ECHO IDAHO

Diabetes and Metabolic Conditions

Food in Focus: Continuing the Conversation on CGM Interpretation

April 2, 2026

Megan R. Williams MDA, RDN, LD, CDCES

Program Coordinator

Diabetes & Nutrition Management

Family Health Services

University of Idaho
School of Health and Medical Professions

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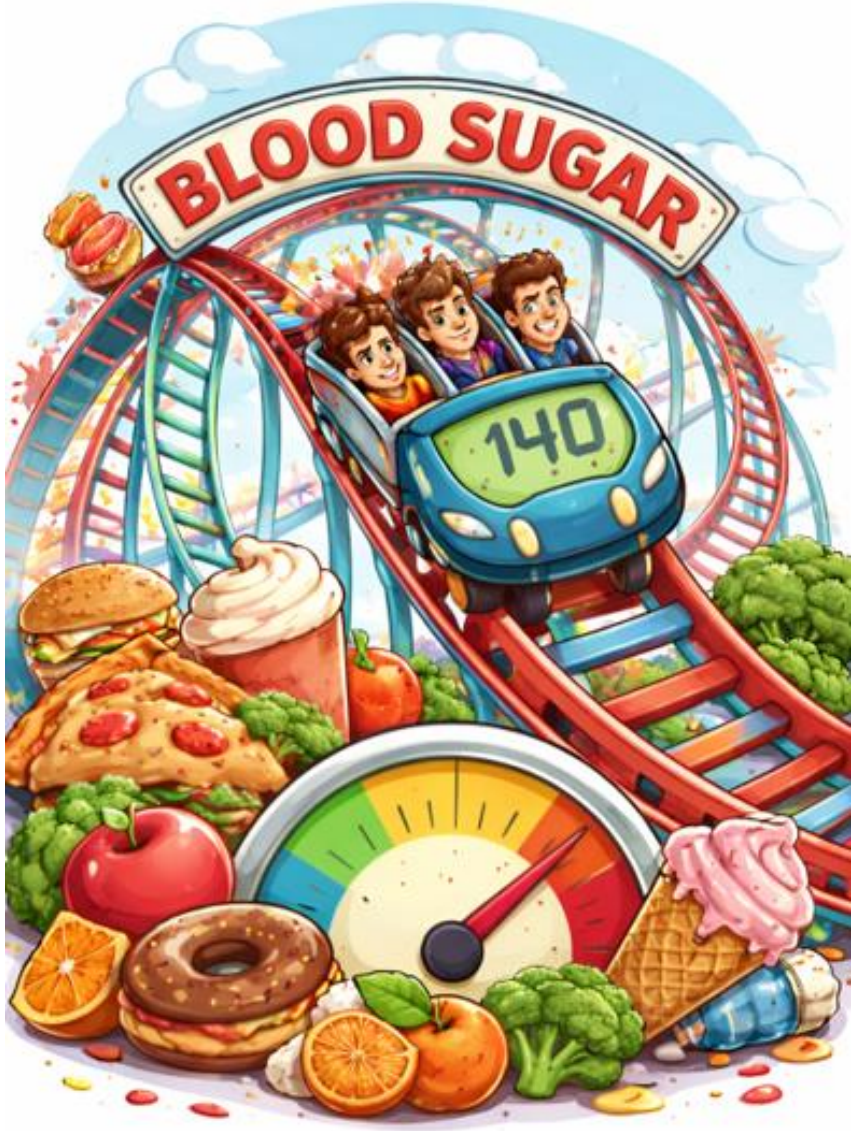
Learning Objectives

- Describe the impact of fat, fiber, and diabetes medications on post meal glucose.
- Identify basic variables that impact glucose management utilizing Continuous Glucose Monitoring (CGM).
- Illustrate ways to promote behavior change utilizing CGM with patients in primary care.



Fat, Protein, Fiber and Glucose Variability

- Fat, Protein, Fiber delay gastric emptying.

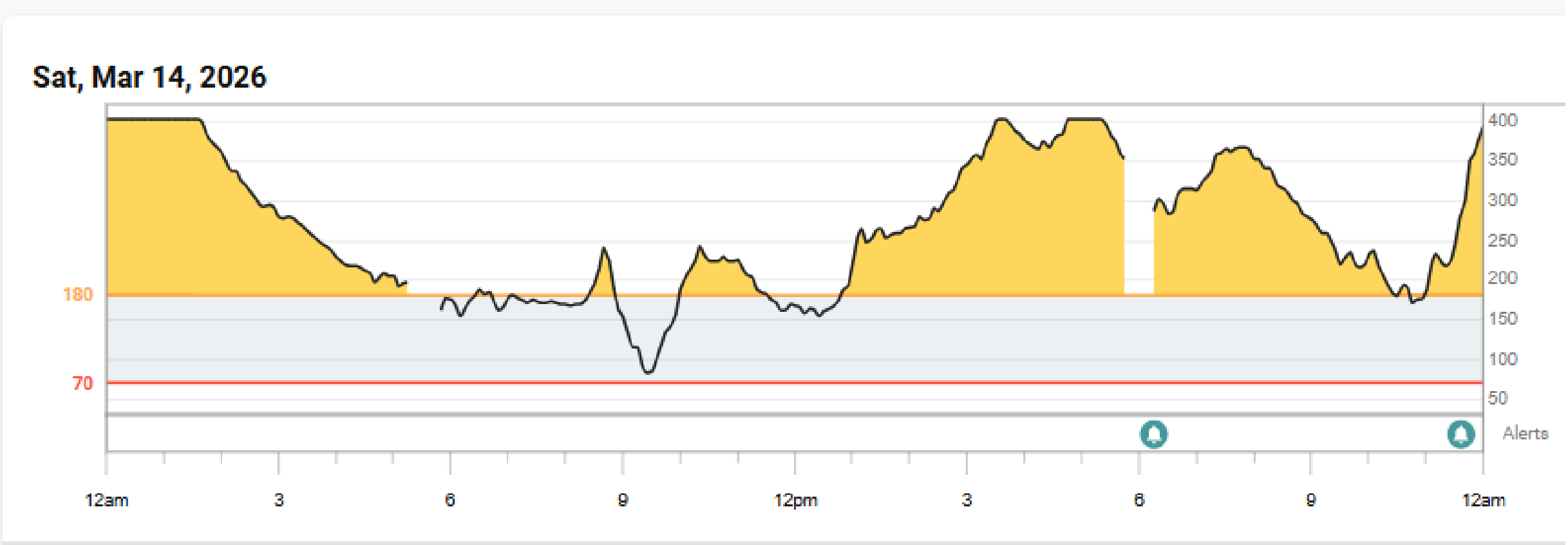
And so do GLP-1's!

(GLP-1 RA & GIP)

Putting it together....with Insulin

Insulin lispro (rapid acting)	15-30 mins	0.5-2 hrs	2-5 hrs
Insulin aspart (rapid acting)	15 mins	1-3 hrs	3-5 hrs
Insulin glulisine (rapid acting)	12-30 mins	1.5 hrs	5-6 hrs
Fiasp (ultra-rapid acting)	5 mins	0.5 hrs	3-5 hrs

Duration of Insulin action- Oops!



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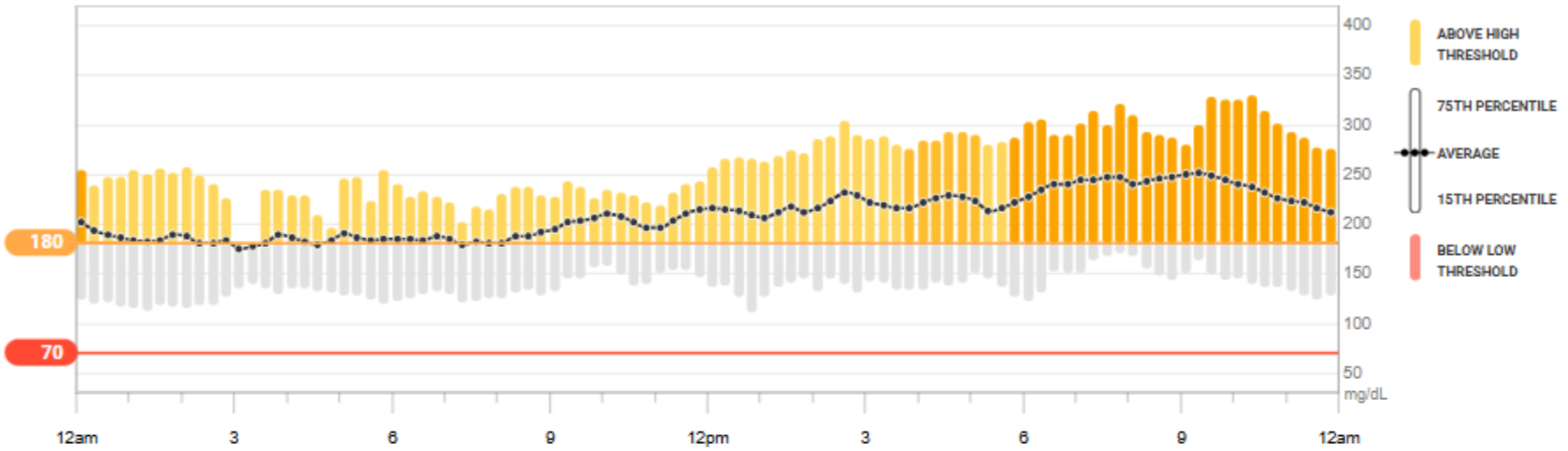
Among other variables...

- Exercise (or lack thereof)
- Travel
- Hydration
- STRESS
- School/Routines
- Sleep
- Alcohol
- Steroids/Medications
- Site issues/Injection form
- Hormones (puberty, Menopause)
- Temperature/Altitude
- Swing Shifts

- Overview Slides
- A1C 6.2?

