

ACCU-CHEK[®]

Smart Pix

DIABETES MANAGEMENT SYSTEM

User's Manual



Accu-Chek® Smart Pix diabetes management system User's Manual

Date of issue: April 2014
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System requirements:

- Microsoft Windows XP / Vista, Windows 7 / Windows 8 (in compatibility mode)
- PDF reader
- Screen resolution of at least 1024 x 768 pixels

Read the User's Manual carefully before the first use. The installation, use and maintenance/data backup of the Accu-Chek Smart Pix software are the sole responsibility of the user. Roche Diagnostics accepts no responsibility for any damage or loss resulting from non-compliance with this User's Manual.

In addition, we advise you to refrain from installing any software on your computer which is not from a trustworthy source and to protect your computer against unauthorised third-party access. This particularly applies to the security of any existing Internet access. Use up-to-date software for virus protection and your firewall and install the security updates and patches recommended by the manufacturers.

If you have obtained the Accu-Chek Smart Pix software from a USB flash drive: The USB flash drive is the original medium used to provide the software, but it is not a removable medium for storing data you have created yourself. Avoid potential data loss (e.g., from damage to or loss of the USB flash drive) and always store all files locally on your computer or on a network server.

Do not remove the USB flash drive containing the Accu-Chek Smart Pix software while data is being exchanged. Doing so could cause irreparable damage to files.



Important note: Never change your therapy based on data contained in the *Status* report element; always talk to your healthcare professional first.



Important note: The displayed blood glucose *Status* will only be meaningful if the settings have been properly selected. We therefore strongly recommend that you talk to your healthcare professional before you change the configuration for Hypo risk, Mean blood glucose and Variability.

The number of tests per test day must be sufficient in order to draw appropriate conclusions regarding therapy from the statistical analysis. In addition, the tests must be conducted at meaningful points in time spread over the course of the day. Only then does the analysis in the *Status* report element correctly reflect the relevant blood glucose parameter. If, for example, blood glucose is only tested when blood glucose levels are within the normal range (euglycaemia) or higher range (hyperglycaemia), the *Hypo risk* is artificially lowered.



Important note: The *Hypo limit* can only be a reliable indicator of low blood glucose (hypoglycaemia) if the limit has been properly selected. We therefore strongly recommend that you talk to your healthcare professional before you change the limit. This function is not a substitute for hypoglycaemia training by your healthcare professional.




Important note: You do **not** require an Internet connection if you wish to use the Accu-Chek Smart Pix device and the Accu-Chek Smart Pix software. All the pages and functions are stored in the device itself or in the software, where they can be called up. An Internet connection is only required if you wish to automatically update the Accu-Chek Smart Pix software, download it from the Internet or send data by email.

Version note


This User's Manual is valid for the Accu-Chek Smart Pix software, **version 2.0** in connection with an

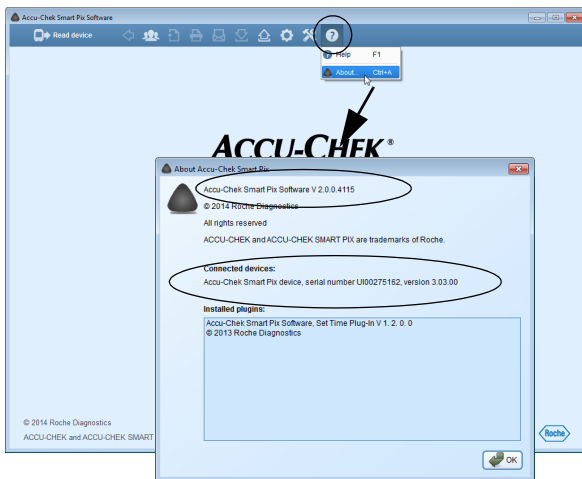
- Accu-Chek Smart Pix device (model 2), **version 2.0** or higher or
- Accu-Chek Smart Pix device (model 1), **version 3.05** or higher.

You can check the software versions at any time as described below:

Open the Help menu by clicking the  icon (on the right-hand edge of the button bar). You can display the software version by clicking *About...* This displays both the software version of the Accu-Chek Smart Pix software and the version of the connected Accu-Chek Smart Pix device.

Latest software versions

You can download the latest software version of the Accu-Chek Smart Pix system using the *Tools*  button or as an automatic download (if configured) from the Internet.



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1 Overview of the Accu-Chek Smart Pix system

The **Accu-Chek Smart Pix system** is used to easily and automatically analyse blood glucose values and therapy data from various Accu-Chek meters and insulin pumps. The analysis is provided on a computer in the form of a report consisting of various configurable report elements. The system is made up of the following components:

Accu-Chek Smart Pix software

The Accu-Chek Smart Pix software generates the reports and also allows you to manage the records of several users or patients. You obtain the software in one of the following ways:

- With the Accu-Chek Smart Pix device (model 2). The setup program is stored directly on the device.
- On a USB flash drive.
- As a download from the Roche website.


Accu-Chek Smart Pix device

The Accu-Chek Smart Pix device¹ is connected to the computer and communicates with the meters and insulin pumps. If you obtained the software from a USB flash drive or as a download, you can also use the Accu-Chek Smart Pix device (model 1) to communicate via the infrared port, or use a suitable USB cable (USB, type A to USB, micro B) to communicate with USB devices.

1. The Accu-Chek Smart Pix device (model 2) and the download version of the Accu-Chek Smart Pix software are not available in all countries.




Using the Accu-Chek Smart Pix software with the Accu-Chek Smart Pix device (model 2)

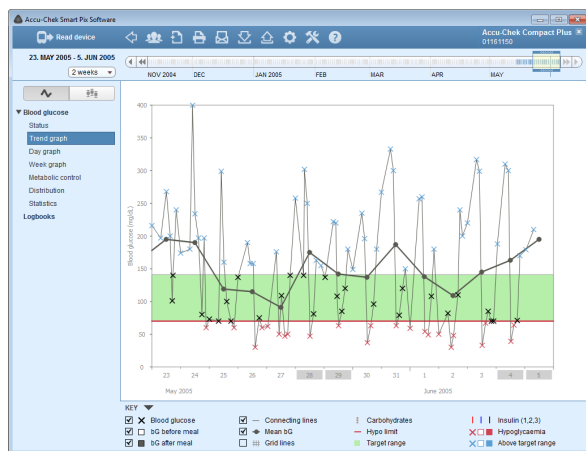
- Connect the Accu-Chek Smart Pix device (model 2) to the computer when you want read data from a meter or an insulin pump.
- Place a meter or an insulin pump with its infrared port facing the Accu-Chek Smart Pix device **or**:
- Connect a meter with a USB port to the Accu-Chek Smart Pix device with a USB cable.
- Launch the Accu-Chek Smart Pix software.
- Prepare the device for transferring data (see chapter 6).
- Click the *Read device*  button.





Using the Accu-Chek Smart Pix software (USB flash drive or download)

- Connect the Accu-Chek Smart Pix device (model 1) to the computer when you want read data from a meter or an insulin pump.
- Place a meter or an insulin pump with its infrared port facing the Accu-Chek Smart Pix device **or**:
- Connect a USB cable for transferring data first to a meter with a USB port (USB, micro B) and then directly connect the other end to a free USB port on your computer (USB, type A).
- Launch the Accu-Chek Smart Pix software.
- Prepare the device for transferring data (see chapter 6).
- Click the *Read device*  button.

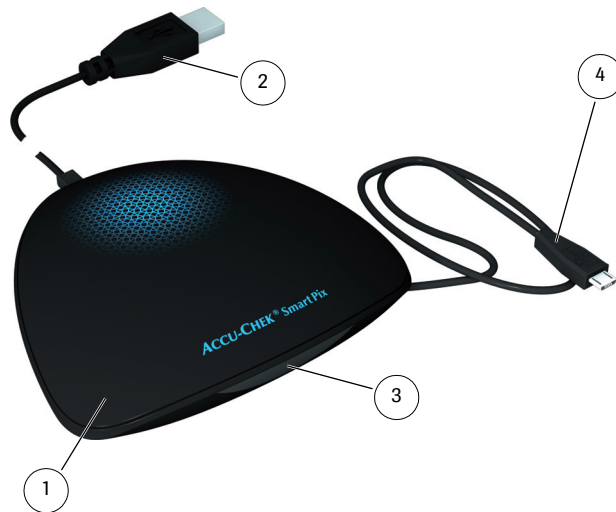


The **Accu-Chek Smart Pix software** is a computer program for the Accu-Chek Smart Pix system. It contains the following functions:

- Create (and edit) reports.
- Archive reports with selected elements as a PDF file.
- Email reports with selected elements.
- Display and print archived reports.
- Manage and edit user or patient records.
- Importing device data as well as printing and saving reports can be automated.
- The graphical report elements displayed have interactive functions for customising the display.
- Install software updates for the Accu-Chek Smart Pix system.

All reports are displayed and all functions are used from within the Accu-Chek Smart Pix software.

1.1 Overview of the Accu-Chek Smart Pix device

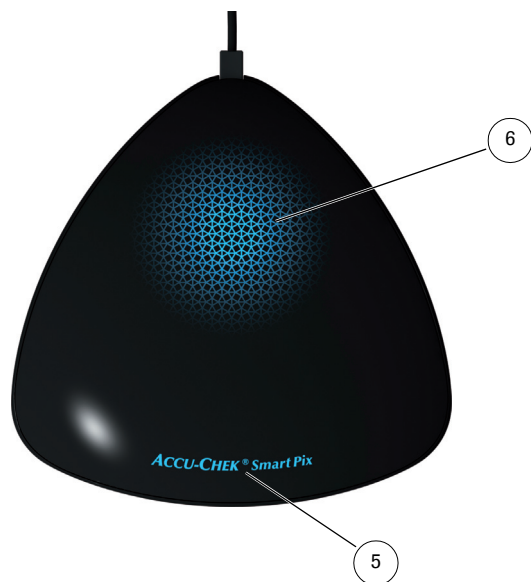


The device is made up of the following components, which are briefly described below.

- | | |
|----------|--|
| 1 | Accu-Chek Smart Pix device ¹ : This device enables connection to various Accu-Chek meters and insulin pumps with infrared or USB ports. At the same time, it contains all the files required for installing the Accu-Chek Smart Pix software. |
| 2 | USB plug for hooking up to the computer. |
| 3 | Infrared window for communicating with similarly equipped Accu-Chek meters and insulin pumps. |
| 4 | USB cable with USB micro B plug to connect directly to similarly equipped Accu-Chek meters. |

1. Note: This device is not available in all countries.

1.2 Overview of the status indicator signals of the Accu-Chek Smart Pix system

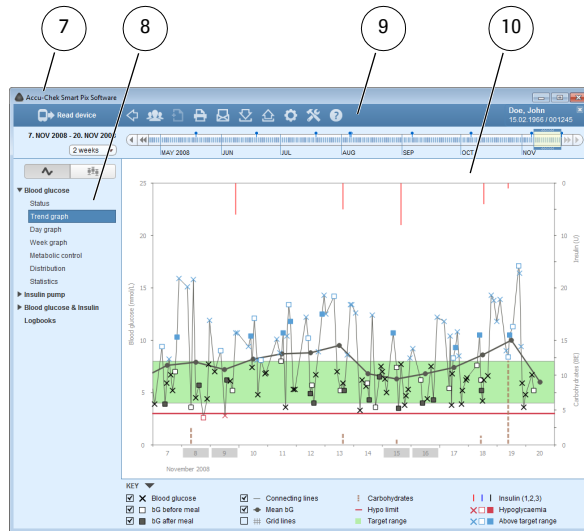


The Accu-Chek Smart Pix system indicates various operating states with the status indicators on top of the device. If all status indicators are off, the Accu-Chek Smart Pix device is not connected to a computer or the computer is not switched on. The following status indicators may be lit up:

-
- 5** Device name:
- Glows continuously if the device is connected to a computer and the computer is switched on. The device is ready for operation.
 - Flashes when a setting or update file is being received.
-
- 6** Luminous surface:
- Off: the device is ready for operation but inactive.
 - Pulsates slowly: the device is actively searching for a meter.
 - Glows continuously: the device is reading data, analysing it or is transferring information (e.g. time) to the meter.
 - Flashes quickly: the device is displaying an error.
-

Software updates for the Accu-Chek Smart Pix system can be installed via the computer. The device name flashes while this type of update is being installed.

1.3 Accu-Chek Smart Pix software overview



The Accu-Chek Smart Pix software consists of the following elements:

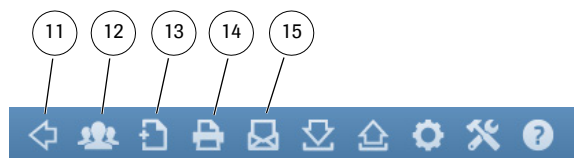
- 7** Title bar of the program window, showing the program name and the buttons for minimising, maximising and closing the window.
- 8** Navigation area
- 9** Button bar containing the buttons for calling up program functions.
- 10** Display pane for showing the reports and records.

The user interface needs a screen resolution of at least 1024 x 768 pixels. On larger screens, the window size can be changed in any way inside the screen area.

Note about the illustrations in this User's Manual

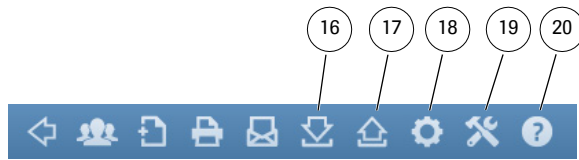
Bear in mind that all illustrations of screen content (screen-shots) used in this User's Manual only serve as examples in terms of visual appearance and content. The actual appearance depends on your individual system and program settings. The content displayed depends on the meter data or insulin pump data that was read.

1.4 Buttons overview



In the program window you will find the following buttons:

-
- | | |
|-----------|--|
| 11 | <i>Back</i> button
Returns to the report element that was displayed last. This button is only activated once you leave the displayed start screen to display another report element. |
| <hr/> | |
| 12 | <i>Open patient list</i> button
You can open an existing record from the patient list or create a new record. |
| <hr/> | |
| 13 | <i>Save</i> button
A record that was just displayed but not yet assigned to a patient can then be saved. |
| <hr/> | |
| 14 | <i>Print</i> button
Selected report elements are output to a printer of your choice. |
| <hr/> | |
| 15 | <i>Email</i> button
The default email program on the computer is launched and selected report elements (in PDF format) as well as the associated record (if selected) are automatically attached to an empty email. |
-














-
- 16** *Save as PDF report* button
Selected report elements are saved in a PDF file.
-
- 17** *Open PDF report* button
Open reports previously saved as PDF files in order to display them using the PDF reader installed on the computer (e.g., Adobe Reader), or to print them.*
-
- 18** *Settings* button
Use this button to adjust the settings for the Accu-Chek Smart Pix software.
-
- 19** *Tools* button
Access to special functions such as software updates or importing records.
-
- 20** *Help* button
This is where you can find menu options for direct access to the User's Manual and for displaying the program version.
-

* If you do not yet have a program for displaying PDF files on your computer, you can download, e.g., Adobe Reader from the Adobe website (<http://get.adobe.com/reader/>) free of charge.

1.5 Printed symbols

Some passages in this User's Manual are highlighted by symbols. Read these passages very carefully! There are more symbols on the type plate of the device and/or the packaging.

Symbol	Description
	This symbol identifies safety information that indicates a possible risk of damage to your health.
	This symbol draws your attention to important information.
	Manufacturer
	Catalogue number
	Batch code – year of manufacture
	<ul style="list-style-type: none"> ▪ The Accu-Chek Smart Pix software fulfils the requirements of the European Directive 93/42/EEC on medical devices. ▪ The Accu-Chek Smart Pix device fulfils the requirements of the European Directive 2004/108/EC on electromagnetic compatibility. ▪ The USB flash drive fulfils the requirements of the European Directive 2004/108/EC on electromagnetic compatibility.
	This product fulfils the legal requirements of the People's Republic of China on the use of certain substances in electronic products.
	The USB flash drive falls inside the scope of the European Directive 2002/96/EC (Directive on waste electrical and electronic equipment, WEEE).
	Consult instructions for use. The Accu-Chek Smart Pix diabetes management system User's Manual can be opened by clicking on the Help  button.
	A printed version of the Accu-Chek Smart Pix diabetes management system User's Manual can be requested by emailing dia.smartpix@roche.com .

2 Prior to using the Accu-Chek Smart Pix system

You can use the Accu-Chek Smart Pix system (device and software) on any computer which meets the necessary system requirements. Any additional computer features required are listed below.




The Accu-Chek Smart Pix software is supplied on the Accu-Chek Smart Pix device and is installed directly from it. In addition, Roche provides the Accu-Chek Smart Pix software on a USB flash drive or as a downloadable file. The software can be used on a standalone computer as well as on a network server.

Files generated (e.g., records, archived reports) are either saved locally or on a server, where they are available for shared access. Just as with all other data you should protect these files from inadvertent data loss by backing them up regularly.



If you have obtained the Accu-Chek Smart Pix software from a USB flash drive: The USB flash drive is the original medium used to provide the software, but it is not a removable medium for storing data you have created yourself. Avoid potential data loss (e.g., from damage to or loss of the USB flash drive) and always store all files locally on your computer or on a network server.

2.1 What you require to use the Accu-Chek Smart Pix system

You have...	You also require...
Accu-Chek Smart Pix device (model 2) ¹ 	<ul style="list-style-type: none">A computer that meets the respective system requirements and a printer, if you wish to print reports.
Accu-Chek Smart Pix device (model 1) 	<ul style="list-style-type: none">A computer that meets the respective system requirements and a printer, if you wish to print reports.The Accu-Chek Smart Pix software (USB flash drive or download)A suitable USB cable (USB, micro B to USB, type A), if you wish to read meters with a USB port.
Accu-Chek Smart Pix software, (USB flash drive or download) 	<ul style="list-style-type: none">A computer that meets the respective system requirements and a printer, if you wish to print reports.A suitable USB cable (USB, micro B to USB, type A), if you wish to read meters with a USB port.An Accu-Chek Smart Pix device (model 1) if you wish to read data from meters with an infrared port.

1. Note: This device is not available in all countries.

The following requirements must be met to be able to use special functions:

- Adobe Reader or a similar program must be installed to be able to display and print PDF files.
- Internet access to download software updates and to send emails.
- A properly configured email program (Microsoft Outlook, Windows Live Mail or Mozilla Thunderbird) to be able to email reports.

2.2 Copying software to the computer

The Accu-Chek Smart Pix software can be used locally on your computer or on a network server. To do this, copy the entire program folder to a suitable location on the selected hard disk. Depending on your needs, you have the following options:

- If you are the only person who will be using the program, copy the program folder locally to your computer. You will also save the created files there.
- If you want to use the program in a network and if the same program settings are to apply for every workstation, then install the program folder on the network server. You will also save the created files there. On the server, the program can also be used by several network users at the same time.
- If you want to use the program in a network, but allow individual program settings for every workstation, copy the program folder separately to every single workstation. The created files, however, will be saved on the server to enable shared access to all data despite individual settings.

Depending on your needs, make the appropriate preparations for copying the software from the following three options:

Connecting the Accu-Chek Smart Pix device

To copy the software from the Accu-Chek Smart Pix device (model 2): Insert the USB plug of the Accu-Chek Smart Pix device in a free USB port on your computer. You can do this while your computer is either on or off. This connection provides the Accu-Chek Smart Pix device with power and it therefore does not need a battery or a power pack.

After connecting the Accu-Chek Smart Pix device and turning on the computer as necessary, the glowing Accu-Chek Smart Pix logo appears and indicates operational readiness. Simultaneously, the computer recognises the Accu-Chek Smart Pix device as removable media (similar to a USB flash drive).

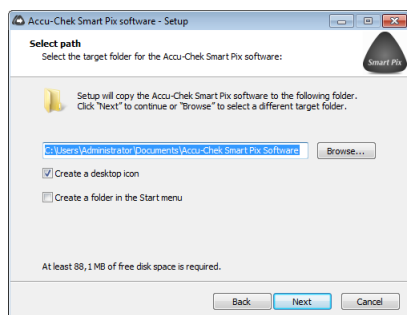
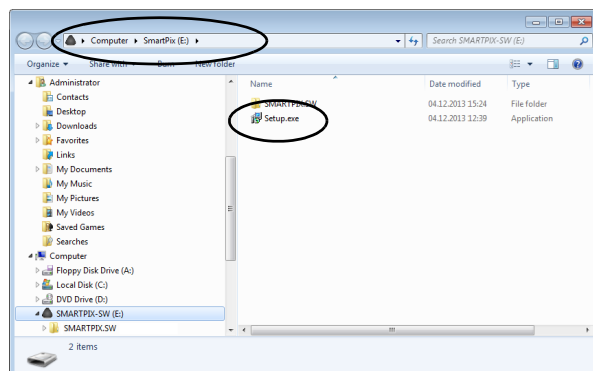
Connecting the USB flash drive

To copy the software from the USB flash drive: Insert the USB flash drive into the computer. The computer recognises it as removable media.

Preparing the download version

To copy the software from the download folder: The software is offered as a compressed data package (ZIP archive) for download. After downloading the ZIP file (e.g. to the *Downloads* folder), extract this file by double-clicking it. After extracting the files, the installation folder *Accu-Chek Smart Pix* is created in the selected location.



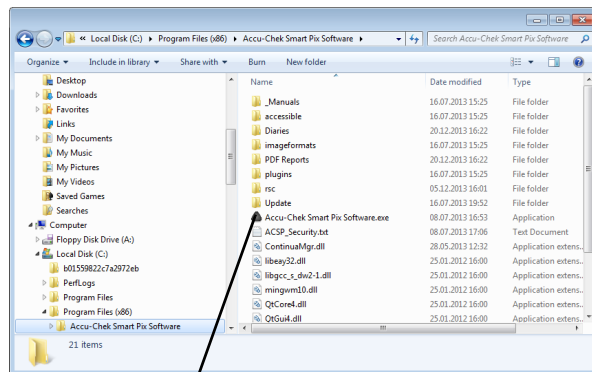
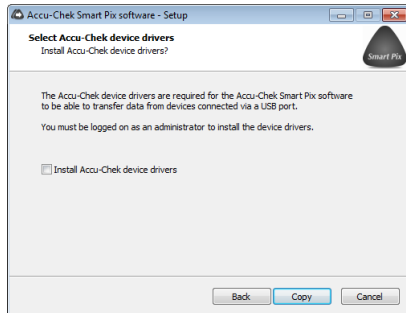


Copy the program to your computer as follows:

- If this has not been done automatically, open a window on your computer which displays the contents of the Accu-Chek Smart Pix device (as a disk), of the USB flash drive or of the extracted installation folder. You can do this from *My Computer* or Windows Explorer.
- Double-click the setup program *Setup.exe* and follow the instructions on the screen.
- Select the location to which you wish to copy the “Accu-Chek Smart Pix Software” program folder.
 - If you are usually logged on as the administrator, open the *Programs* folder (or *Programs (x86)*, if applicable).
 - If you do not have administrator access rights, select a location which you can access even with limited access rights, e.g. the folder *Documents*.
 - When installing the program on a network server, ensure that all users have the necessary access rights for the selected location.



For security reasons, the Accu-Chek Smart Pix device is furnished with write-protection. Therefore before you can use it, the Accu-Chek Smart Pix software must be copied to your computer and then run from there.



- Select the option to install the corresponding drivers if you have obtained the software from a USB flash drive or download and wish to read data from meters with a USB port. This driver installation is not required for the Accu-Chek Smart Pix device (model 2) because the drivers are pre-installed on the device.



Administrator access rights are required for installing the USB driver software.

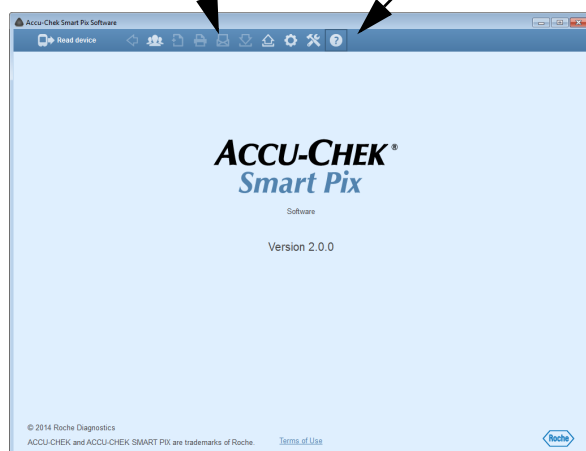
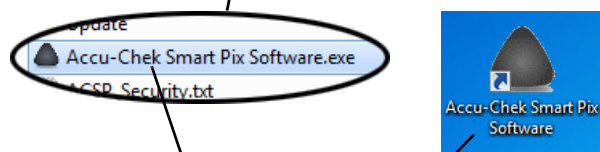
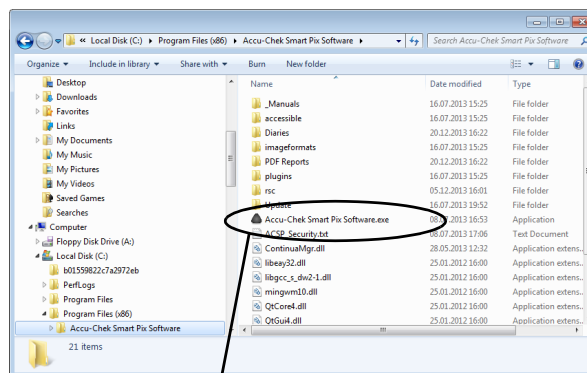
- Upon completion of the installation, shortcuts are automatically created in the Windows start menu and/or on the desktop (depending on the options you selected).



If you are using the application on several computers in the network, make sure that the location for saving the shared files is identical on every computer.

3 Launching and configuring the Accu-Chek Smart Pix software


3.1 Launching the Accu-Chek Smart Pix software



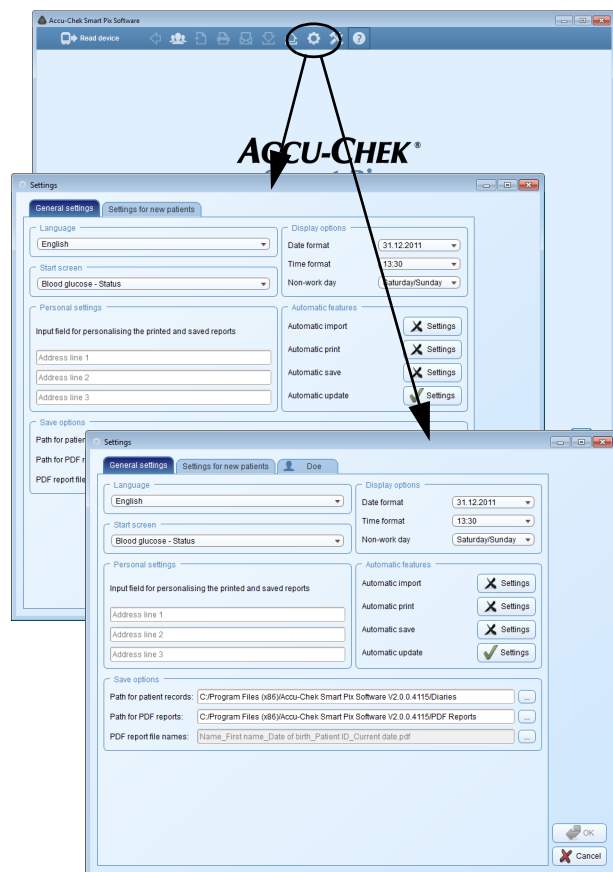
To launch the Accu-Chek Smart Pix software, double-click either the program file *Accu-Chek Smart Pix Software.exe* or an existing shortcut (see chapter 2.2).

