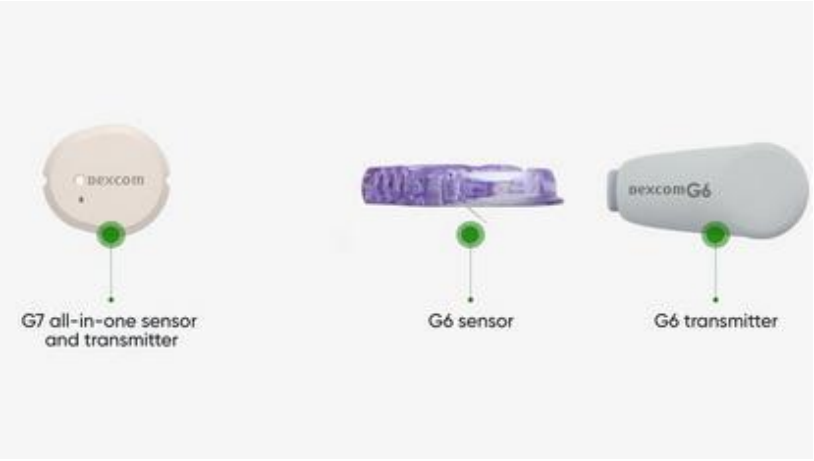
Dexcom G6 and Dexcom G7

- The Dexcom G6 and G7 are advanced continuous glucose monitoring (CGM) systems developed by Dexcom, designed to help individuals with diabetes manage their condition effectively.
- The Dexcom G6 provides real-time glucose readings directly to your smartphone or receiver every five minutes. It features a slim, water-resistant sensor that can be worn for up to 10 days and a transmitter (DO NOT THROW AWAY TRANSMITTER) that sends data wirelessly. The system requires no fingerstick calibrations and has an urgent low soon alert that warns you of severe hypoglycemia.
- The Dexcom G7 is smaller and thinner than the G6, with a fully disposable, all-in-one sensor and transmitter, making it more user-friendly.
- Warm-up time for the Dexcom G6 is 2 hours, and for the Dexcom G7 is 30 minutes.
- Both systems are compatible with various insulin pumps and can be integrated with other diabetes management apps and platforms.

Dexcom G6 is discontinued by manufacturer as of 07/01/2026!



Libre 2, 2 Plus, and 3 Plus

- The FreeStyle Libre 2 and Libre 3 are revolutionary continuous glucose monitoring (CGM) systems developed by Abbott to assist people with diabetes.
- The FreeStyle Libre 2 features optional real-time glucose alarms that alert users when their glucose levels are too high or low. The system includes a small, round sensor worn on the back of the upper arm for up to 14 days, delivering glucose readings through a painless 1-second scan using a handheld reader. This system eliminates the need for routine finger sticks and offers improved accuracy and convenience.
- The latest FreeStyle Libre 3 Plus is a testament to progress, even smaller and thinner than its predecessor. It's the world's smallest and thinnest sensor. It provides real-time, up-to-the-minute glucose readings automatically delivered to your smartphone every minute, eliminating the need for scanning. The Libre 3 Plus sensor also has a wear time of up to 15 days and integrates with the iLet Pump
- The warmup time for the Libre products are 1 hour.
- The Libre 2 Plus integrates with the Tandem X2 pump and soon the Omnipod 5 pump. The Libre 2 Plus does not require Manual scanning to see the data.

Libre 2 and Libre 2+ are in the process of being discontinued. This will certainly happen once a couple more pump companies get FDA approval for Libre 3+

Trend Arrows

- This is a Table depicting all 3 of the commonly available sensors' arrows and the meaning of the arrows.
- The LEAST important thing on the display is the number!

Libre	Dexcom	Medtronic	Description	Where the glucose will be in 10 minutes
		↑↑↑	Rapidly rising	more than 2.0mmol/l higher (40mg/dL)
↑		↑↑	Rising	1.5mmol/l higher (30mg/dL)
↗		↑	Slowly rising	1mmol/l higher (20mg/dL)
→			Stable	Same
↘		↓	Slowly falling	1 mmol/l lower (20mg/dL)
↓		↓↓	Falling	1.5 mmol/l lower (30mg/dL)
		↓↓↓	Rapidly falling	more than 2.0mmol/l lower (40mg/dL)

An easier way to look at the arrows is in terms of "points-per-minute". Flat/stable is 1ppm, slowly rising is 2ppm, Rising is 3ppm, rapidly rising is 4ppm.

Medtronic Guardian 3 and Guardian 4

Guardian sensors are going away. Simplera and Instinct are Minimed's new sensors.

- The Medtronic Guardian 3 and 4 are advanced Continuous Glucose Monitoring (CGM) systems designed for individuals with diabetes. These devices provide real-time and dynamic glucose information, continuously tracking glucose levels and alerting users when they go too high or too low. This allows them to take appropriate action.
- The Guardian 3 and 4 sensors are inserted under the skin and can be worn for up to seven days (Guardian 3 is approved for 6 days of wear). They work with the Guardian Connect app, which allows users to view their glucose levels on their smartphones. Users can also receive predictive alerts up to 60 minutes before a high or low. The Guardian 4 features advanced technology that enables it to communicate directly with compatible insulin pumps (Medtronic 780G), providing an integrated approach to diabetes management.
- The warm-up time for the Guardian CGM is 2 hours.

New Simplera Sync™ sensor --->

InPen (bluetooth linked Insulin Pen)

- Medication Specific bluetooth enabled insulin pen used for Rapid-Acting insulins.
- Mobile Phone phone app links to Dexcom G6, Medtronic Guardian sensors.
- On-board bolus calculators with extra safety measures built in to help prevent low BG's. If the calculator recommends a correction, it can be given regardless of correction interval.
- Pens dose in ½-unit increments for increased accuracy.

iLet Pump

- The iLet Bionic Pancreas from Beta Bionics is an automated insulin delivery system that adjusts to the user's insulin needs. It is designed to work seamlessly with the Dexcom G6, Dexcom G7, and Libre 3 Plus continuous glucose monitors.
- According to their website, there is no need for carb counting, corrections, or set basal rates. The pump has no traditional settings or input requirements except for the ability to adjust target glucose and weight in the settings. The user must announce their meal using the system, and the pump will automatically adapt to their insulin needs.
- This pump is CGM Obligate, it's capabilities are severely handicapped if there is no sensor working!

DON’T OVERTHINK THIS PUMP!!! 99% of the time, use Lunch > Usual. Let it learn!

iLet Pump Pros and cons

Pros:

- Less Burden (carb counting less important, user does not give corrections)
- Adaptive technology
- Fewer (but purposeful alarms)
- Can be run as Untethered (50% basal by injection)

Cons:

- Smallest reservoir size
- Sensor Obligate (must have sensor connected for it to work Effectively)
- Easy to overthink!

Medtronic 770G/780G

These are the current pumps and are about to be replaced by two new pumps (Flex and Fit)

- The Medtronic MiniMed 780G is a groundbreaking automated insulin delivery system for individuals with Type 1 diabetes. This hybrid closed-loop system uses SmartGuard technology to adjust basal insulin and correction boluses every 5 minutes based on real-time glucose readings.
- The 780G integrates with the Guardian Sensor 3 or 4 for accurate continuous glucose monitoring for up to seven days. The system prevents high and low glucose events.
- New Simplera Sync™ sensor soon to be released
- It is important to suspend delivery anytime the pump is disconnected.

Medronic Minimed pros and cons

Pros:

- Aggressive algorithm

Cons:

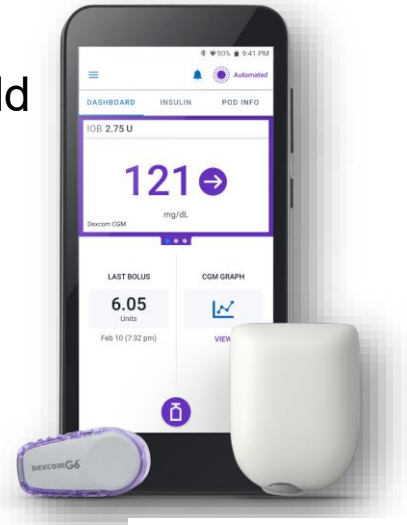
- Large and bulky pump size
- Guardian sensor is not Non-Adjunct (fingersticks are required)
- "Button Heavy" it takes more button pushes than other systems.
- Uses AA batteries instead of rechargeable.

New Minimed pumps coming soon!

- Minimed is breaking away from it's parent company (Medtronic) and is launching several new concepts soon.
- Minimed Flex: FDA Approved and launched with Simplera Sync.
- Minimed Fit (Tubeless): projected 01/2027 Launch
- New algorithm updates coming soon!

Omnipod 5 (OP-5)

Assuming CGM is working, it should be kept in Automode.



- The Omnipod 5, developed by Insulet Corporation, is an advanced tubeless and wearable insulin delivery device designed to serve people with Type 1 diabetes. The system features personalized insulin management through its algorithm that automatically adjusts insulin delivery based on individual glucose levels and trends.
- It utilizes continuous glucose monitoring data from the Dexcom G6/Dexcom G7 or the Dexcom G7/Libre 2 Plus) to predict glucose levels ahead of time and make necessary insulin adjustments. It is waterproof, discreet, and can be worn on multiple sites on the body.
- To get more familiar with the OP-5, check out the Omnipod 5 simulator on the App Store or Google Play.

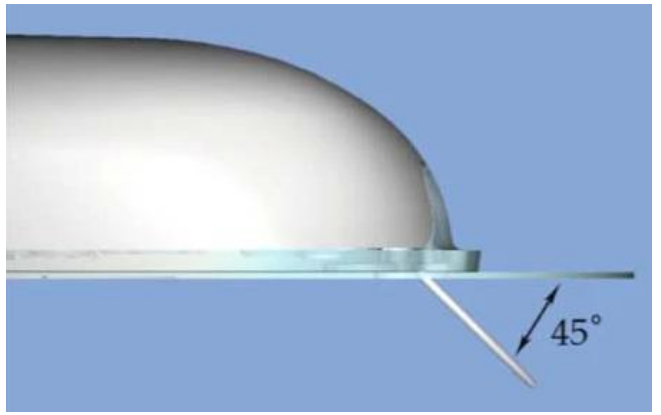
Omnipod 5 Pros and cons

Pros:

- Great safeties (cannot go over 3 days on a pump)
- Easiest pump for site changes

Cons:

- Slowest insulin delivery (40 seconds per unit)
- Weak algorithm for helping with high blood glucoses.
- Must use controller OR app to bolus (not both)
- Bulky on the body vs tubing (no infusion site options)
- Connection issues with Dexcom G6 and G7 (weak Bluetooth®)



Tandem X2 Pump

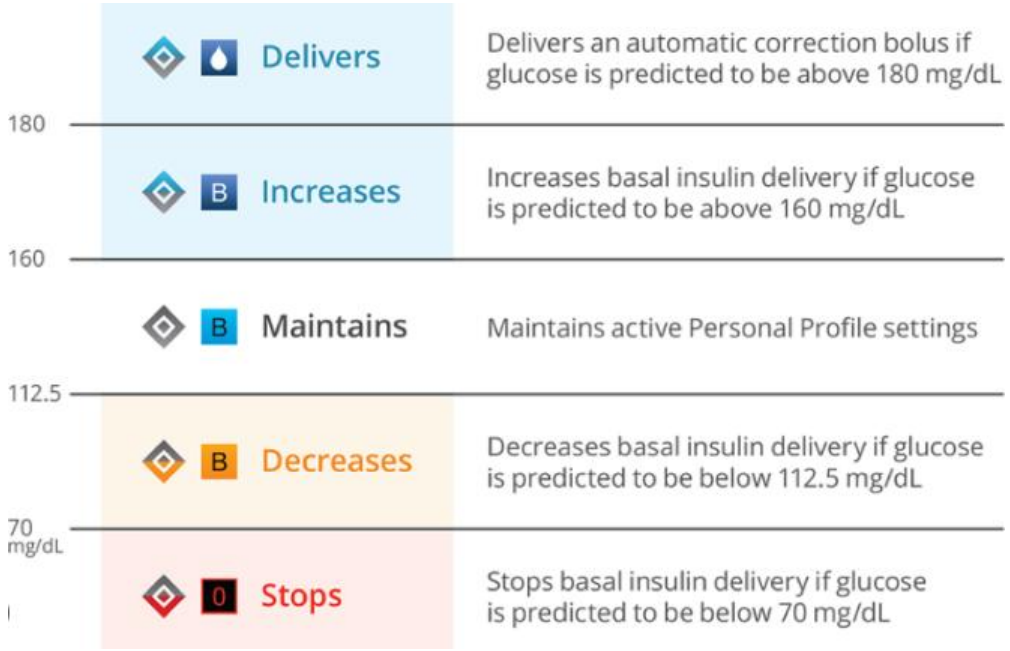
Tandem X2 is on the left; Tandem Mobi is on the right side of the picture.

To get more familiar with the Tandem X2 or Mobi, check out the t: simulator on the App Store or Google Play or check out Tandem pump demos.

- The Tandem t: slim X2 insulin pump, developed by Tandem Diabetes Care, is a user-friendly, technologically advanced device intended to aid individuals with Type 1 diabetes in managing their insulin delivery. The t: slim X2 features a touch screen and a sleek design, making it modern and easy to use.
- One of its key features is its integration with the Dexcom G6, Dexcom G7, and Libre 2 Plus continuous glucose monitoring systems, allowing for automated insulin delivery with its Control-IQ technology. This feature adjusts insulin delivery based on the user's current and predicted future levels, helping maintain optimal glucose control.
- It is important to stop insulin delivery anytime the pump is disconnected.

Tandem X2
Pros and cons

- Pros:
  - Strong algorithm
  - Phone operation in addition to touch screen
  - Large reservoir (300 units)
- Cons:
  - Algorithm is non-adaptive.
  - If bolusing late, the user will go low.



SOON TO BE TUBELESS!

Tandem Mobi

- Newest offering from Insulet
- Tiny (about the size of just the screen on the X2)
- Holds 200 units
- 100% iPhone app driven
- Tons of options with infusion sets and tubing lengths
- Dexcom G6 and G7 compatible
- Tubeless version projected 2026

Tandem Mobi Pros and cons

Pros:

- Small with many tubing/wear options
- Strong Algorithm

Cons:

- Cell phone obligate (iPhone only, must use phone to bolus)
- Small reservoir

- **Each day** please verify that insulin pump has:
  - Sufficient **insulin** in the pump.
  - Sufficient **battery** life for the pump.
  - **Correct time** and **date** on pump home screen.
  - Pertinent receivers or phone app open. If connected to CGM, that CGM reporting to pump.
  - Pump site **appears intact** with **NO** evidence of site being loose or irritated.

Common Pump Issues

- Often not visible.
- Do not trust that just because it looks okay, it must be okay.
- May include kinked catheters, catheters that fell out or never got in all the way, air in tubing/reservoirs, bad insulin, empty cartridge, low battery

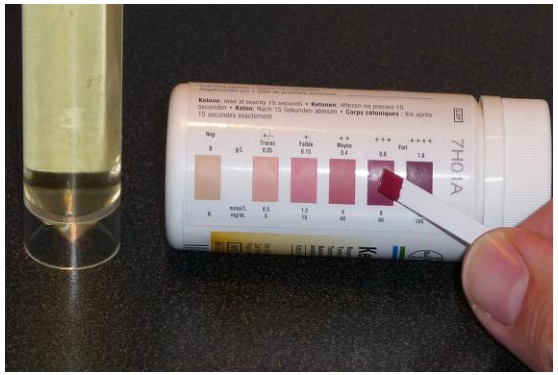
Common Diabetes Tech Issues - CGM

- Each day please verify CGM
  - CGM in place (probably want to note when it expires)
  - If using receiver ensure device is on/battery charged/glucose data reporting
  - If using phone ensure on/battery charged/Bluetooth on and respective app open
  - If using pump, ensure CGM connected to pump interface
  - If using a pump, make sure the factory receiver is turned OFF. The CGM's can only connect to one Mobile Device and one Medical device. The pump and the receiver are both considered to be Medical Devices.

Ketones in the school setting

- Ketones form in the ABSENCE of insulin action. This means that if a single dose of evening Lantus is missed, the child will have ketones by morning (when they arrive to school).
- If they arrive to school with ketones, they are either sick or are not getting insulin in the home setting.
- Sending the child home because of ketones is sending them right back into a potentially dangerous situation.

Ketone Testing: When and How



Test ketones for any BG >300 ***or*** ANY ILLNESS!

1. Inexpensive: Urine test strips. This is easily misperformed and misinterpreted. The results are read EXACTLY 15 SECONDS after sampling. The best practice is to have them urinate in a cup and YOU dip/time it. All that matters is POSITIVE or NEGATIVE, not quantity.
2. Expensive: Blood testing is precise and fast, hard to "mess it up" and misinterpret. NovaMax (Blue meter) and Precision Xtra (Purple strips).

Insurances typically don't cover either type of testing! Even Medicaid!

Pump Trouble Shooting

- Insulin pumps can indeed be a valuable tool, but can also be quite dangerous.
- There is no long acting insulin injected, there is only rapid/ultra rapid insulins in a pump (rare cases of Humulin R U-500)
- This means that if the flow gets interrupted for any reason, they WILL start making ketones within **Two(2) hours**.

(ILet pump can be used with daily basal insulin, which will make pump trouble shooting a bit more difficult)

Pump Trouble Shooting

- This is why insulin pumps are not easier, they are more complex and have more risks associated with them.
- The K.I.S.S. principle does not apply to pump therapy!
- Use CGM data and Ketone testing to troubleshoot the insulin pump is actively infusing insulin.

