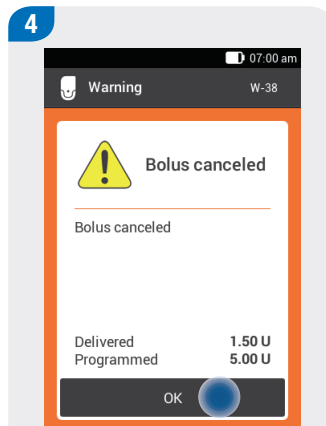
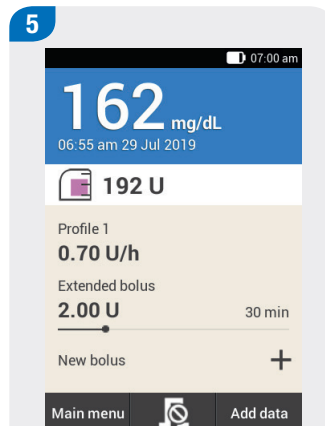


If you want to cancel the bolus now, tap **Yes**.



The W-38 warning is displayed.

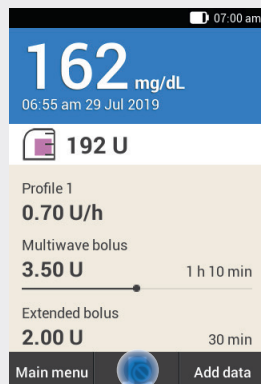
Tap **OK** to confirm the warning.




The bolus has been canceled and deleted from the Status screen.

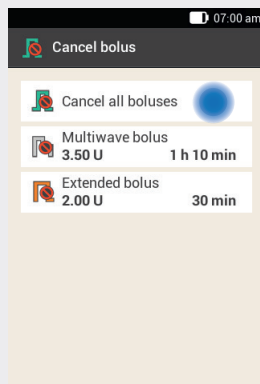
## 6.7.2 Canceling All Boluses

1



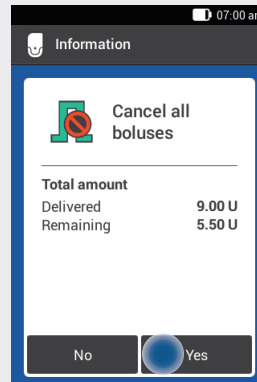
On the Status screen or in the Main menu, tap the option with the  symbol.

2



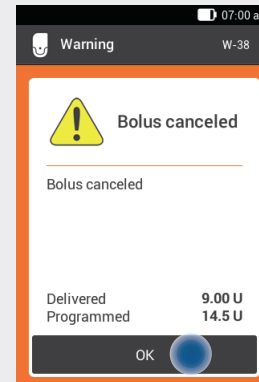
Tap **Cancel all boluses**.

3



Tap **Yes**.

4



For each canceled bolus, the W-38 warning is displayed.


Tap **OK** to confirm the warning.

**5**

07:00 am


**162** mg/dL


06:55 am 29 Jul 2019

 **192 U**

Profile 1

**0.70 U/h**

New bolus 

Main menu 

Add data

All boluses have been canceled and deleted from the Status screen.

## 6.8 Setting the Delivery Lag Time

In some situations (for example, if you have gastroparesis) it may be helpful to only start a bolus after you have started eating. You can use the delivery lag time setting to specify an interval between programming a bolus and the actual start of bolus delivery.

Discuss using the delivery lag time setting with your healthcare professional.

If you want to make use of the delivery lag time, you must activate this feature in the *Bolus settings* menu first. For more information, see chapter 11.3 *Bolus Settings*.

### Note

If a bolus contains correction insulin or if the blood glucose result is above the target range, it is not possible to enter a delivery lag time. Correction insulin must always be delivered immediately.

1

Bolus input

--- mg/dL ] 0.00 U

--- U ] 0.00 U

Carbs 6.00 U

--- g

Total amount 6.00 U

Type Standard

Bolus

Select one of the 3 options for bolus delivery described in chapter 6.4 *Programming a Bolus*. Perform the appropriate steps until the **Bolus input** menu is displayed.

Tap **Bolus**.

2

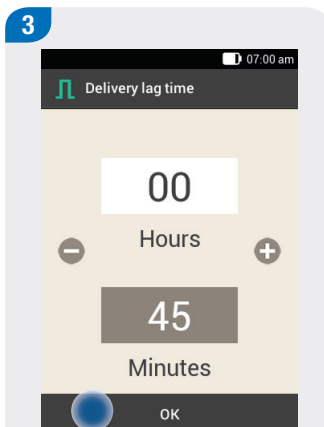
Standard bolus

Total amount 6.00 U

Delivery lag time 00 min

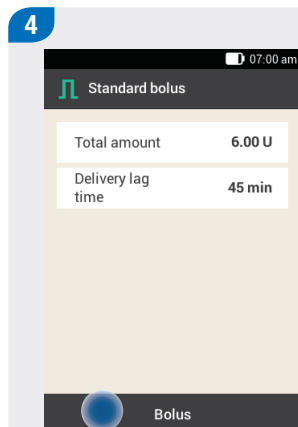
Bolus

Tap **Delivery lag time**.

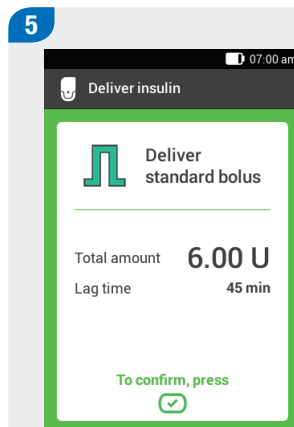



Use  $\ominus$  and  $\oplus$  to set the delivery lag time. The delivery lag time can be 0, 15, 30, 45 or 60 minutes.

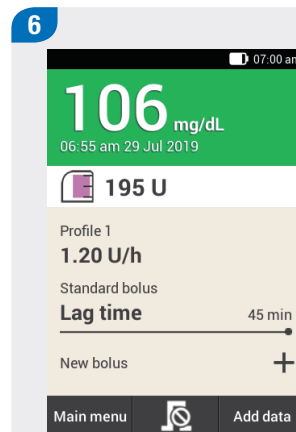
Tap **OK**.



Tap **Bolus**.



To confirm this step and deliver the bolus, press the insulin button lit up in green  below the diabetes manager screen.



The Status screen is displayed with the current bolus information and the set delivery lag time.

