Diabetes Technology and Using the Data

Lorraine Anderson RD, CDE

Agenda

- Diabetes technology
  - Pumps/CGM's
  - What's next?
  - Apps
- Using Data in Real-Life Examples

How well are we doing?

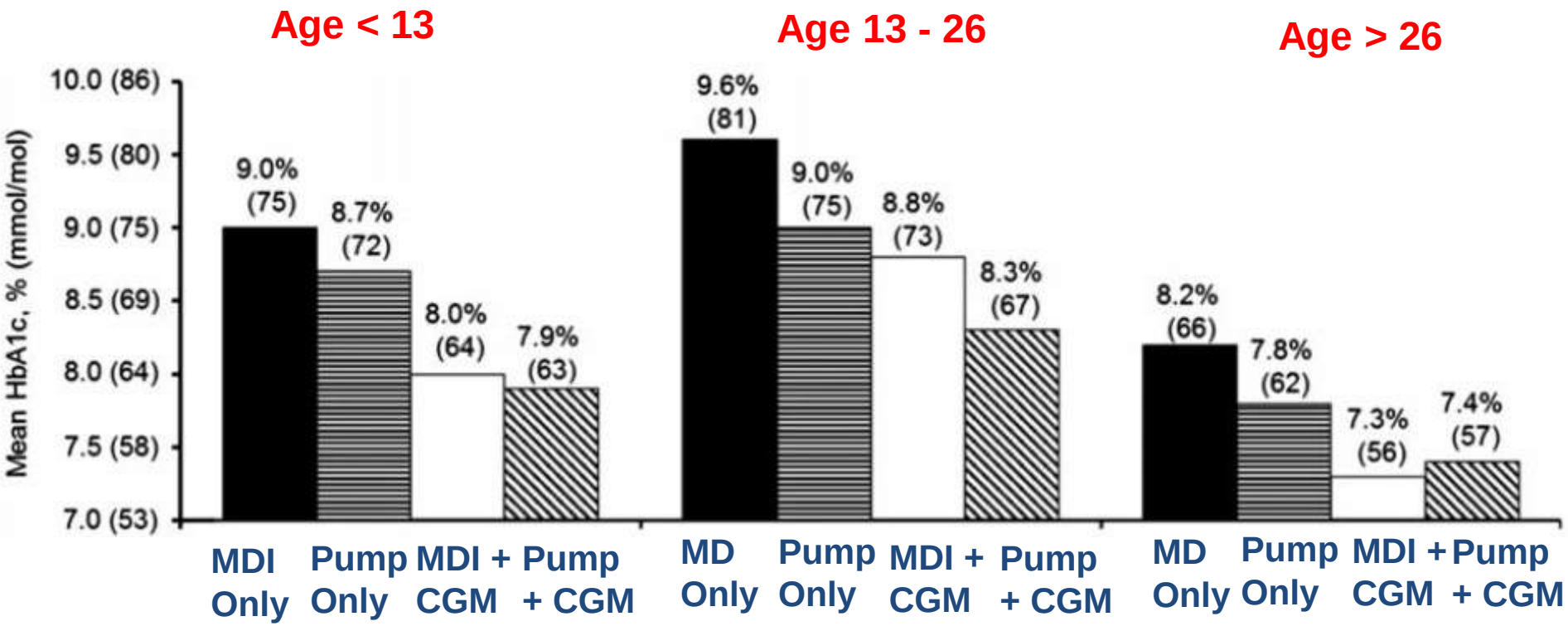
- We are missing the boat somewhere*
- Canadian data (T1/T2) 2017
  - A1C 7.0 – 8.5% ≈ 30%
  - A1C > 8.5% ≈ 15%

  - A1C < 7.5% for youth only achieved by 17%
  - A1C < 7.0% for adults only achieved by 21%

- Despite increases in use of technology:
  - Pump use increased from 57% to 63%
  - CGM use increased from 7% to 30%

*T1D Exchange Clinic Network. State of Type 1 Diabetes Management and Outcomes from the T1D Exchange in 2016-2018. Diab Tech Ther 2019; 21 (2): 1-7.

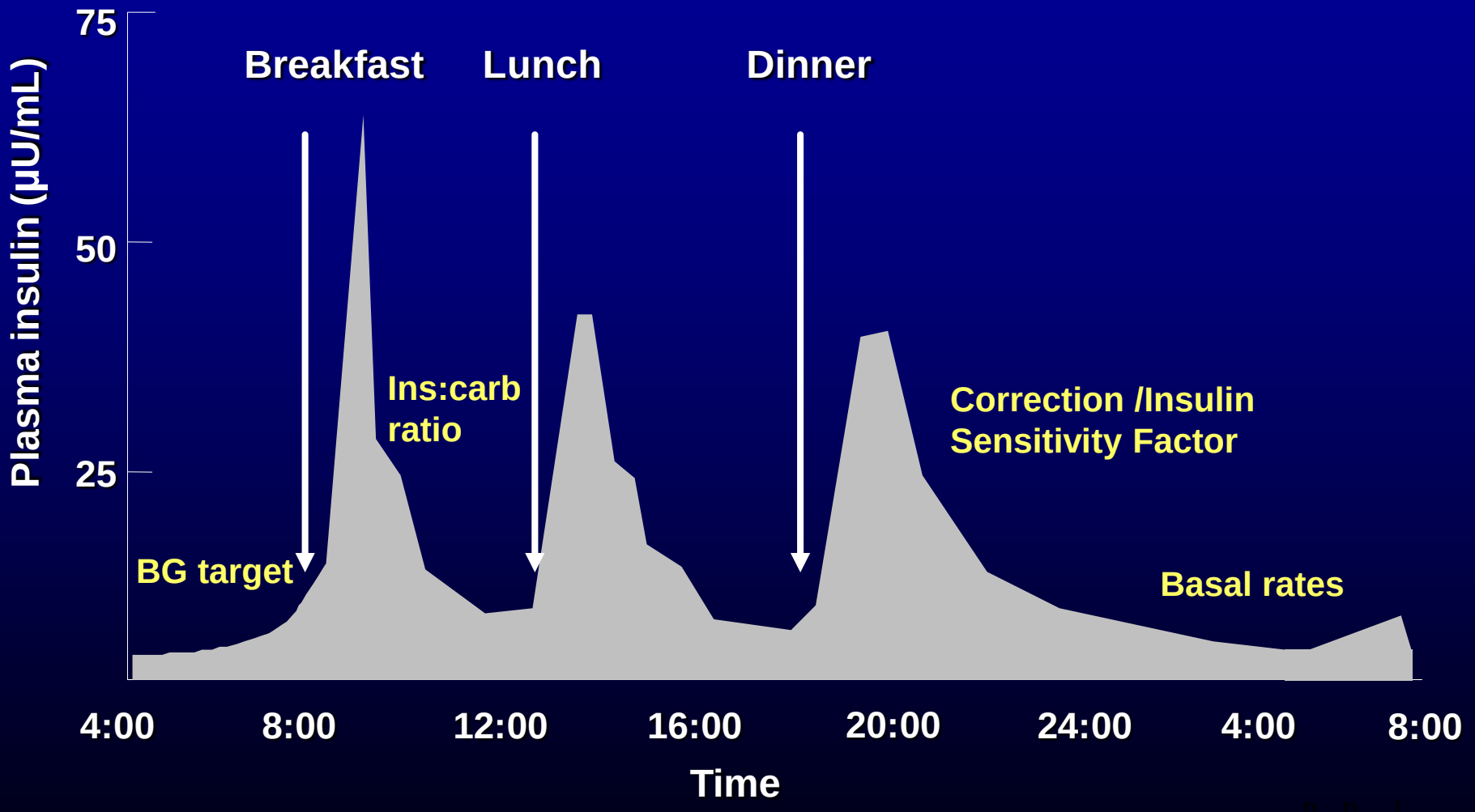
T1D Exchange: Mean A1C by Use of Tech (2016-2018)



→ Technology Makes a Difference

Insulin Delivery and Glucose Monitoring

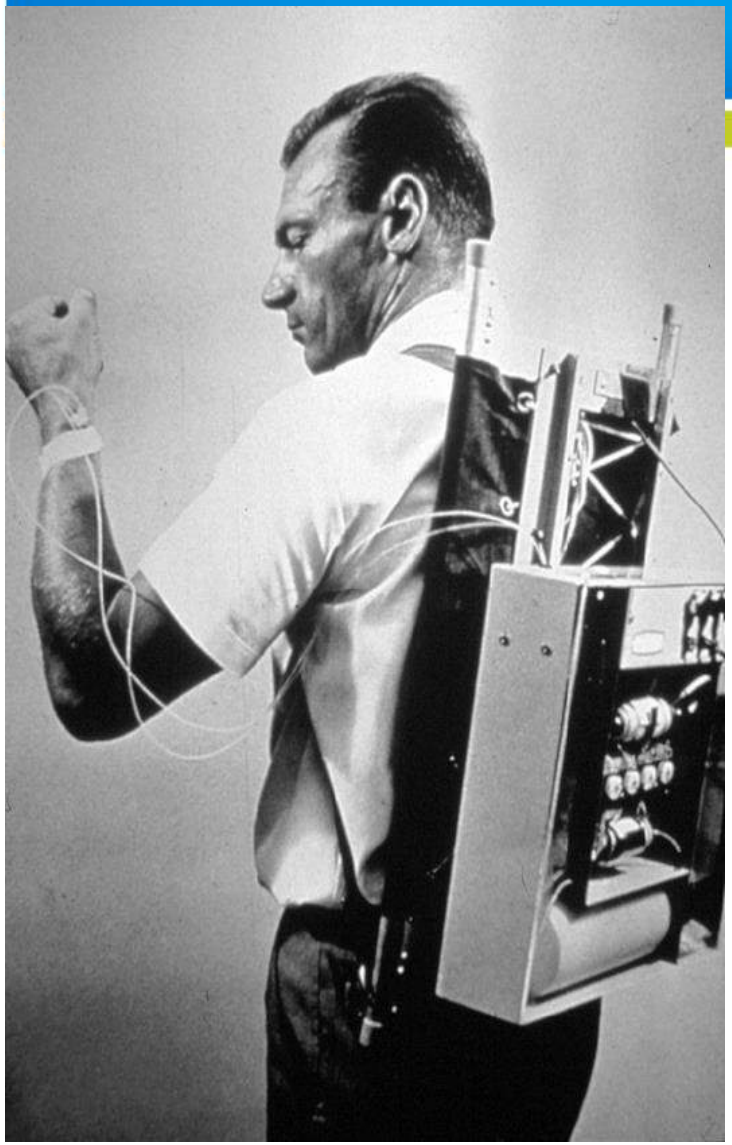
Physiological Serum Insulin Secretion Profile



AW095-631A

Reference
Mayfield JA. *Am Fam Physician.* 2004; 70: 489-500

Early Insulin Pumps



Insulin Pumps in Canada 2019

Pump Considerations

- CGM integration?
- Automation?
- Tubing vs no tubing
- Size of pump, size of reservoir/cartridge
- Features (waterproof, screen readability, etc)
- Dosing increments (basal, bolus)
- Future pipeline
- Costs
- Customer Service, Technical and Clinical Support
- Others?