My Algorithm: Written for Teenagers!

Pump trouble shooting:

1. Using Ketones: If there are ketones, step 1 is to NOT trust the pump. 90% of the time, it is a bad infusion site. *see slide 18*

2. Using CGM: If a bolus is administered and the CGM does NOT show a downward turn in 30-45 mins, it may be a bad site. The insulin probably isn't going in! (or it's going into scar tissue and not absorbing)

My Algorithm: Written for Teenagers!

- **Corrective action: (for all pumps except iLet)**

1. Remove pump/infusion set from the body (but don't start the site change, yet!)
2. Calculate correction dose on the pump, press deliver. (This tracks the dose in the history/IOB)
3. Give the calculated dose manually (syringe or pen) in an area not usually used.
4. Perform a perfect site change in an area not regularly used (to rule out scar tissue interference)
5. Bolus through pump at 2-hour recheck, watch the CGM for the bend.

- This will reestablish flow of insulin, but will not necessarily remove ketones. Only aggressive rehydration does that.

Managing Ketones in the School Setting

- DO NOT PANIC and send the kid home. That is nowhere in our care plan. The ONLY time I will recommend removal from the school setting is if you can't stop the vomiting. Not Home, to the ED!
- You have three (3) tools at your disposal, the same tools the hospital uses: Insulin, Water (any fluids), and Zofran® (Ondansetron ODT).

1. Insulin stops the formation of NEW ketones (Presses Pause)
2. Fluids "flush" out the ketones already formed
3. Zofran ODT remove barriers to rehydration

This begins the 2-hour cycle outlined in the care plan!

A student arrives back to school after winter break with a 585 BG. What do we do?

Scenario

Three (3) non-accusatory questions need to be asked/answered:

1. Is that blood sugar reliable (could it be a dirty finger?) Wash hands with soap and water and retest to confirm.
2. Are there any ketones? (BG is >300, should have been checked)
3. Is there any nausea or vomiting? Don't hesitate to give Zofran® early.

These will be the first questions out of my mouth when you are on the phone with me. Why the ketones are there doesn't matter as much as knowing whether they are Positive or Negative.

Preventing DKA

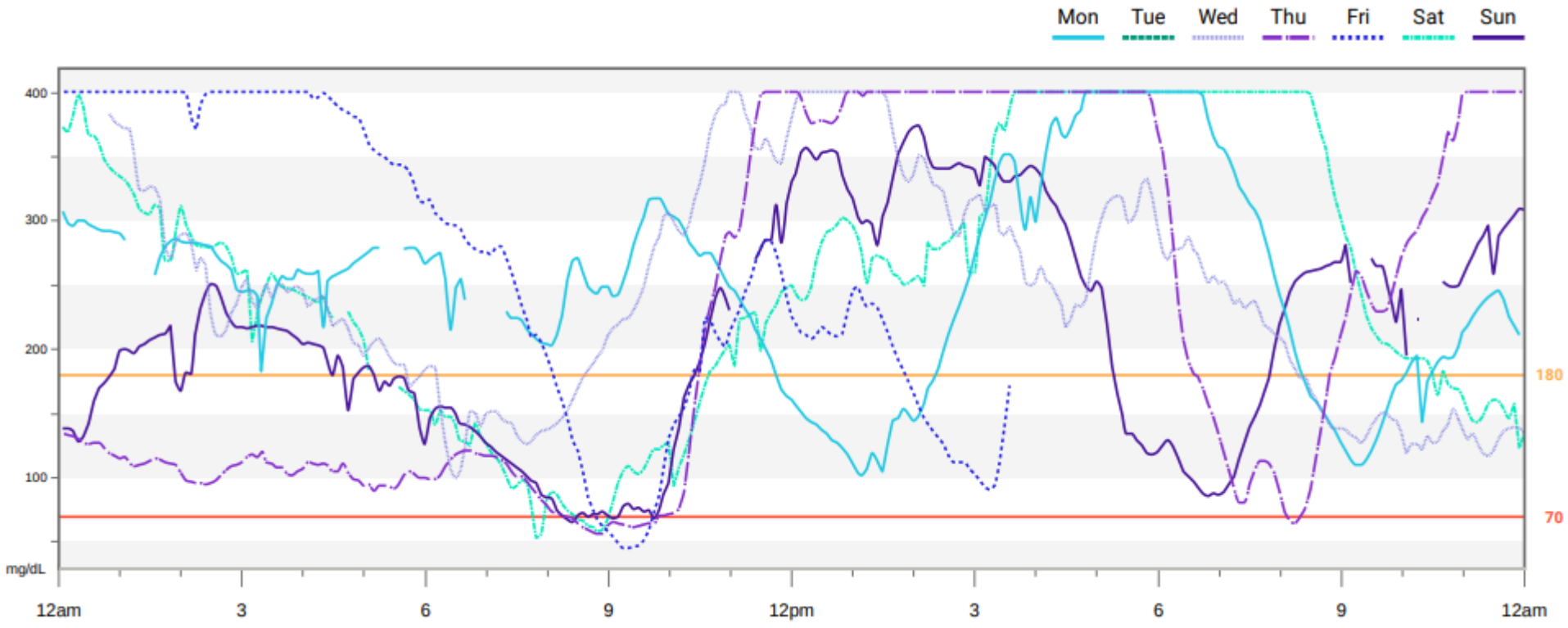
- Begin 2-hour cycle!

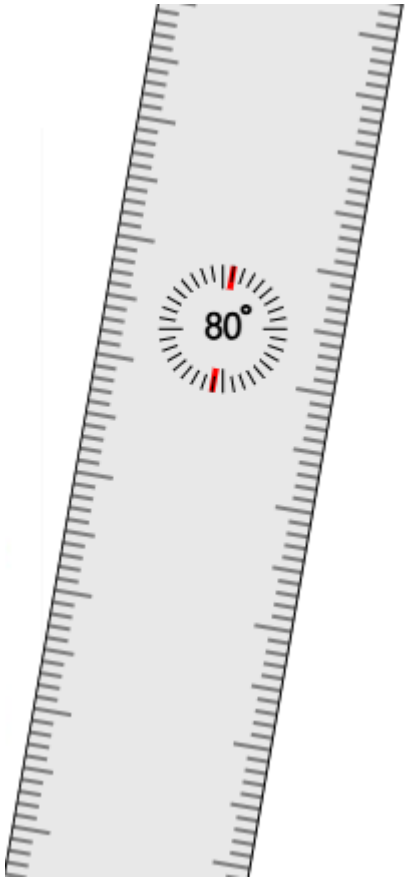
1. Start off with ondansetron (Zofran®) ODT. It will take 15-20 mins to start working. Zofran can be given every 12-hours or every 8-hours depending on body size. Give it even if there is no nausea at that moment, stay ahead!
2. Correction dose of insulin using a fresh insulin pen and **given by an adult** in an area not regularly used. This rules out compromised insulin and scar tissue interference as the cause of ketone formation.
3. Aggressive hydration. Keep in mind, we are not drinking to rehydrate them, we are drinking to force urination. Handing them a water bottle and sending them to class will likely NOT work. The care plan has weight based hydration recommendations. Consider these to be MINIMUMS.

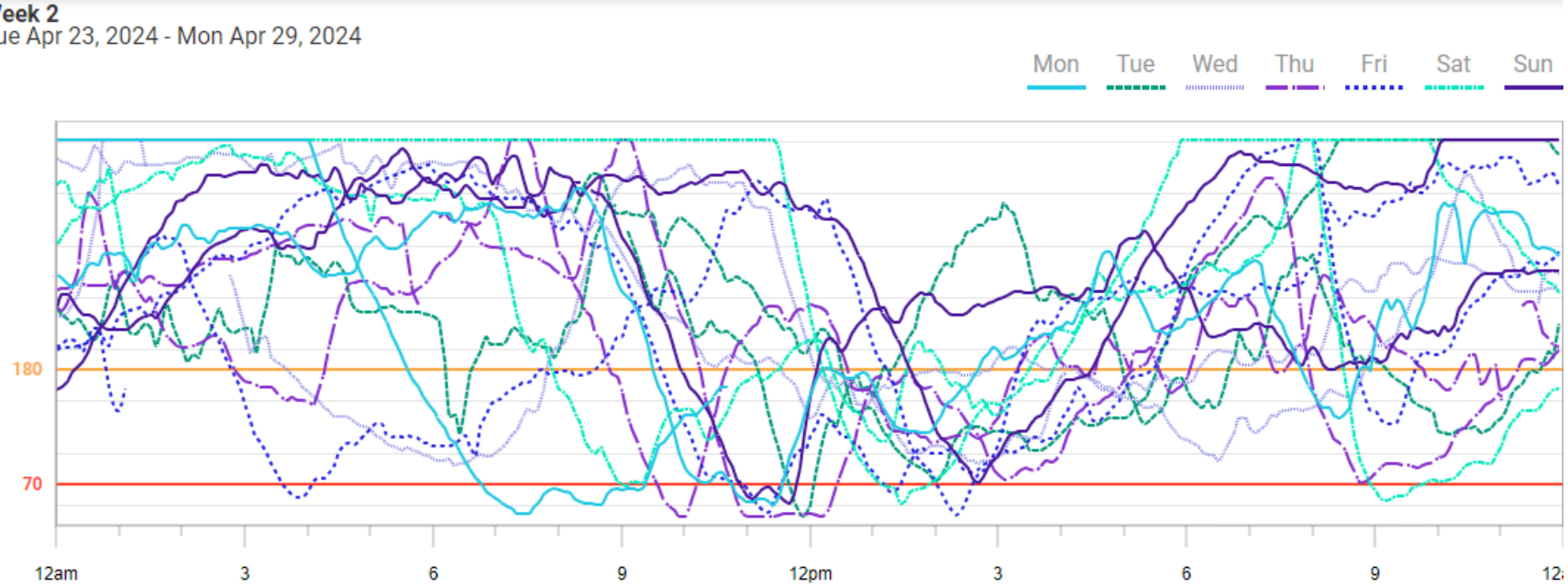
CGM data (and what it means)

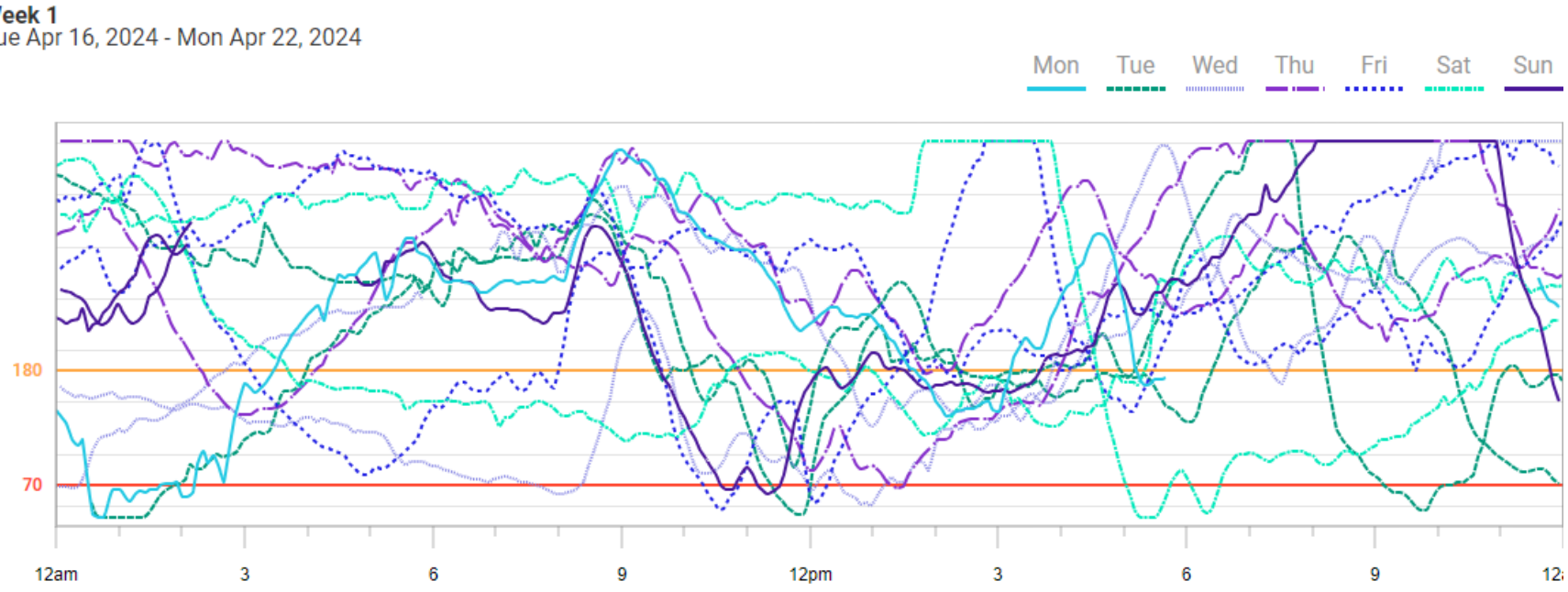
- Here are a few slides to get more comfortable with data.
- These are real pieces of data pulled from our clinic portal (all PHI removed)
- One Nurse's name was called out for a great reason!

Late Bolusing Example









Nurse Brittany is a SAINT!

- She is one of the only people keeping him out of DKA.
- Arrives to school super high
- School Nurse fights the battle.
- Goes home IN RANGE and skyrockets to 400+
- Another reason NOT to send a child home for BG or Ketones!

Insulin Timing- Cause and Effect

This is NO exaggeration!

Blood Glucose behaves Logarithmically, not Linearly!

Food

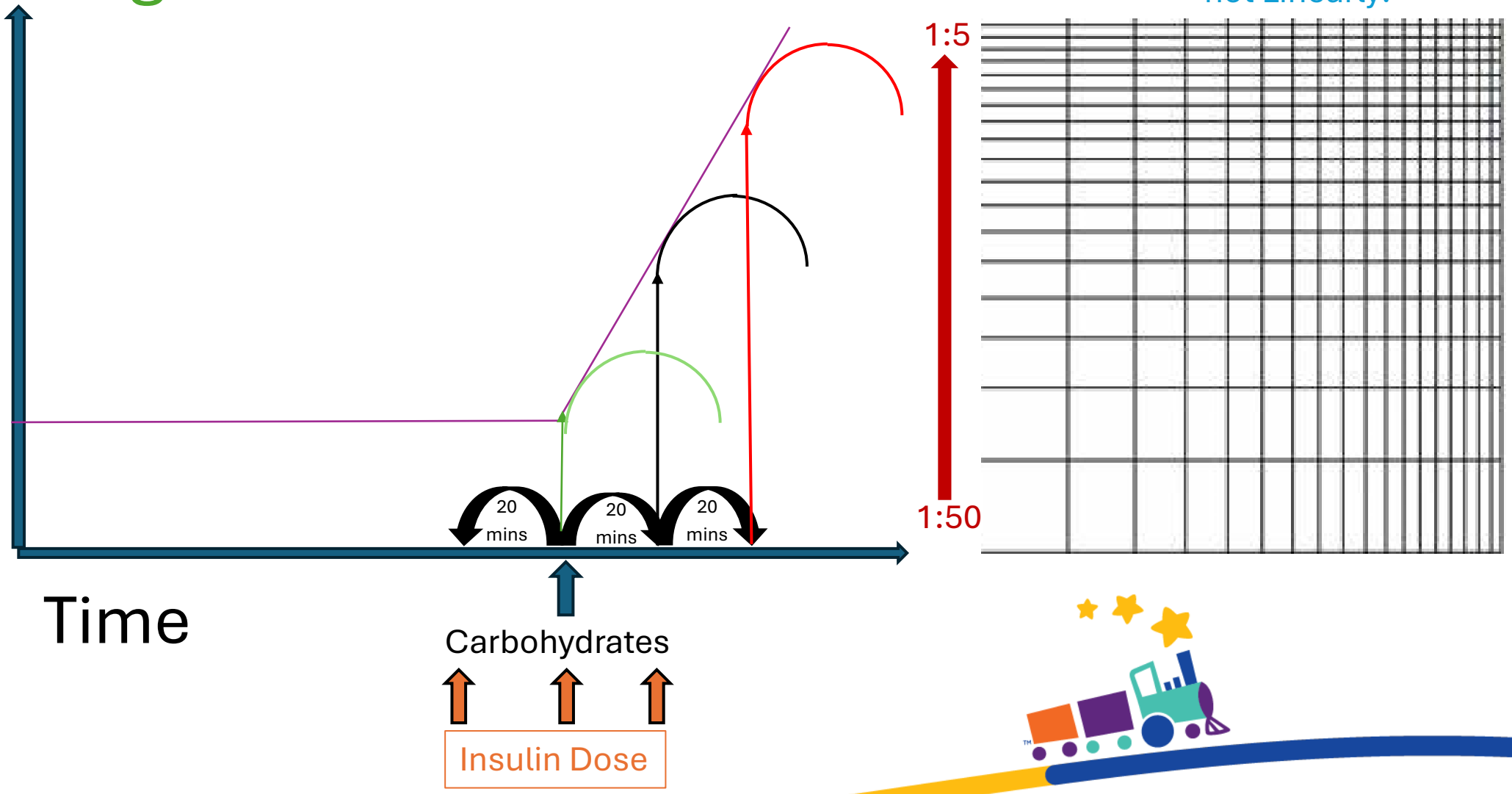
Immediately! (Amylase)

vs.

Insulin

(rapid acting)

Approximately 20 minutes!