# 7

## Bolus Advice

The bolus advice feature aims to bring your blood glucose level back into the target range defined for you, by delivering an insulin amount that was calculated in advance. However, the bolus advice feature only makes a recommendation if you set up bolus advice beforehand.

### 7.1 Overview

The bolus advice feature of the diabetes manager consists of two components: First, a recommendation for a correction bolus to adjust your blood glucose level if it is not within the target range. Secondly, a recommendation for a meal bolus that covers the carbohydrates contained in your meals.

The recommendation for the correction bolus is positive if your current blood glucose level is above your target range. If the blood glucose level is below the target value and a meal bolus is recommended at the same time, a negative correction bolus lowers the total insulin amount of the bolus advice.

If your blood glucose value is below the hypo warning limit, no bolus advice is issued. Instead, you receive a recommendation to consume a certain carbohydrate amount to bring your blood glucose level back to within the target range.

#### Advantages of bolus advice:

- ▶ Bolus advice is calculated based on the current blood glucose value, your carbohydrate intake and other factors.
- ▶ Insulin from a previous bolus that is still acting is taken into account automatically.
- ▶ Errors that can occur in manual bolus calculations are prevented.
- ▶ The blood glucose values after meals are better.
- ▶ The metabolic adjustment is improved.
- ▶ Therapy schemes can be adhered to more consistently.
- ▶ Blood glucose values can be kept within the target range for a longer time period more easily.

### Note the following:

Insulin that was not delivered via the micropump system can only be taken into account by the bolus advice feature if you enter it in the diabetes manager beforehand.

#### Note

The diabetes manager cannot correct input errors.

- ▶ Warnings are issued for entries that exceed possible limit values.
- ▶ No warning will be issued for entries that are incorrect yet still possible (i.e. within acceptable ranges).

### Terminology for setting bolus advice

#### Time blocks

Time blocks allow you to divide the day into different time periods according to your individual lifestyle.

The target range, insulin sensitivity and carbohydrate ratio can be set individually for each time block.

#### Target range

The target range describes which blood glucose values are considered acceptable when fasting or before a meal. The target range is specified by the lower and upper BG thresholds. The midpoint between the lower and upper BG threshold is automatically included in the calculation as the target value.

#### Insulin sensitivity

The insulin sensitivity defines the insulin amount required to lower your blood glucose level by a certain value.

#### Carbohydrate ratio

The carbohydrate ratio defines the insulin amount necessary to compensate for a certain amount of ingested carbohydrates.

### Meal rise

During or after meals, an increase in the blood glucose level is considered normal within a certain range, even if a bolus was delivered beforehand. Enter the maximum increase in your blood glucose level that is to be tolerated without an additional correction bolus.

### Snack size

The snack size defines a carbohydrate threshold; when this is exceeded, a meal rise should be taken into account. Thus, the snack size indicates the carbohydrate amounts up to which no increase in the blood glucose level is to be tolerated after a meal.

### Acting time

The acting time is the period of time from the start of bolus delivery until the blood glucose level is expected to return to the target level.

The acting time includes the offset time.

### Offset time

The offset time is the period of time after which the insulin is expected to start lowering the blood glucose level in the body.

#### Note

- ▶ After bolus advice is set up, you can change the options or turn off bolus advice, if required.
- ▶ **If you turn off bolus advice that has already been configured, all bolus advice options will be deleted.**



## 7.2 Setting Up Bolus Advice

### Main menu > Settings > Bolus settings

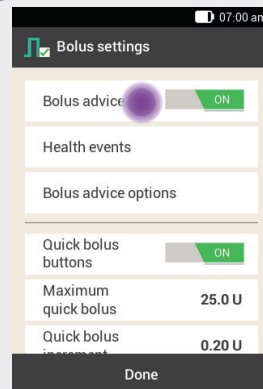
After turning on bolus advice, you must make the default settings for the carbohydrate ratio and the insulin sensitivity. These default settings will be adopted for all time blocks. Afterwards, the time blocks are set up. All time blocks add up to a time period of 24 hours. The diabetes manager factory settings contain 5 default time blocks. You can set up a maximum of 8 time blocks.

The bolus advice feature uses the time blocks that you have already set while executing the setup wizard. If required, you can change the time block settings.

#### WARNING

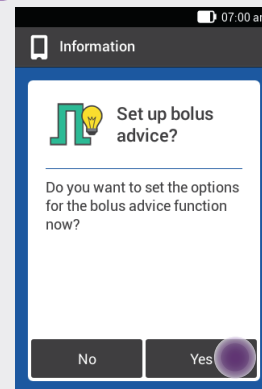
Discuss intended changes to your bolus advice options with your healthcare professional in advance.

1



Tap **Bolus advice**.

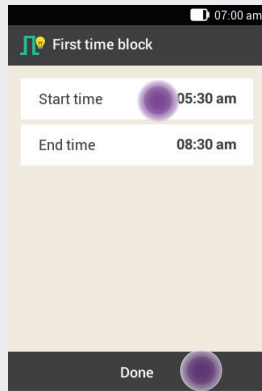
2



Tap **Yes**.

## Defining a time block


1



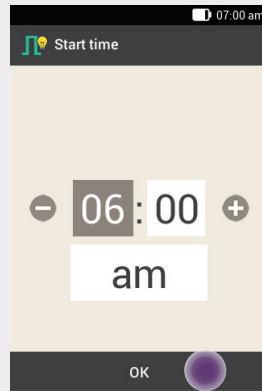
The display for defining the first time block appears.



Tap **Start time**.

If you want to keep the start and end times, tap **Done**.

The  button is deactivated.

2

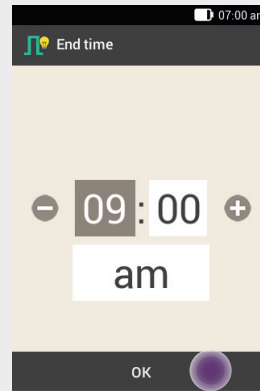




Use  and  to set the start time for the first time block.

You can set the minutes in 15-minute increments.

Tap **OK**.

3

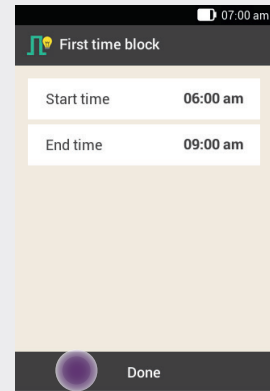


Use  and  to set the end time for the first time block.