The program launches with a program window which is still empty.


- If you only wish to use the program to edit a record already saved or to display saved reports it is not necessary to connect the Accu-Chek Smart Pix device.
- If you wish to use the program to read new data, connect the Accu-Chek Smart Pix device or a suitable meter (e.g., the Accu-Chek Mobile blood glucose meter directly via USB) now.

If a suitable device is already connected, you can use the **Read device**  button to read the data directly from the device.

3.2 Configuring the Accu-Chek Smart Pix software





You can customise several areas of the Accu-Chek Smart Pix software to tailor it to your needs. These settings are independent of those which may have been applied to the Accu-Chek Smart Pix device (model 1).

Click the *Settings*  button to open the corresponding dialog box. Depending on the actual situation you will find two or three setup areas in this dialog box. This can be seen from the tabs below the upper window edge:

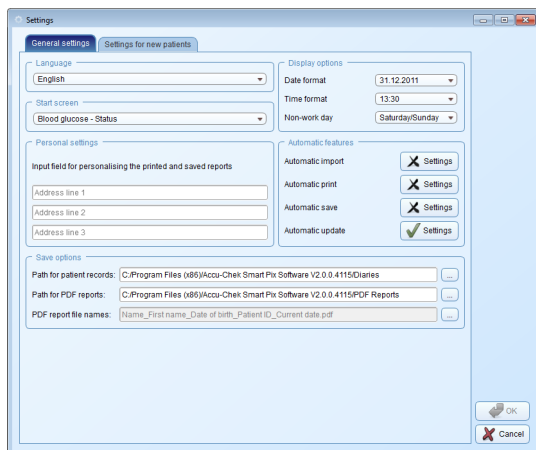
- If no record is currently open, you will find **two** setup areas, *General settings* and *Settings for new patients*.
- If a record is open, you will find **three** setup areas. In addition to the ones mentioned above, you will find a third area whose name corresponds to the open record.

For all the settings described on the following pages, the following applies:

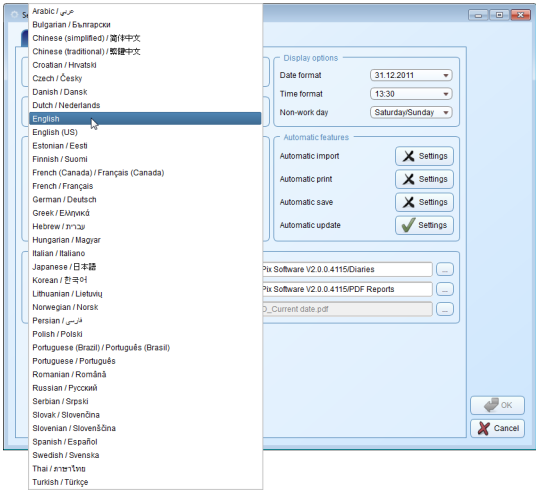
- Click the *OK*  button to save the modified settings and close the dialog box, or:
- Click the *Cancel*  button to discard the modified settings and close the dialog box without saving the changes.

General settings

In the *General settings* area you will find configuration options for the user interface.

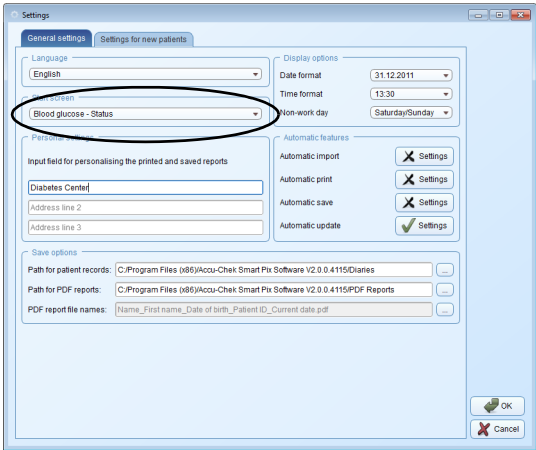


- **Language:** Here you can select the language to be used for the user interface and the reports. If the Accu-Chek Smart Pix software supports the language set in the system, the language will be set automatically.
- **Start screen:** Select the start screen you wish to use for the reports. This screen will be displayed automatically after reading device data. You can select any of the available report elements for this screen.
- **Personal settings:** Input fields for personalising print-outs or saved files.
- **Display options:** Here you can set the date and time format and the non-work days for displaying reports.
- **Automatic features:** Here you can set automatic program functions supporting the use of the system in a doctor's practice or another medical institution. You can configure device data to be automatically read, saved or printed. Updates for the Accu-Chek Smart Pix system can also be downloaded automatically from the Internet.
- **Save options:** Here you can select the location for saving patient data (records), as well as naming conventions and the location for saving PDF reports.



Selecting a language

- Click the currently set language to open the selection list.
- Click the language you want to select.



Start screen

- Select the report element to display as the start screen.



If the report element selected here is not available in the currently displayed report, (e.g., the *Status* report element after reading from an insulin pump), another start screen will be displayed as an alternative: *Status* for blood glucose meters and *Trend graph* for insulin pumps.

Personal settings

- Enter up to three rows of personal data (e.g., name and address of the medical institution). This text will then appear on all saved or printed reports. The number of characters per row must not exceed 50.

Display options

- Select the display format for date and time.
- Select the non-work days. These will then be highlighted in the reports.

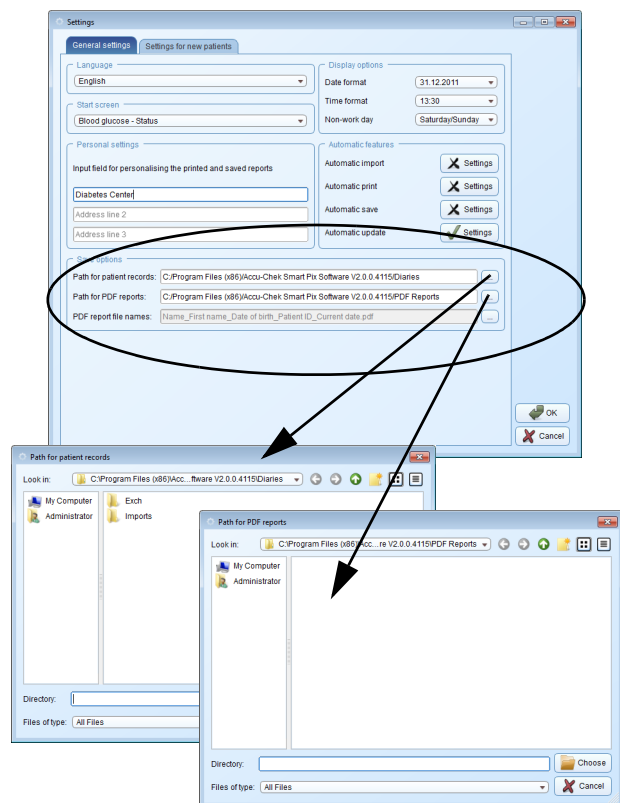
Save options

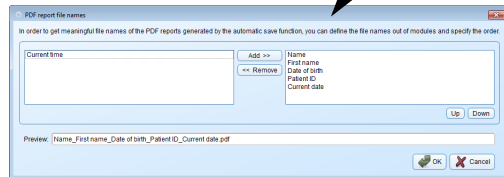
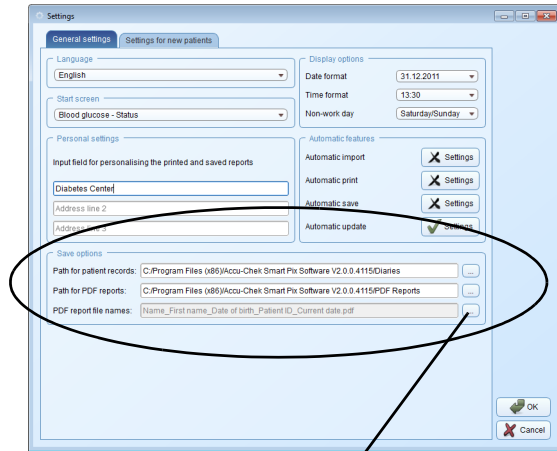
Here you select the folders where the newly-created records and archived reports will be saved. The automatic features described in the following will also use these folders for saving data.

- Select the location you wish to use for saving the records.
- Select the location you wish to use for saving the archived reports (PDF files).



If you have installed the program on several individual computers in a network, ensure that the settings configured here are identical for all computers. This is necessary to enable shared access to all records and archived reports.

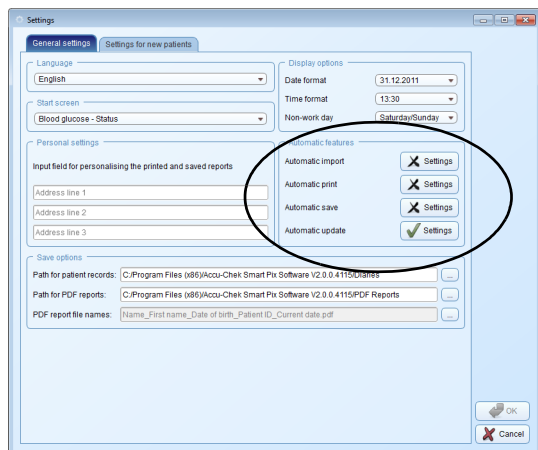




In addition, you can configure the naming conventions to be used for future reports that are archived (as PDF files). You can combine several components in this file name to help you identify and sort the files later.

The *PDF report file names* dialog box displays two columns with possible components for the file name. The left column contains the components not currently used; the right column contains the components currently in use. The row below these columns previews the resulting name. You can change the composition of the name as follows:

- From the left column, select a component you wish to use, and click *Add*. The component will move to the right column.
- From the right column, select a component you no longer wish to use, and click *Remove*. The component will move to the left column.
- From the right column, select a component you wish to move to another position within the name. Click the *Up* or *Down* buttons to move this component up or down in the list.
- Click the *OK* button to save the entries.



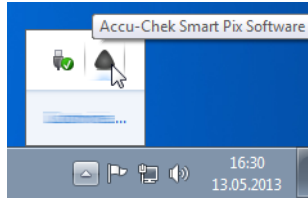
Automatic features

Automatic features help you simplify the following tasks:

- Automatically import device data and (if applicable) add it to an existing record.
- Automatically print device data.
- Automatically save device data.
- Automatically download and install software updates.

The term “record” encompasses all the data read from devices (with manual additions, if applicable) and assigned to a certain person. Data read from the device will always be saved (either to a new or an existing record) unless you select *No* in the corresponding confirmation question when importing data from the device. If, in such a case, you do not manually save the imported data later, it will only be displayed temporarily and will be deleted with the next import.

When importing data from a device for the first time, a new record can be created or the device can be assigned to an existing record. The data from further imports from the same device(s) is added to the existing data of that person.





If you have enabled one or more of the automatic features, the program will no longer close when you close the program window. You will be notified when the program launches as well as when the program window closes that the program will continue running in the background to continue providing the automatic features.


To completely close the program or to restore it to the foreground, right-click the Accu-Chek Smart Pix icon in the information area (right-hand side of the Windows taskbar) and select *Open* or *Quit*.

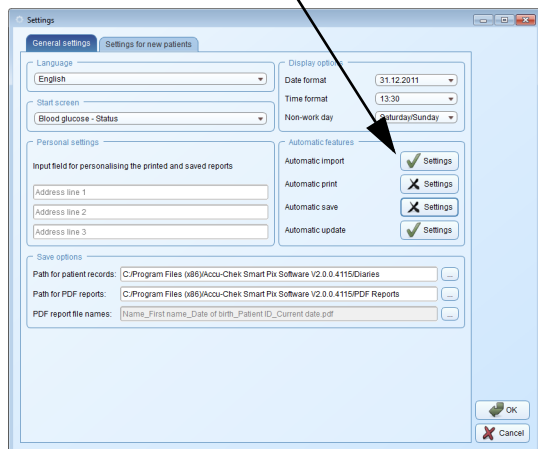
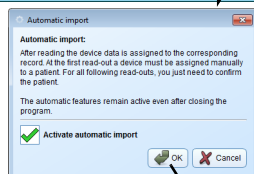
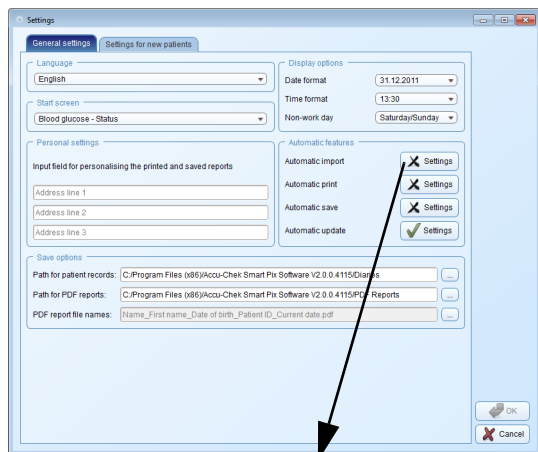
Automatic import

This feature ensures that data available in the Accu-Chek Smart Pix system is adopted directly and saved as a record.

- Click the *Automatic import* button.
- Click the *Activate automatic import* checkbox. A check mark will appear.
- Click the *OK* button to save the entries.

The *Automatic import* button will now be displayed with a check mark  indicating that the corresponding feature has been activated. Deactivated features are displayed with a  on their button.



 The records will be saved in the folder you selected in *Save options* (see page 34).

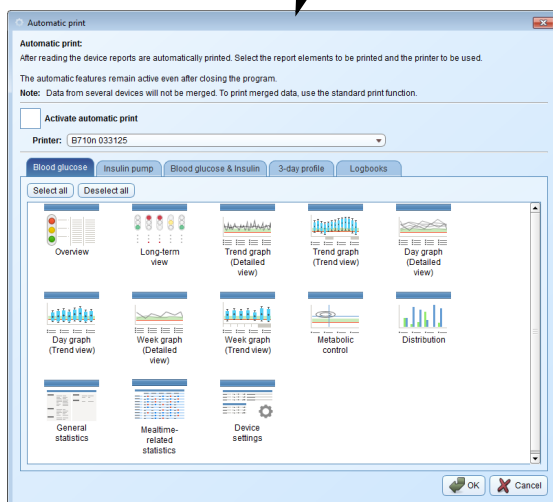
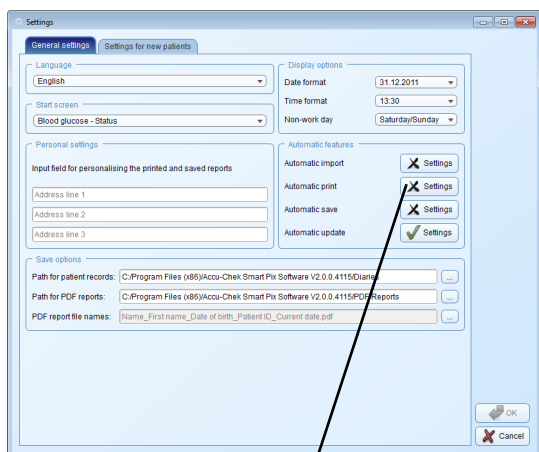


Automatic print

To use this feature, you need to select a printer available on the computer, as well as the reports to be printed.

- Click the *Automatic print* button.
- Click the *Activate automatic print* checkbox. A check mark will appear.
- Select the printer you wish to use.
- Select the report elements you wish to print. Click once to select a report element (it will be highlighted in blue); click the same report element again to undo your selection.
- Click the *Blood glucose*, *Insulin pump*, *Blood glucose & Insulin*, *3-day profile* and *Logbooks* tabs in succession to separately select the report elements to be printed for every one of these reports.
- Click the *OK* button to save the entries.



The *Automatic print* button will now be displayed with a check mark  indicating that the corresponding feature has been activated. Deactivated features are displayed with a  on their button.




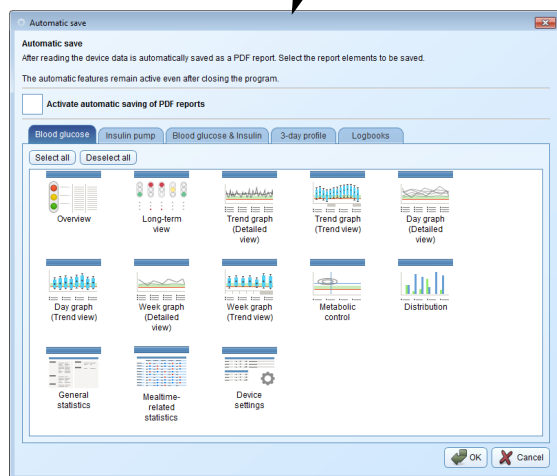
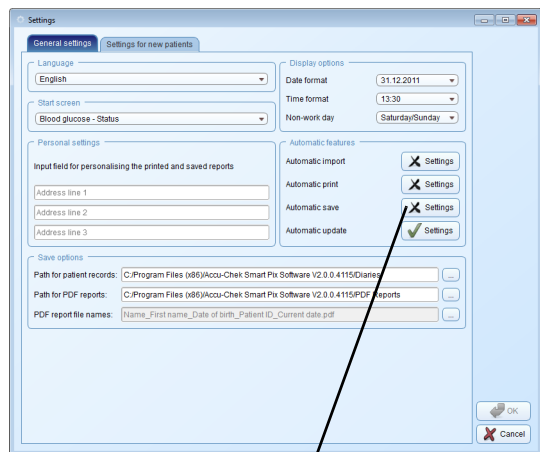
Automatic save

This feature will automatically save reports as PDF files and is independent of the saving feature for records, which is activated using automatic import.

- Click the *Automatic save* button.
- Click the *Activate automatic saving of PDF reports* checkbox. A check mark will appear.
- Select the report elements you want to save as a PDF file. Click once to select a report element (it will be highlighted in blue); click the same report element again to undo your selection.
- Click the *Blood glucose*, *Insulin pump*, *Blood glucose & Insulin*, *3-day profile* and *Logbooks* tabs in succession to separately select the report elements to be saved for every one of these reports.
- Click the *OK* button to save the entries.

The *Automatic save* button will now be displayed with a check mark  indicating that the corresponding feature has been activated. Deactivated features are displayed with a  on their button.

 The PDF files will be saved in the folder you selected in *Save options* (see page 34).

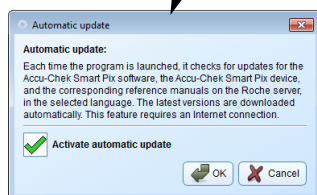
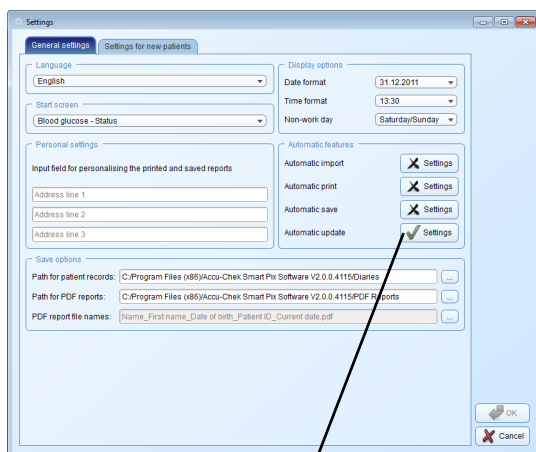


Automatic update


When this function is activated, the Accu-Chek Smart Pix software automatically checks whether updates are available for the Accu-Chek Smart Pix system (software, device, User's Manual) every time the program starts. Newer versions are automatically downloaded and installed.

- Click the *Automatic update* button.
- Click the *Activate automatic update* checkbox. A check mark will appear.
- Click the *OK* button to save the entries.

The *Automatic update* button will now be displayed with a check mark indicating that the corresponding feature has been activated. Deactivated features are displayed with a ✕ on their button.



As soon as a new version is available on the update server, the respective components are updated as described below:

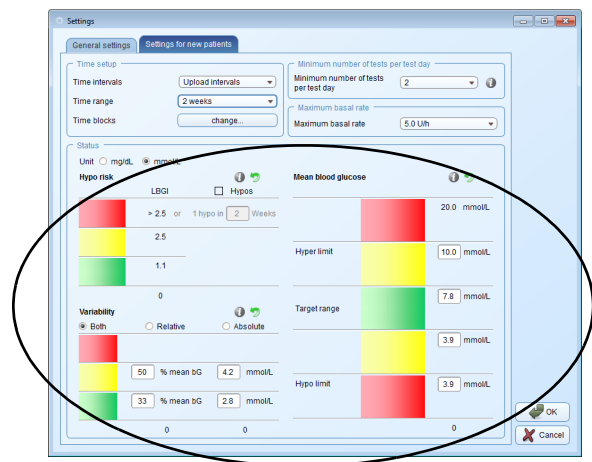
- The Accu-Chek Smart Pix software is updated at the next program start (after requesting confirmation).
- A connected Accu-Chek Smart Pix device is updated at the next program start (after requesting confirmation).
- Newer versions of the User's Manual in the currently set language are saved in the program folder in the *Manuals* folder and can be called up using the  button and the *Help* menu option.



Settings for new patients

In the *Settings for new patients* window you will find configuration options for displaying reports. These settings will always be used when you are creating a new record.

- **Time intervals:** This setting defines the time intervals used to summarise test results in the long-term view of the *Status* report element.
- **Time range:** The *Time range* setting defines the number of days or weeks whose test results will be displayed and analysed in the reports together.
- **Time blocks:** In some report elements, test results are assigned to defined time blocks. These time blocks divide the day into eight periods typical for the patient, and they refer to meal or sleep times.
- **Minimum number of tests per test day:** A statistical analysis of *Hypo risk*, *Variability* and *Mean blood glucose* can only be displayed if a minimum number of test results per day exists. Select the minimum number of results from which to start displaying such statements in the *Status* report element.
- **Maximum basal rate:** You can customise the graphical display of basal rates to high, mean and low average rates.



- **Status:** The statements and statistics displayed in the *Status* report element refer to specified target values or target ranges and the deviation of the test results from these. Here you can define these target values and target ranges that will also be used in other report elements.
 - Select the *Unit* (mmol/L or mg/dL) to use for setting the *Target range* for blood glucose results.
 - Select whether the *Hypo risk* is to be evaluated solely based on the LGBI or, in addition, depending on the number of hypoglycaemic situations.
 - Select whether the *Variability* is set relative to the mean blood glucose (*Relative*) or as a fixed value (*Absolute*).
 - *Mean blood glucose:* The representation of the mean blood glucose value (mean value of all blood glucose values in the selected time range) is defined by an upper and lower limit as well as the hypoglycaemia limit and hyperglycaemia limit. By setting these limits, you determine the values that fall within the target range (green), above or below the target range (yellow), or above or below the hypo and hyper limit (red).

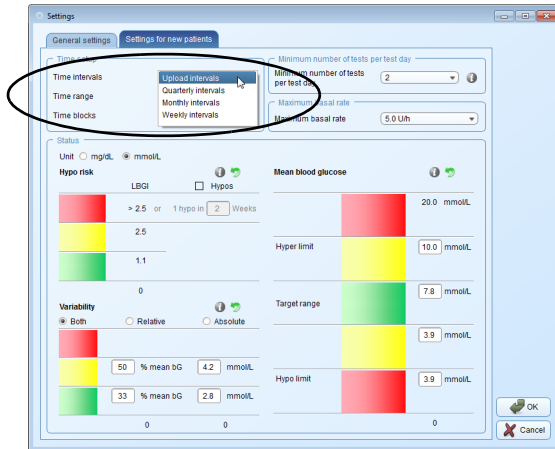


The *Hypo limit* can only be a reliable indicator of low blood glucose (hypoglycaemia) if the limit has been properly selected. We therefore strongly recommend that you talk to your healthcare professional before you change the limit. This function is not a substitute for hypoglycaemia training by your healthcare professional.

Time intervals

With the *Time intervals* setting, you define the time intervals used to summarise test results in the long-term view of the *Status* report element. You can choose between:

- *Upload intervals* (reading out device data using the Accu-Chek Smart Pix software, e.g. as part of regular visits to the doctor).
- *Quarterly intervals*
- *Monthly intervals*
- *Weekly intervals*



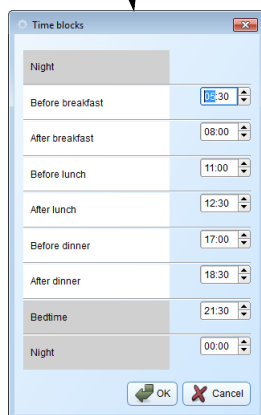
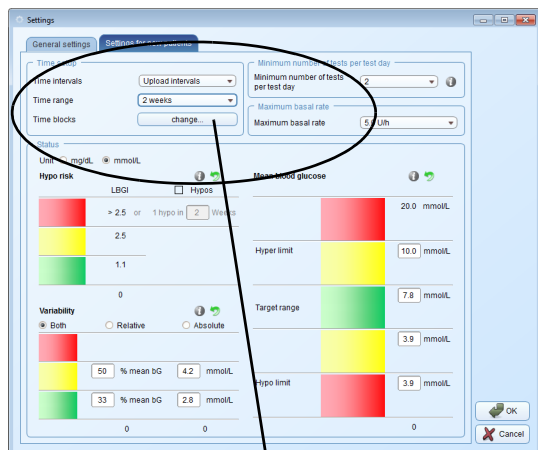
Time setup

Select the default *Time range* you want a report to analyse and display. You can change this setting at any time in reports as they are being displayed to examine them in more detail or with respect to more long-term developments. All displayed charts, values and statistics refer to the selected time range.

By setting *Time blocks*, you divide a 24-hour day into eight periods which are determined by important regular events (e.g., main meals). For each time block, you can specify the start time while the end time is automatically the start time of the next time block.

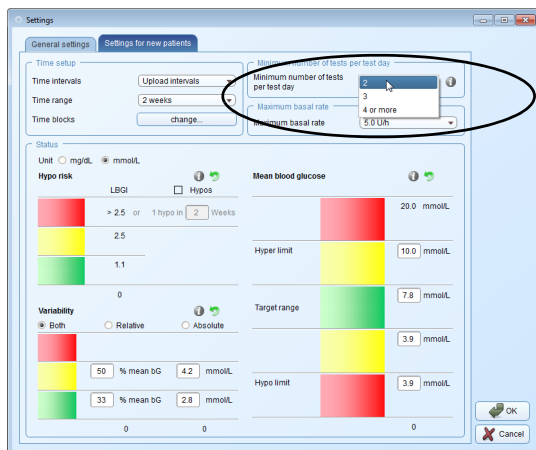
The time blocks set here are used in reports to structure them visually and chronologically.

- Click the *change* button to open the dialog box for setting the time blocks.
- You can set the time in hours and then minutes using the arrow buttons, or enter the time directly as a number.
- Click the *OK* button to save the settings.