13yo, male, highly motivated, and starting his "Honeymoon" phase.

- Strong Support network
- Great Logic
- Freely admits he doesn't want to self manage even though he mostly does.
- Probably does so because his "Helicopter mom" annoys him.

GLUCOSE STATISTICS AND TARGETS

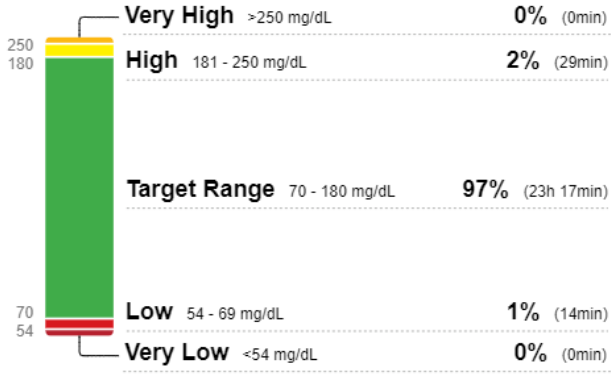
April 4, 2024 - May 1, 2024	28 Days
Time CGM Active:	96%

Ranges And Targets For	Type 1 or Type 2 Diabetes
Glucose Ranges Target Range 70-180 mg/dL	**Targets** % of Readings (Time/Day) Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)
Each 5% increase in time in range (70-180 mg/dL) is clinically beneficial.	

Average Glucose	**106** mg/dL
Glucose Management Indicator (GMI)	**5.8%**
Glucose Variability	**24.0%**

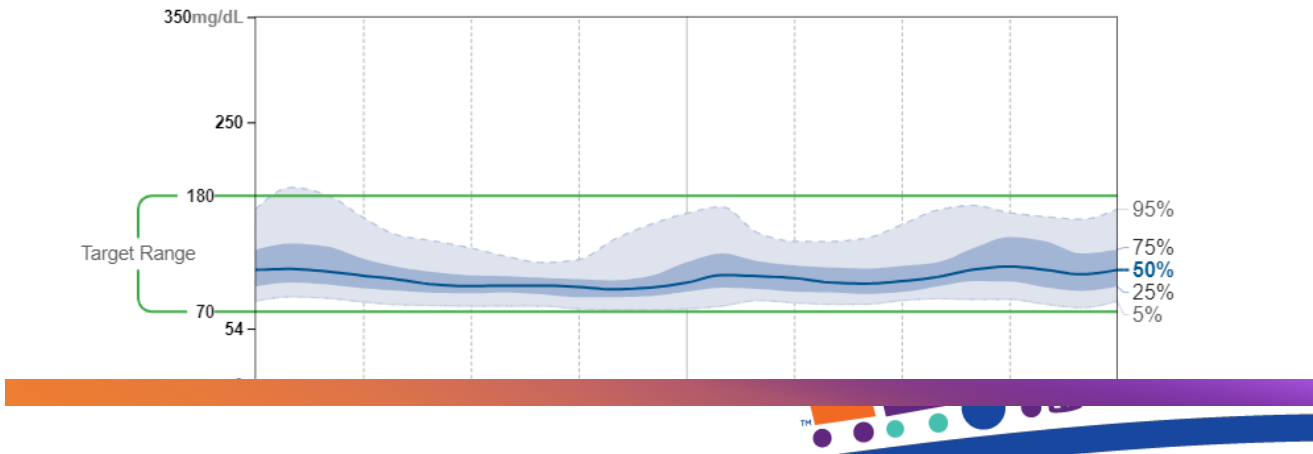
Defined as percent coefficient of variation (%CV); target ≤36%

TIME IN RANGES



AMBULATORY GLUCOSE PROFILE (AGP)

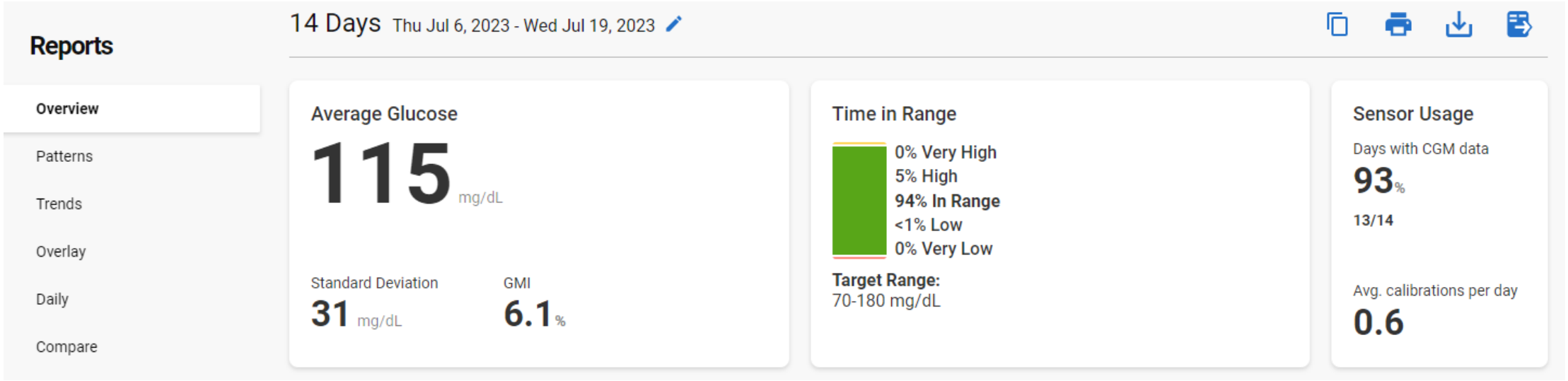
AGP is a summary of glucose values from the report period, with median (50%) and other percentiles shown as if occurring in a single day.



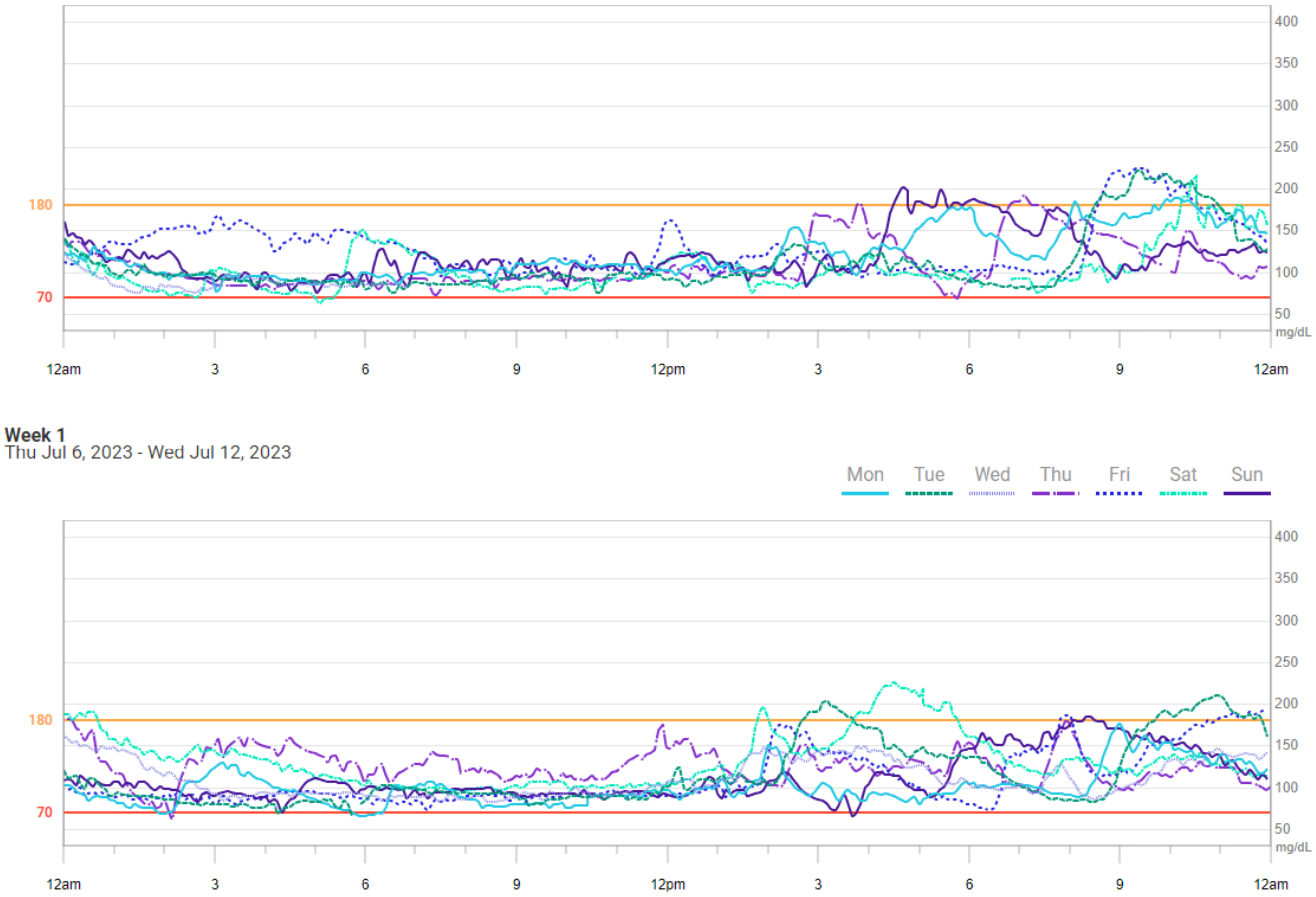
Real world examples

CGM and Pump data

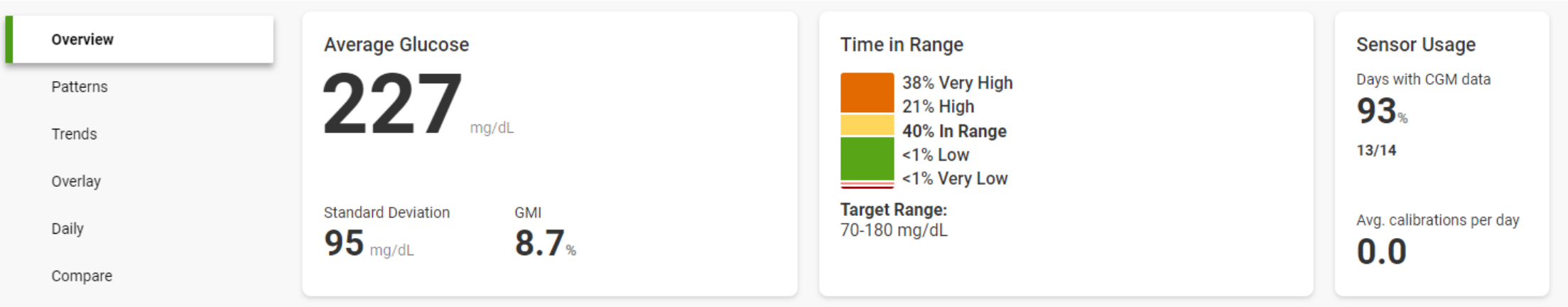
Dexcom data (well controlled)

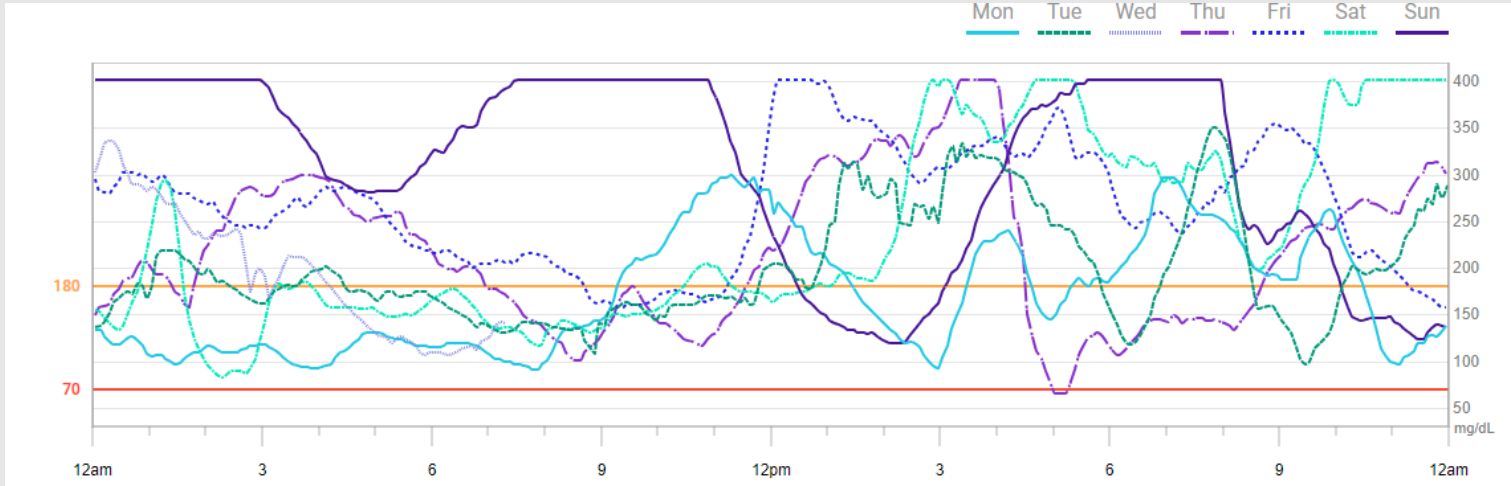


Well controlled (continued)

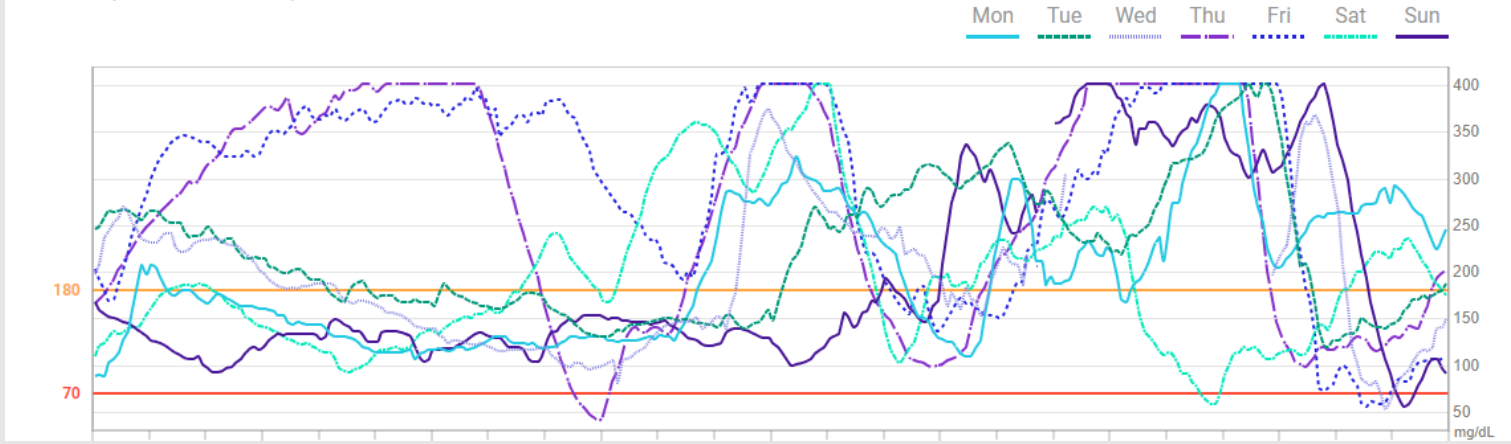


Dexcom Data (not well controlled)