Key Challenges of Pump Therapy

- Intra-individual variability in insulin requirements

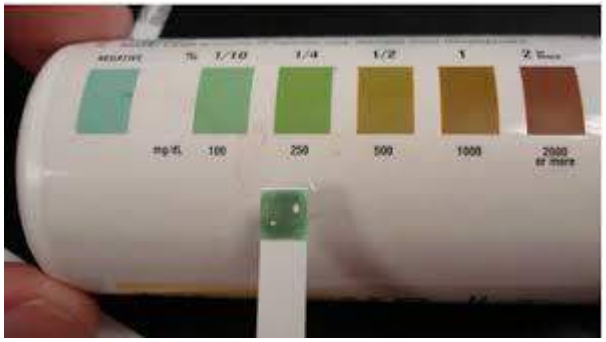
  vary considerably within T1D by on average 30%

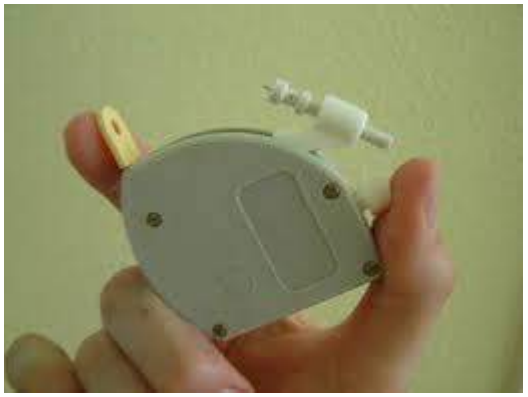
  overnight and 20% during waking hours.
- This can vary from 1/3 to 3 times that of usual delivery
- Reasons include: “variable meal composition, aberrations in glucose turnover, physical activity and changes in insulin sensitivity in women during peri-menstrual periods”
- Experienced pump users may alternate basal patterns

  but - with variable success
- Reliance on infusion set success

Hood T, Roman H (2016) Diabetologia. DOI 10.1007/s00125-016-4022-4

Glucose Monitoring…WE'VE COME A LONG WAY





Continuous Glucose Monitoring Options in Canada 2019

isCGM = intermittently scanned

* Not yet approved by Health Canada

The Endocrine Society Personal CGM Clinical Practice Guidelines **2011**

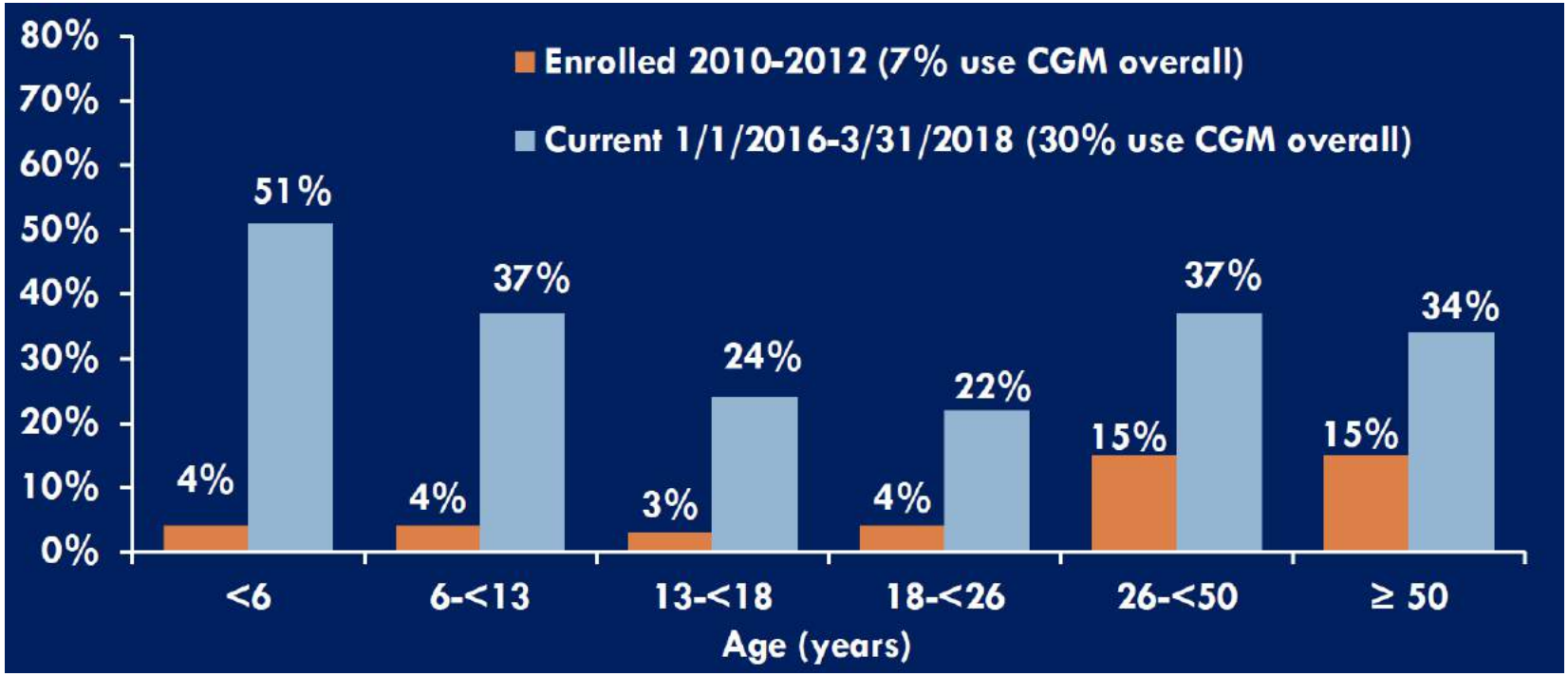
- Recommend personal use CGM for children, adolescents and adults with T1D who have **an A1c above 7.0%** who are willing to use them on a nearly daily basis: adults (4), children- adolescents (3)
- Recommend personal use CGM for children, adolescents and adults with T1D who will use them on a nearly daily basis, who have **an A1c of less than 7.0%,** because it will assist in maintaining target A1c levels while limiting hypoglycemia (4)

Evidence scoring: 4- high quality, 3- moderate quality, 2- low quality, 1- very low

Benefits of CGM

- **The Trend**
  - Glucose direction and rate of change (speed).
- **The Alarms**
  - When we are not actively paying attention to the trend (i.e. when sleeping).
- **The Data Reports**
  - A review of what happened to assess what can be changed in the future.

CGM Use Has Increased but Majority of T1D Do Not Use



T1D Exchange Clinic Registry data through March 31, 2018

Technology Trends

Technology Trends in T1D

- “Smart” insulin pens that connect to apps and glucose monitors

Smart Pens

Live life, less complicated.

inpen™

by Companion Medical

FDA approved and available in U.S.

Technology Trends in T1D

- “Smart” insulin pens that connect to apps and glucose monitors
- Glucose trending apps (“you seem to be low after lunch”)
- CGM based dose decision support apps for PWD and clinicians (ie. basal adjustments)
- Insulin pumps: remote bolusing from phones
- Mobile interfaces for closed loop insulin delivery
- New terminology: TIME IN RANGE

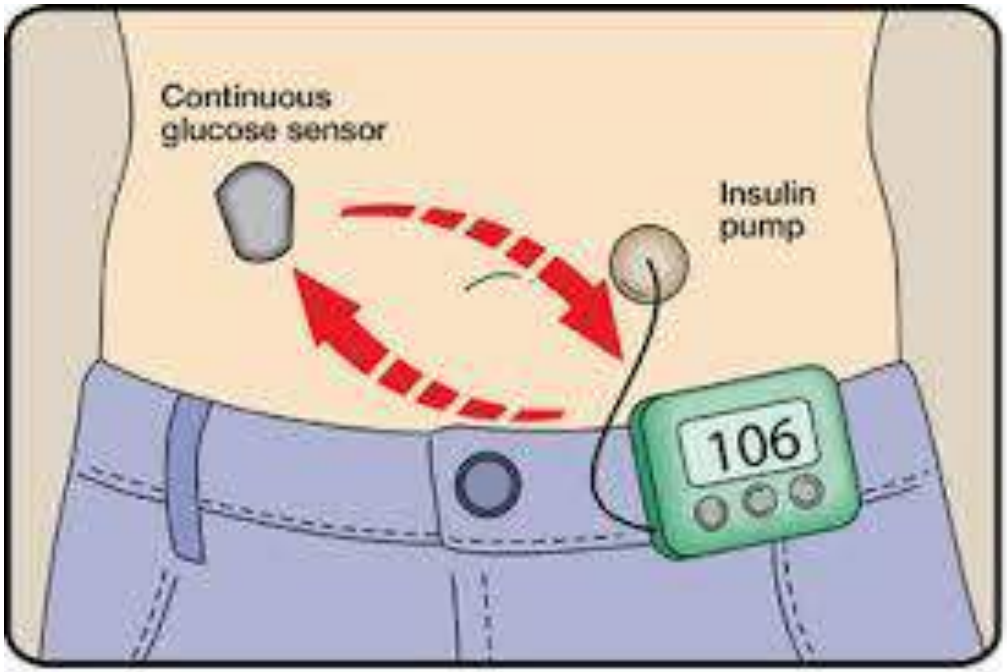
Smart Insulins

- "Glucose responsive insulin" - Turns on when needed, turns off when needed
- Injection, pill or patch
- Lots of talk for a long time

OPEN LOOP VS CLOSED LOOP

CLOSED-LOOP = ARTIFICIAL PANCREAS

- Continuous cycle of feedback



The JDRF 6 Stages of AP Device Systems

- Medtronic Veo

- Tandem Basal IQ*

- 670G
- Control IQ*
- DIY*

- DIY*

*Not approved by Health Canada

Trevitt S et al. Artificial Pancreas Device Systems for the Closed-Loop Control of Type 1 Diabetes: What systems are in Development? J Diab Sci Tech. 2016.

What else is coming in Closed Loop?

System	Status
Tidepool Loop	• October 2017 JDRF announced Open Protocol Automated Insulin Delivery • Dexcom G6 received FDA approval in March 2018 as 'interoperable CGM" • "Mix and match" closed-loop communicating via open protocols • Omnipod initial pump, Medtronic/Dexcom joined June 2019
Tandem Control:IQ	• Pivotal trial data presented at ADA • T:Slim X2 first FDA "ACE" (Alternate controller enabled)
Insulet – Omnipod Horizon	• Clinical trials ongoing • Late 2020?
Beta Bionics Bionic Pancreas iLet	• Pivotal study testing insulin only and dual hormone system
Bigfoot Biomedical	• Comprehensive "service" rather than device • Will include CGM (Libre), pens, pump???, meter

Coming soon?