This graph shows your data averaged over 14 days



We found 1 pattern during this date range.
The best day was March 4, 2026.

[redacted] had a pattern of daytime highs

[redacted] had a pattern of significant highs between 5:55 PM and 12:10 AM.

11 high events contributed to this pattern. None of the contributing events were rebound highs.

[redacted] best glucose day

[redacted] glucose data was in the target range about 86% of the day.

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A1C 6.2??

Average glucose
209 mg/dL

GMI
8.3 %

Standard deviation
72 mg/dL

Coefficient of Variation
34.3 %

Time in Range

29% Very High
27% High
44% In Range
0% Low
0% Very Low

Target Range:
70-180 mg/dL

Sensor usage

Days with data
13/14 days

Time active
91%

Avg. calibrations per day
0.0

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- 39 yo
- Type 2
- Last A1C 7.9
- Lantus 20 units &
- Dulaglutide 3mg

Average glucose
239 mg/dL

GMI
9.0 %

Standard deviation
75 mg/dL

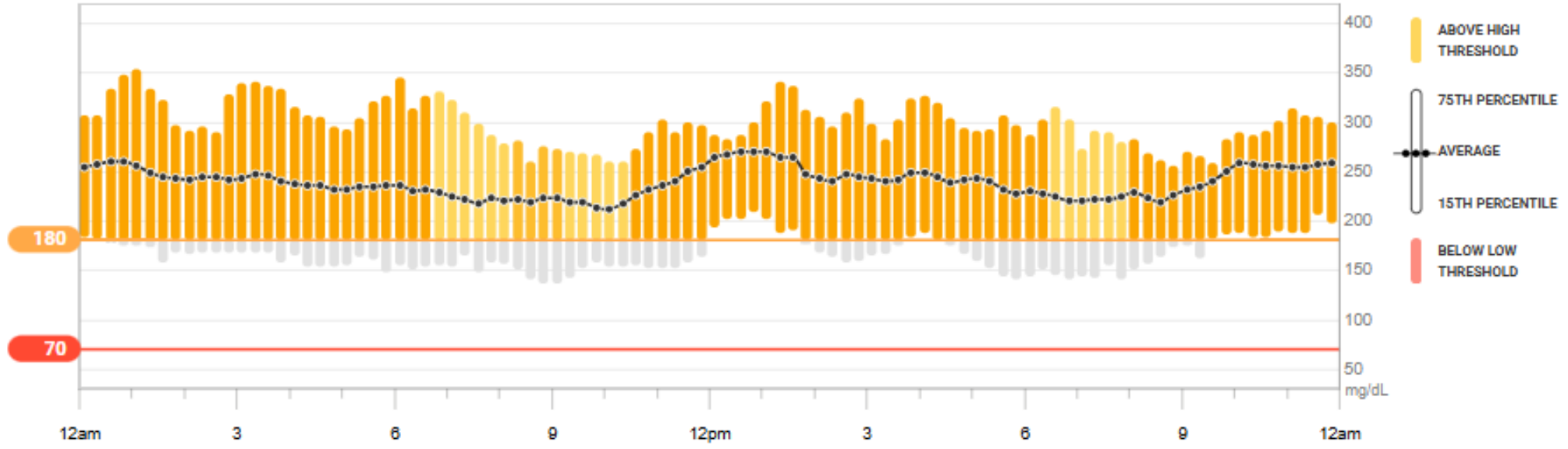
Coefficient of Variation
31.3 %

Time in Range
39% Very High
33% High
28% In Range
0% Low
0% Very Low

Target Range:
70-180 mg/dL

Sensor usage
Days with data
13/14 days
Time active
96%
Avg. calibrations per day
0.0

This graph shows your data averaged over 14 days



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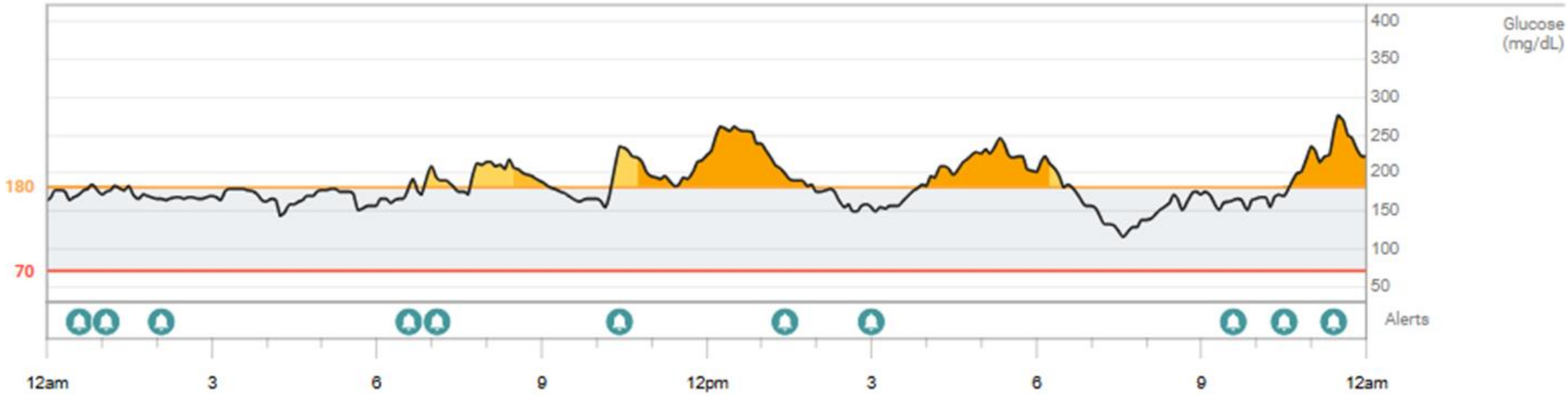
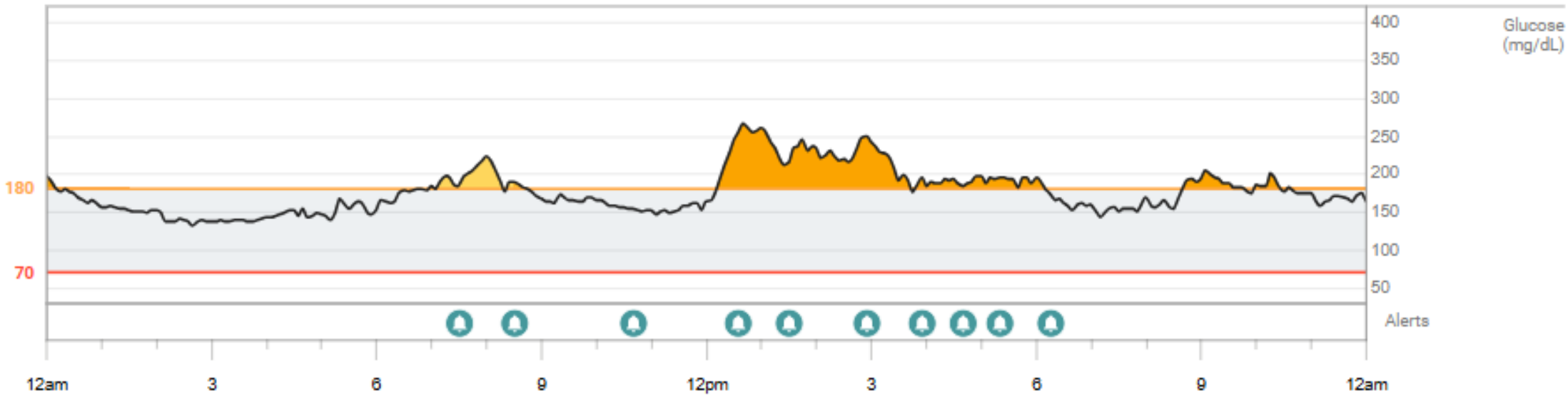

Glucose
(mg/dL)
400
350
300
250
200
150
100
50
180
70
Alerts
12am
3
6
9
12pm
3
6
9
12am