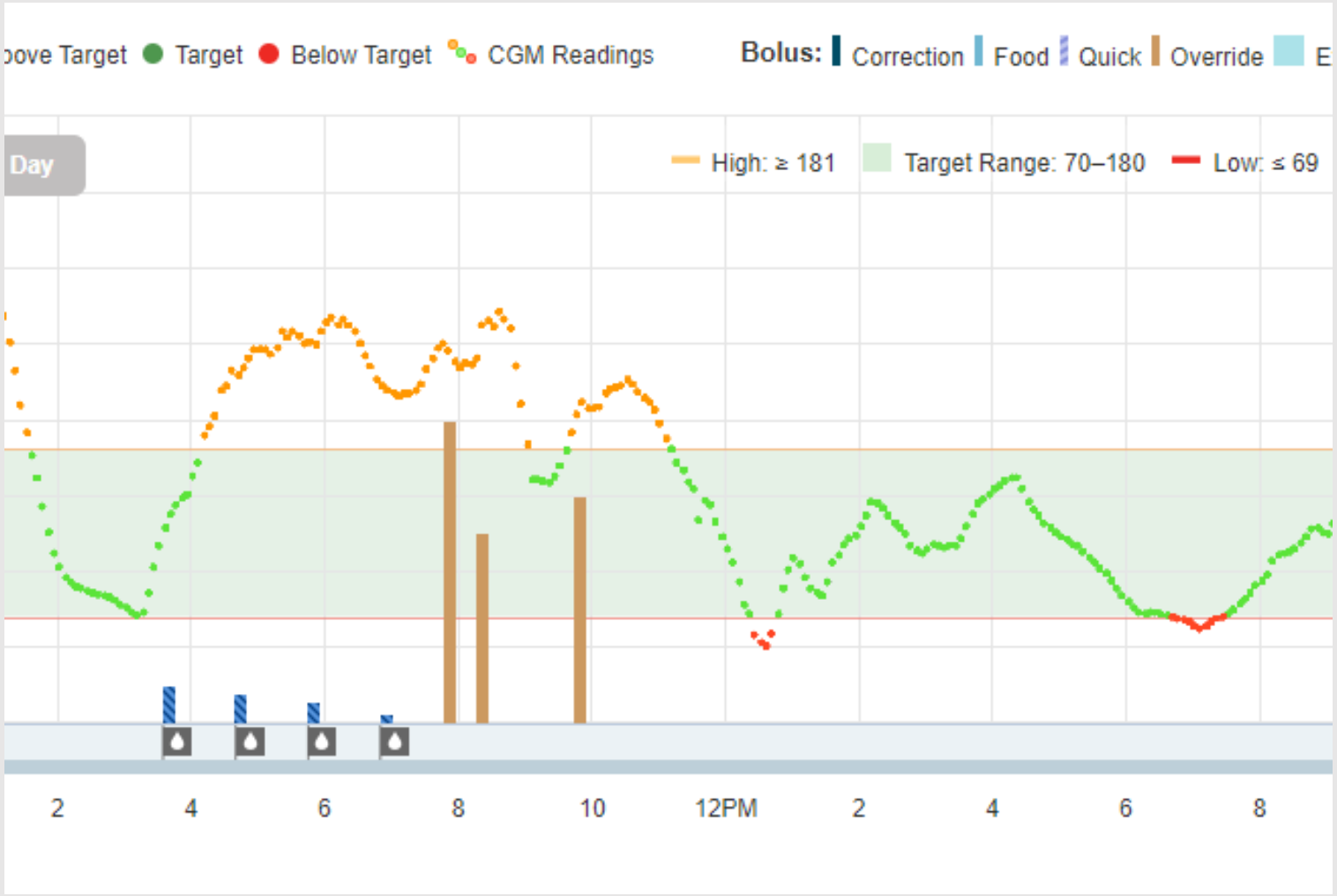




Week 1
Thu Jul 6, 2023 - Wed Jul 12, 2023

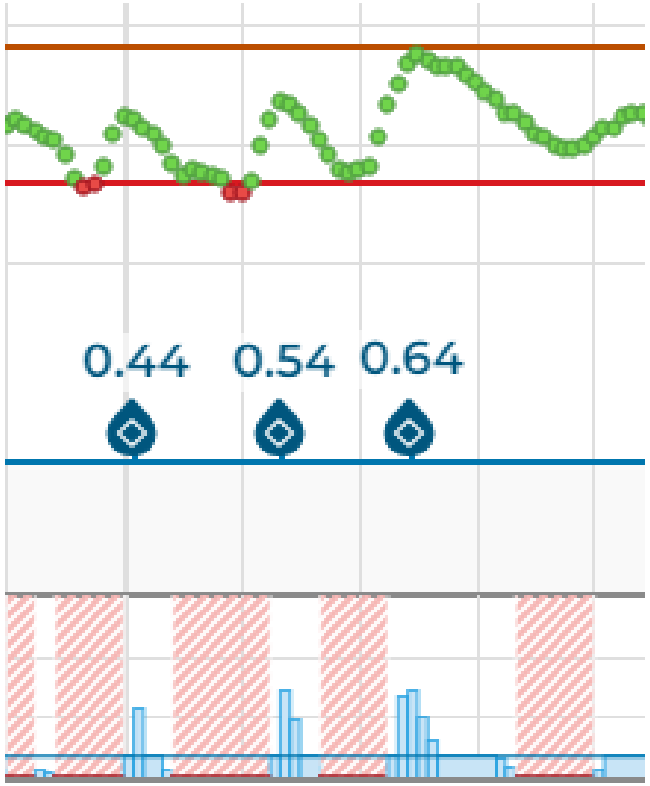


Not well controlled (cont.)



Pump Data (Tandem t:slim)

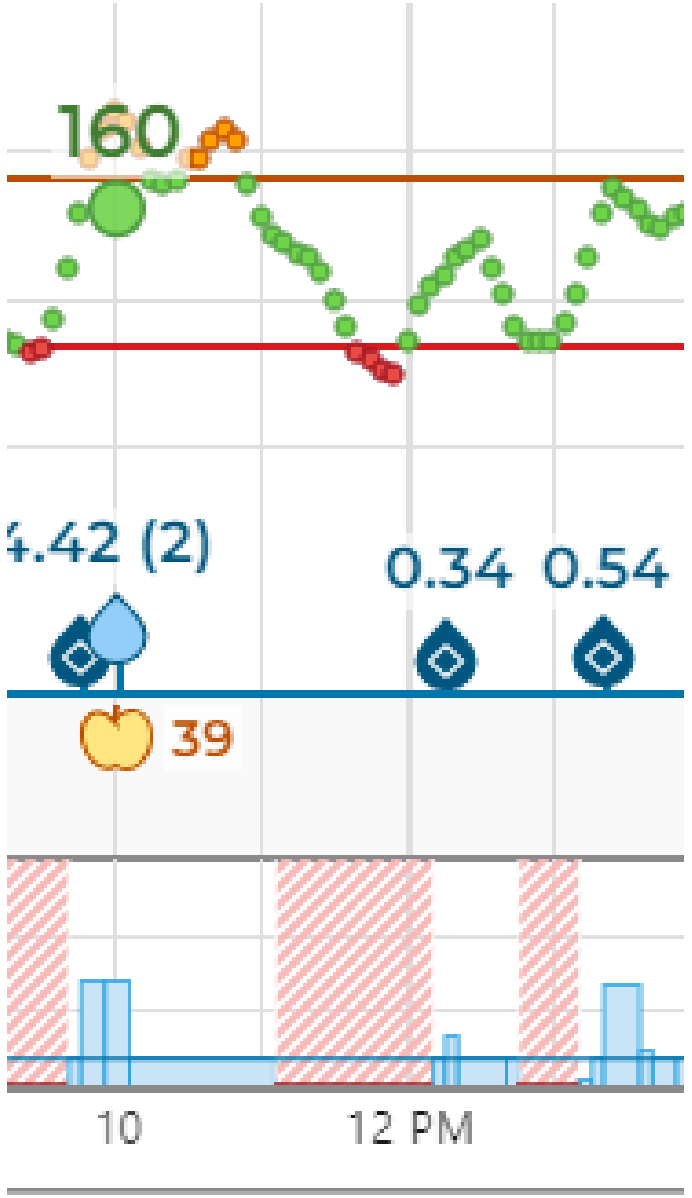
This is a good example of how NOT to use a pump!



AID challenges:

- BG Dips low, the Basal is turned off proactively. The low is treated a bit too aggressively and the steep rise triggered the pump to deliver an auto correction. The algorithm looks at the predicted BG based on the rate of change.
- Carbs being used are super simple carbs and don't last as long as the correction. Resulting in another low BG.
- Great job not "Overcorrecting" these lows, but we may want to use something slower or a smaller amount of carbs.

Triad of a low BG (Proof that bolusing late works against everyone).



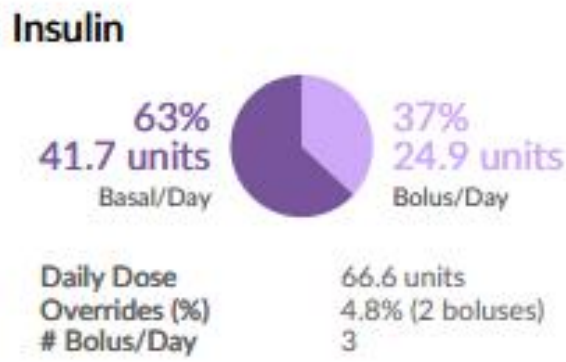
Triad of a Low BG (continued)

- This is where the ramped up basal and auto correction hit first, then the manually entered carbs/BG are entered. The combination of all three of these will combine and result in a Low BG.
- Keep in mind, the BG being entered in the dose calculator at this point is significantly higher than if it was entered at the recommended prebolus time interval. This means that the largest of the 3 components (user entered bolus) is larger than it should have been.
- All due to waiting to bolus.

This is a daily report of a Tandem Insulin pump. This view is Great because it shows everything going on with the pump and CGM.

The blue lines that look like a city scape is showing the pump adjusting the basal rate in response to CGM data.
The teardrops are the 60% SUPPLEMENTAL auto correction
The blue (and gold) bars are user entered boluses. GOLD ARE BAD!

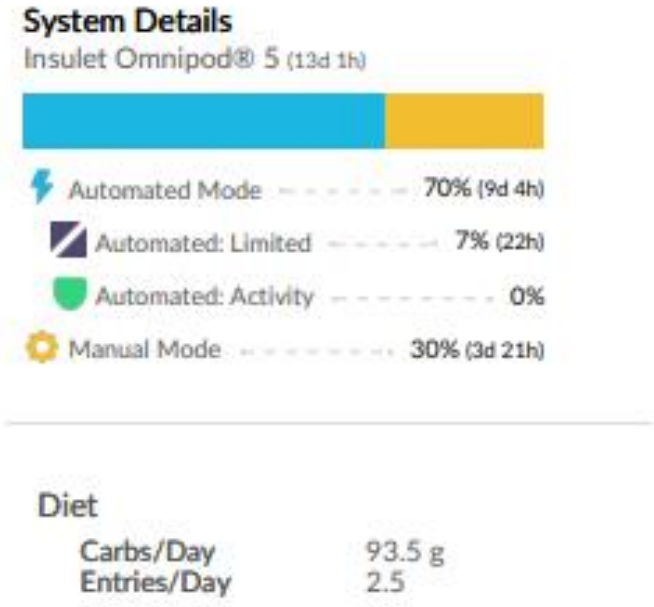
Glooko Data (Omnipod)



This is the OmniPod/Glooko Report. The goal is to stay at 100% Automated.

Every time you open the controller, look at the top right corner of the screen. If it says manual, then switch it to Automatic.

Overrides are dangerous! Don't do it!

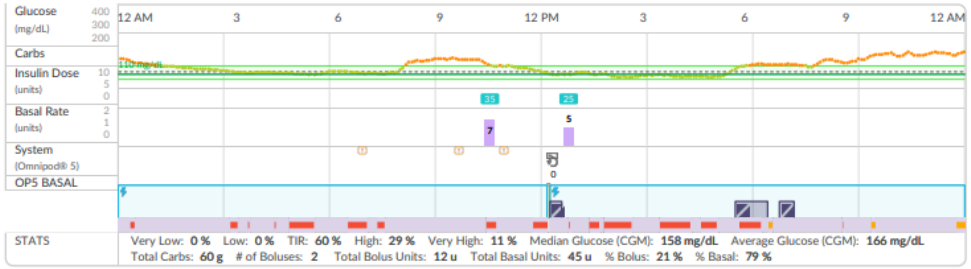


Omnipod 5 data (daily view)

Red Bars are the pump stopping basal delivery and the orange is the pump Maxing out.

Blue are carbs, purple are boluses.

The Dexcom G6 tracing is a bit compressed, it doesn't scale the same as the Dexcom apps do. Those same spikes and highs actually significantly higher than what they look like in this view.



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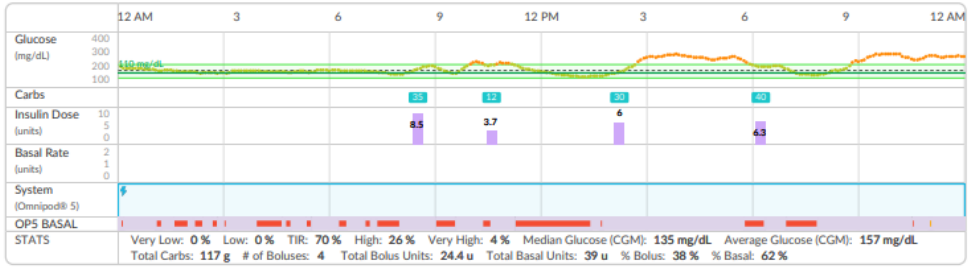
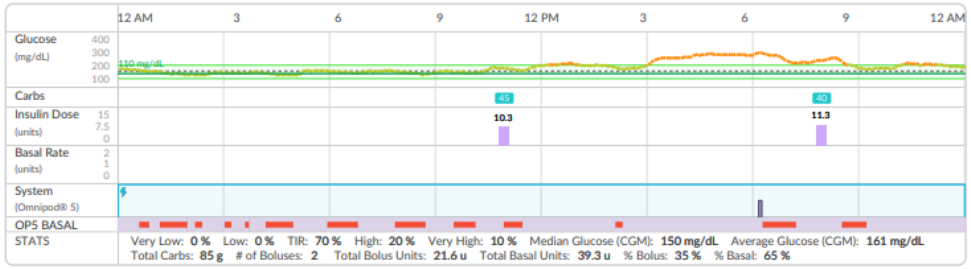


July 9, 2023



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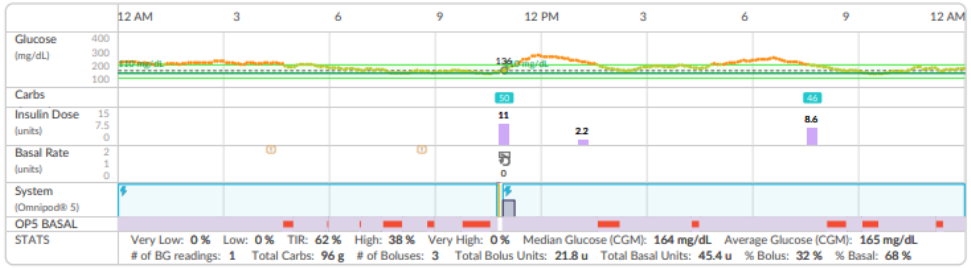


Continuous Glucose Monitors (CGM's)

- Why are they better than Fingersticks?
  - They provide alarms at preset ranges
  - They give a direction and magnitude to a number.
  - Provide more information for better decision making.
  - Fewer ways of getting incorrect numbers (no chance of alcohol or "dirty finger", not sensitive to temperature or humidity)
- See slide 5 for actual trend arrows

Common Challenges at school

- Insufficient supplies sent to school. This IS the parent/guardian's responsibility. Keep in mind that Medicaid DOES limit the amount of supplies per month.
- Parental/Provider management differences. In the end, the parent is the responsible party for the outcomes. Document anything that differs from the provider's care plan. Work to establish a good working relationship with the parents. Conflict only hurts the child.
- Oppositional children. Refusing to come to the nurse office, take insulin, etc. Resource officers can be utilized if the child or family remains obstinate.

Common Challenges (cont.)

- Getting care plans from the provider. This is the PARENT's Responsibility. In my clinic, each patient is given two(2) copies at each visit. It is also printable 24/7 through MyBSWHealth. The clinic cannot fax to schools (HIPAA concerns, Volume of patients, and other issues).
- Precise carbohydrate counting and insulin timing in the school setting. Pumps can deliver insulin doses as accurate as 1/2000th of a single mL/cc. That accuracy should be matched by the carb counting in order to achieve the benefit of the AID's. Carb count is off by 10% and nobody thinks anything about it... if a pump is off by 10% and suddenly everyone panics. It's the same thing!

New section for discussion!

- Let me know how well this is received.
- The intent is to open dialogue and spark new lines of thought.
- We need to break away from dogmatic thinking. "BTTWIABD" may be comfortable, but it isn't helping anyone.

The clinic hears the strangest things! Not all of them are true, not all are false... but all of them make me stop and think “Run that by me again?”

- Names have been changed to protect the innocent!
- Not pointing fingers, just addressing the issues.
- These are real interactions that happened in clinic.
- Let's have fun with this and open up the discussion!

Parent reported: “The school nurse told us that they wouldn’t let our child start school unless they had a CGM/Pump.”

- Depending on the family’s financial situation, those technologies may not be an option at this time. The family may be a new onset and the use of an insulin pump may actually be dangerous.
- Some people don't want more than one device attached to them at once.

Nurse Reported: “The family said they switched insulins and now they don’t have to count carbs anymore.”

This is a common misconception when switching from using NovoLog/HumaLOG for meals/corrections to NovoLog 70/30 or HumaLOG 75/25.

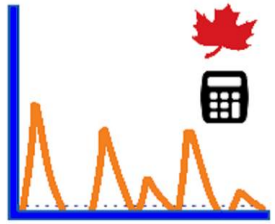
Blended Insulins are fixed doses. No variation based on BG/Carb intake. These require the use of a separate Rapid-acting insulin for corrections.

Instead of counting carbs and dosing according to Carbohydrate ratios, they DO need to count carbs to a set and fixed number. Eating a wide range of carbohydrate amounts will result in chaotic BG’s. (Fixed insulin requires fixed amounts of carbs).

Child Reported: “The nurse hands me the pen and I give my own insulin in the bathroom.”

- This means the injection was not witnessed. The child could be injecting into scar tissue/lipohypertophy (best case scenario) or simply squirting it down the toilet/sink (worst case scenario). Child logic is different than adult logic and does a child want to poke themselves with a needle?
- General rule of thumb: If you didn't see it go through the skin, it didn't happen!

Parent/Child Reports: “The nurse doesn’t trust the pump/InPen calculations, so he/she does them manually for all doses.”



Bolus Calc

- Advanced technologies like InPen and insulin pumps use some complex math for more accurate dosing. These calculations often account for overlapping doses to help minimize the frequency and severity of low BG’s. This safety measure has several names based on the individual company’s choice of description. Insulin On Board (IOB) and Active Insulin Time are two of the more common terms. These calculations are not fun to do manually. We recommend using the dosing calculator 100% of the time for every dose. If there are problems with the outcomes, then we can address those. If the calculator isn’t being used, then any changes to the ratios/targets are useless because they aren’t being used anyway.
- *** IGNORE the InPen recommendation to “eat Xg of carbs” when entering a normal range BG. For example: if the target is set to be 120, and the BG before lunch is 100 and flat. The InPem will recommend to eat carbs to get the kiddo up to the Target BG. This is a type of reverse correction and relies heavily on super accurate carb counting, and absolutely confirmed correction/carb ratios.