You can set the minutes in 15-minute increments.

Tap **OK**.

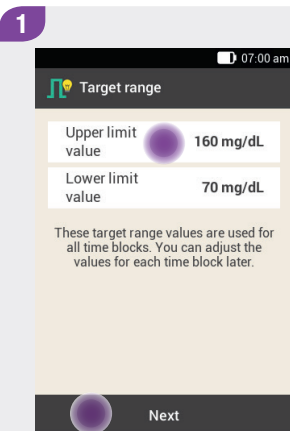
4



The changed start and end times for the first time block are displayed.

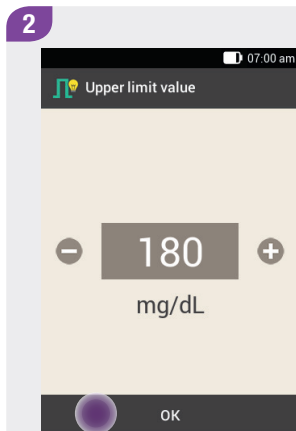
Tap **Done**.

## Setting the target range



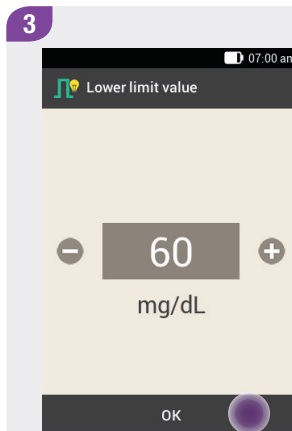
Tap **Upper limit value**.

If you do not want to modify the limit values for the target range, tap **Next**.



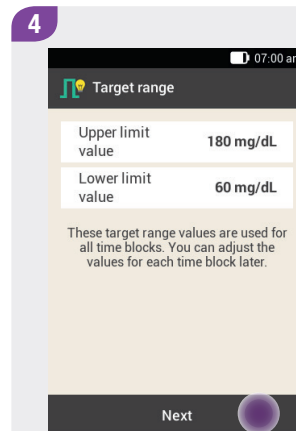
Use **−** and **+** to set the upper limit value.

Tap **OK**.



Use **−** and **+** to set the lower limit value.

Tap **OK**.

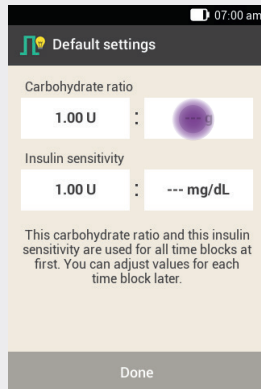


The limit values currently set for the target range are displayed.

Tap **Next**.

## Defining the default settings

1



To define the default settings, tap the entry fields for the **Carbohydrate ratio** and the **Insulin sensitivity**.

### Note

The **Done** button on the **Default settings** display remains deactivated (gray) until the entries for **Carbohydrate ratio** and **Insulin sensitivity** are complete.

### Example

Carbohydrate ratio:  
1.00 U : 10 g

In this example, one insulin unit compensates for 10 g of carbohydrates.

## Carbohydrate ratio

2



Use **−** and **+** to set the insulin units for the carbohydrate ratio.

Tap **OK**.

3



Use **−** and **+** to set the carbohydrate amount for the carbohydrate ratio.

Tap **OK**.


## Insulin sensitivity

### Example

Insulin sensitivity:  
1.00 U : 40 mg/dL

In this example, one insulin unit lowers the blood glucose value by 40 mg/dL.

4



Insulin sensitivity

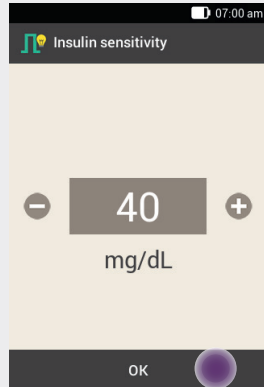
1.00 U

OK

Use  $-$  and  $+$  to set the insulin units for the insulin sensitivity.

Tap **OK**.

5



Insulin sensitivity

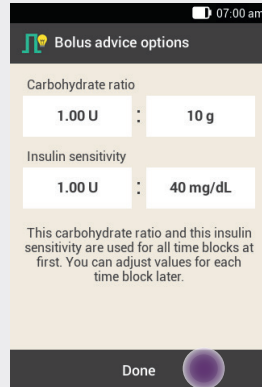
40 mg/dL

OK

Use  $-$  and  $+$  to set the blood glucose value for the insulin sensitivity.

Tap **OK**.

6



Bolus advice options

Carbohydrate ratio

1.00 U : 10 g

Insulin sensitivity

1.00 U : 40 mg/dL

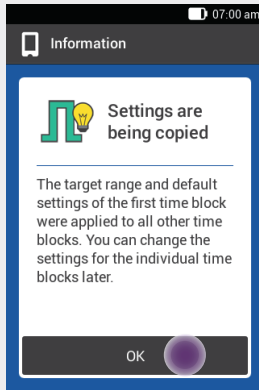
This carbohydrate ratio and this insulin sensitivity are used for all time blocks at first. You can adjust values for each time block later.

Done

Tap **Done**.

## Changing time block settings

7

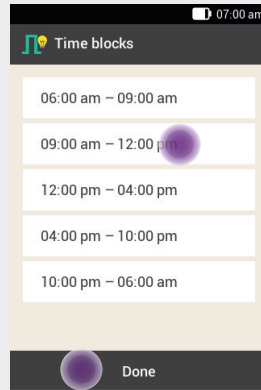


The default settings for carbohydrate ratio and insulin sensitivity are copied to all time blocks.

You can change the settings for each time block separately.

Tap **OK**.

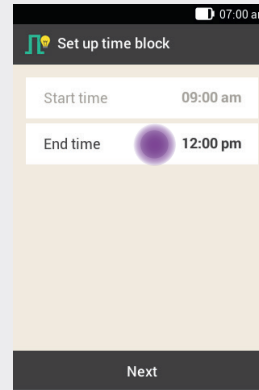
1



Tap the time block you want to change.

If you do not want to change the copied settings for the other time blocks, tap **Done**. Continue with section *Setting a health event*.

2



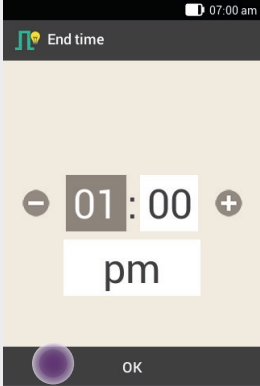
Tap **End time**.