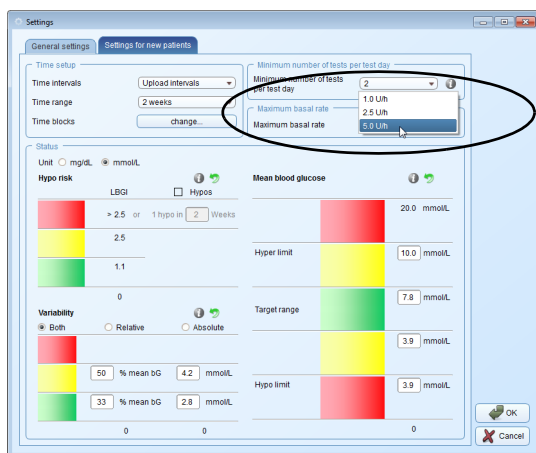
Minimum number of tests per test day

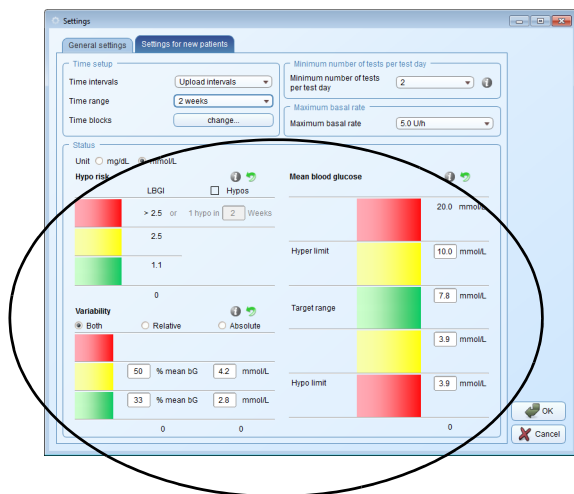
To gain meaningful results from statistical analyses, tests need to be conducted with a certain regularity (throughout the day) and frequency. Select the minimum number of tests necessary to display a statistical analysis. If the actual number of tests is below this value, the *Status* report will not display any information on the *Hypo risk*, *Variability* and *Mean blood glucose*. This applies regardless of the selected setting if there are less than 28 results altogether or if the test results are not distributed evenly over the course of the day.



Maximum basal rate

As the sizes of the individual basal rates can vary, it is possible to adjust the scale of the insulin dose in the basal rate chart to the desired range of values.



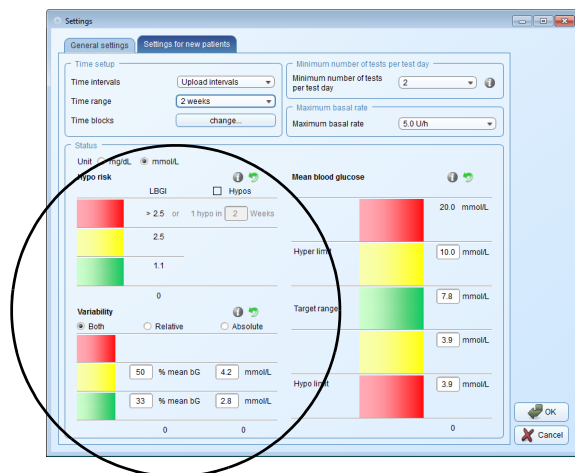


Status

The statements and statistics displayed in the *Status* report element refer to specified target values or target ranges.

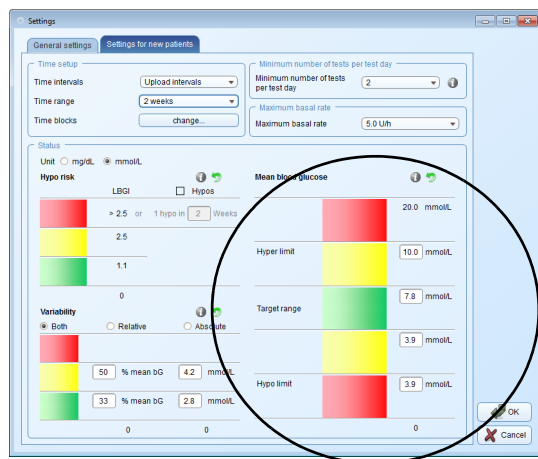
There are three colours to graphically represent the results. The colours have the following meaning:

- **Green** means that the values fall within the target range.
- **Yellow** means that the values fall outside the target range.
- **Red** means that the values fall significantly outside the target range.



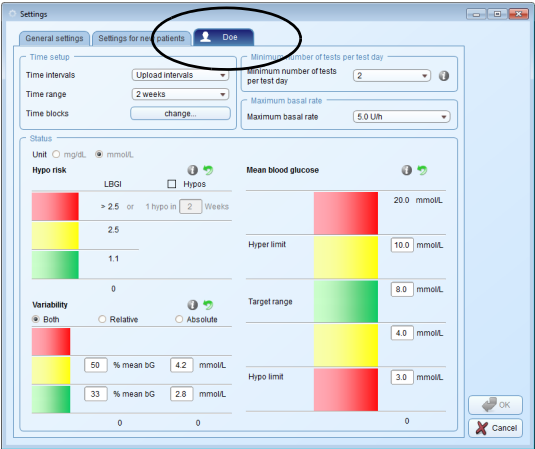
Each of the setup options given here refers to the limit separating the three areas mentioned above. This is shown by the colour bar above the respective input fields. The whole available setup area displays to the left and right of the input fields (e.g., 0 ... 100 (%) if specified in percent; or 0 ... 20 mmol/L if specified in mmol/L).

- Select whether the *Variability* is set relative to the mean blood glucose (*Relative*) or as a fixed value (*Absolute*).
- Select the limits (between the three areas) for *Variability*.
- In the *Mean blood glucose* setup area, enter the values to be used for the *Hyper limit*, the upper and lower limit of the *Target range* and the *Hypo limit*, in the unit selected above. These are also the limits for the colour representation (green, yellow, red). The green area also defines the target range in the graphical report elements.



Click the button to display additional information about the respective term.

Click the button to restore the respective range to the default settings.



Customised settings for the patient record currently displayed

This window, whose name depends on the currently opened record, contains setup options for customising the report. The setup options are identical to the *Settings for new patients*.

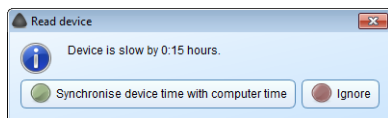
Use the setup area if you want to modify the settings for the patient record that is currently displayed. The changes made here are **only** applied to the currently opened record and saved with it.

4 Using the Accu-Chek Smart Pix software


The Accu-Chek Smart Pix software gives you the following options:

- Display report elements with graphical, tabular and statistical elements.
- Maximise graphical report elements depending on the available screen area and examine them in detail.
- Interactively toggle individual elements in the charts and/or adjust them.
- Archive reports with selected elements as a PDF file.
- Print selected elements of a report.
- Email reports with selected elements.
- Display data read from the device as an Accu-Chek Smart Pix software record to edit and save it.
- Create records for multiple patients or users and assign the devices in use.
- Read, send or save records and automate reports.
- Display archived (saved) reports in a PDF reader and print them.
- Perform software updates.

4.1 Manually reading data

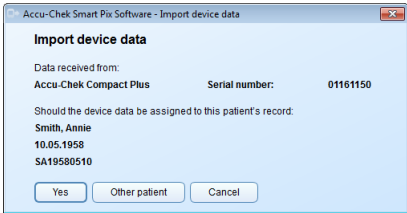
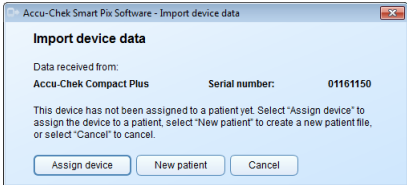
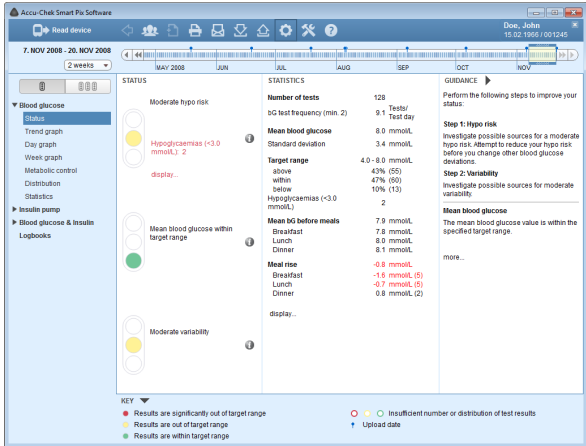


If you configured the Accu-Chek Smart Pix software so that **no automatic features** will run, you need to trigger the reading of data manually.

- Prepare the meter or insulin pump for transferring data. See chapter 6 or the User's Manual of the meter for detailed information about this preparation.
- Click the *Read device*  button.



When reading the data, the time set in the device is compared to the time set in the computer. You will be notified if these times do not match. You can adjust the time set in the device directly from the Accu-Chek Smart Pix software if your meter supports this function.



The data is now imported from the Accu-Chek Smart Pix device and prepared for a report according to the defaults. At this point in time the record is not yet saved. This allows you to simply display the report without assigning it to a patient and/or permanently saving it.

To permanently save the displayed record, click the **Save** button. Which dialog box will be displayed next depends on whether the respective device has already been assigned to a patient and/or record or not. See page 56 and further for information about creating and managing records.

If data is imported from a device for the **first time**:

- The *Assign device* button allows you to add the data to an existing record.
- The *New patient* button allows you to create a new record and assign the device to it.

If data has already been imported from the device and assigned to a record:

- The *Yes* button allows you to confirm that the data is to be added to the existing and pre-selected record.
- The *Other patient* button allows you to assign the device to another existing record.



Note that unsaved data is only available until you close the program or the record, or import new data.

If patients are using more than one meter (e.g., one at the workplace and one at home) and you want to read the data from all the devices for the same report, repeat the steps described above for each device.



A joint analysis of several devices can only be performed if the imported data is saved. Reports that are not saved can only represent the data from one device.



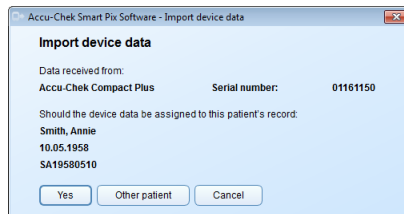
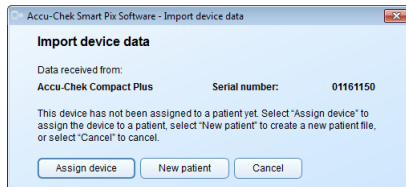
To be able to analyse the combined data from several devices properly, all meters used must have the same date and time settings. Only then will the reports provide correct information for recommending a potential course of treatment.

4.2 Automatically reading data

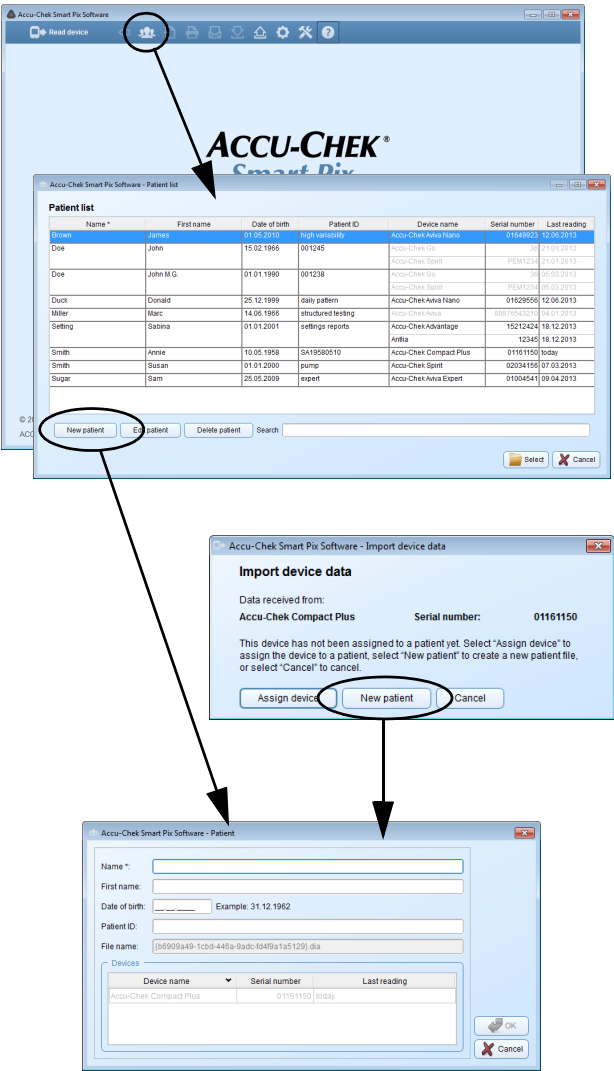
If you configured the Accu-Chek Smart Pix software so that an *Automatic import* will be performed, it is not necessary for the program to run in the foreground. You can minimise or close the program window. As soon as the program running in the background recognises that new data has been transferred to the Accu-Chek Smart Pix device, you will be notified and guided through further steps.

As soon as new data is recognised, the following options can be taken as subsequent steps (as with manually reading data):

- If you have not yet created a personalised record for the currently imported data, you can create a new record for it and assign the device to it.
- If you have already created a personalised record but not yet assigned the device to it, you can assign it now.
- If you have already created the record and assigned the device to it, you will only need to confirm that the data is to be added to the record.
- You also have the option to view the data temporarily without saving it to a record.




4.3 Managing records



Creating a new patient record

You can create a new record at any time (irrespective of existing data), even during an import.

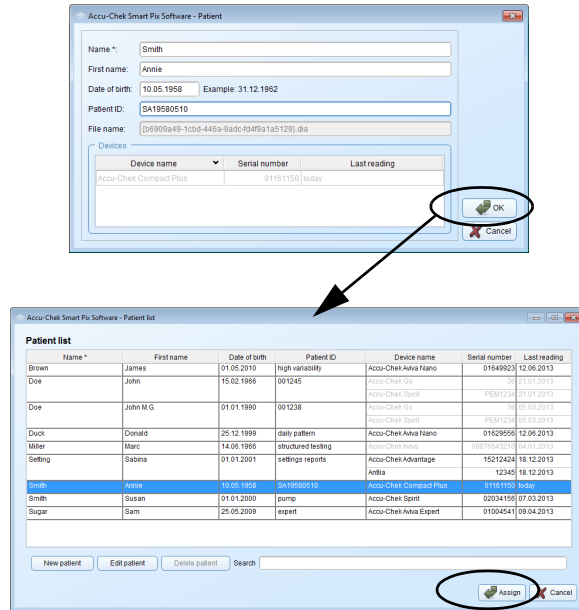
To create a new record:

- If there is no import running, click the *Open patient list*  button.
- In the *Patient list* window, click *New patient*.

Or:

- When the import dialog box is displayed, click the *New patient* button.

In the *Patient* dialog box displaying now, you need to enter at least the patient's name. Further identification information such as first name, date of birth or an existing patient ID are also possible and/or necessary if several patients with the same name exist.



To create the new record:

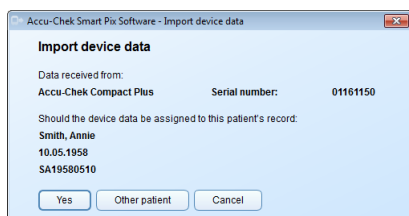
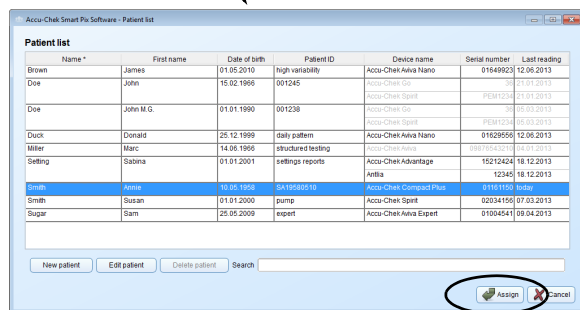
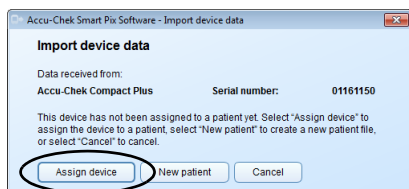
- Enter the name and any further information you require. You can use any of the information entered here to search for the record at a later stage.
- Click the **OK** button to create the record and to close the dialog box, or:
- Click the **Cancel** button to discard the modified entries and to close the dialog box without saving the changes.

The meter entry visible in the above image is only displayed if this dialog box is opened during the import. Otherwise the device is assigned at a later stage.

If you have created the new record during an import, you will need to assign the device just read to this record to complete the process.


- Make sure you have the correct (newly created) record selected.
- Click the **Assign** button.

The device has now been assigned to this record. From now on, you will only need to confirm this connection when performing an automatic import. The data will be saved to the selected record.



Assigning an existing record

If you are importing data that is to be assigned to a person with an already existing record (e.g., if a new meter is used), you can do this during the import.

- Click the  button.
- Click the *Assign device* button in the dialog box displayed.
- Make sure you have the correct record selected.
- Click the *Assign* button.

The device has now been assigned to this record. From now on, you will only need to confirm this connection when performing an import. The data will be imported and saved to the selected record.

Confirming the device assignment

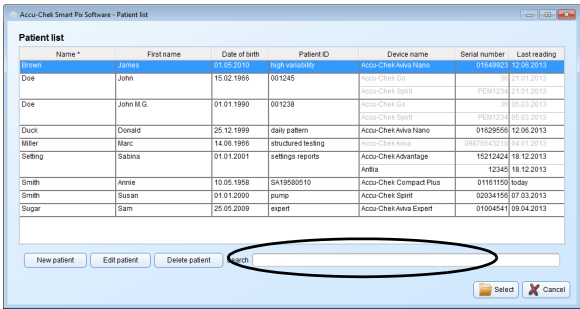
If the assignment has already been completed, it will be displayed when saving future imports.

- Click the *Yes* button to add the data to the existing record.

The data will be saved to the selected record.


- Click the *Other patient* button to re-assign the device.
- Click the *Cancel* button to close the dialog box without saving the data.

4.4 Further report and record management features



Opening a record


You can open saved records at any time. An opened record gives you access to all its reports and a tabular representation of its data (*Diary*).


- Click the *Open patient list*  button.
- Click the record you want to select.
- Click the *Select* button.

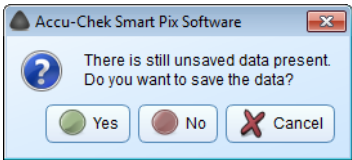
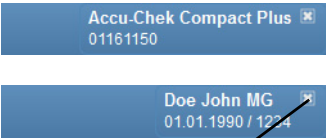
To quickly find a certain record, you can also enter known parts of the patient ID into the search window on the bottom right. Only records matching these entries will be displayed.

Closing the record and report

To close an open record (and/or the currently displayed report):

- Click the  icon next to the record ID or meter information.
- If the displayed data has not been saved yet, you will need to confirm whether you want to save or discard the data now.

 Note that unsaved data is only available until you close the program or the record, or import new data.



Accu-Chek Smart Pix Software - Patient list

Patient list

Name *	First name	Date of birth	Patient ID	Device name	Serial number	Last reading
Ursen	James	01.05.2010	High variability	Accu-Chek Aviva Nano	01646603	12.06.2013
Doe	John	15.02.1966	001245	Accu-Chek Go		20.01.01.2013
				Accu-Chek Spirit	PE981234	21.01.2013
Doe	John M G.	01.01.1980	001238	Accu-Chek Go		20.03.2013
				Accu-Chek Spirit	PE981234	20.03.2013
Duck	Donald	25.12.1999	daily pattern	Accu-Chek Aviva Nano	01629556	12.06.2013
Miller	Marc	14.06.1966	structured testing	Accu-Chek Aviva	0001653213	14.01.2013
Setling	Sabina	01.01.2001	settings reports	Accu-Chek Advantage	15212456	16.12.2013
				Aviva	12345	16.12.2013
Smith	Annie	10.05.1958	SA19580510	Accu-Chek Compact Plus	01161155	today
Smith	Susan	01.01.2000	pump	Accu-Chek Spirit	02034156	07.03.2013
Sugar	Sam	25.05.2009	expert	Accu-Chek Aviva Expert	01004541	09.04.2013

New **Edit patient** Delete patient Search

Select Cancel

Accu-Chek Smart Pix Software - Patient

Name *:

First name:

Date of birth: Example: 31.12.1962

Patient ID:

File name:




Devices

Device name	Serial number	Last reading
Accu-Chek Compact Plus	01161155	today

OK Cancel

Editing a record

You can edit the name of a record at a later stage.

- Click the *Open patient list*  button.
- Click the record you want to select.
- In the *Patient list* window, click *Edit patient*.
- Make the desired changes.
- Click the *OK*  button to save the changes and to close the dialog box, or:
- Click the *Cancel*  button to discard the modified entries and to close the dialog box without saving the changes.

You cannot use this feature to edit the information contained in this record. For more information about editing this information, see page 130 and further.

Accu-Chek Smart Pix Software - Patient list

Patient list


Name *	First name	Date of birth	Patient ID	Device name	Serial number	Last reading
Brown	James	01.05.2010	high variability	Accu-Chek Aviva Nano	01649923	12.06.2013
Doe	John	15.02.1996	001245	Accu-Chek Go		20.01.01.2013
Doe	John M.G.	01.01.1990	001238	Accu-Chek Spirit	PEM1234	01.01.2013
Doe				Accu-Chek Go	999	05.03.2013
Doe				Accu-Chek Spirit	PEM1234	05.03.2013
Duck	Donald	25.12.1999	daily pattern	Accu-Chek Aviva Nano	01629656	12.06.2013
Miller	Marc	14.06.1966	structured testing	Accu-Chek Aviva	09876543210	01.01.2013
Setting	Sabina	01.01.2001	settings reports	Accu-Chek Advantage	15212424	16.12.2013
				Aviva	12345	16.12.2013
Smith	Annie	10.05.1958	SA19580510	Accu-Chek Compact Plus	01161150	today
Smith	Susan	01.01.2000	pump	Accu-Chek Spirit	02034156	07.03.2013
Sugar	Sam	25.05.2009	expert	Accu-Chek Aviva Expert	01004041	09.04.2013


New patient Edit patient **Delete patient** Search

Selected Cancel

Deleting a record

You can delete a record at any time.

 The selected record will be deleted upon confirmation. Be sure that you no longer need the selected record. Regular data backups also help to avoid inadvertent data loss.

- Click the *Open patient list*  button.
- Click the record you want to select.
- In the *Patient list* window, click *Delete patient*.

The selected record has now been deleted.

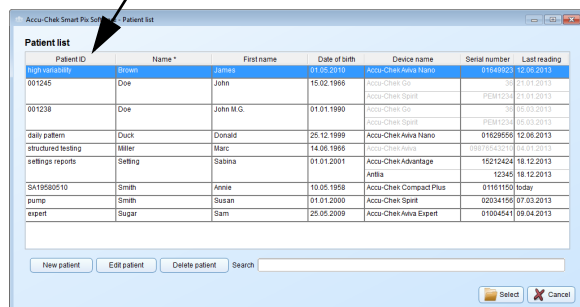
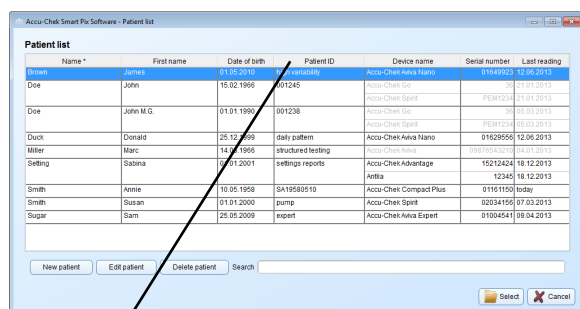
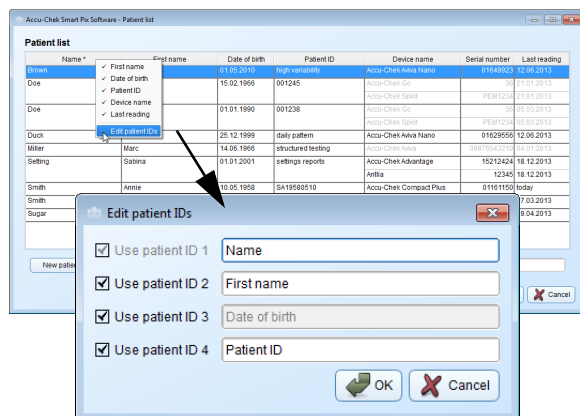
Archiving a record

You can archive records (*.DIA) by copying the complete *Diaries* folder containing the saved records during your regular data backups.

See page 71 and further for information about reading such an archived record.

Adjusting the patient list display

You can toggle the contents displayed in the patient list as you wish and you can also rename the column headings and change the column order.

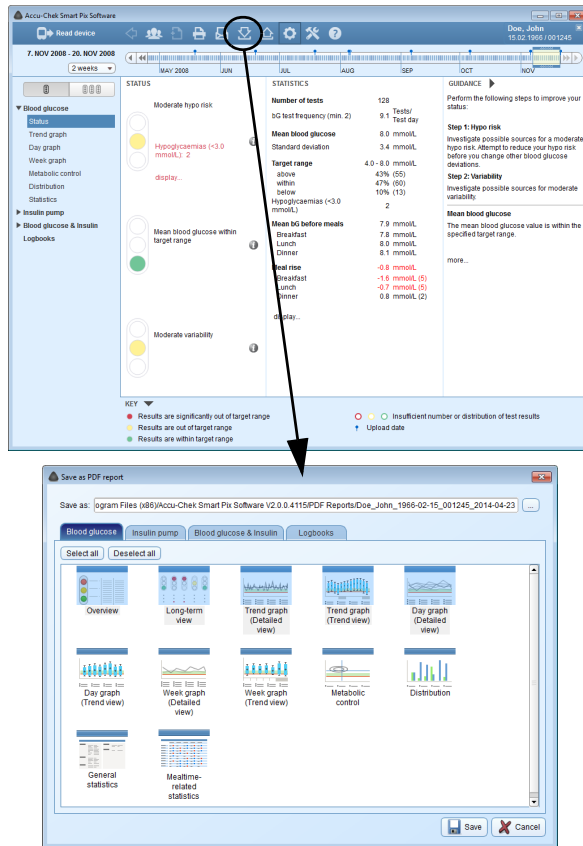


- Right-click any column heading.
- From the context menu, select the contents you want to display in the patient list (with a check mark). Remove the check mark for contents you want to hide. ID1 (Name) will always be displayed and cannot be hidden.
- From the context menu, select *Edit patient IDs* if you want to change the column heading (e.g., *Name*, *First name*).
- If you categorically do not wish to use a particular individual ID, deselect the checkbox to the left. The respective ID will be hidden from the patient list and the *Patient* dialog box. ID1 (Name) will always be displayed and cannot be deselected.
- Click on a column heading and drag it to any position to change the display sequence of the IDs.
- Click any column heading to sort the table by this column.
- Click the column heading according to which the patient list is to be sorted. Click the ▼ button next to the selected column heading to toggle the sorting order (ascending or descending). You can, e.g., sort according to the date when data was last read from the device and then all records changed on the current date can be found at the beginning (or end) of the list.






If there are several records with the same information (e.g., the current date) for the selected sorting basis (e.g., date when data was last read from the device), the resulting group will be sorted also by name.

4.5 Exporting reports as PDF files



When you have read device data or opened a record, you can save the displayed report as a PDF file.

