

# Reviewing my data: What does it all mean?

## Dr Fraser Gibb

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Consultant Diabetologist, Royal Infirmary of Edinburgh

Honorary Senior Lecturer, University of Edinburgh

Supported by a restricted educational grant from Abbott



# Dr Fraser Gibb

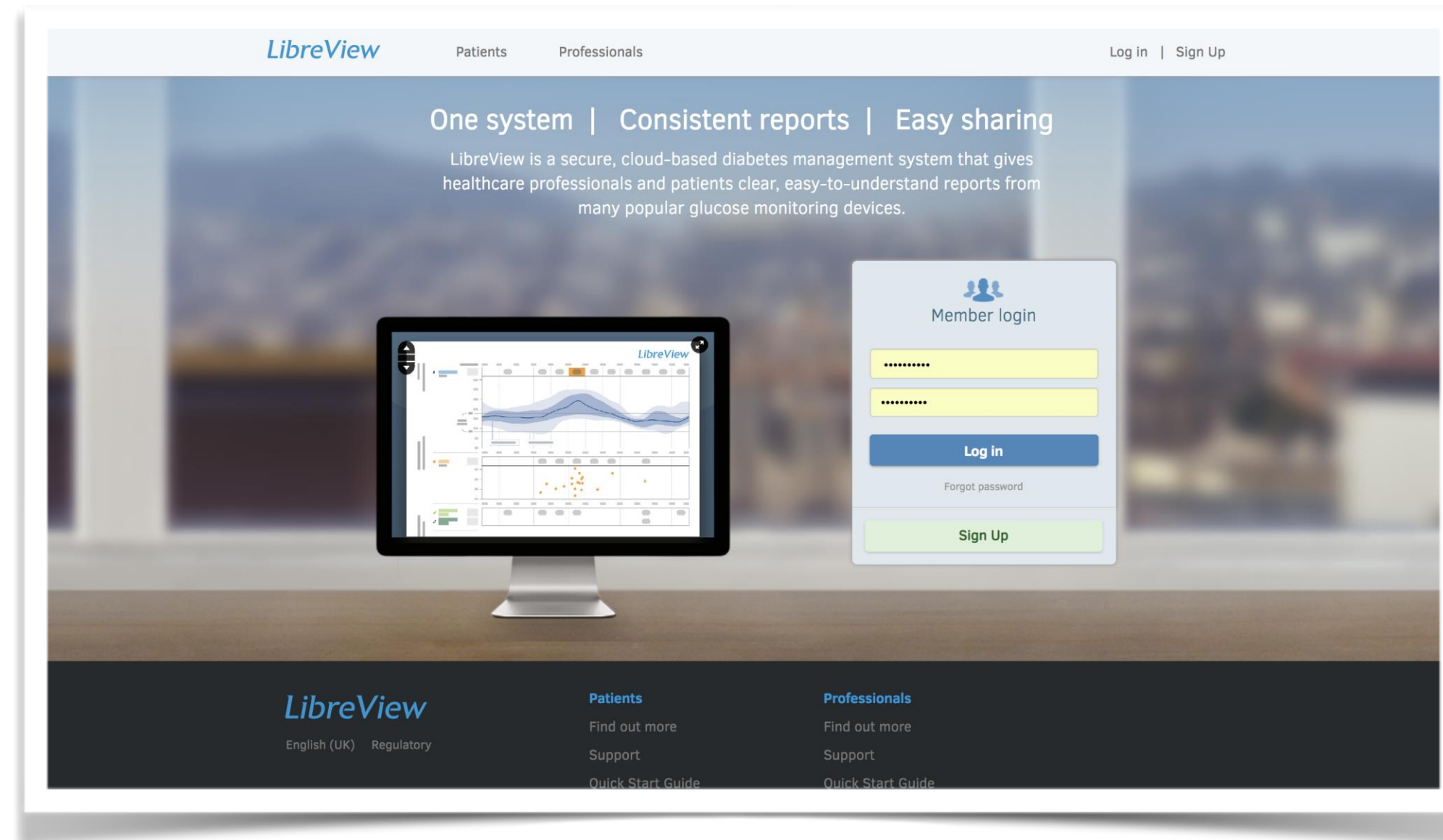
- Consultant Diabetologist, Royal Infirmary of Edinburgh
- Honorary Senior Lecturer, University of Edinburgh
- DTN-UK committee member

## **Disclosures:**

Personal fees and educational grants from:

Dexcom, Novo Nordisk and Sanofi

# Introduction



Regular data review is essential to get the most out of Libre

# Getting started

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Clear, intuitive reports for you and your doctor

**LibreView**  
Select Country of Residence

United Kingdom (GB) ▼

English (UK) ▼

Submit

LibreView is supported in the countries listed above. New countries will be added in the future. Check back soon.

easy-to-read reports from  
meter and share them with  
or nurse

Get your free LibreView account

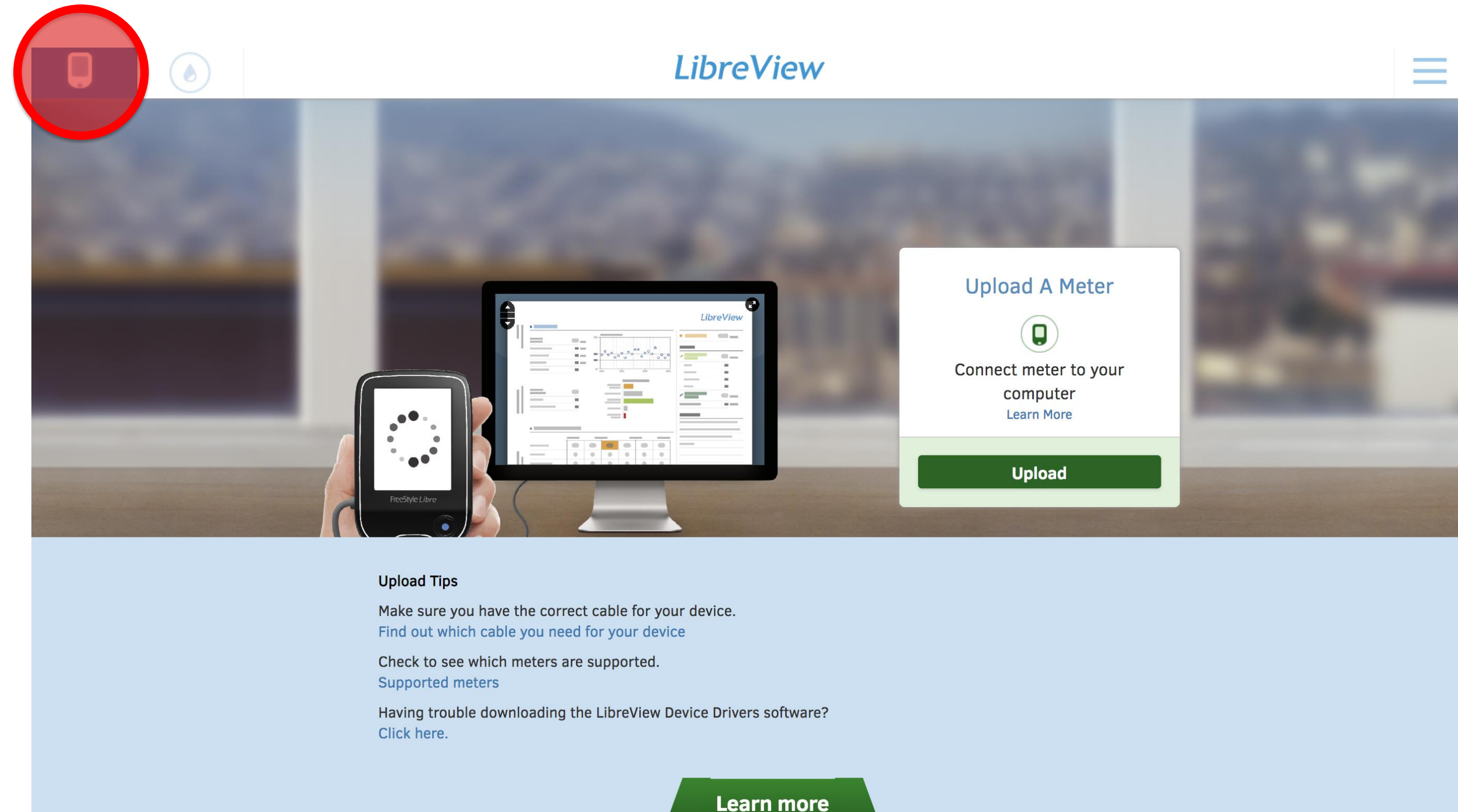
Your email

Sign Up Now

How it works



# Getting started



The screenshot shows the LibreView website interface. At the top, there is a navigation bar with the LibreView logo and a hamburger menu icon. Below the navigation bar is a large hero image featuring a hand holding a LibreView glucose meter next to a computer monitor displaying the LibreView software interface. A white call-to-action box is overlaid on the right side of the hero image, titled 'Upload A Meter'. This box contains a mobile phone icon, the text 'Connect meter to your computer', a 'Learn More' link, and a green 'Upload' button. Below the hero image is a light blue section with the heading 'Upload Tips'. This section contains three paragraphs of text, each with a corresponding link: 'Find out which cable you need for your device', 'Supported meters', and 'Click here'. At the bottom of this section is a green 'Learn more' button.

**LibreView**

### Upload A Meter

Connect meter to your computer  
[Learn More](#)

**Upload**

#### Upload Tips

Make sure you have the correct cable for your device.  
[Find out which cable you need for your device](#)

Check to see which meters are supported.  
[Supported meters](#)

Having trouble downloading the LibreView Device Drivers software?  
[Click here.](#)

**Learn more**

# Getting started

**LibreView**

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**Step 1**

Are you using **LibreLink** on your phone to scan your Libre sensor?

- YES – go to step 5
- NO – go to step 2

**Step 2**

Have you set up a **LibreView** account?

- YES – go to step 6
- NO – go to step 3

**Step 3** Setting up a LibreView account

- Go to [www.libreview.com](http://www.libreview.com)
- Click the sign up button **(A)**
- Select 'LibreView Account' **(B)**
- Follow the on-screen instructions regarding country of residence, accepting the terms of use (user agreement and privacy policy), enter your name and date of birth, create a password, respond to the verification email sent to you by LibreView.
- You can now log-in with your email and password – go to **STEP 4**

**Step 4** Uploading your reader data

When logged in, Connect your Libre reader to your computer with the supplied USB cable (if you don't have one – you can pick one up at the diabetes department).

Click the green 'Upload' button **(C)** and follow the on-screen instructions to upload your Libre data.

**IMPORTANT:** You also need to link your LibreView account to the Royal Infirmary account – go to **STEP 6** to do this now.

**Upload A Meter**

Connect meter to your computer

**Step 5**

If you have set your phone up to scan the sensor, please log in to [www.LibreView.com](http://www.LibreView.com) (using the same username and password that you use on your LibreLink phone app).

Now move to **STEP 6**.

**Step 6** Linking your LibreView account to the Royal Infirmary Diabetes Clinic

When logged in to your LibreView account click at the top right corner **(A)** and then open up 'Account Settings' **(B)**. Click the tab 'My practices' **(C)** and in the 'Link to a practice' box type in: **royalinfl** then click 'Add'.

This will link your Libre account to our Royal Infirmary account.

If you are only using your phone to scan the Libre sensor this is all you need to do.

**IMPORTANT:** If you are using a Libre reader (i.e. not using your phone to scan), upload your data as described in **STEP 4**.

**Upload Tips**

- Make sure you have the correct cable for your device. [Find out which cable you need for your device](#)
- Check to see which meters are supported. [Supported meters](#)
- Having trouble downloading the LibreView Device Drivers software? [Click here.](#)

**Learn more**

If you are having trouble getting any of this to work, click the 'support' option which has troubleshooting information



# Getting started

**LibreView**

Page 1/2

**Reviewing and sharing Libre data**

**Step 1**

Are you using **LibreLink** on your phone to scan your Libre sensor?

- YES – go to step 5
- NO – go to step 2

**Step 2**

Have you set up a **LibreView** account?

- YES – go to step 6
- NO – go to step 3

**Step 3 Setting up a LibreView account**

- Go to [www.libreview.com](http://www.libreview.com)
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- Follow the on-screen instructions regarding country of residence, accepting the terms of use (user agreement and privacy policy), enter your name and date of birth, create a password, respond to the verification email sent to you by LibreView.
- You can now log-in with your email and password – go to **STEP 4**

**Step 4 Uploading your reader data**

When logged in, Connect your Libre reader to your computer with the supplied USB cable (if you don't have one – you can pick one up at the diabetes department).

Click the green 'Upload' button **(C)** and follow the on-screen instructions to upload your Libre data.

**IMPORTANT:** You also need to link your LibreView account to the Royal Infirmary account – go to **STEP 6** to do this now.

**Upload A Meter**

Connect meter to your computer

**Step 5**

If you have set your phone up to scan the sensor, please log in to [www.LibreView.com](http://www.LibreView.com) (using the same username and password that you use on your LibreLink phone app).

Now move to **STEP 6**.

**Step 6 Linking your LibreView account to the Royal Infirmary Diabetes Clinic**

When logged in to your LibreView account click at the top right corner **(A)** and then open up 'Account Settings' **(B)**. Click the tab 'My practices' **(C)** and in the 'Link to a practice' box type in: **royalinif** then click 'Add'.

This will link your Libre account to our Royal Infirmary account.

If you are only using your phone to scan the Libre sensor this is all you need to do.

**IMPORTANT:** If you are using a Libre reader (i.e. not using your phone to scan), upload your data as described in **STEP 4**.

**Upload Tips**

- Make sure you have the correct cable for your device. Find out which cable you need for your device
- Check to see which meters are supported. Supported meters
- Having trouble downloading the LibreView Device Drivers software? Click here.

**Learn more**

If you are having trouble getting any of this to work, click the 'support' option which has troubleshooting information

# LibreView – clinic link

The screenshot shows the LibreView website interface. At the top, there is a navigation bar with a mobile icon, a water drop icon, and the text 'LibreView'. A red circular menu icon is visible in the top right corner. The main content area features a large image of a hand holding a LibreView meter next to a computer monitor displaying the LibreView software interface. To the right of the image is a white box with the heading 'Upload A Meter', a mobile icon, the text 'Connect meter to your computer', a 'Learn More' link, and a green 'Upload' button. Below this is a light blue section with the heading 'Upload Tips' and several lines of text providing instructions and links. At the bottom of this section is a green 'Learn more' button.

**Upload A Meter**

Connect meter to your computer  
[Learn More](#)

**Upload**

**Upload Tips**

Make sure you have the correct cable for your device.  
[Find out which cable you need for your device](#)

Check to see which meters are supported.  
[Supported meters](#)

Having trouble downloading the LibreView Device Drivers software?  
[Click here.](#)

**Learn more**



# Account settings

The screenshot displays the LibreView web application interface. At the top, the 'LibreView' logo is visible. Below it, there's a navigation bar with a hamburger menu icon on the left and a user profile 'Fraser Gibb' on the right. The main content area shows 'My Glucose History In' with a '14 day' dropdown and a 'View Full' button. A summary card for the 'Most recent 13-day period' (May 02, 2018 - May 14, 2018) displays the following statistics:

Average Glucose (mmol/L)	Average Scans/Day	Hypo Events
5.1	12.0	16

To the right of the summary card is a line graph showing glucose levels over time, with markers for 12AM, 6AM, 12PM, 6PM, and 12AM. The y-axis ranges from 0 to 20 mmol/L, with a shaded area between 3.9 and 10 mmol/L. A mobile menu is open on the right side, listing 'Report Preferences', 'Account Settings' (highlighted with a red oval), and 'Sign Out'. At the bottom of the mobile menu, there are links for 'LibreView' and 'Support'.

