ACCU-CHEK® Combo

Accu-Chek Combo Insulin Pump System

Training Handbook - Advanced Lesson

Information for Insulin Pump Users

ACCU-CHEK®

For product support and ordering pump service pack items:
Accu-Chek Insulin Pump Hotline
1800 633 457
australia.insulinpumps@roche.com
www.accu-chek.com.au

Dear User,

Congratulations on receiving the Accu-Chek Combo system! Your new insulin pump system will help you to manage your diabetes quickly and easily. The discretion offered by the Accu-Chek Combo system will let you stay in control while your pump stays out of sight.
This Handbook is provided as part of your training on your new Accu-Chek Combo system.
It will help you to set up your Insulin Pump and your Meter, so that they quickly become part of your daily life.
Roche Diabetes Care

! This document is not intended to replace training by a qualified diabetes instructor, or the User Guide and Owner's Booklets provided with your new system.
Before starting therapy with your Accu-Chek Combo system, please consult your Accu-Chek Spirit Combo insulin pump User Guide and Accu-Chek Performa Combo Meter Owner's booklets for detailed information regarding warnings and precautions related to their use.

In this Handbook the term "Meter" always refers to the Accu-Chek Performa Combo blood glucose Meter.

The term "Pump" always refers to the Accu-Chek Spirit Combo Insulin Pump.

Structure of this Training Handbook

The Handbook is divided into a Standard Lesson and an Advanced Lesson. This will enable you to learn all the features and functions of your new Accu-Chek Combo system easily, whether you are new to pump therapy or already experienced.

In the Standard Lesson, you will learn about the basic functions of your new insulin pump system, necessary for successfully starting pump therapy. When you have completed this lesson you will know how to:

- Run your Accu-Chek Spirit Combo insulin pump with one basal rate profile
- Administer a standard bolus
- Use your Meter to remotely control your insulin pump
- Monitor your blood glucose (bG) level using your Accu-Chek Performa Combo

After getting some experience in pump therapy, you can move on to the Advanced Lesson where you will learn to use the complete range of convenient and helpful features of your new Accu-Chek Combo system.

At the end of the Advanced Lesson you will know how to:

- Use Bolus Advice
- Interpret the values of your personal data collection in the Meter database
- Set a variety of reminders
- Use different Bolus types
- Personalise your Pump

The chapters explaining the handling of the Pump are highlighted in light blue and marked with only.

The chapters explaining the handling of the Meter are highlighted in green and marked with only.

The chapters explaining the handling of the Pump together with the Meter are highlighted in dark blue and marked with .

Table of Contents

1 Getting Bolus Advice from your Meter

The Bolus Advice function on your Meter will provide you with recommendations on the amount of insulin for food intake and for correcting bG levels that are not within your Target Range. In the following chapter you will learn how to program all your individual settings for the bolus advice calculation and how to use Bolus Advice in your day-to-day life.

1.1 About Bolus Advice

The Bolus Advice function of your Meter provides you with bolus recommendations based on your:

- Current blood glucose level
- Expected food intake
- Current health event or activity
- Individual settings, such as Carb Ratio, Insulin Sensitivity, and other settings that will be explained later in this chapter.

When you have programmed these settings, you will only need to:

- Measure your bG level
- Enter the amount of carbs you are currently planning to eat
- Enter your current health or activity state

Your Meter will then calculate the required amount of insulin based on your personal settings. You can adjust the calculated dose as appropriate and choose the bolus type you prefer. After confirmation the pump will then deliver the bolus accordingly.

Using the Bolus Advice function, delivering a bolus is easy, quick and discreet.

If you are interested in details of the calculation for the recommended bolus, please refer to Appendix A to C.

1.2 Setting up Bolus Advice

Before you can start setting up the Bolus Advice function, you need to discuss the required setting parameters with your healthcare professional. The following settings are necessary:

Time Block settings

Time Blocks … split the day into periods, to facilitate the programming of those settings that change throughout the day, such as Insulin Sensitivity and Carb Ratio. You only need to set the end-time of a Time Block, as this is also the starting time of the following Time Block. Five Time Blocks are set up by default, but you can set up up to eight if necessary. The following parameters can be set up separately for each Time Block.

Target Range … is the range of your blood glucose, consisting of a lower and an upper bG value that is considered to be acceptable as long as you are fasting (in the morning or before a meal). The target bG will be calculated automatically as the average between the upper and lower bG values.

Carb Ratio … is the amount of insulin you need for a set amount of carbohydrates. You must program the Carb Ratio for each Time Block you wish to set up.

Insulin Sensitivity … is the amount of insulin you need to lower your bG level by a given amount. You may know this as the “correction factor”. You must program this for each Time Block you wish to set up.

Health Event settings

Health Events … are percentages that allow you to adjust the calculated insulin amount to allow for individual needs and health status; for example, when you are planning physical activity (subtract percentages) or you are ill (add percentages). You can set percentages for:

- Exercise 1
- Exercise 2
- Stress
- Illness
- Premenstrual

You cannot adjust fasting

Advice Option settings

Meal Rise … is an increase in your bG level that is acceptable after administering a standard bolus appropriate for a meal. After a meal bolus, the Meal Rise is added to your bG target. It is the maximum increase in your bG level that can be tolerated without an additional correction bolus, as long as Acting Time and Offset Time are effective (see the explanations below).

Snack Size … is the amount of carbohydrates that is not to be counted as a regular meal. A bolus will be recommended but no Meal Rise is triggered.

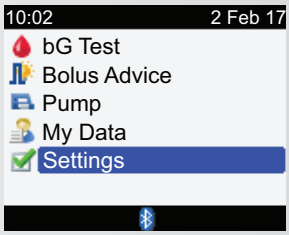
Acting Time … is the time during which a standard bolus is effective. The Acting Time starts afresh for each new bolus.

Offset Time … is the expected time taken for your bG level to fall after you inject a standard bolus. The Offset Time starts afresh for each new bolus.

Setting up Bolus Advice

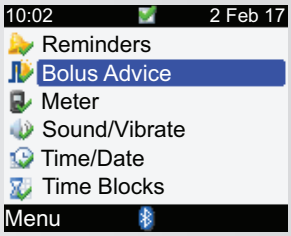
The following procedure will help you programming all necessary settings when you enter the Bolus Advice Settings for the first time

1.



From main menu press ▲ or ▼ to select Settings press ⬭ to enter.

2.

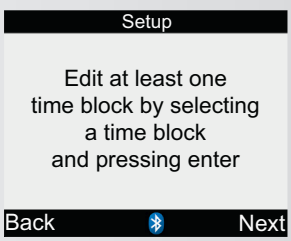


The Settings screen appears.
Press ▲ or ▼ to select Bolus Advice.
Press ⬭ to enter.

3.

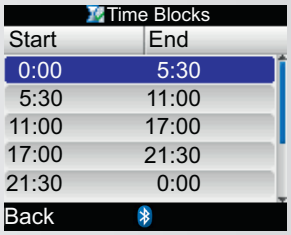
The Setup screen “Would you like to receive bolus advice from your Meter?” appears.
Press ⬭ to select Yes.

4.



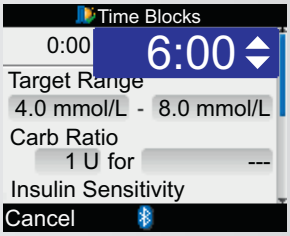
The Setup screen “…edit at least one Time Block by selecting a Time Block and pressing enter” appears.
Press ⬭ to select Next.

5.



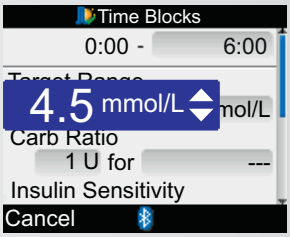
The Time Blocks screen appears.
Press ⬭ to enter the first Time Block.

6.



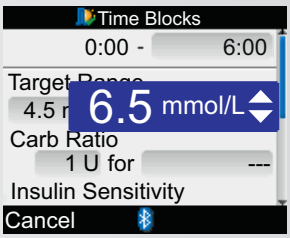
The first Time Blocks screen appears.
Press ⬭ to enter the end time box.
Press △ or ▽ to select the end time.
Press ⬭ to save the setting and move to the lower target limit box.

7.



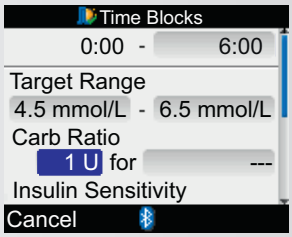
Press ⬭ to enter.
Press △ or ▽ to select your lower target limit.
Press ⬭ to save and move to the upper target limit box.

8.



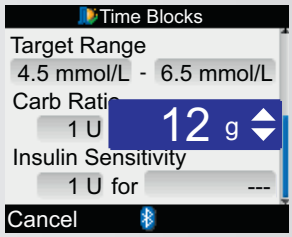
Press ⬭ to enter.
Press △ or ▽ to select your upper target limit.
Press ⬭ to save and move to the insulin for carb box.

9.



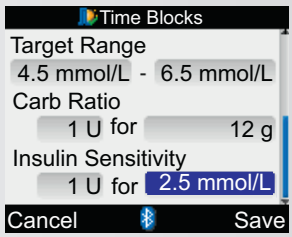
Press ◯ to enter.
Press △ or ▽ to enter the insulin amount.
Press ◯ to save and move to the carb box.

10.



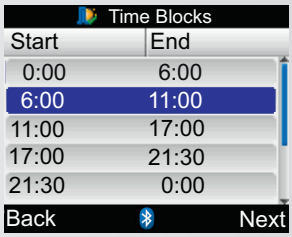
Press ◯ to enter.
Press △ or ▽ to select the amount of carbs covered by the amount of insulin.
Press ◯ to save and move to the insulin for bG box.
Press ◯ to enter.
Press △ or ▽ to select the insulin amount.
Press ◯ to save and move to the bG box.

11.



Press ◯ to enter.
Press △ or ▽ to select the decrease in bG expected for the insulin amount.
Press ◯ to enter.
Press ↩ to save and exit to the Time Blocks screen.

12.

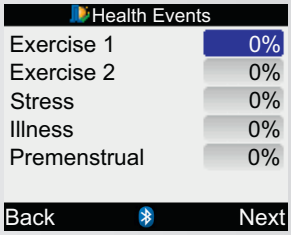


Press △ or ▽ to move to the next Time Block.
Press ◯ to enter.

13.

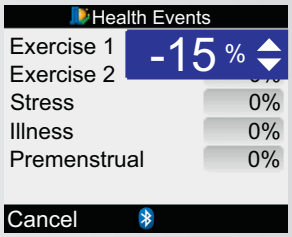
Repeat steps 6 to 12 accordingly to setup all Time Blocks as necessary.
Press ▭ to select Next.

14.



The Health Events screen appears.
Press ▭ to enter the Exercise 1 box.

15.



Press △ or ▽ to select the percentage as needed.
Press ▭ to save.

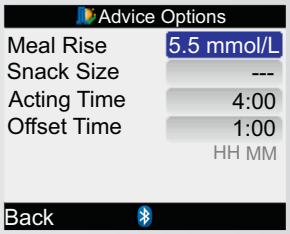
16.

Press △ or ▽ to move to the next Health Event you wish to setup.

17.

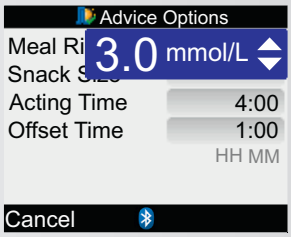
Use ▭, △, ▽ and ▭ to setup all Health Events as needed.
Press ▭ to select next.

18.



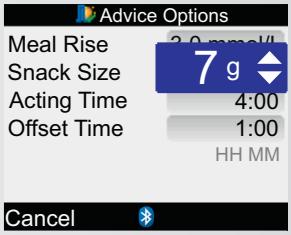
The Advice Options screen appears.

19.



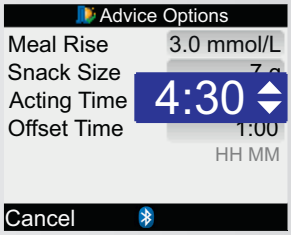
Press ⬭ to enter the Meal Rise box.
Press △ or ▽ to select the Meal Rise level.
Press ⬭ to save and move to the Snack Size box.

20.



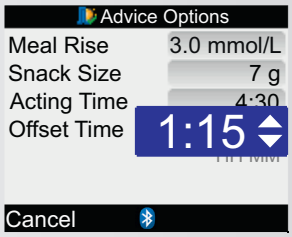
Press ⬭ to enter.
Press △ or ▽ to select the Snack Size.
Press ⬭ to save and move to the Acting Time box.

21.



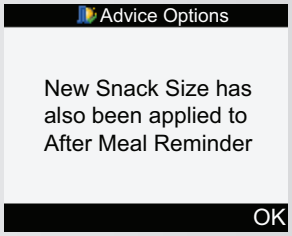
Press ⬭ to enter.
Press △ or ▽ to select the Acting Time.
Press ⬭ to save and move to the Offset Time box.

22.



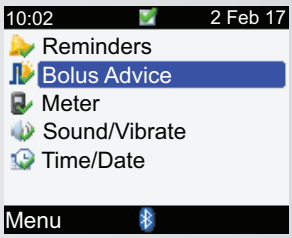
Press ◯ to enter.
Press △ or ▽ to select the Offset Time.
Press ◯ to save.
Press ⌐ to save all settings and select Next.

23.



If you changed the Snack Size you receive the message that the new setting will be applied to the After Meal Reminder Snack Size.
Press ⌐ to select OK.

24.



The Settings screen appears.
Press ⌐ to select Menu and return to the Main Menu.

Boluses that you administered manually from the pump before setting up Bolus Advice cannot be taken into consideration for the bolus calculation. Therefore please wait at least eight hours after the setup before using Bolus Advice for the first time.

1.3 Using Bolus Advice

Bolus Advice can only provide a reliable bolus recommendation, when a current bG test result is available. Therefore it is highly recommended that you always use Bolus Advice by starting with a bG test. When you use Bolus Advice without a current bG test result, you will be prompted with a warning if the last bG test result dates back for more than five minutes.

Taking Bolus Advice from a bG test

To take bolus advice from a bG test, you need:

- your lancing device with lancet drum
- a new test strip

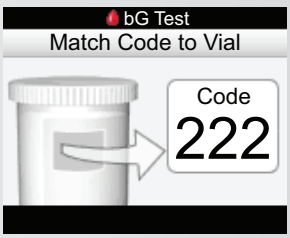
1.

Prepare the lancing device according to the instructions provided. Wash and dry your hands.

2.

Place your Meter on a flat surface (for example, a table) and insert the test strip into the Test Strip slot in the direction of the arrow. The Meter turns on.

3.



The “Match Code to Vial” screen appears. Make sure the code number on the screen matches the code number on the test strip container.

4.

The “Apply Sample” screen appears and a beep indicates that the strip is ready for testing.

5.

Prick your finger with your lancing device. Gently squeeze your finger to get a blood drop

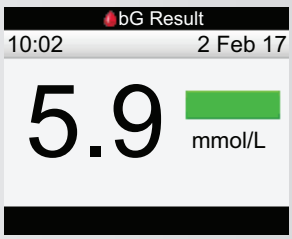
6.

Touch the blood drop against the front edge of the yellow window of the test strip.

7.

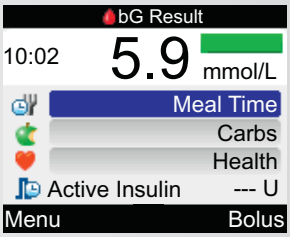
The “Analyzing” screen appears as soon as you have applied enough blood.

8.



Your result appears on the display.

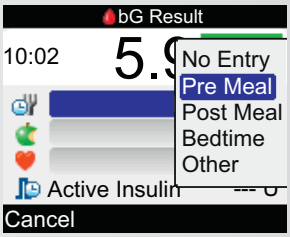
9.