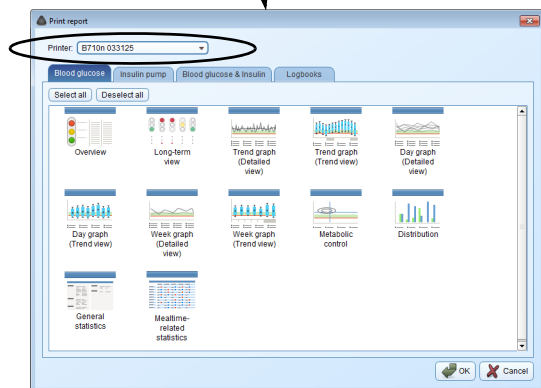
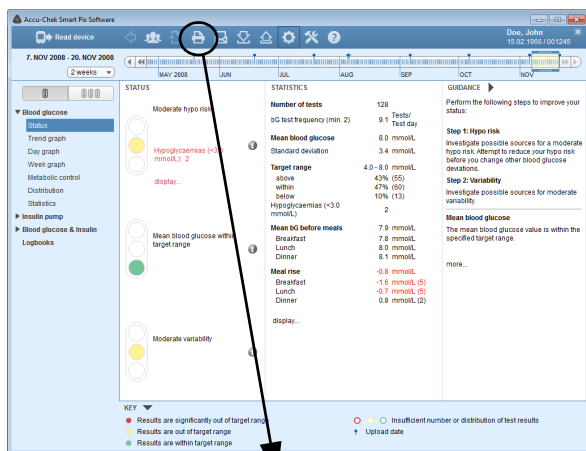
- Click the  button to save selected report elements. The selection window will be displayed.
- Enter the desired file name in the corresponding input field. You can also keep the default file name (see *Save options* in chapter 3). The file will be given the name entered here along with the suffix “.pdf”.
- From the displayed reports (displayed on four tabs) and report elements, select the ones you want to save in the file. Selected report elements are highlighted in blue.
 - To select an individual report element, click the corresponding report icon. To select all the report elements, click the *Select all* button.
 - To deselect a highlighted report element, click the report icon again. To deselect all highlighted report elements, click the *Deselect all* button.
- When you have selected all the desired report elements, click the *Save*  button.

This creates the PDF file and saves it in the folder selected in *General settings*. If you decide not to save the file, click the *Cancel*  button instead.



4.6 Printing reports


When you have read device data or opened a record, you can print the displayed report with the Accu-Chek Smart Pix software's print feature.

- If you are printing a currently **displayed report** (regardless of whether it is new or created from a currently opened record), you will be given the selection options described below.
- If you have opened an **archived report** saved as a PDF file (see page 69), displaying and printing it occur using the respective functions of the PDF program installed on your computer. This is not part of the Accu-Chek Smart Pix software.



To print a report:

- Click the  button to print selected report elements. The selection window will be displayed.
- Click the printer you wish to use for printing the report elements.
- From the displayed reports (displayed on four tabs) and report elements, select the ones you wish to print. Selected report elements are highlighted in blue.
 - To select an individual report element, click the corresponding report icon. To select all the report elements, click the *Select all* button.
 - To deselect a highlighted report element, click the report icon again. To deselect all highlighted report elements, click the *Deselect all* button.
- When you have selected all the desired report elements, click the *OK*  button.

The selected report elements are now output to the selected printer. If you decide not to print the file, click the *Cancel*  button instead.

4.7 Emailing reports

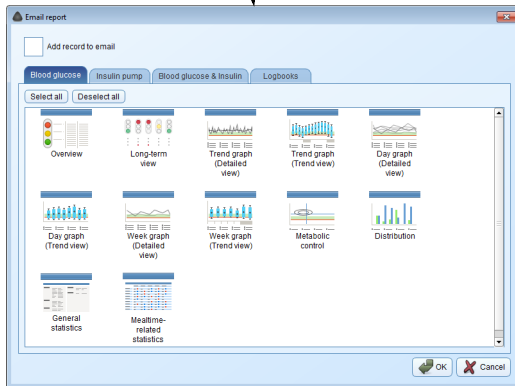
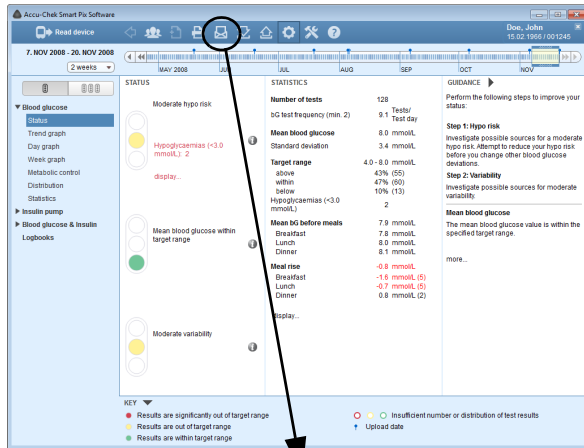
When you have read device data or opened a record, you can directly email the displayed report.





A suitable email program must be installed and configured on your computer to be able to use this function.


This feature will automatically create a PDF file of the selected report elements, open your email program and create a new email with the PDF file as an attachment. In addition, you can attach the record (*.DIA) used as the basis for this report. See page 71 for information about reading such a record received by email.

Independently of this, you can send reports previously exported as PDF files as email attachments (you do not need the Accu-Chek Smart Pix software for this).



To email a report:

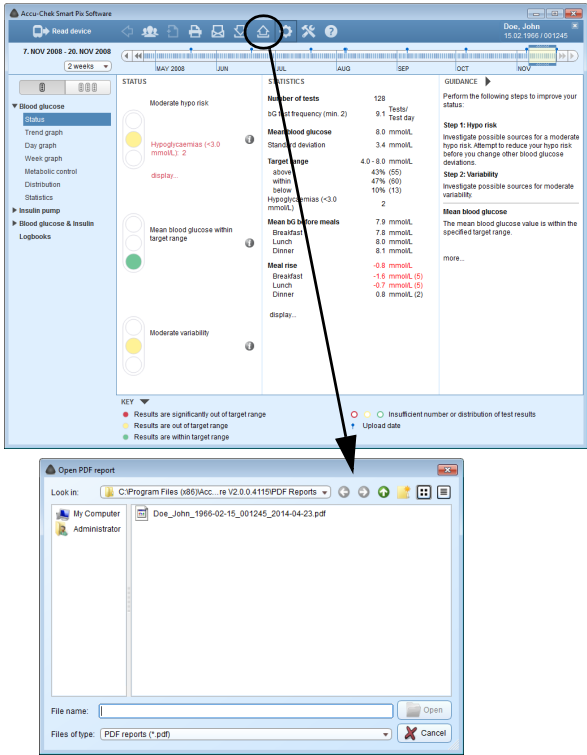
- Click the  button to send selected report elements. The selection window will be displayed.
- Select the corresponding checkbox if you want to add the complete record (*.DIA) as well.
- From the displayed reports (displayed on four tabs) and report elements, select the ones you wish to send. Selected report elements are highlighted in blue.
 - To select an individual report element, click the corresponding report icon. To select all the report elements, click the *Select all* button.
 - To deselect a highlighted report element, click the report icon again. To deselect all highlighted report elements, click the *Deselect all* button.
- When you have selected all the desired report elements, click the *OK*  button.


The selected report elements are now saved to a temporary PDF file (which will be deleted after the email is sent). If you decide not to send the report elements, click the *Cancel*  button instead.


Your computer's default email program is then launched and an empty email is opened. The email subject line is already filled in (but you can change the text if you want). The PDF file just created and the record (if selected) are enclosed as an attachment.


- Enter the email address of the recipient.
- Write a text referring to the report attached.
- Send the email.

4.8 Displaying archived reports (PDF files)



All the reports you have previously exported (archived) as a PDF file using the  button can be opened in the Accu-Chek Smart Pix software at any time.

 The exported PDF files are displayed using the PDF reader (e.g., Adobe Reader) installed on your computer, not in the Accu-Chek Smart Pix software. This is why you can also forward these PDF files to someone not working with the Accu-Chek Smart Pix software for information purposes.

- Click the  button to open an archived PDF file.
- Select the file you want to use from the dialog box now displaying.
- Click the *Open* button.

The PDF reader will now launch and display the selected PDF file. All the display and print options available here depend on the installed program.


4.9 Special functions

The Accu-Chek Smart Pix software allows you to select the following special functions:


- Importing externally available records (*.DIA) and assigning them to a patient
- Performing updates for the Accu-Chek Smart Pix device
- Manually triggering the search for software, device and User's Manual updates
- Setting date and time of the majority of supported blood glucose meters
- Using additional functions which may be available in the future as a loadable plugin (add-on module)

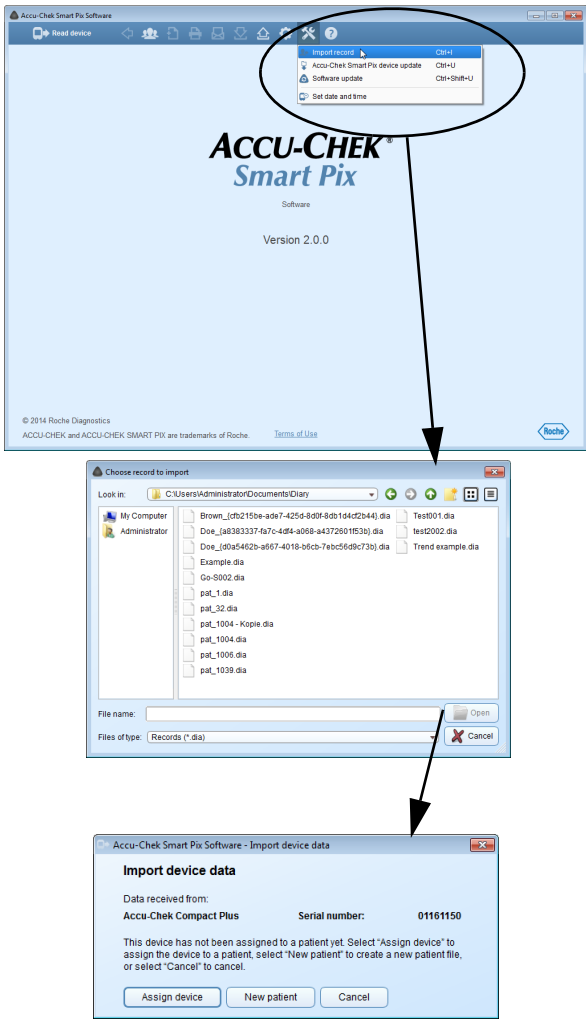
Importing records

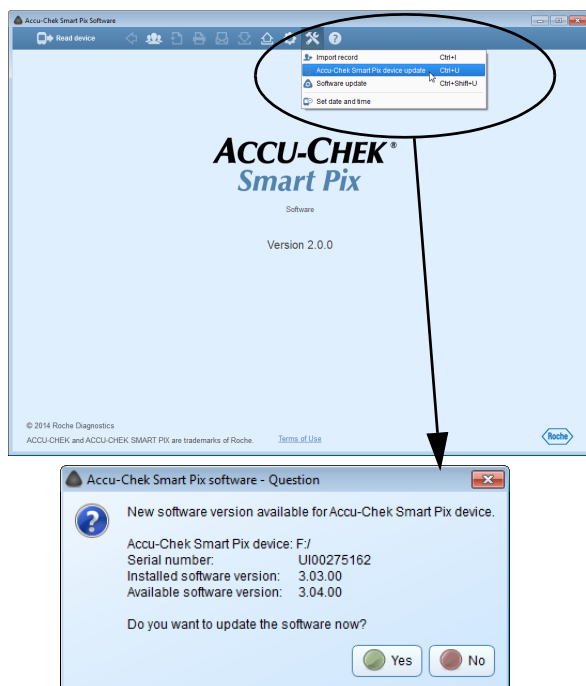
To add a DIA file which was received by email or restored from a data backup to your patient list:

- Click the *Tools*  button.
- Select the *Import record* option.
- In the following dialog box (if there is more than one file), select the desired DIA file and click *Open*.

Now the same dialog box will be displayed as the one displayed when reading data from an unknown meter. You can now assign the contents of the file for import to a new or an existing record.

 When importing a DIA file to an existing record, just as when reading meter data, duplicate entries (i.e., entries that have been read previously) are kept and only new entries are added.





Performing updates for the Accu-Chek Smart Pix device


The program folder of the Accu-Chek Smart Pix software also contains the Accu-Chek Smart Pix device system software which is current at the time of delivery. This software can be installed using the *Accu-Chek Smart Pix device update* feature, provided the Accu-Chek Smart Pix device is plugged in and contains an older software version.

- Click the *Tools*  button.
- Select the *Accu-Chek Smart Pix device update* option.
- Click on *Yes* to install the update.

The software update will now be installed. In the meantime, the Accu-Chek Smart Pix device logs itself off and logs on again (if the update has been successful).

Search for software updates for the Accu-Chek Smart Pix system

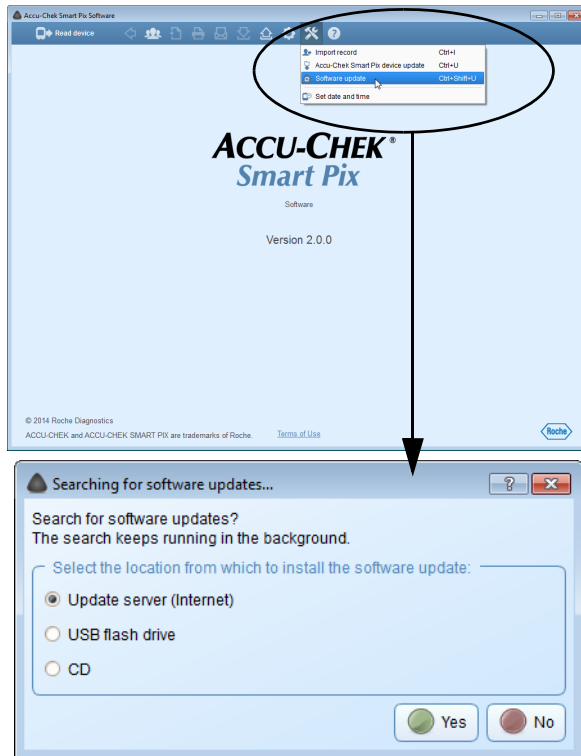
If you have not configured the software to automatically search for available updates at every program start, you can manually trigger the search with this function. This is useful, e.g., if the computer is not regularly connected to the Internet.

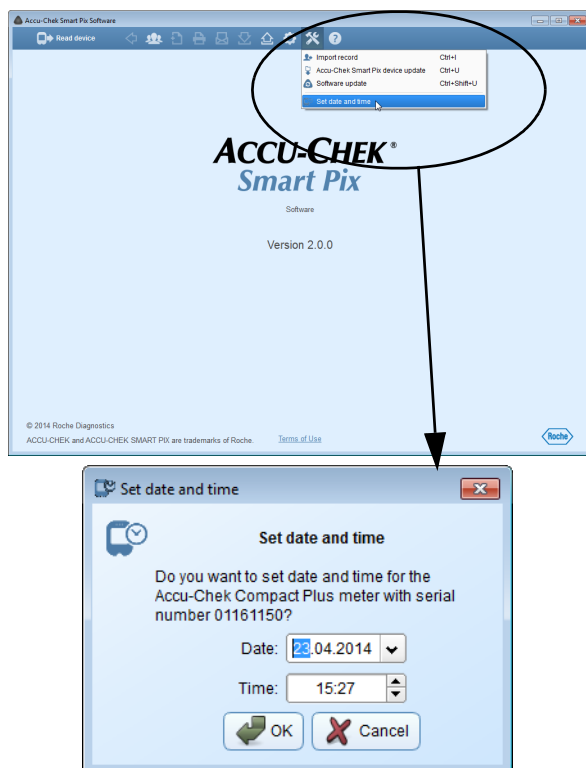
- Click the *Tools*  button.
- Select the *Software update* option.
- Click on *Yes* to launch the search for current software versions.

The search is performed in the background and you can use the Accu-Chek Smart Pix software without restriction. When a newer version is found, it is downloaded.

Updating the respective components occurs as described below:

- The Accu-Chek Smart Pix software is updated at the next program start (after requesting confirmation).
- A connected Accu-Chek Smart Pix device is updated at the next program start (after requesting confirmation).
- The latest version of the User's Manual is saved locally.







Setting date and time in the meter

For the majority of supported meters, you can set the date and time directly from the Accu-Chek Smart Pix software. You can correct this manually at any time or when you are notified during the reading of data that there is a mismatch between the time on the meter and on the computer.

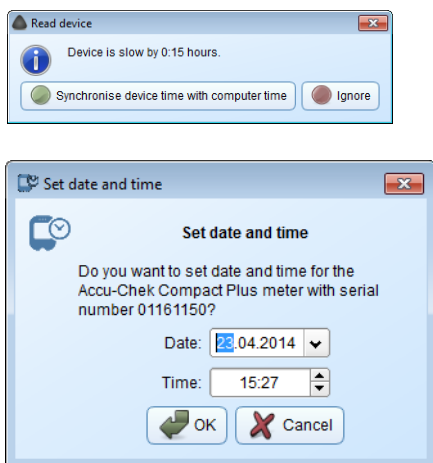
Manually correcting date and time

- Click the **Tools**  button.
- Select the **Set date and time** option.
- Prepare the meter for communication as shown in the following dialog box.
- If the meter allows you to set the date and time, you can accept the date and time displayed in the following dialog box or adjust it as you wish. You will be notified if your meter does not support this function.
- Click the **OK**  button to send the settings to the meter.

Semi-automatically correcting date and time

When you are reading data from a meter, the Accu-Chek Smart Pix software will automatically compare the date and time settings of the meter with those of the computer. If the device date and time cannot be set directly, you will be notified of the difference between the meter and the computer in case there is a deviation. In this case, make the correction directly on the meter.

- If the meter allows you to set the date and time, you can accept the date and time displayed in the associated dialog box or adjust it as you wish.
- Click the *OK* button to send the settings to the meter.



5 Reports and records

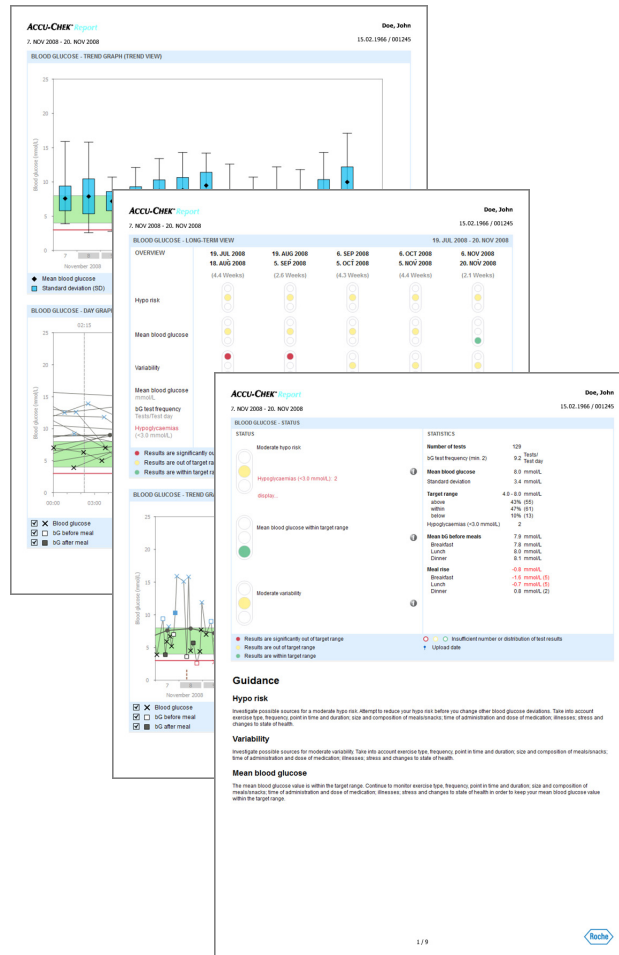
5.1 Blood glucose: general information about the reports

Types of reports

The Accu-Chek Smart Pix software creates single-page or multi-page reports for defined time ranges (e.g., the last 2 or 4 weeks); the time range can be selected as needed. A blood glucose report can contain any of the following report elements:

- [1] Status
- [2] Trend graph
- [3] Day graph
- [4] Week graph
- [5] Metabolic control
- [6] Distribution
- [7] Statistics

The illustration on the left shows examples of reports, either available as a printout or exported as a PDF file.



Analysed data

The Accu-Chek Smart Pix software checks the read data to create the reports. The following data is not included in the statistics:

- Test results outside the selected time range
- Test results saved without date and time
- Tests with control solution
- Invalid/deleted tests
- Tests outside the measuring range (marked as HI/LO)

Existing target range definitions are only adopted from the Accu-Chek Pocket Compass software. Apart from that, the settings made during configuration of the Accu-Chek Smart Pix software apply.

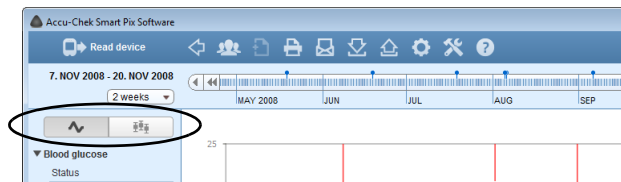
Note the following when using the Accu-Chek Smart Pix software with several meters and patients:



To ensure that the report that belongs to a particular meter is displayed, compare the serial number on the meter with the data displayed in the top right-hand corner of the report, e.g., patient name or meter name and serial number.

Report styles

Some report elements can be displayed in different styles, which you can toggle directly when displaying the respective report element. You can find such toggle buttons in the following report elements:



Toggle button	Report element	Toggle between...
	<ul style="list-style-type: none">▪ <i>Status</i> (blood glucose)	Current status, Long-term view
	<ul style="list-style-type: none">▪ <i>Trend graph</i> (blood glucose)▪ <i>Day graph</i> (blood glucose)▪ <i>Week graph</i> (blood glucose)	Detailed view, Trend view
	<ul style="list-style-type: none">▪ <i>Statistics</i> (blood glucose)	General statistics, Mealtime-related statistics
	<ul style="list-style-type: none">▪ <i>Lists</i> (insulin pump)	Bolus, Basal rate, Events
	<ul style="list-style-type: none">▪ <i>Logbooks</i>	Diary, Logbook, Daily statistics

KEY

● Results are significantly out of target range

● Results are out of target range

● Results are within target range

○ Insufficient number or distribution of test results

↑ Upload date

KEY

☒ X Blood glucose

☒ bG before meal

☒ bG after meal

☒ Connecting lines

☒ Mean bG

☐ Grid lines

⋮ Carbohydrates

— Hypo limit

■ Target range


|| Insulin (1,2,3)

⊗ Hypoglycaemia

⊗ Above target range

Graphical elements of the reports

In all reports, you will find keys explaining the meaning of individual elements. In the following, you will find detailed explanations of the various elements.



Icons (Detailed view)  Test results are plotted in the report elements using various icons to increase their level of information:



Mean blood glucose


Blood glucose value without any additional information. Values below the hypo limit are shown in red; results above the target range are shown in blue.


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Accu-Chek Smart Pix diabetes management system User's Manual





  Blood glucose value before and/or after meal. Values below the hypo limit are shown in red; results above the target range are shown in blue.


  Value outside the measuring range (indicated on the meter as HI or LO).





 Blood glucose value above 25 mmol/L or 400 mg/dL.


 Blood glucose value (any icon inside the red circle) accompanied by hypoglycaemic symptoms.

 Blood glucose value (any icon inside the black circle) with a user-defined event (marked with an asterisk * on the blood glucose meter).

 Insulin amount for insulin 1 , 2  or 3 , respectively. Insulin amounts are plotted in the chart top down.

 Carbohydrate amounts; represented at the bottom in some report elements. The carbohydrate amount is indicated by the height of a single block (or a bar consisting of several blocks). The bars shown in this illustration (from left to right) represent the following amounts:

 – Block 1: 2.5 g
 – Block 2: 5.0 g
 – Block 3: 7.5 g
 – Bar 4 (3 blocks of 10 g each): 30 g

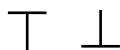
Icons (Trend view)  Here the analysis does not cover individual test results but mean values in relation to a certain time grid. Here you will find the following icons:



Mean blood glucose




Standard deviation



Highest value and/or lowest value



Maximum value/minimum value outside the measuring range (HI/LO)

Icons (Diary)  The following additional icons are used in the tabular representation:



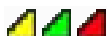
User-defined event, e.g., AST (Alternative Site Testing)



Hypoglycaemia



Carbohydrate amount



Before/during/after exercise



Stress



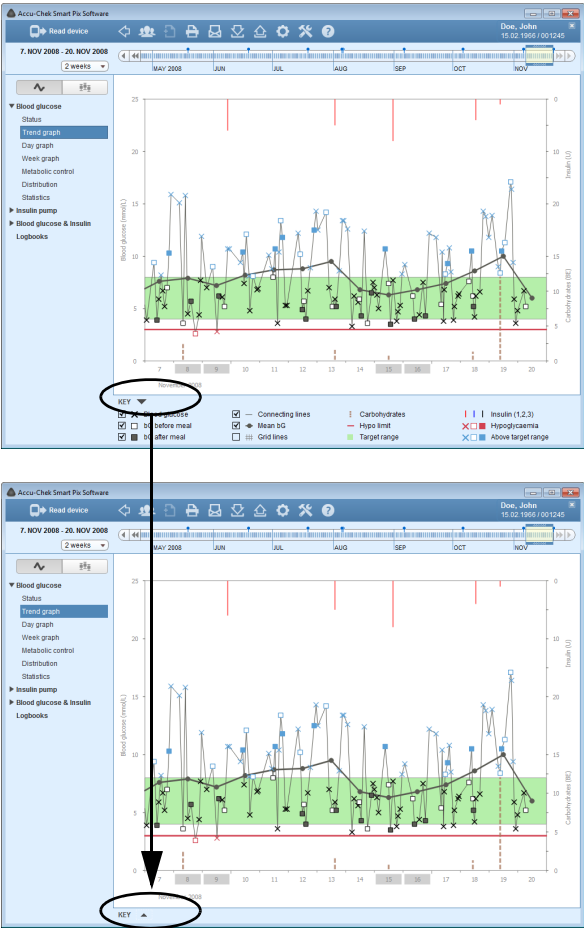
Illness

Test results which have been imported from the Accu-Chek Pocket Compass software or from the Accu-Chek Aviva Combo, Accu-Chek Aviva Expert, Accu-Chek Performa Combo, Accu-Chek Performa Expert, Accu-Chek Aviva Insight or Accu-Chek Performa Insight meters may include several items of additional information (events), which are not represented by icons. These events are displayed in the comments column of the list representation:

- Snack
- Bedtime
- Fasting
- Before exercise
- After exercise
- Stress
- Illness
- Oral medication
- User-defined
- Hypo warning
- Hyper warning
- Premenstrual
- Other
- Exercise 1
- Exercise 2
- Manually entered value

The icons previously described are used for all other events.

5.2 Interactive features in the report



The reports displaying on-screen contain many interactive features you can use to directly modify the representation. These features help you to, e.g., see certain information in more detail or to hide interfering elements.

Toggleing panes

Whenever you see this triangular icon ▼ in a report, you can click it to toggle its associated panes. This allows you to, e.g., create more space for graphical representations by hiding the key.