Bigfoot Biomedical

Introducing the iLet™

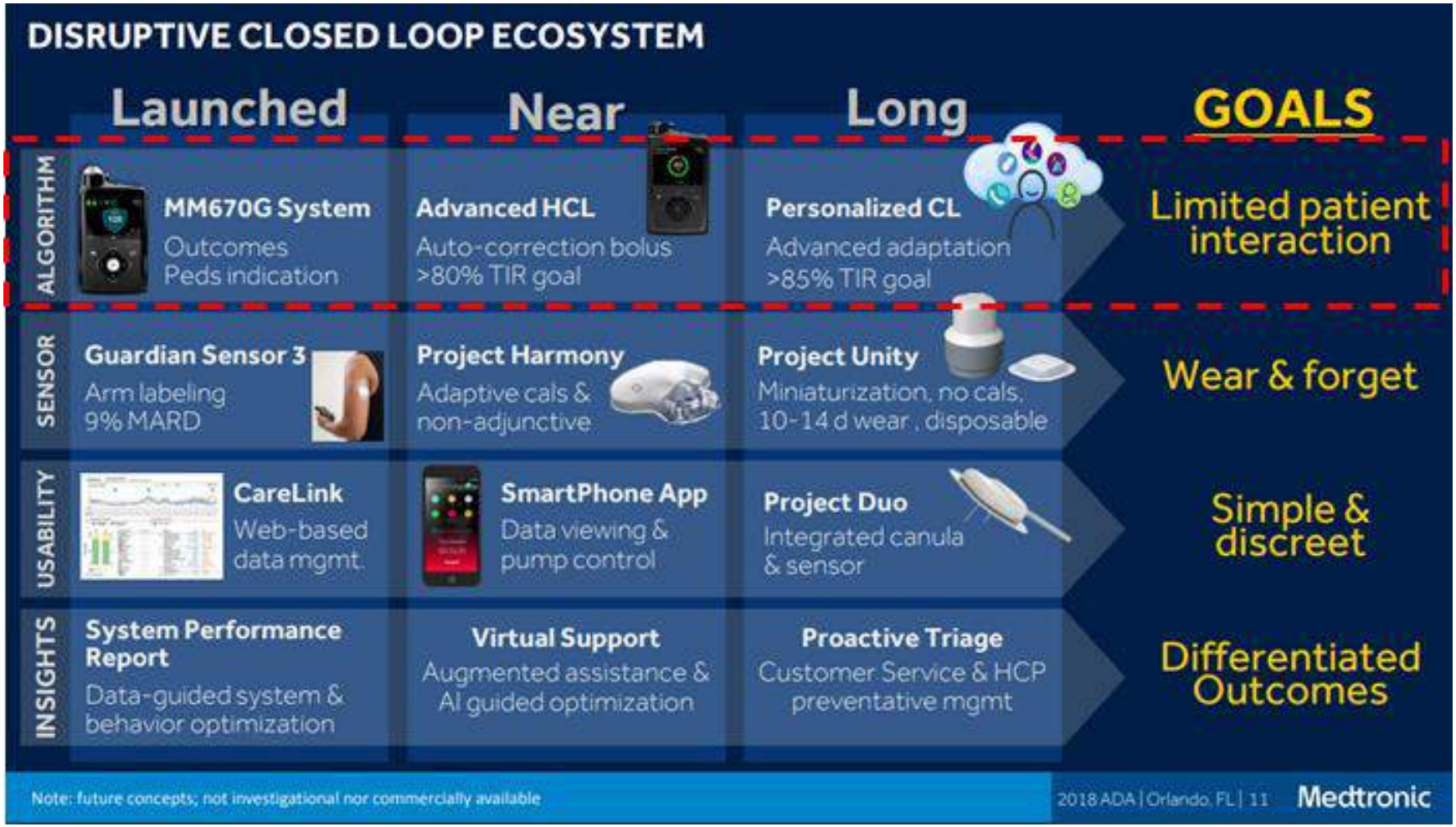
Diabeloop DBLG1
*CE approved

Not currently approved by FDA/Health Canada.

Medtronic 780G

- Bluetooth® enabled MiniMed™ 780G advanced hybrid closed loop (AHCL) system.
- Next-generation system is designed to automate the delivery of correction boluses when the user experiences, or is predicted to experience, prolonged high glucose levels based on their sensor readings.
- “Our goal is to increase automation through smart algorithms that reduce the need for patient interaction and decision-making."

Medtronic


DISRUPTIVE CLOSED LOOP ECOSYSTEM
Launched
Near
Long
GOALS
ALGORITHM
MM670G System
Outcomes
Peds indication
Advanced HCL
Auto-correction bolus
>80% TIR goal
Personalized CL
Advanced adaptation
>85% TIR goal
Limited patient interaction
SENSOR
Guardian Sensor 3
Arm labeling
9% MARD
Project Harmony
Adaptive cals &
non-adjunctive
Project Unity
Miniaturization, no cals,
10-14 d wear , disposable
Wear & forget
USABILITY
CareLink
Web-based
data mgmt.
SmartPhone App
Data viewing &
pump control
Project Duo
Integrated canula
& sensor
Simple & discreet
INSIGHTS
System Performance Report
Data-guided system &
behavior optimization
Virtual Support
Augmented assistance &
AI guided optimization
Proactive Triage
Customer Service & HCP
preventative mgmt
Differentiated Outcomes
Note: future concepts; not investigational nor commercially available
2018 ADA | Orlando, FL | 11
Medtronic

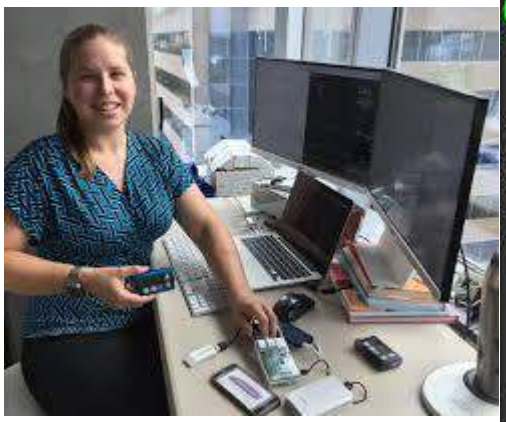
Imagine…

- The brilliance of a product when it is designed by the people who use it!!!

#We Are Not Waiting – DIY Diabetes

Loop

Open/Android APS



Interoperability is KEY

- March 2018 → Dexcom G6 first interoperable CGM (iCGM)
  - Class II device
  - Works with different types of compatible devices
  - FDA review process expedited -> to get in the hands of the user faster

- February 2019 → Tandem T:Slim X2 ACE (alternate controller enabled)
  - The first interoperable pump
  - Can be used with different components allowing patients to tailor their diabetes management to their individual device preference
  - Works with compatible devices, including automated insulin dosing (AID) systems, CGMs, blood glucose meters or other electronic devices used for diabetes management.

What's Coming in CGM?

Dexcom G7

Aiming for 14-15 day wear. "disposable" transmitter, more "affordable".

Abbott Freestyle Libre 2

Diabetes Apps – A Few of My Favourites

“mHealth/Digiceuticals/Digital Therapeutics”

The New York Times

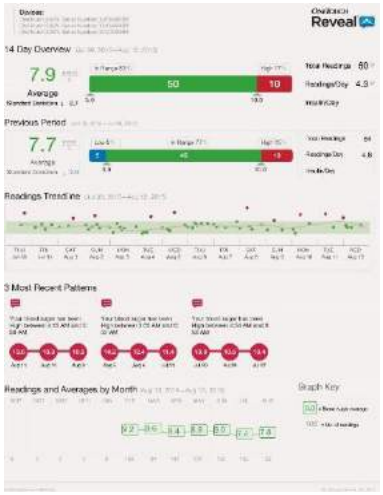
Take This App and Call Me in the Morning

A new category of prescription medical treatments, what executives call digital therapeutics, comes in the form of mobile apps.

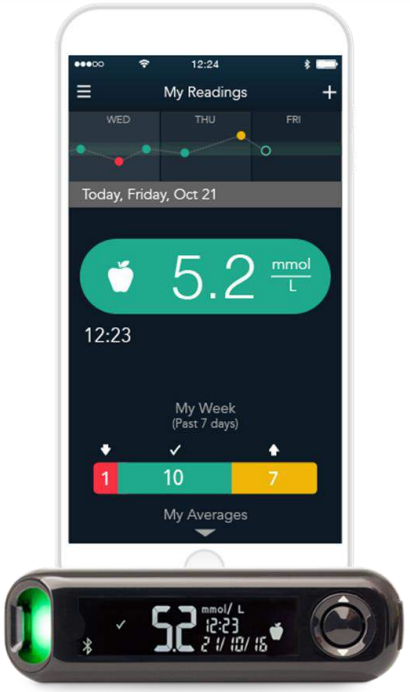
By Natasha Singer

March 18, 2018

Device Apps



One Touch Reveal



Contour Next One

LibreLink

MYSUGR DIABETES LOGBOOK

- To Help “Make Diabetes Suck Less”

Remote Monitoring May Improve Glucose Control & Device Utilization in Youth With Diabetes

Table. Effects of Follower(s)

	Age (years)	Number of Followers	
		0	1 or more
n, %	2-5	79 (7.5%)	975 (92.5%)
	6-12	354 (5.0%)	6660 (95.0%)
	13-18	395 (5.1%)	7314 (94.9%)
Device Utilization (days/week)	2-5	4.8	6.2**
	6-12	4.7	6.2**
	13-18	4.9	5.9**
Mean EGV (mg/dL)	2-5	190.0	186.8
	6-12	192.2	184.1**
	13-18	193.4	186.5*
Percent <70 mg/dL	2-5	4.0	3.2
	6-12	3.4	3.1
	13-18	3.9	3.2*
Percent 70-180 mg/dL	2-5	47.7	49.8
	6-12	46.7	51.0**
	13-18	46.3	49.7*
Percent >180 mg/dL	2-5	48.3	46.9
	6-12	49.9	45.9**
	13-18	49.8	47.0*

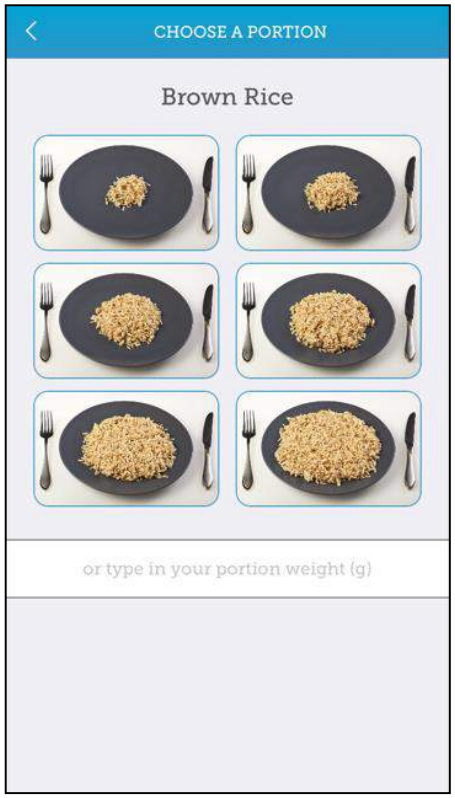
*, p<0.05 and **, p<0.001 compared to 0 followers

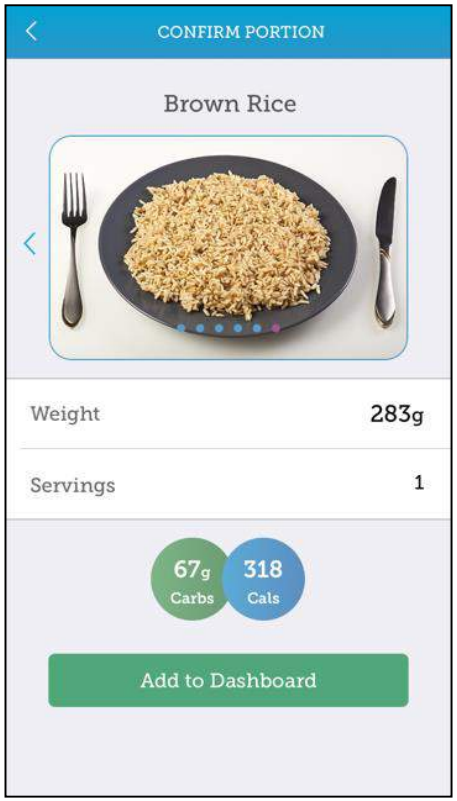
Significantly higher device utilization across all age ranges

Decreased time spent in hypo (<70 mg/dL), hyperglycemia (>180 mg/dL) and more time spent in euglycemia (70-180 mg/dL)

Derdzinski M, et al. Oral presentation. ATTD 2019.