Glucose
(mg/dL)
400
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Alerts
12am
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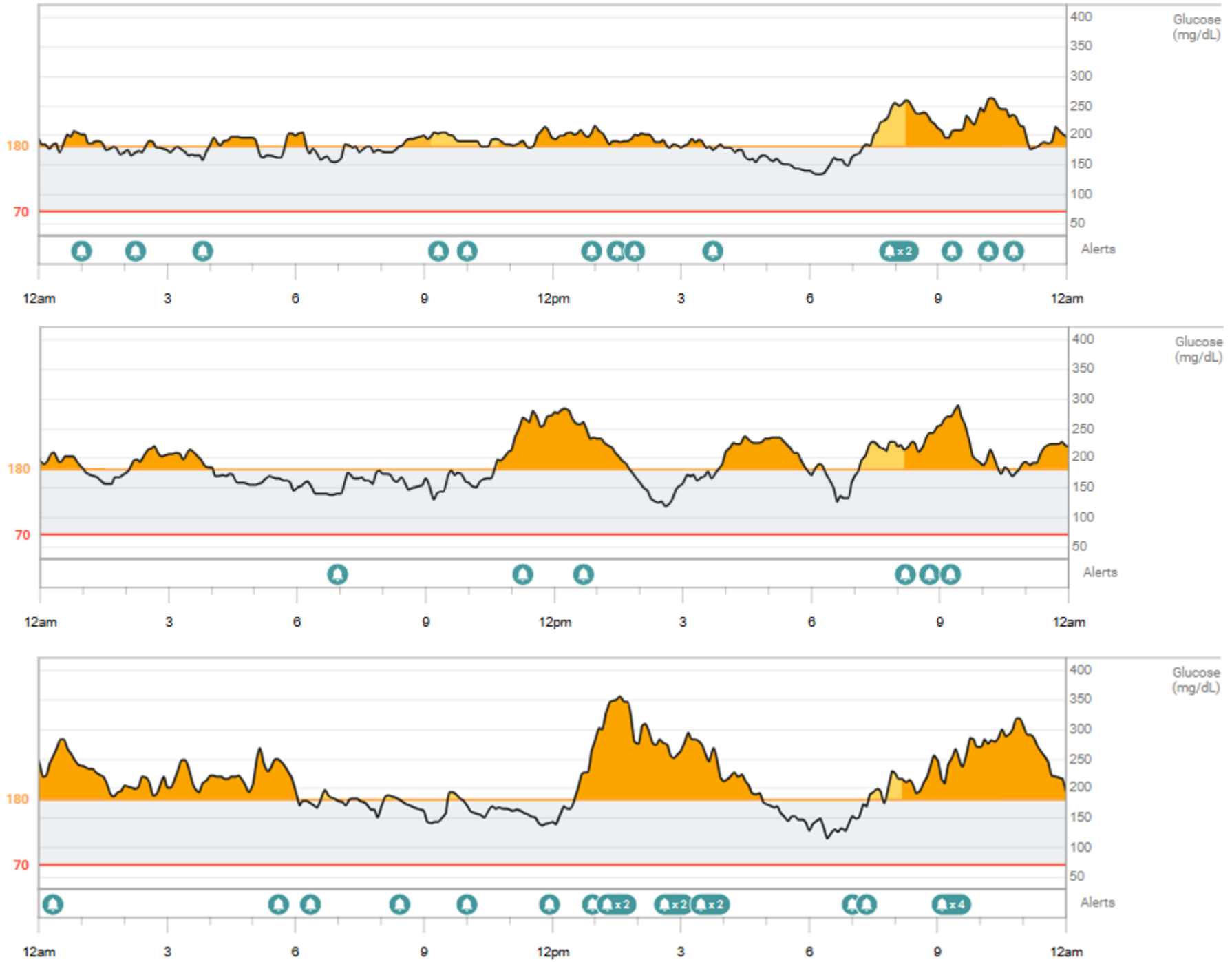
12am



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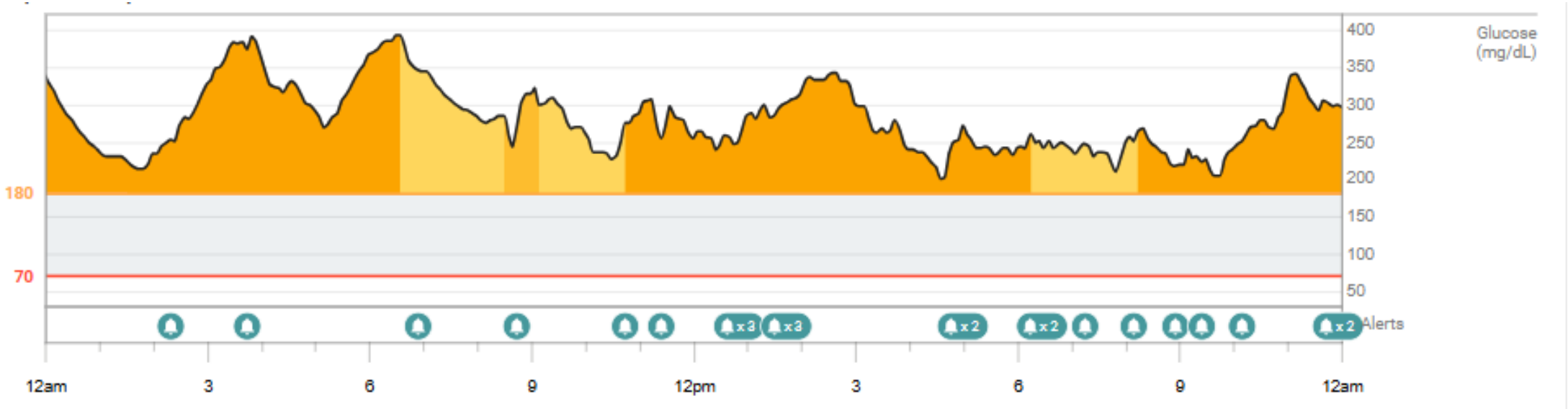

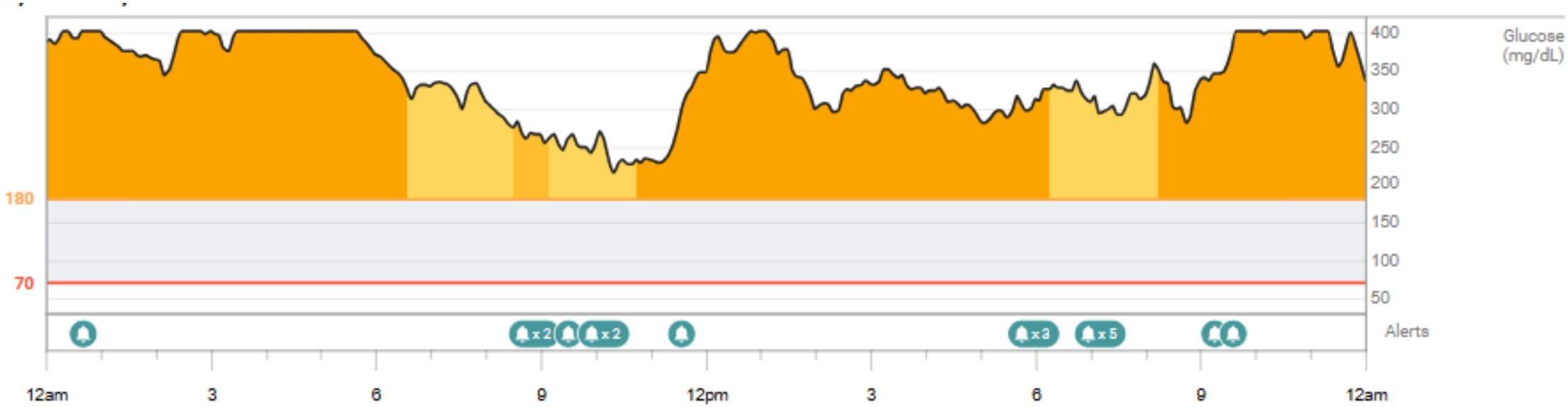

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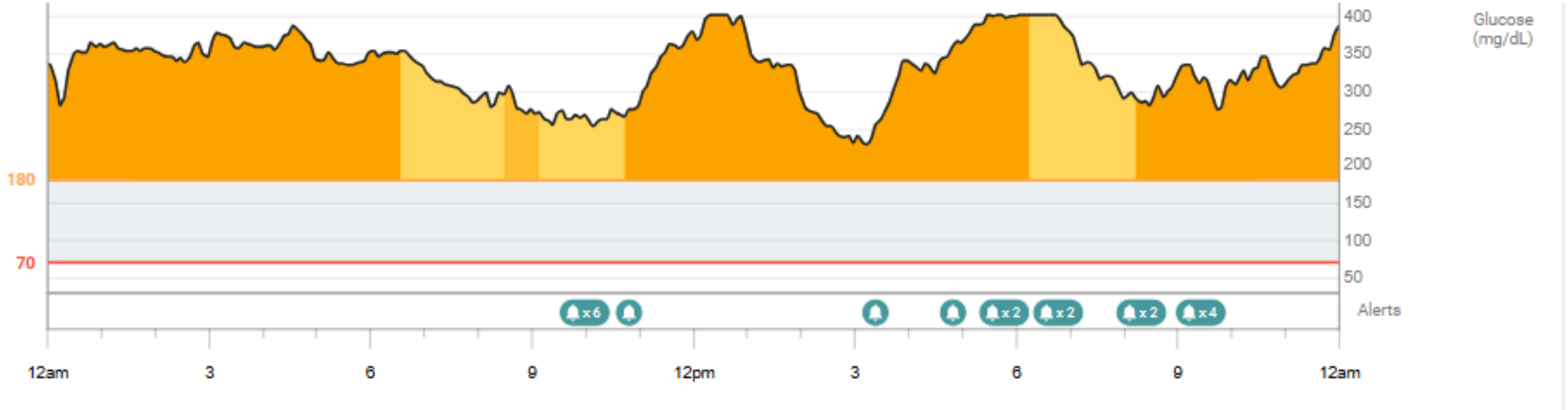