# My practices

Account Settings

Profile Preferences **My Practices** My Meters

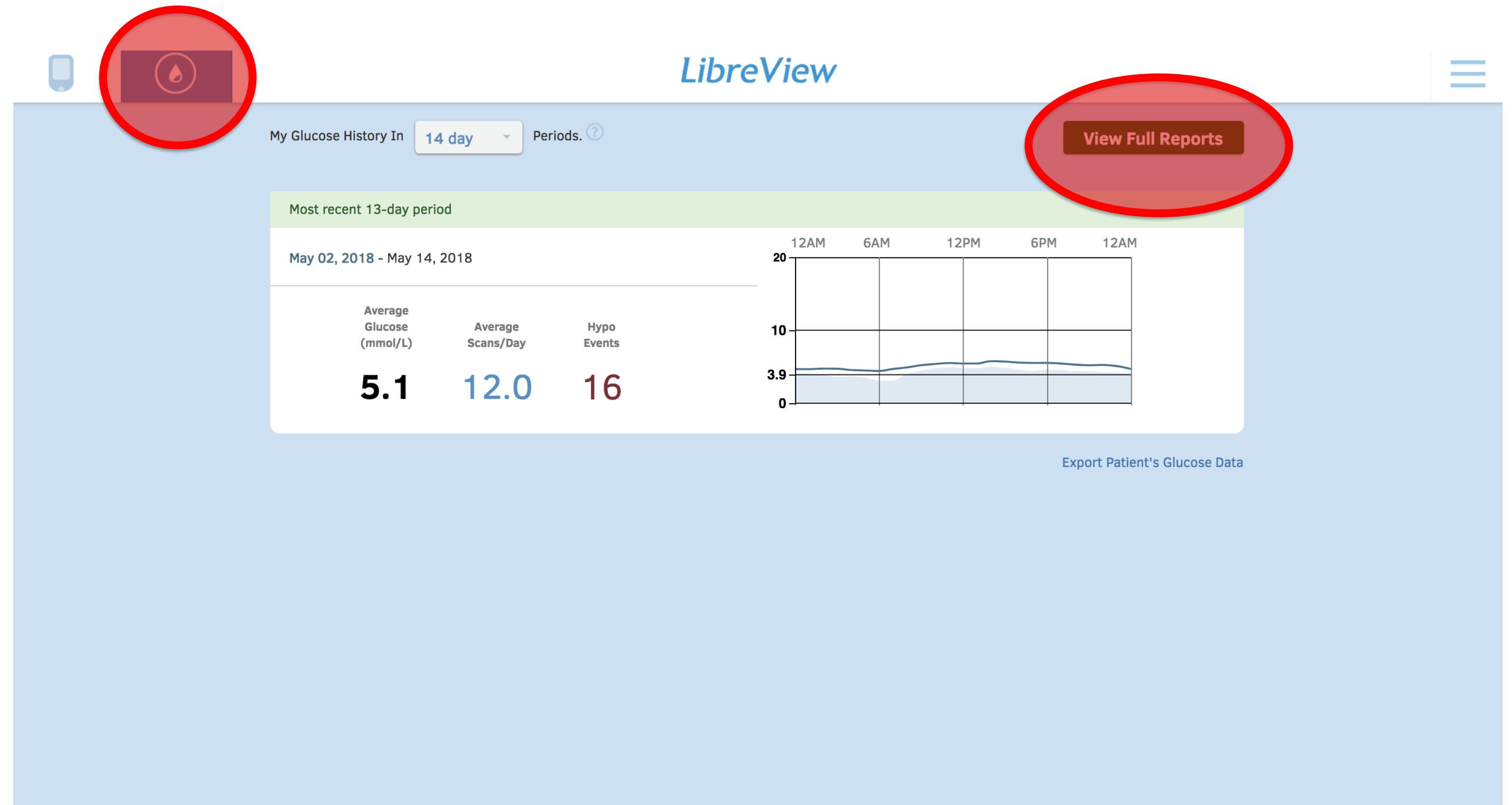
### My Practices

Below are the health care practices that have access to your glucose history.

Link to a practice

	<b>Royal Infirmary of Edi...</b> ID: royalinf Practice	Little France Crescent , Edinburgh, MIDLOTHIAN EH16 4SA Address	Remove
--	--	--	--------

# LibreView – your reports





# LibreView - Snapshot

Back Fraser Gibb

Report Name

Report Settings

Report end date Last Upload 12:48 PM May 14, 2018

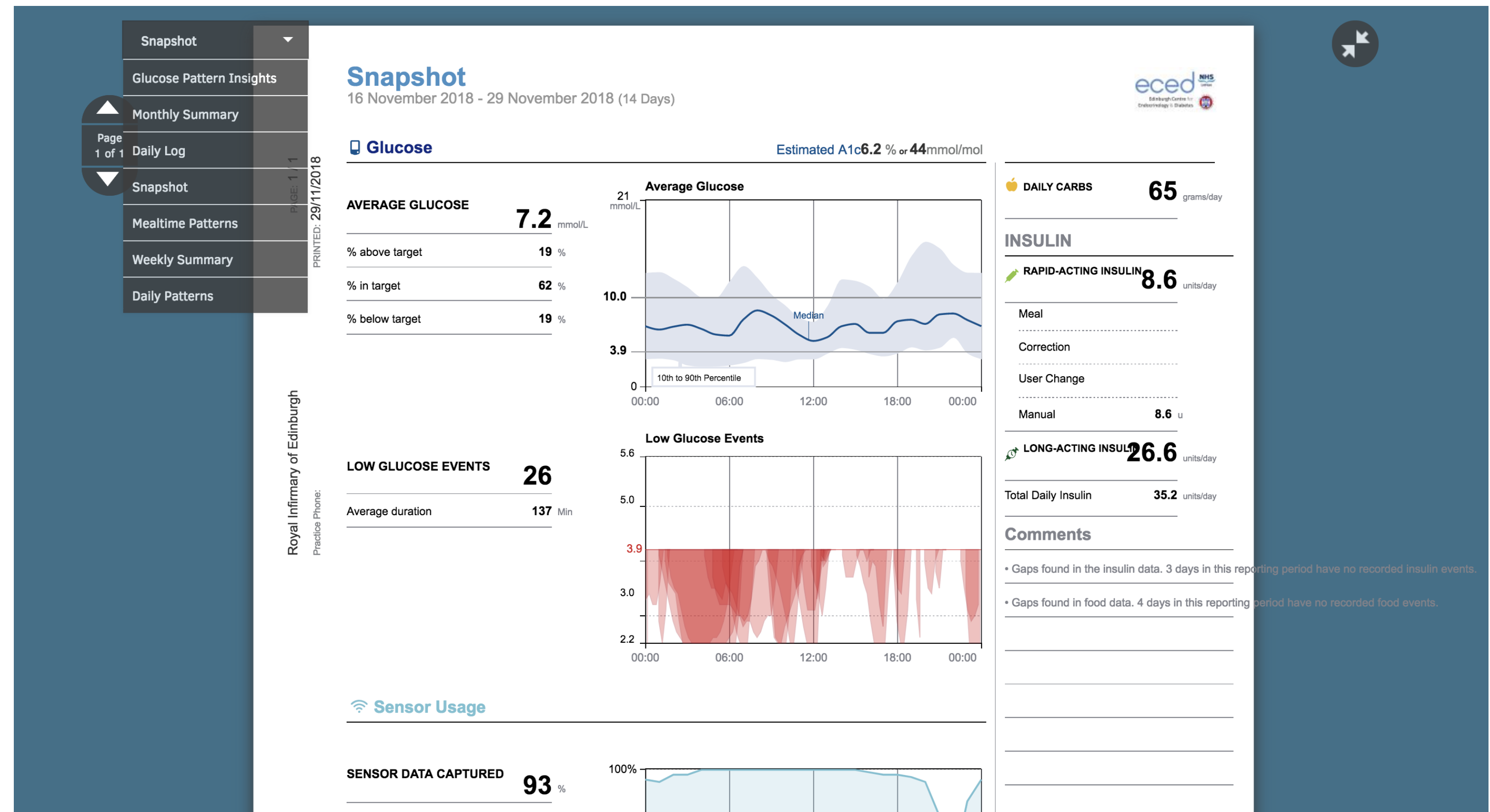
<input checked="" type="checkbox"/> Edit Glucose Pattern Insig...  2 weeks	<input checked="" type="checkbox"/> Monthly Summary  2 weeks	<input checked="" type="checkbox"/> Daily Log  2 weeks	<input checked="" type="checkbox"/> Snapshot  2 weeks	<input checked="" type="checkbox"/> Edit Mealtime Patterns  2 weeks	<input checked="" type="checkbox"/> Weekly Summary  2 weeks	<input checked="" type="checkbox"/> Daily Patterns  2 weeks
---	--	--	---	--	---	---

Target Range 3.9 to 10.0 mmol/L Low Glucose Threshold 3.9 mmol/L High Glucose Threshold 13.9 mmol/L

Print reports with patient information

Cancel changes Revert to report default settings Generate reports

# LibreView - Snapshot



# LibreView - Snapshot

Glucose Summary Insights

- Monthly Summary
- Page 1 of 1
- Daily Log
- Snapshot**
- Mealtime Patterns
- Weekly Summary
- Daily Patterns

PRINTED: 29/11/2018

Royal Infirmary of Edinburgh  
Practice Phone:

## Snapshot

16 November 2018 - 29 November 2018 (14 Days)

**Glucose**

Estimated A1c **6.2 %** or **44 mmol/mol**

**AVERAGE GLUCOSE** 7.2 mmol/L

% above target **19 %**

% in target **62 %**

% below target **19 %**

**Average Glucose**

**Low Glucose Events**

**DAILY CARBS** 65 grams/day

**INSULIN**

**RAPID-ACTING INSULIN** 8.6 units/day

Meal

Correction

User Change

Manual 8.6 u

**LONG-ACTING INSULIN** 26.6 units/day

Total Daily Insulin 35.2 units/day

**Comments**

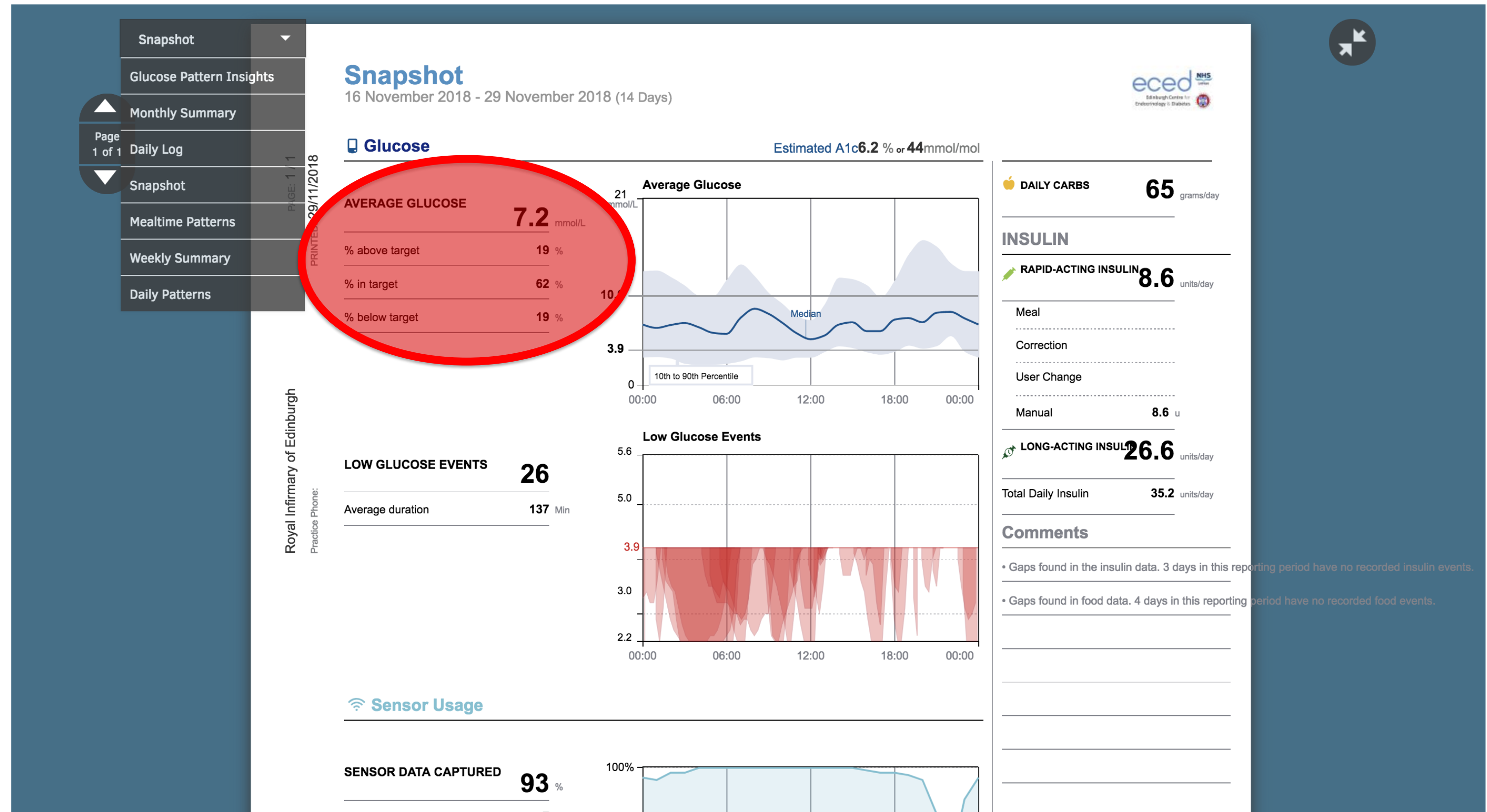
- Gaps found in the insulin data. 3 days in this reporting period have no recorded insulin events.
- Gaps found in food data. 4 days in this reporting period have no recorded food events.