Gluroo (it's awesome!)

Nurse Reported: “Child refuses to come to the clinic for BG checks or Insulin.”

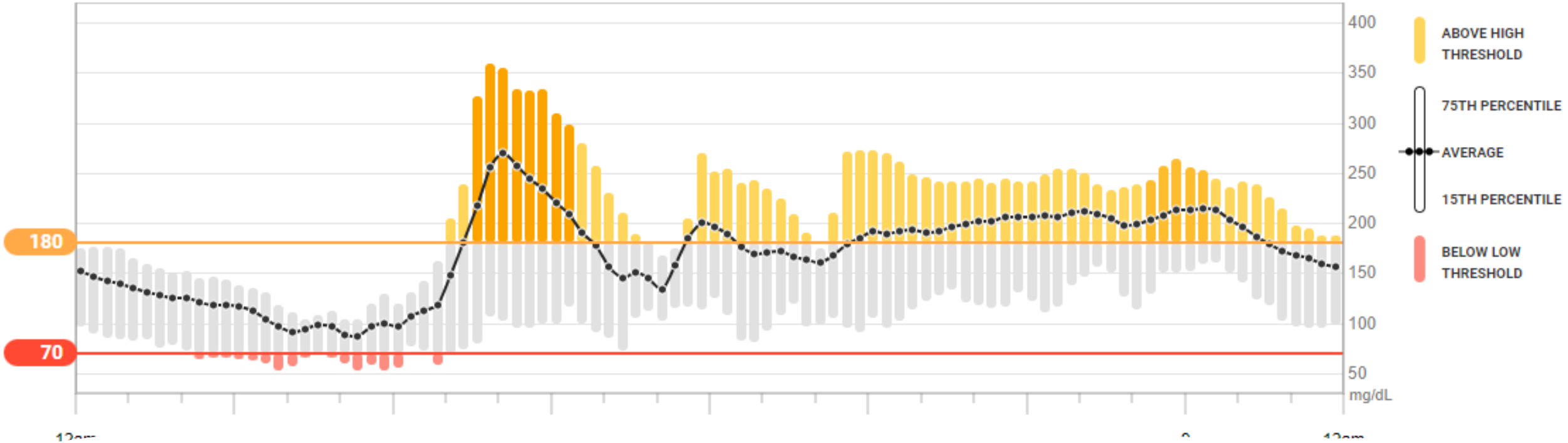
- This is obviously not safe at all. Self-management of diabetes without supervision is rare. Social pressures can also contribute. The children often don’t like the attention that technology, leaving class early, and the extra steps bring to their diagnosis. Age has NOTHING to do with the child’s ability to self-manage. The #1 determinant of whether a child is ready to assume responsibility or not is Emotional Maturity. I can name 2-3 exceptionally mature children, I can ask them advanced application based questions and they will ask me questions back because they want more information before making a decision. I also know some 21yo’s I wouldn’t trust with my dog!

Nurse Phone Call (2 slides)

- **School Nurse Phone call: sent from the call center.**

- “School Nurse
- Main symptom/complaint: Nurse is concerned about the ratio of the insulin/novalog. Patient is bottoming out with the dosage given and will have to be picked up from school. Nurse gave 2 units yesterday instead of 4 and patient did fine with no carbs needed and readings stayed constant.
- This is affecting her school activities.
- When giving 4 carbs are needed all day and numbers still stay low.
- Additional Details: wanted to let the provider know, will fax diabetic log also.
- Return Call Requested? No
- Patient's preferred method of contact: Phone # as listed above"

- Sending the child home is also going to effect her school activities!
- The message isn't quite coherent, could be due to relaying a message through the call center, or just a difference in terminology.
- Did the nurse deviate from the care plan? Yes! Is she in trouble? No! She made a judgement call in the moment and it was possibly in the best interest of the child!



Nurse Phone Call Slide 2

Parent reported:
“We were hoping to get it added into both boys plans that the school nurse can refill the tubing and insulin in their pumps. She is willing to learn and do it, but she needs it in writing that she can. ”

- This is akin to needing written permission to place a pen needle on an insulin pen.
- Every family should be training their school staff on the basic operation of the pump.
- What would happen if the pump wasn't refilled and infusion set replaced? A switch to manual injections would be mandatory or Ketones would form within two(2) hours.

Parent reported: Next school year, the school district has a zero-tolerance no cell phone policy.

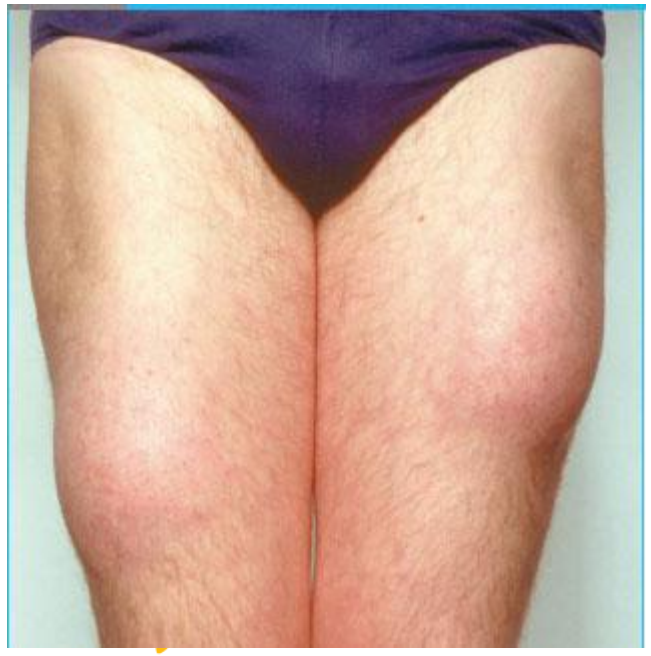
- When a patient's CGM is paired to a mobile phone, it is considered a Medical Device.
- Tandem Mobi insulin pump is 100% cell phone controlled and most other companies are going to be app-based in the near future.
- Medical exemption will be necessary, but parental controls are strongly encouraged.

Other Random issues

- **Split Dosing** – Dividing a dose into 2-3 smaller doses. This is great for Children that you aren't sure will eat the whole meal. Give half up front, and the other at the end if they finish all of their carbs. This will prevent super high spikes that happen whenever bolusing late and will minimize low BG's if the child doesn't eat everything. The same amount of insulin is being delivered, so this is not a deviation of the written care plan. It's an "application of finesse." This also a great technique for Pizza and other foods that are high in Protein/Fat.

Injection/infusion site rotation

- Most children fixate on the location of injections and site placements.
- When Insulin is involved, the site must be rotated to avoid Lipohypertrophy
- Lipohypertrophy will prevent absorption of insulin and delay the onset of doses further.



Site Changes – show of hands: “How many families have trained you on how to change pump sites at school?” “Do you have all of the required supplies on hand?”

- I encourage EVERYONE involved with a child using an insulin pump (RN, LVN, Aides, UDCA’s) to become familiar with their technologies. Technology is NOT going away, it’s only gaining speed and complexity. Keep in mind, if a pump has any sort of failure, the child with T1D will begin to make ketones within 2 hours. This means we have to identify the problem early, then take corrective action quickly to avoid a bad situation. Pumps are NOT an “Easy Button”.

Supplies At School

- Supplies often have limitations set by insurance. Medicaid only allows 5 strips per day if using insulin, and that's WITH a Prior Authorization. That's only 5 tests a day!
- I typically recommend sending 1/3 of their supplies to school.
- It is the Parent's responsibility to maintain supplies at school.

BSW Pedi Endo Care Plans

- Very thorough by school nurse request, can be very long depending on the individual. Currently under revision and will be shorter and more concise!
- Includes technology clauses (cell phone, CGM receiver, pumps, InPen, etc.)
- Dosing calculations or pump settings
- Sick day management (ketones in the school setting)
- Do NOT send the child home for high BG's or Ketones.

Care Plan Page 1

Contact information and setting up expectations

CONTACT INFORMATION

- **During business hours, message us on MyBSWHealth.** If unable to access MyBSWHealth, visit www.MyBSWHealth.com or call toll free 1-855-691-0180 for assistance. If calling (254-935-5048) and you reach voicemail/call center, leave the student's name (Aziyah Nichole Stevenson-Quinn), date of birth (12/12/2011), your name, and contact number with a detailed message. Watch for call back or communication by the MyBSWHealth app.
- **After hours, weekends, or holidays: Call the Patient Advisory Nurse at 254-724-7037.** Have the student's name, date of birth, glucose and ketone status, care details, and concerns ready. If no answer in 15 minutes, call back. Continue following these care plan instructions while waiting for a response.
- For Fax Communication (254-935-5045) include the student's name and date of birth.

DIABETES CARE PLAN OVERVIEW

The following Diabetes Care Plan discuss topics including (1) Teamwork between care team, Aziyah, and care partners, (2) Nutrition tips, (3) Glucose check instructions, (4) Managing low and high glucose as well as sick days, and (5) Insulin use instructions (as applicable).

Section 504 of the Rehabilitation Act of 1973, provides students with diabetes the right to: (1) An individualized written plan (504 Plan or IEP) based on these orders, (2) Immediate access to all diabetes supplies, devices, and treatments at all times, (3) Staff trained to recognize symptoms and respond to emergencies (including glucagon), (4) Full participation in school activities, including field trips and bus rides, with needed accommodations, and (5) Emergency management plans with school staff.

WORKING WITH OUR TEAM

- **Clinic visits:** Every 2–6 months. Please schedule or change appointments by calling 254-935-5048.
- **Absence letters:** Available for clinic visits or after direct team communication on the date of concern.
- **MyBSWHealth:** Message us, share documents, check appointments, manage prescriptions (if using BSW Pharmacy). Enable notifications. Update contact info.
- **Refills:** For mail-order or outside pharmacies, contact pharmacy directly. Message us on MyBSWHealth with any issues.

WORKING WITH CARE PARTNERS

- Students with diabetes must have ready access to all diabetes supplies: glucose monitoring supplies, insulin and delivery devices, fast-acting carbs for low glucose, snacks, glucagon, ketone testing supplies, water, a sharps container, the signed Diabetes Care Plan, and emergency contacts.
- Review Diabetes Care Plan and emergency procedures with care partners at diagnosis, before each school year, and as needed.
- Care partners: Contact parents/guardians first with questions. Keep contact info current.
- These are official Diabetes Care Orders. No extra paperwork is needed. The plan is valid for one year from 06/03/2026. Contact us with any questions or care concerns. Thanks for your efforts!

Care Plan Page 2

EATING WITH DIABETES

- Eat regular meals and scheduled snacks to keep glucose stable. Drink water or sugar-free drinks for hydration.
- For students receiving meal/snack insulin dose(s): Give insulin 15–20 minutes before meals.
- Students using multiple daily injection (MDI) or insulin pump therapy can adjust timing and dose based on intake, but must count carbohydrates. Those on fixed-dose insulin should eat meals at set times and keep carbohydrates consistent.
- Planning ahead to provide carbohydrate counts can be quite helpful to care partners.
- May use resources like ChatGPT, Gluroo, Carb Scanner, or Calorie King to check carbohydrate content.

Glucose Checks

GLUCOSE CHECKS

These instructions apply to students who monitor glucose.
For more on the difference between continuous glucose monitor (CGM) readings and fingerstick glucose check, visit https://tinyurl.com/CGMDelay or scan QR code to the right.

Glucose management goals aim to keep glucose levels between 70 to 180 mg/dL for more than 70% of the time, while reducing the time spent outside this range.

Fingerstick Glucose Guidelines
Check glucose before meals, at bedtime, and when symptoms arise. Follow any special monitoring agreements with parent/guardian.

Continuous Glucose Monitoring (CGM) Guidelines
CGM can replace fingerstick glucose checks for insulin dosing. CGM readings may lag by 15–20 minutes and pressure may cause false lows. Use a fingerstick check if symptoms don't match, glucose is rising or falling quickly, is above 350 mg/dl, or below 65 mg/dl, or if CGM fails. Calibrate CGM only when glucose is stable. Students must always have their receiver, phone, or watch. **Do not ignore alerts—respond as instructed.** A trained care partner may monitor and change CGM sites.

Make management decisions based on current glucose levels, planned activities, food, insulin doses, and trend arrows. Smart insulin pens and insulin pumps factor in the rate of change. Check CGM glucose AT LEAST pre-meals, bedtime, every 30 minutes for low glucose, and every 2 hours as needed for high glucose. Follow any special monitoring agreements with parent/guardian.

Care Plan Page 3

LOW GLUCOSE MANAGEMENT

These instructions apply to students who use insulin and monitor glucose.

Low glucose may cause many symptoms—or none—so respond quickly.

Recall: CGM readings may lag fingerstick results by 15–20 minutes. Use a fingerstick check if glucose is changing quickly or symptoms don't match CGM. Automated insulin delivery (AID) systems—which consist of continuous glucose monitors (CGMs) and insulin pumps—work together to help prevent or reduce episodes of low glucose, provided the devices are functioning properly. Inform care partners and the medical team about recurring low glucose episodes. **Review the student's history of response to low blood glucose treatment when determining the appropriate treatment.**

MILD OR MODERATE LOW GLUCOSE may cause shaking, sweating, hunger, irritability, dizziness, confusion, rapid heartbeat, fatigue, headache, blurred vision, or sometimes no symptoms. Treat promptly with quick-acting carbohydrates such as: Glucose tablets (1 tab = 4g), Juice or regular soda (4 oz = 15g), Honey or sugar (1 tbsp = 15g), Hard candy (4–6 pieces = 15g), or Other sources as discussed with parent/guardian.

Weight (in pounds)	Mild Low Glucose (less than 70 to 80 mg/dL)	Moderate Low Glucose (less than 55-60 mg/dL)
Less than 50 pounds	4-6 grams[1,2]	8-12 grams[1,2]
50-100 pounds	8-12 grams[1,2]	12-15 grams[1,2]
Greater than 100 pounds	10-15 grams[1,2]	15-20 grams[1,2]

[1] In addition to rapid-acting carbohydrates, adding more complex carbohydrates and protein sources (such as cheese crackers, cheese sticks, or jerky) may be beneficial if there are more than 1-2 hours until the next planned meal or snack.

[2] Begin with a lower-carb treatment at half the recommended dosage for students using an AID.

SEVERE LOW GLUCOSE can cause confusion, trouble eating, seizures, or unconsciousness. The student cannot self-treat. Give glucagon immediately.

HOW TO GIVE GLUCAGON

- **For Intranasal (Baqsimi):** Insert the tip into one nostril and press the plunger until green line disappears.
- For Injectable: Inject 0.5 mg if under 5 years old, or 1 mg if 5 years or older.

>>> After glucagon, turn student on left side and monitor. Call 911. Notify team and replace glucagon. When alert, resume usual low glucose care.

Treating without "overtreating" and causing more issues.

Look at footnote 2: this applies to AID (pumps) and those in their Honeymoon period.

Care Plan Page 4

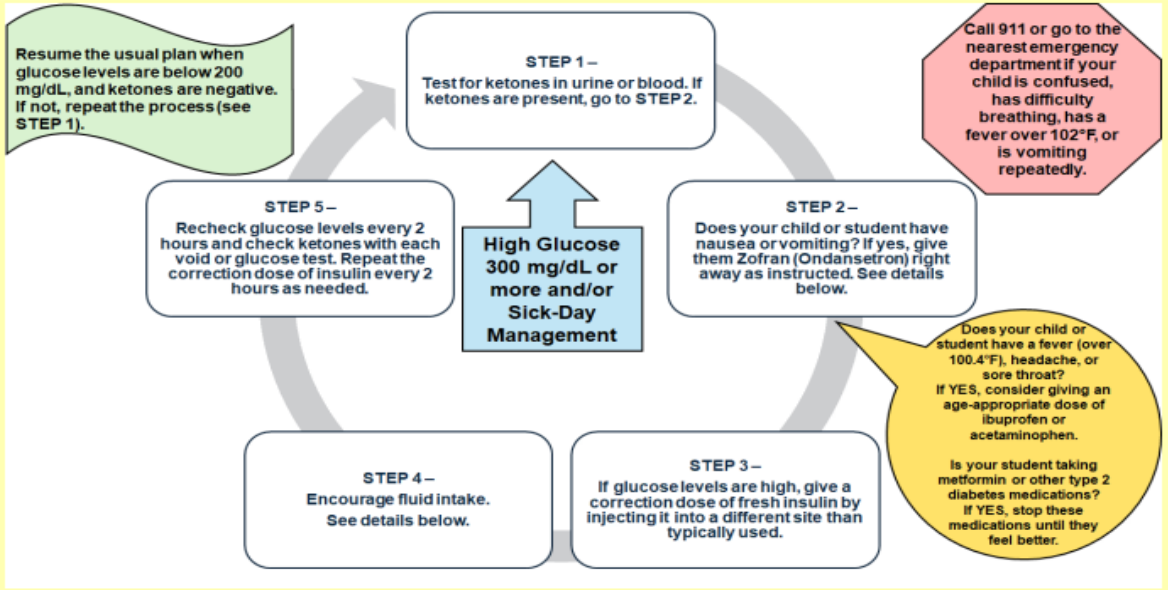
HIGH GLUCOSE/SICK-DAY MANAGEMENT

These instructions apply to students who use insulin and monitor glucose. If glucose is above target glucose, give correction dose as recommended and push water intake. In the instance of glucose 300 mg/dL or higher for over 2 hours, or if signs of illness (fever, headache, sore throat, nausea, vomiting) are present, follow the steps outlined below. For type 2 diabetes (T2D) students not using insulin or monitoring glucose, skip insulin/glucose steps but stop T2D medications when sick or vomiting and seek emergency care if needed.