About three seconds later, a detailed “bG Result” screen appears. Here you can add information about the Meal Time, planned food intake or your state of health, for statistical reasons, where appropriate.

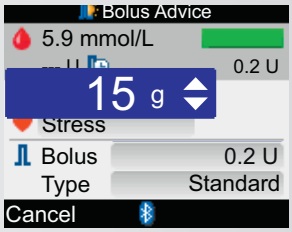
If you use the bG result for Bolus Advice, you cannot change entries later on. Therefore it is recommended that you add information about Meal Time here.

10.



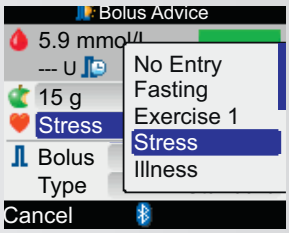
Press ▲ or ▼ to move to the Meal box (or Carbs/ Health accordingly), and press ⬭ to enter.
Press ▲ or ▼ to select a value.
Press ⬭ to save the value. If you enter values for carbs and health here, they are adopted to the Bolus Advice screen.
Press ⬭ to select Bolus and move to the Bolus Advice screen.

11.



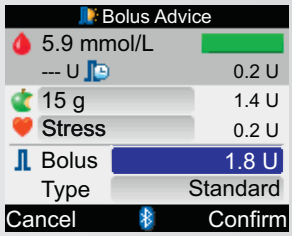
Press ⬭ to enter the carbs Box.
Press △ or ▽ to select the amount of carbohydrates you are planning to eat.
Press ⬭ to save and move to the Health box, and press ⬭ to enter.

12.



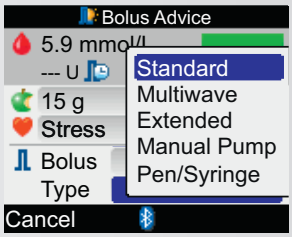
Press △ or ▽ to select your current state of health, as appropriate.
Press ⬭ to save and move to the Bolus Amount box.

13.



If you need to change the recommended bolus amount, use ⬭, △, ▽ and ⬭ to change the bolus amount and move to the Type box.
Otherwise, press ▽ to move to the Type box directly.

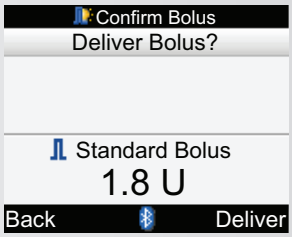
14.



Press ◯ to enter , if you wish to select a bolus type other than Standard (Extended or Multiwave; see explanation below).
Press △ or ▽ to select the bolus type.
Press ◯ to save.

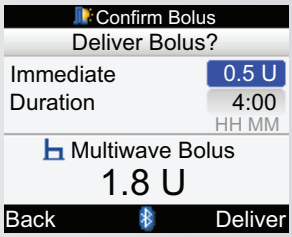
You will learn more about using different bolus types next.
If you have chosen here "Manual Pump", please program the exact bolus amount manually on the Pump within the next 10 minutes. Otherwise there may be a double entry in the meter data and the next Bolus Advice calculation may not be correct.

15.



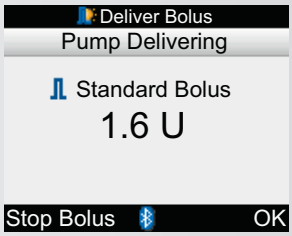
Press ⌐ to confirm and move to the Confirm Bolus screen. Press ⌐ to select Deliver.
The Pump starts delivering the bolus accordingly.

15a.



If you choose a bolus type other than Standard, press ⌐ to confirm and move to the Confirm Bolus screen.
Use ◯, △, ▽ and ◯ to select Immediate Bolus and Bolus Duration as necessary.
Press ⌐ to select Deliver.
The Pump starts delivering the bolus accordingly.

16.



If you need to stop the bolus delivery for any reason press .
Otherwise press to select OK and return to the main menu screen.

If necessary, you can also stop the bolus delivery using the Pump keys: Press and hold or until you hear a short beep (3sec.).

Choosing your bolus type

Three bolus types, each with a different delivery shape, are available:

Standard

The complete bolus amount is delivered in one portion. This bolus is the best choice for corrections made during the day and when compensating for food intake with fast acting carbohydrates (for example fruit, cake, etc.)

Extended

A bolus delivered over a period of time. That means you have to program an appropriate duration as well as the bolus amount. This bolus type can be helpful during long meals, dinners, or receptions, or when you have meals that are digested slowly. It may also be appropriate for people who have gastroparesis (delayed digestion).

Multiwave

A bolus designed to better simulate the body's insulin delivery. It combines an immediate bolus delivery followed by an Extended Bolus delivery. A Multiwave Bolus can be helpful when you have meals that include both rapidly and slowly absorbed carbohydrates.

Extended and Multiwave Bolus are not available in the STANDARD user menu on the Pump. You will learn how to change from STANDARD to ADVANCED or CUSTOM user menu in chapter 5.

2 Managing your data

Careful analysis of your bG data is an effective way for you and your healthcare professional to control and manage your diabetes.

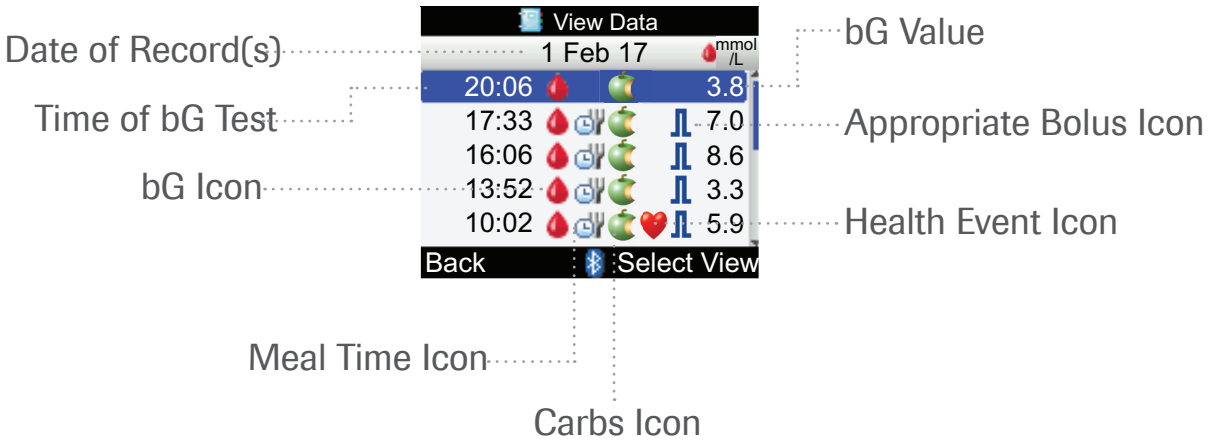
Your Meter automatically stores up to 1000 diary records with their time and date. You can review up to 250 diary records on your Meter, or up to 1000 diary records using compatible software. These records are stored from the newest to the oldest. It is very important to have the correct time and date set on both devices, to ensure that you and your healthcare professional can accurately interpret your blood glucose results.

Each diary record can contain:
- Date and time
- bG test result
- Meal time (events)
- Carbs
- Health Event
- Bolus type
- Bolus amount

You can display filtered or sorted diary data in graphical or table format. Your Meter generates reports, such as bG averages with standard deviations, for the time period you choose (for example, the past 7 days or the past 30 days). Graphs can be a good way to view your bG results. Your Meter can display a line graph to depict bG record trends, a graph showing result ranges for daily or weekly, and a pie chart with different colours to illustrate the amount of test results within, above, or below your bG Target Range.

If you use your pump temporarily without the meter, it is recommendable to initiate a data exchange before the next bG test when starting to use the devices together again. Choose "My Data" or "Bolus Advice" from the main menu for that purpose.

The following table depicts the icons used to display your data:

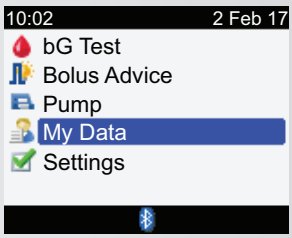


Icon	Icon Name	Description
	bG Test	• Icon is displayed when information exists for this diary record regarding a blood glucose test.
	Meal Time	• Icon is displayed when information exists for this diary record regarding Meal Time.
	Carbs	• Icon is displayed when information exists for this diary record regarding carbs.
	Health Event	• Icon is displayed when information exists for this diary record regarding Health Events.

Icon	Bolus Type	Delivery Confirmation
	Extended Bolus	• Delivery has not been confirmed by the Pump.
	Extended Bolus	• Delivery has been confirmed by the Pump.
	Multiwave Bolus	• Delivery has not been confirmed by the Pump.
	Multiwave Bolus	• Delivery has been confirmed by the Pump.
	Pen / Syringe Bolus	• Bolus has not been delivered by the Pump but by pen or syringe.
	Standard Bolus	• Delivery has not been confirmed by the Pump.
	Standard Bolus	• Delivery has been confirmed by the Pump.

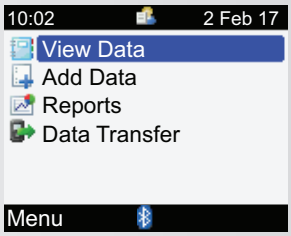
Viewing your data

1.



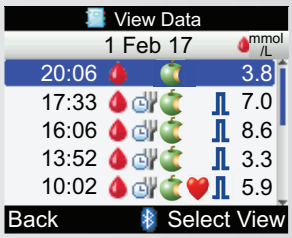
From main menu press ▲ or ▼ to select My Data.
Press ⬭ to enter.

2.



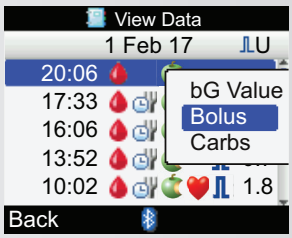
The Data screen is displayed and View Data is highlighted.
Press ⬭ to enter.

3.



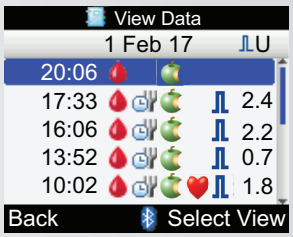
The View Data screen appears.
Press ▲ or ▼ to view other records (the screen scrolls if there are additional records).

4.



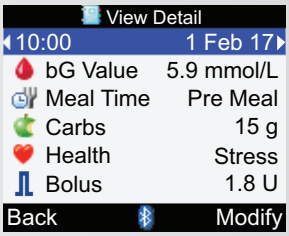
The screen shows the bG test results in the right column by default, but you can also view bolus or carb data.
Press to select Select View.
Press or to select carbs or bolus.
Press to enter.

5.



To view the details of a specific record press or to move the record.
Press to enter.

6.

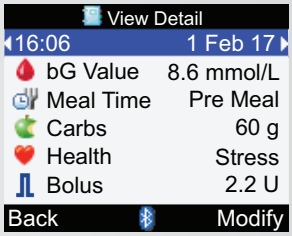


The View Detail screen is displayed.
Press to view the previous or to view next (newer) record.

Editing your data

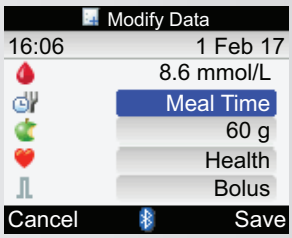
You are in the View Detail screen in step 6 of the previous procedure.

1.



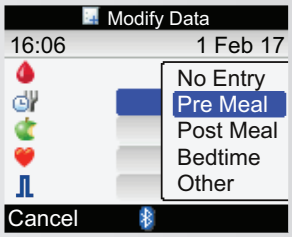
Press ⌐ to select Modify.

2.



Press △ or ▽ to select the field you wish to edit, and press ⬭ to enter.

3.



Press △ or ▽ to change the entry, and ⬭ to save the change.

4.

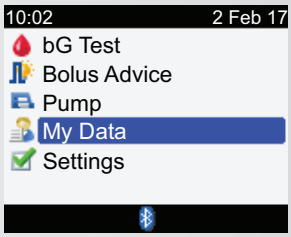
Edit the other fields accordingly, as necessary.
Press ⌐ to save the changes and exit.

You cannot go back and edit data that have been used with Bolus Advice!

Adding data

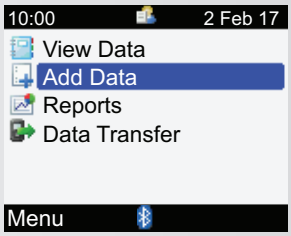
You can add data to a diary record for Carbs, Health, and Bolus, but not for bG Test results.

1.



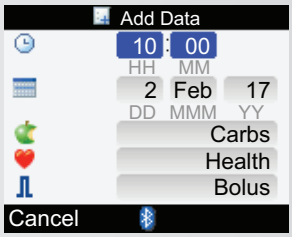
From the main menu, press ▲ or ▼ to select My Data.
Press ◯ to enter.

2.



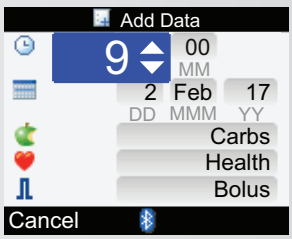
Press ▼ to move to Add Data.
Press ◯ to enter.

3.



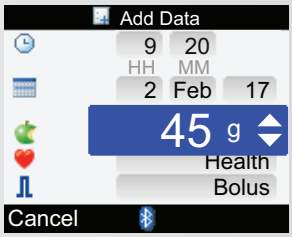
Press ▲ or ▼ to select a field
Press ◯ to enter.

4.



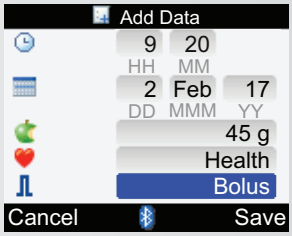
Press ▲ or ▼ to edit the entry.
Press ◯ to confirm

5.



Use ▲, ▼ and ⬭ to edit other entries accordingly.

6.

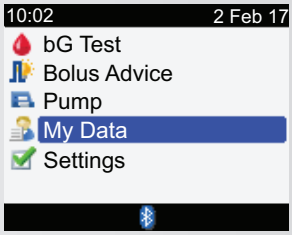


Press ⬭ to save and return to the My Data screen.

Reporting data

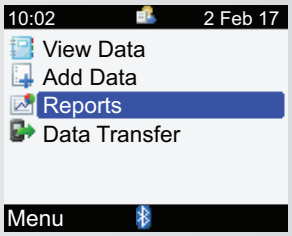
In this menu you can view many different statistics for your bG test results, such as bG averages and standard deviations. Standard deviation is a statistical expression that indicates how far the individual test results are scattered around the average.

1.



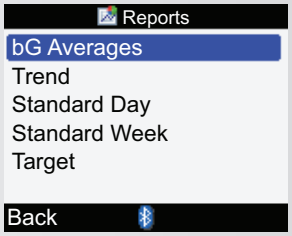
From main menu, press ▲ or ▼ to select My Data.
Press ⬭ to enter.

2.



The My Data screen appears.
Press ▼ to select Reports.
Press ⬭ to enter.

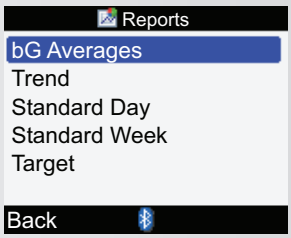
3.



The Reports screen appears.

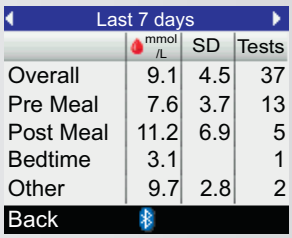
bG Averages … shows you averages and standard deviations for your bG test results for the categories Overall, Pre Meal, Post Meal, Bedtime and Others. Test results without Meal time entry only occur in the Overall category. You can choose whether the averages and standard deviations include the results of the last 7, 14, 30, 60 or 90 days.