**SENSOR USAGE**

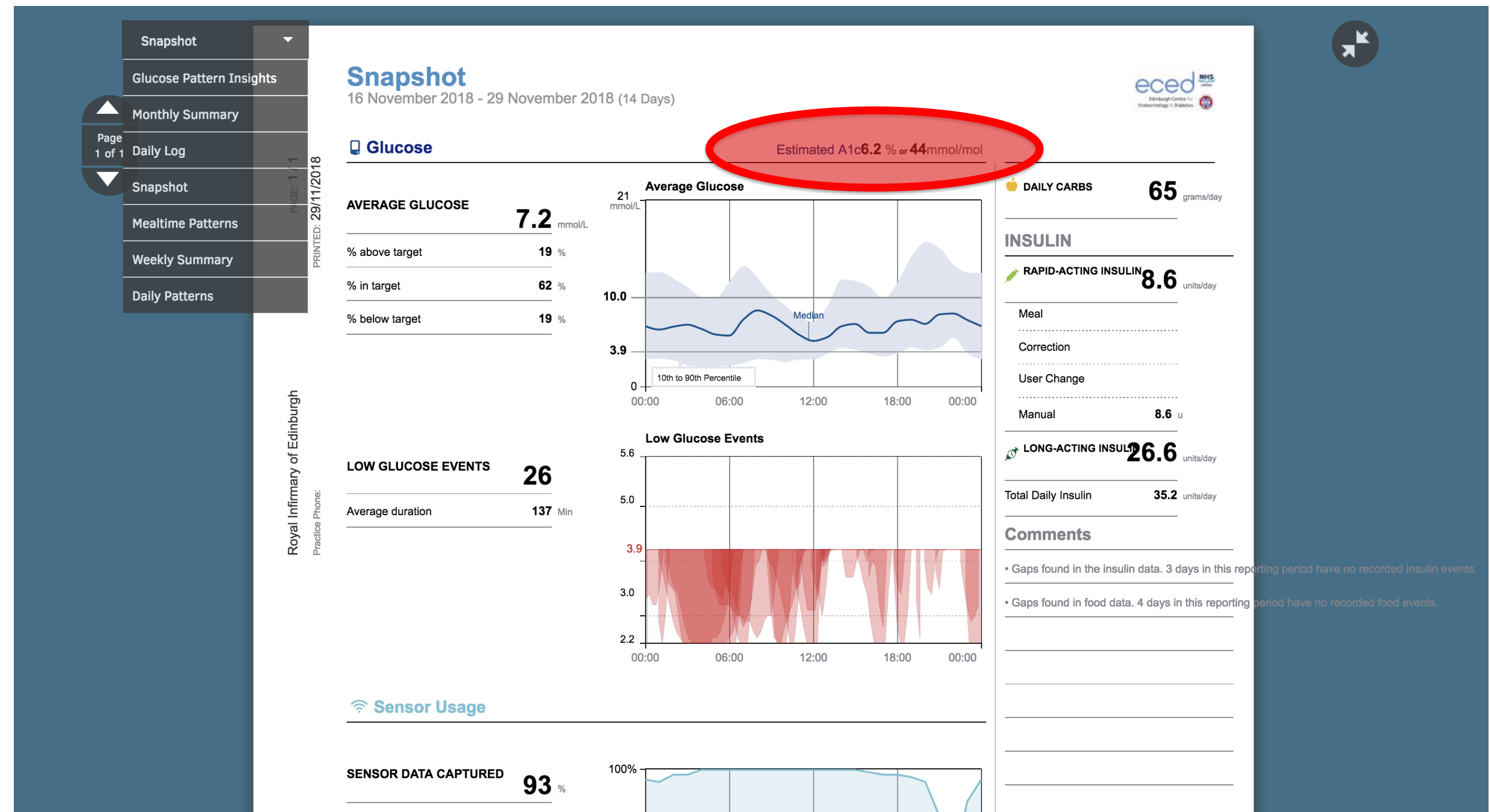
**SENSOR DATA CAPTURED** 93 %



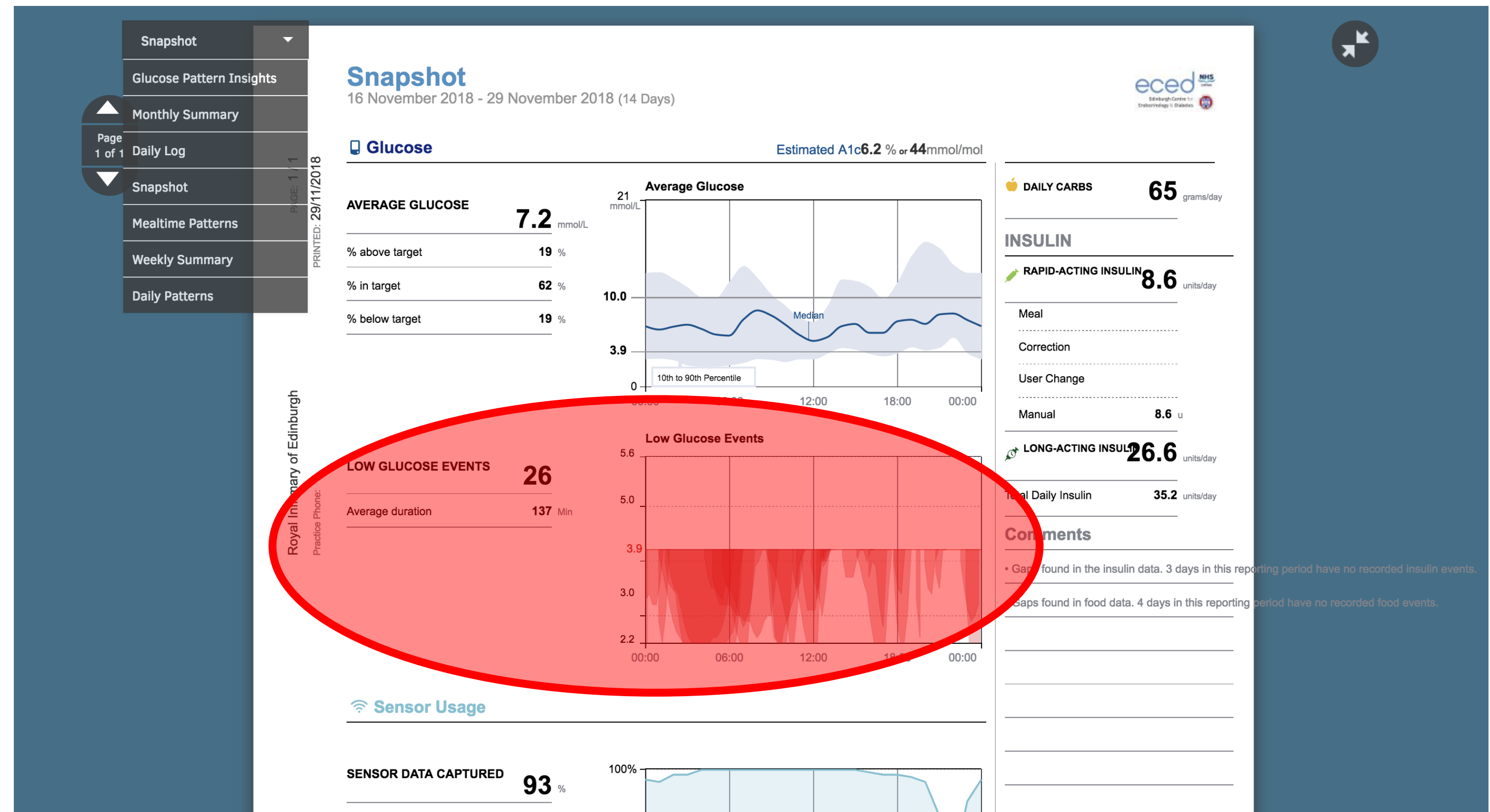
# LibreView - Snapshot



# LibreView - Snapshot

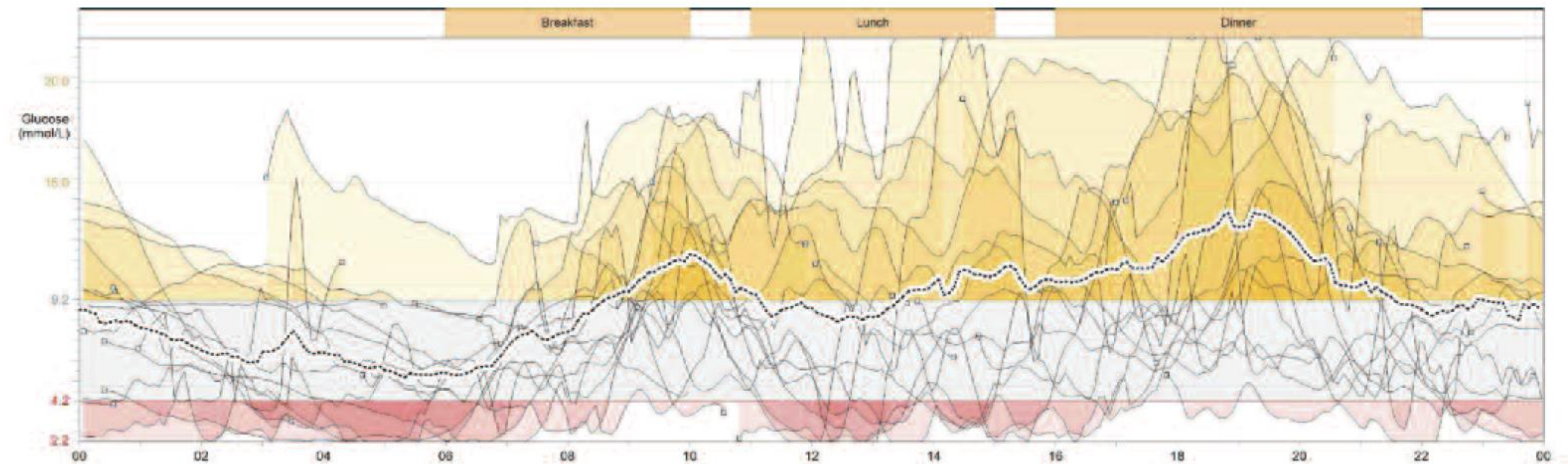


# LibreView - Snapshot





# The 'spaghetti' of CGM

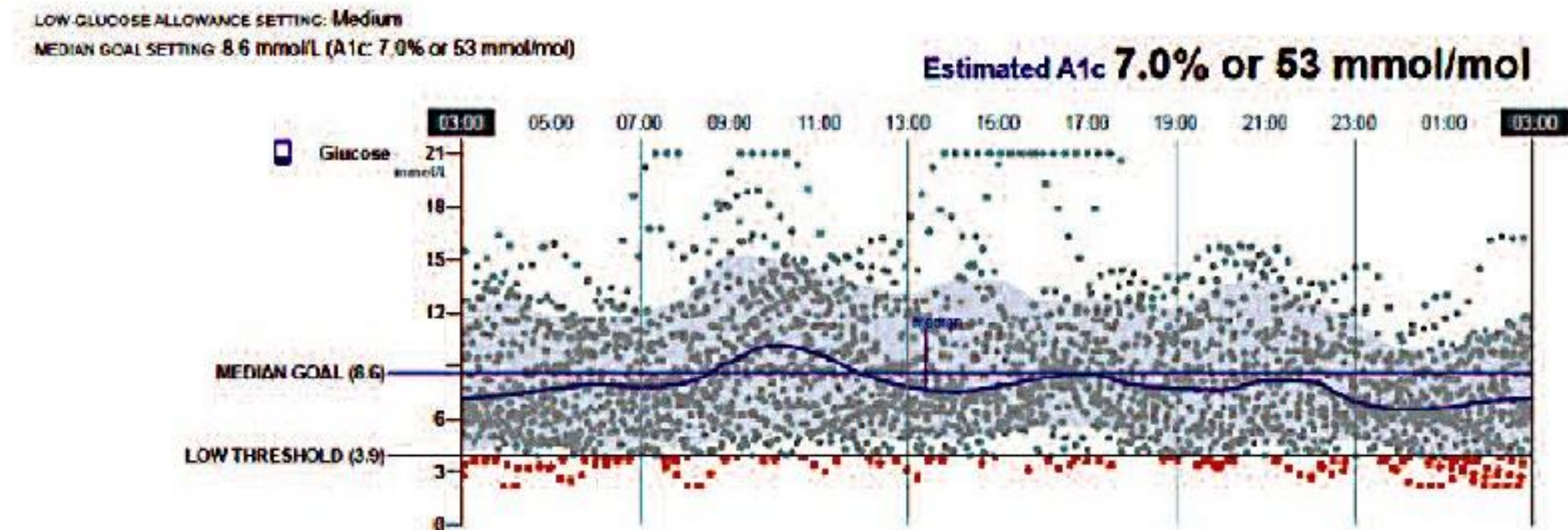


From Hammond P. Interpreting the ambulatory glucose profile.  
*Br J Diabetes* 2016; 16(S1): S10 – S15

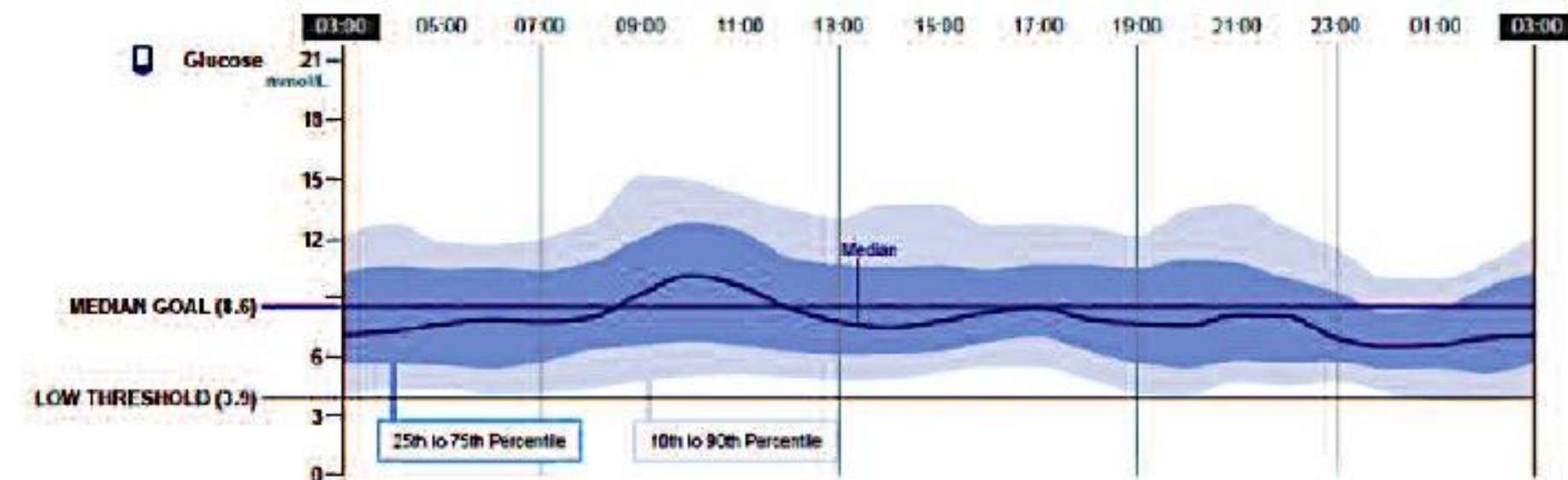


# Ambulatory Glucose Profile

a) Raw scattered data



b) The ambulatory glucose profile derived from the same data reveals periods of increased hypoglycaemia risk between 00.00–08.00 and 18.30–20.30.



From Hammond P. Interpreting the ambulatory glucose profile.  
*Br J Diabetes* 2016; 16(S1): S10 – S15

# AGP

## Glucose Pattern Insights

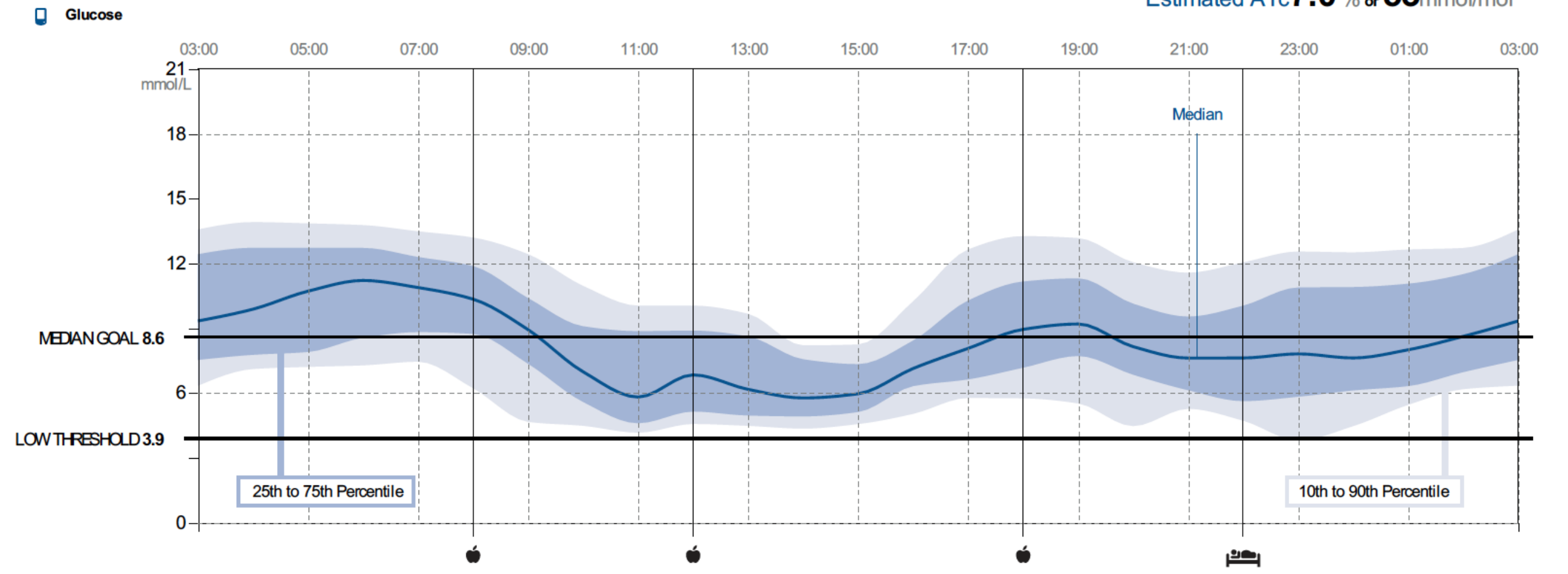
16 November 2018 - 29 November 2018 (14 Days)



Estimated A1c **7.0%** or **53** mmol/mol

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Royal Infirmary of Edinburgh  
Practice Phone:



Likelihood of LOW GLUCOSE	OK				
MEDIAN GLUCOSE Compared to goal		OK	OK	OK	OK
VARIABILITY BELOW MEDIAN Median to 10th percentile					