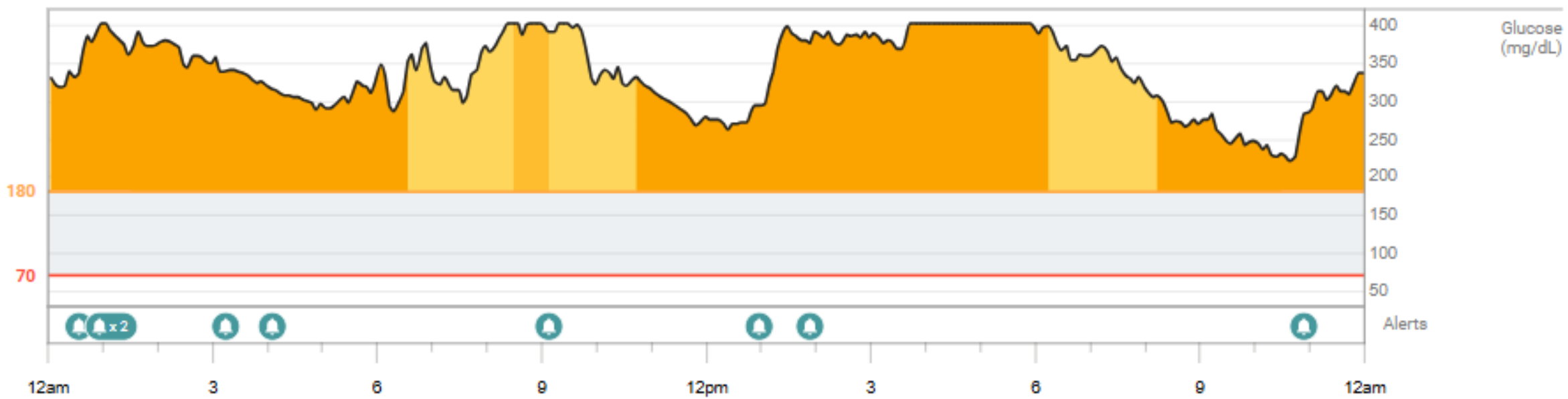

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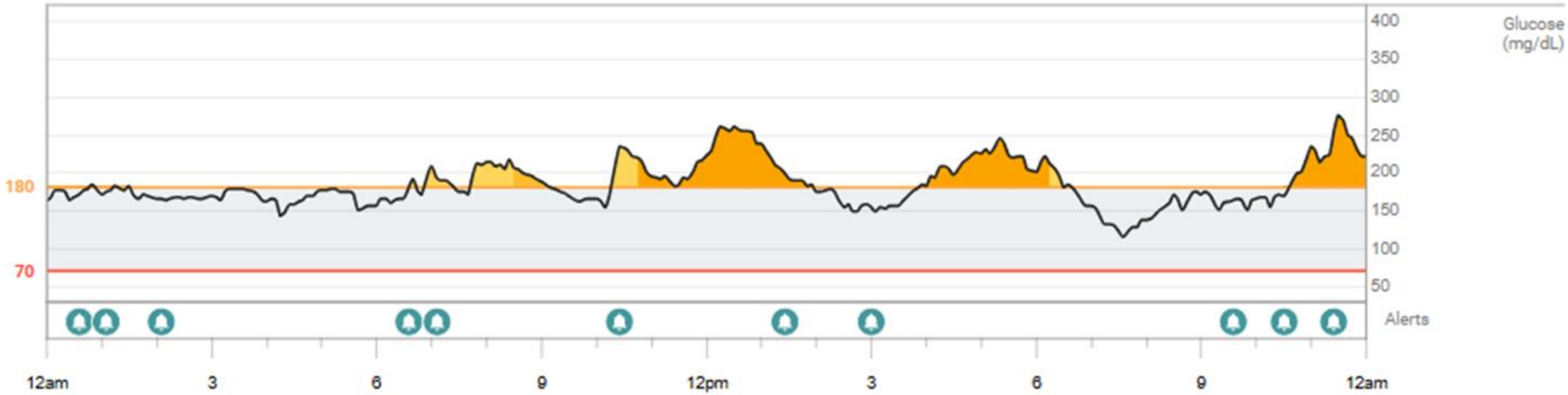
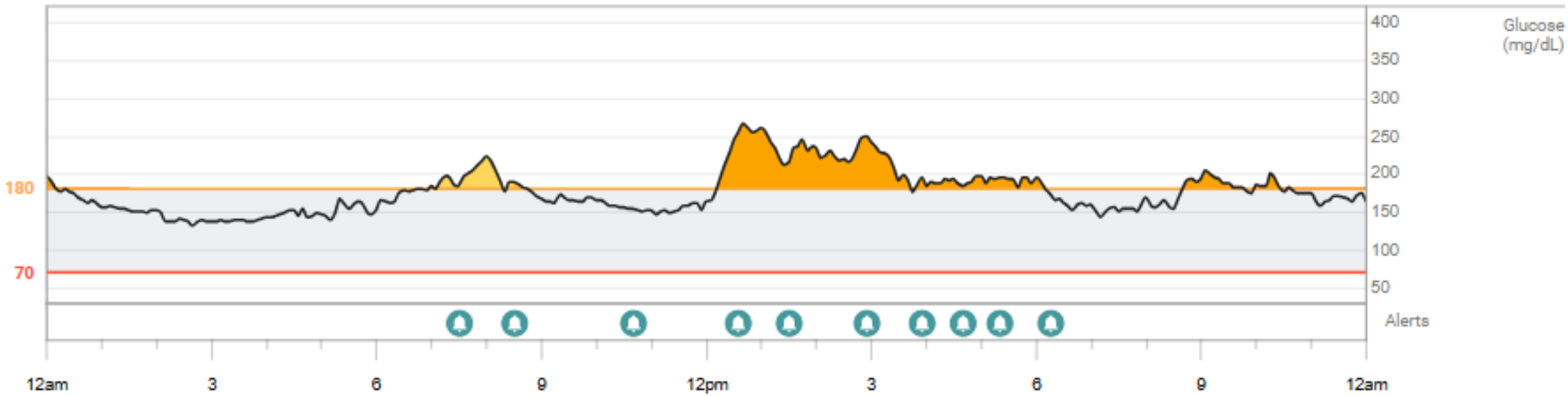
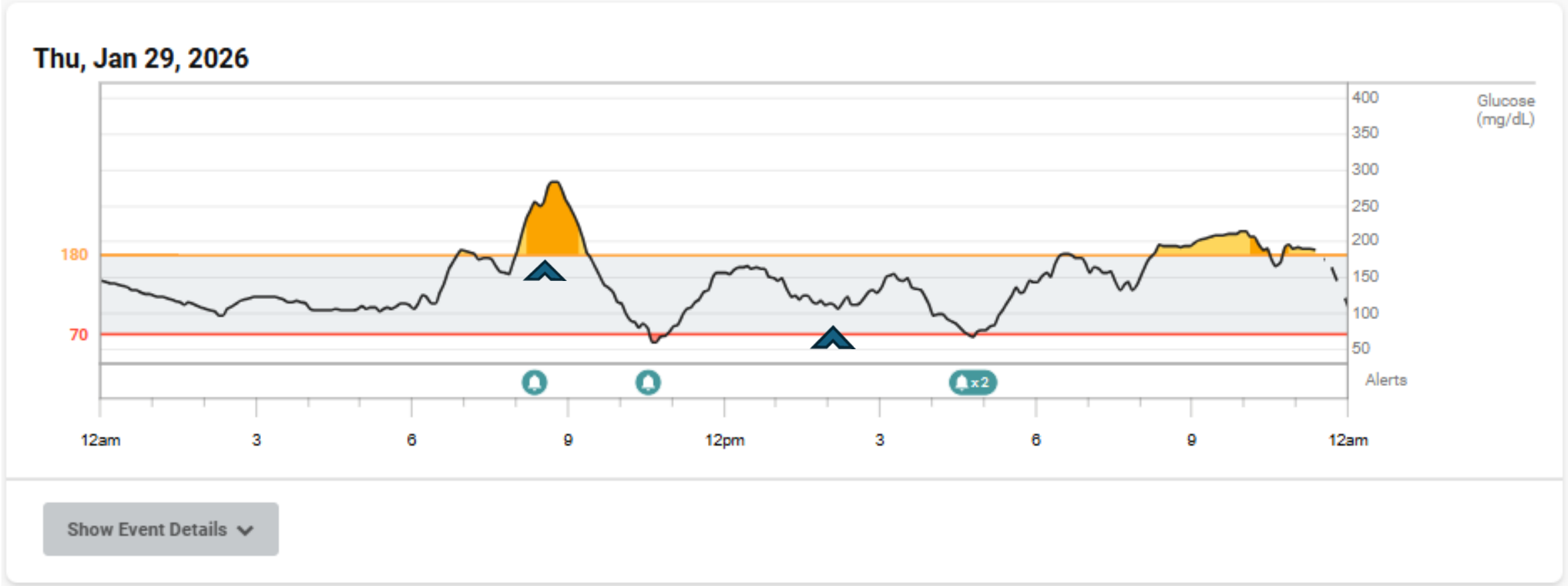

Glucose
(mg/dL)
400
350
300
250
200
150
100
50
180
70
Alerts
12am
3
6
9
12pm
3
6
9
12am


Glucose
(mg/dL)
400
350
300
250
200
150
100
50
180
70
Alerts
12am
3
6
9
12pm
3
6
9
12am

Large caramel Iced Coffee



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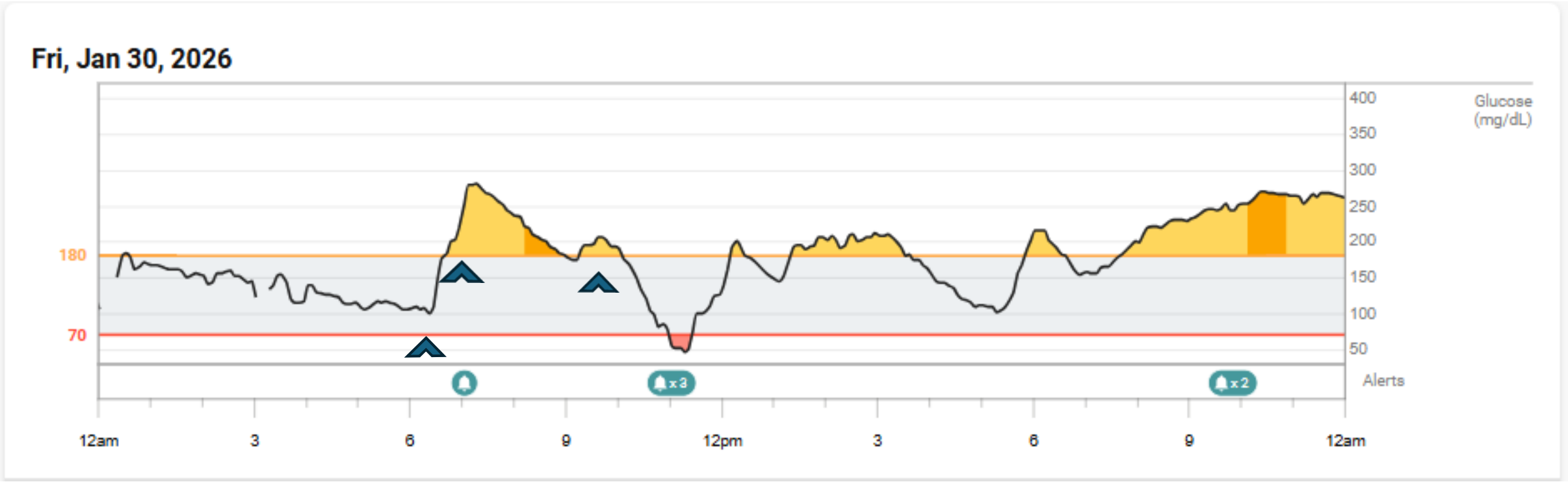
Large caramel Iced Coffee