1.



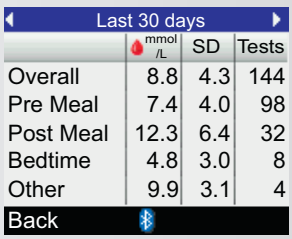
From the Reports screen, press ⬭ to enter bG Averages.

2.



The bG Average screen appears.
Press ◁ or ▷ to select the period of time included in the calculation.

3.

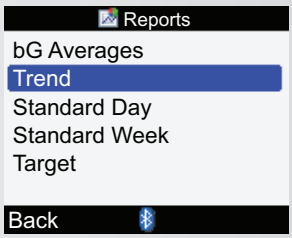


Press ⬭ to select Back and return to the Reports screen.

Trend …

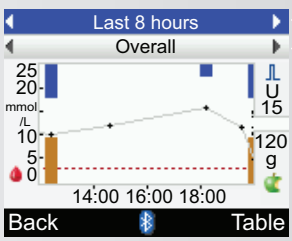
combines your bG test results for the categories Overall, Pre Meal, Post Meal, Bedtime and Others with the entries for Carbs and insulin. You can view them either as a table or as a graphic. You can choose whether the results of the last 8, 24 or 48 hours or 7 days are included.

1.



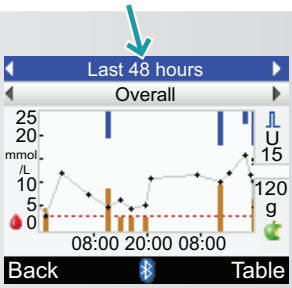
From the Reports screen, press ▽ to select Trend. Press ⬭ to enter.

2.



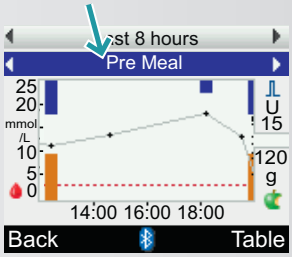
The Trend screen appears.
Press △ or ▽ to switch between the selection of the included period of time and the Meal Time field

3.



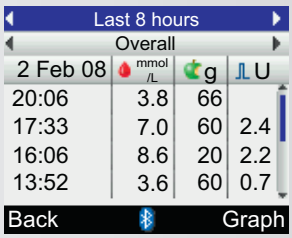
When the time field is highlighted (8, 24 or 48 hours or 7 days), press ◁ or ▷ to select the included period of time.

4.



When the Meal Time field is highlighted, press ◁ or ▷ to select the Meal Time category you wish to view.

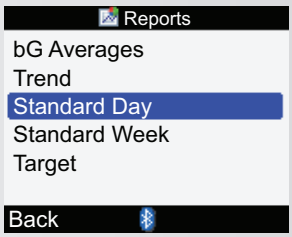
5.



Press ⌐ to switch between Graph view and Table view.
Press ⌐ to select Back and return to the Reports screen.

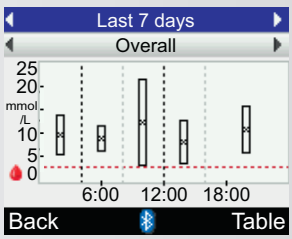
Standard Day … shows you averages and standard deviations for your bG test results for the categories Overall, Pre Meal, Post Meal, Bedtime and Others calculated for each Time Block of your Bolus Advice / Time Block setting. You can view them either as table or as a graphic. You can choose whether the averages and standard deviations include the results of the last 7, 14, 30, 60 or 90 days.

1.



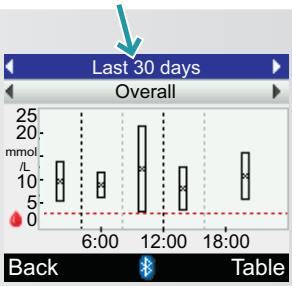
From Reports screen press ▲ or ▼ to select Standard Day.
Press ⬭ to enter.

2.



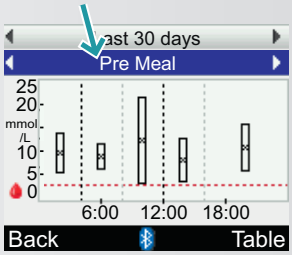
The Standard Day screen appears.
Press ▲ or ▼ to toggle between selection of included period of time and Meal Time field

3.



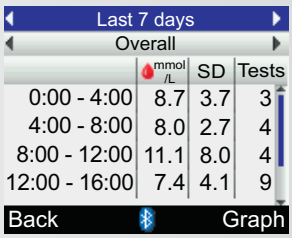
When the time field is highlighted (7, 14, 30, 60 or 90 days), press ◁ or ▷ to select the included period of time).

4.



When the Meal Time field is highlighted, press ◁ or ▷ to select the Meal Time category you wish to view.

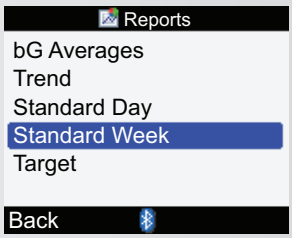
5.



Press ▭ to switch between Graph view and Table view.
Press ▭ to select Back and return to the Reports screen.

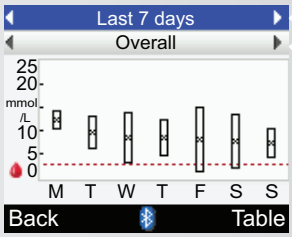
Standard Week … shows you averages and standard deviations for your bG test results for the categories Overall, Pre Meal, Post Meal, Bedtime and Others, calculated for each day of the week. You can view them either as a table or as a graphic. You can choose whether the averages and standard deviations include the results of the last 7, 14, 30, 60 or 90 days.

1.



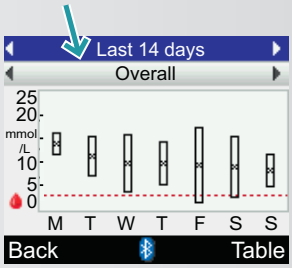
From the Reports screen, press ▲ or ▼ to select Standard Week.
Press ⬭ to enter.

2.



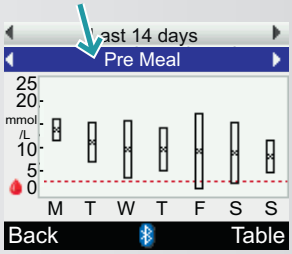
The Standard Week screen appears.
Press ▲ or ▼ to toggle between the selection of included period of time and Meal Time field

3.



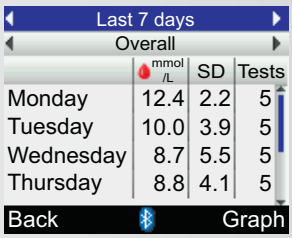
When the time field is highlighted (7, 14, 30, 60 or 90 days), press ◁ or ▷ to select the included period of time).

4.



When the Meal Time field is highlighted, press ◁ or ▷ to select the Meal Time category you wish to view.

5.

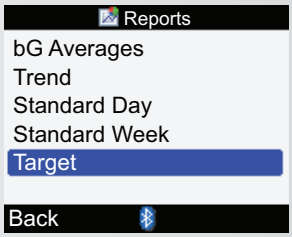


Press ⬭ to switch between Graph view and Table view.
Press ⬭ to select Back and return to the Reports screen.

Target ...

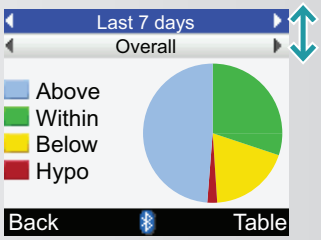
shows you percentages of your bG test results that are above, within or below your Target Range (between upper and lower bG target limit) and below your Hypo Warning Limit. You can view them either as a table or as a pie chart. You can choose whether the percentages include the results of the last 7, 14, 30, 60 or 90 days.

1.



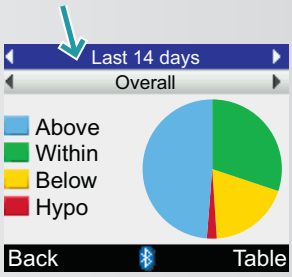
From the Reports screen, press ▲ or ▼ to select Target.
Press ⬭ to enter.

2.



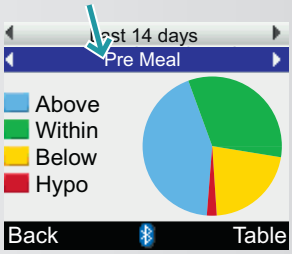
The Target screen appears.
Press ▲ or ▼ to switch between the selection of included period of time and Meal Time field

3.



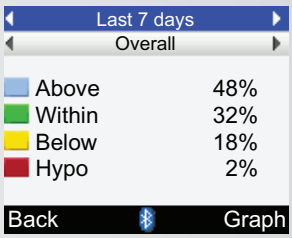
When time field is highlighted (7, 14, 30, 60 or 90 days), press ◁ or ▷ to select the included period of time).

4.



When the Meal Time field is highlighted, press ◁ or ▷ to select the Meal Time category you wish to view.

5.



Press ⌐ to toggle between Graph view and Table view.
Press ⌐ to select Back and return to the Reports screen.

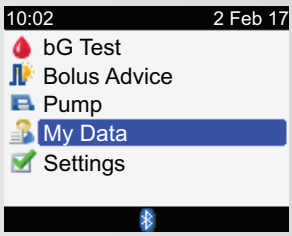
Transferring data to a computer

For safety reasons you must transfer Pump and Meter data separately. You will learn how to transfer your Pump data in lesson 11.

1.

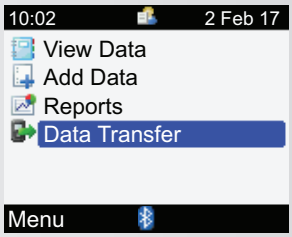
Position the infrared window of your Meter opposite the infrared cable of the computer, and prepare the computer for data transfer (for detailed instructions, see the user documentation provided with the software).

2.



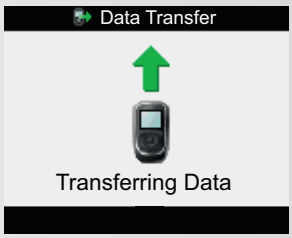
From main menu on the Meter press △ or ▽ to select My Data.
Press ◯ to enter.

3.



Press ▲ or ▼ to move to Data Transfer.
Press ⬭ to enter.

4.



The data transfer begins.
When the data transfer is complete the Data Transfer Complete screen appears for three seconds and then the Meter turns off.

3 Using Reminders

Managing your job, managing your family or managing school often require your full attention. The Meter can assist you managing your diabetes. With reminders it helps you remember a variety of diabetes related tasks.
Three different types of reminders are available to accommodate for different requirements:

bG Test Reminders… remind you to test your bG level in special situations:

- after a high bG test result (hyperglycaemia): After High bG
- after a low bG test result (hypoglycaemia): After Low bG
- after a meal: After Meal

Alarm Clock… You can set up to eight different alarm clock reminders per day.
You can set them to remind you of:

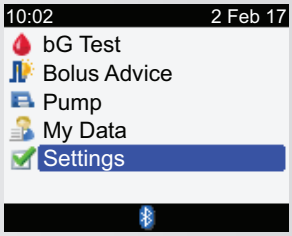
- a bG Test
- other events

Date Reminders… remind you of events like:

- Dr. Visit sounds at a set date
- Lab Test sounds at a set date
- Infusion Set Change sounds after a 1, 2 or 3 day period.

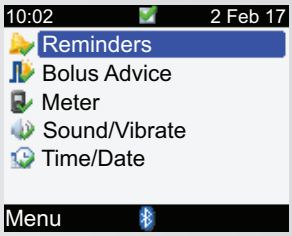
To set Reminders

1.



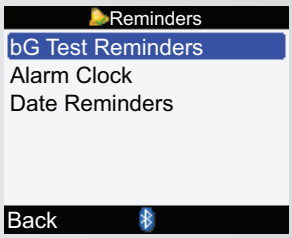
From main menu, press ▲ or ▼ to select Settings.
Press ⬭ to enter.

2.



The Settings screen appears.
Press ⬭ to enter Reminders.

3.

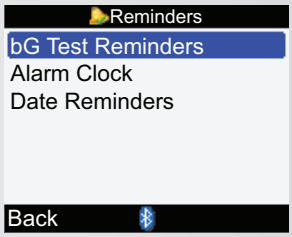


The Reminders screen appears.

bG Test Reminders – After High bG

This reminder will turn on the Meter. You can dismiss it by pressing .
You can reschedule (snooze) it to occur in 15 minutes by pressing .

1.

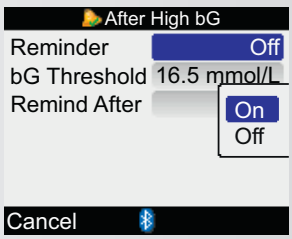


From the Reminders screen press ▲ or ▼ to select bG Test Reminders.
Press ● to enter.

2.

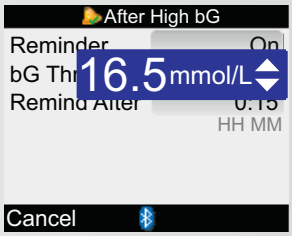
The bG Test Reminders screen appears.
Press ● to enter After High bG.

3.



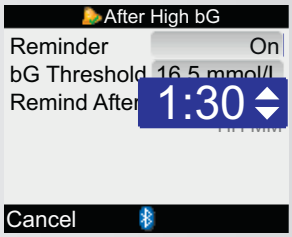
The After High bG screen appears.
Press ● to enter Reminder.
Press ▲ or ▼ to select On or Off as needed.
Press ● to confirm and move to the bG Threshold box. The Hyper Warning Limit is set as bG threshold for triggering the reminder by default.

4.



To change the bG threshold press ⬭.
Press △ or ▽ to select the bG value as needed.
Press ⬭ to confirm and move to the Remind After box.

5.

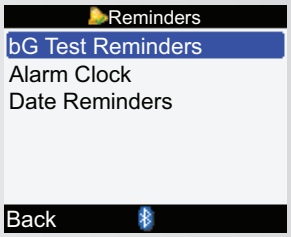


Press ⬭ to enter.
Press △ or ▽ to change the period after which the reminder sounds as needed.
Press ⬭ to confirm.
Press ⬭ to save and return to the bG Test Reminders screen.

bG Test Reminders – After Low bG

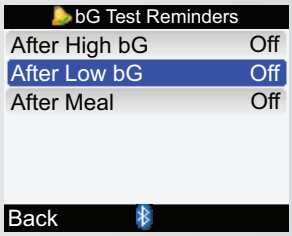
This reminder turns on the Meter. You can dismiss it by pressing .
You can reschedule (snooze) it to occur in five minutes by pressing .

1.



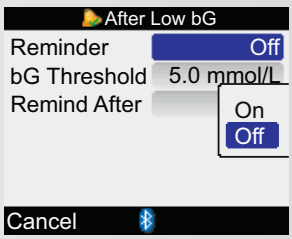
From the Reminders screen press ▲ or ▼ to select bG Test Reminders.
Press ◯ to enter.

2.



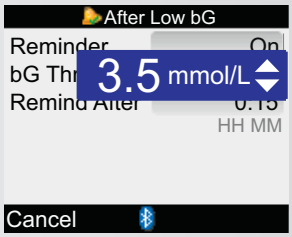
The bG Test Reminders screen appears.
Press ▲ or ▼ to select After Low bG.
Press ◯ to enter.

3.



The After Low bG screen appears.
Press ◯ to enter Reminder.
Press ▲ or ▼ to select On or Off as needed.
Press ◯ to confirm and move to the bG Threshold box. The Hypo Warning Limit is set as bG threshold for triggering the reminder by default.