Association of British Clinical Diabetologists





# AGP

## Glucose Pattern Insights

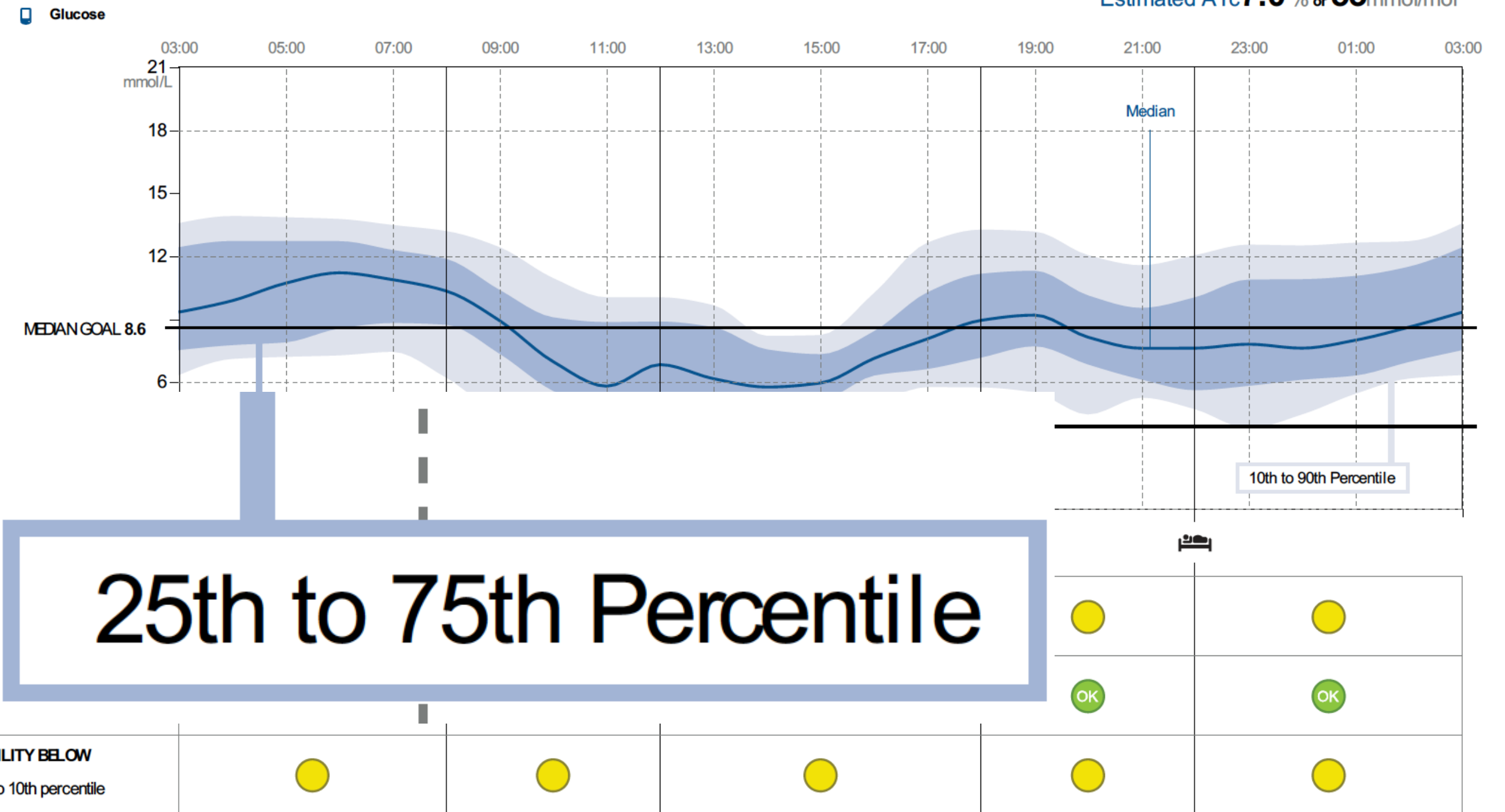
16 November 2018 - 29 November 2018 (14 Days)



Estimated A1c **7.0%** or **53** mmol/mol

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Royal Infirmary of Edinburgh  
Practice Phone:



Association of British Clinical Diabetologists



# AGP

## Glucose Pattern Insights

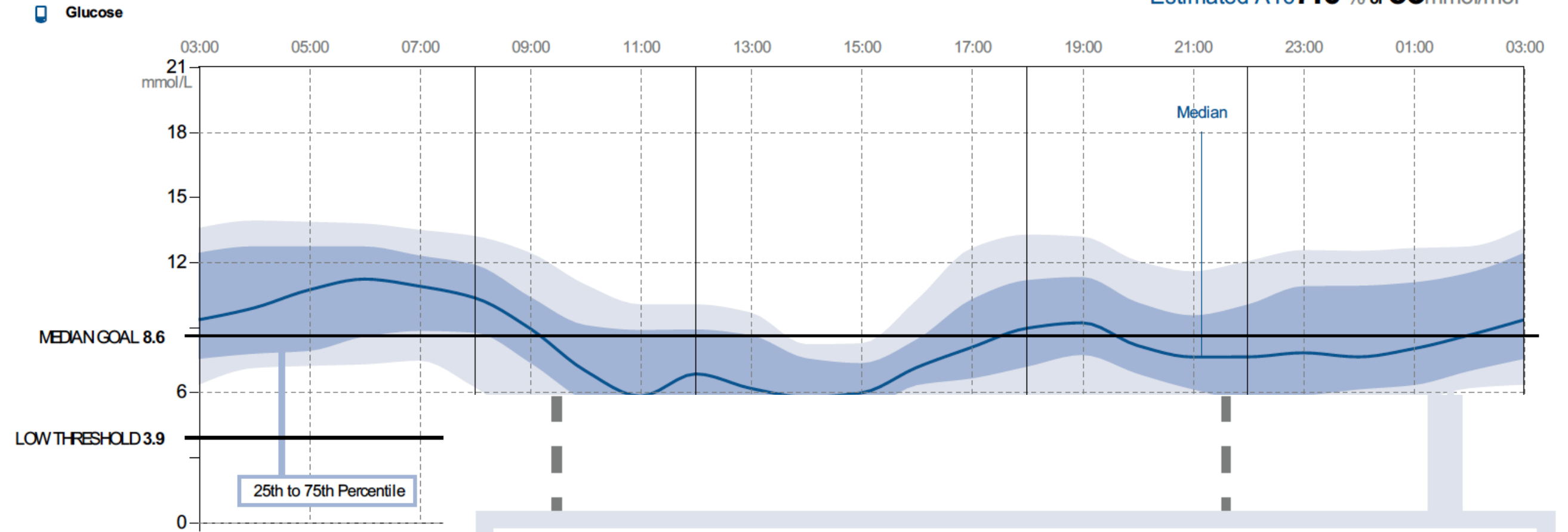
16 November 2018 - 29 November 2018 (14 Days)



Estimated A1c **7.0%** or **53**mmol/mol

PAGE: 1 / 1  
PRINTED: 29/11/2018

Royal Infirmary of Edinburgh  
Practice Phone:






Likelihood of LOW GLUCOSE	OK
MEDIAN GLUCOSE Compared to goal	
VARIABILITY BELOW MEDIAN Median to 10th percentile	



Association of British Clinical Diabetologists



# Simple traffic lights

Traffic Light	Risk	What Should I Do?
	Low	Low chance of hypo- or hyperglycaemia (most glucose results closer to target). No action required.
	Moderate	Moderate or high chance of hypo- or hyperglycaemic episode (many glucose results further away from target). Consider any factor which may have contributed to this reading and check the relevant checkbox
	High	There is a very high risk of hypo- or hyperglycaemic episode (a lot of glucose results away from the goal). Consider any factor which may have contributed to this reading and check the relevant checkbox



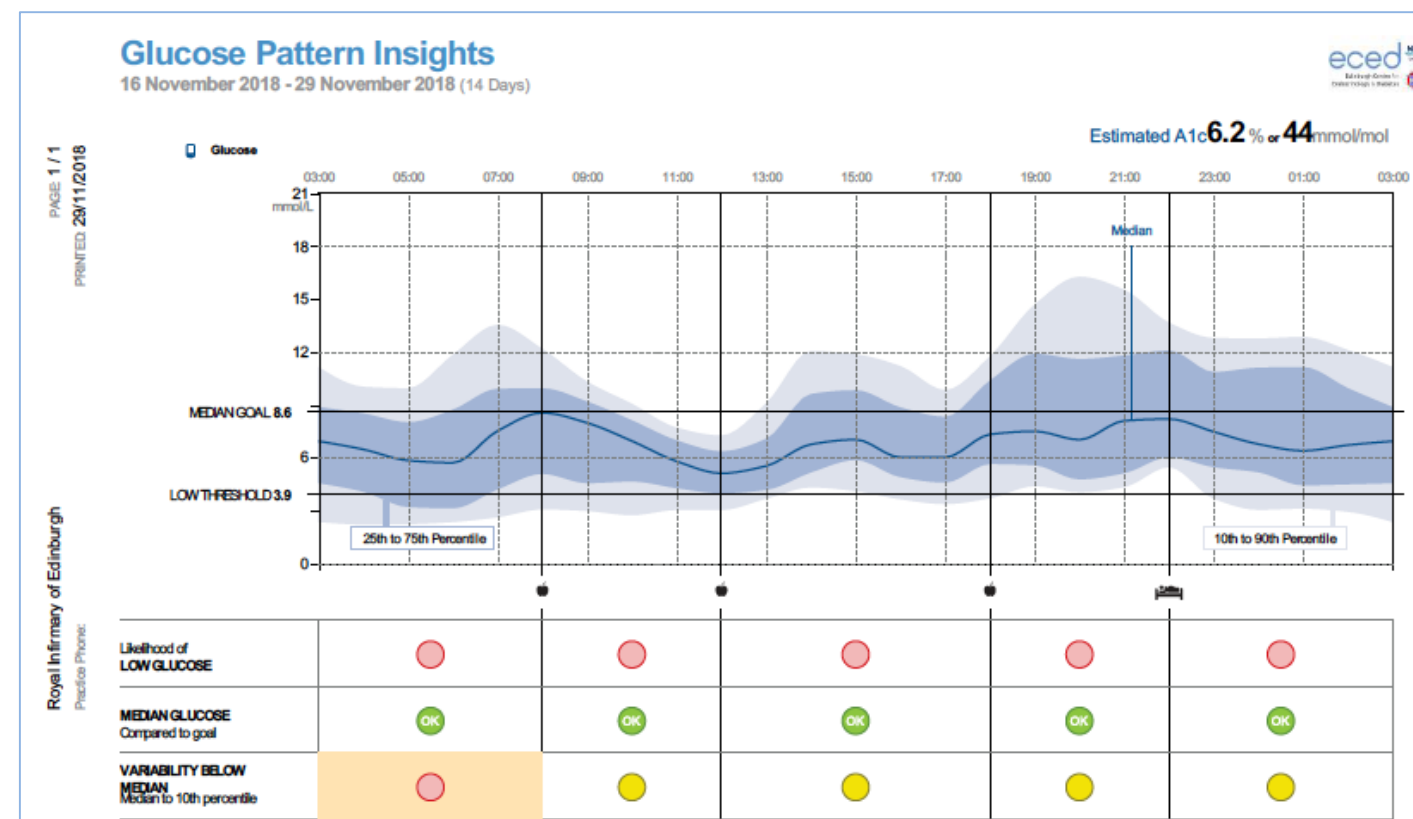
Association of British Clinical Diabetologists