Student should remain at school and not be sent home solely for high glucose levels or the presence of ketones, unless accompanied by other symptoms or as directed by a healthcare provider.

Early high glucose symptoms: increased thirst, frequent urination, fatigue, blurred vision, headaches, hunger, dry mouth, or no symptoms. Very high glucose—especially with ketones—can cause nausea, vomiting, fruity breath, rapid/labored breathing, and confusion. These may signal diabetic ketoacidosis (DKA), a serious condition needing urgent care. Ketones can also develop during illness or when eating/drinking is disrupted, even with normal glucose levels.

Recall: CGM readings may lag fingerstick results by 15–20 minutes. Use a fingerstick check if glucose is changing quickly or symptoms don't match CGM. Automated insulin delivery (AID) systems—which consist of continuous glucose monitors (CGMs) and insulin pumps—work together to help prevent or reduce episodes of high glucose, provided the devices are functioning properly. Inform care partners and the medical team about recurring high glucose or any sick-day episodes.



Ketone management!

The 2-hour cycle is in white boxes, this is the key!

Additional notes are in the colored/shaded areas.

Care Plan Page 5

PERSISTENT HIGH GLUCOSE/SICK-DAY MANAGEMENT STEPS

Call 911 or go to the ER if the student is confused, has trouble breathing, has a fever over 102°F, or has repeated vomiting.

Step 1: Verify glucose and check urine or blood for ketones. If ketones are present, go to Step 2.
For CGM users: Use a fingerstick glucose check if CGM readings are inconsistent, outside expected range, don't match symptoms, or are changing quickly.

Step 2: If the student has nausea or vomiting, give Zofran (Ondansetron) as instructed.

Age (years)	Dose (mg)	Frequency
Less than 5 years	2mg	Every 8 to 12 hours
5-11 years	4mg	Every 8 hours
12 years or older	8mg	Every 8 hours

Step 3: If glucose is high, inject a Correction Dose of rapid-acting insulin (Aspart, Lispro, Glulisine, or Regular) at a new site. High glucose and ketones suggest missed or insufficient insulin, pump issues, and dehydration. Act quickly to lower glucose and rehydrate.

- If missed basal dose: For Degludec, give full dose ASAP and resume schedule next day. For Glargine, if more than 8–12 hours late, give half the dose and resume regular schedule.
- For Pump users: Likely insulin delivery issue. Give all corrections by injection until glucose is below 200 mg/dL and ketones are negative. Replace the entire pump setup (infusion set, tubing, and insulin) and monitor glucose closely to ensure the new site is working.

Step 4: Encourage fluids. See details below.

Weight (pounds)	Recommended fluid intake (every 30 minutes)
Less than 40 pounds	4 to 6 ounces
40-80 pounds	6 to 8 ounces
More than 80 pounds	8 to 10 ounces

- If glucose is below 70 to 80 mg/dL, give sugar-containing fluids (like sports drinks, popsicles, or sweet tea).
- If glucose is 80 to 200 mg/dL, give sugar-containing fluids and cover carbohydrates with rapid-acting insulin.
- If glucose is above 200 mg/dL, offer sugar-free fluids (water, zero-calorie drinks, or sugar-free popsicles).

STEP 5 – Check glucose every 2 hours and check ketones with each void or glucose check. Repeat Correction Dose every 2 hours as needed. Resume the usual plan when glucose is below 200 mg/dL and ketones are negative. If not, repeat from Step 1.

Zofran dosing and fluid intake recommendations for ketone management.

Don't hesitate with the Zofran!

Care Plan Page 6

EXTRACURRICULAR ACTIVITIES

These instructions apply to students who use insulin and monitor glucose.

A care partner must be present during extracurricular activities to assist with diabetes management. Work together to ensure all students can participate safely. Adjust the care plan as needed. If a student feels unwell, check glucose immediately and always allow them to take a break, regardless of glucose level.

Students must have diabetes supplies available during activities. The go bag should contain glucose monitoring tools, insulin (stored at or below room temperature), delivery devices, fast-acting carbohydrates, glucagon, and a backup charger. Ensure free access to water, bathroom, food, and diabetes supplies. Physical activity can cause glucose to go low or high.

For students using insulin injections, consider pre-carb 10-15 grams if glucose is below 125 mg/dL, and may provide 10-15 grams of carbs every 30-60 minutes during intense physical activity (or as agreed upon with care partners). Delay intense physical activity until glucose is above 90 mg/dL.

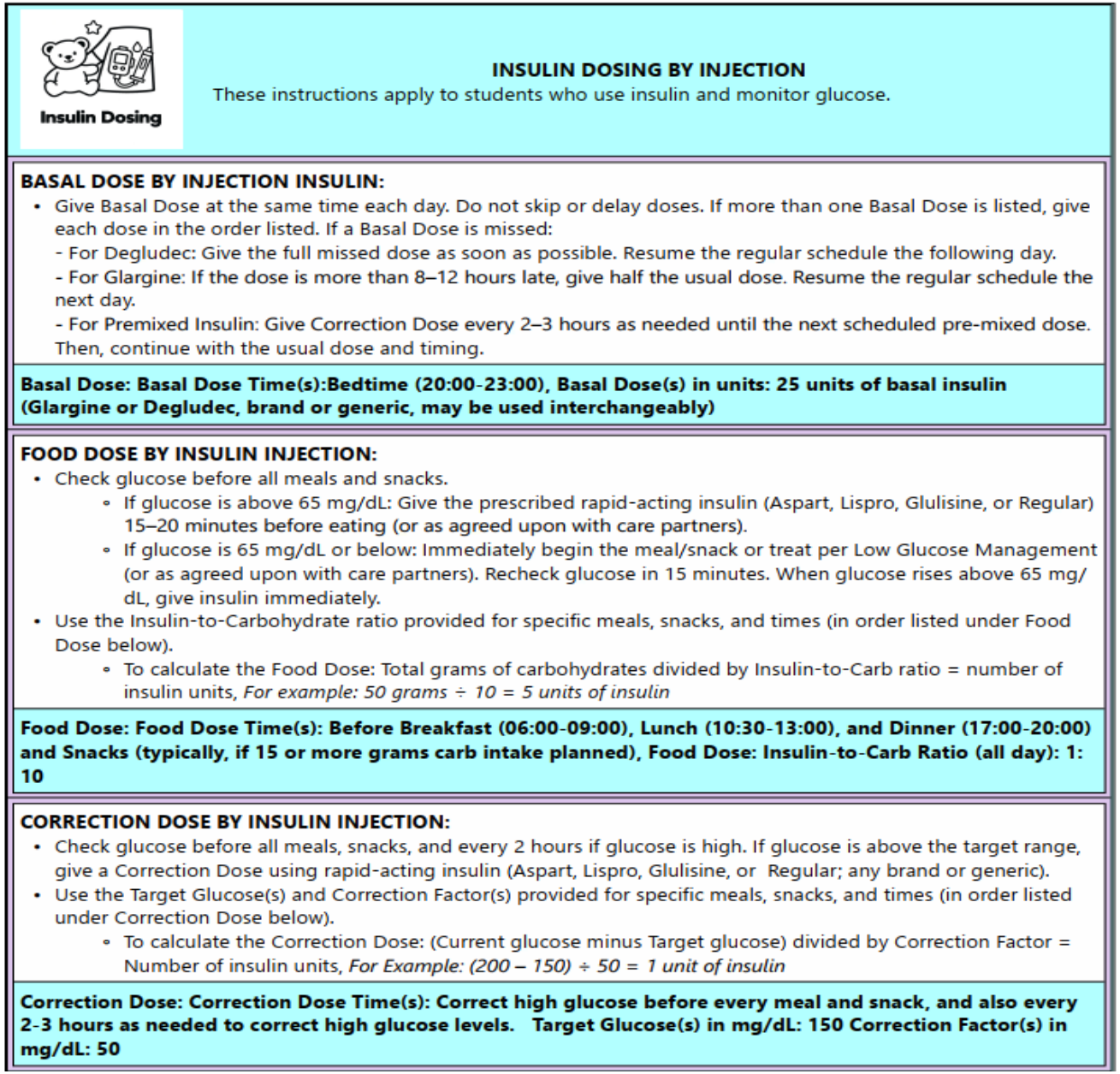
For students using insulin pumps or CGMs, ensure all devices are working before activity. Use exercise mode on insulin pumps 45–60 minutes before and during activity to reduce low glucose risk. For high-intensity activities, tubed insulin pumps may be disconnected up to 2 hours if needed; pod insulin pumps should remain attached. Store insulin pumps securely (at or slightly below room temperature) and check function when reconnecting. In the event of pump site problem, use injectable insulin and follow care plan as directed. If issues with CGM site, use fingerstick glucose check until CGM can be replaced.

Glucose	Treatment	Activity
Less than 70-80 mg/dl	See Low Glucose Management	Pause activity until low glucose is treated and symptoms are resolved.
Greater than 300 mg/dl with small/ trace urine ketones or blood ketones less than 0.6 mmol/L	See High Glucose/Sick-Day Management	May resume activity once appropriate steps are taken, including insulin dosing. Encourage consistent water drinking.
Greater than 300 mg/dl with moderate/large urine ketones or blood ketones above 0.6 mmol/L	See High Glucose/Sick-Day Management	Pause activity until glucose is below 300 mg/dl, urine ketones are small/trace/negative or blood ketones are less than 0.6 mmol/L. Encourage consistent water drinking.

Care Plan Page 7

DIABETES TYPE/ MANAGEMENT	Type 1 diabetes (T1D) is an autoimmune condition where the body cannot produce insulin. Students with T1D require regular glucose monitoring and insulin administration, either through injections or a pump. School nurses should watch for symptoms of high or low glucose, help with diabetes care routines as needed, and communicate promptly with families and healthcare providers about any concerns or changes.
DIABETES CARE/ TECHNOLOGY	DIABETES CARE PLAN for INJECTIONS: Multiple Daily Injection (MDI): Student requires Basal, Food, and Correction Dose insulins. Give Basal Dose once daily at the same time. Administer Food Dose for expected carbs and Correction Dose as directed. If Basal Dose is missed: For Degludec, give full dose ASAP and resume normal schedule. For Glargine, if more than 8-12 hours late, give half the dose and resume regular schedule.. Insulin Delivery/CGM DEVICE(S) used: Dexcom G6/G7 with applicable receiver, phone, or smart watch (as applicable). A trained care partner may perform a CGM site change when needed. or Use BolusCalc, Gluroo, T1D, or other similar apps to calculate insulin doses, or a smart insulin pen. These apps allow you to set the carbohydrate ratio, target glucose level, and correction dose, which helps ensure consistency in meal and correction doses. InPen is a Bluetooth-enabled smart insulin pen for multiple daily injections. It connects to an app to log insulin doses, calculate meal and correction doses, and track active insulin. It delivers doses in half-unit increments (up to 30 units) and can display real-time glucose data when integrated with compatible CGMs. The app provides alerts for missed doses and hyperglycemia. Use the InPen app for all doses whenever possible; enter doses manually if necessary. Learn more: https://tinyurl.com/InPensmart Students using diabetes technology such as continuous glucose monitor (CGM), insulin pump, smart insulin pens, and bolus calculator apps, must always have access to compatible devices (receiver, phone, or smartwatch). For additional information on diabetes technology including insulin pumps and CGM, please visit https://tinyurl.com/CGMPump or scan QR to left.
SUPERVISION REQUESTED/ OTHER INSTRUCTIONS	ADULT SUPERVISION: An adult must directly observe all diabetes care tasks. INSULIN TIMING IMPORTANCE - Insulin timing is as important as the dose. Rapid-acting insulin should be given 15-20 minutes before eating or as directed in Diabetes Care Orders. Giving insulin too late can cause high glucose after meals; often, followed by low glucose. Insulin must be administered on schedule, carefully coordinated with meals and snacks. Consistent, timely insulin helps reduce high and low glucose, keeps students in range, and helps support safe participation in school activities. MILD LOWS: Allow students to treat mild low glucose in the classroom with teacher supervision. Minimize class time missed. Students may return to activities when glucose is 80 mg/dL or higher, and symptoms resolve. SCHOOL ACTIVITIES: Ensure a nurse or trained diabetes care assistant is present at all school events to support the student as needed.. Inform parents/guardians if the student is not visiting the nurse as planned.

Care Plan Page 8

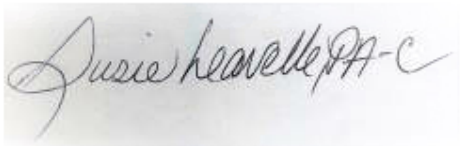


Shaded areas have the actual settings/dosing guidelines.

White areas are explanations for the dosing

All together in one place!

Care Plan Page 9



Susie Leavelle PA-C
Pediatric Endocrinology
McLane Children's Baylor Scott & White
1901 SW HK Dodgen Loop | 3rd Floor | Temple, Texas 76502
254-935-5048 Office
Satellite Clinics: College Station, Killeen, Virtual

I commit to provide the best diabetes and endocrine care to the children and families I serve.

Our team commits to providing the best diabetes and endocrine care for the children and families we serve.
The school nurse/care partners and parent/guardian agree to follow these diabetes care orders and will work together to support excellent diabetes management for the student, recognizing that variations in care may sometimes be necessary based on the Aziyah's individual needs. All care partners will keep each other informed of any concerns, disagreements, or additional needs that arise.

_____ _____
Parent/Guardian Signature *Date*

_____ _____
Nurse/Care Partner Signature *Date*

Provider signature block

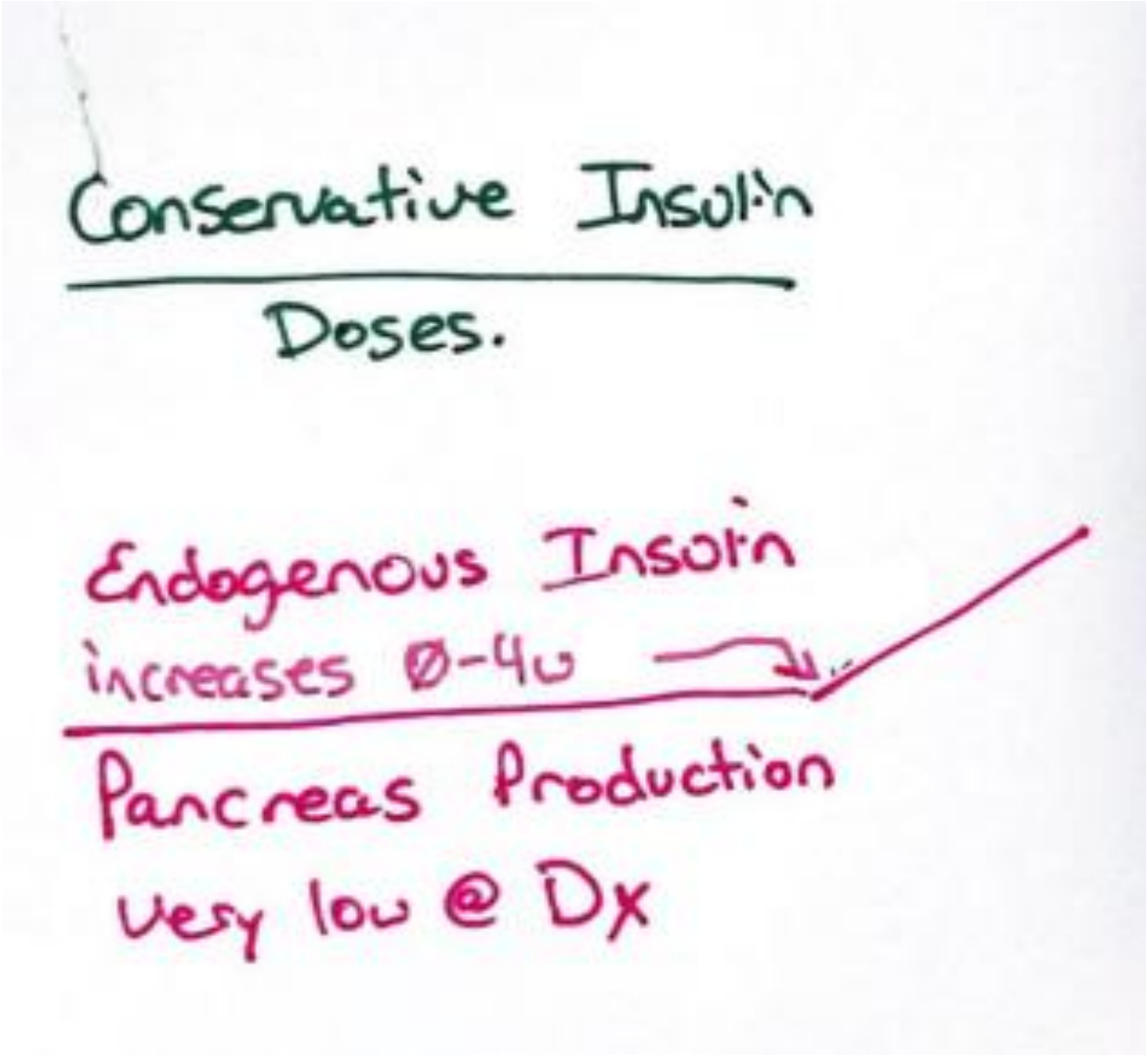
This also includes signature blocks for parent and student.