4.



To change the bG Threshold press ⬭.
Press △ or ▽ to select the bG value as needed.
Press ⬭ to confirm and move to the Remind After box.

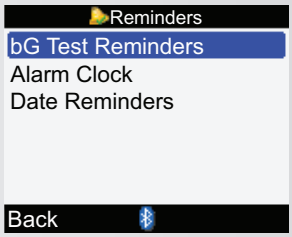
5.

Press ⬭ to enter.
Press △ or ▽ to change the period after which the reminder sounds as needed.
Press ⬭ to confirm
Press ⬭ to save and return to the bG Test Reminders screen.

bG Test Reminders – After Meal

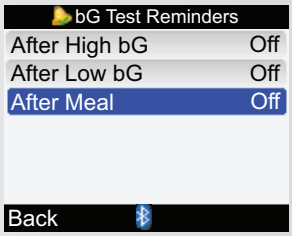
This reminder will turn on the Meter. You can dismiss it by pressing .
You can reschedule (snooze) it to occur in five minutes by pressing .

1.



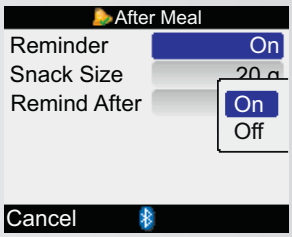
From the Reminders screen press ▲ or ▼ to select bG Test Reminders.
Press ◯ to enter.

2.



The bG Test Reminders screen appears.
Press ▲ or ▼ to select After Meal.
Press ◯ to enter.

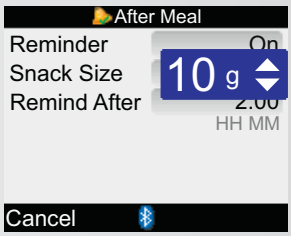
3.



The After Meal screen appears.
Press ◯ to enter Reminder.
Press ▲ or ▼ to select On or Off as needed.
Press ◯ to confirm and move to the Snack Size box.

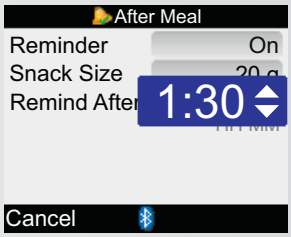
The Snack Size is the same as entered in the Bolus Advice Options.
If you change it here it will also be changed in the Bolus Advice settings.

4.



Press ⬭ to enter.
Press △ or ▽ to select appropriate Snack Size as needed.
Press ⬭ to confirm and move to the Remind After box.

5.

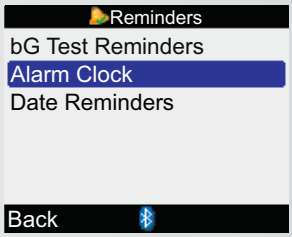


Press ⬭ to enter.
Press △ or ▽ to select an appropriate period of time as needed.
Press ⬭ to confirm.
Press ⬭ to save and return to the bG Test Reminders screen.

Alarm Clock

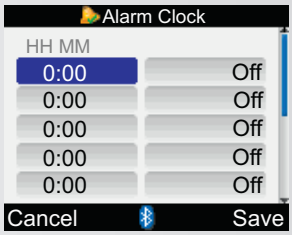
This reminder turns on the Meter. You can dismiss it by pressing .
You can reschedule (snooze) it to occur in 15 minutes by pressing .

1.



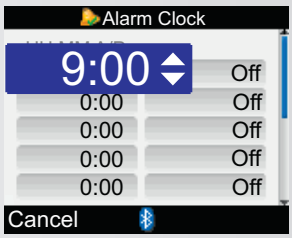
From the Reminders screen, press ▲ or ▼ to select Alarm Clock.
Press ● to enter.

2.



The Alarm Clock screen appears.
Press ▲ or ▼ to move to the alarm clock you wish to change.
Press ● to enter the time box.

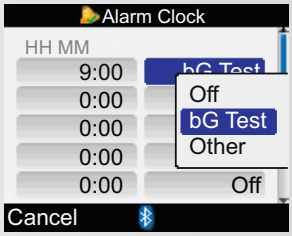
3.



Press ▲ or ▼ to select the appropriate time for the alarm.

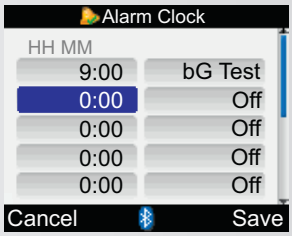
Press ● to confirm and move to the Off or purpose box.

4.



Press ⬭ to enter.
Press △ or ▽ to select Off, bG Test or Other as needed.
Press ⬭ to confirm

5.

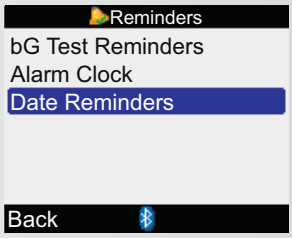


Where appropriate, repeat steps 2 to 4 to set more Alarm Clocks accordingly.
Press ⬭ to save and return to the Reminders screen.

Date Reminders – Dr. Visit

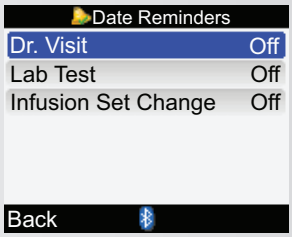
This reminder does not turn on the Meter, but sounds as soon as you turn on the Meter on the selected day. You can dismiss it by pressing .

1.



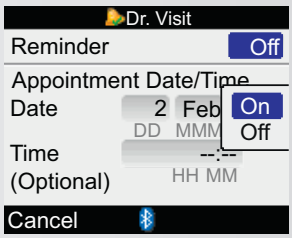
From the Reminders screen, press △ or ▽ to select Date Reminders.
Press ⬭ to enter.

2.



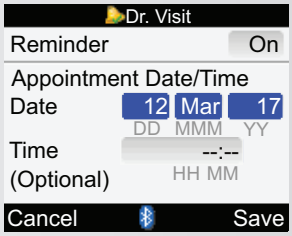
The Date Reminder screen appears.
Press ⬭ to enter Dr. Visit.

3.



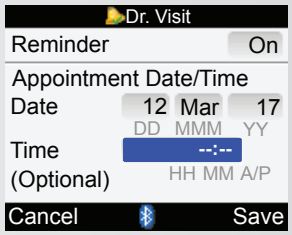
The Dr. Visit screen appears.
Press ⬭ to enter the Reminder box.
Press △ or ▽ to select On or Off.
Press ⬭ to confirm an move to the Date line

4.



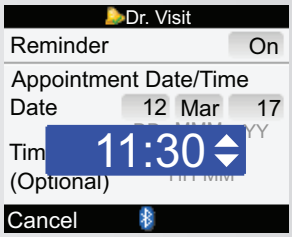
Press ⬭ to enter the day box.
Press △ or ▽ to select the day.
Press ⬭ to confirm and enter the month box
Press △ or ▽ to select the month.
Press ⬭ to confirm and enter the year box
Press △ or ▽ to select the year.

5.



Press ⬭ to confirm and move to the Time box.
Press ⬭ to enter.

6.

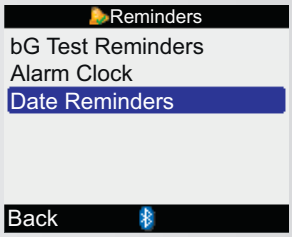


Press △ or ▽ to select the time.
Press ⬭ to confirm.
Press ⬭ to save and return to the Date Reminders screen.

Date Reminders – Lab Test

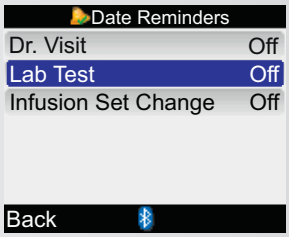
This reminder does not turn on the Meter, but sounds as soon as you turn on the Meter on the selected day. You can dismiss it by pressing .

1.



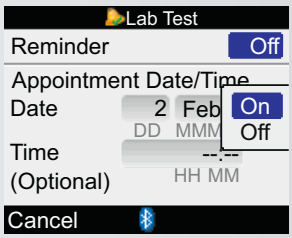
From the Reminders screen press ▲ or ▼ to select Date Reminders.
Press ● to enter.

2.



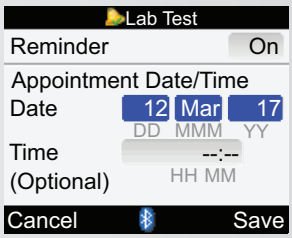
The Date Reminder screen appears.
Press ▲ or ▼ to move to Lab Test.
Press ● to enter.

3.



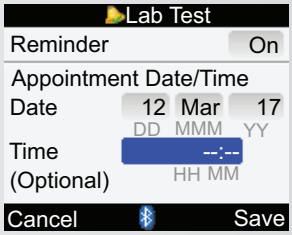
The Lab Test screen appears.
Press ● to enter the Reminder box.
Press ▲ or ▼ to select On or Off.
Press ● to confirm and move to the Date line

4.



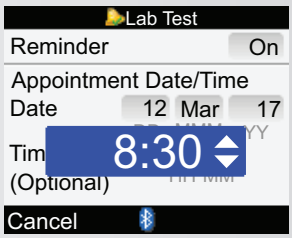
Press ⬭ to enter the day box.
Press △ or ▽ to select the day.
Press ⬭ to confirm and enter the month box.
Press △ or ▽ to select the month.
Press ⬭ to confirm and enter the year box.
Press △ or ▽ to select the year.

5.



Press ⬭ to confirm and move to the Time box.
Press ⬭ to enter.

6.

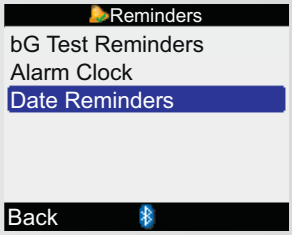


Press △ or ▽ to select the time.
Press ⬭ to confirm.
Press ⬭ to save and return to the Date Reminders screen.

Date Reminders – Infusion Set Change

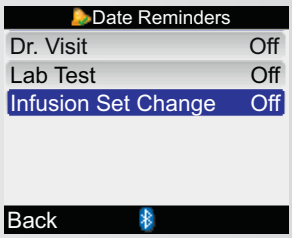
This reminder does not turn on the Meter, but sounds as soon as you turn on the Meter on the according day. You can dismiss it by pressing .
You can reschedule (snooze) it to occur the next time you turn on your Meter by pressing .

1.



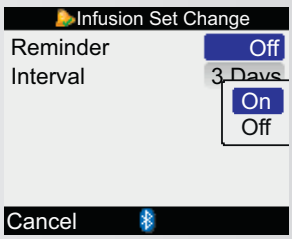
From the Reminders screen press △ or ▽ to select Date Reminders.
Press ◯ to enter.

2.



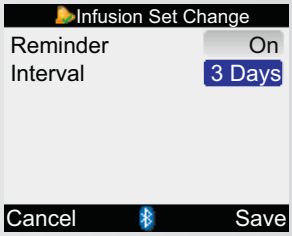
The Date Reminder screen appears.
Press △ or ▽ to move to Infusion Set Change.
Press ◯ to enter.

3.



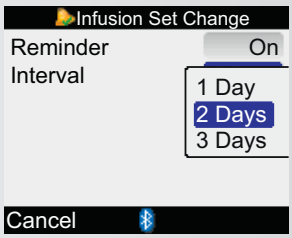
The Infusion Set Change screen appears.
Press ◯ to enter the Reminder box.
Press △ or ▽ to select On or Off.

4.



Press ⬭ to confirm and move to the Interval box
Press ⬭ to enter.

5.



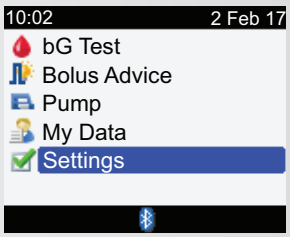
Press △ or ▽ to select the interval as needed.
Press ⬭ to confirm.
Press ⬭ to save and return to the Date Reminders screen.

The Reminder will sound every 1, 2 or 3 days after you switched it On, according to the selected interval. If you need to reset the starting day, switch the Reminder Off and then On again.

4 Changing your Meter settings

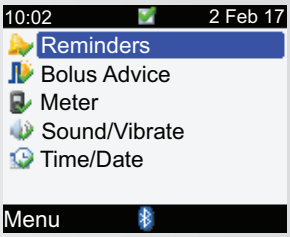
As your life or health situation may change, you may need to change some of the values in your Meter settings. Discuss with your healthcare professional before you change settings.

1.



From main menu press ▲ or ▼ to move to Settings.

2.



Press ◯ to enter. The Settings screen appears.

3.

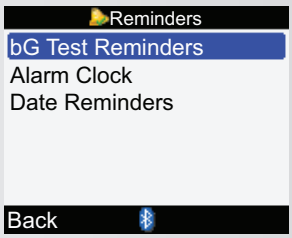
Use ▲, ▼ and ◯ to edit the particular setting as needed.

4.

Where appropriate, press ↩ to save and exit.

You will find the particular settings as follows:

Reminders

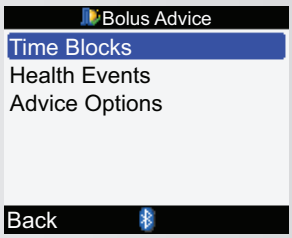


› bG Test Reminders
- › After High bG
- › After Low bG
- › After Meal

› Alarm Clock
- › Alarm Clock 1–8

› Date Reminders
- › Dr. Visit
- › Lab Test
- › Infusion Set Change

Bolus Advice

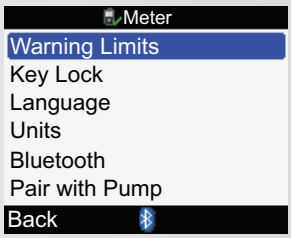


› Time Blocks
- › End
- › Target Range
- › Carb Ratio
- › Insulin Sensitivity

› Health Events
- › Exercise 1
- › Exercise 2
- › Stress
- › Illness
- › Premenstrual

› Advice Options
- › Meal Rise
- › Snack Size
- › Acting Time
- › Offset Time

Meter



› Warning Limits → › Hyper (high)
› Hypo (low)

› Key Lock → › ON / OFF

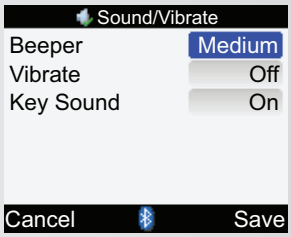
› Language

› Units → › Grams, BE, KE, CC

› Bluetooth → › ON / OFF

› Pair with Pump

Sound / Vibrate

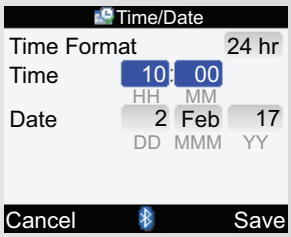


› Beeper → › Off, low, medium, high

› Vibrate → › ON / OFF

› Key Sound → › ON / OFF

Time / Date



› Time Format

› Time

› Date

5 Accu-Chek Spirit Combo user menus

There are three user menus to choose from, depending on your knowledge and experience of pump therapy:

STANDARD
For ease of use, this menu features only the basic functions you need for successful insulin pump therapy. It is particularly well-suited to those beginning insulin pump therapy.

ADVANCED
This menu includes all STANDARD menu functions plus a number of additional functions, allowing a more flexible and comfo table insulin pump use. This is particularly recommended, if you are already experienced in insulin pump therapy.

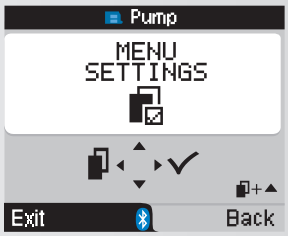
CUSTOM
This menu enables you to organise all the Accu-Chek Spirit Combo insulin pump functions according to your individual requirements. You or your healthcare team can set up the menu using PC based Configuration Software (available separately).