Changing the time range

In the beginning, most reports show the time range set in the configuration, with the most current data at the end of the visible range. Aside from these, there are report elements that are in relation to points in time and time intervals (see page 86), as well as report elements that do not require separate chronological navigation as they are set up as chronological tables.

To change the time range at a click, simply select a pre-defined time range using the associated button.

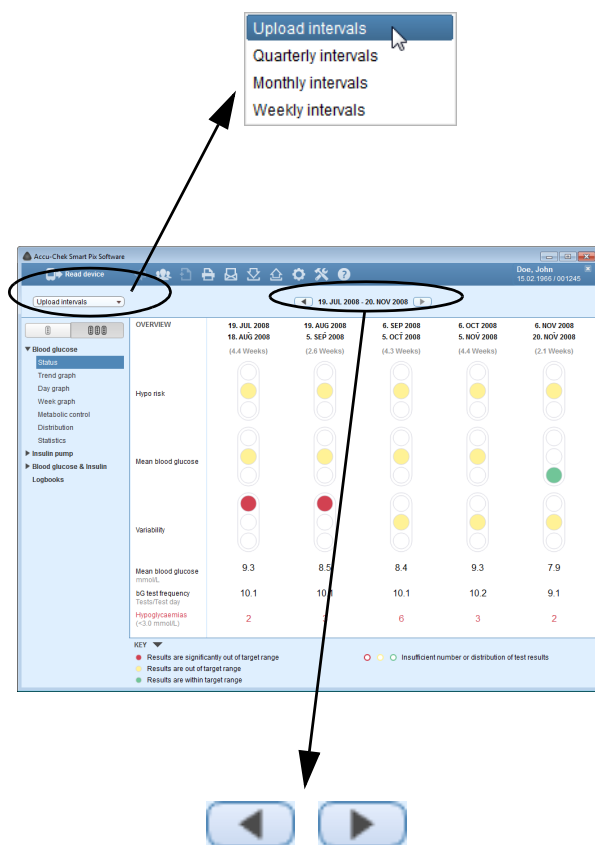
The interactive time axis allows you to quickly and easily navigate all available data thanks to a moveable time range.

The frame highlighted in yellow shows the currently selected section on the time axis.

- You can enlarge or reduce this frame at the left and right edges to adjust the displayed time range (by days, from 1 day to 12 weeks).
- You can move the whole frame along the time axis to go forwards or backwards in time.
- You can click anywhere in the time scale; the complete time range will then move its end point to the place where you clicked.
- You can use the arrow buttons at either end of the time scale to move the section by one day or one time range.

The screen representation of the report immediately adjusts itself to the changes made to the time axis.





Changing time intervals

In some report elements, you find representations that are in relation to specific points in time and time intervals. While, for example, the *Status* report element evaluates all the information and values of the selected time range at once, the *Long-term view* summarises values in time intervals and presents these intervals next to each other for comparison.

- To define the time intervals, select a predefined interval (*Upload intervals*, *Quarterly intervals*, *Monthly intervals*, *Weekly intervals*) from the list.
- To toggle the display between earlier or later intervals, use the arrow buttons to the left and right of the time information (at the upper edge of the window).

Changing chart contents

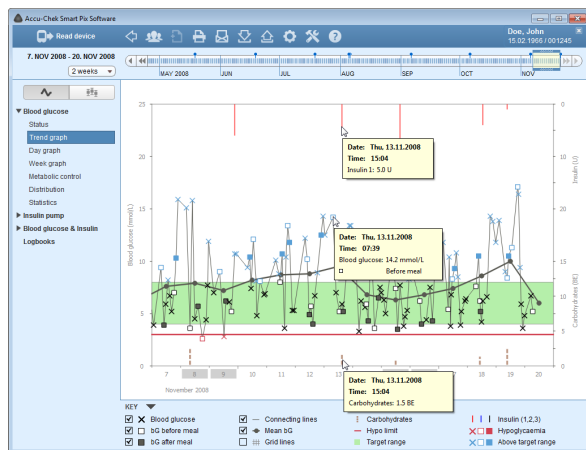
In graphical report elements you can toggle certain displayed objects and, in some cases, change parameters of the representation:

- You can toggle each element which has a checkbox in the key (e.g. test results or grid lines) by clicking the checkbox to select or deselect it.

In addition, you can change the time axis and the predefined time blocks in the graphical report element *Day graph*:

- Select the starting time point of the (horizontal) time axis.
- Move your mouse across one of the vertical dotted lines separating two time blocks. When the mouse pointer turns into a double-pointed arrow, you can click and pull the line to move it horizontally to change the adjoining time blocks. A tooltip shows you the corresponding time.





Displaying additional information in charts

The *Trend graph*, *Day graph* and *Week graph* report elements allow you to display additional information for every entry.

- Move your mouse across the entry (blood glucose, insulin or carbohydrate amount, connecting line) you would like to have more information about.

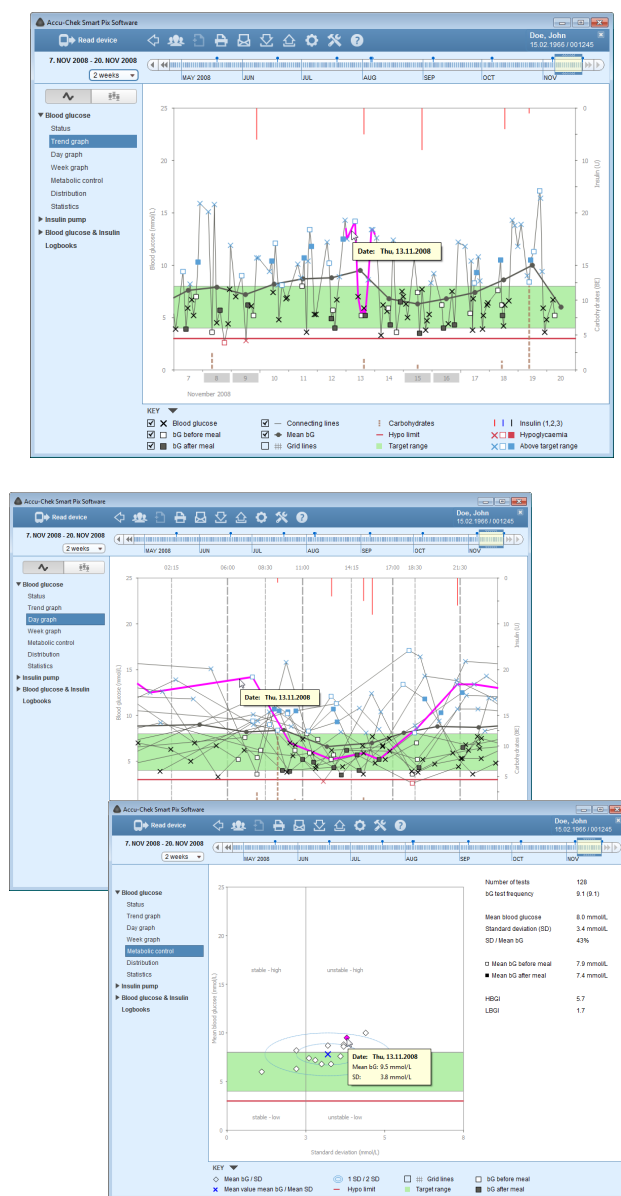
Within a few seconds, a tooltip will be displayed showing you the details for this entry:

- For blood glucose: date, time, test result, flags (for example, before/after meal, if applicable), comment.
- For insulin: date, time, type and amount of insulin, comment.
- For carbohydrates: date, time, amount, comment.

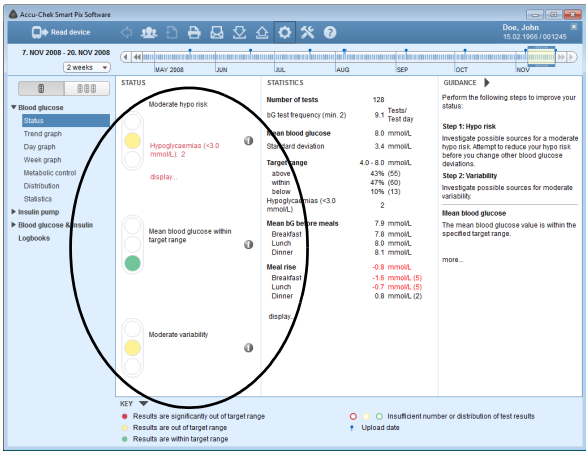
Selecting chart contents

The *Trend graph*, *Day graph*, *Week graph* and *Metabolic control* report elements allow you to select certain elements (thus highlighting them) for examination in this report or other reports.

- Simply clicking a connecting line or an entered test point marks the day's tests belonging together. If you keep the CTRL key pressed while clicking, you can mark additional days.
- Once you have marked a chart element, you can switch to another report; the highlighting will be visible in this report too.
- Double-clicking the highlighted element will directly open the tabular record; the respective day will be highlighted.
- To undo the highlighting, simply click an empty area in the chart.








5.3 Blood glucose: contents of the report




Status

In the *Status* report element, you find two display options:

- *Status* : A joint analysis of all values in the selected time range.
- *Long-term view*   : Divided into time intervals with separate analysis, displayed next to each other.

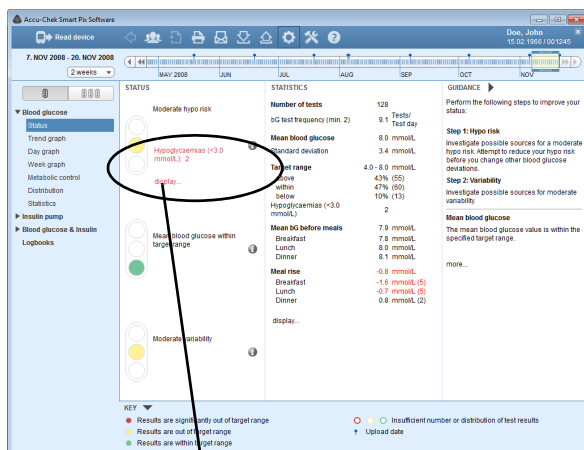
Status : The *Status* report element contains a summarised assessment of the read data in relation to the target range and the limits specified in the configuration. This report element helps to quickly gain an overview and does not contain any detailed information about individual results.

 The *Status* report element displays an assessment of the data only if the number of tests and the distribution of tests throughout the day is sufficient (see page 47).

Status pane

The *Status* pane on the left will give you a basic assessment of the read test results while considering the following three parameters:

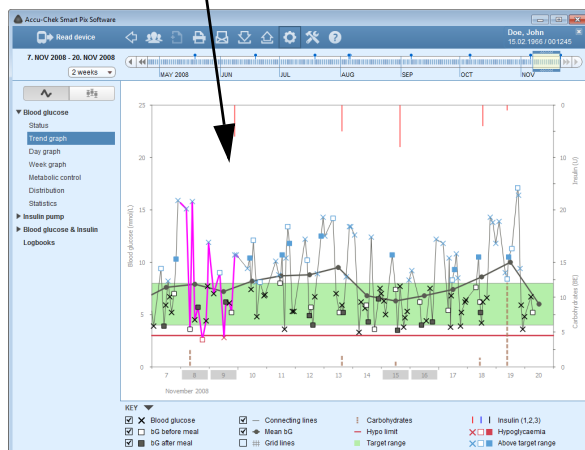
- Hypo risk
- Mean blood glucose
- Variability

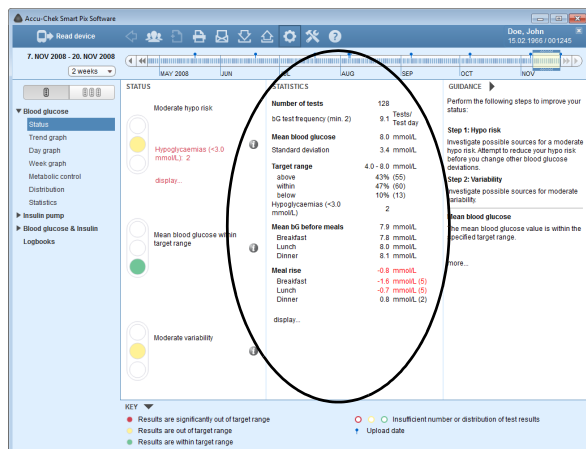


For these three parameters, you will find the corresponding result specification, the set target value or target range, and also a symbolic traffic light indicating “Keep it up!”, “Watch out!” or “Stop!”.

- If the values fall inside the specified range, this is indicated by the colour **green**.
- If the values fall marginally outside the specified range, this is indicated by the colour **yellow**.
- If the values fall significantly outside the specified range, this is indicated by the colour **red**.

If information about hypoglycaemic situations is displayed in the *Hypo risk* area, you can click *display...* in this note to go directly to the report element *Trend graph*. The days on which these hypoglycaemic situations occurred are already marked and can easily be examined in more detail.





Statistics pane

Here you will find the following statistical analyses of the available data:

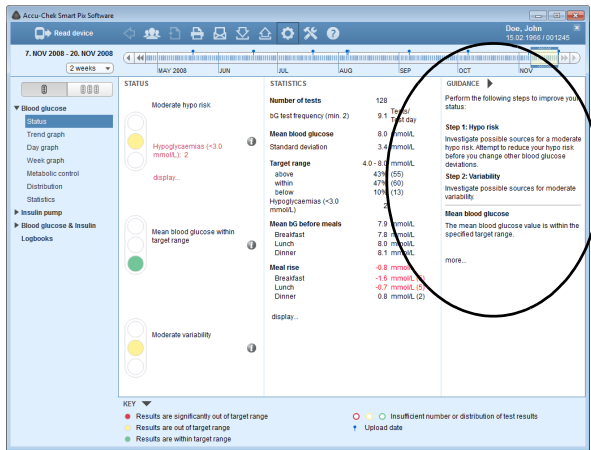
- Number of analysed test results
- Frequency of blood glucose tests (tests per day)
- Mean blood glucose
- Standard deviation
- Target range
- Number of values above the target range
- Number of values within the target range
- Number of values below the target range
- Number of hypoglycaemias
- Mean blood glucose before meals (if available)
- Meal rise (if available)

As with all further reports, the results and statistics always refer to the set time range. If you click on *display...* in this pane, you go directly to mealtime-related statistics.

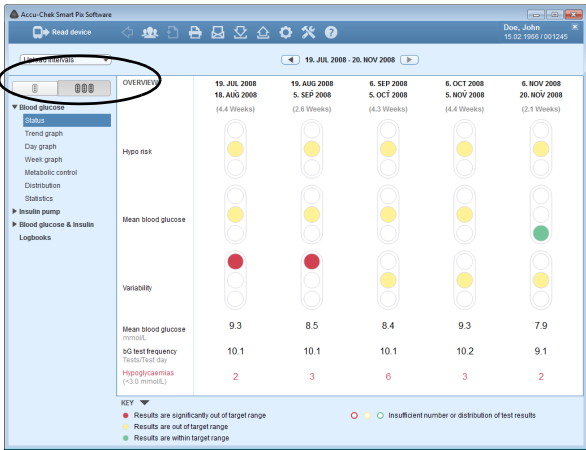
Guidance pane

This pane gives you guidance regarding the results in the *Status* pane. These recommendations may be helpful for optimising the results.

Recommendations are displayed in a short version. Click *more...* to display the complete text of the recommendation.






Long-term view 📅📅📅 The *Long-term view* summarises values in time intervals and presents these intervals next to each other for comparison. This allows, for example, fundamental changes between visits to the doctor (*Upload intervals*) to be displayed at a glance.



Trend graph

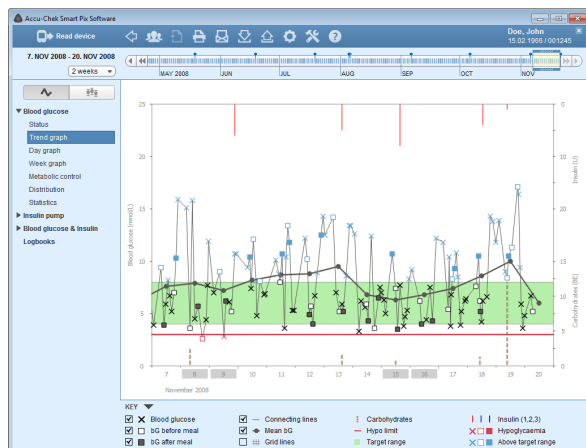
In the *Trend graph* report element, you find two display options:

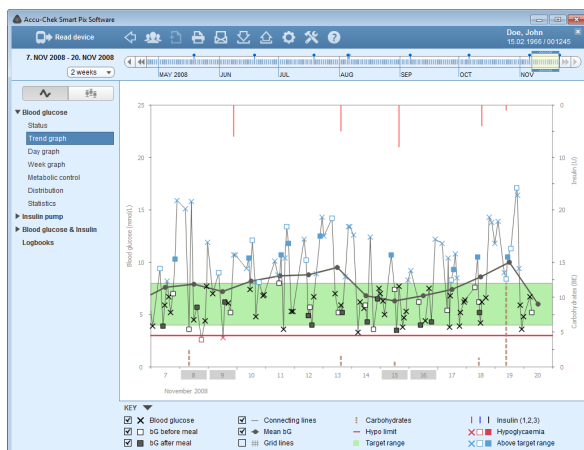
- *Detailed view* : Displays all individual values in the selected time range.
- *Trend view* : Displays the daily mean values next to each other.

Detailed view : This report element shows the trend for several test results over the selected time range. The values that can be displayed in this report element are:

- Blood glucose values
- Insulin amounts (bolus insulin only)
- Carbohydrate amounts

You will find the days, months and years along the horizontal (x) axis and the blood glucose values along the vertical (y) axis. For your guidance, the blood glucose values (represented by various icons) are connected by a line, provided the corresponding tests are no more than 10 hours apart. The various icons are explained briefly in the key; for more details, see page 80.



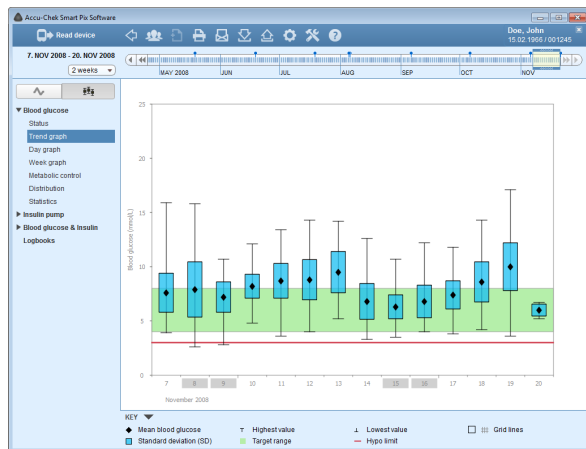



For further guidance, you can see the set target range in the background of the chart (in the form of a green bar) and the hypo limit (in the form of a red line). Days that are non-work days (the default is set to weekends) are additionally marked with a grey bar on the horizontal axis.

In addition to the thin line connecting the various blood glucose values, you will also see a (thicker) grey curve: the day-to-day trend of the mean blood glucose value.

Here you will also find a display of insulin amounts (if stored in the meter or entered in the record). Each insulin amount is plotted top down in the chart. You can see the associated amounts at the top of the right-hand y-axis.

At the bottom of the chart, you will see carbohydrate amounts (if stored in the meter or entered in the record). To facilitate evaluation of the amounts, the bars are represented by small separate blocks. Each complete block represents a carbohydrate amount of 10 g, smaller blocks represent a certain fraction of these amounts (25, 50 or 75 %). At the bottom of the right-hand y-axis, you will find the scale for carbohydrate amounts.





Trend view : Here you will find the mean value for each individual day from the selected time range displayed as a single dot (black diamond) for the respective date. Standard deviation and highest and lowest values are plotted according to the icons described on page 82.

If you position the mouse cursor on a value bar, a tooltip will be displayed shortly after, showing you the corresponding figures. These figures are:

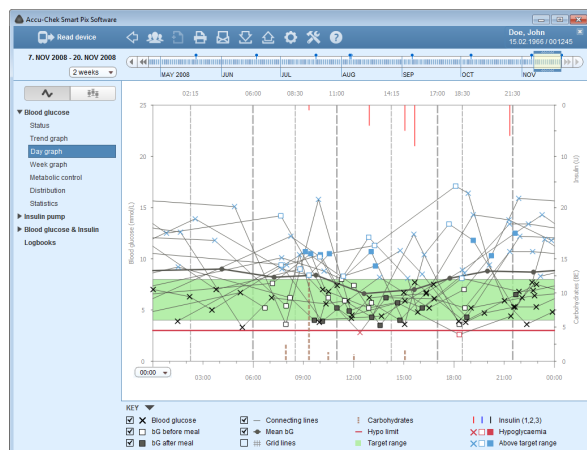
- Number of analysed test results
- Highest, mean and lowest value of the analysed test results
- Standard deviation or variance of the analysed test results


Day graph

In the *Day graph* report element, you find two display options:

- *Detailed view*  : Displays all individual values in the selected time range.
- *Trend view*  : Displays the mean values from 8 time blocks, displayed next to each other.

This report element is used to facilitate recognition of patterns recurring on a daily basis. For this purpose, all the data is positioned in a 24-hour grid. As a result, all the tests performed at a specific time of day are shown at the same position on the time axis. If the time blocks are defined in the meter, the information will be analysed when the time axis is set out. If they are not, the time block settings set during configuration will be used.

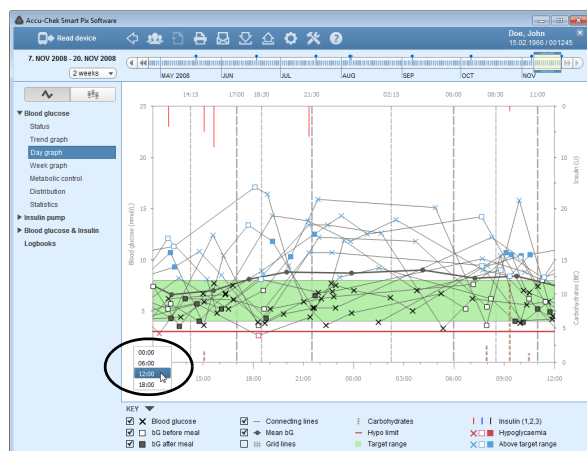


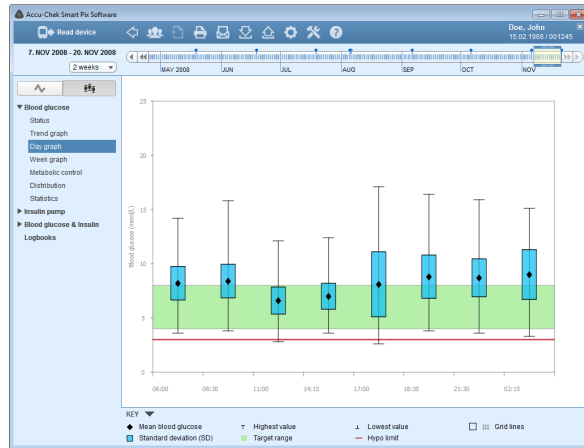
Detailed view : All the blood glucose values are plotted at the relevant time of day according to the time when the test was performed. For your guidance, the blood glucose values (represented by various icons) are connected by a line, provided the corresponding tests are no more than 10 hours apart. A (thicker) grey curve represents the trend of the mean value for every time block. Boundaries between time blocks are represented by vertical grey lines. Beginning and end of the time blocks are indicated above the chart.


Here you will also find a display of insulin amounts (if stored in the meter or entered in the record). Each insulin dose is plotted top down in the chart and you can see the associated amounts at the top of the right-hand y-axis.

At the bottom of the chart, you will see carbohydrate amounts (if stored in the meter or entered in the record). At the bottom of the right-hand y-axis, you will find the scale for the carbohydrate amounts.

You can shift the time axis, which normally runs from 0:00 to 0:00 (midnight), in 6-hour steps. This facilitates examination of the results obtained, e.g. at night.





Trend view : All the blood glucose values are assigned to one of the eight time blocks according to the time when the test was performed. This creates eight areas displaying the mean blood glucose value (black diamond), standard deviation (blue bar) as well as the lowest and highest value.

If you position the mouse cursor on a value bar, a tooltip will be displayed shortly after, showing you the corresponding figures. These figures are:

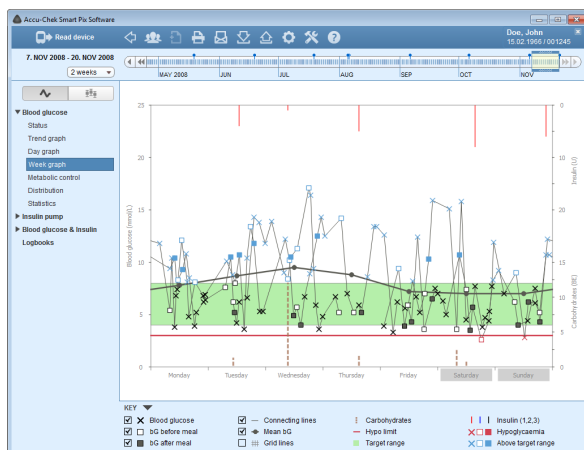
- Number of analysed test results
- Highest, mean and lowest value of the analysed test results
- Standard deviation or variance of the analysed test results


Week graph

In the *Week graph* report element, you find two display options:

- *Detailed view* : Displays all individual values in the selected time range.
- *Trend view* : Displays the mean values from the 7 days of the week next to each other.

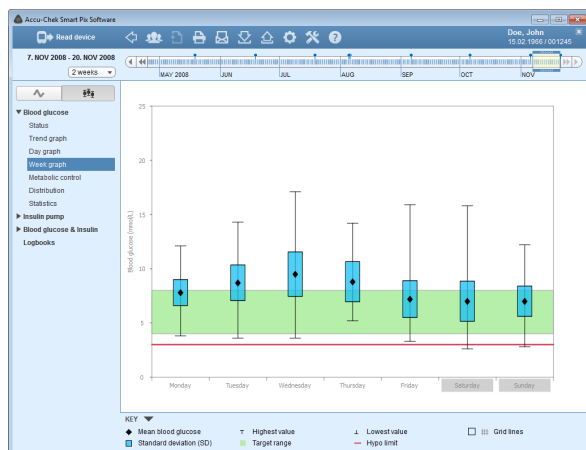
This report element is also used to facilitate recognition of recurring patterns, but here the reference point is the day of the week. It allows you to recognise changes in your metabolism which occur repeatedly on specific days of the week (e.g., exercise days).




Detailed view : All the blood glucose values are plotted on the chart according to the time when the test was performed and the respective day of the week. Results which are no more than 10 hours apart are connected by lines in chronological order for a better overview. The connecting lines are also drawn beyond individual weeks (if applicable). A (thicker) grey curve represents the trend of the mean value on the different days of the week.

Here you will also find a display of insulin amounts (if stored in the meter or entered in the record). Each insulin dose is plotted top down in the chart and you can see the associated amounts at the top of the right-hand y-axis.

At the bottom of the chart, you will see carbohydrate amounts (if stored in the meter or entered in the record). At the bottom of the right-hand y-axis, you will find the scale for the carbohydrate amounts.