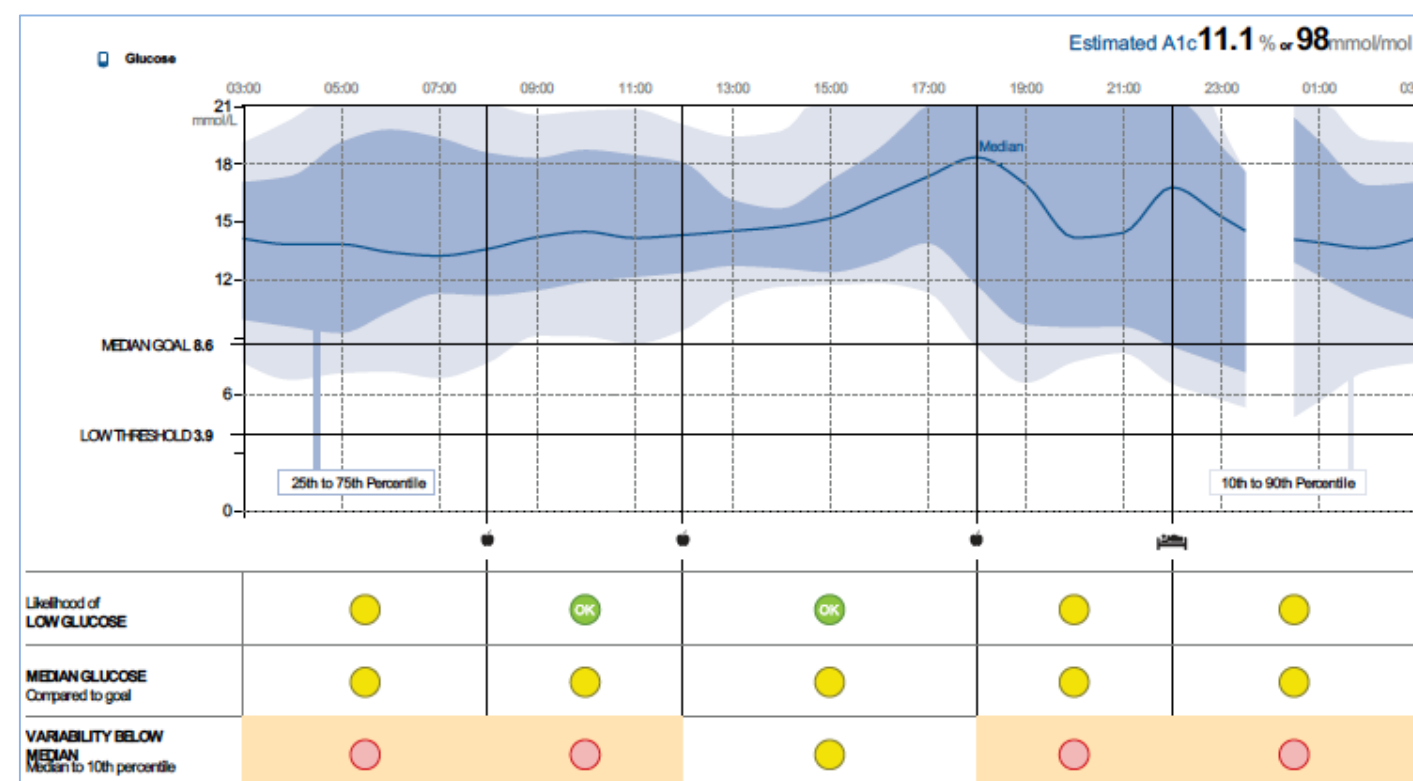


# AGP and 'traffic lights'

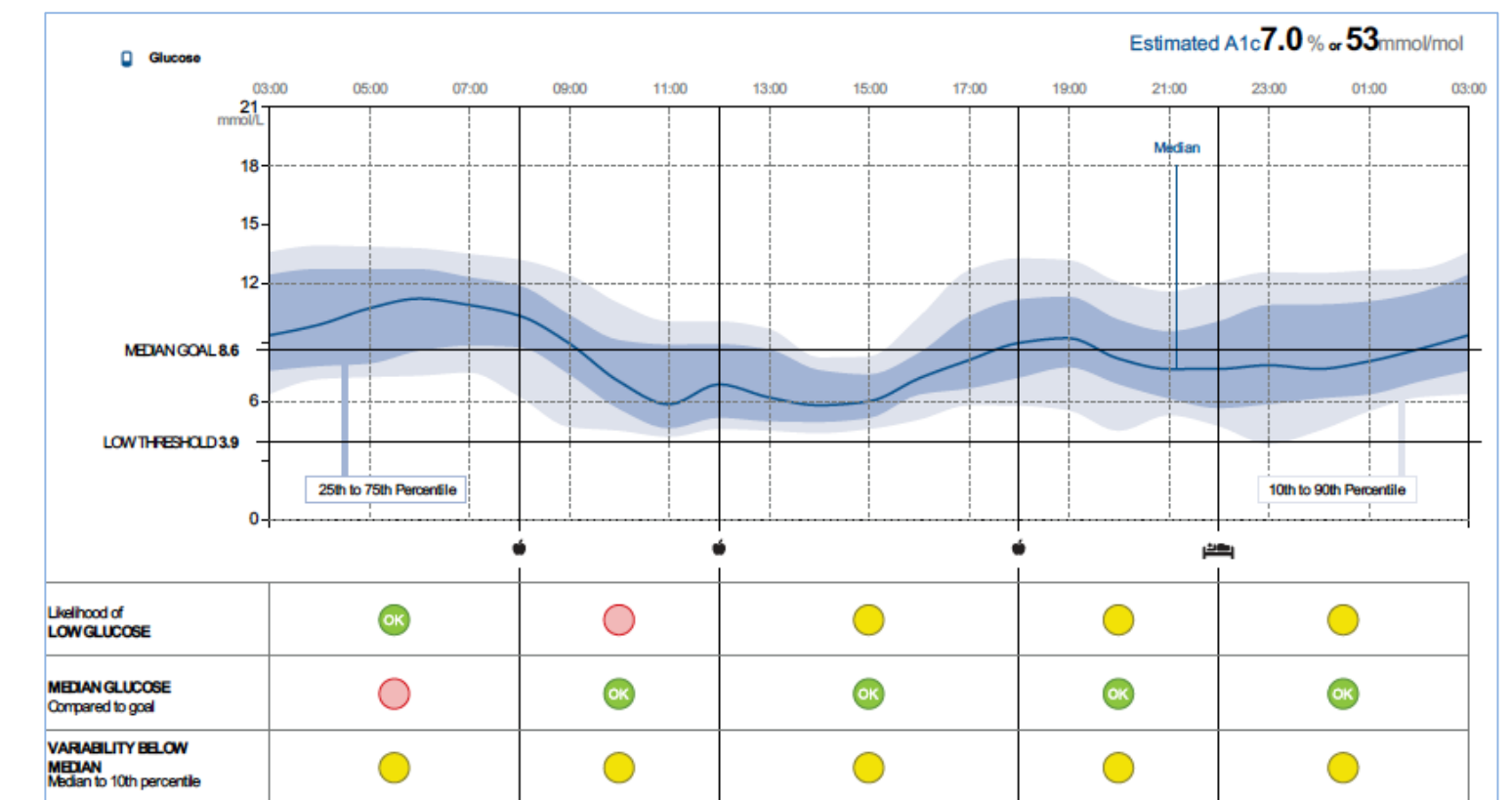
A



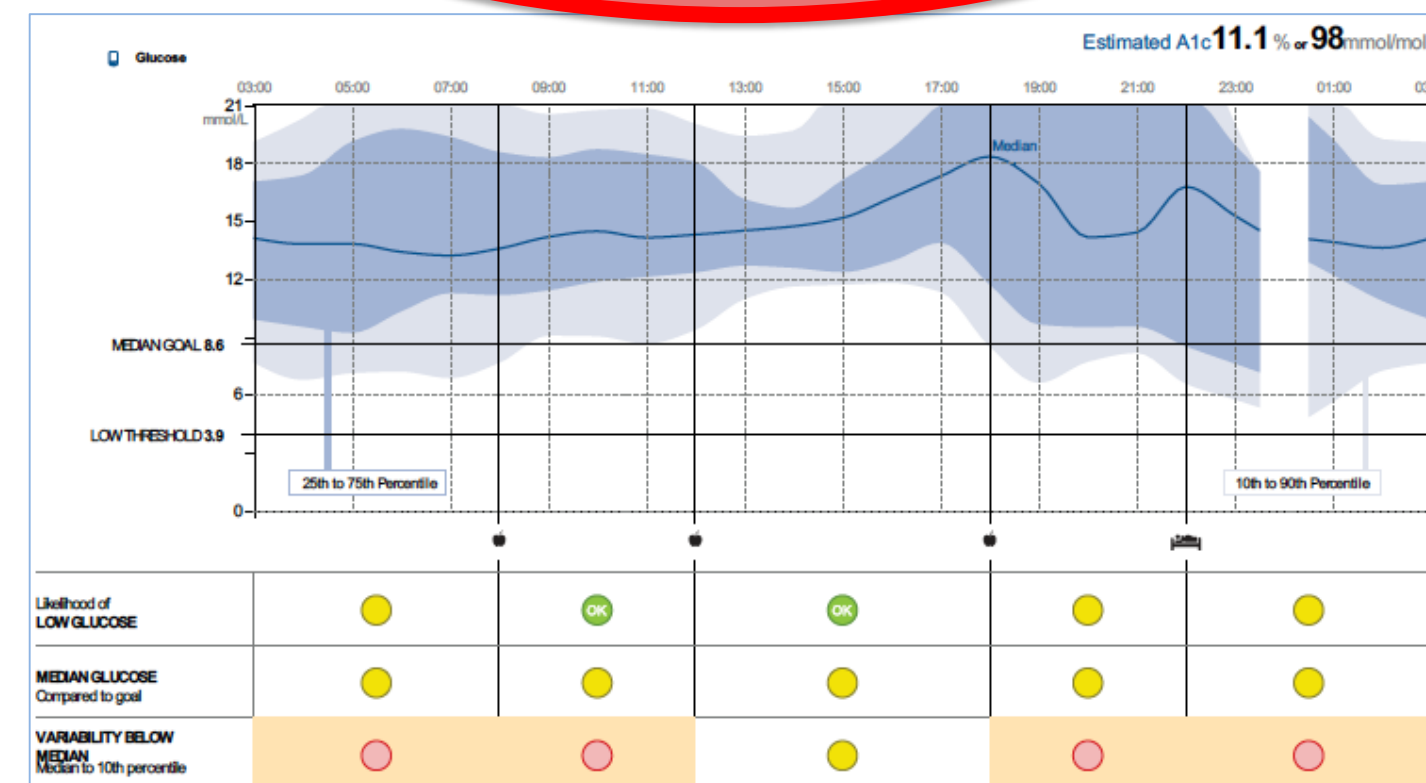
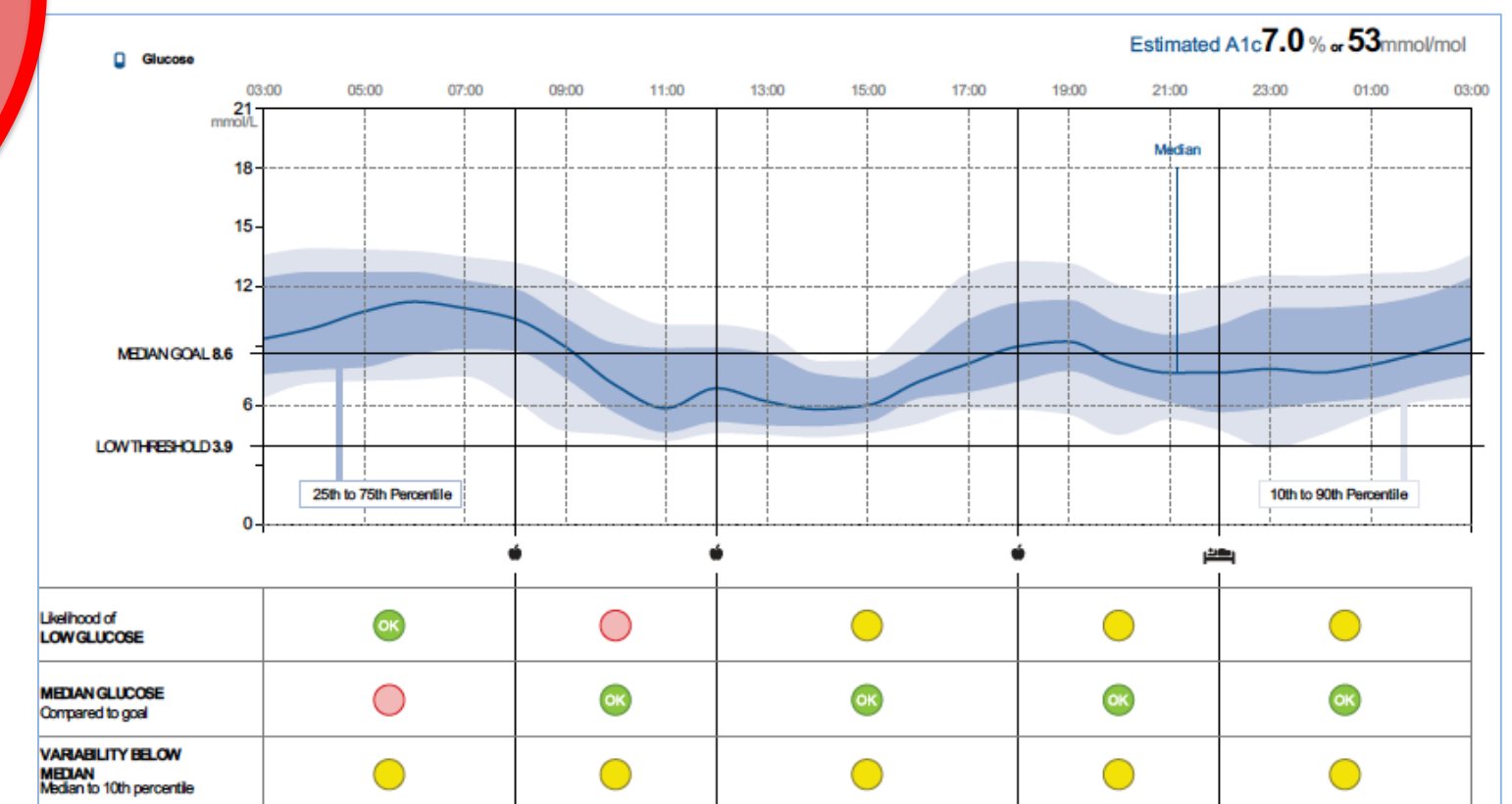
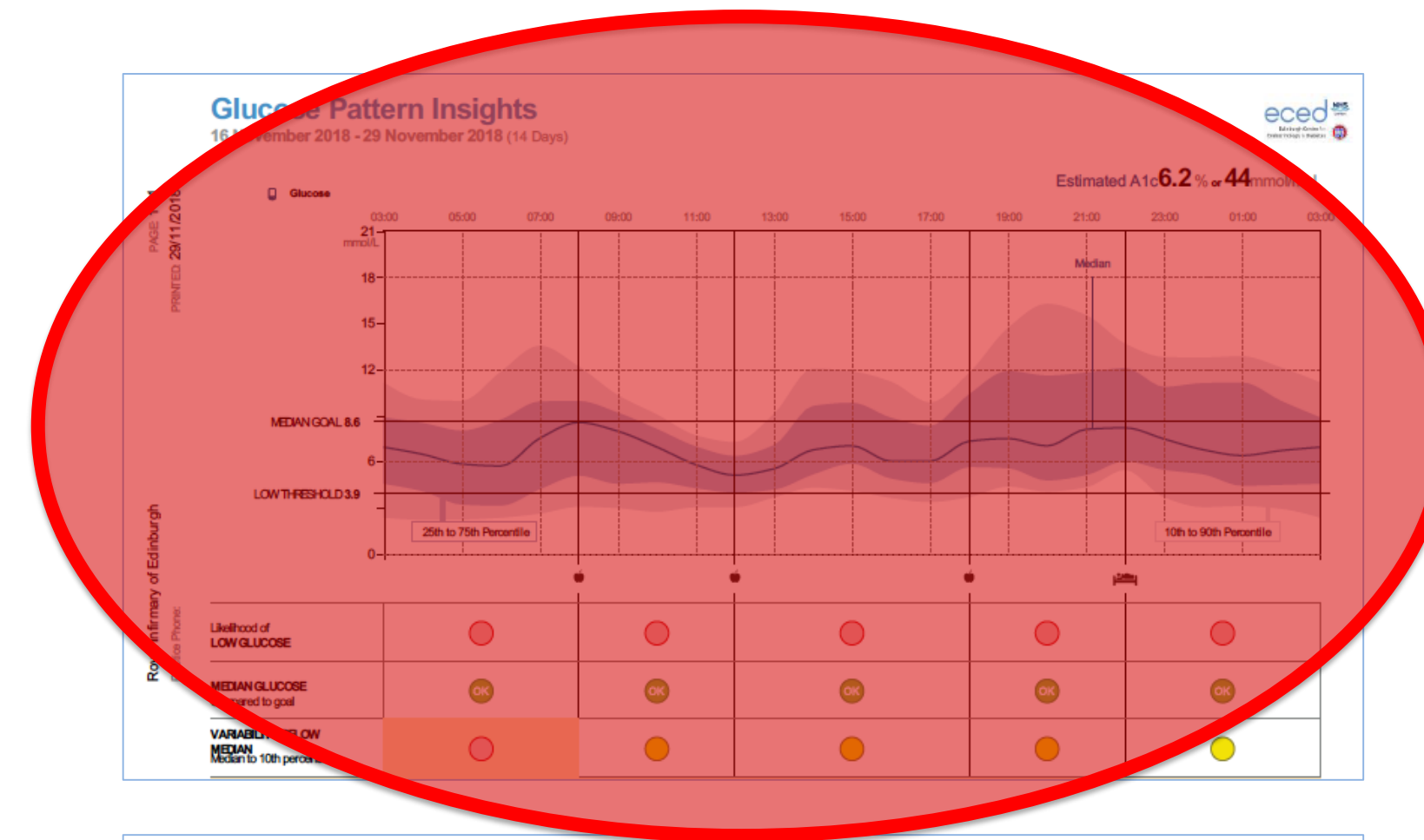
B