Honeymoon explanation

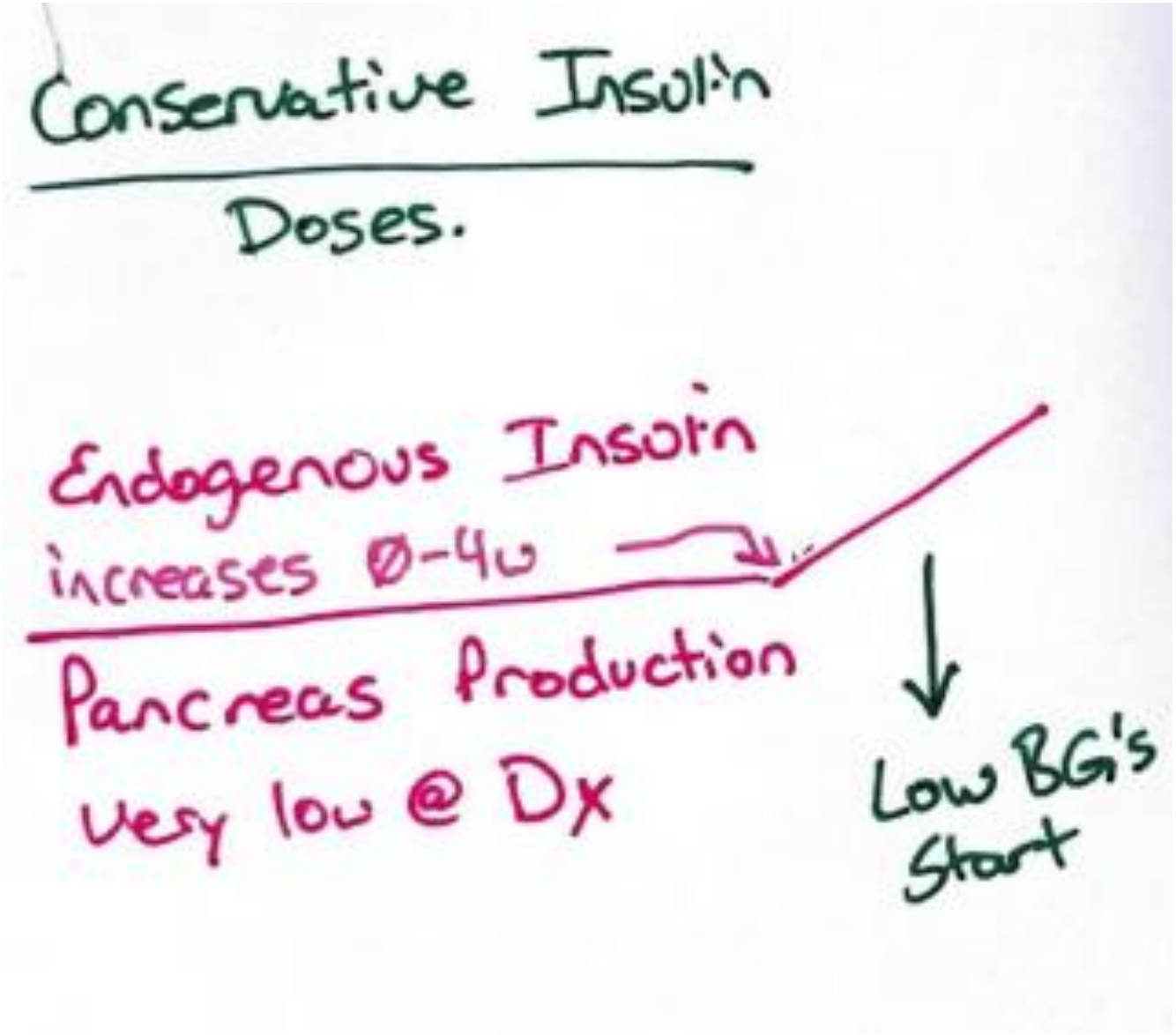
- Confusing time for many people because this is all new to them and they are trying to find some semblance of cause/effect.
- Then the pancreas contributes in addition to administered insulin and cause lows.
- The goal during the honeymoon is in 2 areas:
  - Prevent the formation of bad habits due to complacency
    - Dosing late
    - Inaccurate carb counting
    - Not following up on high BG's
  - Minimize the pancreas contribution (preventing spikes and highs)
    - Don't "poke the pancreas"! Let it sleep.

"Honeymoon" phase explanation

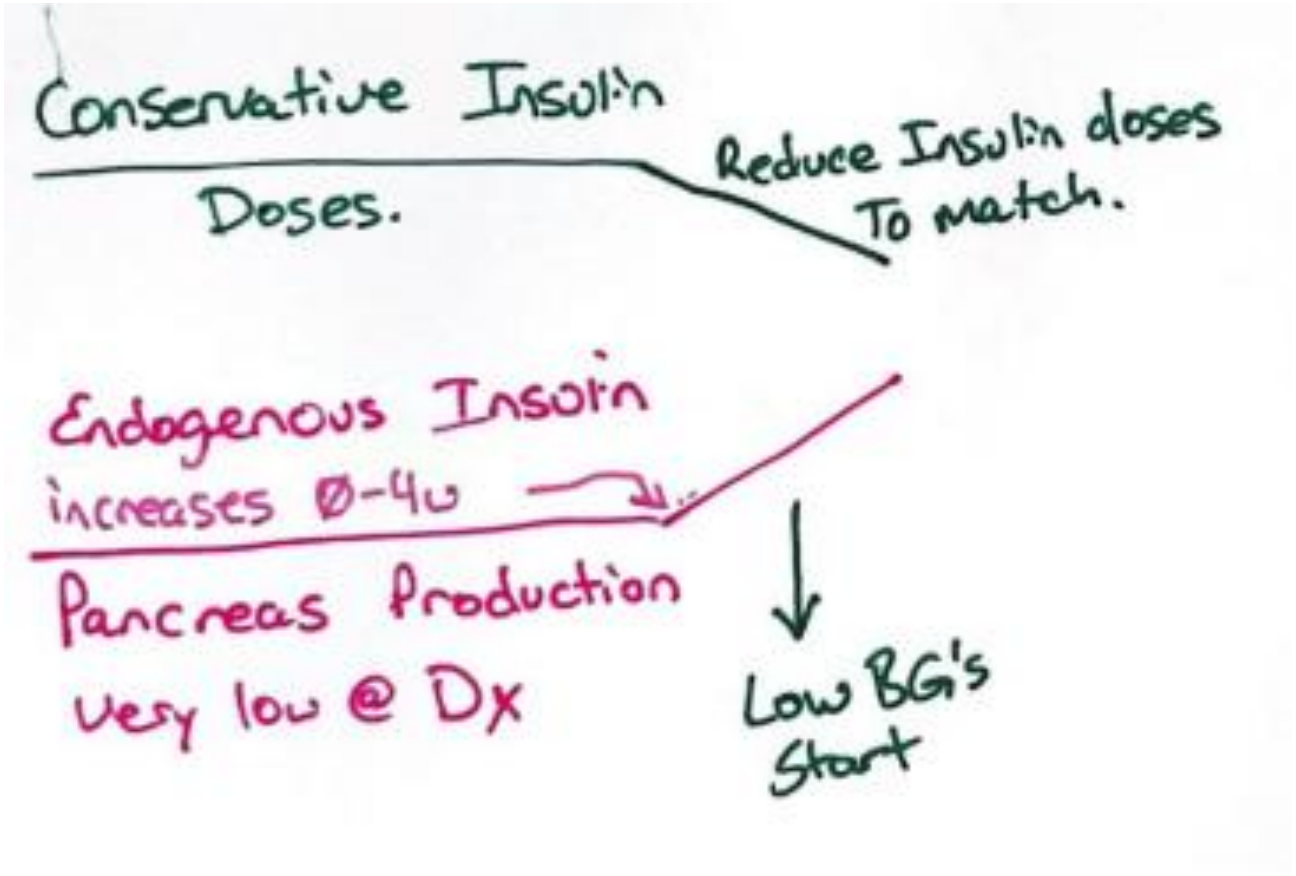
"Honeymoon" Phase explanation (cont.)



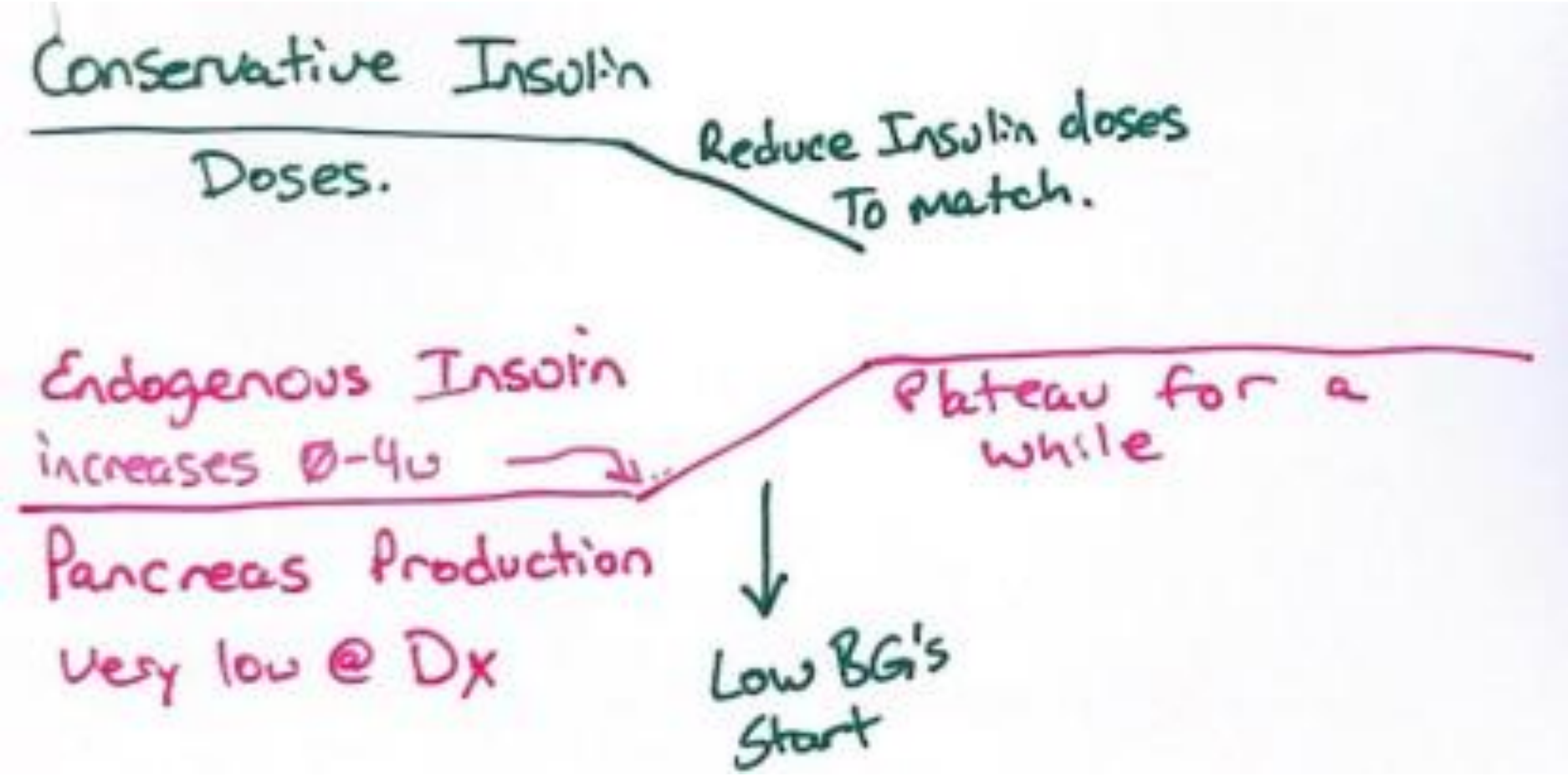
"Honeymoon" Phase explanation (cont.)



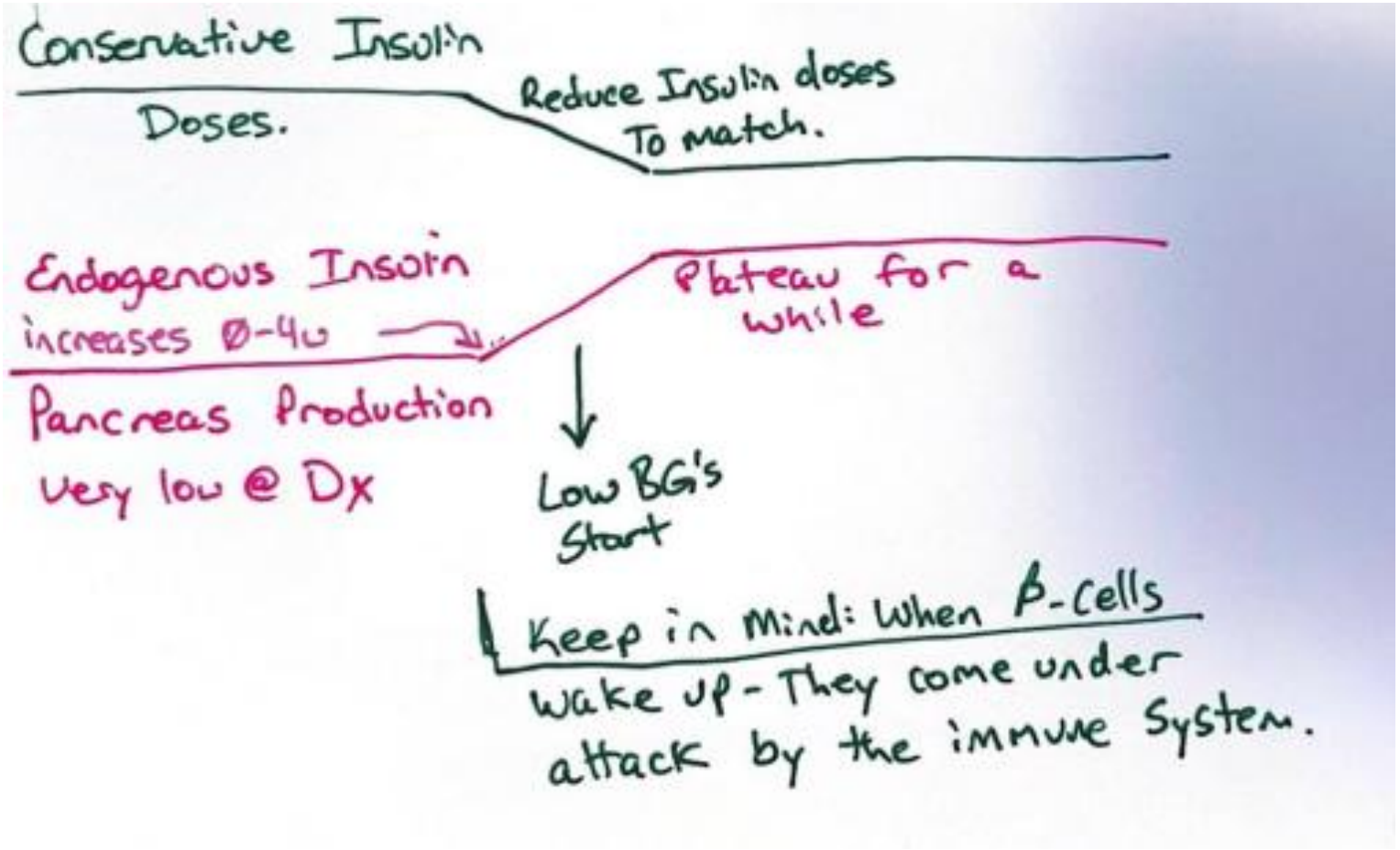
"Honeymoon" Phase explanation (cont.)