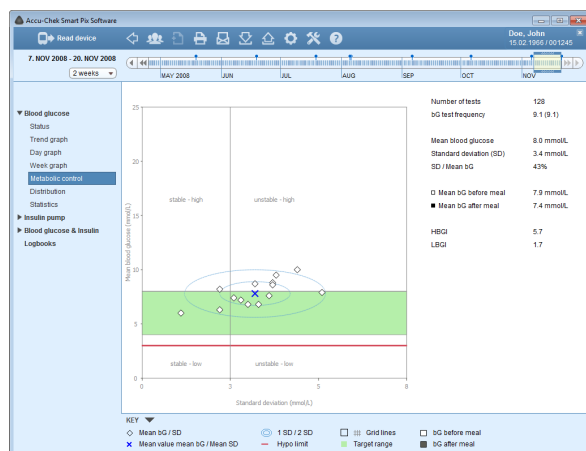


Trend view  : All the blood glucose values are assigned by date to one of the seven days of the week. Accordingly, you will see seven blocks indicating the mean blood glucose value (black diamond), standard deviation (blue bar) and lowest or highest value of the respective day of the week.

If you position the mouse cursor on a value bar, a tooltip will be displayed shortly after, showing you the corresponding figures. These figures are:

- Number of analysed test results
- Highest, mean and lowest value of the analysed test results
- Standard deviation or variance of the analysed test results

Metabolic control



The mean blood glucose value and the standard deviation (SD/variance of the values) are calculated for each day of the analysed time range. These two results together provide the coordinates for making an entry (per day) in the chart. The mean blood glucose value is plotted along the y-axis while the standard deviation is plotted along the x-axis.

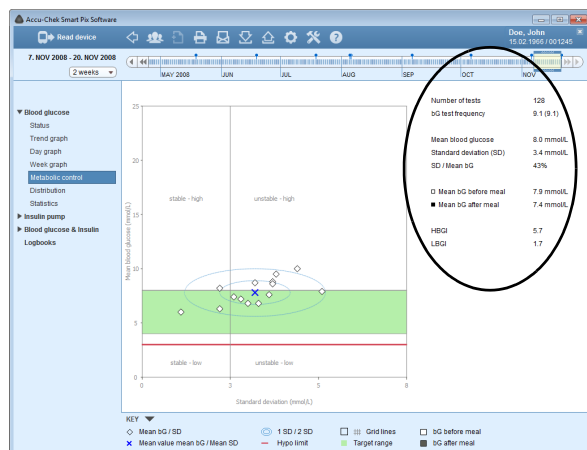
This type of presentation produces a “scatter plot”. To facilitate faster assessment of your metabolic state from this overview, the chart is split up into four “quadrants”. Each of these quadrants represents a certain metabolic constitution and is described by the attributes “stable/unstable” (referring to standard deviation) and “low/high” (referring to mean blood glucose values). This gives each quadrant two attributes.

Example:

Mean blood glucose values below 8.3 mmol/L (or below 150 mg/dL) with a standard deviation of less than 2.8 mmol/L (or less than 50 mg/dL) are plotted in the bottom left quadrant. Its attributes are “stable-low”. If both values are above these limits, the entry is made in the top right-hand quadrant (“unstable-high”).

Two ellipses are plotted, centred around the mean value of all represented levels (marked by a blue cross). They illustrate the variance of the daily mean values and the daily blood glucose variability over the selected time range as a simple (1 SD) and two-fold (2 SD) standard deviation of the displayed values.

Good metabolic control can be recognised by the fact that there are as many dots as possible in the “stable-low” quadrant (bottom left), but there should not be any cases of hypoglycaemia in the respective time range.



In addition to the graphical display, you will find statistical information about the values included in the analysis.

These are:

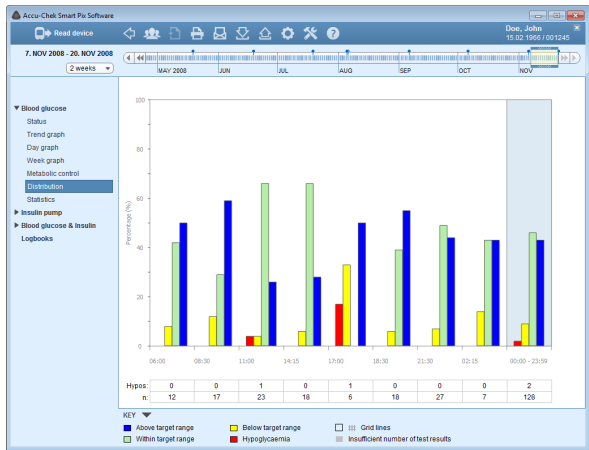
- **Number of tests:** Number of analysed blood glucose results in the selected time range.
- **bG test frequency:** Average number of blood glucose tests per day for **each day** of the analysed time range. In addition, the value of **only those days** when a test was performed at least once, is also displayed (in brackets).
- **Mean blood glucose:** Mean value of analysed test results.
- **Standard deviation (SD):** Standard deviation or variance of the analysed test results.
- **SD / Mean bG:** This value indicates the variability of the blood glucose value with reference to the mean value. If the mean value is in the desired range, a ratio of less than 50 % (or better: 30 %) indicates a desirably low variability and thus good metabolic control.
- **Mean bG before/after meal:** Mean value from all test results which have been obtained before or after meals and have been marked in the meter accordingly. Values are displayed only when the appropriate information is stored in the meter.
- **HBG1 / LBG1:** These figures represent the frequency and the resulting risk of blood glucose values being too high or too low (see bibliography on page 148). Figures should be as low as possible.

Distribution

For each time block, you will find a bar chart here representing the percentages of values above, within and below the target range. The eight consecutive time blocks are arranged next to each other. If there are less than 5 test results for a time block, the bar is displayed in grey. The right part of the bar chart (blue background) shows a summary of the corresponding information for the whole day.


Below the bar chart, you can see the number of hypoglycaemic situations (*Hypos*) that occurred for each time block along with the number (*n*) of test results obtained and analysed for the respective time block.


If the time blocks are defined in the meter, the information from the meter will be used. If they are not, the settings in the Accu-Chek Smart Pix software configuration are used.



Statistics

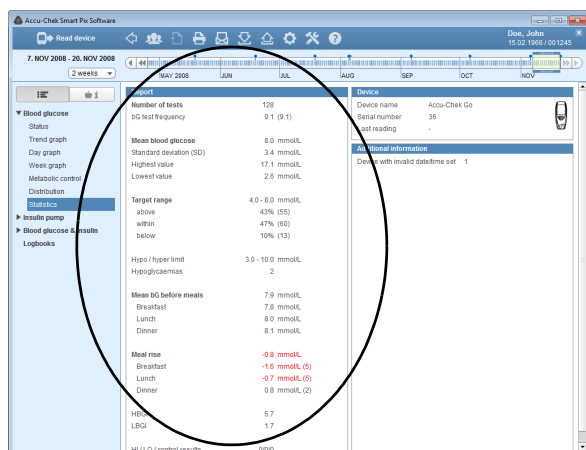
In the *Statistics* report element, you find two display options:

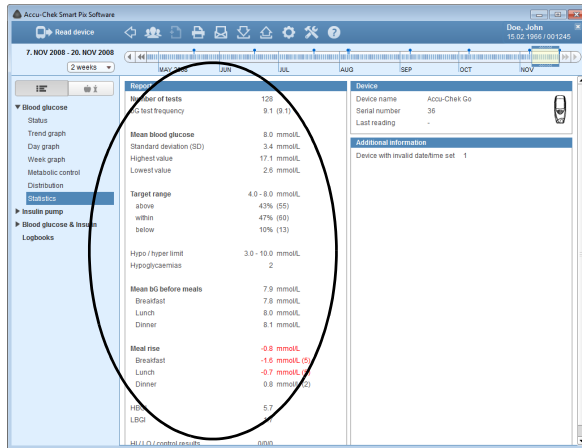
- **General statistics**  : Displays all statistical information in the selected time range.
- **Mealtime-related statistics**  : Analyses all information in relation to mealtimes.

General statistics  : Contains general and statistical information about the values processed for the selected time range. Here you will find the following information:

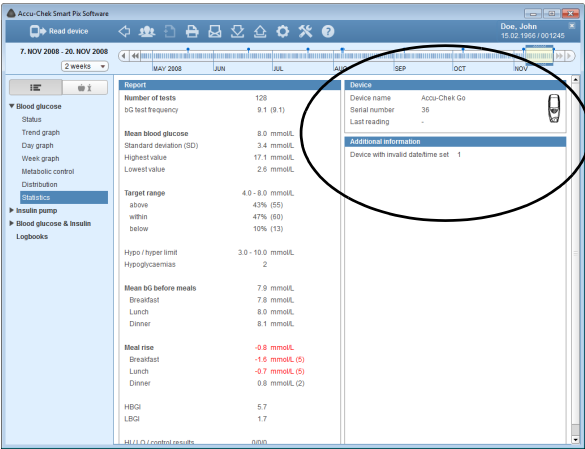
Report

- **Number of tests:** Number of analysed blood glucose results in the selected time range.
- **bG test frequency:** Average number of blood glucose tests per day for **each day** of the analysed time range. In addition, the value of **only those days** when a test was performed at least once, is also displayed (in brackets).
- **Mean blood glucose:** The average of all test results obtained.
- **Standard deviation (SD):** Standard deviation or variance of the analysed test results.
- **Highest value/Lowest value:** Highest and lowest blood glucose value obtained in the selected time range.





- **Target range:** The target range used for the report.
- **Above/Within/Below target range:** Percentage of test results above, within or below the target range (in percent).
- **Hypo/hyper limit:** Blood glucose values below the hypo limit are marked as a hypoglycaemia; results above the hyper limit are marked as a hyperglycaemia.
- **Hypoglycaemias:** Number of hypoglycaemias.
- **Mean bG before meals:** Mean blood glucose value before meals (if available).
- **Meal rise:** The mean difference in blood glucose values before and after a meal.
- **HBGI / LBGI:** These figures represent the frequency and the resulting risk of blood glucose values being too high or too low (see bibliography on page 148). Figures should be as low as possible.
- **HI/LO/control results:** Number of test results above (HI) and below (LO) the measuring range and number of tests with control solution.



Device

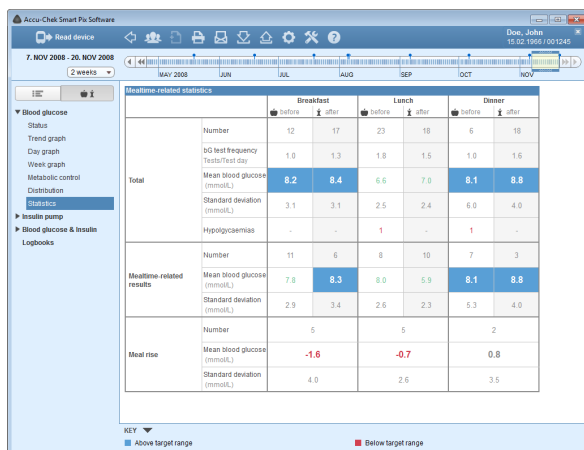
- **Device name**
- **Serial number:** Serial number of the meter.
- **Last reading:** Date and time of the last reading, including the time settings difference between device and computer (if this exceeds 5 minutes).
- **Meter (icon):** Displays the meter used.

If you used several meters in the selected time range, this information is given for each meter.

Additional information

This information is only displayed if required:

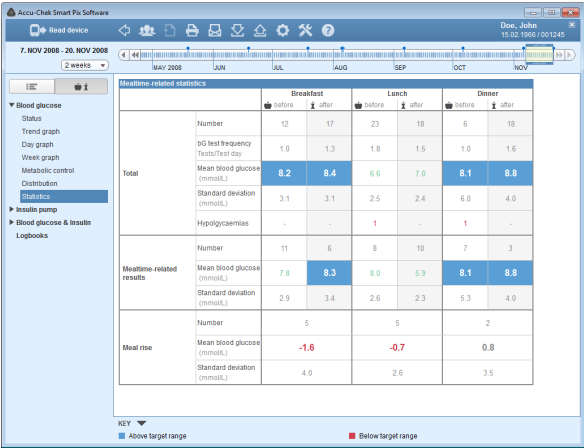
- **Results without date/time:** Number of test results which were stored without date and time information.
- **Results with warnings:** Number of test results which were stored with temperature warning, expiry note, etc.



Mealtimes-related statistics 🍏 🍷 : Contain all relevant statistical information on the processed values, displayed in relation to the three mealtimes. Here you will find the following information:

Total pane

- **Number:** Number of analysed blood glucose results before/after meal.
- **bG test frequency:** Average number of before/after meal blood glucose tests per day for **each day** of the analysed time range.
- **Mean blood glucose:** The average of all before/after meal test results obtained.
- **Standard deviation:** Standard deviation or variance of the analysed test results.
- **Hypoglycaemias:** Number of hypoglycaemias.



Mealtime-related results pane

- **Number:** Number of analysed blood glucose results where the specific mealtime-related information before/after meal was saved together with the test result.
- **Mean blood glucose:** The average of all test results obtained, which were saved with specific mealtime-related information.
- **Standard deviation:** Standard deviation or variance of the analysed test results with specific mealtime-related information.

Meal rise pane

- **Number:** Number of analysed pair values before/after meal, whereby the after meal result must lie within a time frame of 1 to 3 hours after the test performed before the meal. Individual values whereby only one test was performed before **or** after a meal are not included.
- **Mean blood glucose:** The average change in the blood glucose value during the meal in the analysed before/after meal pair values.
- **Standard deviation:** Standard deviation or variance of the analysed test results from these value pairs.

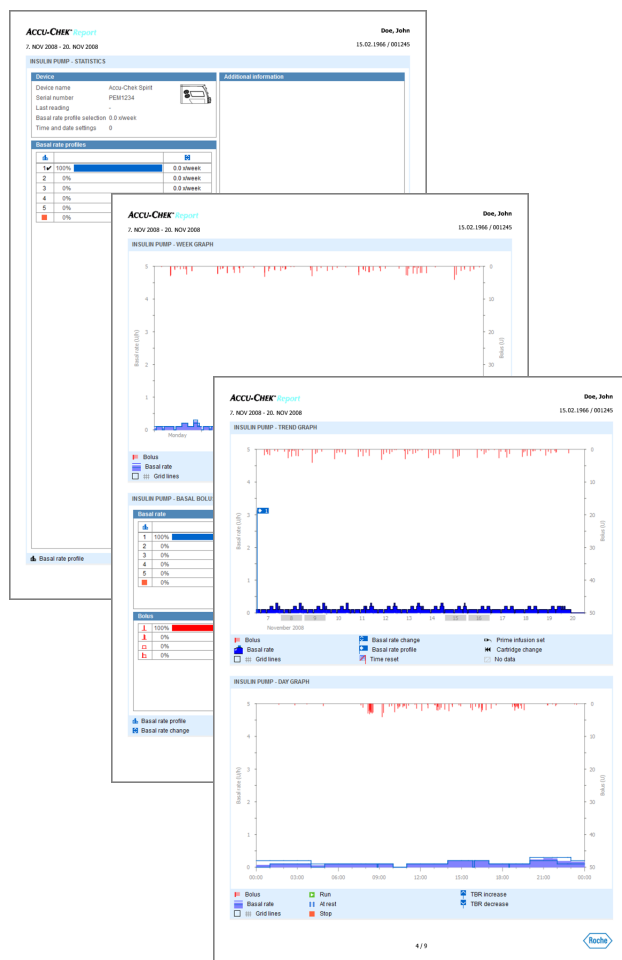
5.4 Insulin pump: general information about the reports

Types of reports

The Accu-Chek Smart Pix software creates single-page or multi-page reports for defined time ranges (e.g., the last 2 or 4 weeks). The time range can be selected as needed (as with blood glucose). A(n) (insulin pump) report can contain any of the following report elements:

- [1] Trend graph
- [2] Day graph
- [3] Week graph
- [4] Basal rates
- [5] Basal bolus
- [6] Statistics
- [7] Lists

The illustration on the left shows examples of the printed version of the report.



Graphical elements of the reports

In all reports, you will find keys explaining the meaning of individual elements. In the following, you will find detailed explanations of the various elements.

Icons On the insulin pump reports, you will find the following icons:



Basal rate (represented in the *Trend graph*)



Average total basal insulin per day



Basal rate profile



Basal rate change



Basal rate change (with name; *Trend graph*)



Temporary increase in basal rate



Temporary decrease in basal rate


















Active basal rate profile (*Statistics*)



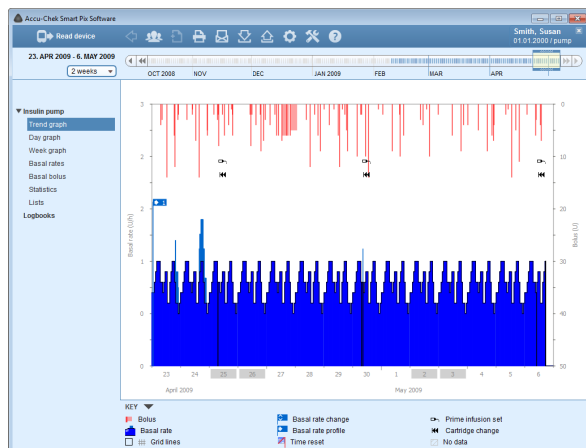
Switch to a named basal rate profile (e.g., "1")



Switch from a named basal rate profile (e.g., "1") to another named basal rate profile (e.g., "2")

-  Total of basal insulin + bolus insulin per day
-  Standard bolus, represented in charts  top down
-  Quick bolus, represented in charts  top down
-  Extended bolus, represented in charts  top down; the width of the bar shows the duration of the bolus delivery
-  Multiwave bolus, represented in charts  top down; the width of the bar shows the duration of the extended portion
-  Bolus advice, always appears in combination with one of the four bolus type icons described above. These boluses have been calculated with a bolus calculator (from a corresponding meter). Bolus advice is only displayed if the bolus was delivered unchanged.
-  Prime infusion set
-  Return of piston rod (cartridge change)
-  Insulin pump run
-  Insulin pump stop
-  Insulin pump pause

5.5 Insulin pump: contents of the report



Trend graph

This report element shows the trend in insulin dosage over the selected time range. You will find the days and months along the horizontal (x) axis and the respective amounts of insulin delivered along the vertical (y) axis.

The basal rate chart is at the bottom, and the individual boluses are shown at the top. Therefore, you will find the basal rate scale along the left-hand y-axis (bottom up) and the scale for the boluses along the right-hand y-axis (top down).

Various events are also displayed in addition to the insulin dose. These are:

- Pump events
- Switch of the basal rate profile
- Changes in basal rate

The various icons are explained briefly in the key; for more details, see page 112.

As in the blood glucose report elements, the non-work days (the default is set to weekends) are additionally marked with a grey bar on the horizontal axis.

Day graph

This report element is used (as with blood glucose) to facilitate recognition or illustration of patterns recurring on a daily basis. For this purpose, all data is placed on a 24-hour grid. This allows you to easily recognise frequent manual basal rate changes at certain times, e.g., to facilitate general adjustment of the basal rate.

The mean basal rate is displayed as an area coloured in blue; the maximum and minimum basal rate at the respective time of day is shown as a thin blue line.

In this chart, you will not only find basal rates and boluses but also information about the start and stop of the insulin pump and about a temporary decrease or increase in the basal rate.

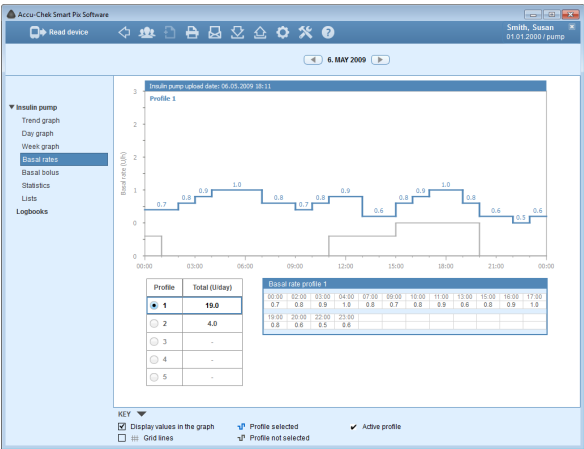


Week graph

This report element is also used (as with the Day graph) to facilitate recognition of recurring patterns (e.g., repeated basal rate changes), but in this case the reference point is the day of the week.

In this chart, you will not only find basal rates and boluses but also information about basal rate changes and the selection of basal rate profiles.





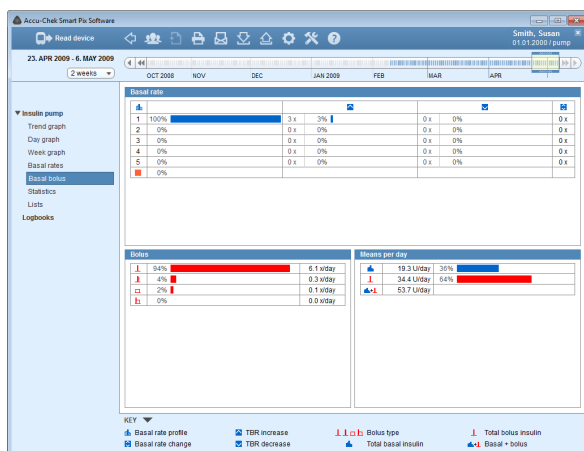
Basal rates

This report element displays the basal rates set in the insulin pump at the time of data transfer in order to facilitate comparison. The currently selected basal rate profile can be identified by the thicker dark blue line; other profiles are displayed in grey.

A tabular representation of the selected basal rate is displayed below the chart. The table contains all points in time where a change to the insulin amount was specified as well as the specified insulin amount per hour as a numeric value.

To the left below the chart, you find a selection of the available basal rate profiles. Click on a profile to activate it in the chart and table. The chart belonging to this profile is then displayed in blue, the table displays associated numeric values.

i This report element is only displayed if data was read from the pump in the selected time range. The upload date (at which the profiles were active) is specified in the heading (e.g., "Insulin pump upload date: 31.01.2014"). If no data was read from the pump in the selected time range, this report element will **not** be displayed.



Basal bolus

The tabular *Basal bolus* report element shows the (absolute and relative) frequency with which, e.g., a certain basal rate profile or bolus type was used.

Basal rate

Here you can see, for example, how often the basal rate of a certain basal rate profile was temporarily increased or decreased and how long (as a percentage) it remained in this changed state. If there are frequent changes and/or if manually changed basal rates are used for a long time, you may need to make general adjustments.

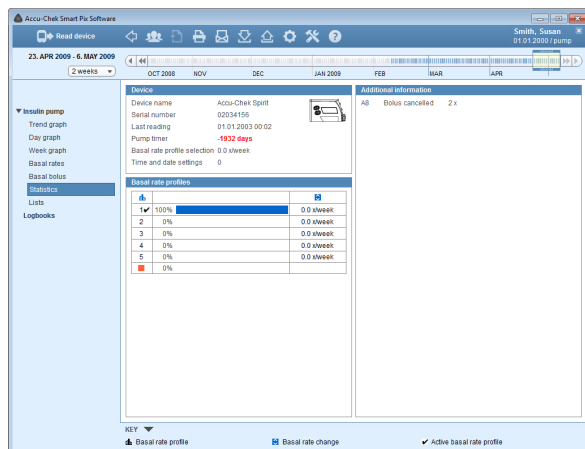
The number of times the basal rate has been reprogrammed is displayed in the last column. For the sake of completeness, the *Basal rate* table also includes the times when the insulin pump was in STOP mode.

Bolus

This table shows both the (relative) frequency of use with regard to certain types of bolus and their average number per day. The proportion of boluses which were delivered using bolus advice is represented in a different colour (orange).

Means per day

Here you will find the average values for basal and bolus insulin as well as their percentage of the total amount.



Statistics

The *Statistics* report element contains general and statistical information about the imported values. Here you will find the following information:

Time range

- Time range considered in the report, with start and end date.

Device

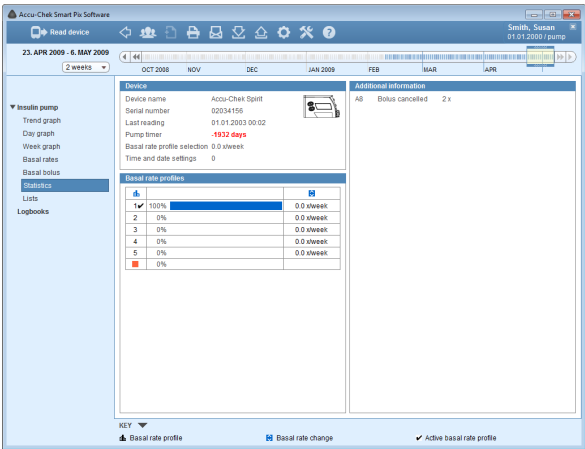
- Insulin pump** (icon): Displays the insulin pump used.
- Serial number:** Serial number of the insulin pump.
- Last reading:** Date and time of the last reading, including, if applicable, the time settings difference between device and computer (if this exceeds 5 minutes).
- Pump timer:** Remaining time of use for this insulin pump (Accu-Chek Spirit Combo insulin pump: This setting is country-specific and may not be active on your pump).
- Basal rate profile selection:** How frequently (per week) was the insulin pump switched to a different basal rate profile.
- Time and date settings:** How often the time and date information was updated (e.g., due to daylight saving time, transcontinental flights, etc.).

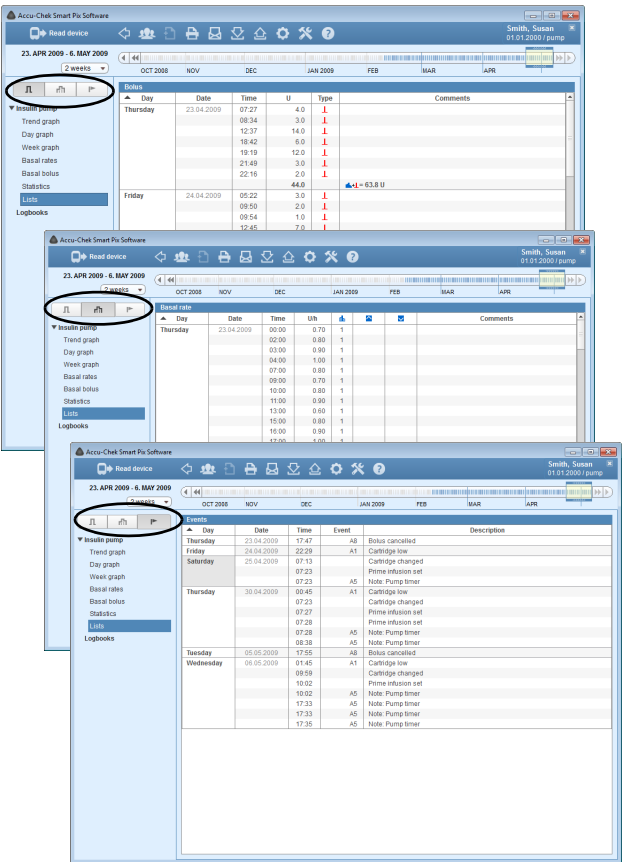
Basal rate profiles

The table shows the percentage of certain basal rate profiles (plus times when the insulin pump was in STOP mode). The basal rate profile active at the time of data transfer is marked with a check mark ✓.

Additional information




This information contains error messages and warnings (and their number) which were stored in the insulin pump.






Lists

In the *Lists* report element, you find three display options:

- **Bolus**  : Tabular representation of all bolus deliveries.
- **Basal rate**  : Tabular representation of the basal rate.
- **Events**  : Tabular representation of the events.