CARBS & CALS





- Choose the plate that looks close to yours
- Can track other nutrients as well
- Customizable

https://www.youtube.com/watch?v=UTdoW
SW9YPg

FIGWEE PORTION EXPLORER

- Search for a food → fill your plate or bowl to resemble yours

- CHO count / portion chosen

https://www.youtube.com/watch?v=a1VmrwvJlQ0

Others…

- More than 1100 diabetes apps

- Sugarmate
- Glucose Buddy
- Medtronic Sugar IQ Diabetes Assistant
- Diabetes:M
- Fooducate
- Diabetes Connect
- My Fitness Pal

Using the Data

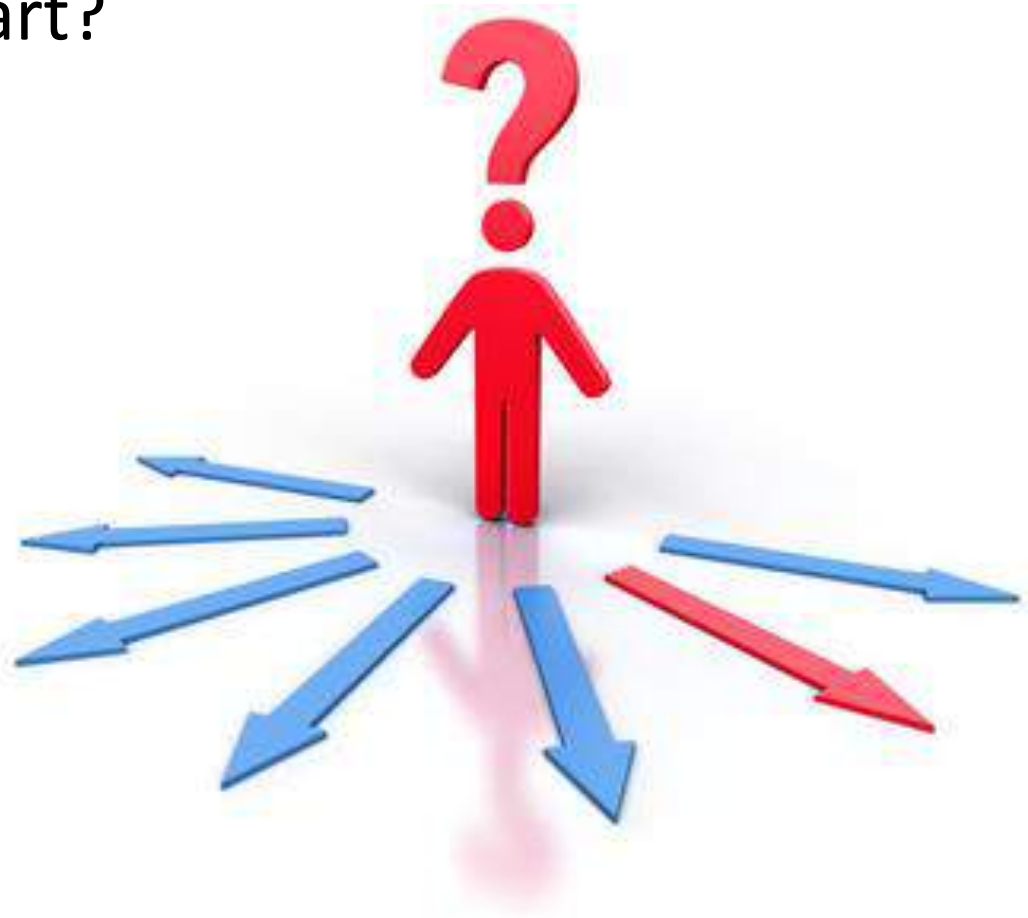
CGM

- “CGM is effective only when users are able to interpret and respond appropriately to their data.”

  Davida Krueger MSN, APN-BC, BC-ADM

Data Analysis

- Where do we start?



Disclaimer

- Everyone's diabetes is different.
- Everyone has choices about how they manage diabetes – we have a large toolbox (pumps, CGM's/FGM, meters, medications, software, apps, diets). Different tools will work for different people.
- There is often more than 1 right answer.
- ALWAYS consult with your diabetes care team before making any changes to your diabetes care plan.

What are we aiming for?

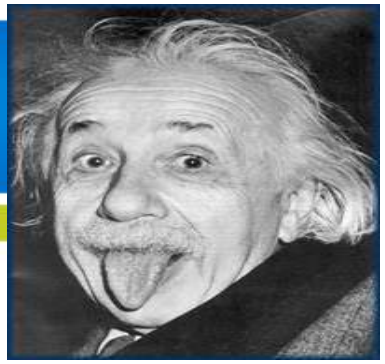
- **“In all the work with diabetes technology I’ve done, I’ve worn CGM for long periods of time. I don’t have diabetes, but I’ll eat a dessert and go up to 200 mg/dL (11.1mmol/L). I’ll also drop down to 50 (2.8) or 60 mg/dL (3.3). People with diabetes are comparing themselves to a false standard. The pancreas, for all of the advantages it has, still allows big excursions. It’s crazy to think it’s ideal.”**

-Dr. Steven Russell (Massachusetts General Hospital, Boston, MA) urging people with diabetes not to be too hard on themselves at the 14th North American Conference on Diabetes and Exercise in San Diego, CA, August 17-18.

Diabetes is Frustrating

- There is no such thing as a “normal” day in type 1 diabetes.
- Sometimes, there is NO pattern or trend.
- Always remember that diabetes subscribes to the philosophy that “on any given day, anything can happen”
  - We cannot make a change based on a single day or incident.

Second Verse, Same As the First.



Six Until Me. Kerri Sparling Posted: 07 Mar 2012 07:10 AM PST

Monday morning, I woke up at a blood sugar of 4.6mmol/L.

I had a cup of coffee, half of a banana, and two scrambled eggs for breakfast. I took 2 units of Humalog insulin to cover my meal, and then spent the morning playing with Birdy and doing some writing. Two hours after eating, I was at 7.9 mmol/L.

Tuesday morning, I woke up at a blood sugar of 5.4 mmol/L. I had a cup of coffee, half of a banana, and two fried eggs for breakfast. I took 2 units of Humalog insulin to cover my meal, and then spent the morning playing with the Birdzone and answering emails. Two hours after eating, I was 15.8 mmol/L.

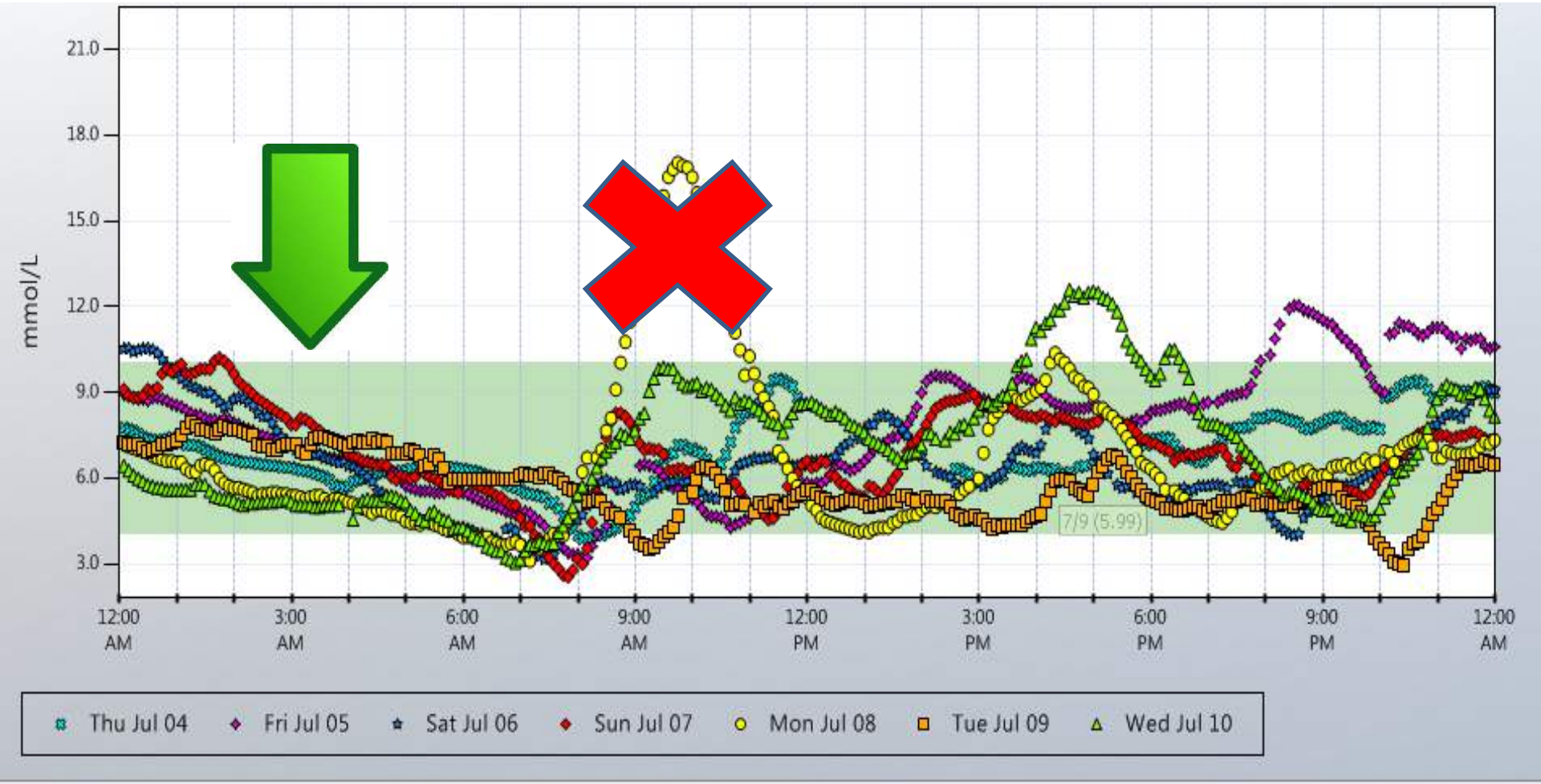
What. The. Eff?

Albert Einstein once said, "The definition of insanity is doing the same thing over and over again and expecting different results."

I think the definition of diabetes is doing the same thing, over and over again, and waiting to see which way the wind is blowing that day. Or maybe the definition of "insanity" is "diabetes." ;)

Looking at the Data - Tips

- Don’t be overwhelmed.
- Ideally review download reports BEFORE meeting with your educator/team.
- Avoid focusing on ‘outliers’; look for patterns first.


21.0
18.0
15.0
12.0
9.0
6.0
3.0
mmol/L
7/9 (5.99)
12:00 AM
3:00 AM
6:00 AM
9:00 AM
12:00 PM
3:00 PM
6:00 PM
9:00 PM
12:00 AM
Thu Jul 04
Fri Jul 05
Sat Jul 06
Sun Jul 07
Mon Jul 08
Tue Jul 09
Wed Jul 10

Data Interpretation Tips - Download

- Don’t be overwhelmed.
- Ideally review download reports BEFORE you meet with your educator/team.
- Avoid focusing on ‘outliers’; look for patterns first.
- Follow a stepwise approach to assess downloads

Data Interpretation Tips - Download

- Look at your data – diabetes is DIY!
- Don’t be overwhelmed.
- Ideally review download reports BEFORE you meet with your educator/team.
- Avoid focusing on ‘outliers’; look for patterns first.
- Follow a stepwise approach to assess downloads
- Don’t fix too much at once – you don’t have to solve everything in one sitting!
- Fix overnight issues first and then assess rest of day/evening

First Things First

- It's best to keep a log:
  - Food, timing of meals
  - Duration and type of exercise
  - Insulin doses
  - Noteworthy events
    (restaurant meals, illnesses, unusual stress, pump infusion set change, menses, etc.)

