

eeced

Edinburgh Centre for Endocrinology & Diabetes

Getting Started with Libre 2 and setting alarms



www.edinburghdiabetes.com



FreeStyle Libre 2

Summary

Differences compared to the original Libre:

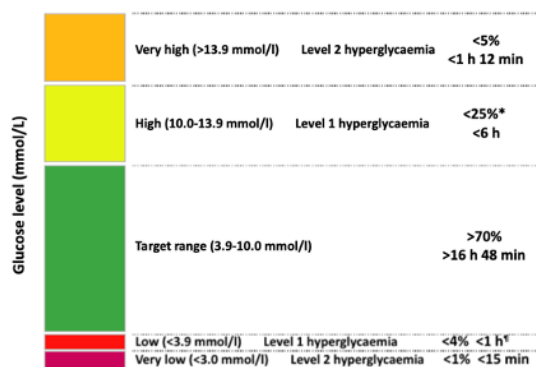
- Improved accuracy
- Optional low glucose alarm
- Optional high glucose alarm



The Libre 2 system will be rolled-out, on prescription, for all current Libre users in NHS Lothian between January and March 2021.

Time in range

3.9 – 10 mmol/l



* Readings >13.9 mmol/l are also included in the <25% target
Readings <3.0 mmol/l are also included in the <4% target

Thinking about individualised targets

A person with HbA1c of 53-63 mmol/mol (7.0-7.9%) will see on average a 4 mmol/mol (0.4%) reduction with each 10% (2 h 24 min) increase in TIR

A person with HbA1c of ≥64 mmol/mol (≥ 8.0%) can see on average a 11 mmol/mol (1.0%) reduction in HbA1c with each 10% (2 h 24 min) increase in TIR

A 10% (2 h 24 min) decrease in TAR can be associated on average with a reduction in HbA1c of approx 7 mmol/mol (0.6%)

For age <25 years with type 1 diabetes, if the HbA1c goal is 58 mmol/mol (7.5%), set TIR target to approx 60%




NB: Target range is not the same as the alarm settings!



Target range is not the same as where you should set the glucose alarms on the Libre. The ideal target for most people with type 1 diabetes would be to achieve >70% time between 3.9 and 10 mmol/l and less than 5% of time below the target range. Most people with TIR >60% will have an HbA1c below the 58 mmol/mol target. Your diabetes team will be happy to work with you to help you achieve these goals. This brief video will explain how the alarm functions on the Libre 2 may help with this process.