### Note

You can change the start time for the first time block only.

Changes to the target range, carbohydrate ratio and insulin sensitivity can be made for each time block.

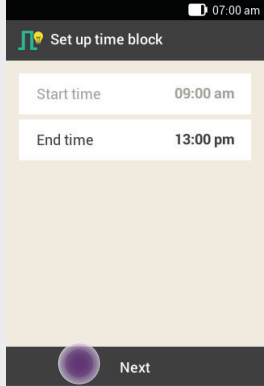
**3**



Set the end time for the selected time block.

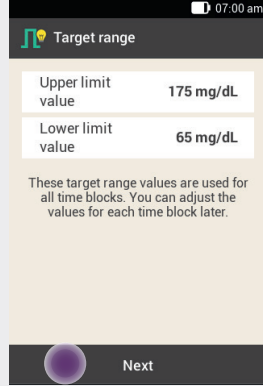
Tap **OK**.

**4**



Tap **Next**.

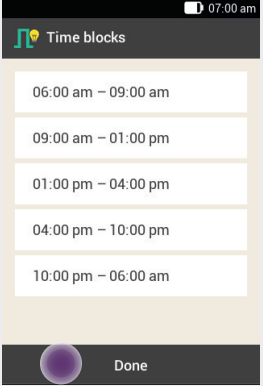
**5**



Set the upper and lower limit values.

Tap **Next**.

**6**









Tap **Done** when you have completed the desired settings for all time blocks.

## Setting health events

Your state of health and your activities have an impact on your blood glucose level. Bolus advice calculation takes health events into account.

Each health event adjusts bolus advice by the percentage set by you. A positive percentage (+) increases the bolus amount and a negative percentage (-) decreases the bolus amount.

You can choose between 5 default health events and 3 customized health events:

- ▶ Exercise 1 
- ▶ Exercise 2 
- ▶ Stress 
- ▶ Illness 
- ▶ Premenstrual 
- ▶ Customized: Name 1-3 

You can also enter health events at a later time.

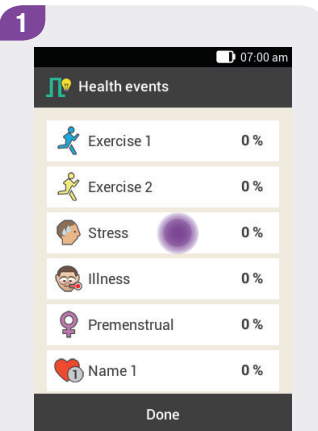
The percentage for a health event must be between -50% and +50%. You can change the percentage in increments of 5%.

### Example

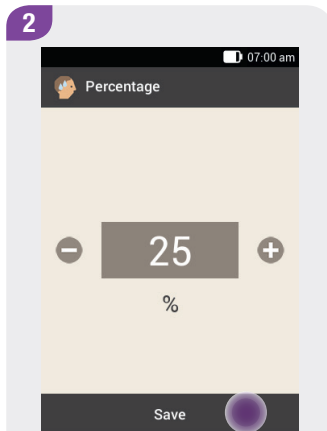
You like running, so you create the customized health event *Run* with a percentage of -20%, for example. When you select the *Run* health event during bolus calculation, the bolus amount is decreased by 20%.



## Setting a health event



Tap the health event for which you want to make settings (for example, **Stress**).

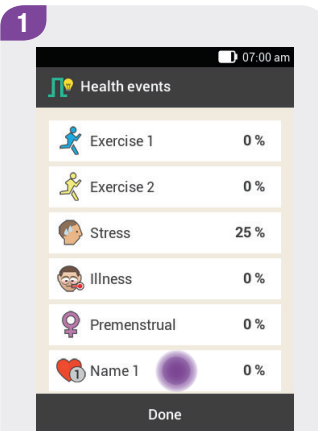


Enter a percentage for the selected health event.

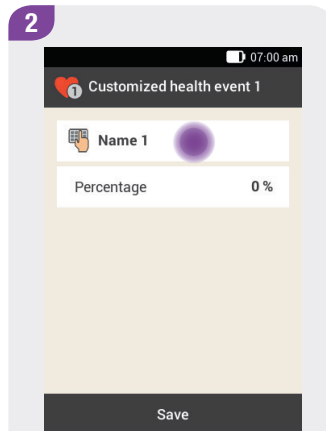
Tap **Save**.

Repeat Steps 1 and 2 to set the percentage for other health events.

## Setting a customized health event



If you want to set a customized health event, tap **📄**.



Tap **📄** to enter a name for the customized health event (for example, Run).

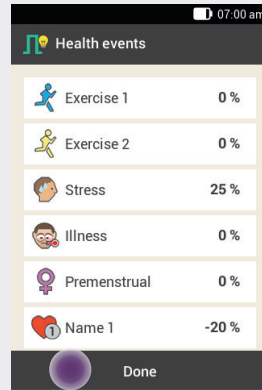
3



Use **−** and **+** to set the percentage for the customized health event.

Tap **Save**.

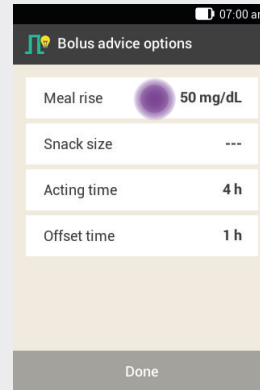
4



Tap **Done**.

## Bolus advice options

1



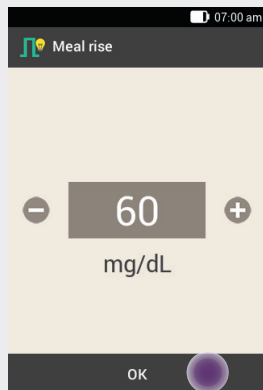
Tap **Meal rise**, **Snack size**, **Acting time** and **Offset time** to adjust the respective settings.

### Note

The **Done** button on the **Bolus advice options** display remains deactivated (gray) until you make a numeric entry for the snack size.

## Meal rise

2



Use **-** and **+** to set the meal rise value.

Tap **OK**.

## Snack size

3

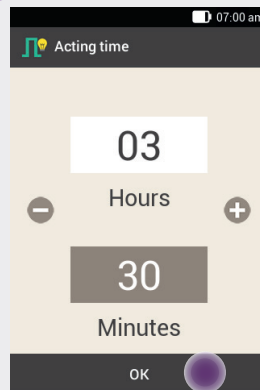


Use **-** and **+** to set the snack size value.