✓ **Recording data 1 or 2 weeks prior to appointment should provide sufficient data for performing effective analysis of BG data**

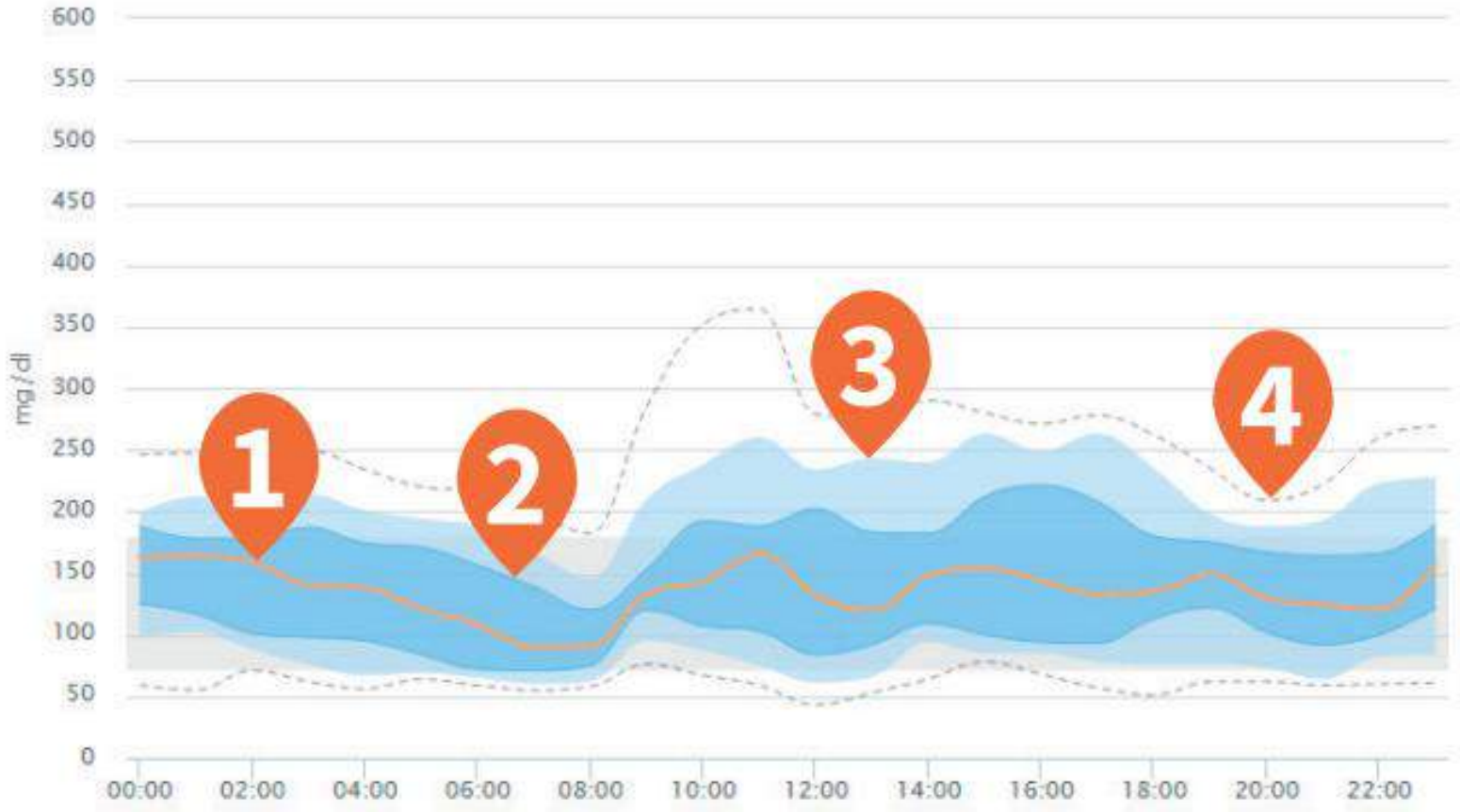
Adapted from: Scheiner, Gary. Practical Continuous Glucose Monitoring. 1st ed. Alexandria, VA: American Diabetes Association, 2015. Pages 42-43.

How to Read CGM Data – Step 1.

Important Info	Targets/Action
Data Sufficiency	10 - 14 days
CGM Use	> 70%
Standard Deviation	< 1/3 of AVG BG
Percent Time in Range (4 – 10 mmol/L)	> 70%
Percent Time in Hypo (< 4 mmol/L)	< 3%
Percent Time in Hyper (> 10 mmol/L)	< 25 %

How to Read CGM Data – Step 2.

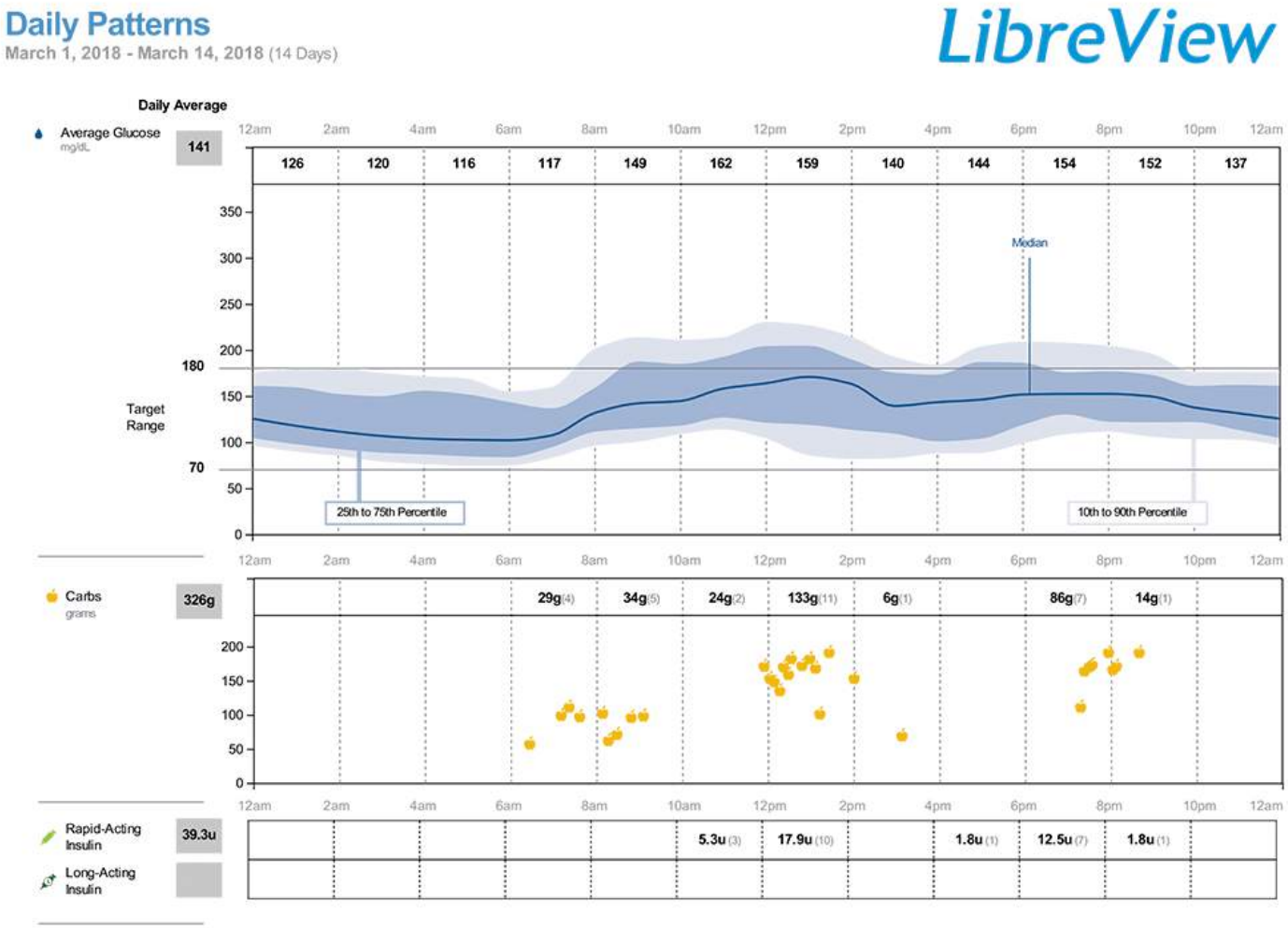
The Ambulatory Glucose Profile (AGP)



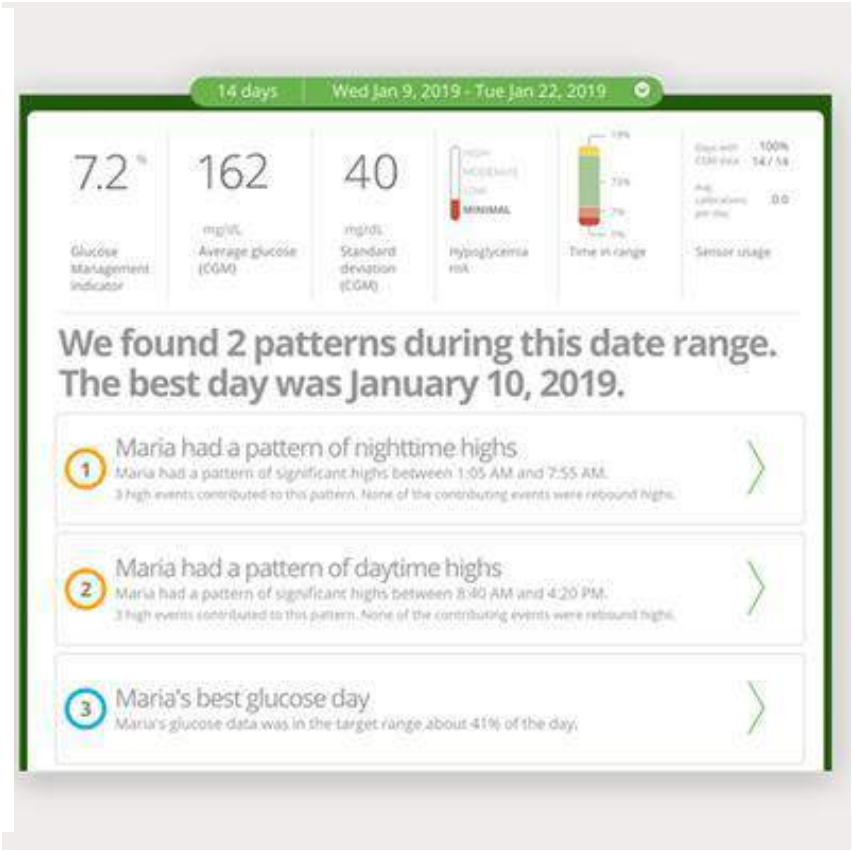
Diabetes Software Features

- Glucose monitoring data analysis (meter, FGM, CGM)
- Logbooking and organization of data
- Tracks basal and bolus settings for an insulin pump
- Records of carbs and actual insulin delivery
- Allows for manual log of entries for exercise and other factors
- Statistical analysis
- Prediction of future blood sugars, trends and coaching/adjustment of dosing

LibreView (Abbott)



Clarity (Dexcom)



MySugr (Roche)

WEEK 28	BASAL	BOLUS	ESTIMATED HBA1C	BLOOD GLUCOSE AVERAGE	BLOOD GLUCOSE DEVIATION	ACTIVITY	HYPOS	HYPERS
FROM: Jul 9, 2017 UNTIL: Jul 15, 2017	73% 79.29 IU/Day	27% 29.86 IU/Day	7.3 %	162 mg/dL	±50 mg/dL	0:00	0% 0	27% 10

SUN, 9. (1:00 AM · 3:00 AM · 5:00 AM · 7:00 AM · 9:00 AM · 11:00 AM · 1:00 PM · 3:00 PM · 5:00 PM · 7:00 PM · 9:00 PM · 11:00 PM · SUM)

													SUM	
BASAL				45.0								40.0	85.0	75%
BOLUS							11.0		18.0				29.0	25%
BG				157[1]	161[2]	×[3]	168[5]	×[7]	142[9]	×[11]		103[13]	Ø146	
CARBS					0[4]		0[6]	0[8]	0[10]	0[12]				
ACT.														

[1]Before the meal, Breakfast [2]After the meal, Breakfast [3]Breakfast [4]Eggs, bacon, sausage, hashbrowns, coffee w cream [5]Lunch, Before the meal [6]G2 [7]Lunch [8]Chicken, brownie bite [9]Snack, Before the meal, Dinner [10]Mac nuts, G2 [11]Dinner [12]Chick patty w putanesca and mozzarella, spaghetti [13]After the meal, Dinner, Bedtime

MON, 10. (1:00 AM · 3:00 AM · 5:00 AM · 7:00 AM · 9:00 AM · 11:00 AM · 1:00 PM · 3:00 PM · 5:00 PM · 7:00 PM · 9:00 PM · 11:00 PM · SUM)

													SUM	
BASAL					45.0			10.0				40.0	85.0	75%
BOLUS									19.0				29.0	25%
BG		97[1]			129[2]	173[4]		153[5]	173[9]	×[9]	187[11]	158[13]	Ø153	
CARBS					0[3]		0[5]	0[7]		0[10]	0[12]			
ACT.														