FreeStyle Libre 2

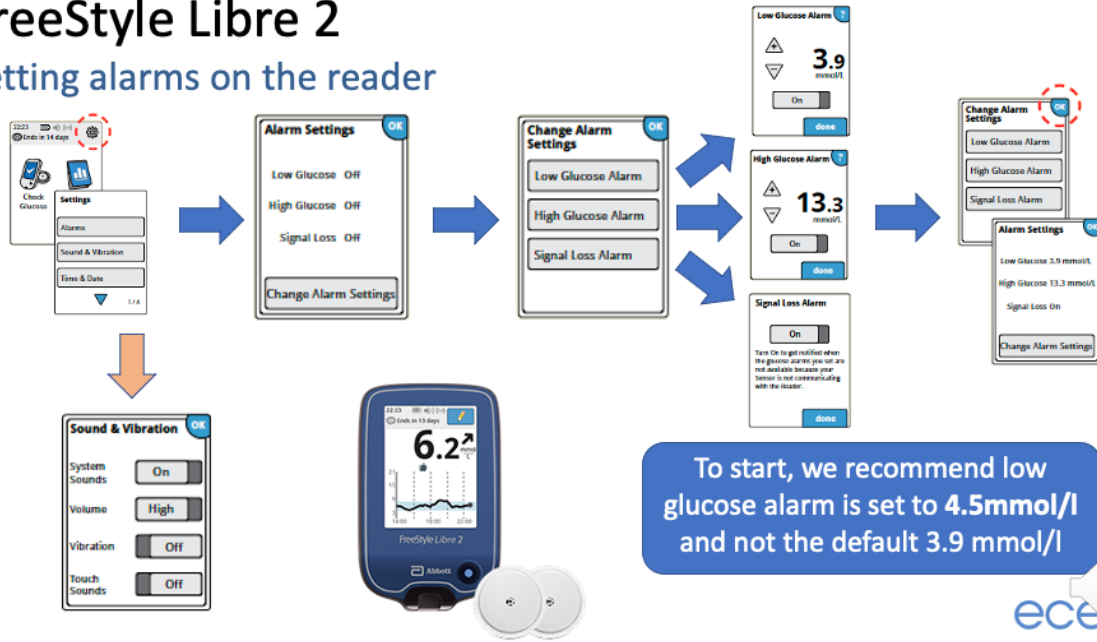
Alarms

- You have to turn the alarms ON – they are turned OFF by default
- The Reader / Phone must be within 6 metres (20ft) of the sensor for alarms to function
- You will see this symbol on the reader  if the sensor is not communicating with the reader
- The signal loss alarm will sound if there is not communication between sensor and reader for 20 minutes
- Make sure sound and vibration are set to on



FreeStyle Libre 2

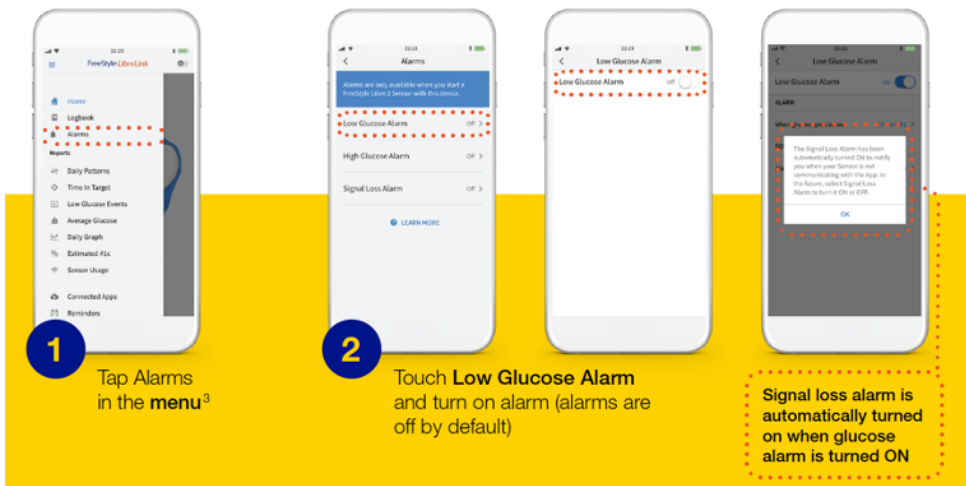
Setting alarms on the reader



If you use a reader – you will have to ensure you have ordered a new Libre 2 reader from Abbott – details of how to do this are on our website. This slide explains the process of setting up the alarms on the reader.

FreeStyle Libre 2

Setting alarms on a mobile phone (LibreLink)



If you use your mobile phone to scan, all you need to do is ensure you have the current version of LibreLink downloaded. These next two slides describe the process of setting alarms on the phone.

Libre 2


Setting alarms on a mobile phone (LibreLink)

3 Scroll to select **Low Glucose Value**¹

To start, we recommend low glucose alarm is set to 4.5mmol/l and not the default 3.9 mmol/l

4 Touch **Alarm Tone** and make your tone choice

5 Set your **High Glucose Alarm** using the same steps⁵



We will explain, in later slides, why setting the low alarm at 4.5 is perhaps the best strategy for most.