Tap **OK**.

## Acting time

4

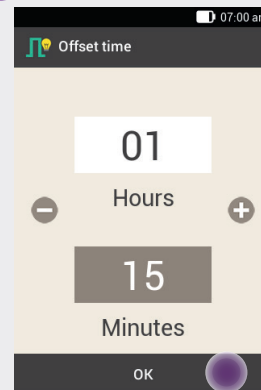


Use **-** and **+** to set the hours and minutes for the acting time.

Tap **OK**.

## Offset time

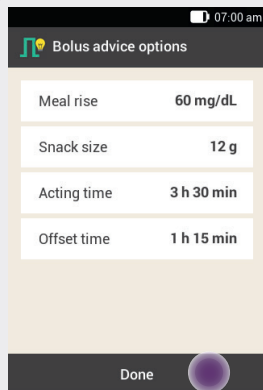
5



Use **-** and **+** to set the hours and minutes for the offset time.

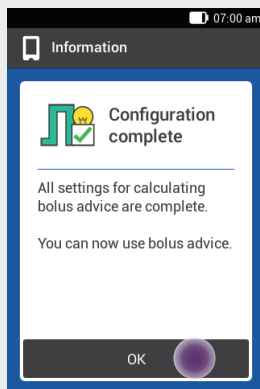
Tap **OK**.

6



Tap **Done** to complete the setup wizard.

7



All settings for calculating bolus advice are now complete.

Tap **OK**.

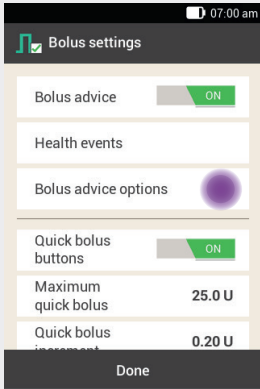
## 7.3 Changing Bolus Advice and Time Blocks

Main menu > Settings > Bolus settings

### 7.3.1 Changing Bolus Advice Options

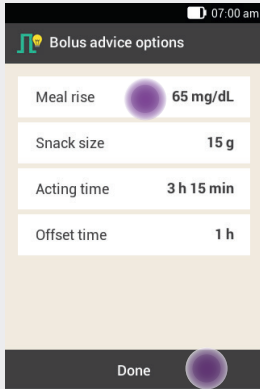
This section describes how to change the values for meal rise, snack size, acting time and offset time.

**1**



Tap **Bolus advice options**.

**2**

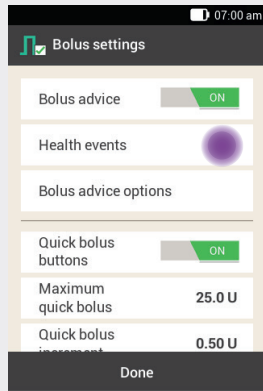


Tap the respective entries to set the **Meal rise**, **Snack size**, **Acting time** and **Offset time**.

Tap **Done** after making changes to all the settings.

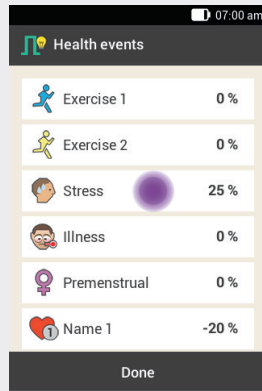
### 7.3.2 Changing Percentages for Health Events

1



Tap **Health events**.

2



Tap the health event for which you want to make changes (for example, **Stress**).

3

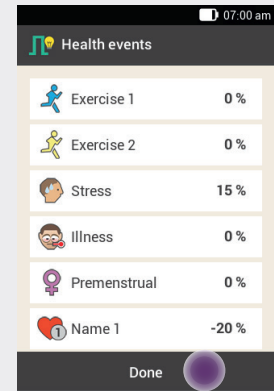


Enter a percentage for the selected health event.

Tap **Save**.

Repeat steps 2 and 3 to set the percentage for other health events.

4



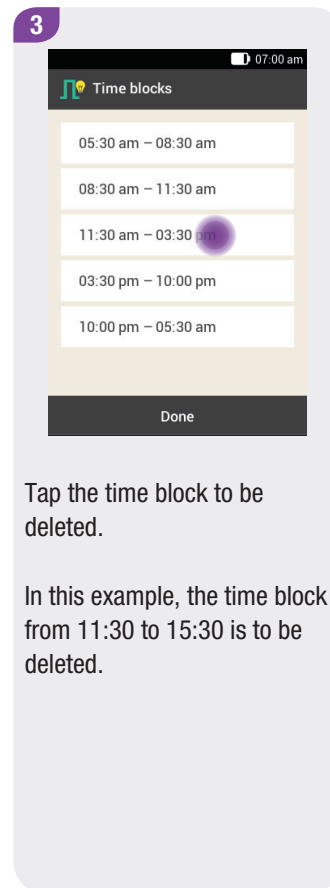
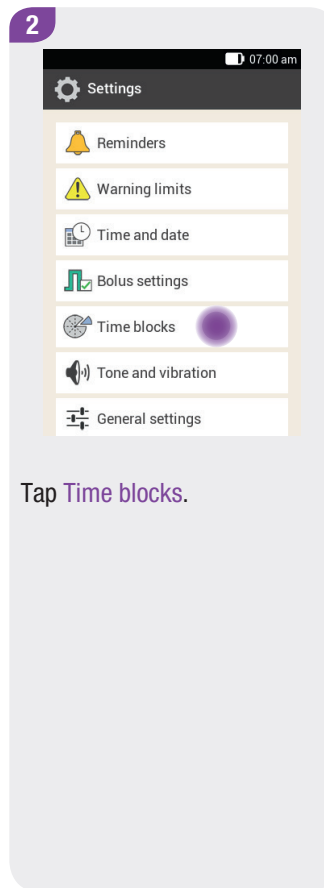
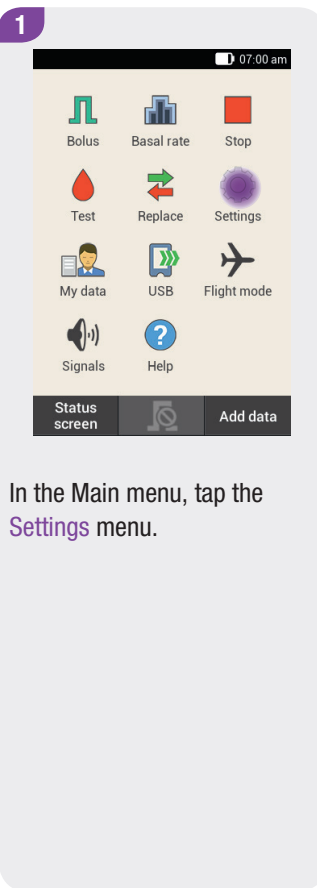
The health events are displayed with the percentages that were set.