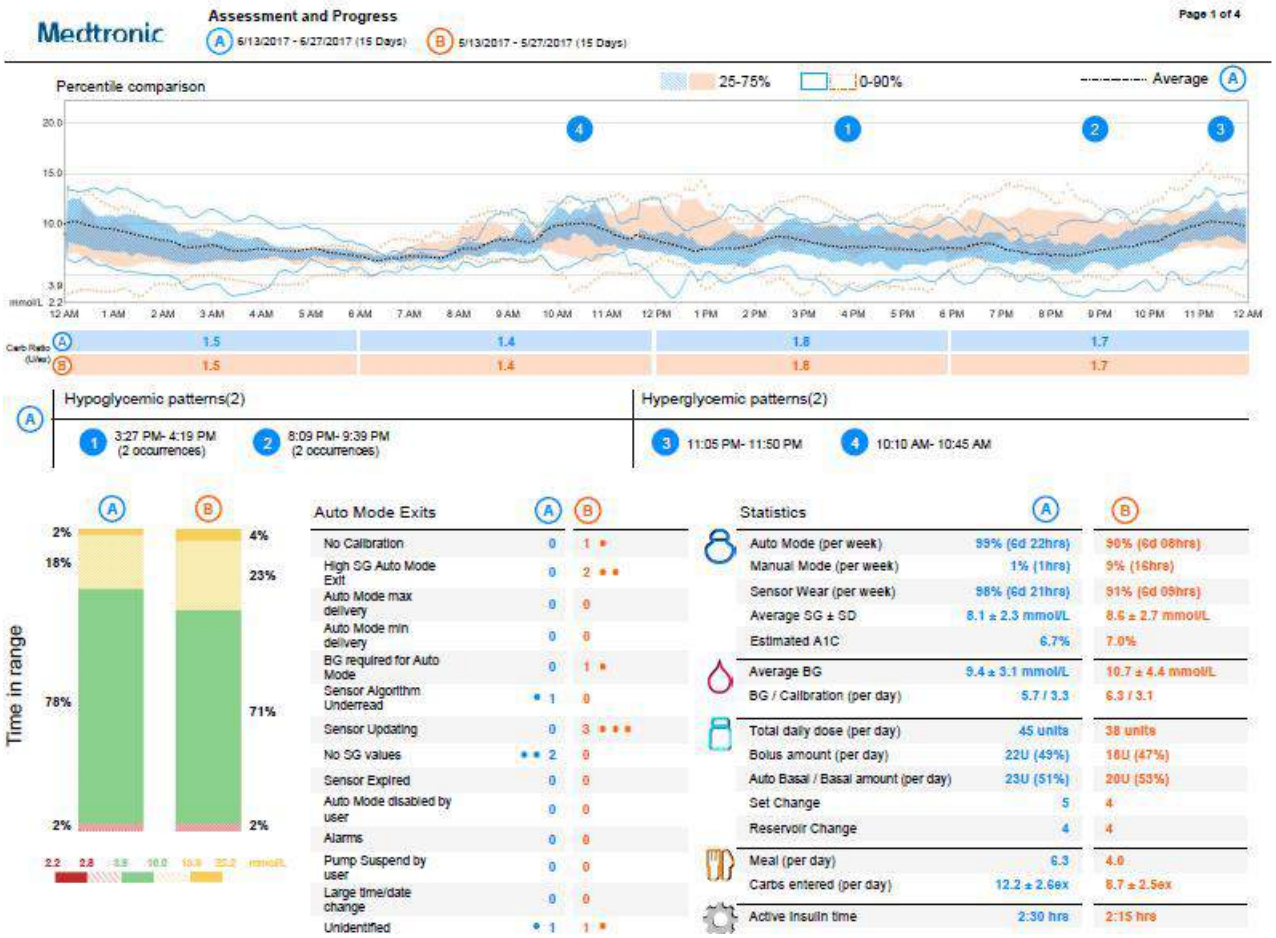
[1]At night [2]Before the meal, Breakfast [3]1 sprouted toast w butter, 2 HB eggs, tea w 1/2&1/2 [4]After the meal, Breakfast, Housework [5]Mac nuts, water [6]Lunch [7]Chicken sandwich, hello panda, water [8]Lunch, After the meal [9]Snack [10]Ice cream [11]Before the meal, Dinner [12]7 grains, daram masala with tofu and veggies, diet cola , brownie bite [13]After the meal, Dinner, Bedtime

TUE, 11. (1:00 AM · 3:00 AM · 5:00 AM · 7:00 AM · 9:00 AM · 11:00 AM · 1:00 PM · 3:00 PM · 5:00 PM · 7:00 PM · 9:00 PM · 11:00 PM · SUM)

													SUM	
BASAL					45.0			10.0			23.0	40.0	85.0	72%
BOLUS													33.0	28%
BG					101[1]	198[3]		145[5]	200[7]	×[9]	288[11]	129[12]	Ø177	
CARBS					0[2]		0[4]	0[6]	0[8]	0[10]				
ACT.														

[1]Before the meal, Breakfast [2]2 sprouted toast w butter, tea w 1/2&1/2 [3]After the meal, Breakfast, Housework [4]Water, hello panda [5]Lunch, Before the meal [6]Is in w chicken, diet cola [7]Lunch, After the meal, Housework [8]Diet cola [9]Snack [10]2 sprouted toast w butter, sour gummies, water [11]Before the meal, Dinner [12]After the meal, Dinner, Bedtime

Carelink (Medtronic)



Medtronic

Assessment and Progress

A 5/13/2017 - 5/27/2017 (15 Days) B 5/13/2017 - 5/27/2017 (15 Days)

Page 1 of 4

Percentile comparison

25-75% 10-90% Average A

20.0 15.0 10.0 3.9 mmol/L 2.2

12 AM 1 AM 2 AM 3 AM 4 AM 5 AM 6 AM 7 AM 8 AM 9 AM 10 AM 11 AM 12 PM 1 PM 2 PM 3 PM 4 PM 5 PM 6 PM 7 PM 8 PM 9 PM 10 PM 11 PM 12 AM

Carb Ratio (U/ex)					
A	1.5	1.4	1.8	1.7
B	1.5	1.4	1.8	1.7

A

Hypoglycemic patterns(2)

1 3:27 PM- 4:19 PM (2 occurrences)

2 8:09 PM- 9:39 PM (2 occurrences)

Hyperglycemic patterns(2)

3 11:05 PM- 11:50 PM

4 10:10 AM- 10:45 AM

Time in range

	A	B
	2%	4%
	18%	23%
	78%	71%
	2%	2%

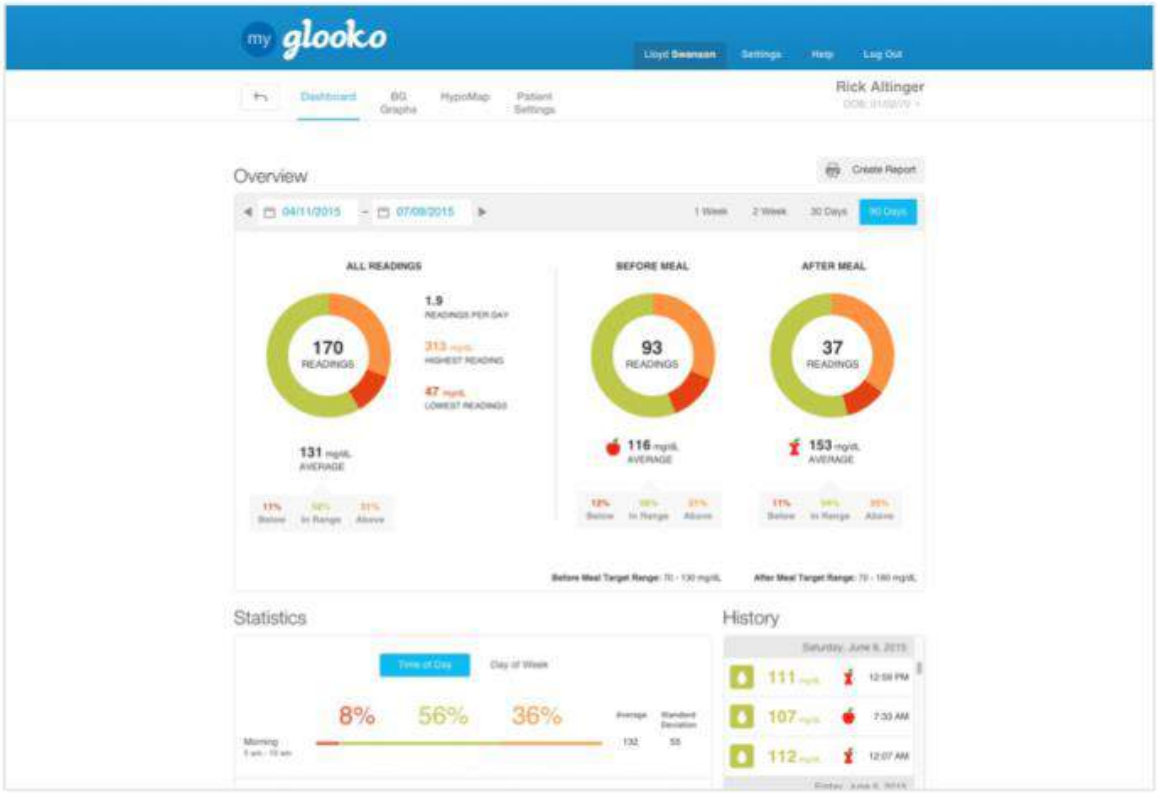
2.2 2.8 3.9 10.0 10.9 22.2 mmol/L

Auto Mode Exits	A	B
No Calibration	0	1 •
High SG Auto Mode Exit	0	2 • •
Auto Mode max delivery	0	0
Auto Mode min delivery	0	0
BG required for Auto Mode	0	1 •
Sensor Algorithm Underread	• 1	0
Sensor Updating	0	3 • • •
No SG values	• • 2	0
Sensor Expired	0	0
Auto Mode disabled by user	0	0
Alarms	0	0
Pump Suspend by user	0	0
Large time/date change	0	0
Unidentified	• 1	1 •