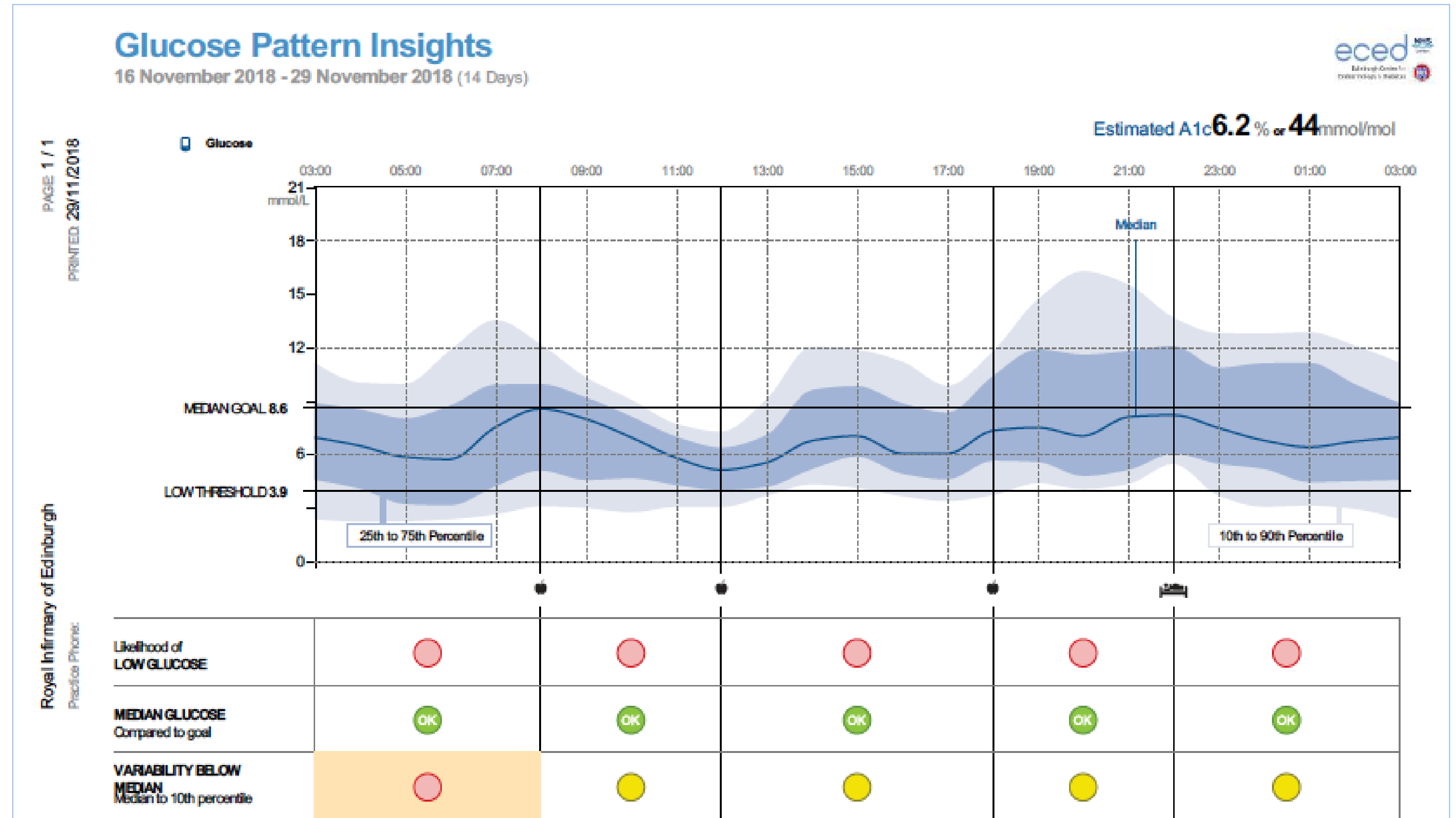
C



# AGP – how representative?



# AGP – how representative?







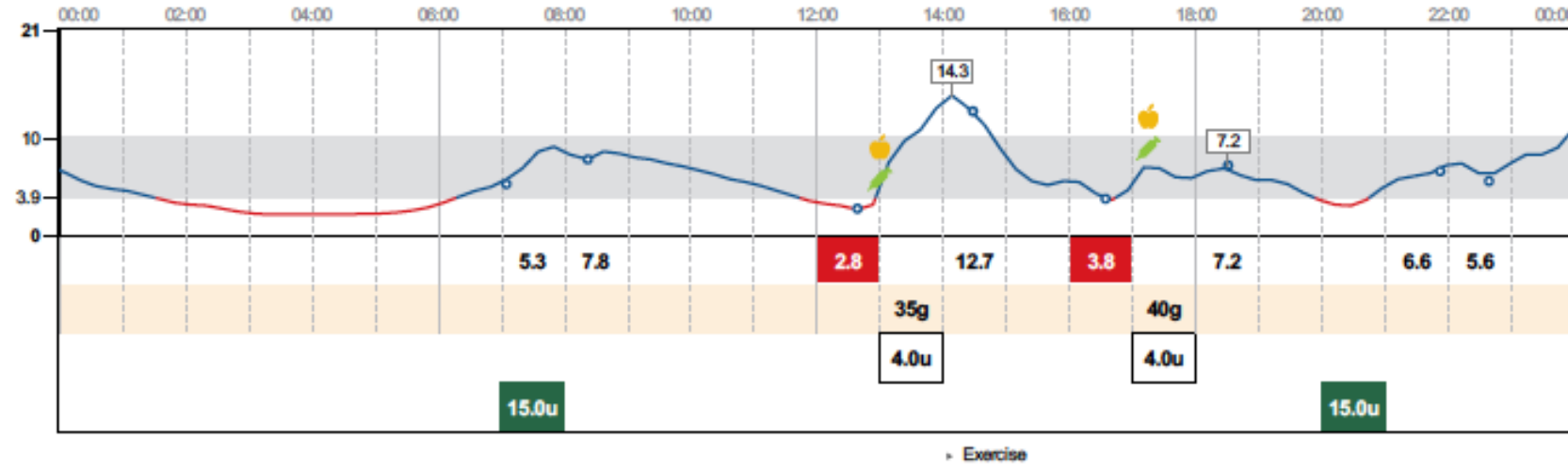


# The 'Daily Log'





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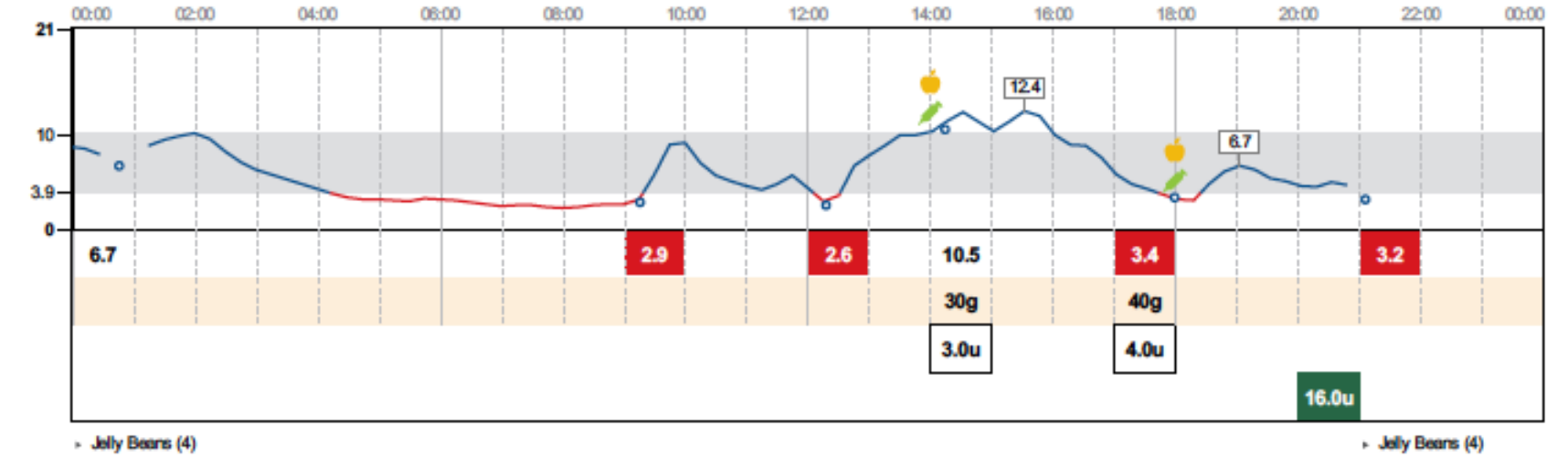
FRI 16 Nov

-  Glucose mmol/L
-  Carbs grams
-  Rapid-Acting Insulin
-  Long-Acting Insulin
- Notes







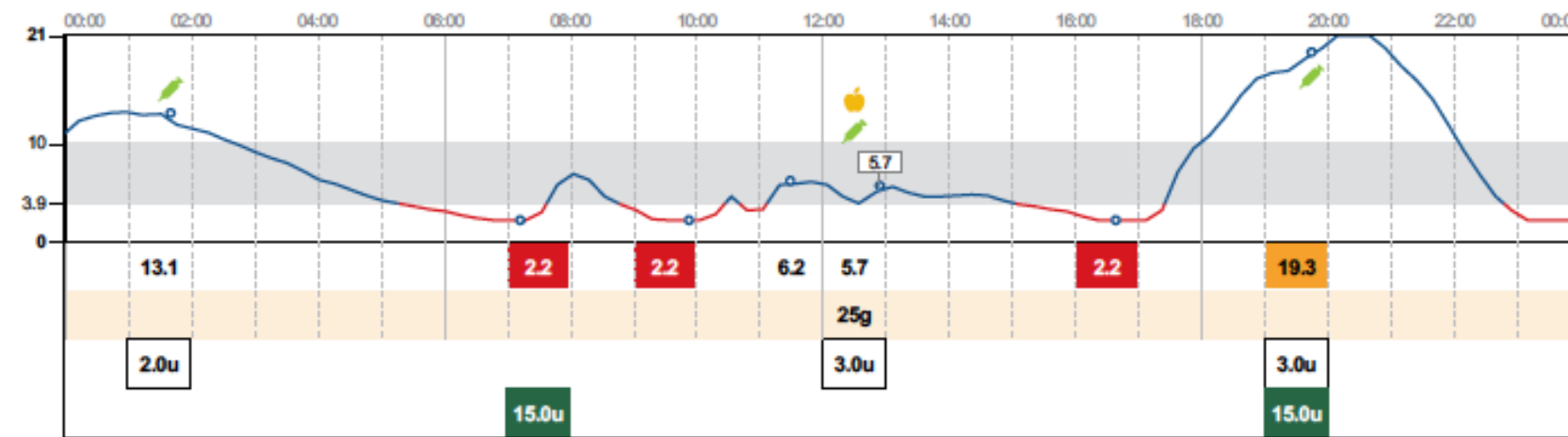
SAT 24 Nov

-  Glucose mmol/L
-  Carbs grams
-  Rapid-Acting Insulin
-  Long-Acting Insulin
- Notes







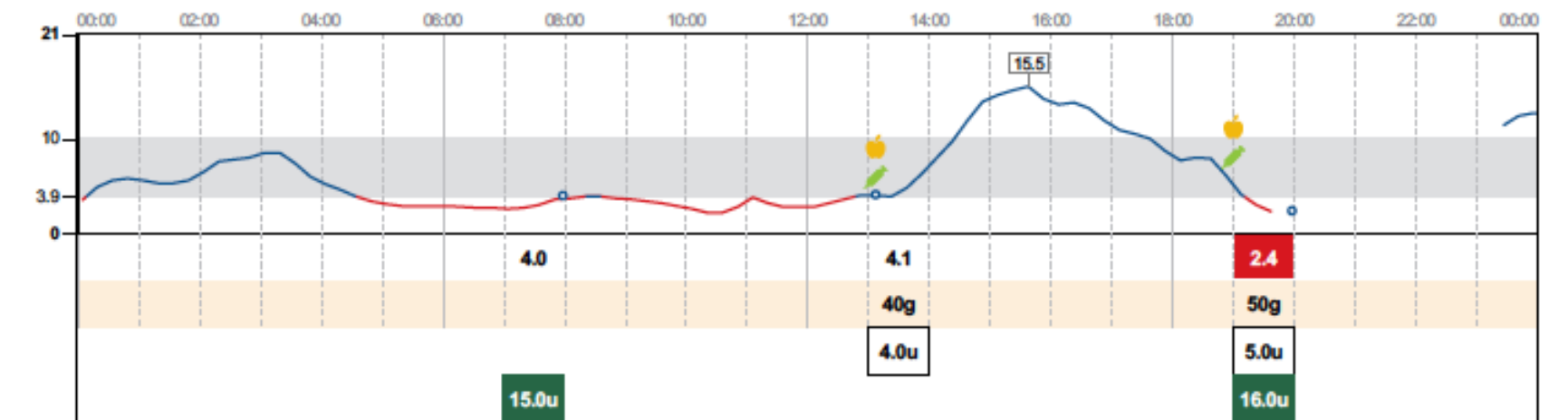
SAT 17 Nov

-  Glucose mmol/L
-  Carbs grams
-  Rapid-Acting Insulin
-  Long-Acting Insulin
- Notes







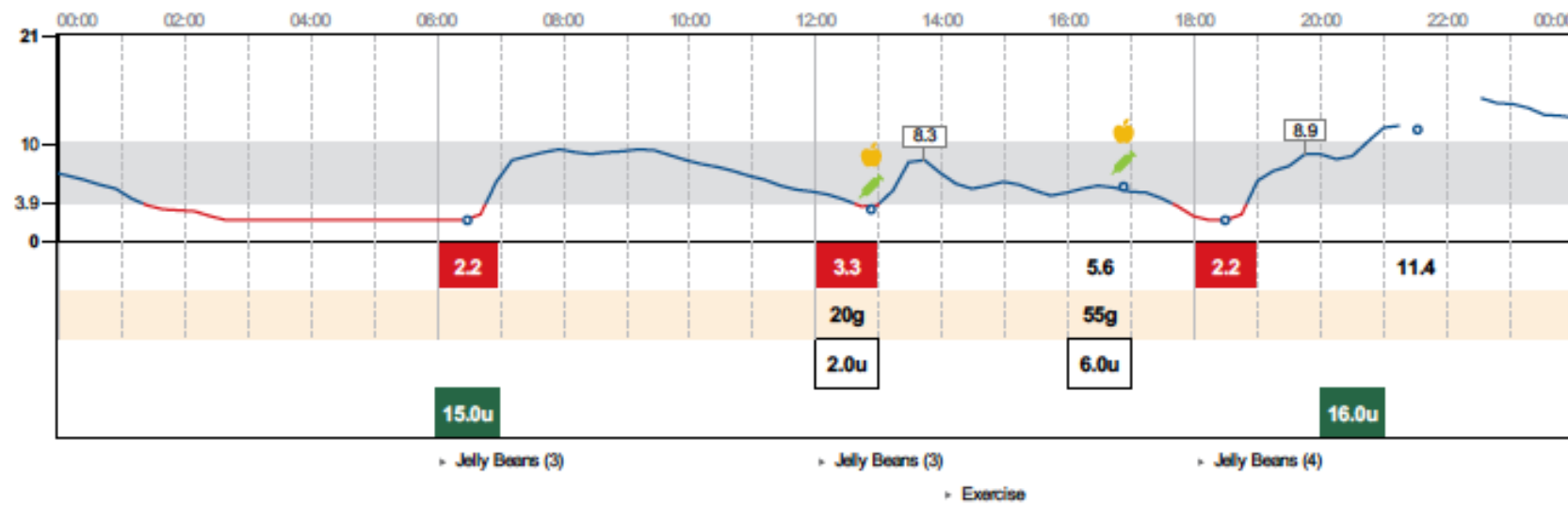
SUN 25 Nov

-  Glucose mmol/L
-  Carbs grams
-  Rapid-Acting Insulin
-  Long-Acting Insulin
- Notes




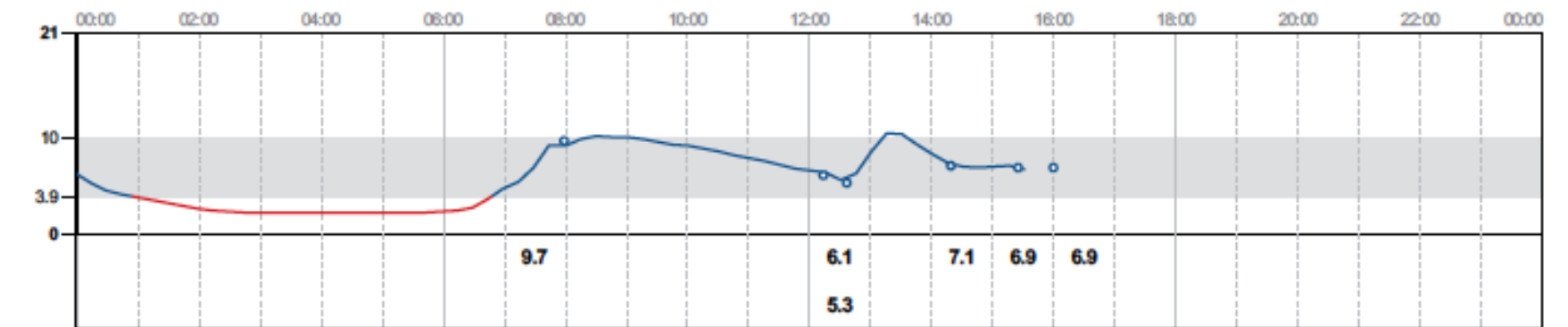
WED 21 Nov

-  Glucose mmol/L
-  Carbs grams
-  Rapid-Acting Insulin
-  Long-Acting Insulin
- Notes