Tap **Done** after setting the health events.

### 7.3.3 Deleting a Single Time Block

In order to delete a single time block, decrease the end time of the time block until it is the same as its start time.

After time blocks have been deleted, it may be necessary to change the end times and other information for the remaining time blocks until all of the time blocks are set up the way you want them.



4

Set up time block

Start time 11:30 am

End time 11:30 am

Next

Decrease the end time until it equals the start time.

Tap **Next**.

5

Target range

Upper limit value 135 mg/dL

Lower limit value 65 mg/dL

Next

Set the upper limit value and lower limit value for the new time block.

Tap **Next**.

6

Bolus advice options

Carbohydrate ratio

1.00 U : 14 g

Insulin sensitivity

1.00 U : 50 mg/dL

This carbohydrate ratio and this insulin sensitivity are used for all time blocks at first. You can adjust values for each time block later.

Done

Set the carbohydrate ratio and insulin sensitivity for the new time block.

Tap **Done**.

7

Time blocks

05:30 am - 08:30 am

08:30 am - 11:30 am

11:30 am - 10:00 pm

10:00 pm - 05:30 am

Done

It may be necessary to adjust the end times and settings of the remaining time blocks.

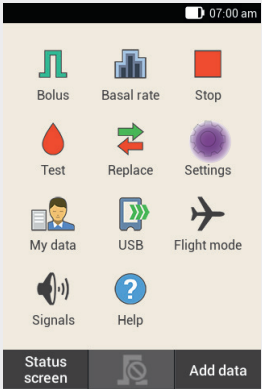
Once you have finished editing the time blocks, tap **Done**.



### 7.3.4 Deleting Several Time Blocks

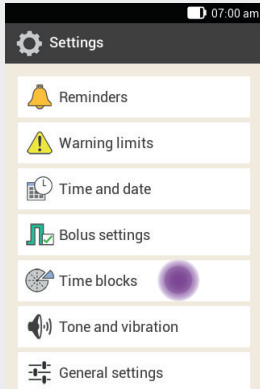
You can delete one or more time blocks by merging different time blocks.

1



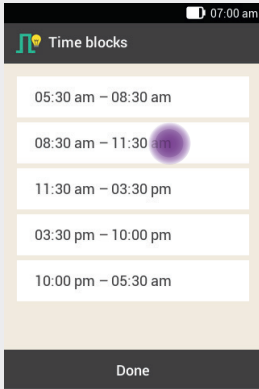
In the Main menu, tap the **Settings** menu.

2



Tap **Time blocks**.

3



Select the first time block that is to be merged with one or more time blocks.

In this example, the three time blocks between 08:30 and 22:00 are being merged.

4

Increase the end time until it equals the end time of the last time block to be deleted.

Tap **Next**.

5

Set the upper limit value and lower limit value for the merged time block.

Tap **Next**.

6

Set the carbohydrate ratio and insulin sensitivity for the merged time block.

Tap **Done**.

7

It may be necessary to adjust the end times and settings of the remaining time blocks.

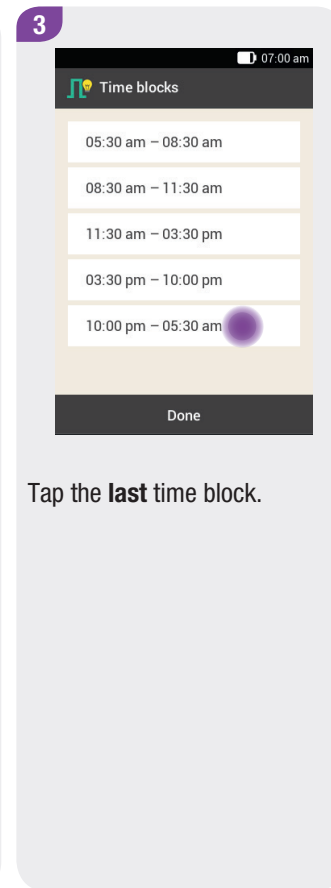
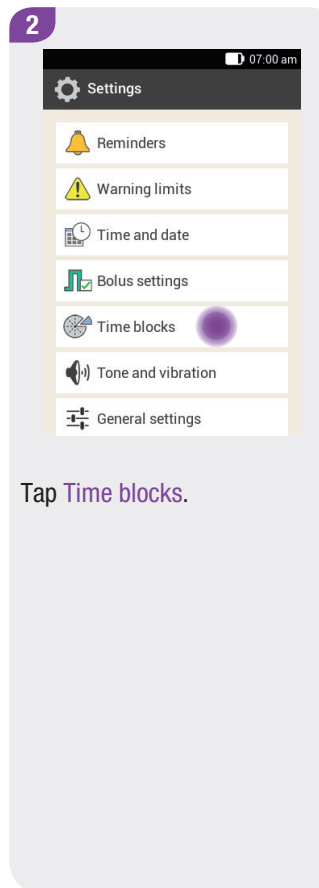
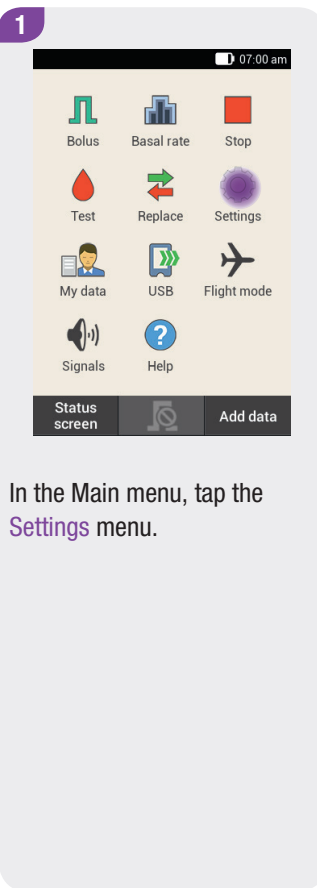
Tap **Done** when you have finished editing the time blocks.