By default your Pump is in STANDARD user menu. For using Extended or Multiwave bolus, different basal rate profiles, changing your THERAPY SETTINGS or using Reminder you must change to the ADVANCED user menu.

Selecting a user menu

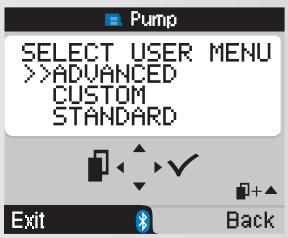
While you are becoming an experienced pump user, you may wish to change to the ADVANCED user menu for using the complete flexibility and convenience of your Pump.

1.



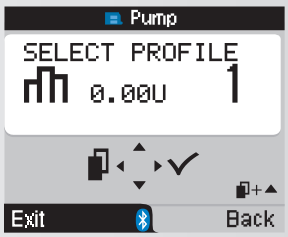
Press ◁ to move to the MENU SETTINGS screen.
Press ▷ to enter.

2.



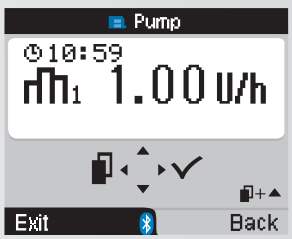
The SELECT USER MENU screen appears.
Press △ or ▽ to move to ADVANCED.
Press ▷ to select.

3.



The SELECT PROFILE screen appears. Profile 1 is selected by default.
Press △ or ▽ to select the appropriate profile
Press ▷ to confirm.

4.



The Pump returns to the STOP or RUN screen.

6 Choosing your bolus type

There are three bolus types with different shapes of bolus delivery available:

Standard …

The complete bolus amount is delivered in one portion. This bolus is the best choice for corrections during the day and to compensate for food intake with fast acting carbohydrates (for example fruit, cake, etc.)

Extended …

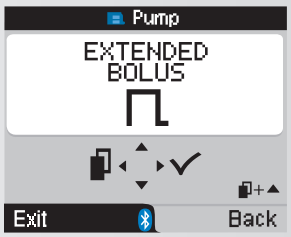
A bolus delivered over a period of time.
That means you have to program an appropriate duration as well as the bolus amount. This bolus type can be helpful during long meals, dinners, or receptions, or when you have meals that are digested slowly. It may also be appropriate for people who have gastroparesis (delayed digestion).

Multiwave …

A bolus designed to better simulate the body's insulin delivery. It combines an immediate bolus delivery followed by an Extended Bolus delivery. A Multiwave Bolus can be helpful when you have meals that include both rapidly and slowly absorbed carbohydrates.

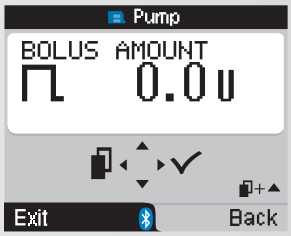
Procedure for programming an Extended Bolus

1.



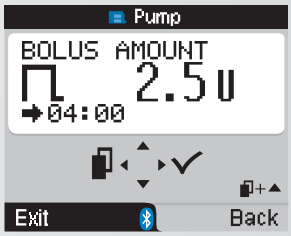
While your Meter is in “Pump” menu, press ◁ to move to the EXTENDED BOLUS screen.

2.



Press ▷ to select. The BOLUS AMOUNT screen appears.

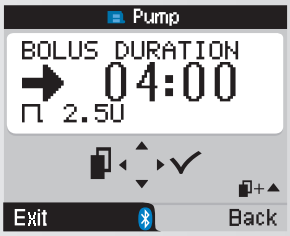
3.



Press △ to increase or ▽ to decrease the bolus amount.
Press ◁ to move to the BOLUS DURATION screen.

Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

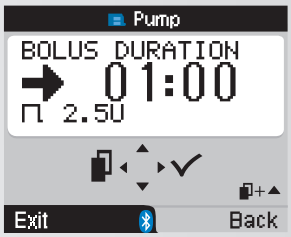
4.



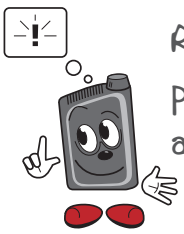
The duration of the last Extended Bolus delivered appears.
Press ▲ to increase or ▼ to decrease the bolus duration.

Press ◀ to switch between programming the bolus amount and bolus duration.

5.



Press ▶ to confirm the bolus amount an duration. You hear a melody and/or feel a vibration. The bolus delivery begins within the next 3 minutes.



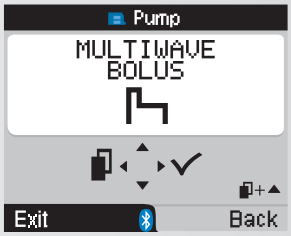
Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

Cancelling an Extended Bolus

During programming (the bolus amount or bolus duration blinks):	You can either: • wait for your Pump to return to the RUN screen • press ↩ to exit the Function screen • set the bolus amount to 0.0 units and press ▷.	No bolus is delivered.
During bolus delivery	• If the Extended Bolus delivery has begun, it can be cancelled by putting your Pump into STOP mode. This cancels the bolus delivery and a Warning W8: BOLUS CANCELLED is displayed. Press ▷ twice to confirm and turn off the alert. The bolus amount delivered up to the cancellation can be reviewed in the BOLUS DATA screen.	Bolus delivery is interrupted.

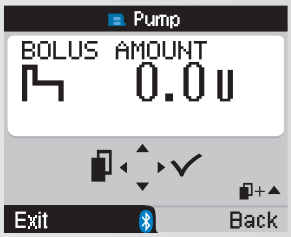
Procedure for programming a Multiwave Bolus

1.



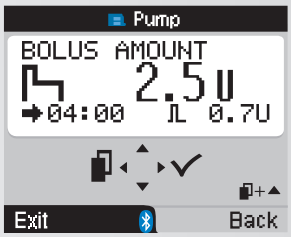
While your Meter is in “Pump” menu press ◁ to move to the MULTIWAVE BOLUS screen.

2.



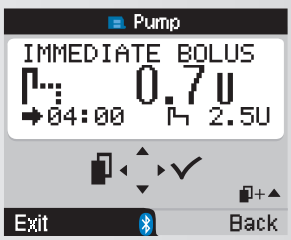
Press ▷ to select. The BOLUS AMOUNT screen appears.

3.



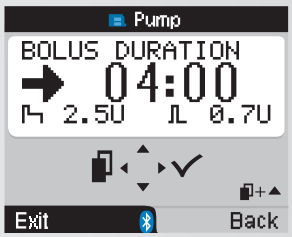
Press △ or ▽ to increase or decrease the total bolus amount.

4.



Press ◁ to move to the IMMEDIATE BOLUS screen.
Press △ or ▽ to correct and set the immediate bolus amount.

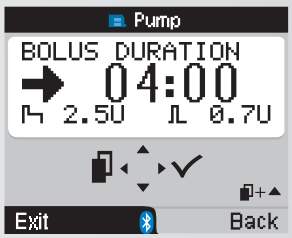
5.



Press ◁ to move to the BOLUS DURATION screen.
Press △ or ▽ to correct and set the Extended Bolus duration in increments of 15 minutes for up to 24 hours.

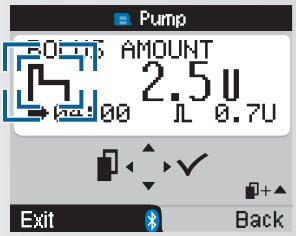
Press ◁ to loop between programming the total BOLUS AMOUNT, IMMEDIATE BOLUS and BOLUS DURATION.

6.



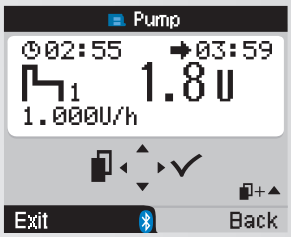
Check the total and immediate bolus amounts and the Extended Bolus duration programmed on the screens.

7.



Press ▷ to confirm both bolus amounts and the bolus duration. The Multiwave Bolus symbol blinks for 5 seconds (bolus delivery start delay).

8.



The Pump beeps three times and vibrates and the immediate bolus delivery begins. The countdown of the remaining bolus continues to appear on the display.

Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

Cancelling a Multiwave Bolus

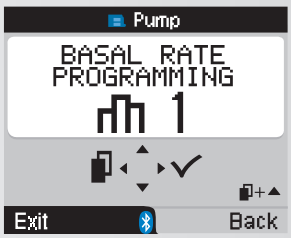
During programming	There are three ways to cancel a Multiwave Bolus during programming: • Do not press any key for 20 seconds. The Pump returns to the RUN screen. • Exit to the Multiwave Bolus screen by pressing  . • Set the total bolus amount to 0.0 units and press ▷.	No bolus is delivered
During the start delay	• Press ▽ or △. The Pump beeps and vibrates. The Pump returns to the RUN screen. This cancels the bolus delivery and a Warning W8: BOLUS CANCELLED is displayed. Press ▷ twice to confirm and turn off the alert.	No bolus is delivered

During immediate bolus delivery	• You can cancel immediate delivery by pressing and holding ▽ or △ for 3 seconds until you hear a melody. This cancels the whole bolus (immediate and Extended Bolus delivery). This cancels the bolus delivery and a Warning W8: BOLUS CANCELLED is displayed. Press ▷ twice to confirm and turn off the alert. The bolus amount delivered up to the cancellation can be reviewed in the BOLUS DATA screen.	Bolus delivery is interrupted
During extended delivery	• You can cancel the extended delivery by putting the Pump in STOP mode. This cancels the Extended Bolus. This cancels the bolus delivery and a Warning W8: BOLUS CANCELLED is displayed. Press ▷ twice to confirm and turn off the alert. The bolus amount delivered up to the cancellation can be reviewed in the BOLUS DATA screen.	Bolus delivery is interrupted

7 Additional basal rate profiles

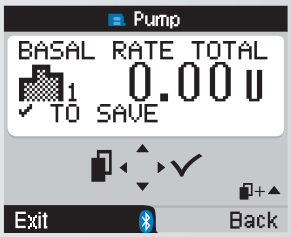
Your Pump has five different basal rate profiles to match your changing insulin needs (for example, Monday to Friday or Exercise Day or Sleeping Late Day). Discuss additional basal rate profiles with your doctor or healthcare team. Also, consult with your doctor or healthcare team before changing basal rate profiles. You can use the same procedure as for BASAL RATE PROGRAMMING 1.

1.



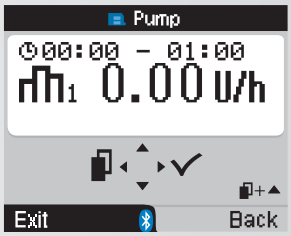
While the Meter is in “Pump” menu press ◁ to move to the BASAL RATE PROGRAMMING 1 screen (or 2, 3, 4 or 5 accordingly).

2.



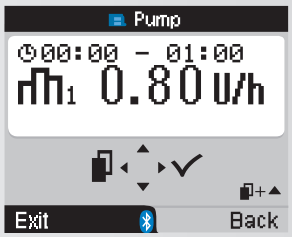
Press ▷ to enter. The BASAL RATE TOTAL screen appears.

3.



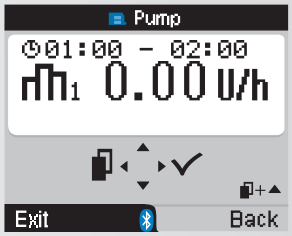
Press ◁ to move to the first hour. This is always 00:00 – 01:00 (12 AM – 01 AM if the American time format is used).

4.



Press ▲ or ▼ repeatedly or scroll to set the hourly basal rate given by your doctor or healthcare team.

5.

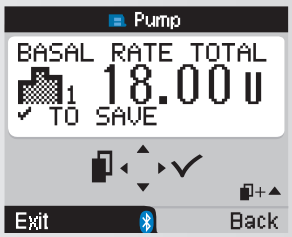


Press ◀ to move to the next hour.

6.

Continue using ◀ and ▲ or ▼ to set the hourly basal rates for the remaining hours. This allows you to program your individual basal rate profile on an hour-by-hour basis. Continue until all 24 hours are programmed.

7.



Press ▶ to confirm. The new daily BASAL RATE TOTAL is displayed.

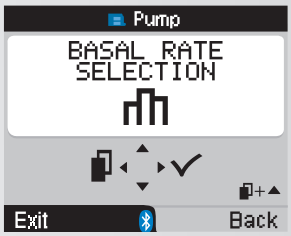
Press ▶ again to save the profile and exit

Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

7.1 Selecting a basal rate profile

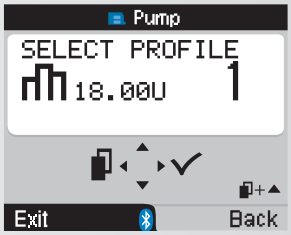
Procedure for selecting a basal rate profile

1.



While your Meter is in “Pump” menu, press ◁ to move to the BASAL RATE SELECTION screen. Press ▷ to enter.

2.



Press △ or ▽ to select a basal rate profile. The selected basal rate profile and its daily insulin total appear.

Press ▷ to select.

The new basal rate profile is active immediately.

Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

8 Therapy settings

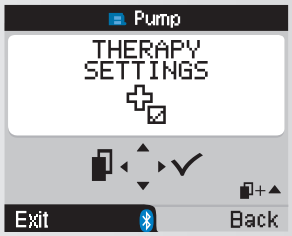
These settings relate to the therapeutic use of the Pump. For settings relating to the practical use of the Pump, see Pump settings earlier in this chapter.

8.1 Adjusting the bolus increment

Designed for those patients who may need large or small amounts of insulin, the bolus increment for the Quick Bolus of your Accu-Chek Spirit Combo insulin pump is adjustable. It is initially set to 0.5 units per key-press, but it can be changed to 0.1, 0.2, 0.5, 1.0 or 2.0 units per key-press.

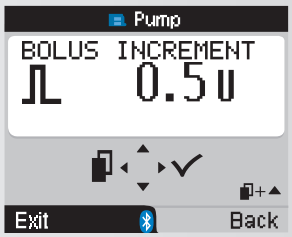
Procedure for adjusting the bolus increment

1.



While your Meter is in “Pump” menu, press ◁ to move to the THERAPY SETTINGS screen.
Press ▷ to select.

2.



Press ◁ to move to the BOLUS INCREMENT screen.
Press △ or ▽ to select a bolus increment.
Press ▷ to save and exit

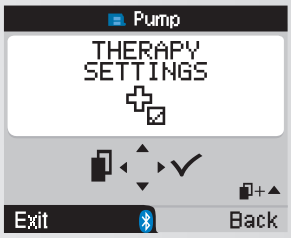
Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

8.2 Adjusting the prime amount

The prime amount needed to fill an infusion set depends on the length of the infusion set tubing. The shorter your infusion set tubing, the less insulin will be required to prime the infusion set. The default setting for the prime amount is 25 units of U100 insulin.

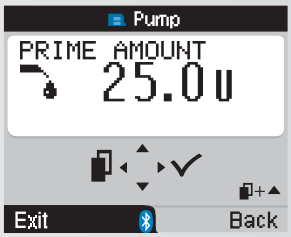
Procedure for adjusting the prime amount

1.



While your Meter is in “Pump” menu, press ◁ to move to the THERAPY SETTINGS screen.
Press ▷ to select.

2.



Press ◁ to move to the PRIME AMOUNT screen.
Press △ or ▽ to select a prime quantity between 0.0 and 50.0 units.
Press ▷ to save and exit.