The three groups of information, *Bolus*, *Basal rate* and *Events*, are also output as lists (on three separate tabs). You can specify whether these tables are sorted in ascending or descending order by clicking the table heading (e.g., *Day*, *Date*). In these lists, you will find detailed documentation of each individual event stored in the insulin pump, including date and time. Boluses which were delivered using bolus advice are marked with the corresponding .

5.6 Blood glucose and insulin pump: combined report

If you analyse data from a blood glucose meter together with data from an insulin pump, combined report elements of the simultaneously obtained information can provide useful indications for treatment. In addition to the individual blood glucose and insulin pump reports, a combined report is therefore available.



If you want to analyse the data of several devices together, the devices must be **synchronised**, i.e. all devices involved should have the same date and time settings. Otherwise the sequence of stored events may be interpreted incorrectly.



Types of reports

The Accu-Chek Smart Pix software creates single-page or multi-page reports for defined periods (e.g., the last 2 or 4 weeks). The time range of the combined report is the time range set for blood glucose or insulin pump reports. The blood glucose values are always displayed in the *Detailed view* style, irrespective of the selected setting for the individual blood glucose report. A combined report can contain any of the following report elements:

- [1] Trend graph
- [2] Day graph
- [3] Week graph
- [4] Statistics

The illustration on the left shows examples of the printed version of the report.

Graphical elements of the reports

In all reports, you will find keys explaining the meaning of individual elements. For detailed explanations of the various elements, see the preceding descriptions of the blood glucose and insulin pump reports on page 80 and page 112.

Trend graph

This report element shows you the trend in test results and insulin pump data over the selected time range. You will find the days and months along the horizontal (x) axis and the blood glucose values can be seen on the vertical (y) axis. In addition, delivered bolus insulin amounts are plotted in the chart (top down) and selectively either the basal rate or carbohydrates (bottom up). The associated values can be seen on the right-hand y-axis.

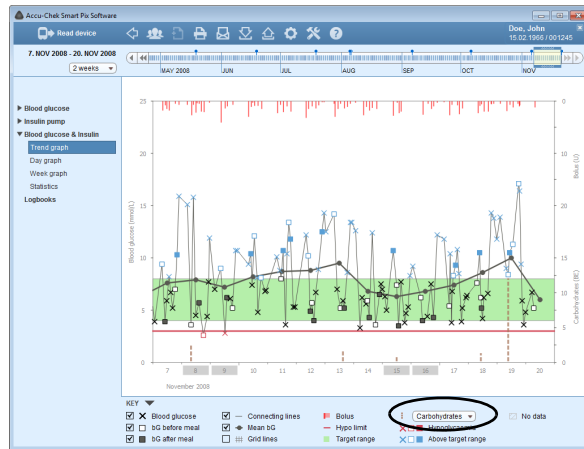
Bottom up (selected in the key):

- blue = basal rate **or**
- brown = carbohydrates

Top down:

- red = bolus

For a better overview, this representation does not display pump events. If required, you can find this information in the individual reports.

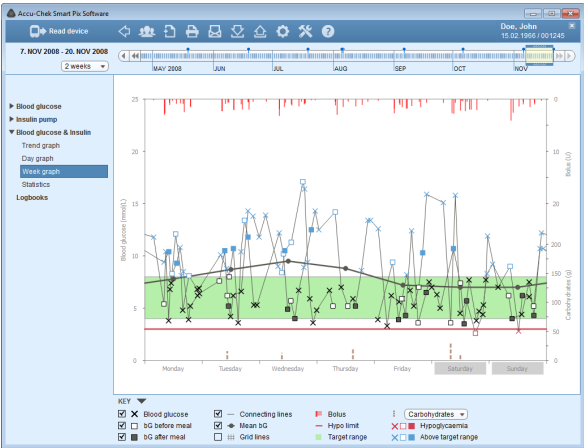




Day graph

As with the individual reports, this view facilitates recognition of patterns recurring on a daily basis. Here, too, all data is placed in a 24-hour-grid, making it easier to see the connection between insulin doses (bolus and basal insulin) and measured blood glucose values in relation to the time of day. All the information is plotted at the relevant time of day according to the time when the test was performed.

The elements and setup options used in the display correspond to those in the *Trend graph*.



Week graph

This report element is also used to facilitate recognition of recurring patterns, but here the reference point is the day of the week. All the information is plotted on the chart according to the time the test was performed and the respective day of the week.

The elements and setup options used in the display correspond to those in the *Trend graph*.

Statistics

The *Statistics* report element contains general and statistical information about the values processed for the selected time range. Here you will find the following information:

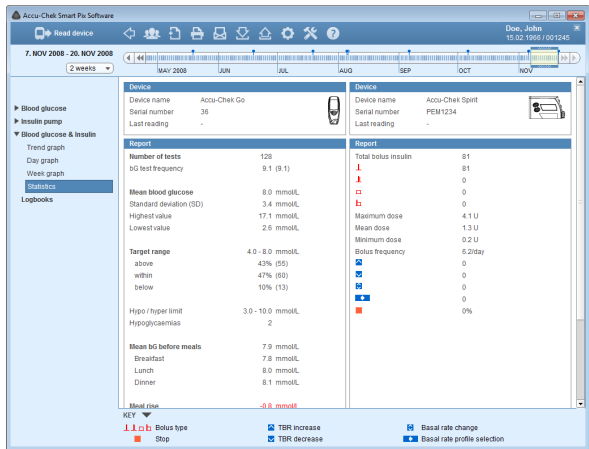
Time range

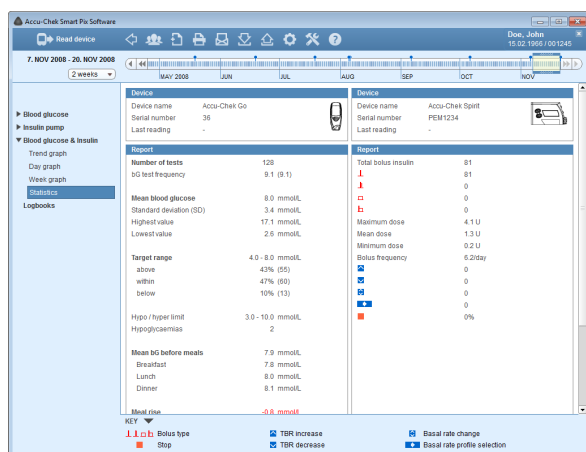
- Time range considered in the report, with start and end date.

Device

- Device name**
- Serial number:** Serial number of the meter/insulin pump.
- Last reading:** Date and time of the last reading, including, if applicable, the time settings difference between device and computer (if this exceeds 5 minutes).
- Device** (icon): Displays the device used in the selected time range.

If you used several meters in the selected time range, this information is given for each meter.





Report

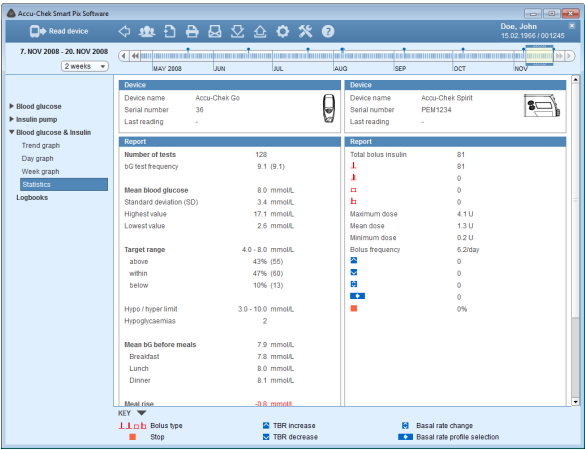
- **Number of tests:** Number of analysed blood glucose results in the selected time range.
- **bG test frequency:** Average number of blood glucose tests per day for **each day** of the analysed time range. In addition, the value of **only those days** when a test was performed at least once, is also displayed (in brackets).
- **Mean blood glucose:** The average of all test results obtained.
- **Standard deviation (SD):** Standard deviation or variance of the analysed test results.
- **Highest value/Lowest value:** Highest and lowest blood glucose value obtained in the selected time range.
- **Target range:** The target range used for the report.
- **Above/Within/Below target range:** Percentage of test results above, within or below the target range (in percent).
- **Hypo/hyper limit:** Blood glucose values below the hypo limit are marked as a hypoglycaemia; results above the hyper limit are marked as a hyperglycaemia.
- **Hypoglycaemias:** Number of hypoglycaemias.

- **Mean bG before meals:** Mean blood glucose value before meals (if available).
- **Meal rise:** The mean difference in blood glucose values before and after a meal.
- **HBGI / LBGI:** These figures represent the frequency and the resulting risk of blood glucose values being too high or too low (see bibliography on page 148). Figures should be as low as possible.
- **HI/LO/control results:** Number of test results above (HI) and below (LO) the measuring range and number of tests with control solution.

Additional information

This information is only displayed if required:

- **Results without date/time:** Number of test results which were stored without date and time information.
- **Results with warnings:** Number of test results which were stored with temperature warning, expiry note, etc.



Report

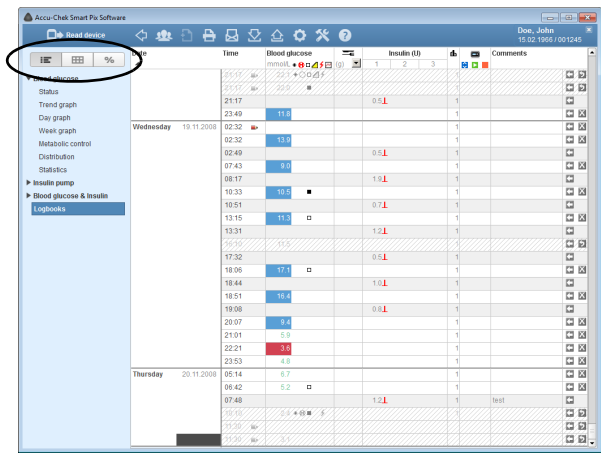
- **Total bolus insulin:** Number of respective bolus deliveries, according to bolus type.
- **Maximum/Mean/Minimum dose:** Highest and lowest single insulin dose delivered in the selected period and the average of all insulin amounts delivered.
- **Bolus frequency:** Average frequency of insulin amount delivery per day (combined without considering the bolus type).
- **Basal rate change:** Number of manual increases and decreases of the basal rate as well as the number of changes to and switches of the basal rate profile.

Additional information




This information is only displayed if required:

- **Results without date/time:** Number of test results which were stored without date and time information.
- **Results with warnings:** Number of test results which were stored with temperature warning, expiry note, etc.

5.7 Logbooks



In the *Logbooks* report element, you find three display options:

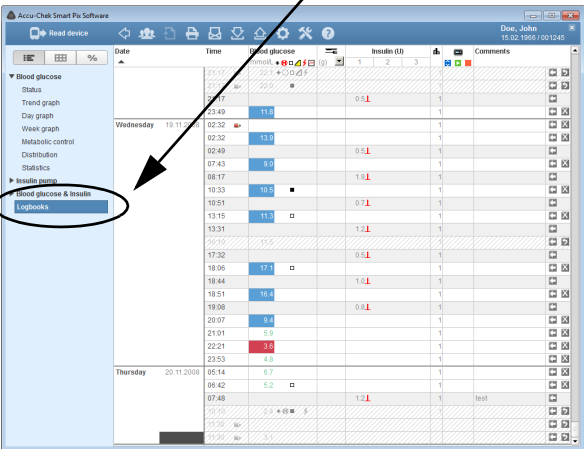
- *Diary*  : Table set up chronologically including all available information.
- *Logbook*  : Chronological table divided into columns according to time blocks and these columns are subdivided into before/after meal columns.
- *Daily statistics*  : Chronological table divided into columns according to blood glucose, carbohydrates and insulin. The associated statistical values (mean value, numbers, etc.) are entered for each day.

Accu-Chek Smart Pix Software - Patient list

Name *	First name	Date of birth	Patient ID	Device name	Serial number	Last reading
Green	James	01.05.2010	High variability	Accu-Chek Aviva Nano	81646603	12.06.2013
Doe	John	15.02.1995	001245	Accu-Chek Go		20.01.01.2013
Doe	John M.G.	01.01.1990	001238	Accu-Chek Spirit	PE981238	21.07.2013
Duck	Donald	25.12.1999	daily pattern	Accu-Chek Aviva Nano	91629556	05.03.2013
Miller	Marc	14.05.1965	structured testing	Accu-Chek Aviva	8887653210	14.01.2013
Settling	Sabina	01.01.2001	settings reports	Accu-Chek Advantage	15212425	16.12.2013
Smith	Annie	10.05.1958	SA19580510	Accu-Chek Compact Plus	91661150	today
Smith	Susan	01.01.2000	pump	Accu-Chek Spirit	02034155	07.03.2013
Sugar	Sam	25.05.2009	expert	Accu-Chek Aviva Expert	91004541	09.04.2013

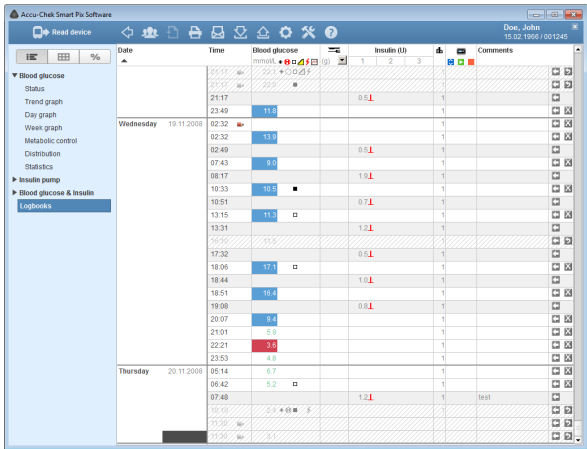
New patient Edit patient Delete patient Search

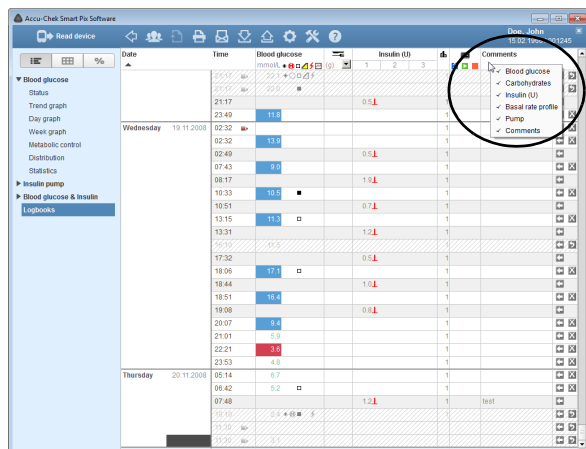
Select Cancel



Contents of the diary

The record displays as a tabular list of sorted blood glucose results, insulin pump data and further information. The table of values (sorted by date and time blocks) is created according to the date and time information of the blood glucose results and pump data. You can specify whether this table is to be sorted in ascending or descending order by clicking the table heading *Date*. This table will always display all existing data, irrespective of the time range settings in the report.





Adjusting the list view

You have the following options for customising the table to suit your personal requirements:

Column hide option

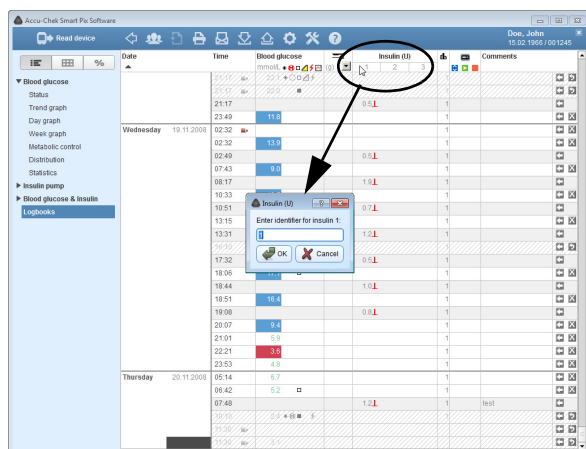
- Right-click the table header to open the context menu.
- All the columns currently selected are ticked. Click the name of the column you wish to hide.
- The check mark in front of the column name is removed and the column is now hidden.

By clicking the name again you can re-display the hidden columns.

Naming insulins

Insulins are listed with the names 1, 2, and 3 (see page 140). Instead of the column headings 1, 2, 3, you can also enter abbreviations (up to 5 characters, e.g., “NPH” or “Mix”) for each type of insulin.

- Click the relevant figure in the column heading.
- Enter the desired name (up to 5 characters).
- Click the **OK** button to save the changes and to close the dialog box.



Editing list entries



“List entry” always refers to a complete table row divided into various information sections (e.g., *Blood glucose* or *Comments*). Each list entry has at least a date and a time.

Date	Time	Blood glucose (mmol/L)	Insulin (U)	Comments
Wednesday 19.11.2008	21:17	11.0	0.5	
	23:49	11.0		
	02:32	12.0		
	02:32	12.0	0.5	
	07:43	9.0		
	08:17		1.0	
	10:33	10.0		
	10:51		0.7	
	13:15	11.0		
	13:31		1.2	
	16:35	11.0		
	17:32		0.6	
	18:06	17.1		
	18:44		1.0	
Thursday 20.11.2008	18:51	10.4		
	18:08		0.6	
	20:07	9.4		
	21:01	5.9		
	22:21	3.6		
	23:53	4.9		
	05:14	6.7		
	06:42	5.2		
	07:48		1.2	test
	10:15	5.0		

You have the following options for editing list entries:

You can:

- add extra information to existing list entries.
- manually add new entries and manually add test results to these entries. Data entered manually can also be changed later.
- flag existing entries as invalid (e.g., incorrect measurements) to exclude them from the reports.



You cannot:

- modify date or time information or test results read from meters.
- mark as deactivated or modify any entries read from insulin pumps.


An open record is automatically saved as soon as you close it.

Adding or deactivating list entries

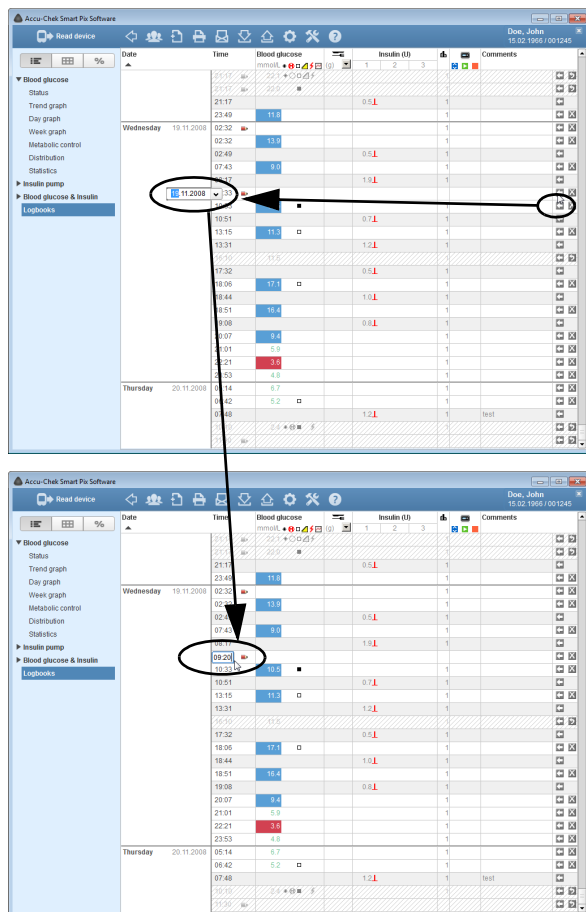
On the right-hand side of every list entry there are one or two small buttons with the following functions:

- With the  button you can add a row **above** the present row.
- With the  button you can delete the highlighted entry (e.g., to exclude incorrect measurements from reports and statistics). This button is only displayed for entries which can be deactivated.

To add a list entry:

- Double-click the  button in the row above which you wish to create an entry.
- Set the desired date and time for the entry using the arrow buttons.

If the date and time setting does not match the current position of the entry, the row will automatically move to the right position.



Accu-Chek Smart Pix Software

Read device

Doc: John
15.02.1956 / 001245

Date	Time	Blood glucose (mmol/L)	Insulin (U)	Insulin (U)	Comments
Wednesday 10/11/2008	01:17	22.1	0.0	1	
	01:17	22.0	0.0	1	
	01:17	21.7	0.0	1	
	02:49	11.0	0.5	1	
	02:52	13.9	0.5	1	
	02:49	9.0	0.5	1	
	07:43	9.0	0.5	1	
	08:17	8.4	1.0	1	
	08:29	8.4	1.0	1	Headache, Cold
	10:33	10.1	0.5	1	
	10:51	11.0	0.7	1	
	13:15	11.0	1.2	1	
	13:31	11.0	1.2	1	
	15:55	11.0	0.5	1	
17:32	17.1	1.0	1		
18:06	17.1	1.0	1		
18:44	16.6	0.8	1		
18:51	16.6	0.8	1		
19:08	9.4	0.8	1		
20:07	9.4	0.8	1		
21:01	5.9	0.8	1		
22:21	3.8	0.8	1		
23:53	4.8	0.8	1		
Thursday 20/11/2008	05:14	8.7	0.8	1	
	06:42	8.0	0.8	1	
	07:48	10.0	0.8	1	
10:51	11.0	0.8	1		
11:55	11.0	0.8	1		

To deactivate a list entry:

- Double-click the button in the row you wish to deactivate. The row will now be displayed shaded in grey.

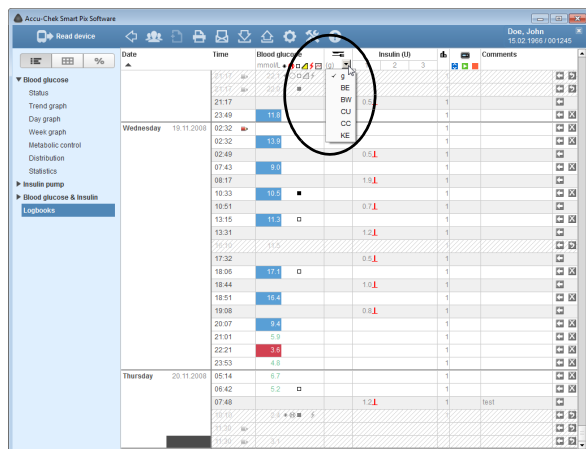
This list entry will no longer be included in reports and statistics.

To reactivate a deactivated list entry:

- Double-click the button in the row you previously deactivated.





You can also use the context menu to add or deactivate entries. To do so, right-click an entry and select the desired option from the menu now displaying.



Data (blood glucose, carbohydrates, insulin) in the list

The records in the various columns are displayed with the following units:

- Blood glucose**
 The unit is the same as the setting on the meter from which the data was read.
- Carbohydrates** 
 You can set the unit yourself. To change the displayed unit, click the  button next to it and select the desired unit. The unit selected here will also be used for the report.
- Insulin**
 The unit is always *U*.

The following limitations apply when entering data:

- In entries read from insulin pumps, you can only enter carbohydrates and comments but no blood glucose or further insulin amounts.
- You cannot change blood glucose data read from devices but mark them with events.
- You can enter blood glucose values only in manually created entries.




Icons used in list entries to provide insulin pump information correspond to the icons described in the insulin pump reports.

Entering and editing blood glucose values

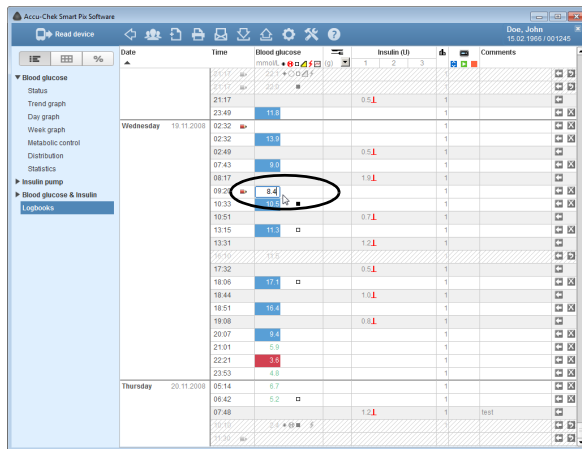
To enter a blood glucose value in a manually created list entry:

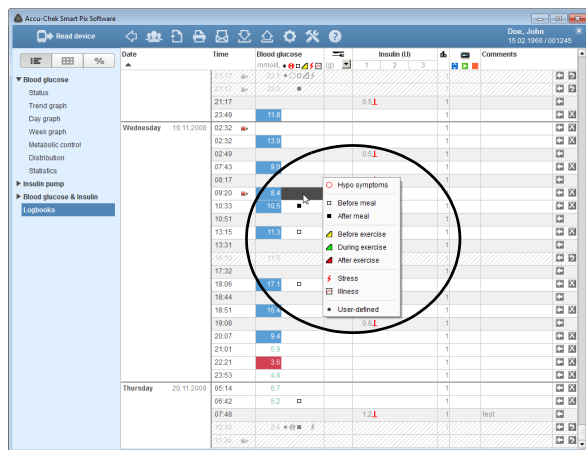
- In the desired entry, click the *Blood glucose* column.
- If the input field is highlighted, you can enter the value.
- Complete your data input by pressing the Enter key.

As soon as you have completed your data input, the entry is marked as a manual list entry with the  icon.

To change or delete a blood glucose value which has been entered manually:

- Double-click the value you wish to change or delete. The cursor now flashes in that input field.
- Delete or change the value and then press the Enter key.





To mark a blood glucose value with an event:

- In the desired entry, click the section to the right of the blood glucose value.
- From the menu now displayed select the desired event by clicking it once.

The event selected is now displayed as an icon to the right of the blood glucose value. You can mark a blood glucose value with up to six events.


To delete an event icon:

- In the desired entry, click the section to the right of the blood glucose value.
- The icons of events already assigned are displayed with a highlighted border in the menu now displayed. Click the highlighted icon once to delete it.

This icon is now removed from this entry.

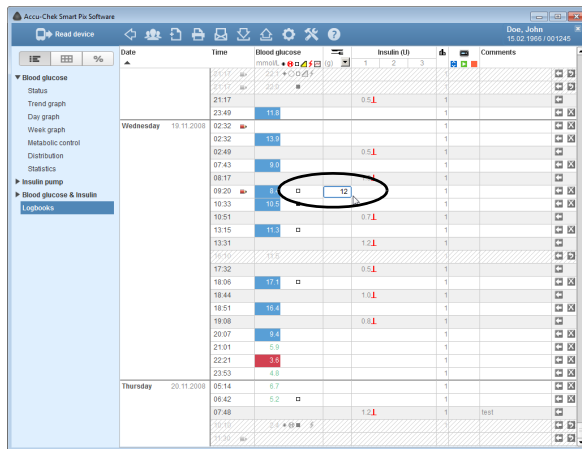
Entering and editing carbohydrates

To enter a carbohydrate amount in a list entry created manually or read from a meter or insulin pump:

- In the desired entry, click the *Carbohydrates*  column.
- If the input field is highlighted, you can enter the value.
- Complete your data input by pressing the Enter key.

To change or delete a carbohydrate amount which has been entered manually:

- Double-click the value you wish to change or delete. The cursor now flashes in that input field.
- Delete or change the value and then press the Enter key.



Entering and editing insulin doses

Insulin types 1, 2 and 3 are assigned as follows in the list:

If you use an insulin pump, the pump insulin is automatically entered as *Insulin 1*.