THU 29 Nov

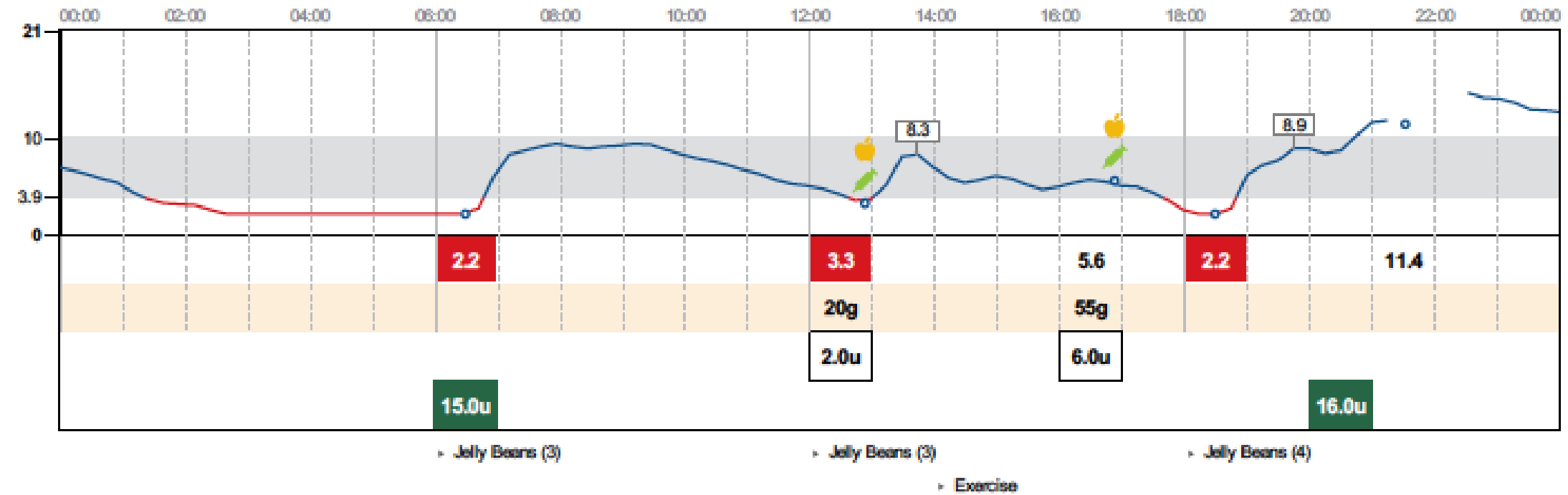
-  Glucose mmol/L
- Notes




# Information in daily log

WED 21 Nov

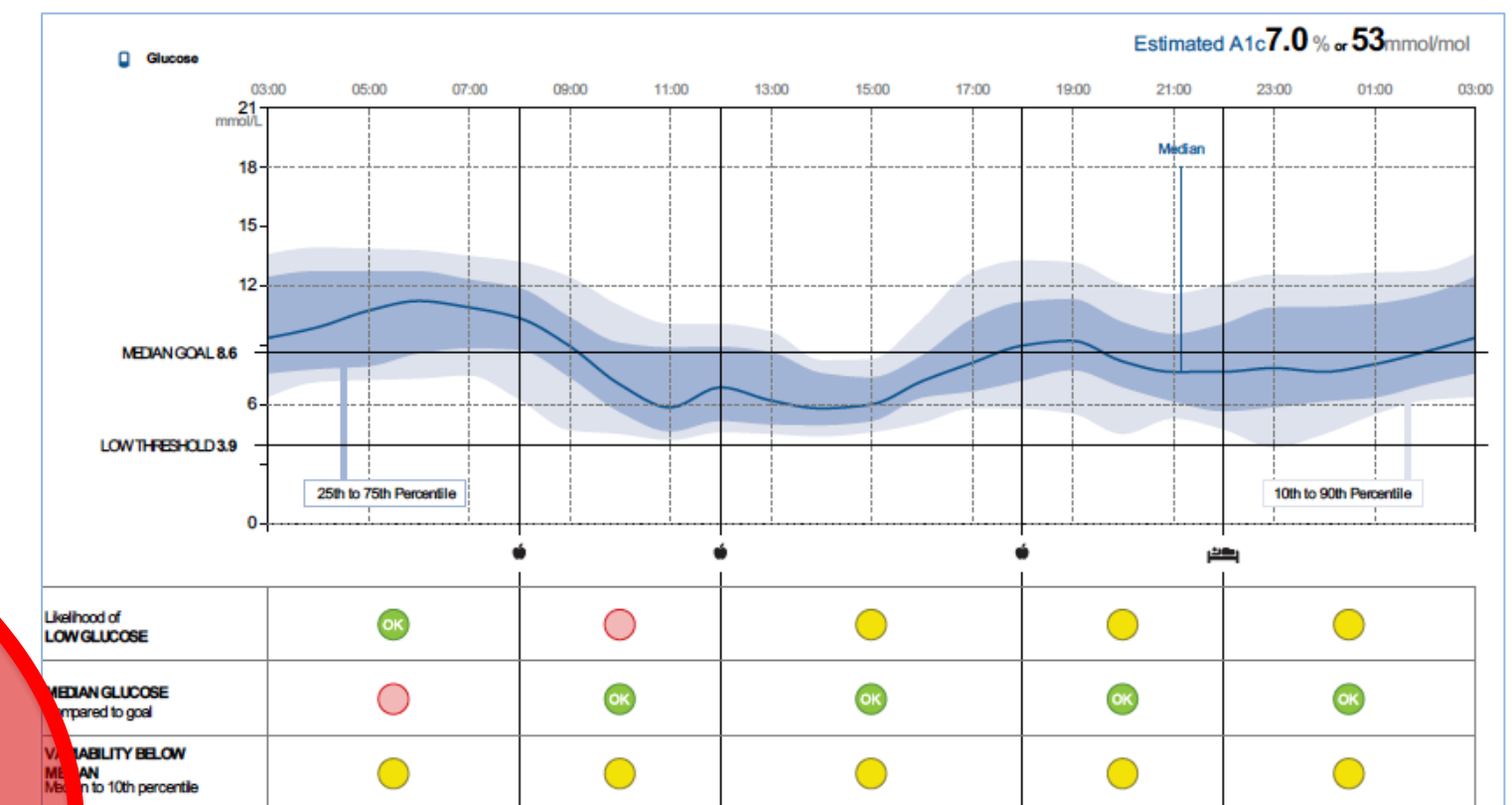
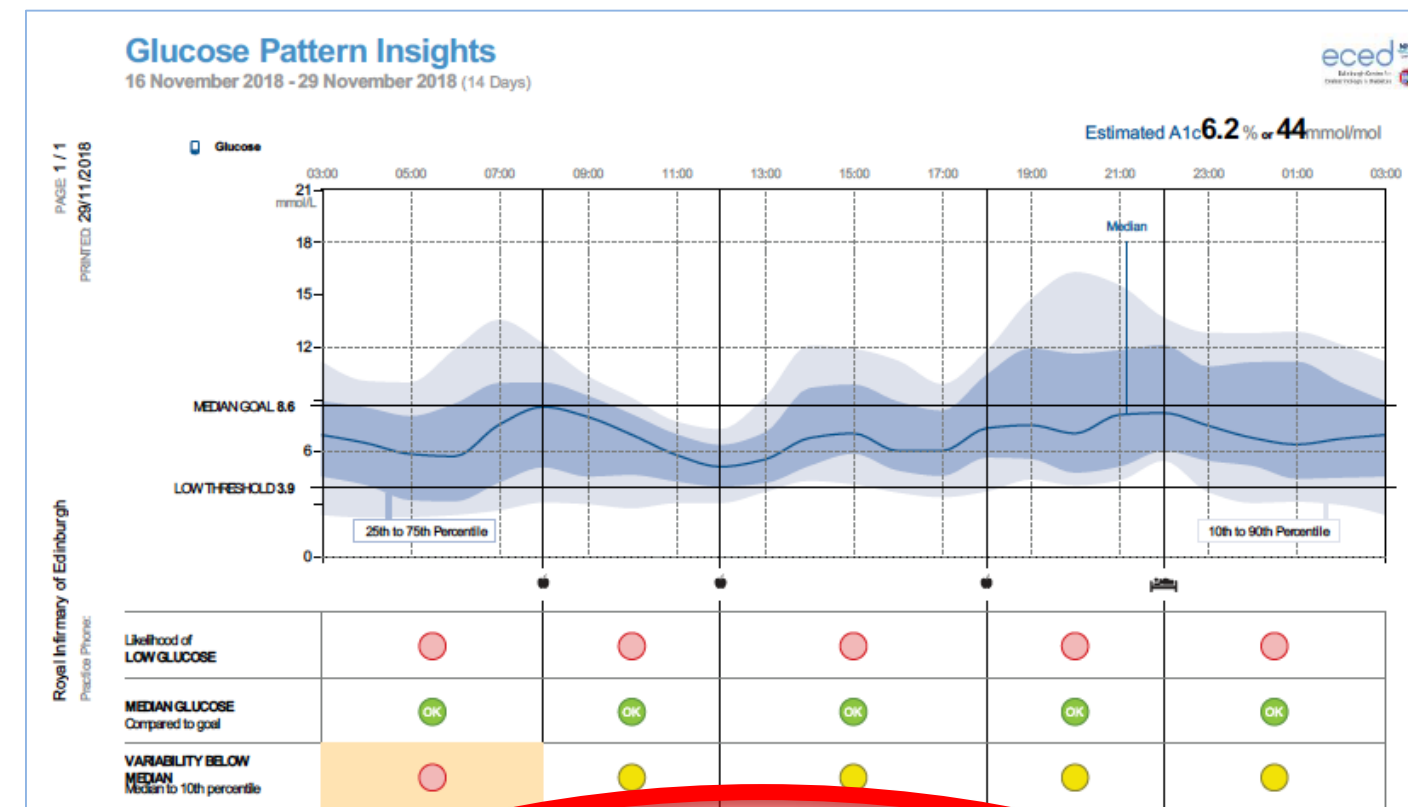
-  Glucose mmol/L
-  Carbs grams
-  Rapid-Acting Insulin
-  Long-Acting Insulin
- Notes



 High Glucose (>13.9)  Low Glucose (<3.9)  Sensor Scan   Logged

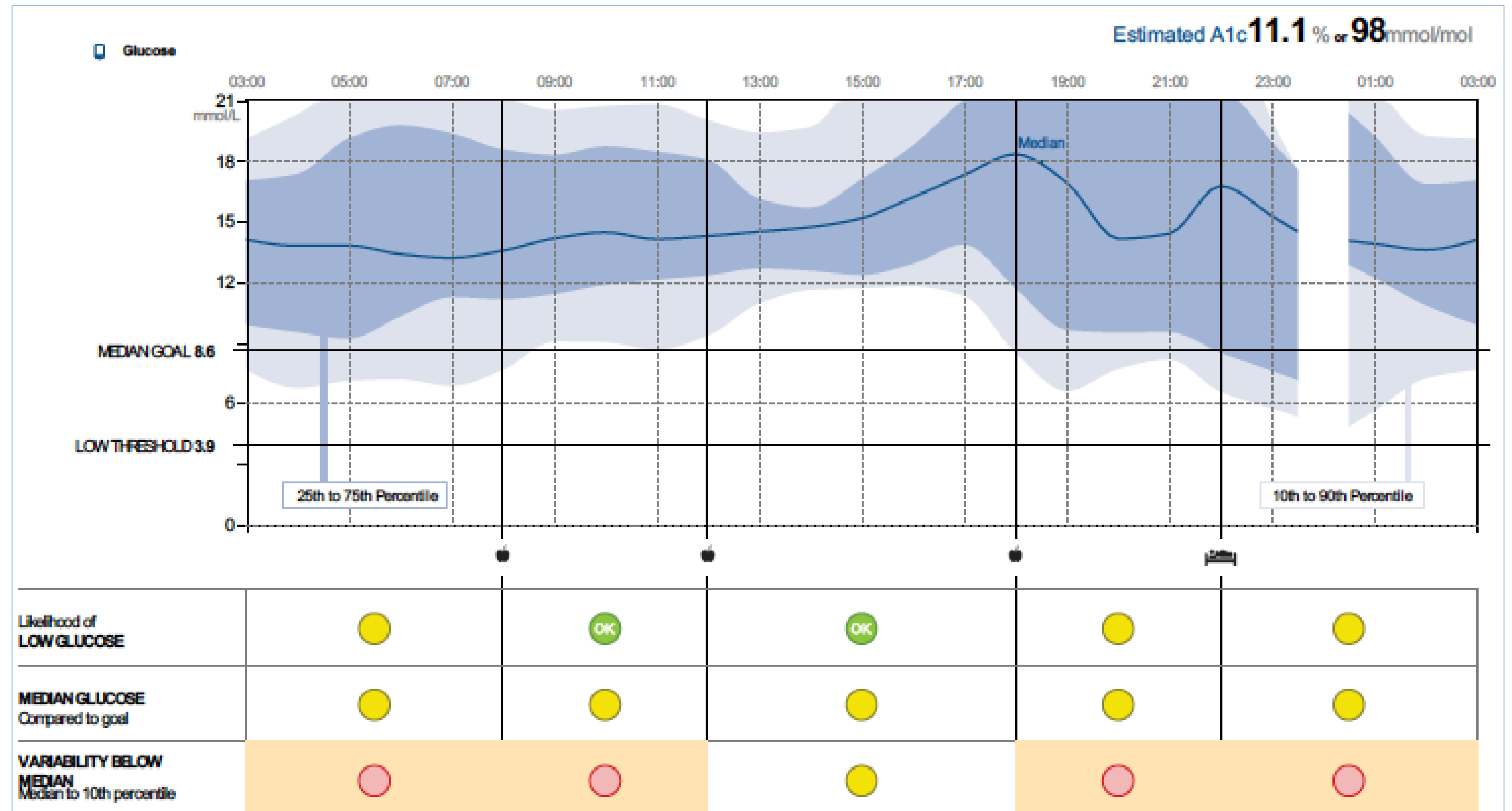
 Post-Meal Peak  New Sensor  Time Change 17.0u-2.0+0.0 15.0u Meal + Correction + User Change = Total \* Strip Test

# AGP – how representative?





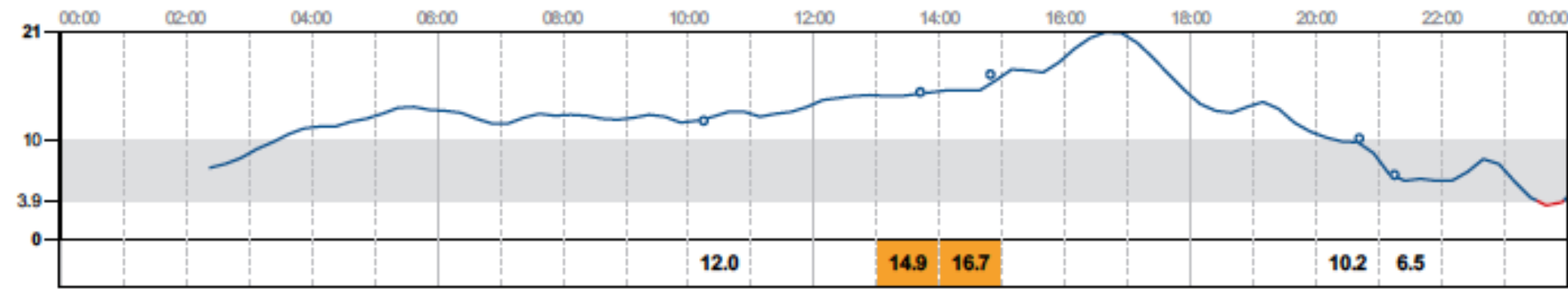
# AGP – how representative?



# AGP – how representative?

TUE 27 Nov

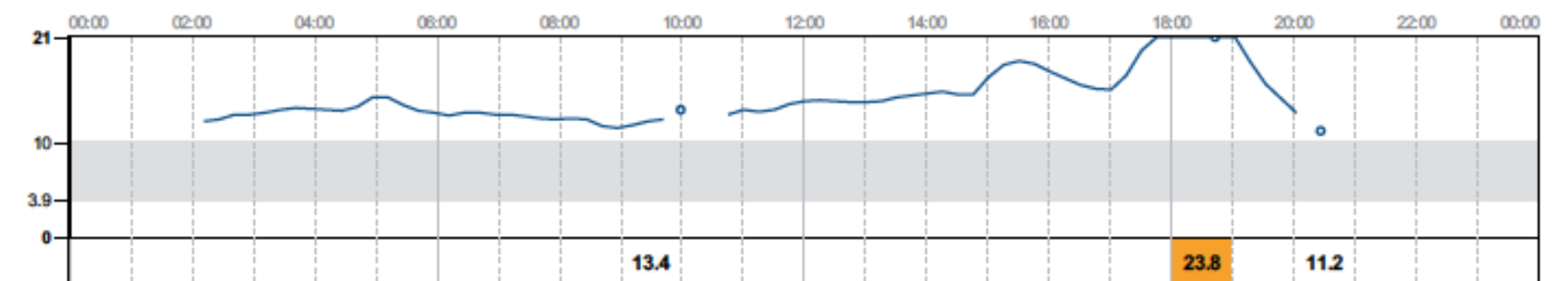
Glucose mmol/L



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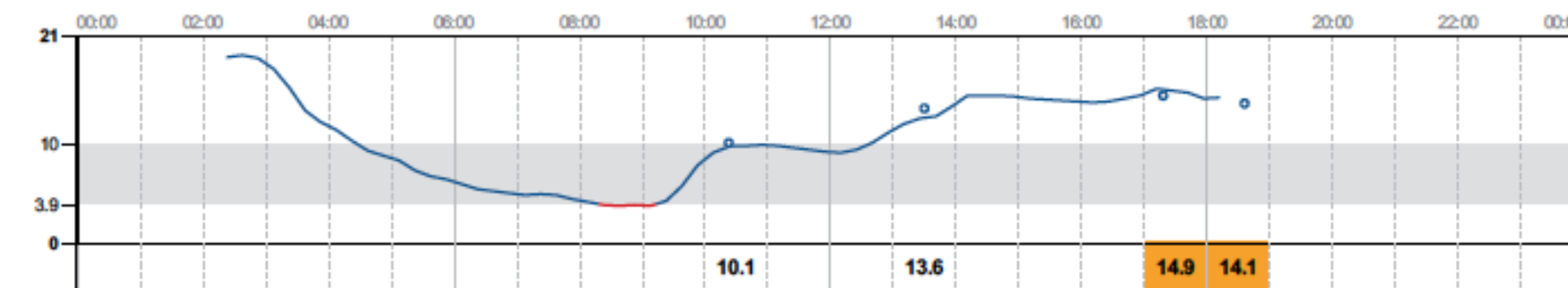
TUE 20 Nov