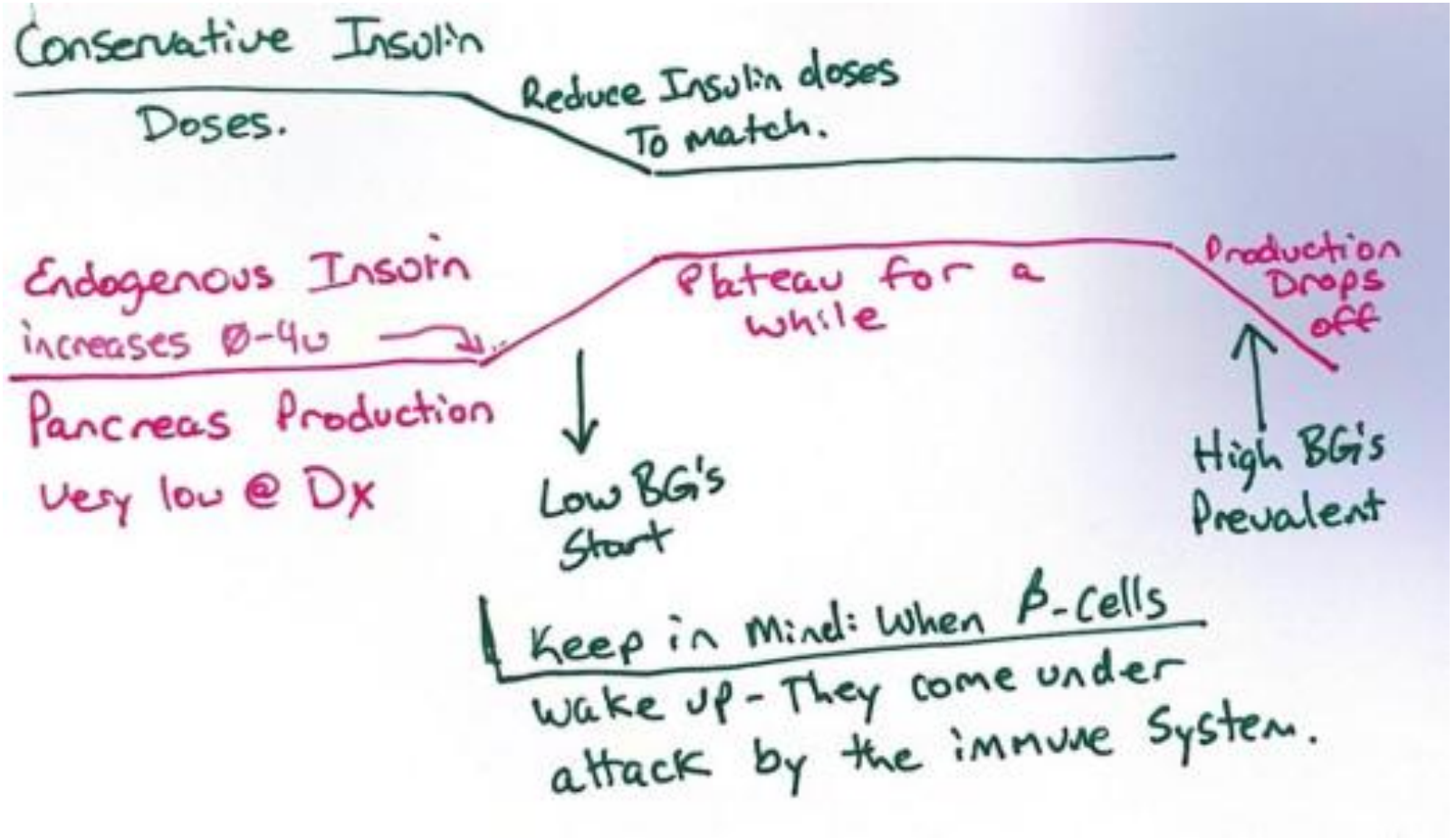
"Honeymoon" Phase explanation (cont.)



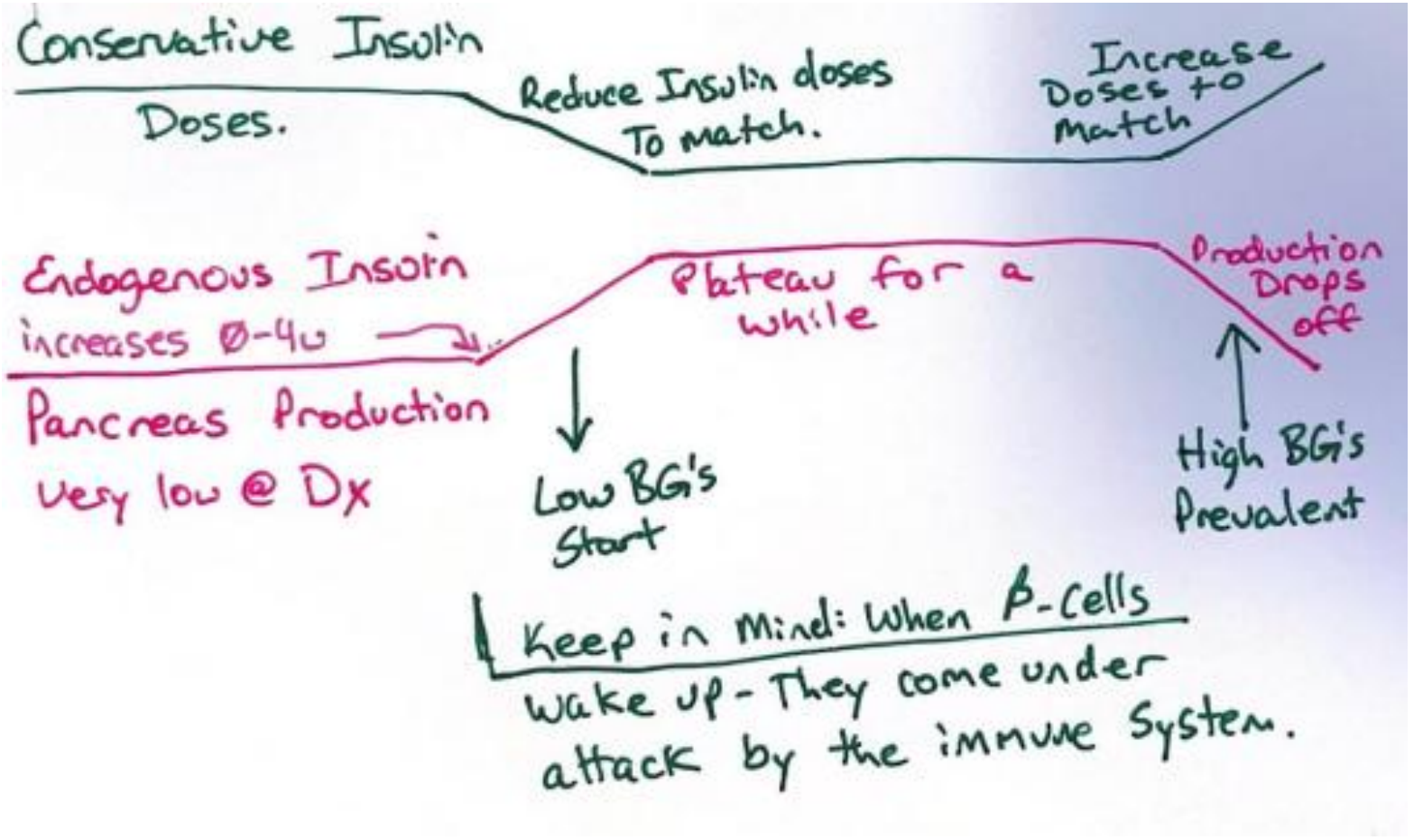
"Honeymoon" Phase explanation (cont.)



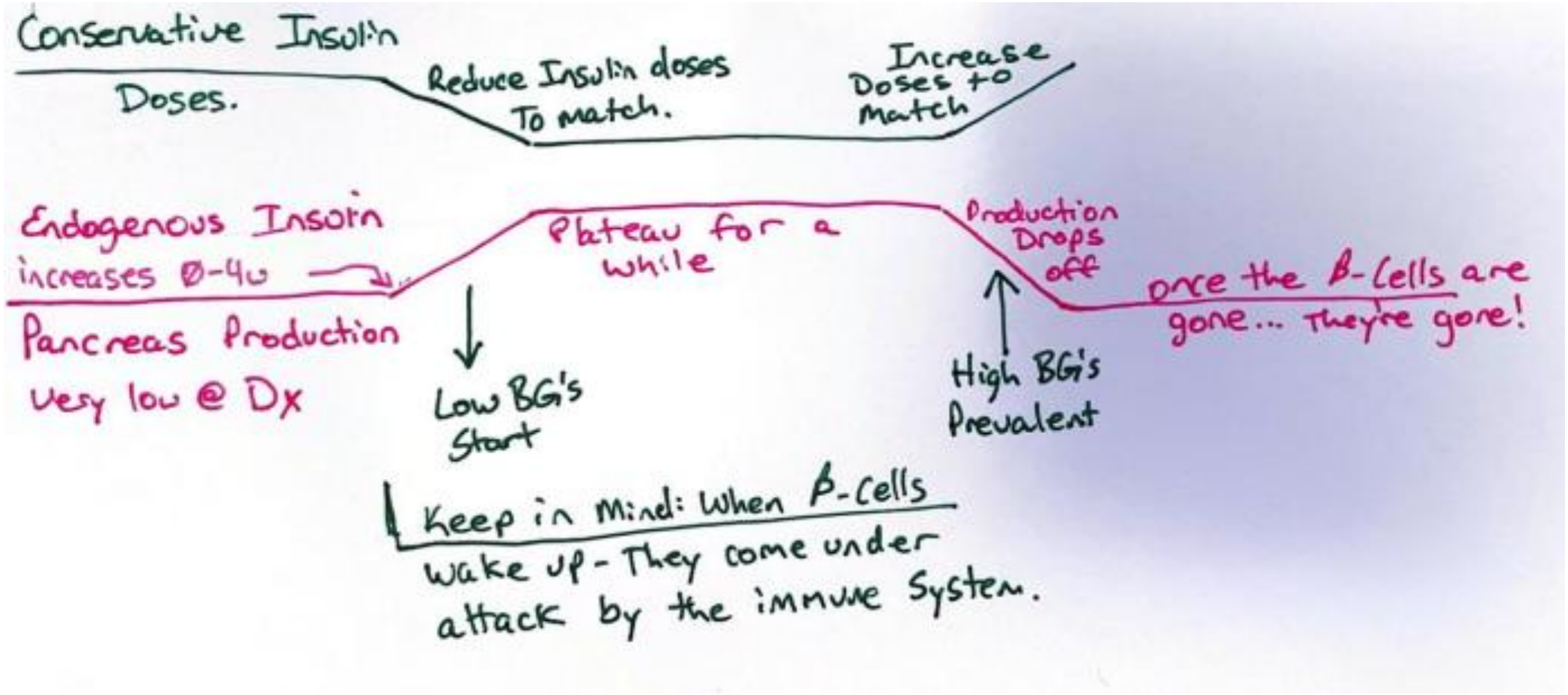
"Honeymoon" Phase explanation (cont.)



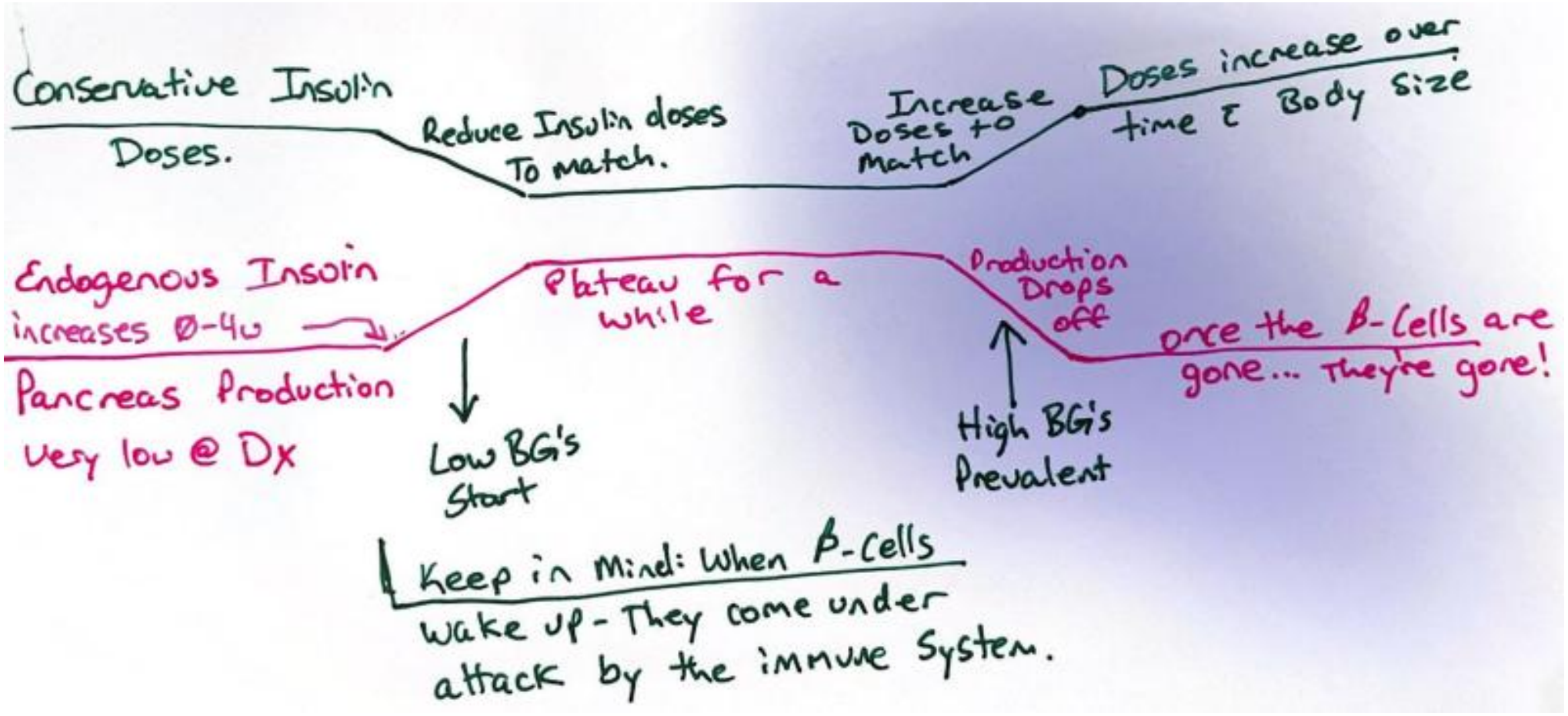
"Honeymoon" Phase explanation (cont.)



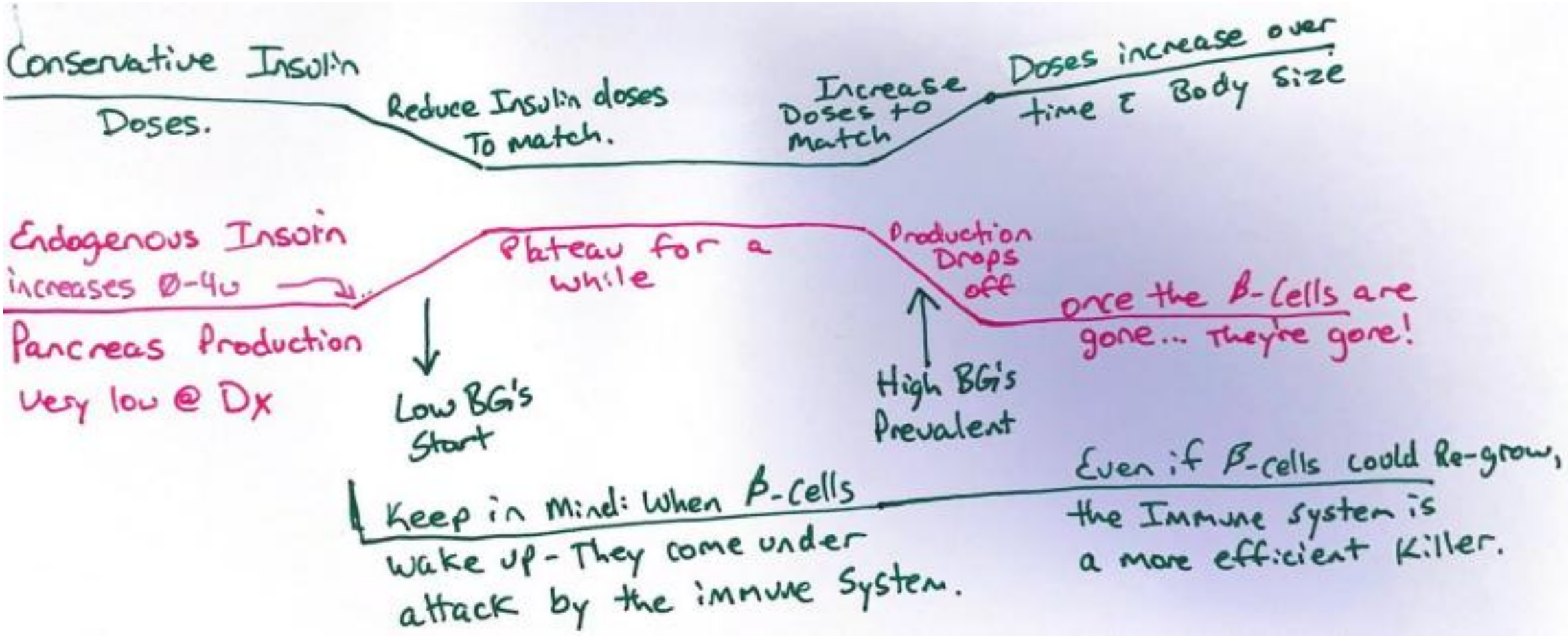
"Honeymoon" Phase explanation (cont.)



"Honeymoon" Phase explanation (cont.)



"Honeymoon" Phase explanation (cont.)



Take Home Points

- Inefficient use of insulin leads to unnecessary weight gain, that leads to the need for more insulin (if there is more body mass, it takes more insulin). Feed forward loop.
- When using most AID's, dosing late causes more after meal lows 1.5-2 hours after the meal. When is the child's PE/Recess?
- If you can avoid stimulating the pancreas (during the honeymoon) or the pump, the chances for lows drops significantly.

Take Home Points

- Delivering insulin sufficiently before carb intake enables the use of weaker ratios. This means a more efficient delivery, uses less insulin, and causes less after meal lows.
- Work together with family, clinic, coaches, teachers to get insulin on board earlier (pumps deliver slower than injections).

Contact Information

BSW Pediatric Endocrinology at McLane Children's
1901 S.W. HK Dodgen Loop
Temple, Tx 76502
Phone: 254-935-5048
Fax: 254-935-5045

McLane Children's Staff

Dr. William P. Bryant, MD
Dr. Matthew D. Stephen, MD
Dr. Stephen Ponder, MD, CDCES
Krishnaswamy J. "Jo" Rao, MD
Susie Leavelle, PA-C
Bradly Hinrichs, RN, CDCES
Brant P. Foster, RN, CDCES
Wendy Estrella, BSN
Erin Scallorn, MS, RD, LD, CDCES