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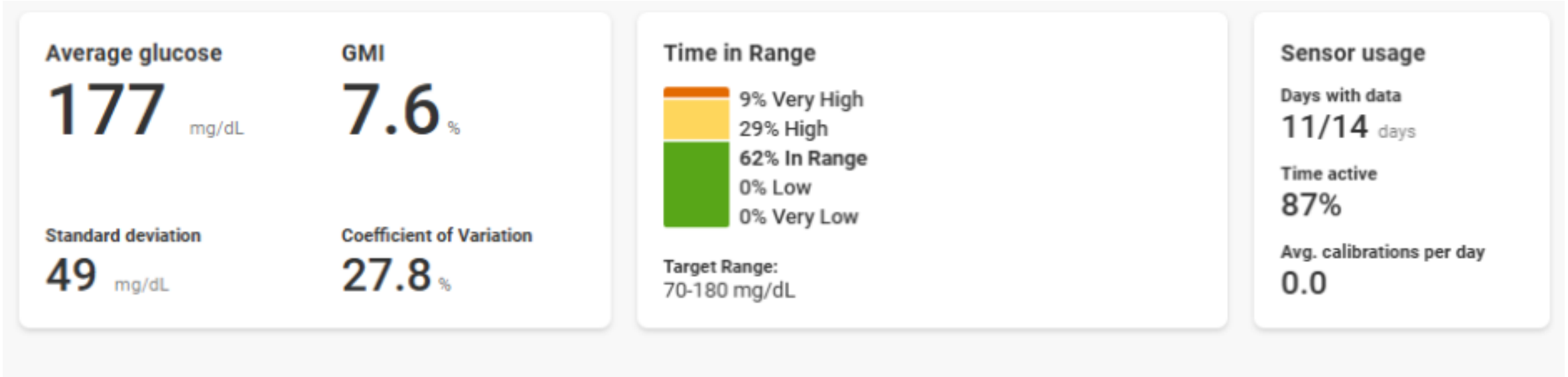

- 57 year old pt HIV+ with Type 2 DM
- Previous A1C 5.7-5.8 (77%TIR)

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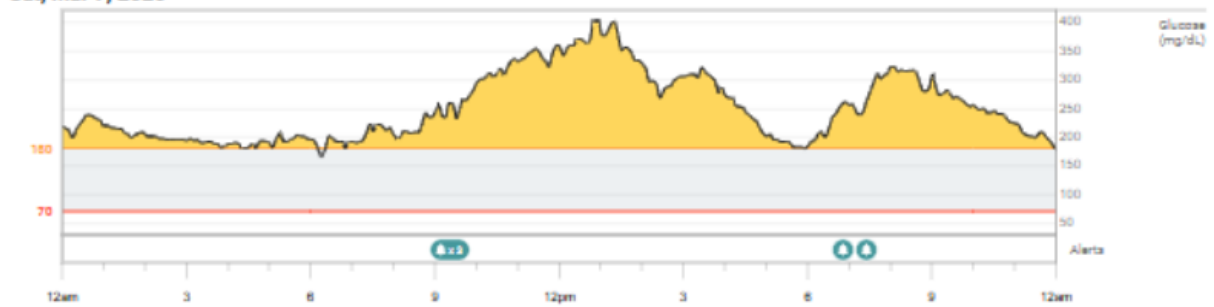
Assessment/Plan

#	Detail Type	Description
1.	Assessment	Type 2 diabetes mellitus without complications (E11.9).
	Provider Plan	A1C 6.6% (previous 5.7–5.8%). Patient aware of slight increase; overall control remains acceptable. Plan: - Continue current diabetes management regimen (no changes specified). - Routine follow-up per standard diabetes care.
2.	Assessment	Chronic low back pain without sciatica (M54.50).
	Provider Plan	Acute exacerbation of chronic low back pain with new severe episode, described as possible structural change ("bone going to crack"). Plan: - Order lumbar spine X-ray today. - Await imaging results and determine next steps based on findings. - Patient may pursue chiropractic care after imaging if appropriate and covered.
	Plan Orders	Ordered: X-RAY LUMBOSACRAL SPINE 2-3 VIEWS to be performed.
3.	Assessment	Chronic anemia (D64.9).
	Provider Plan	Receiving Epogen q2 weeks; recent hemoglobin improved from 8.7 to 9.5. Twelve transfusions since December. Ongoing work-up; appointment with University of Utah hematology 21 May. Plan: - Continue Epogen injections q2 weeks as arranged. - Place referral to University of Utah hematologist (rare blood disorder specialist). - Place referral to local hematologist Dr. P K for continuity.

Sat, Mar 7, 2026

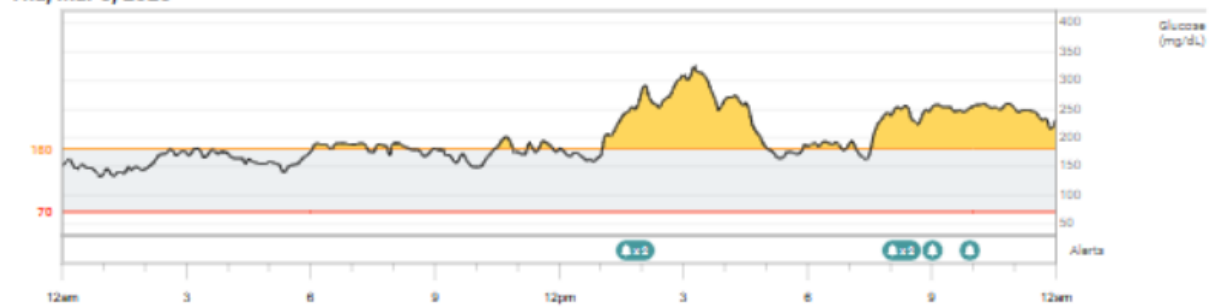


Show Event Details

Fri, Mar 6, 2026

Show Event Details

Thu, Mar 5, 2026



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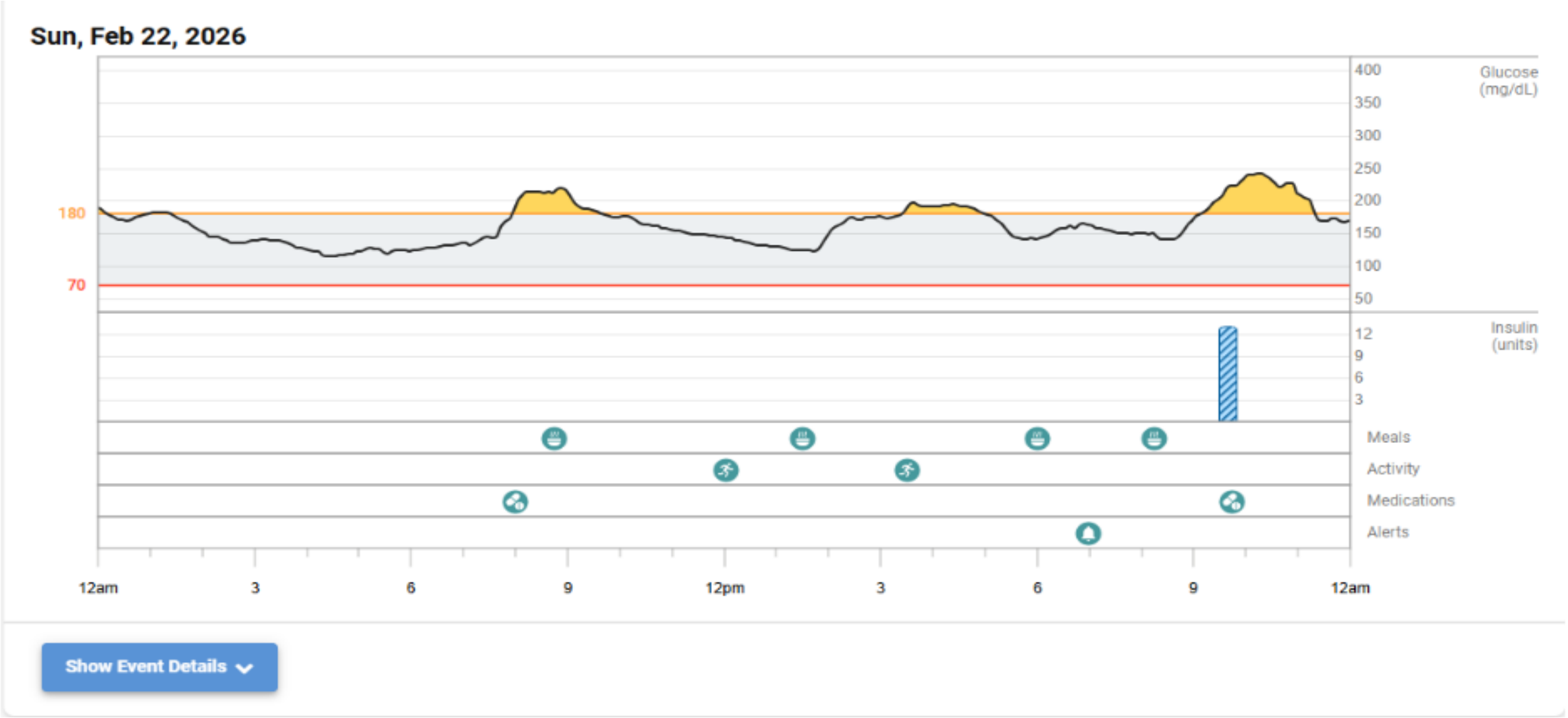