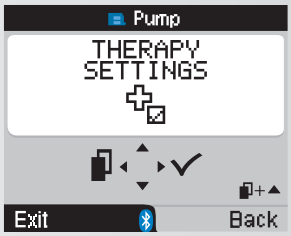
Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

8.3 Locking basal rate profiles

Your Accu-Chek Spirit Combo insulin pump allows you to adapt your hourly basal rate profile as needed. You can then lock your basal rate profiles to provide additional protection against accidentally changing a basal rate during normal operation. If the basal rate lock is set to ON, programming of the basal rate profiles 1, 2, 3, 4 and 5 is blocked.
If you try to program a basal rate while the BASAL RATE LOCK is turned ON, the key symbol in the BASAL RATE TOTAL screen indicates that basal rate programming is locked. The △ and ▽ functions are blocked.
However, you can still change between the different basal rate profiles 1 to 5.

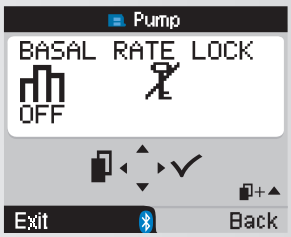
Procedure for locking the basal rate profile

1.



While your Meter is in “Pump” menu, press ◁ to move to the THERAPY SETTINGS screen.
Press ▷ to select.

2.



Press ◁ to move to the BASAL RATE LOCK screen.
Press △ or ▽ to turn the BASAL RATE LOCK ON or OFF.
Press ▷ to save and exit.

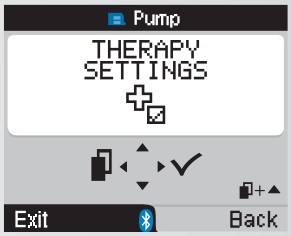
Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

8.4 Automatic Off

Automatic Off is a safety feature that stops insulin delivery and triggers Error E3: AUTOMATIC OFF if no pump keys are pressed or the Pump was operated using the Meter within a programmed time period in RUN mode. This feature can either be set to OFF or programmed up to 24 hours in 1-hour intervals. The factory setting is OFF.
Discuss using the Automatic Off function with your doctor or healthcare team.

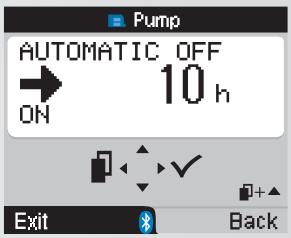
Procedure for using Automatic Off

1.



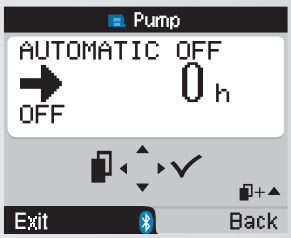
While your Meter is in “Pump” menu, press ◁ to move to the THERAPY SETTINGS screen.
Press ▷ to select.

2.



Press ◁ to move to the AUTOMATIC OFF screen.
Press or scroll △ to increase or ▽ to decrease the duration for the Automatic off in 1-hour intervals.

3.



If you would like to set the Automatic Off function to off, press ▽ until “0 hours” and OFF appear on the display.
Press ▷ to save and exit.

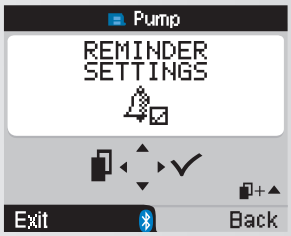
Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

9 Setting a reminder on the Pump

You can set both single and multiple reminders on your Pump. Multiple reminders are repeated at a set time every day. You can use this feature to remind you, for example, when you need to test your blood glucose.

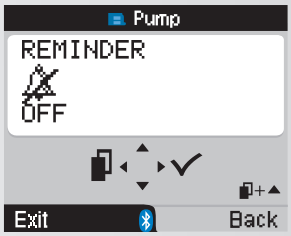
Procedure for setting single or multiple reminders

1.



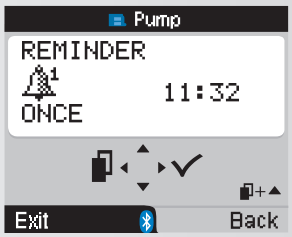
While your Meter is in “Pump” menu, press ◁ to move to the REMINDER SETTINGS screen.

2.



Press ▷ to select. The current reminder status and alarm time appear.

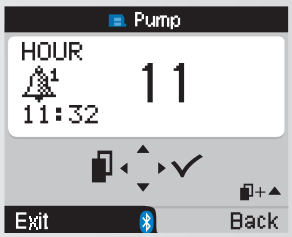
3.



Press ▲ or ▼ to change the reminder setting to OFF, ONCE or EVERY DAY.

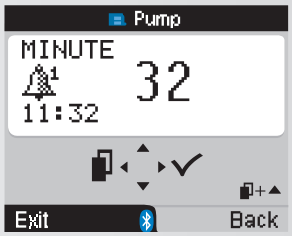
Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

4.



Press ◀ to move to the HOUR screen.
Press ▲ or ▼ to set the hour.

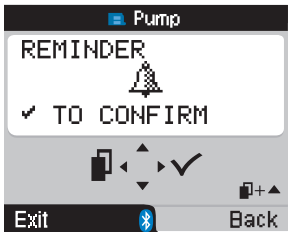
5.



Press ◀ to move to the MINUTE screen.
Press ▲ or ▼ to set the minute.
Press ▶ to save and exit.

Turning off the reminder

When the reminder sounds, the REMINDER screen is displayed.

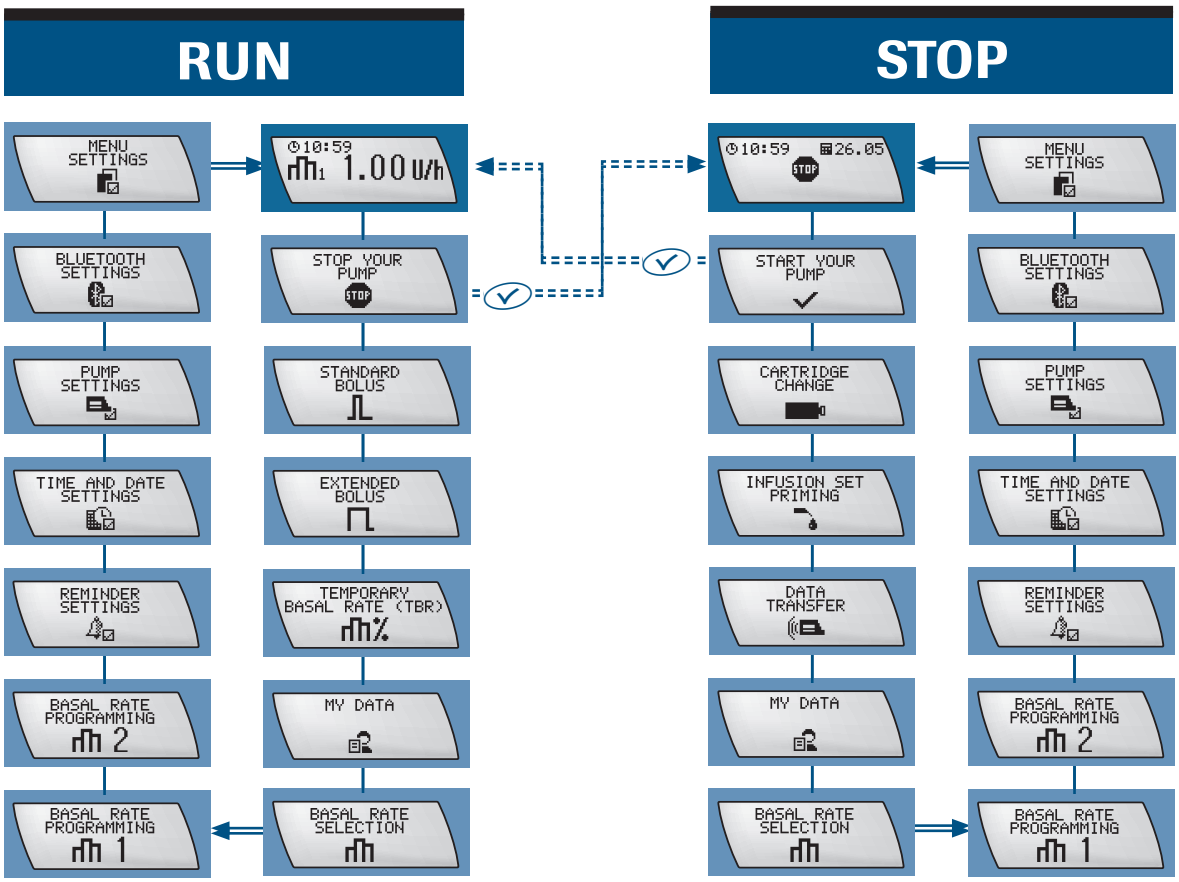


Press ✓ twice to snooze and confirm and return to RUN or STOP mode.

Remember that you can also use the according keys of the Pump for this procedure. See chapter 8.2 of the Standard Training Handbook for the attribution of Meter buttons and Pump keys.

10 CUSTOM user menu

The CUSTOM user menu is designed to adapt your Pump to your special requirements and preferences. It allows you or your healthcare provider to display or hide screens and thereby customise the individual user menus. By default the following functions are accessible in the CUSTOM menu:



- Press ⊙ or ◁ to move forwards
- Press ⊙+△ simultaneously or ↩ to move backwards

To change the CUSTOM user menu, you, your doctor, or your healthcare provider must use the Accu-Chek Spirit Combo insulin pump PC configuration software (available separately).

11 Transferring your Pump data to a computer

The built-in infrared interface on the end of your Accu-Chek Spirit Combo insulin pump enables you to transfer data between your Pump and a PC.

The memory of your Accu-Chek Spirit Combo insulin pump stores all the events (Warnings and Errors, programming operations and insulin delivery records) up to a total of 4500 events. These data correspond to about the last ninety days of use, and can be accessed on a personal computer using Accu-Chek information management products (for details see the user information provided with the software).

Procedure for transferring your data

1.

Put your Pump in STOP mode.

2.

Press ⓘ to move to the DATA TRANSFER screen.
Press ✓ to select.

3.

Press ✓. A melody signals that your Pump is transfering data.

4.

When the data transfer is complete, press ✓ to return to the STOP screen.

Set up your Pump with a cartridge, adapter, and a new infusion set, and put it in RUN mode if necessary.

12 Pairing your Pump with the Meter

If you have already acquired the Meter together with the Accu-Chek Spirit Combo insulin pump, the two devices will already have been paired. If you acquired the devices separately or after a Warning W10: BLUETOOTH FAULT you must pair the devices before they can communicate with each other.
When pairing your Accu-Chek Spirit Combo insulin pump with the Meter, place both devices on a table or desk, so that you can see the displays of both devices clearly.
You should not perform the pairing process in crowded areas, since the emissions of other electronic devices could interfere with the connection.

Procedure for Pairing

1.

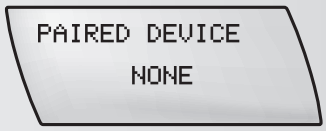
Press ⧉ to move to the BLUETOOTH SETTINGS screen.

2.

Press ✓ to select to the ON/OFF screen.
Press ▲ or ▼ to switch on the *Bluetooth*® function.

When Bluetooth® is turned off, you cannot access the Paired Device menu.

3.



Pump screen

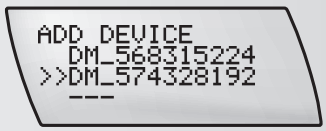
Meter screen

Press ⧉ to display the PAIRED DEVICE screen. If the pump screen indicates that no paired device is available, turn on the Meter in pairing mode by holding down ☼ and simultaneously pressing ⓘ.

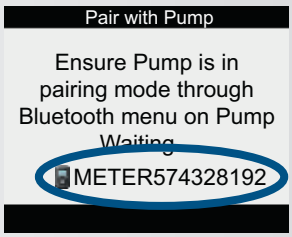
4.

Press the ⧉ key on the Pump to see the ADD DEVICE screen, and press ✓ to initiate pairing.

5.



Pump screen



Meter screen

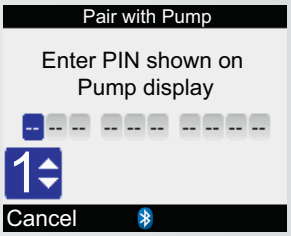
The Pump begins searching and detects the Meter, displaying its serial number (This process may take several minutes).

Press ▲ or ▼ to select the number, which is also shown on your Meter screen.

Press ✓ on the Pump to confirm that you want to pair the Meter.

6.

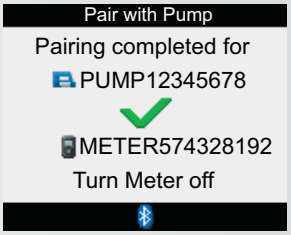
Pump screen



Meter screen

The Pump begins the pairing process and shows a 10-digit code. Enter the code on the Meter display, using ▢, △ and ▽ and then ▢ to move to the next digit.
Confirm the complete code with ▢.

7.



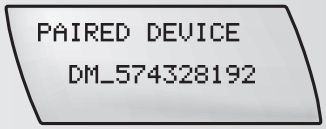
Meter screen

After the pairing is completed press ⏻ to turn off the Meter.

8.

The Pump now shows the DEVICE PAIRED screen.
Press ✓ to confirm the pairing

9.



The Pump displays the PAIRED DEVICE screen.
You can return to the RUN screen by pressing ✓.

If the pairing is not successful in a first attempt, wait a few minutes before you repeat the procedure in a safe or less crowded environment.

Troubleshooting the *Bluetooth*® connection

If problems with the Buetooth® connection occur, you should repeat the pairing procedure described on the previous pages.
Since only one Meter at a time can be paired with your Pump, you must delete the old pairing before you can pair your Pump with a new Meter.

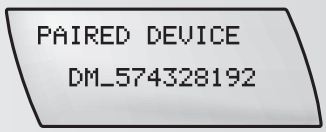
1.

Press ⧉ to move to the BLUETOOTH SETTINGS screen.

2.

Press ✓ to enter the BLUETOOTH ON/OFF screen.

3.



Press ⧉ to move to the PAIRED DEVICE screen.

4.

Press ⧉ to move to the DELETE DEVICE screen.
Press ✓ once to delete the pairing and a second time to confirm

Appendix A

Calculating a correct bolus is a tricky business.

If you had to work it out yourself, here's what you would have to do.

Pumpy's Recipe for a Ready-to-Use Insulin Bolus

Ingredients

- A fresh amount of carbohydrates
- Your current insulin-to-Carb Ratio
- A fresh blood glucose (bG) test result
- Your current bG target level
- Your current insulin sensitivity (also called your correction factor)
- The correct time
- An insulin dose adjustment for exercise, stress, illness or premenstruation (add as needed)
- Insulin

Tools

- A watch or clock
- A Meter
- A test strip
- A lancing device
- An insulin pump, pen or syringe

Instructions

1. Check the time and multiply the carbohydrates by your current insulin-to-Carb Ratio.
   The carbohydrates must be fresh and must not have been used for a previous bolus.
2. Put the result aside. This is your meal bolus.
3. Perform a bG test to get a fresh (new) bG test result.
   Make sure the result is less than five minutes old and has not been used for a previous bolus.

4. Take away your current bG target level from your bG test result.
5. Multiply the answer by your current insulin sensitivity level (check the time). This gives you the correction bolus.
6. Add the correction bolus to the meal bolus that you prepared earlier. (If the result is less than 0, you do not need to inject insulin at the moment.)
7. Add or take away the health percentage for exercise, stress, illness or premenstruation as required.
8. Inject the resulting amount of insulin using your pump, pen or syringe.

Note: Do not re-use the carb amount or bG test result for a second bolus as this could lead to double dosage and hypoglycaemia.

Thankfully, calculating a correct bolus with the Accu-Chek Combo system is so much easier.