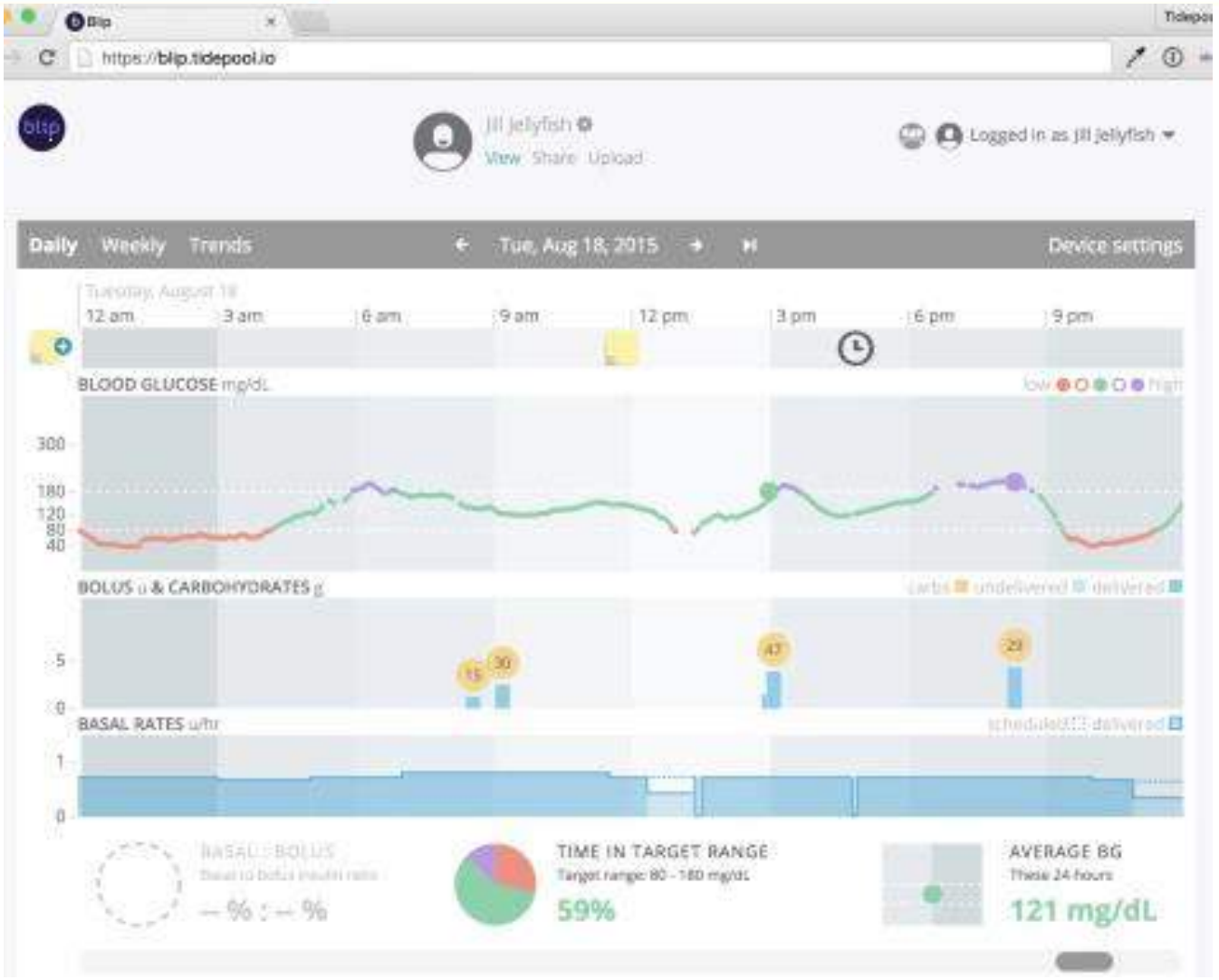
Statistics	A	B
Auto Mode (per week)	99% (6d 22hrs)	90% (6d 06hrs)
Manual Mode (per week)	1% (1hrs)	9% (1&hrs)
Sensor Wear (per week)	98% (6d 21hrs)	91% (6d 09hrs)
Average SG ± SD	8.1 ± 2.3 mmol/L	8.6 ± 2.7 mmol/L
Estimated A1C	6.7%	7.0%
Average BG	9.4 ± 3.1 mmol/L	10.7 ± 4.4 mmol/L
BG / Calibration (per day)	5.7 / 3.3	6.3 / 3.1
Total daily dose (per day)	45 units	38 units
Bolus amount (per day)	22U (49%)	18U (47%)
Auto Basal / Basal amount (per day)	23U (51%)	20U (53%)
Set Change	5	4
Reservoir Change	4	4
Meal (per day)	6.3	4.0
Carbs entered (per day)	12.2 ± 2.6ex	8.7 ± 2.5ex
Active Insulin time	2:30 hrs	2:15 hrs

Glooko


8:44 PM
77%
History
Logbook
Thursday, December 25, 2014
96 mg/dL
6:57 PM
Running
1 hour, 30 minutes,...
6:56 PM
Monday, December 15, 2014
112 mg/dL
10:48 AM
Chicken Breast, Bro...
Carbs: 9.83 g
10:47 AM
Saturday, December 13, 2014
196 mg/dL
5:33 PM
Ate a huge meal at w...
5:32 PM
55 mg/dL
4:44 PM
Thursday, December 11, 2014


my glooko
Rick Altinger
Overview
ALL READINGS
BEFORE MEAL
AFTER MEAL
170 READINGS
93 READINGS
37 READINGS
131 mg/dL AVERAGE
116 mg/dL AVERAGE
153 mg/dL AVERAGE
Statistics
History
8%
56%
36%

Tidepool


Blip
https://blip.tidepool.io
Jill Jellyfish
View Share Upload
Logged in as Jill Jellyfish
Daily Weekly Trends
Tue, Aug 18, 2015
Device settings
12 am
3 am
6 am
9 am
12 pm
3 pm
6 pm
9 pm
BLOOD GLUCOSE mg/dL
300
180
120
80
40
BOLUS u & CARBOHYDRATES g
5
0
BASAL RATES u/hr
1
0
TIME IN TARGET RANGE
59%
AVERAGE BG
121 mg/dL

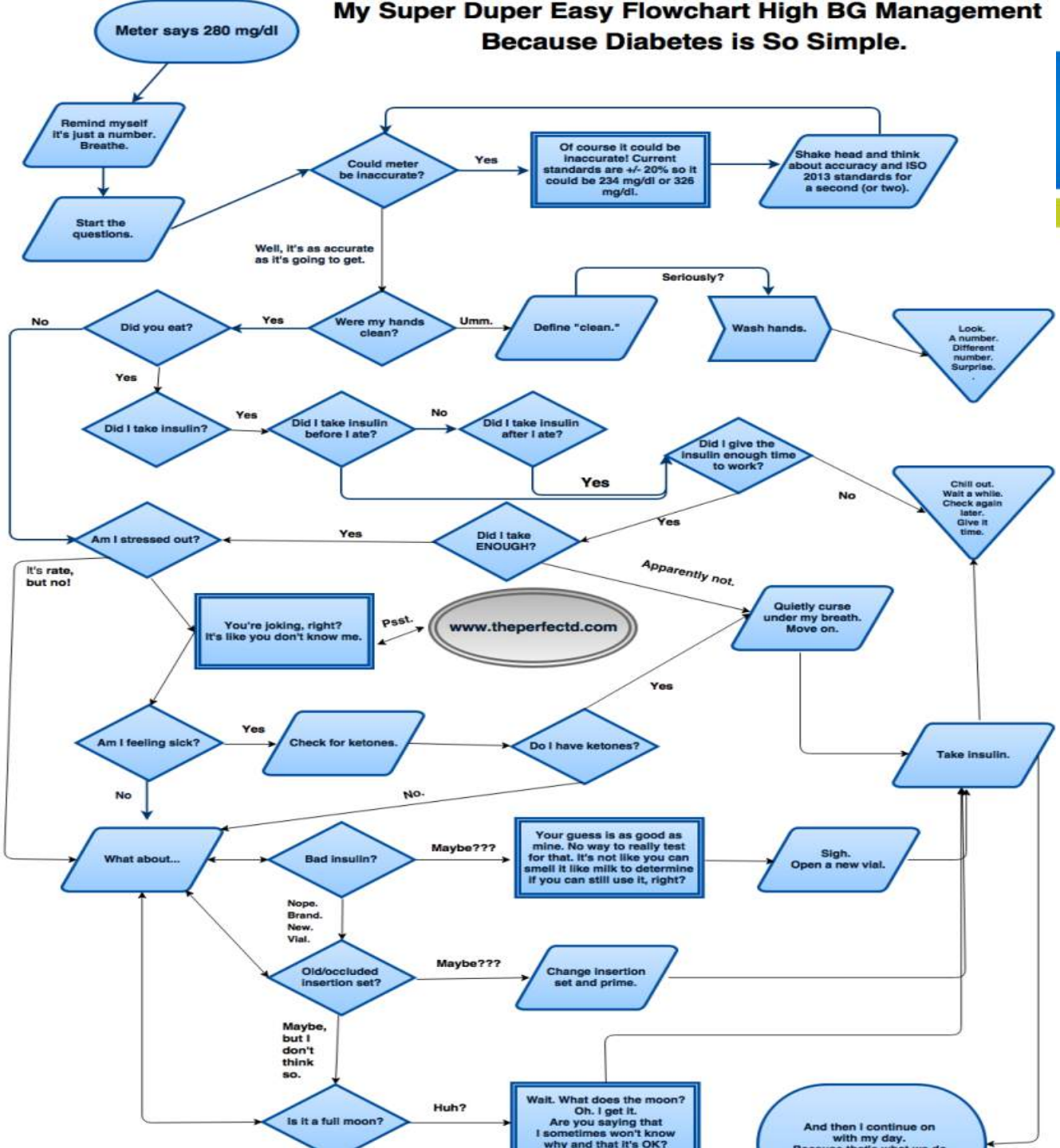
Nightscout

Glucose distribution (14 days total)

Range	% of Readings	# of Readings	Average	Median	Standard Deviation	A1c estimation*
Low (<4.4):	9.0%	242	3.7	3.8	0.5	
Normal:	76.0%	1979	6.4	6.4	1.2	
High (>=8.9):	15.0%	402	10.8	10.3	1.6	
Overall:		2684	6.9	6.6	2.2	6.0%$_{DCCT}$ | 42$_{IFCC}$

Mean Total Daily Change	Time in fluctuation (>0.27 mmol/l/5m)	Time in rapid fluctuation (>0.55 mmol/l/5m)
62.1 mmol/L	23.0%	7.0%
Mean Hourly Change	**GVI**	**PGS**
2.59 mmol/L	1.37	40.77

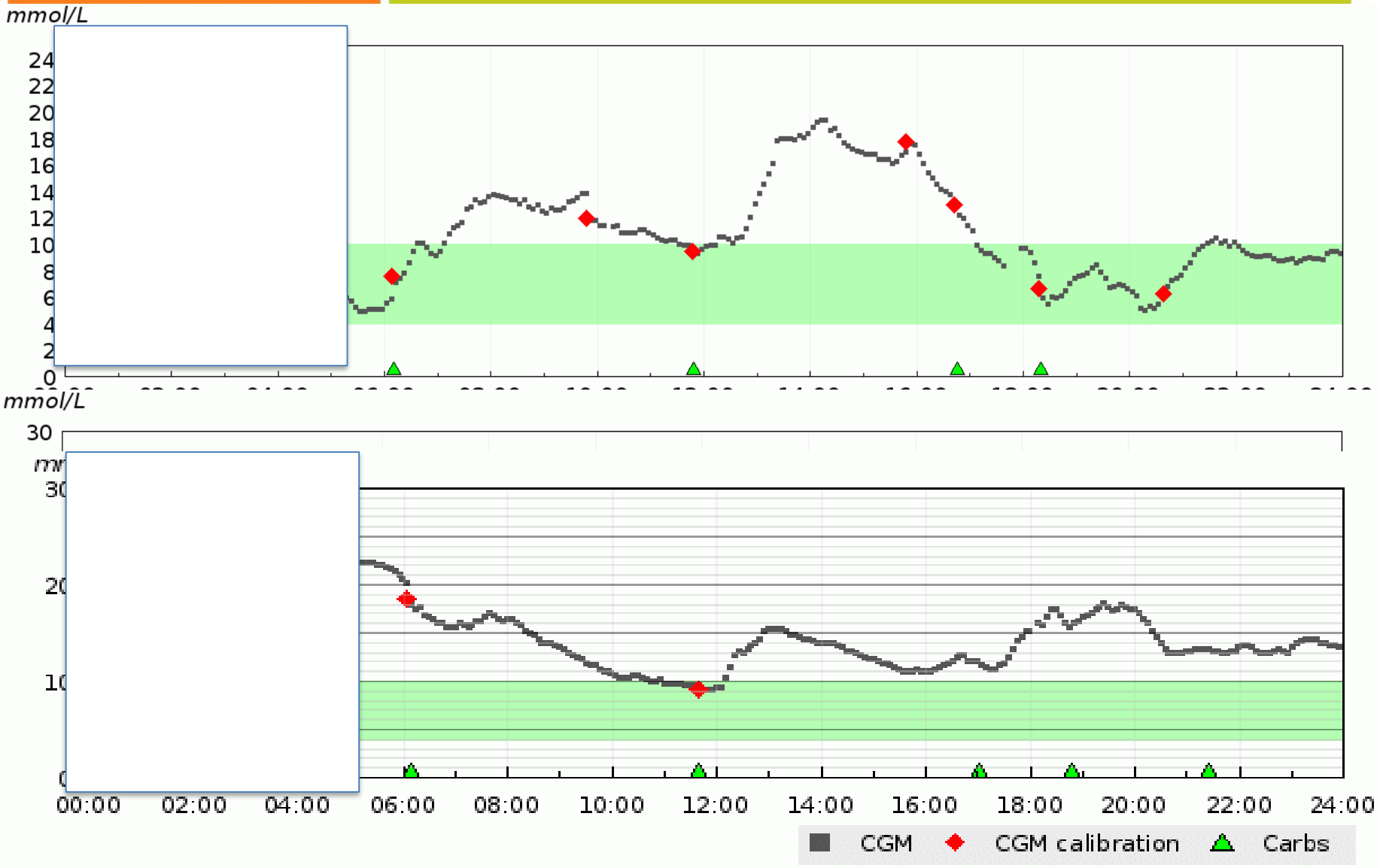
My Super Duper Easy Flowchart High BG Management
Because Diabetes is So Simple.