### 7.3.5 Adding a Time Block

This section describes how to add a new time block.

To add a time block, decrease the end time of the last time block.

After the new time block has been created, you may have to adjust the end time and other information for each time block.



4

Tap **End time** and decrease the end time in order to create a new time block. However, do not decrease the end time until it equals the start time because this will delete the time block.

Tap **Next**.

5

Set the upper limit value and lower limit value for the new time block.

Tap **Next**.

6

Set the carbohydrate ratio and insulin sensitivity for the new time block.

Tap **Done**.

7

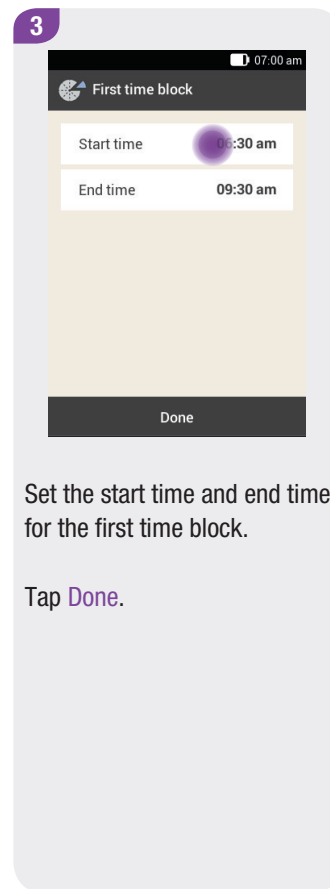
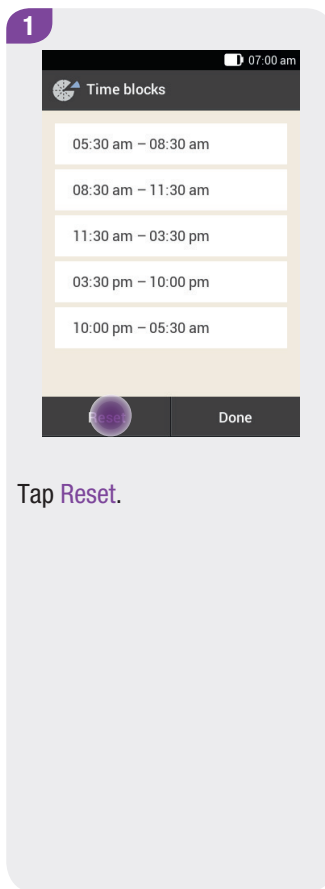
It may be necessary to change the end times and settings of other time blocks.

Tap **Done** when you have finished editing the time blocks.

### 7.3.6 Resetting All Time Blocks

This section describes how to restore the settings for all time blocks to the default settings and then re-enter them.

Changing the start time of the first time block, for example, may be one reason for resetting all time blocks.



4

Target range

Upper limit value 140 mg/dL

Lower limit value 70 mg/dL

Done

Set the upper limit value and lower limit value that are to be used for all time blocks for the time being.

Tap **Done**.

5

Bolus advice options

Carbohydrate ratio

1.00 U : 10 g

Insulin sensitivity

1.00 U : 40 mg/dL

This carbohydrate ratio and this insulin sensitivity are used for all time blocks at first. You can adjust values for each time block later.

Done

Set the carbohydrate ratio and the insulin sensitivity that are to be used for all time blocks for the time being.

Tap **Done**.

6

Information

Set up time blocks

The target range and default settings of the first time block were applied to all other time blocks. You can change the settings for the individual time blocks later.

OK

Tap **OK**.

7

Time blocks

06:30 am - 09:30 am

09:30 am - 11:30 am

11:30 am - 03:30 pm

03:30 pm - 10:00 pm

10:00 pm - 05:30 am

Reset Done

It may be necessary to change the end times and settings of the other time blocks.

Tap **Done** when you have finished editing the time blocks.

## 7.4 Using Bolus Advice



You can use the bolus advice feature directly after testing your blood glucose or entering a blood glucose value manually. Note that a blood glucose result is only valid for bolus advice **within 15 minutes of the blood glucose test**.

You can also call up bolus advice from the Status screen or Main menu.

### WARNING

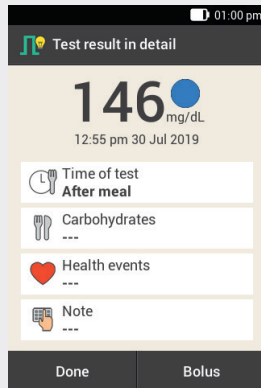
- ▶ Review manually entered data (for example, carbohydrate amount) used to calculate the bolus advice. Incorrectly entered values may lead to incorrect bolus advice.
- ▶ Note that the micropump system may give incorrect bolus advice if insulin is delivered manually (for example, by syringe or pen). Insulin that was not delivered via the micropump system can only be taken into account if you enter it in the diabetes manager.

### In doing so, consider the following:

- ▶ Boluses for which bolus advice was used are indicated by the  symbol in the logbook. If no bolus advice is set up, bolus advice is turned off or a manual bolus was delivered, the  symbol is displayed.
- ▶ If you deliver a quick bolus, the information on the total bolus amount is taken into account for future bolus advice. However, the total bolus amount is considered as a correction bolus, and no meal rise is registered.  
If this bolus was used for food intake, you should edit the bolus in your logbook to assign the bolus part that was used for the carbohydrates. This ensures that you receive bolus advice that is as accurate as possible during the acting time.
- ▶ If you provide values for blood glucose results, carbohydrates and health events to calculate bolus advice, you will obtain the best results.

## 7.4.1 Starting Bolus Advice After a BG Test

1



Tap the respective entries to add information on **Time of test**, **Carbohydrates** or **Health events**.

Tap **Bolus**.

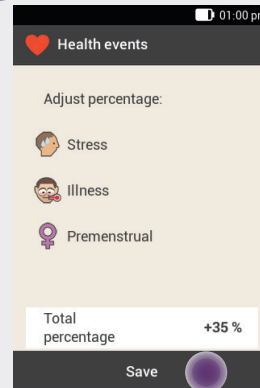
### Note

You can select a maximum of 4 health events.

If you have selected more than one health event, you will have to enter a total percentage for the selected health events in the next step.

Discuss health event adjustments with your healthcare professional, who will help you to determine the suitable percentage for the adjustment.