- 55 with Type 2 DM
- Initial A1C: 9.2
- Glucophage 2000mg, Tirzepatide 7.5mg, 13 units insulin glargine

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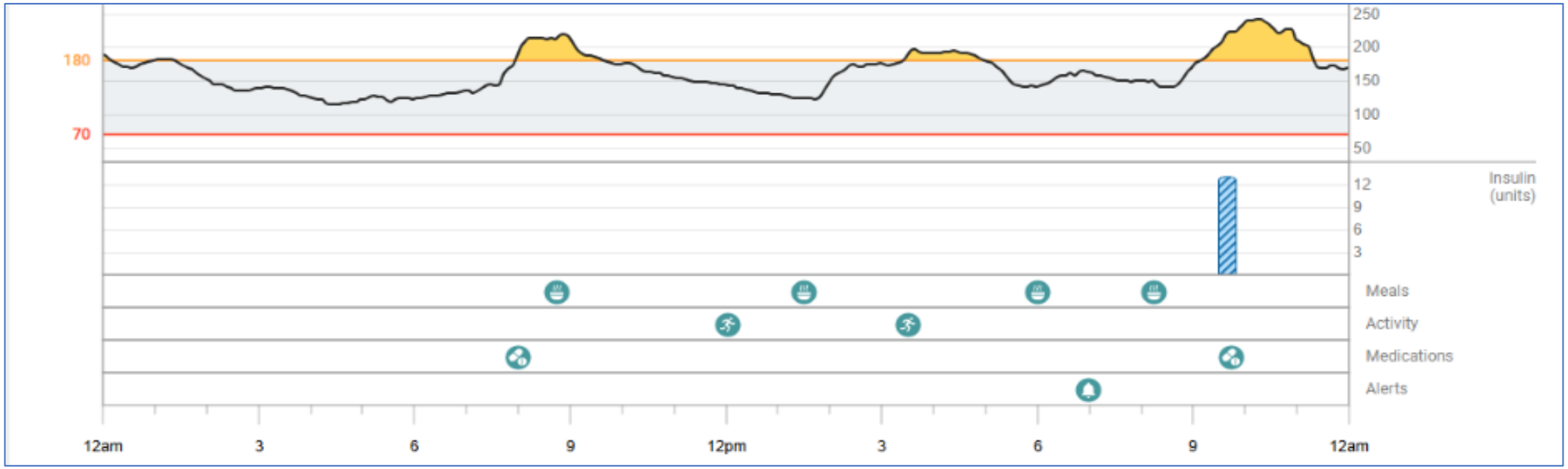


Hide Event Details

Time	Device	Event	Details	Insulin Units	Glucose
8:00 AM	CGM	Metformin	Metformin • 1000 mg • Oral	--	186 mg/dL
8:45 AM	CGM	Meal	Chobani 20 mg protein Yogurt drink	--	212 mg/dL
12:03 PM	CGM	Activity	2h, 30 min • Light	--	144 mg/dL
1:30 PM	CGM	Meal	While Grilled cheese sandwich on sourdough with tomato soup	--	124 mg/dL
3:30 PM	CGM	Activity	2h	--	185 mg/dL
6:01 PM	CGM	Meal	4 pieces of imitation crab legs	--	143 mg/dL
8:15 PM	CGM	Meal	1.5 cup of shredded wheat squares with 1 cup milk	--	150 mg/dL
9:40 PM	CGM	Insulin	Long-Acting	13.0 u	219 mg/dL
9:44 PM	CGM	Metformin	Metformin • 1000 mg • Oral	--	223 mg/dL

Case Review

- 39 yo Spanish Speaking pt, been in US for 2 years, family still in Mexico with no insurance.
- ER in May 2025 for DKA, diagnosed with LADA dt c-peptide of 0.34 (but both GAD & IgG negative).
- Finally came to the diabetes team after an A1C>15 in Jan 2026.
- By the time we met, he had started 32 units of glargine and tries to limit to only dosing 1x/day with lispro as needed.

Average glucose
212 mg/dL

GMI
8.4 %

Standard deviation
57 mg/dL

Coefficient of Variation
26.7 %

Time in Range

24% Very High
46% High
30% In Range
0% Low
0% Very Low

Target Range:
70-180 mg/dL

Sensor usage

Days with data
14/14 days

Time active
100%

Avg. calibrations per day
0.0

Insulin

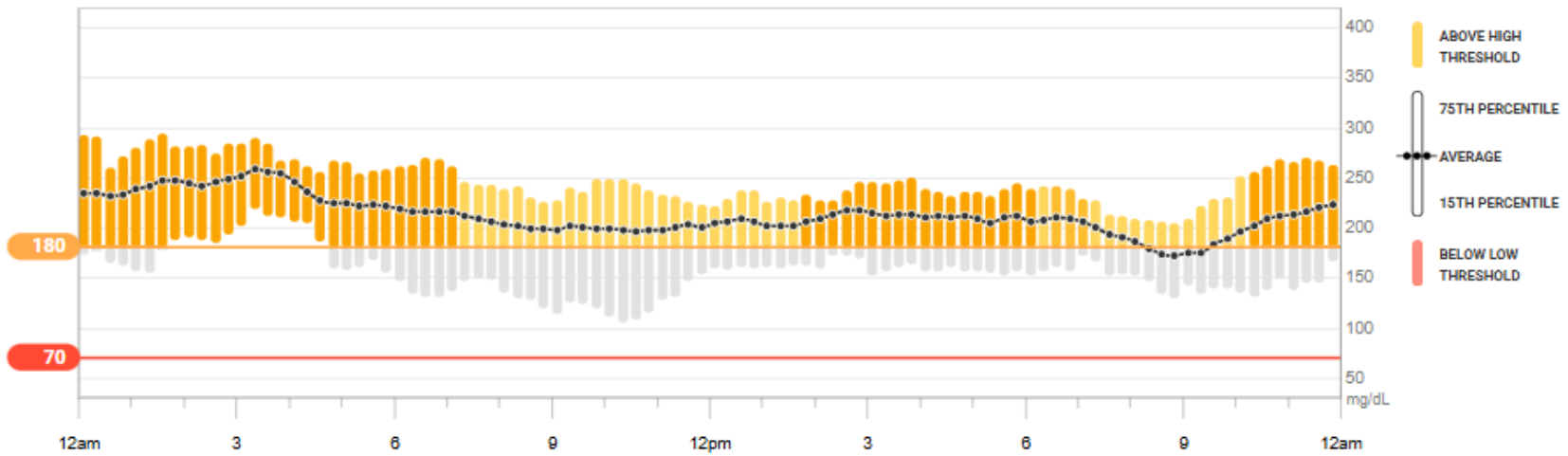
39% Fast-Acting
18.4 u/day

61% Long-Acting
28.7 u/day

Average Total
47.1 u/day

Average Fast-Acting
1.9 doses/day

This graph shows your data averaged over 14 days



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Case Review Part 2

- Pt comes back 1 month later and reports he is no longer having blurry vision or feeling so tired and has gained some weight back.
- Decided that milk raises his blood sugar too quickly, so he stopped drinking it.
- Takes 10 units of lispro for each 2-3 tortillas at a meal.