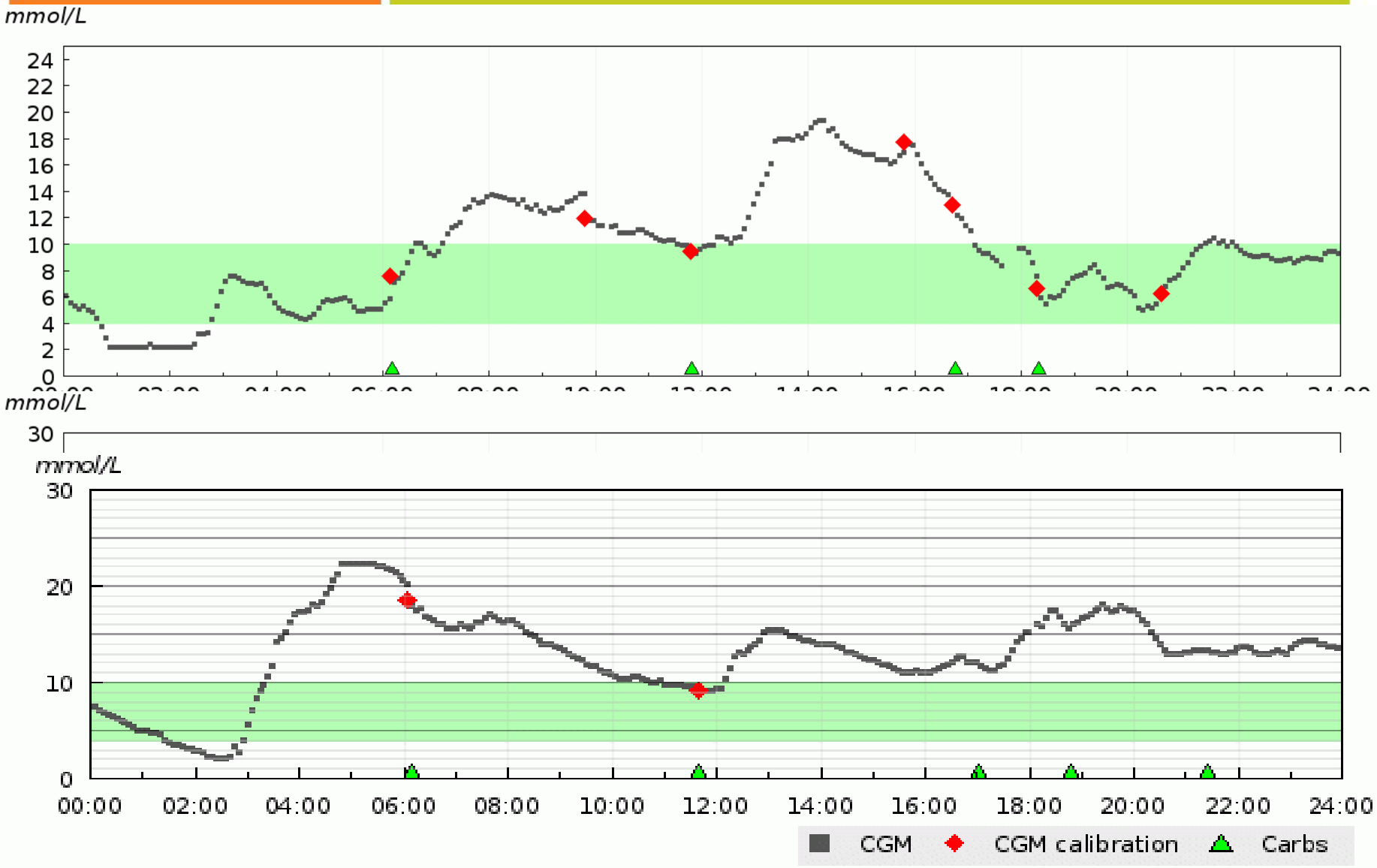
No diabetes…

Common Scenarios – What would you do?

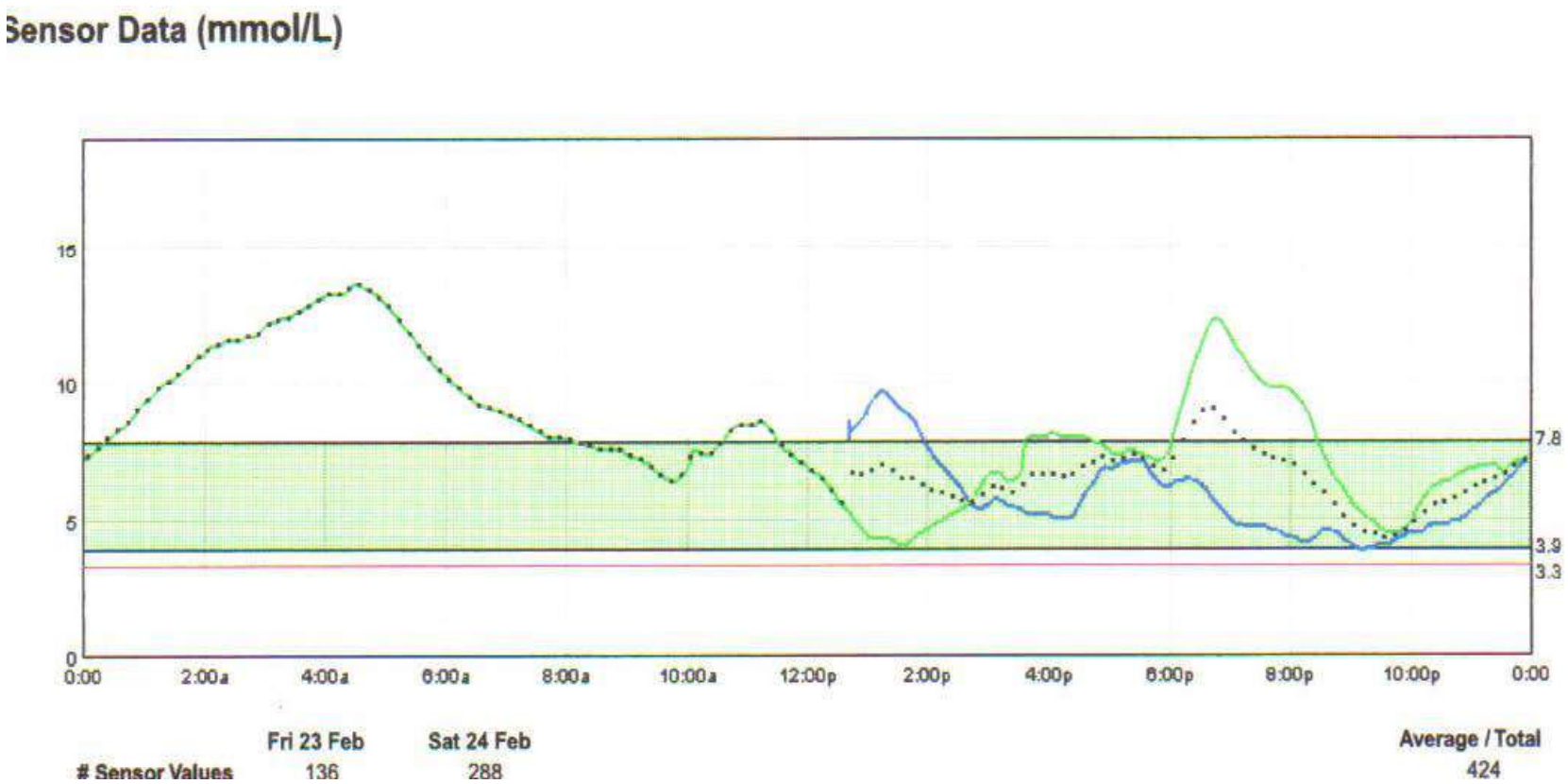
Question: What's happening here?



Hypoglycemia – causes the roller coaster



Question - Lisa ate pizza…



Why Use a Combination/Dual Wave Bolus?

- Prevents **early post meal lows** (from insulin peaking before blood glucose rises)
- Prevents **late post meal highs** (from not having insulin to "cover" the late rise in glucose from carbohydrate)
- The more rapidly-absorbed carbohydrate is "covered" now, and the more slowly absorbed carbohydrates are "covered" later

An ode to pizza, From a T1D Mom

DEAR PIZZA:

We really like you a lot
But my son's T1D, you see, it does not

Everyone says to just dose and move on
But when we do, the night gets extremely long

All that bread and the toppings,
the grease and the cheese
Say what you will, it isn't a breeze

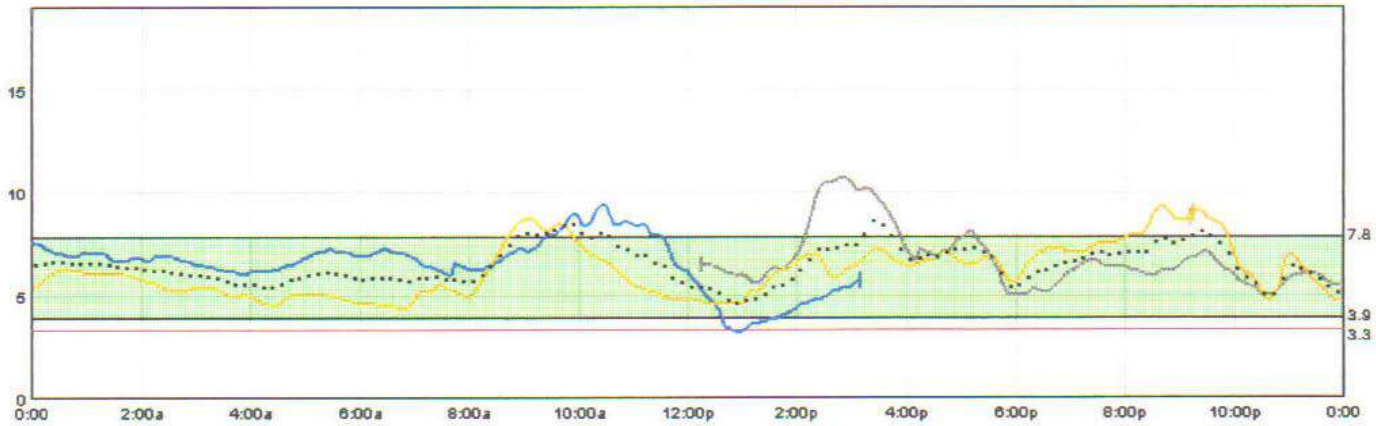
With the combo bolus and temp basal rate
You'd think all would be great

But the highs and lows and that
BEEP BEEP BEEP
Keep me up all night, I get next to no sleep

There is more to say, but let's call it a wrap
So I can sneak off to bed, for a quick little nap

WWW.CARBCOUNTINGMAMA.CA

What is Possible…50%/50% over 4 hours



WHAT CAN YOU DO TODAY

- **I CHALLENGE YOU TO:**

1. Download 1 App.
2. Test it out.
3. Remember that there is **no such thing as a perfect tool – diabetes is far from a perfect science**.

Thank you! Questions?

Lorraine Anderson RD, CDE
416-303-0996