Ingredients

- A fresh amount of carbohydrates
- A fresh bG test result
- A health percentage for exercise, stress, illness or premenstruation (add as needed)

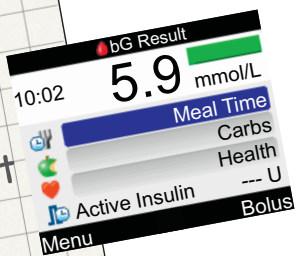
Your Accu-Chek Combo system automatically considers the current time, your insulin-to-Carb Ratio for the current time, your current Insulin Sensitivity (also called the correction factor) and the percentages for exercise, stress, illness or premenstruation as you entered them in the Set-up Wizard. Your Pump also contains the required insulin.

Tools

- Your Accu-Chek Combo system
- A test strip
- A lancing device

Instructions

1. Perform a bG test using your new Accu-Chek Combo Meter.
2. Access Bolus Advice from the bG Test Result screen.
3. In Bolus Advice, enter the amount of carbs you are planning to consume and any information about Health Events as required. Bolus Advice will do the calculation for you.
4. Press the soft key to confirm and deliver the bolus as prepared by your Accu-Chek Combo system.



Your Accu-Chek Combo system will automatically ensure that neither a carb amount nor a bG test result is re-used for a second bolus!

For further details see Appendix B and C: Bolus Advice Calculation.

Where to find the Bolus Advice settings on the Meter

Manual calculation	On your Meter
Time dependence of parameters (circadian rhythm)	**Time Blocks:** In Settings › Bolus Advice › Time Blocks
Insulin-to-carbohydrate ratio	**Carb Ratio:** Within each Time Block (in Settings › Bolus Advice › Time Blocks)
Insulin Sensitivity / correction factor	**Insulin Sensitivity:** Within each Time Block (in Settings › Bolus Advice › Time Blocks)
bG target level	**Target Range:** Within each Time Block (in Settings › Bolus Advice › Time Blocks) The target value is calculated automatically as midway between the upper and lower target limits.
Insulin dose adjustment for exercise, stress, illness or premenstruation	**Health:** In the bG Test Result screen or in Bolus Advice. Select the value in Settings › Bolus Advice › Health Events.

Manual calculation	On your Meter
Prevention of double dosage after meal	Meal Rise: In connection with Acting Time and Offset Time (in Settings › Bolus Advice › Advice Options).
Prevention of double dosage after a high bG test result	Offset Time and Acting Time after a correction bolus.

Appendix B: Bolus Advice calculations

In this section you will learn how Bolus Advice recommendations are calculated. To make sure that the recommendations meet your needs, you must give the Bolus Advisor feature on your Meter some extra information, as well as the basic blood glucose (bG) and carbohydrate values. As a safety measure, the Bolus Advisor will not work without this information.

Your healthcare professional will give you the information that you need for the Bolus Advice feature.

Carbohydrate Units

Choosing how your carbohydrates will be measured is important. In this way, the Bolus Advisor can give you an accurate result. You just select what carbohydrate units the Bolus Advisor will use to make its calculations. You can choose between:

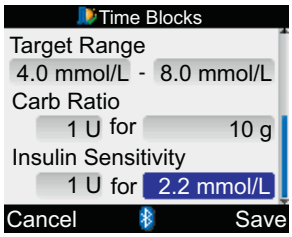
- Grams
- BE (≈ 12 g)
- KE (≈ 10 g)
- CC (≈ 15 g)

Time Blocks

Your insulin needs may vary depending on the time of day, so using the same values and factors throughout the day would probably not suit your metabolism or lifestyle. This could also lead to incorrect doses of insulin.

The screen above shows the Time Blocks feature within Bolus Advice. Time Blocks consider your time dependent requirements when calculating your insulin dose at different times of the day. You can program up to eight Time Blocks, depending on your lifestyle. For example, your insulin needs in the morning or evening may not be the same as those in the afternoon or at night, so you can program these different periods as Time Blocks. There are no pre-defined Time Blocks that you should follow. You can choose when a Time Block ends to suit your lifestyle.

Within Time Blocks you will find the following settings



Target Range

Your bG results should be between the lower and upper values of the Target Range as long as you are fasting (in the morning or before a meal). The target bG will be calculated automatically as the average between the upper and lower bG values.

Carb Ratio

The Carb (carbohydrate) Ratio defines how much insulin is needed to compensate for a certain amount of carbohydrates.

Insulin Sensitivity

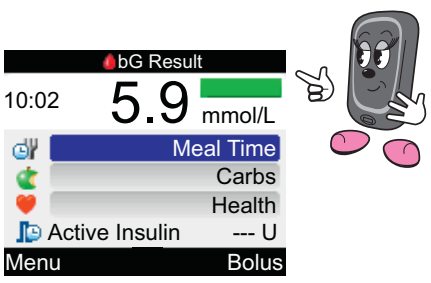
The Insulin Sensitivity (correction factor) shows how sensitive you are to a dose of insulin. This is how much your bG drops in response to a certain amount of insulin.

You can define all of these values separately for each Time Block. The Bolus Advice calculation automatically takes these values into account for the time of day.

Without a meal – that means, when you do not enter Carbs – these are the Calculations

If your bG level is …		… the Bolus calculation is
hyper ↑	above Hyper Warning	(bG – Target bG) × Insulin Sensitivity Additional recommendation to measure BG more frequently and check for ketones.
	between Upper Target Limit and Hyper Warning	(bG – Target bG) × Insulin Sensitivity.
	between Upper and Lower Target Limit	No correction bolus necessary.
	between lower Target Limit and Hypo Warning	No correction bolus recommended.
hypo ↓	below Hypo Warning	Hypo Warning! Recommendation to eat fast acting carbs. Bolus Advice function not accessible!

Remember the coloured bar in the bG test-result screen tells where your current bG level is compared to your target bG.



Before a meal – that means, when you enter Carbs – these are the Calculations

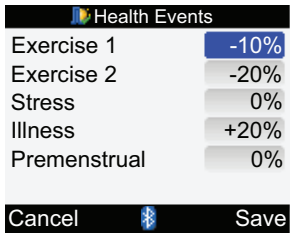
The Meal bolus will always be calculated as:

carbs × insulin-to-carb-ratio

If your bG level is …		… the Bolus calculation is
hyper ↑	above Hyper Warning	(bG – Target bG) × Insulin Sensitivity + Meal bolus. Additional recommendation to measure bG more frequently and check for ketones.
	between Upper Target Limit and Hyper Warning	(bG – Target bG) × Insulin Sensitivity + Meal bolus.
	between Upper and Lower Target Limit	(bG – Target bG) × Insulin Sensitivity + Meal bolus. Note that correction bolus can be negative.
	between lower Target Limit and Hypo Warning	(bG – Target bG) × Insulin Sensitivity + Meal bolus. Note that correction bolus is negative.
hypo ↓	below Hypo Warning	Hypo Warning! Recommendation to eat fast acting carbs. Bolus Advice function not accessible!

Health Events

If your routine was always the same from one day to the next, then Time Blocks would provide enough information to calculate the correct boluses. However, sometimes your daily routine may be different and your insulin needs will then change.

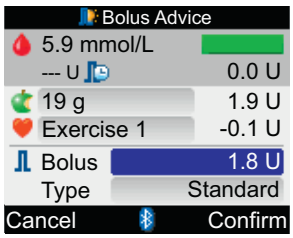


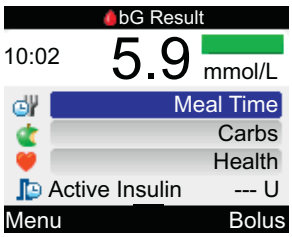
You can use Health Events to take into account various activities or events that increase or decrease your insulin needs. You can choose different Health Events depending on how you are feeling or what you are doing. For example, sport or physical activity could decrease your insulin needs, whereas illness or the menstrual cycle could increase your insulin needs.
Many of these activities or events do not occur at regular intervals, and Time Blocks cannot take them into account. With Health Events, you can program how much less/more insulin (as a percentage of your usual bolus) you may need. For example, when exercising, your insulin requirement may be 25% lower. You and your healthcare professional should discuss what percentage to program for each Health Event.

When one of the programmed Health Events occurs in your daily life, you can choose the Health Event on your Meter so that the Bolus Advisor can calculate the correct insulin dose. You can program five different Health Events:

- Exercise 1
- Exercise 2
- Stress
- Illness
- Premenstrual

The Bolus Advice screen and the bG Result screen call these *Health* with the ❤️-icon.





Within Health on the Bolus Advice and bG Result screen you can also select Fasting. However, you cannot adjust Fasting by percentage and it does not scale advice calculations.

Advice Options – Meal Rise, Snack Size, Acting Time, and Offset Time

Advice Options help to make sure that the Bolus Advisor does not recommend a second bolus for a blood sugar event, such as a meal or a high bG level, that has already been covered by a previous bolus.

Meal Rise

After a meal, bG levels usually increase by a noticeable amount, even in people without diabetes. Depending on the type of meal, your bG can reach a maximum about an hour after your meal and return to its original level after another one to two hours. This is a normal process, so the Bolus Advisor takes this into account using Meal Rise.

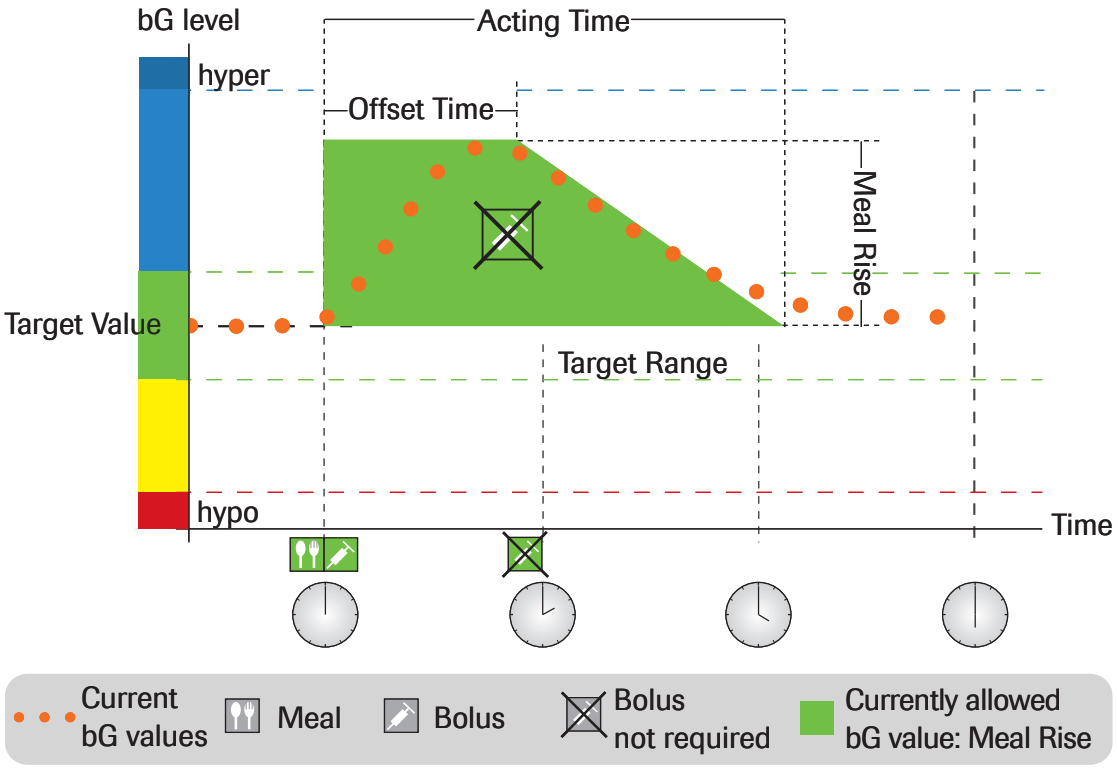


Fig. 1: Meal Rise

The dotted line shows how your bG level typically changes after a meal bolus. The Bolus Advisor tolerates an increased bG level within the Meal Rise range (green) without calculating an extra correction bolus. Each time you tell the Bolus Advisor that you have consumed more carbohydrates than the Snack Size, the Meal Rise entry is added to the bG target value. How long the Meal Rise lasts (the width of the green area) is determined by the Offset Time and the Acting Time.

Snack Size

The Snack Size defines a certain amount of carbohydrates for which a meal bolus is calculated, but no Meal Rise is triggered. No bG level above the Target Range or currently allowed bG is tolerated for this amount of carbohydrates, so the Bolus Advisor will calculate a correction bolus for any increase in bG after a snack.

Acting Time

The Acting Time is the time for which the insulin delivered as a standard bolus is still effective. It is the whole time for which an increase in bG after a meal bolus or a correction bolus is taken into account. the Bolus Advisor will not recommend a correction bolus for this time if your current bG level is less than the bG level covered by the previous bolus (Meal Rise or a corrected high bG).

To choose the correct value for the Acting Time, you and your healthcare professional should think about the following:

- Whether you use rapid-acting insulin analogue or fast-acting regular human insulin (the Acting Time should be longer for regular insulin)
- Your average bolus amount (the larger your average bolus amount, the longer the Acting Time should be)

You can program the Acting Time from 1½ to 8 hours.

Offset Time

The Offset Time is the time taken for the bolus to take effect. After the Offset Time, your bG level should decrease because of the insulin, and at the end of the Acting Time it should return to the target level.

The Offset Time must be at least 45 minutes, and the maximum value will be limited by the Acting Time that you choose.

Example

The following example explains the effect of the Offset Time and Acting Time:

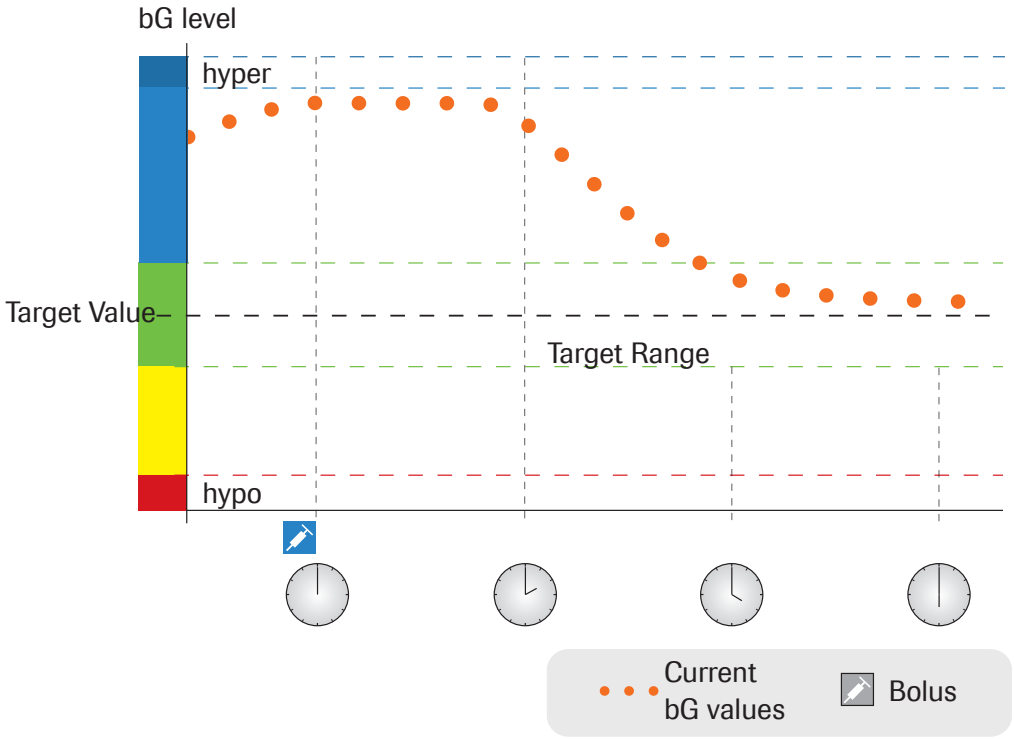


Fig. 2: Example blood-sugar curve (bG-level)

You calculate and administer a correction bolus at 12 o'clock. The insulin needs time to become effective, so your bG value (dotted line) may not be significantly reduced, even by 2 o'clock. (If you had not administered the correction bolus, your bG might even have increased.) You measure your bG at 2 o'clock and it is nearly the same as at 12 o'clock. Between 2 o'clock and 4 o'clock the effect of the correction bolus, which is still active, will decrease your bG level to a value within the Target Range.