Average glucose

152 mg/dL

GMI

6.9 %

Standard deviation

41 mg/dL

Coefficient of Variation

27.0 %

Time in Range

4% Very High
9% High
87% In Range
0% Low
<1% Very Low

Target Range:
70-180 mg/dL

Sensor usage

Days with data
14/14 days

Time active
100%

Avg. calibrations per day
0.0

Insulin

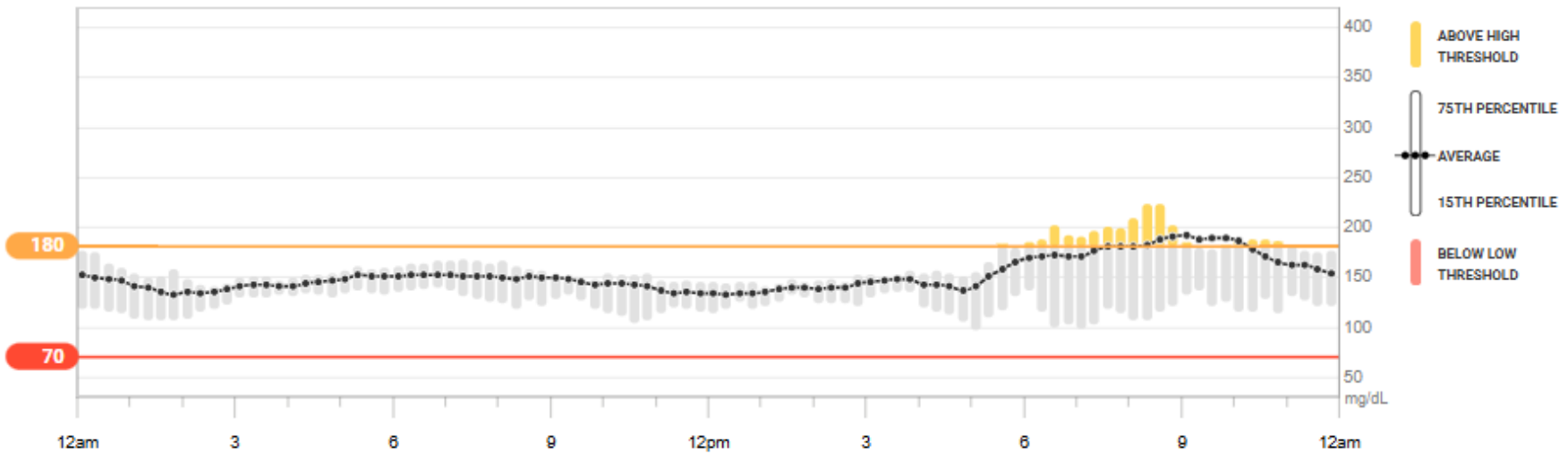
24% Fast-Acting
9.5 u/day

76% Long-Acting
29.4 u/day

Average Total
38.9 u/day

Average Fast-Acting
1.0 doses/day

This graph shows your data averaged over 14 days



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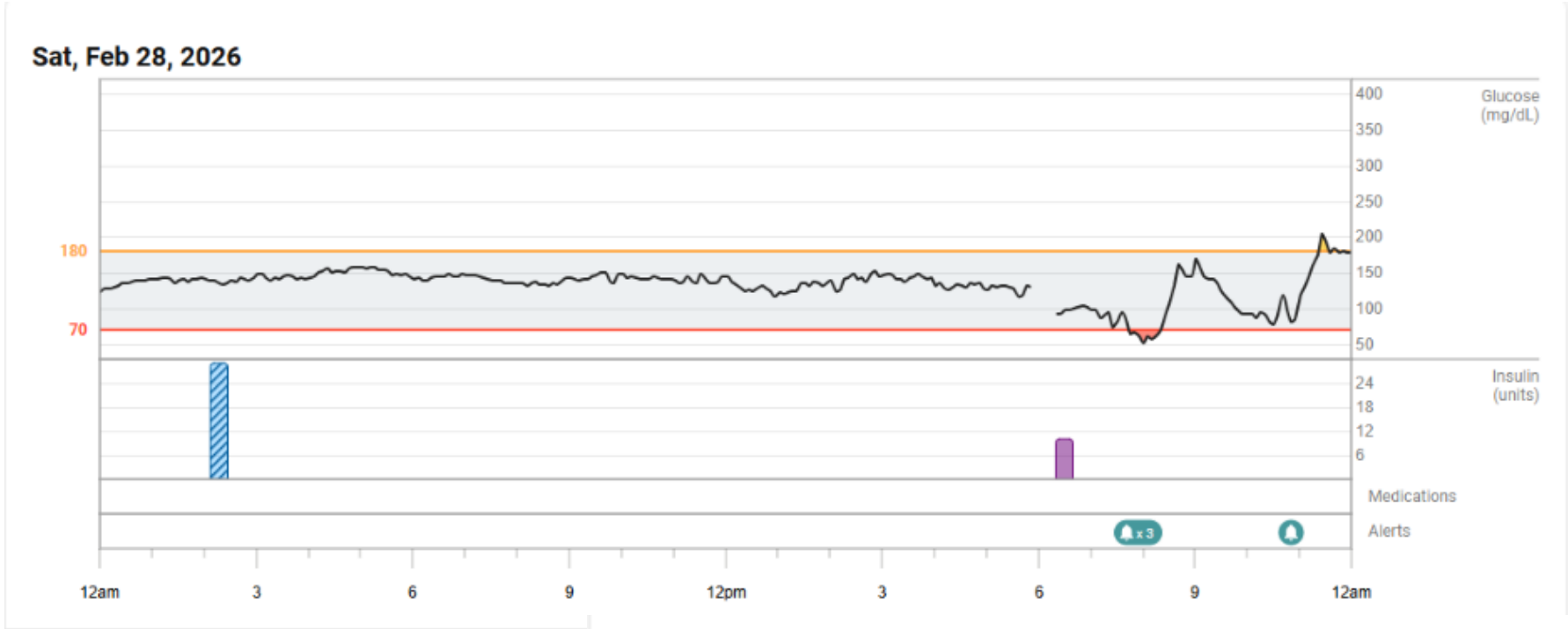
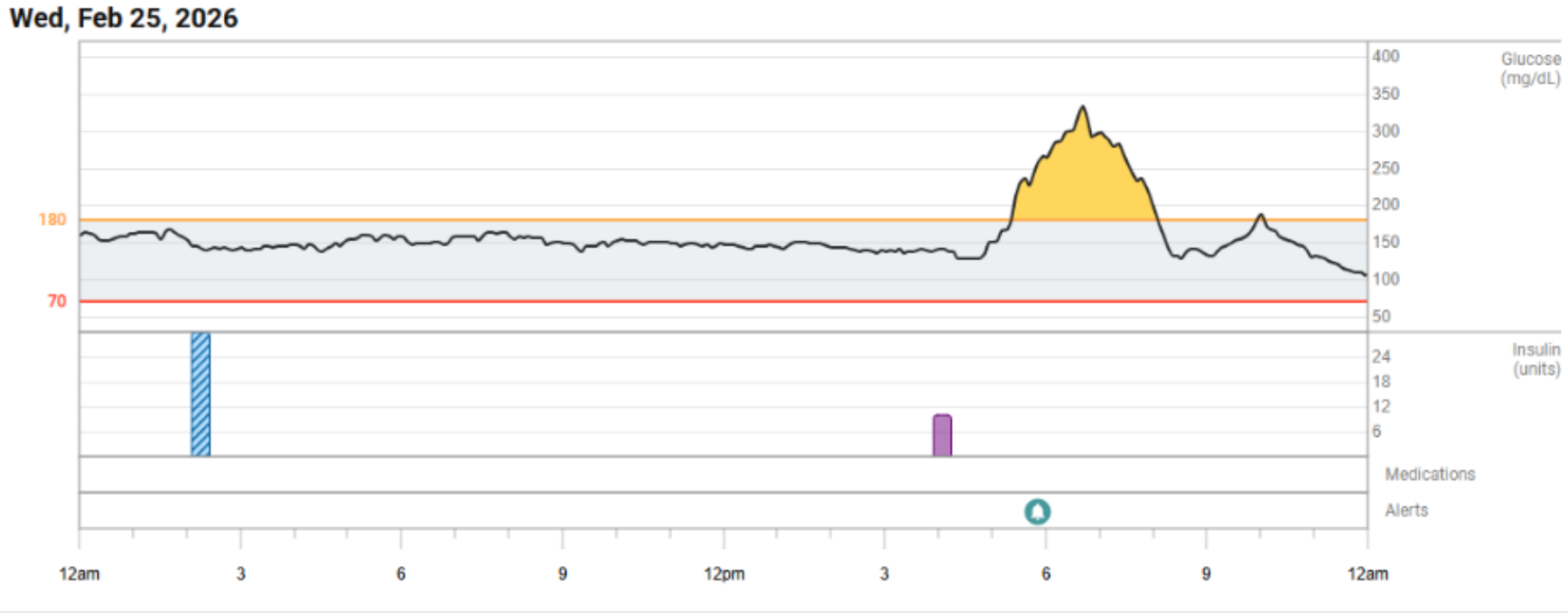
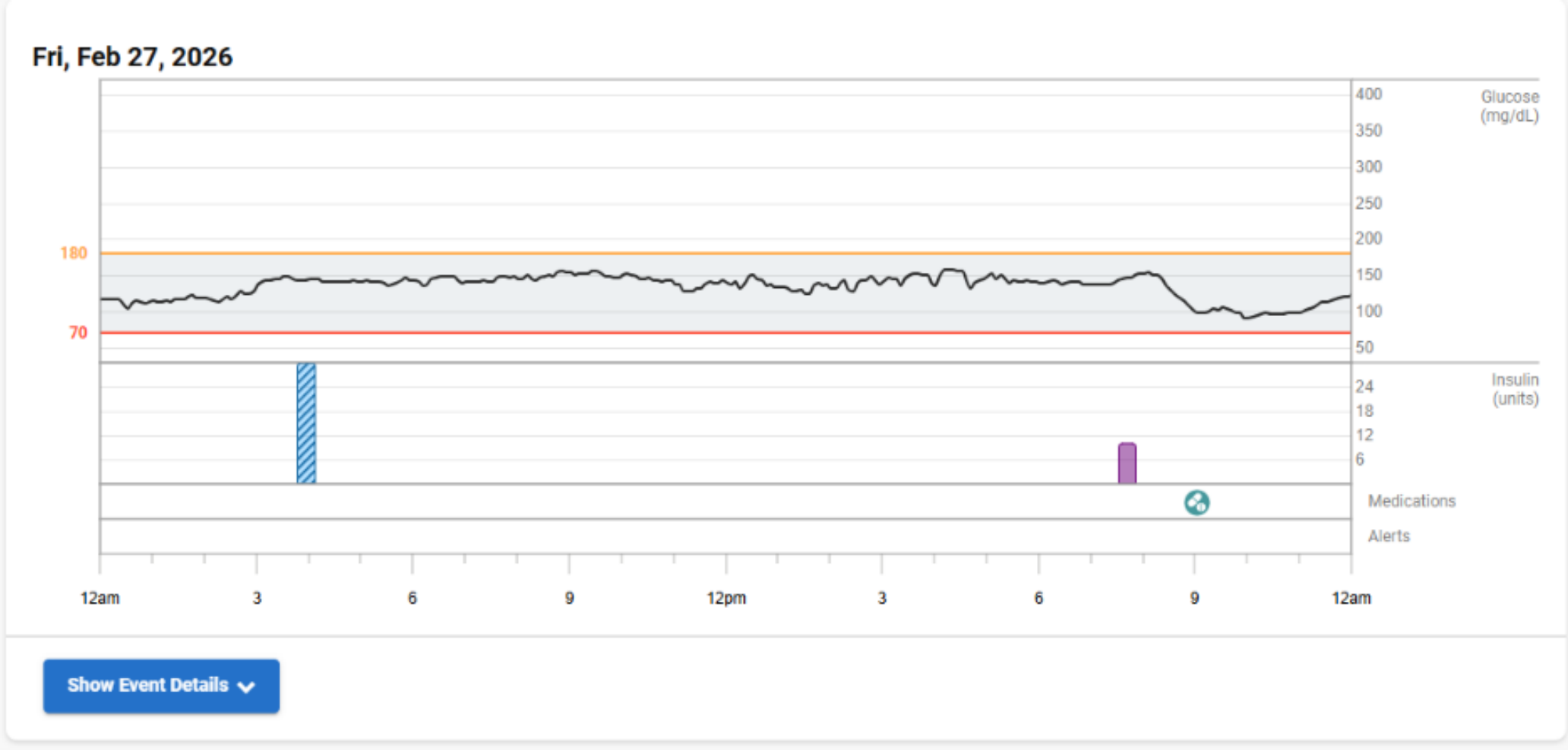