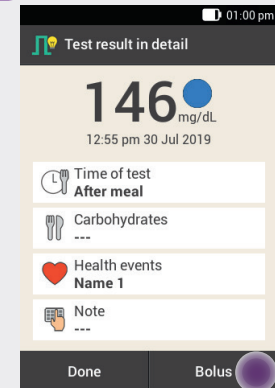
2



If you have selected multiple health events, enter the total percentage.

Tap **Save**.

3



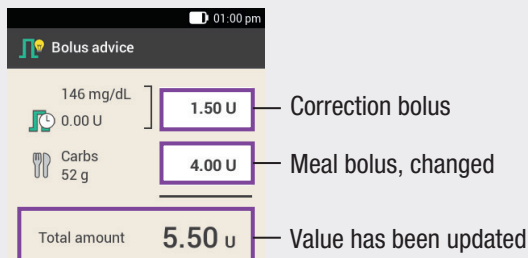
The bolus advice feature calculates a suggestion and transfers the recommended values to the entry fields in the bolus advice display. Tap the respective entry fields if you want to change the suggested values.

Tap **Bolus**.



## Changing bolus advice values

### Example

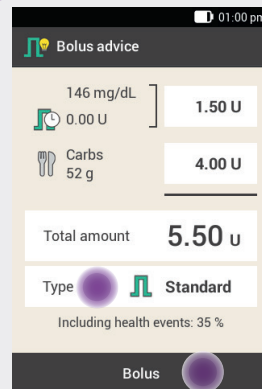


If you change the correction bolus or meal bolus first, the total amount can no longer be directly changed after that. The value, however, is updated accordingly (see figure).

If you change the total amount first, the correction bolus and meal bolus can no longer be directly changed after that. If you increase the total amount, the correction bolus is increased accordingly. If you decrease the total amount, the meal bolus is decreased accordingly. Once the meal bolus reaches “0”, the correction bolus is decreased accordingly.

## Selecting the bolus type

4



Tap **Type** to select the desired bolus type.

Tap **Bolus**.

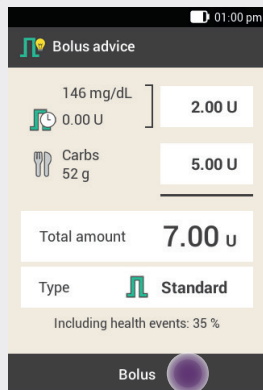
### Note

Not every bolus type can be selected, depending on the setting. You cannot select an extended bolus, for example, if a correction bolus is to be delivered.

For more information about the different bolus types, see chapter 6.3 *Bolus Types*.

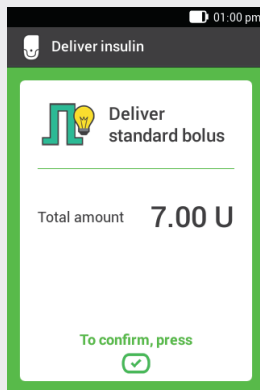
## Confirming the bolus


5



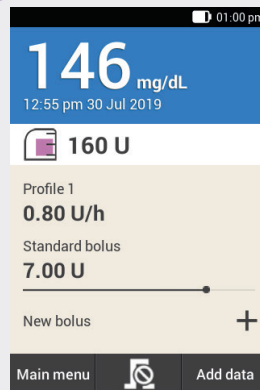
Tap **Bolus**.

6



To confirm this step and deliver the bolus, press the insulin button lit up in green  below the diabetes manager screen.

7

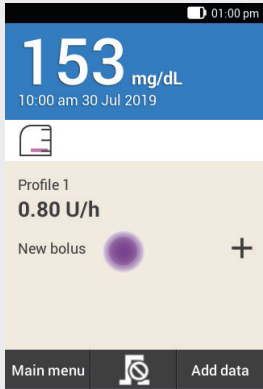


The Status screen is displayed showing the current bolus information.

## 7.4.2 Starting Bolus Advice With Manually Entered Test Result

You can enter your blood glucose value that was measured using another meter and the carbohydrate amount you want to eat. If you then tap **Bolus** on the **Bolus advice** display, a bolus advice is shown.

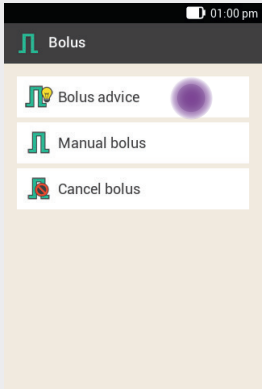
**1**



On the Status screen, tap **New bolus** or the **+** symbol.

or

**2**

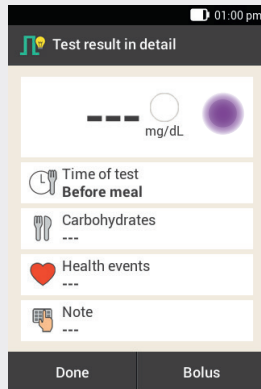


Tap **Bolus advice**.

### Note

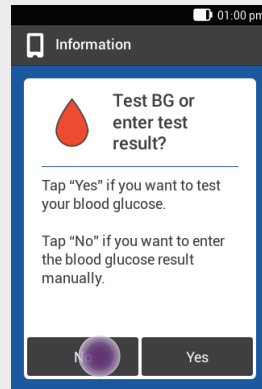
We recommend using the built-in meter of the diabetes manager to rule out transfer errors of entered test results.

3



Tap the field for manually entering the blood glucose result.

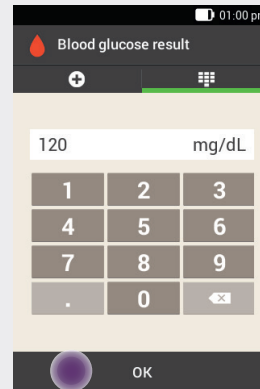
4



Tap **No** if you want to enter the test result manually.

## Entering the test result

5

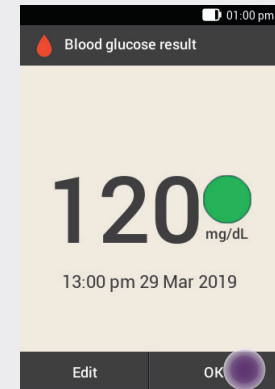


Enter the test result using the numeric keypad and tap **OK**.

Alternatively, you can set the test result using **-** or **+**. To do so, tap the **+** symbol.

## Confirming the test result

6



The entered test result is displayed. Tap **OK** if the test result is correct.