Glucose mmol/L



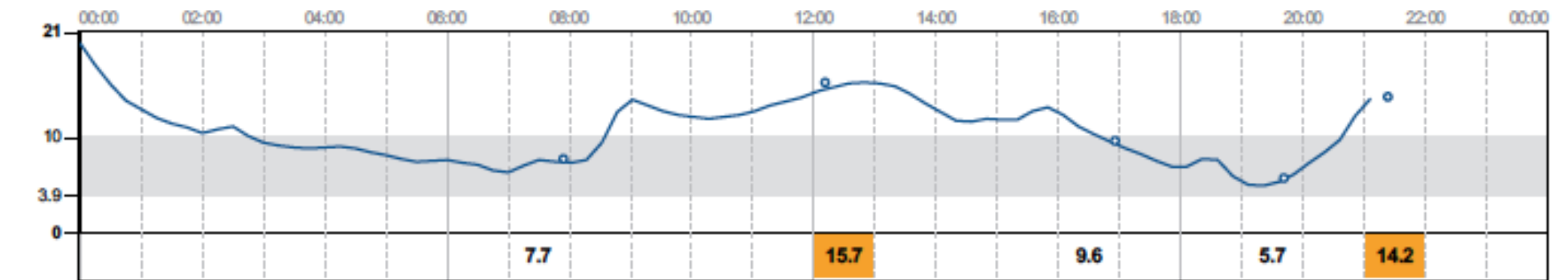
WED 21 Nov

Glucose mmol/L



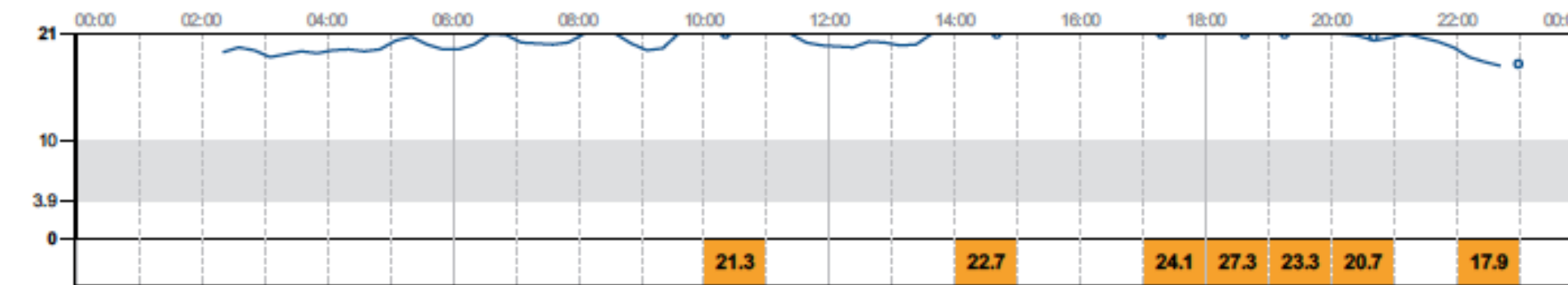
MON 19 Nov

Glucose mmol/L



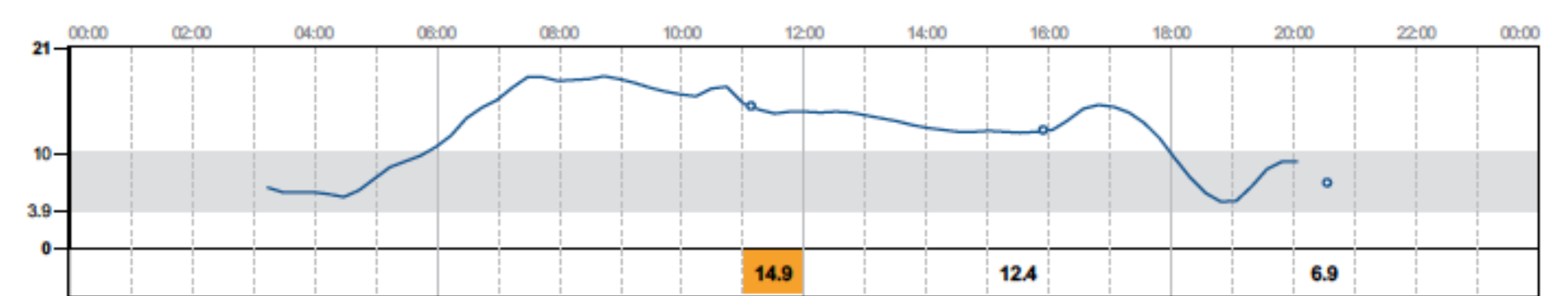
SUN 18 Nov

Glucose mmol/L



FRI 16 Nov

Glucose mmol/L



# The monthly summary

## Monthly Summary November 2018



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Royal Infirmary of Edinburgh  
Practice Phone:

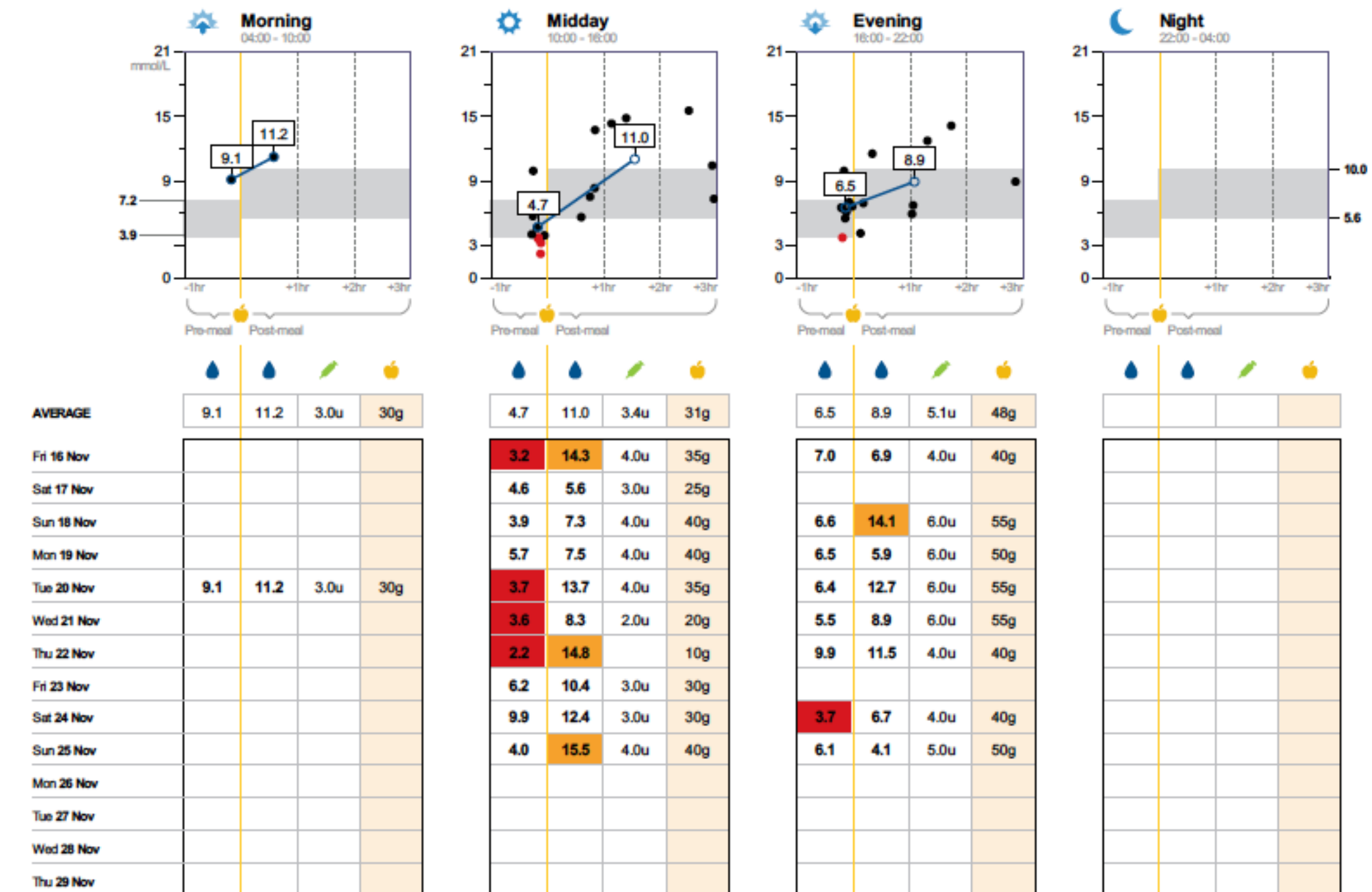
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
<input type="checkbox"/> Average Glucose				6.7 mmol/L	Low 2.3 mmol/L		Low 3.3 mmol/L
<input type="checkbox"/> Scans/Day				10	1		0
<input type="checkbox"/> Low Glucose Events				3			1
	5	6	7	8	9	10	11
	5.8 mmol/L 10 1	7.2 mmol/L 7 1	5.9 mmol/L 10 2	9.1 mmol/L 6 2	7.2 mmol/L 5 2	5.8 mmol/L 11 3	8.3 mmol/L 6 1
	12	13	14	15	16	17	18
	6.3 mmol/L 7 2	6.6 mmol/L 7 1	7.7 mmol/L 11 1	9.7 mmol/L 7 2	5.7 mmol/L 8 3	7.4 mmol/L 7 4	7.6 mmol/L 8 1
	19	20	21	22	23	24	25
	7.1 mmol/L 7 1	8.2 mmol/L 13 1	6.1 mmol/L 5 3	8.4 mmol/L 8 1	8.7 mmol/L 4 1	6.0 mmol/L 6 3	6.2 mmol/L 3 2
	26	27	28	29	30		
	8.8 mmol/L 7 4	5.3 mmol/L 7 1	8.6 mmol/L 5 1	5.8 mmol/L 6 1			



# Mealtime (BG only)

## Mealtime Patterns

16 November 2018 - 29 November 2018 (14 Days)



Legend ■ High Glucose (>13.9) ■ Low Glucose (<3.9) ○ Pre & Post-meal Averages ● Glucose Reading ▲ Glucose Above 21 ■ Rapid-Acting Insulin

# Weekly summary

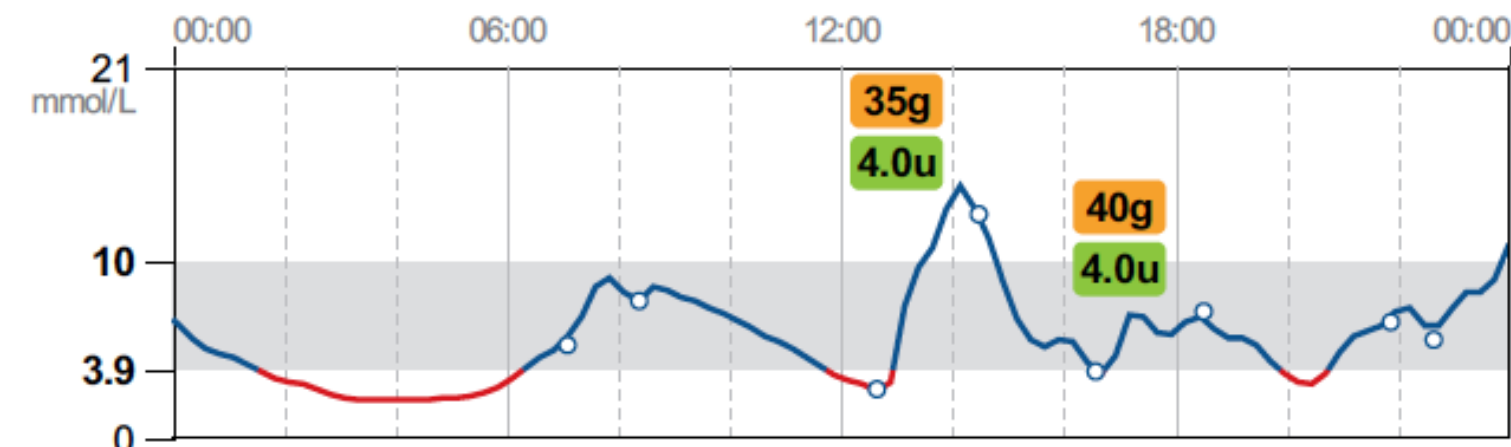
## Weekly Summary

16 November 2018 - 29 November 2018 (14 Days)



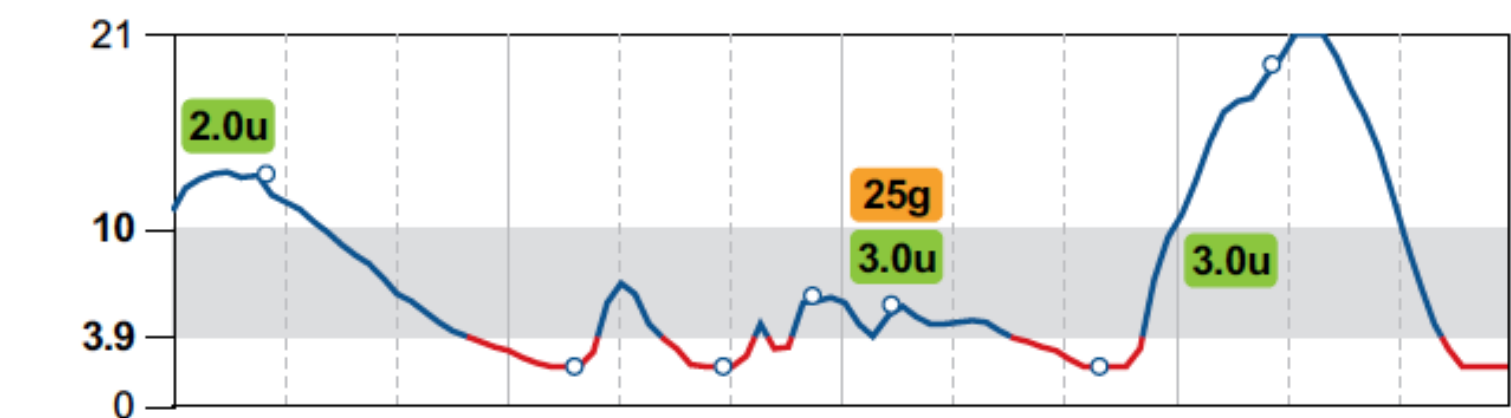
Glucose

Fri  
16 Nov



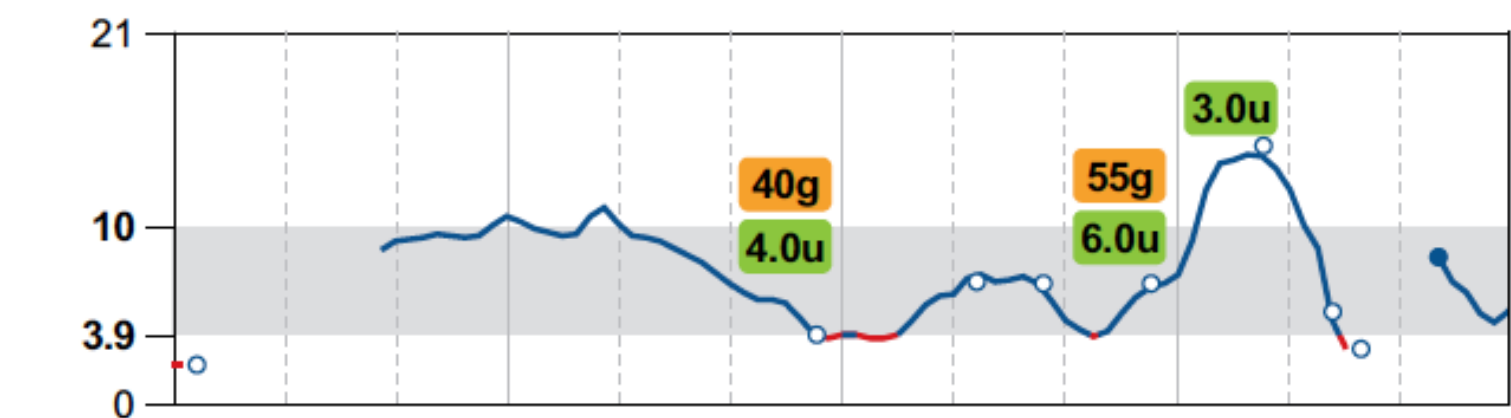
Average Glucose	Carbs	Rapid-Acting Insulin	Long-Acting Insulin
5.7 mmol/L	75 grams	8.0 units	30.0 units

Sat  
17 Nov



Average Glucose	Carbs	Rapid-Acting Insulin	Long-Acting Insulin
7.4 mmol/L	25 grams	8.0 units	30.0 units

Sun  
18 Nov



Average Glucose	Carbs	Rapid-Acting Insulin	Long-Acting Insulin
7.6 mmol/L	95 grams	13.0 units	15.0 units



# Conclusion

- Aim to review data at least every 2 weeks
- Link up your LibreView to your clinic
- Use the AGP (found in daily patterns on LibreLink app) to generate questions
- Use the daily log to answer the questions and consider solutions
- More context –easier to interpret glucose results