Sometimes it works....

Sometimes it doesn't...but he is pre-bolusing!!

Why the high?





But most of the time it goes very well, and he learns from the CGM.

Average glucose

139 mg/dL

GMI

6.6 %

Standard deviation

24 mg/dL

Coefficient of Variation

16.9 %

Time in Range

0% Very High
6% High
94% In Range
0% Low
0% Very Low

Target Range:
70-180 mg/dL

Sensor usage

Days with data
14/14 days

Time active
99%

Avg. calibrations per day
0.0

Insulin

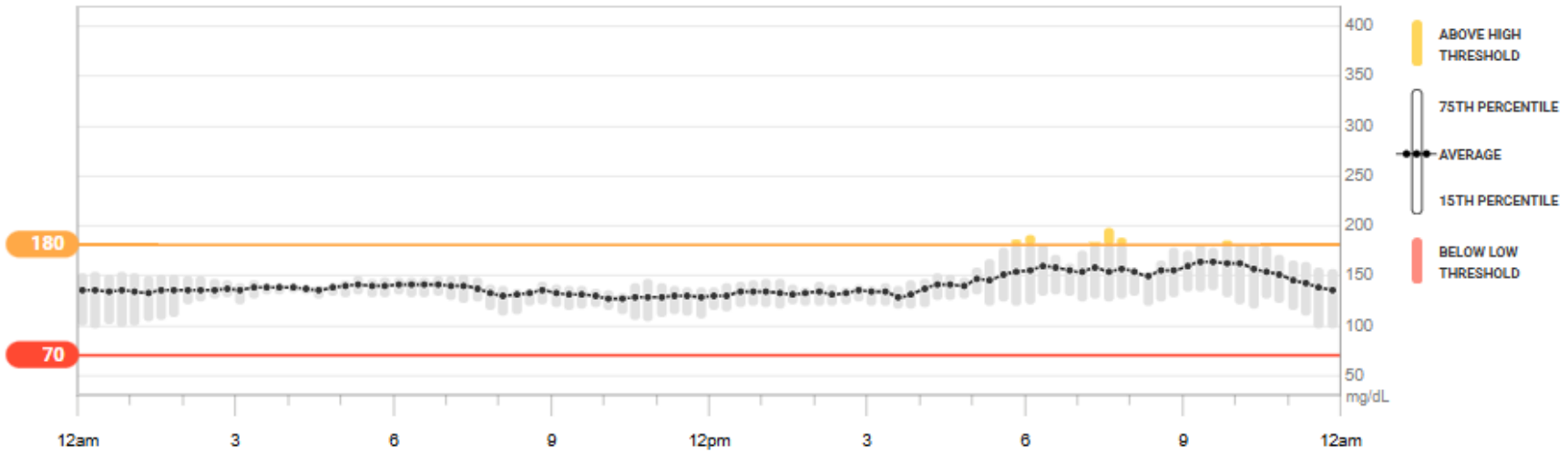
24% Fast-Acting
7.3 u/day

76% Long-Acting
22.9 u/day

Average Total
30.1 u/day

Average Fast-Acting
0.9 doses/day

This graph shows your data averaged over 14 days



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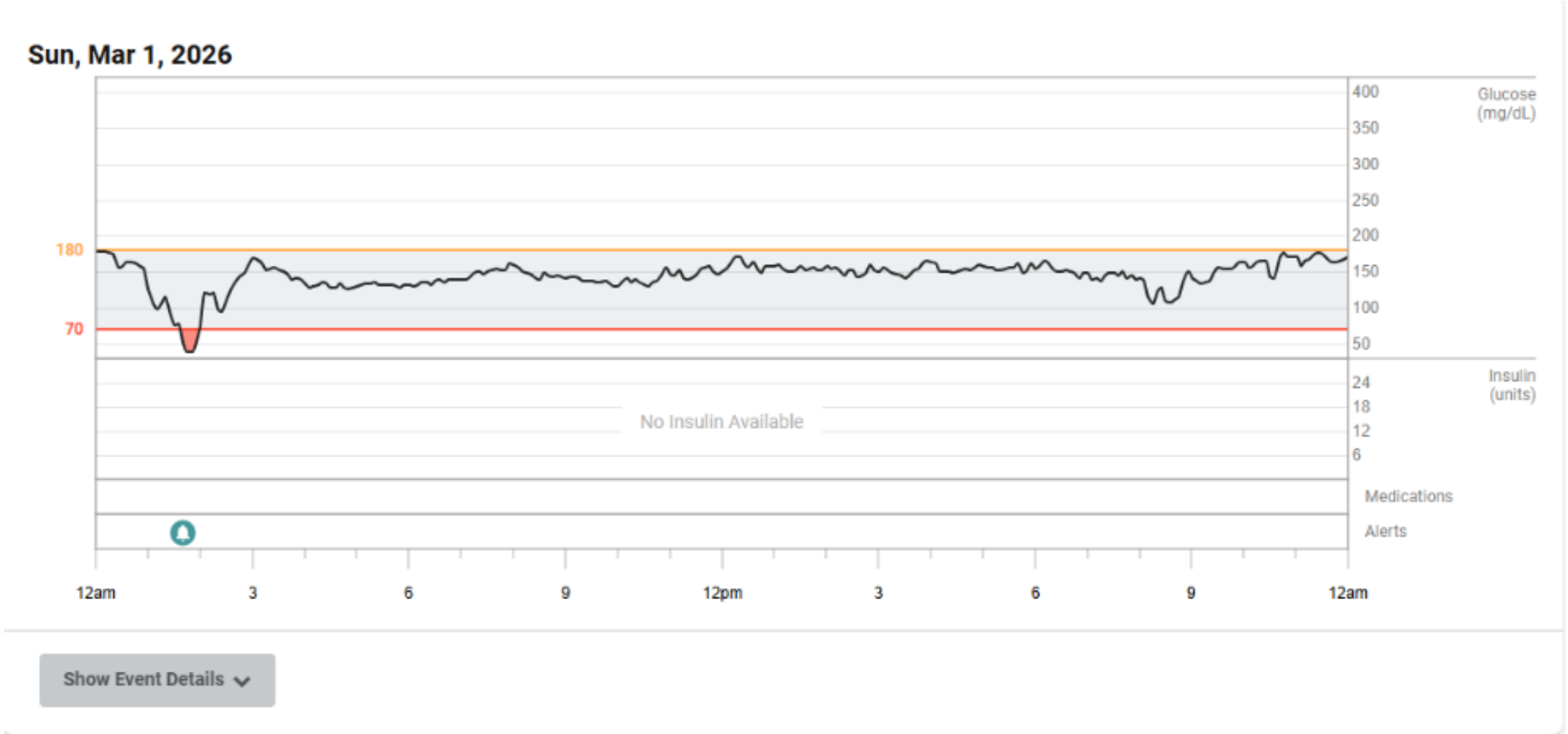
Compression Lows



What can you take home?

- Short glances at CGM data can improve care.
- Staff can be trained to take longer looks at CGM data and be a detective for shorter PCP visits.
- CGM data helps patients make informed decisions.
- The more they put in, the more you get out of it.

Thank you!

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Resources

- Chinmay S. Marathe, MBBS; Christopher K. Rayner, MBBS; Karen L. Jones, DIP APP; Michael Horowitz. Relationships Between Gastric Emptying, Postprandial Glycemia, and Incretin Hormones. Diabetes Care 2013;36(5):1396–1405
- Dericioglu D, Oldham S, Methven L, Shafat A, Clegg ME. Macronutrients effects on satiety and food intake in older and younger adults: A randomised controlled trial. Appetite. 2023 Oct 1;189:106982. doi: 10.1016/j.appet.2023.106982. Epub 2023 Jul 26. PMID: 37507052.
- Dericioglu D, Methven L, Shafat A, Clegg ME. Differences in appetite, food intake, and gastric emptying responses to protein intake by older adults varying in level of physical activity: A randomised controlled trial. Appetite. 2025 Feb 1;206:107830. doi: 10.1016/j.appet.2024.107830. Epub 2024 Dec 28. PMID: 39736413.