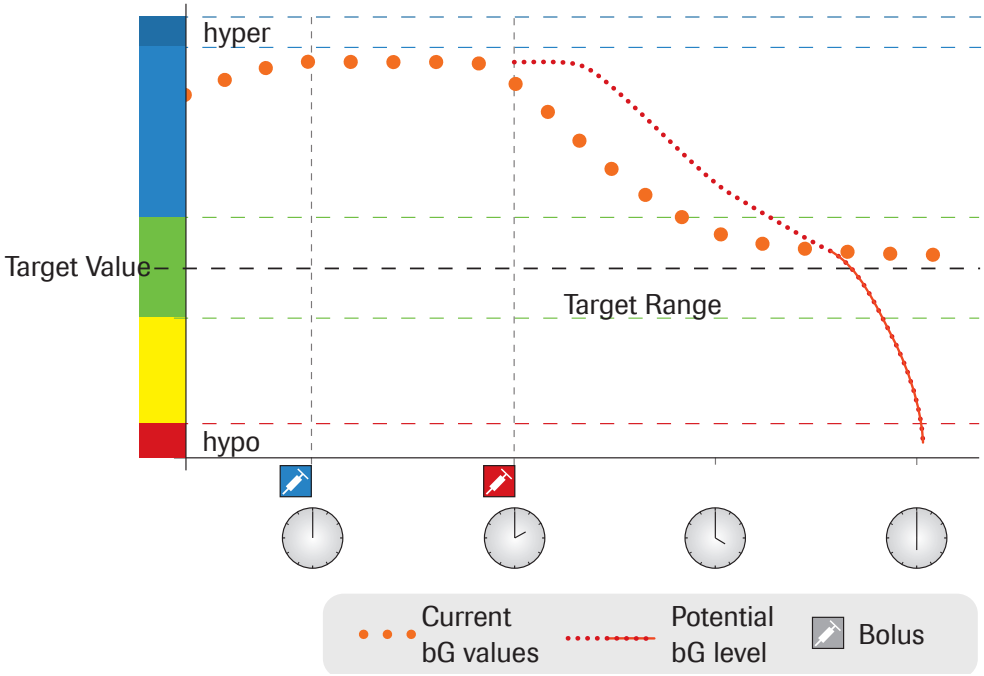


Fig. 3: Example blood-sugar curve – double dosage

However, at 2 o'clock, if the Bolus Advisor took only your current bG value into consideration, it would ignore the ongoing effect of your correction bolus.
It would then recommend an additional bolus to compensate for the raised bG value. Where the effect of the two boluses overlap it could lead to a hypoglycemia (red line), because you would have had two boluses for the same blood-sugar excursion.
Therefore, the Bolus Advisor always compares your bG result with the currently allowed bG value, and not just with the target value for the current Time Block.

The currently allowed bG value considers the following factors:

- The upper limit of the Target Range for your current Time Block
- Excursions beyond the Target Value that have had a correction bolus that is still active (Acting Time)
- bG values that were tolerated as a Meal Rise and which have had a meal bolus that is still active (Acting Time)
- The expected reduction of your bG level due to the effect of insulin during the Acting Time (the decrease between the end of Offset Time and end of Acting Time)

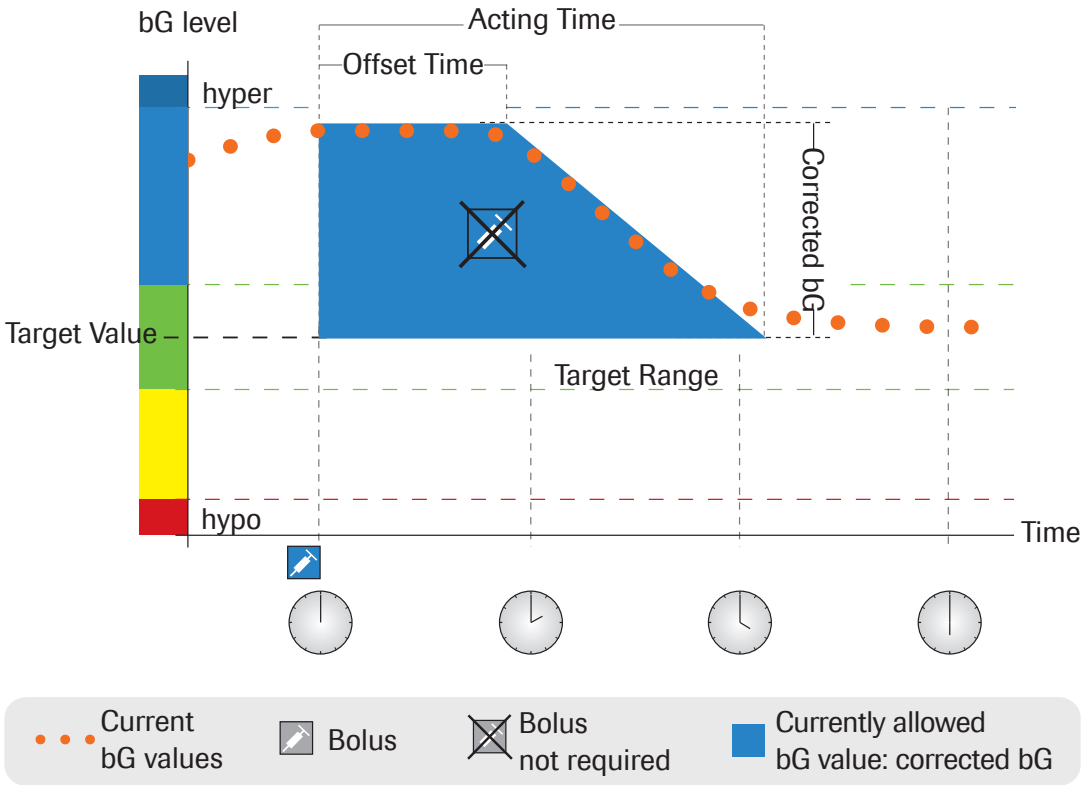


Fig. 4: Corrected high bG

The above diagram shows an example of the effect of this rule. The first correction bolus at 12 o'clock remains active during the Acting Time (the width of the blue area). If a measured value at 2 o'clock falls within the currently allowed bG value (height of the blue area), no new correction bolus is calculated.

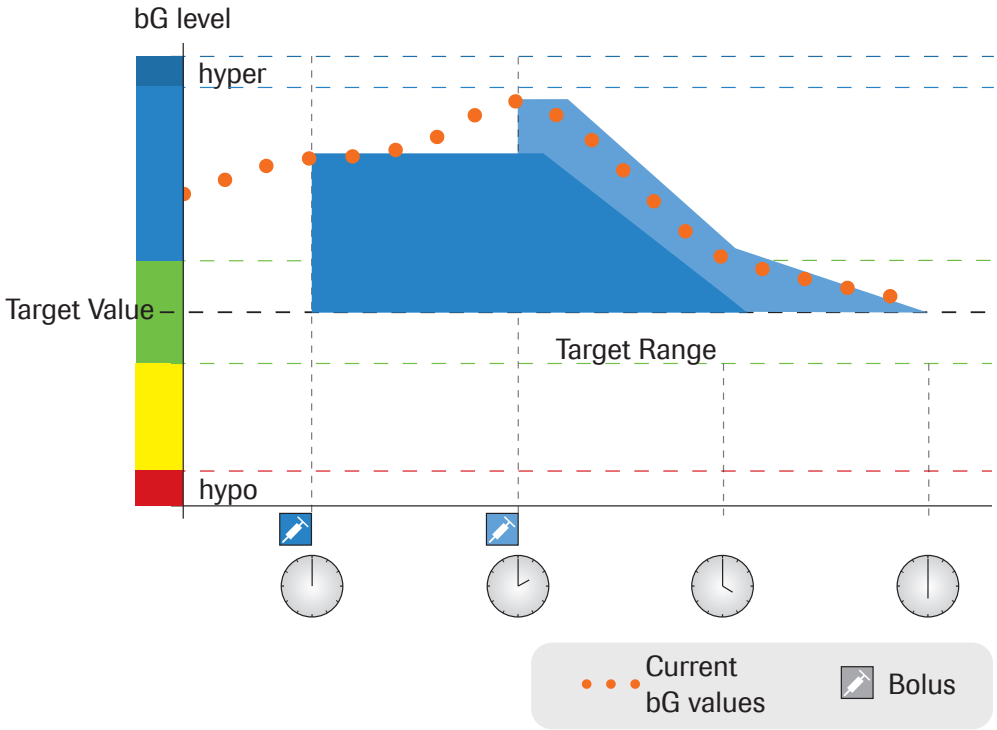


Fig. 5: Subsequent boluses

Where the measured value is greater than the currently allowed bG value, the newly calculated bolus (light-blue), only considers the difference between the current bG value (dotted line) and the currently allowed bG value (the height of the blue area). During the Acting Time of the first correction bolus (the width of the blue area), only the currently allowed bG value is used to calculate the second bolus.

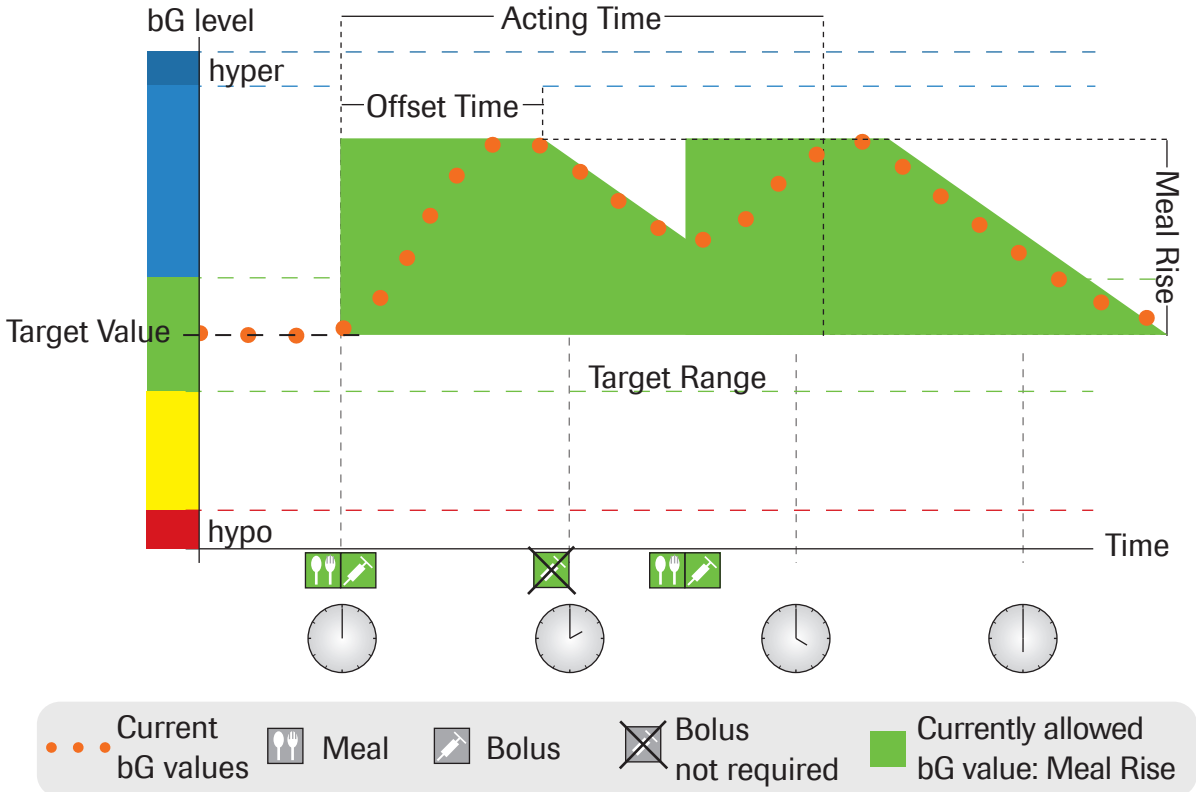


Fig. 6: Subsequent meal boluses

Subsequent meals

If you eat several meals in a row, the Meal Rise will not add up, but start afresh for each new meal bolus.

Appendix C

The Mathematical Basis for Bolus Calculations

Below is a list of the most important formulas and principles that the Bolus Advisor uses to calculate your bolus. It is difficult to accurately calculate a bolus yourself using these formulas (remembering to include the Acting Time and Offset Time of your most recent boluses). This is why the Bolus Advisor is so useful. It will save you a lot of time and avoids the risk of mistakes in your calculations.

Carbohydrates

This calculation is required when the bG result falls below the Hypo Warning Limit. It is based on the other values defined for the current Time Block, and the result recommends how much carbohydrate you should consume.

The words written in blue in the formula refer to the setting that you find on the Meter screen.

$$\text{Carbohydrates} = (\underbrace{\text{Target Range mean value}}_{\text{according to block definition}} - \text{Current bG}) \times \underbrace{\frac{\text{Insulin}}{\Delta\ \text{bG}}}_{\text{from Insulin Sensitivity}} \times \underbrace{\frac{\text{Carbohydrates}}{\text{Insulin}}}_{\text{from Carb Ratio}}$$

Meal bolus

$$\text{Meal bolus} = \text{Carbohydrates intake} \times \underbrace{\frac{\text{Insulin}}{\text{Carbohydrates}}}_{\text{from Carb Ratio}}$$

Currently Allowed bG Value

The currently allowed bG Value considers all blood sugar excursions, that have already been treated by a meal- and/or correction- bolus. For all bG test results below the currently allowed bG value no correction will be recommended. The currently allowed bG value is calculated as follows:

$$\text{Currently allowed} = \underbrace{\text{Target Range mean value}}_{\text{according to block definition}} + \text{Meal rise} + \underbrace{\sum \text{blood glucose range covered by correction bolus}}_{\text{currently acting correction boluses}}$$

When no Meal Rise or correction bolus Acting Time is in effect, the value for these in the formula is 0.

Correction Bolus

Generally, a correction bolus is only calculated if your current bG value is above the hypo bG warning limit and outside of the Target Range. Additionally, it must be above the currently allowed bG value. Only correction boluses greater than 0 will trigger an Acting Time.

$$\text{Correction bolus} = (\text{current bG} - \text{currently allowed bG}) \times \underbrace{\frac{\text{Insulin}}{\Delta\ \text{bG}}}_{\text{from Insulin Sensitivity}}$$

The size of the correction bolus depends on the following:

- If your bG is higher than the currently allowed bG, then:
  Correction bolus = (current bG – currently allowed bG value) × Insulin Sensitivity
- If the current bG is higher than the Hypo Warning Limit, and the current bG is lower than Target Range lower limit, then the correction bolus that is subtracted from the meal bolus is:
  Correction bolus = (current bG – Target Range average value) × Insulin Sensitivity

Correction Bolus with Carbohydrate Intake

Whenever you tell the Bolus Advisor that you have consumed carbohydrates, the related meal bolus is always offset against any (even negative) correction bolus. When you eat a meal, the Bolus Advisor also calculates the correction bolus for bG results that are within the Target Range if your current bG result is below the Target Range average value, or if your current bG is above the currently allowed bG value.

Boluses that are calculated to be less than 0 are just displayed as 0.

Accu-Chek Insulin Pump Hotline

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For people with diabetes. Use only as directed. Consult your healthcare professional for advice.
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