FreeStyle Libre 2

Alarms – what to do

**When alarm sounds → scan Libre
to find out glucose result**

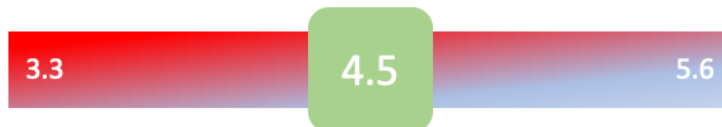
**Consider finger-prick test on low
glucose alert**



Low glucose alarm

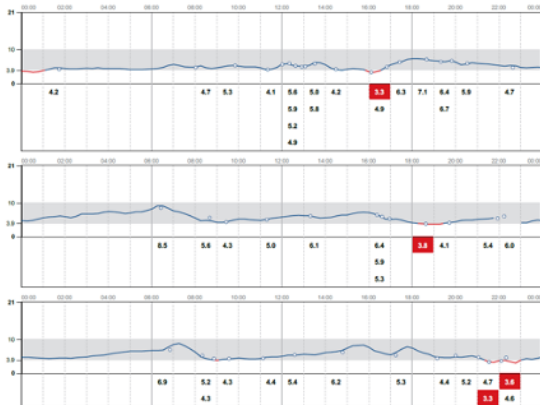
Why start at 4.5 mmol/l ?

- The aim of the alarm is to help avoid hypoglycaemia
- The optimal setting for the low alarm will depend on how early you develop hypo symptoms and how quickly hypos typically develop
- It will also depend upon what your 'typical' glucose profile looks like
- It can be set anywhere between 3.3 and 5.6 mmol/mol
- At what level would you want to be woken from sleep?



Low glucose alarm

Adjusting the setting



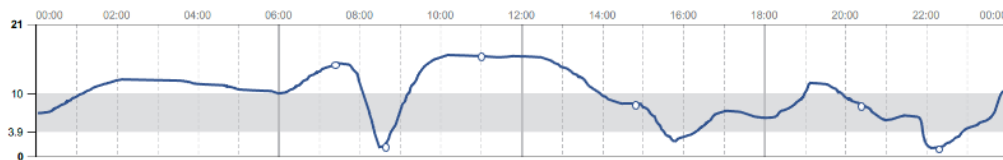
If you run very tight glucose levels, near the lower end of the range (and have good awareness), 4.5 mmol/mol may result in too many alarms, where hypoglycaemia does not develop – in that case, the setting could be turned down (e.g. 4 mmol/mol)

Pregnancy (3.5 – 4 mmol/mol) – discuss with your diabetes team



Low glucose alarms

Reduced awareness of hypoglycaemia



- If you have reduced awareness of hypos, are prone to sudden onset hypoglycaemia or are prone to severe hypos – you may wish to have your low glucose alarm set at a higher value – to give you more time to respond before the glucose drops into the hypo range
- If unsure, discuss this with your diabetes team



Low glucose alarms

Preventing and treating hypos

- Preventing hypoglycaemia will often require less carbohydrate than treating a hypo
- Avoid over-correction – use your experience
- Where hypo alarms are sounding at the same time each day – why?
 - Too much basal insulin? / exercise? / alcohol?
 - Speak to your diabetes team
- Overnight hypos – work with your diabetes team to work out why – avoid them to avert ‘alarm fatigue’



High glucose alarms

When and where to start

- Start with the low glucose alarm turned on – this is the most important alarm. Once you are used to this, turn on the high alarm.
- Where to set it?
 - Need to avoid ‘alarm fatigue’
 - Better to adjust level than turn it off
 - **Set it at a level where you would act**
 - Can start high and bring it down
 - What high level would you want to wake you from sleep?

HbA1c	TIR	High alert
<58 mmol/mol	>60%	15 mmol/l
58 – 75 mmol/mol	30 – 50%	18 mmol/l
76 – 86 mmol/mol	10 – 30%	20 mmol/l
>86 mmol/mol	<10%	24 mmol/l

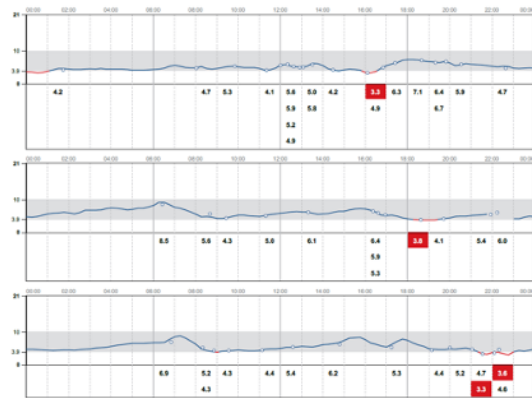
Rough guide for starting high alert level



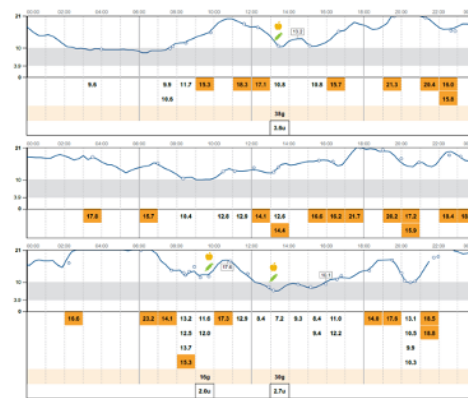
The table gives a rough indication of where you may want to set the high alarm based on your current HbA1c (or time in range)

High glucose alarms

When and where to start



Person A



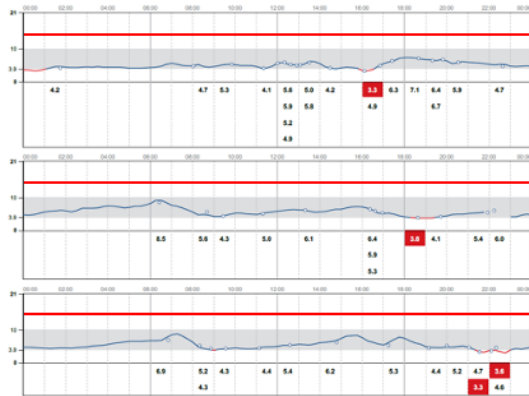
Person B



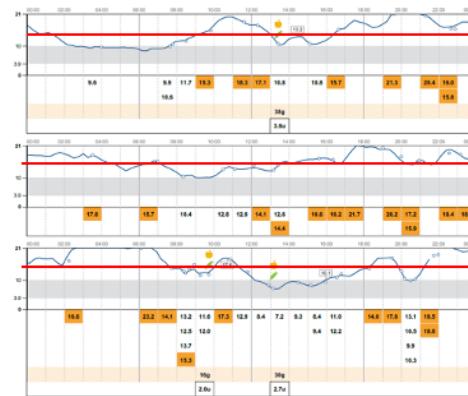
These are examples of 2 very different libre traces.

High glucose alarms

When and where to start



Person A



Person B

If set at 15 mmol/mol the person on the left would have no alarms – the person on the right would be alarming very often

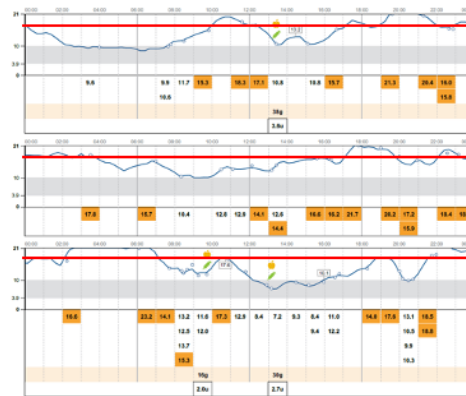


High glucose alarms

When and where to start



Person A



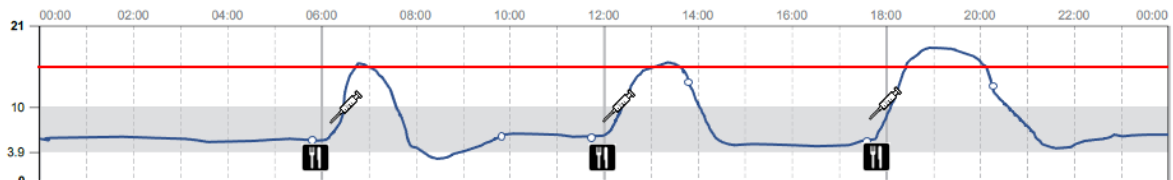
Person B

So maybe best to start with a high threshold and gradually lower it over time



How to react to high alarms

Bolus timing



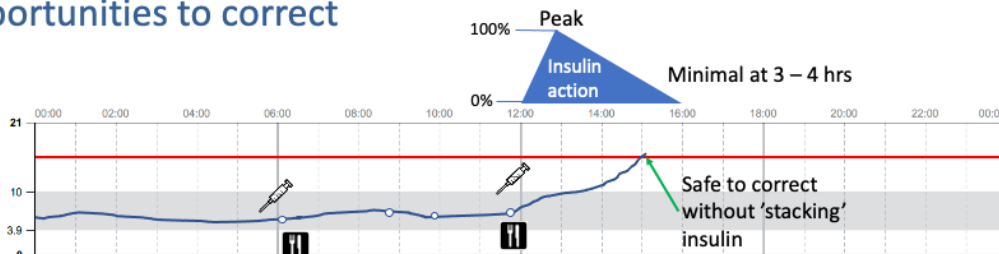
- Alarm sounds after each meal – insulin bolus needs to be earlier in relation to meal
- Should NOT take extra insulin within the first 2 hours of bolus dose as will likely cause hypo (STACKING INSULIN)



An example of where bolus (quick-acting) timing needs to change

How to react to high alarms

Opportunities to correct



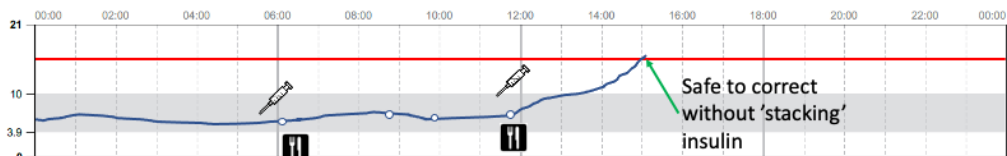
- If 3 hours after last bolus and glucose high (alarm) and arrow → ↑ ↗
- Consider taking correction dose to bring glucose back down
- Also, if this is always happening – why? Basal insulin, wrong insulin dose (insulin to carb ratio), inaccurate carb counting...



3 hours after a bolus, if the glucose trace is rising or stable, it is unlikely that the glucose level will fall spontaneously, as the insulin effect has peaked and is wearing off. In situations like these, you may wish to take a small corrective bolus (quick-acting dose) to nudge the glucose level back down. When getting used to doing this, you may want to start with a lower correction dose and, through experience, find what works best for you to bring the glucose back into target. It's also important to consider why highs are happening, particularly if they seem to occur at the same time each day – what can be done to prevent it?

How to react to high alarms

Opportunities to correct and to prevent in the future



Main benefits of high alarm:

Ability to correct down and

Chance to prevent future highs where there is a pattern



Using the alarms to improve time in range

Resources – highly recommended

DTN-UK
FREESTYLE LIBRE EDUCATION PROGRAMME
collaborate - evolve - support

This series of engaging videos is designed for people with Type 1 diabetes who use the FreeStyle Libre and the health care professionals supporting them.

 DR EMMA WILMOT	 DR PETER HAMMOND	 DR GERALDINE GALLEN	 DR NICOLA TAYLOR	 DR JACKIE ELLIOTT	 DR PRATH NARENDREN
 DR PRAMIR OBER	 DR PRATIK CHOUDHARY	 DR IAN CRUMPTON	 DR SINE KENNELL	 DR NICK RYCROFT	 DR ROB ANDREWS

Register at www.abcd.care/dtn/education

STEP
Diabetes Self-Management Programme

Ten steps to improving your Type 1 diabetes control

STEP CONTROL SMART SUBSTITUTION SMART AVOIDANCE SMART MONITORING

Using Flash Glucose Monitoring to improve control in type 1 diabetes

eced NHS
Edinburgh Centre for Endocrinology & Diabetes

www.edinburghdiabetes.com

Links to all of these are available at www.edinburghdiabetes.com/libretwo

Contact your diabetes team with any questions



We would recommend all Libre users complete the series of video guides produced by DTN-UK. You may also wish to refresh your memory with the two short guide-books which are available to download on the Edinburgh diabetes website.