If you do not use an insulin pump, you may, e.g., assign *Insulin 1* to the short-acting insulin you use; assign *Insulin 2* to the long-acting insulin; and assign *Insulin 3* to the pre-mixed insulin.

To enter an insulin dose in a list entry created manually or read from a meter:

- In the desired entry, click the *Insulin 1, 2* or *3* column (you may have given these columns different names).
- If the input field is highlighted, you can enter the value.
- Complete your data input by pressing the Enter key.

To change or delete an insulin dose which has been entered manually:

- Double-click the value you wish to change or delete. The cursor now flashes in that input field.
- Delete or change the value and then press the Enter key.

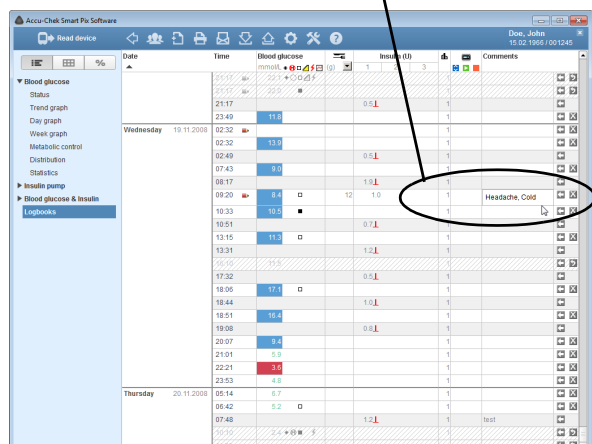
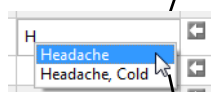
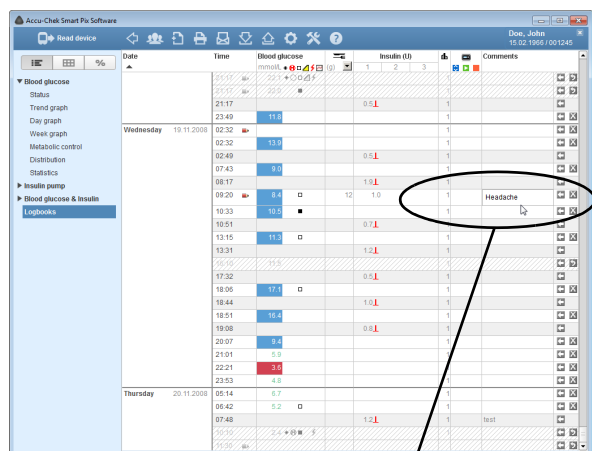
The screenshot shows the 'Accu-Chek Smart Pix Software' interface. On the left is a sidebar with navigation options: Blood glucose, Trend graph, Day graph, Week graph, Metabolic control, Distribution, Statistics, Insulin pump, Blood glucose & insulin, and Logbooks. The main window displays a logbook for 'Doe, John' dated '10.11.2008'. The logbook has columns for 'Date', 'Time', 'Blood glucose', and 'Insulin (U)'. The 'Insulin (U)' column is further divided into three sub-columns labeled '1', '2', and '3'. A red circle highlights the input field in the 'Insulin 1' sub-column for the entry at 09:20, which currently shows the value '1.0'. Other entries in the logbook show blood glucose values and insulin doses for various times throughout the day.

Adding, editing and deleting comments

To add a comment to a list entry:

- In the *Comments* column, click the entry to which you wish to add the comment.
- When the comments field is highlighted, you can enter the desired text. All entered comments will be saved in a list which will appear automatically upon entry of your next comment. The list will display all comments that start with the same initial letter as your new comment. Simply click the comment displayed in the list if you wish to enter it again.
- You can enter up to 30 characters for each comment. Complete your text input by pressing the Enter key.

When reading data from an insulin pump, specific saved pump events automatically appear as entries in the comments column.



To change an existing comment:

- Double-click the comment you wish to change.
The cursor now flashes in that text field.
- Change the text as you wish.
- Complete your text input by pressing the Enter key.

To delete an existing comment:

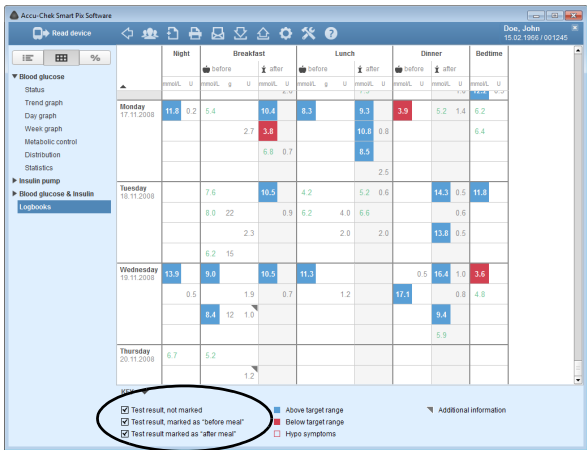
- Double-click the comment you wish to delete.
The cursor now flashes in that text field.
- Delete the text.
- After deleting the text, press the Enter key.

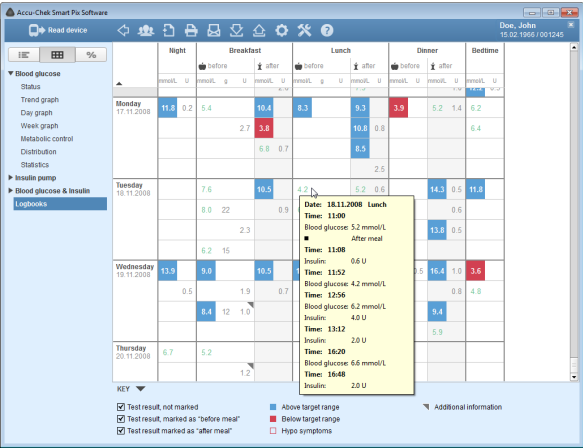
Logbook

The logbook creates a tabular overview of blood glucose results, carbohydrates and insulin doses. The table of values (vertically sorted by date and horizontally divided into time blocks) is created according to the mealtime flag and the date and time information of the blood glucose results. An existing mealtime flag always leads to the test result being sorted into the corresponding column (before/after meal), even if the associated time information may deviate from it.

The time blocks containing the meals are subdivided further into before and after meal areas. Values without any date or time information will not be displayed in the logbook. They are, however, contained in the *Diary* report element.

The key contains checkboxes which you can use to hide certain values (unmarked or marked as before/after meal).





You can display detailed information for every entry.

- Move your mouse across an entry for which you would like to have more information.

Within a few seconds, a tooltip will be displayed showing you the details for this entry:

- For blood glucose: date, time, test result, flag (before/after meal, if applicable), comment.
- For insulin: date, time, insulin amount, comment.
- For carbohydrates: date, time, amount, comment.

If entries have additional information (e.g. marked with the event *User-defined*), this is shown by a grey triangle in the upper right-hand corner.

Daily statistics %

The *Daily statistics* table is set up chronologically with columns divided into blood glucose, carbohydrates and insulin. The associated statistical values (mean values, numbers, etc.) are entered for each day.

Blood glucose pane

- **Number:** Number of analysed blood glucose results on the selected day.
- **Mean bG:** The average of all test results obtained on this day.
- **SD:** Standard deviation or variance of the analysed test results.
- **Hypos:** Number of hypoglycaemias.

Carbohydrates pane

- **Total:** Carbohydrate amounts consumed on this day.

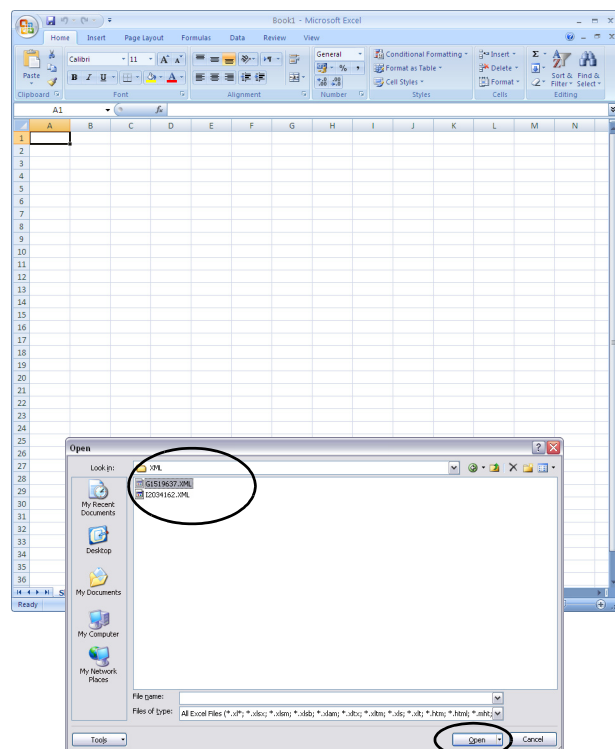
Insulin pane

- **Insulin:** Total amount of insulin delivered (bolus and basal).
- **Basal:** Total amount of basal insulin delivered.
- **Bolus:** Total amount of bolus insulin delivered.
- **Number of boluses**
- **Basal/bolus:** Ratio of basal insulin to bolus insulin.

	Number	Mean bG	SD	Hypos	Total	Insulin (Basal/Bolus)	Number of boluses	Basal/bolus
05.11.2008	19	7.3	4.4	0	U	U	9	2111/1117
Thursday 06.11.2008	9	6.2	1.5			6.6	5	300/200
Friday 07.11.2008	10	7.6	3.6			7.1	6	337/237
Saturday 08.11.2008	9	7.9	5.1	1	20	11.6	9	487/387
Sunday 09.11.2008	8	7.2	2.8	1	3.0	13.2	5	340/440
Monday 10.11.2008	9	8.2	2.2			7.7	6	366/266
Tuesday 11.11.2008	10	8.7	3.2			8.1	5	378/278
Wednesday 12.11.2008	9	8.8	3.7			8.3	7	377/277
Thursday 13.11.2008	9	9.5	3.8	10	1.9	13.5	8	413/711
Friday 14.11.2008	10	6.8	3.3			8.7	6	356/256
Saturday 15.11.2008	11	6.3	2.2	10	5.1	15.4	5	202/302
Sunday 16.11.2008	7	6.8	3.0			5.9	5	311/211
Monday 17.11.2008	13	7.4	2.6			8.3	6	396/296
Tuesday 18.11.2008	11	8.6	3.5	37	1.2	13.4	9	1017/1117
Wednesday 19.11.2008	11	10.0	4.4	12		7.6	8	500/400
Thursday 20.11.2008	2	6.0	1.1		1.2	1.2	1	0/100

KEY
Above target range
Below target range

5.8 Analysing data in external applications



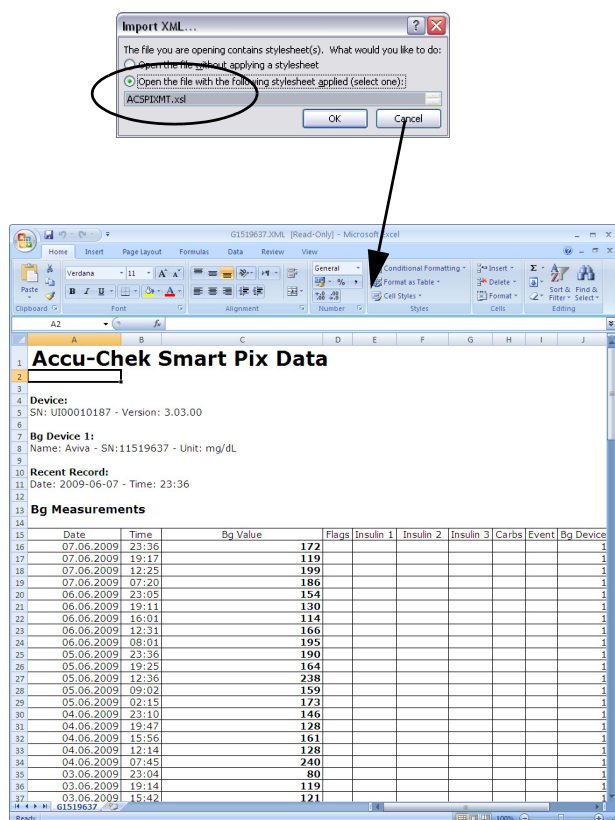
You can also open and analyse data read from meters and insulin pumps in other applications. Whenever data is transferred, XML files are created in addition to the graphical and tabular analyses (XML files are created separately for blood glucose meters and insulin pumps, XSL style sheets for formatting are included). These files can be read by other suitable applications.

The following example shows how to import an XML file into Microsoft Excel (as of version 2002).

- Start Microsoft Excel and choose the command *File > Open*.
- In the file selection dialog, navigate to the *SmartPix* drive and from there go to the *MISC* folder to display the contents saved there. If no file is displayed there, you must first select the file type “XML” in the file selection dialog, if not already done.

If you have read in data from a meter as well as an insulin pump, you will find two XML files. The first letter of the file name indicates what data is contained:

- **G**xxxxxxx.XML: blood glucose values from meter
 - **I**xxxxxxx.XML: data from insulin pump
- Select the desired file and click *Open*.



- In the following dialog box, select the option for importing the XML file using the related style sheet. This additional file prepares and formats the data records in a legible way.

Be careful to select the correct style sheet for the chosen XML file:

- ACSPIXMT.XSL
is the style sheet for meter data;
MT = meter
- ACSPIXIP.XSL
is the style sheet for insulin pump data;
IP = insulin pump

The meter data read from the XML file is now displayed in table form. Besides the tabular listing, you will also find statistical analyses at the end of the table.

You can now save this file for archiving or other purposes on your hard drive. You **cannot** save this file on the *SmartPix* removable disk.

5.9 Bibliography for reports

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6 Preparing the devices

The Accu-Chek Smart Pix system can read and analyse data from the following blood glucose meters:

Via USB port:

- Accu-Chek Active (model GU, GB)
- Accu-Chek Aviva Connect
- Accu-Chek Aviva Insight
- Accu-Chek Mobile (model U1)
- Accu-Chek Performa Connect
- Accu-Chek Performa Insight

Via IR port (Accu-Chek Smart Pix device):

- Accu-Chek Active (model GG, GN, GC)
- Accu-Chek Aviva
- Accu-Chek Aviva Nano
- Accu-Chek Aviva Combo
- Accu-Chek Aviva Expert
- Accu-Chek Compact
- Accu-Chek Integra
- Accu-Chek Compact Plus
- Accu-Chek Go
- Accu-Chek Mobile (model U8)
- Accu-Chek Performa
- Accu-Chek Performa Nano
- Accu-Chek Performa Combo
- Accu-Chek Performa Expert

The following are also compatible:

- Accu-Chek Voicemate Plus voice unit
- Accu-Chek Pocket Compass software for handhelds

Using an Accu-Chek IR key (accessory), the following blood glucose meters can also be used to transfer data:




- Accu-Chek Advantage
- Accu-Chek Comfort
- Accu-Chek Sensor

The following insulin pumps are suitable for transferring data to the Accu-Chek Smart Pix system:

- Accu-Chek D-TRONplus
- Disetronic D-TRONplus
- Accu-Chek Spirit
- Accu-Chek Spirit Combo
- Accu-Chek Insight

Note: Not all products are available in all countries.

In some cases, these devices require different preparation in order to be able to transfer data to the Accu-Chek Smart Pix system. On the following pages, you will find the procedure for each device to analyse stored data successfully. You or the user can also find this information in the User's Manuals for the meters, insulin pumps and the Accu-Chek Pocket Compass software.

-  Always prepare only one device at a time for data transfer. Otherwise, simultaneous communication attempts might interfere with the data transfer. Also avoid possible interference from infrared ports of other devices such as laptops or mobile phones.
-  Avoid infrared data transfer in direct extraneous light (e.g. sunlight) because it may interfere with data transfer.
-  If you want to analyse insulin pump data together with meter data, the devices must be **synchronised**, i.e. all devices involved should have the same date and time settings.



All the descriptions below for an infrared data transfer assume the following prerequisites to have been met:

- The Accu-Chek Smart Pix device is already plugged into the computer.
- The computer is switched on and the operating system is running.
- In the Accu-Chek Smart Pix software, you have clicked on *Read device* or activated the automatic import.
- The Accu-Chek Smart Pix device is ready for data transfer when the luminous surface pulsates slowly.

6.1 Accu-Chek Active blood glucose meter

The Accu-Chek Active meter (model GG, GN, GC) has a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Switch the meter on by keeping the **M** button pressed for more than 3 seconds.
- The display shows “PC”, and data transfer starts automatically.





The Accu-Chek Active meter (model GU, GB) has a built-in USB port for data transfer.



The Accu-Chek driver must be installed on your computer to enable direct communication between meter and computer (see chapter 2.2). If you connect the meter to the Accu-Chek Smart Pix device (model 2), this driver is not required.

In order to read data from these devices, proceed as follows:

- Connect the micro B plug of the USB cable to the meter.
- If you are not using the Accu-Chek Smart Pix device (model 2): Connect the USB A plug to a USB port on your computer.
- The meter connects to the computer. “PC” flashes on the display.
- Data transfer starts automatically, “PC” no longer flashes during the data transfer.

The data is transferred. When data transfer has been completed, “End” appears on the display, after which the meter turns itself off. You can now remove the USB cable.

6.2 Accu-Chek Aviva blood glucose meter Accu-Chek Aviva Nano blood glucose meter



The Accu-Chek Aviva and Accu-Chek Aviva Nano meters have a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

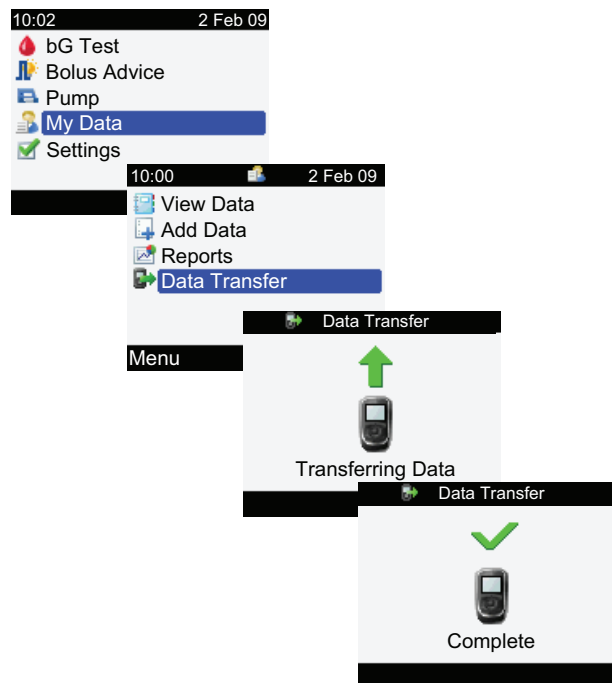
- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Switch the meter on by keeping the ◀ and ▶ buttons pressed simultaneously until two alternately flashing arrows appear on the display. The data transfer starts automatically.



6.3 Accu-Chek Aviva Combo blood glucose meter Accu-Chek Aviva Expert blood glucose meter



The Accu-Chek Aviva Combo and Accu-Chek Aviva Expert meters have a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.



- In the main menu, select *My Data* and press .
- Select *Data Transfer* and press .

The data is now transferred. When data transfer has been completed, the *Complete* display is shown for three seconds. Then, the meter turns off.



If you are using the Accu-Chek Aviva Combo meter together with an Accu-Chek Spirit Combo insulin pump, you should always read the data from both devices at the same time in order to get information that is as complete as possible (especially concerning bolus amounts and basal rates).

6.4 Accu-Chek Aviva Insight Diabetes Manager



The Accu-Chek Aviva Insight Diabetes Manager has a built-in USB port for data transfer.

i The Accu-Chek driver must be installed on your computer to enable direct communication between meter and computer (see chapter 2.2). If you connect the meter to the Accu-Chek Smart Pix device (model 2), this driver is not required.

Proceed as follows to read out data from the Accu-Chek Aviva Insight Diabetes Manager:

- Connect the micro B plug of the USB cable to the meter.
- If you are not using the Accu-Chek Smart Pix device (model 2): Connect the USB A plug to a USB port on your computer.
- In the *Communication* menu of the meter, select the *Connect to PC* option. (If the *Connect to PC* option is set as default in your device, this step is omitted.)
- The data transfer starts automatically and the transfer in progress is displayed.
- When data transfer has been completed, *Data transfer complete* briefly appears on the display. The meter automatically turns itself off (and switches to charging mode). You can now remove the USB cable.

i If you use the meter together with an Accu-Chek Insight insulin pump, the saved data from both devices is automatically transferred (see page 171).

6.5 Accu-Chek Compact blood glucose meter Accu-Chek Integra blood glucose meter



The Accu-Chek Compact and Accu-Chek Integra meters have a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Switch the meter on by pressing the **SET** and **MEMO** buttons simultaneously. The device is now switched on and in data transfer mode, without advancing to a new test strip.
- The display shows two arrows, and data transfer starts automatically.



6.6 Accu-Chek Compact Plus blood glucose meter



The Accu-Chek Compact Plus meter has a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Switch the meter on by pressing the **S** and **M** buttons simultaneously. The device is now switched on and in data transfer mode, without advancing to a new test strip.
- The display shows two arrows, and data transfer starts automatically.

6.7 Accu-Chek Go blood glucose meter



The Accu-Chek Go meter has a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Switch the meter on by keeping the **M** button pressed for more than 3 seconds.
- The display shows “PC”, and data transfer starts automatically.


If you have this version of the Accu-Chek Go meter, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Switch the meter on by pressing the ◀ and Ⓜ buttons simultaneously.
- The display shows “PC”, and data transfer starts automatically.

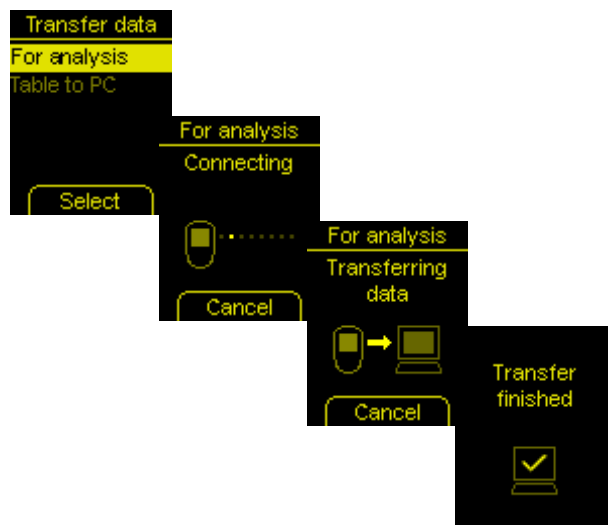
6.8 Accu-Chek Mobile blood glucose meter



The Accu-Chek Mobile meter (model U8) has a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Keep the ▼ and ▲ buttons pressed until the meter turns on.
- Wait for the display check to be completed and the *Transfer data* menu to be displayed.
- In the *Transfer data* menu, select *For analysis* and press .

The connection is now established, and the data is transferred. When data transfer has been completed, the *Transfer finished* display is shown for two seconds. Then, the meter turns off.





The Accu-Chek Mobile meter (model U1) has a built-in USB port for data transfer.



The Accu-Chek driver must be installed on your computer to enable direct communication between meter and computer (see chapter 2.2). If you connect the meter to the Accu-Chek Smart Pix device (model 2), this driver is not required.

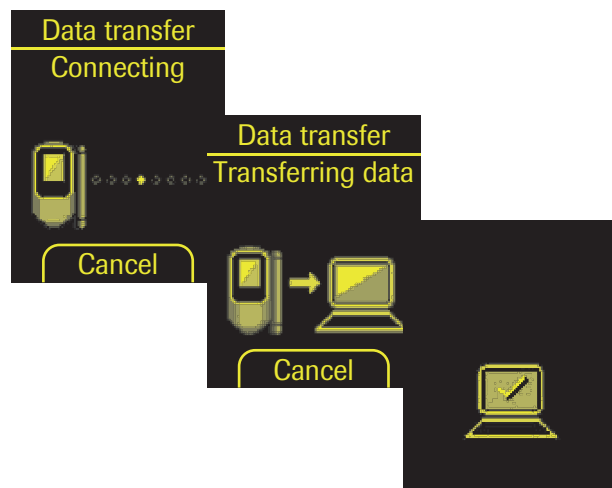


The Accu-Chek Mobile meter has a selectable presetting for connecting to a computer. To directly analyse data in the Accu-Chek Smart Pix software, the *Data transfer* option must be set as default.

In order to read data from these devices, proceed as follows:

- Connect the micro B plug of the USB cable to the meter.
- If you are not using the Accu-Chek Smart Pix device (model 2): Connect the USB A plug to a USB port on your computer.
- The meter turns on and connects to the computer. Information is displayed keeping you updated on the progress.

The data is transferred. When the data transfer has been completed, the meter automatically turns itself off after a few seconds. You can now remove the USB cable.



6.9 Accu-Chek Performa blood glucose meter Accu-Chek Performa Nano blood glucose meter



The Accu-Chek Performa and Accu-Chek Performa Nano meters have a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

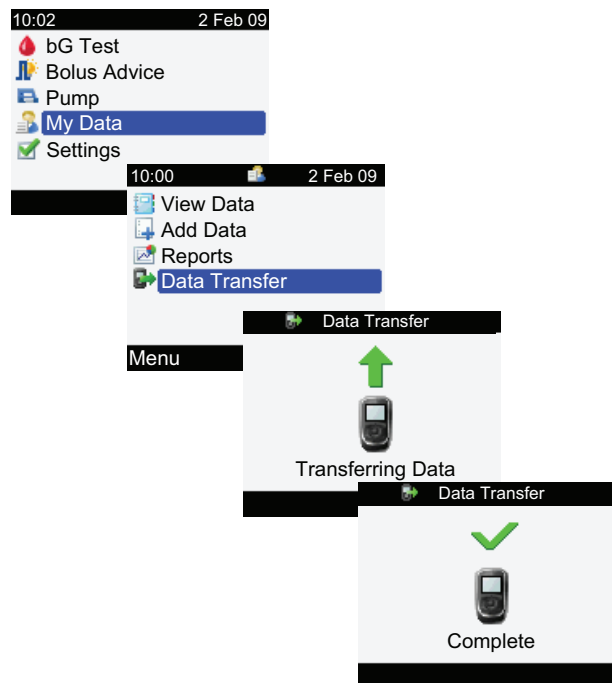
- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Switch the meter on by keeping the ◀ and ▶ buttons pressed simultaneously until two alternately flashing arrows appear on the display. The data transfer starts automatically.



6.10 Accu-Chek Performa Combo blood glucose meter Accu-Chek Performa Expert blood glucose meter



The Accu-Chek Performa Combo and Accu-Chek Performa Expert meters have a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.



- In the main menu, select *My Data* and press .
- Select *Data Transfer* and press .

The data is now transferred. When data transfer has been completed, the *Complete* display is shown for three seconds. Then, the meter turns off.



If you are using the Accu-Chek Performa Combo meter together with an Accu-Chek Spirit Combo insulin pump, you should always read the data from both devices at the same time in order to get information that is as complete as possible (especially concerning bolus amounts and basal rates).

6.11 Accu-Chek Performa Insight Diabetes Manager



The Accu-Chek Performa Insight Diabetes Manager has a built-in USB port for data transfer.



The Accu-Chek driver must be installed on your computer to enable direct communication between meter and computer (see chapter 2.2). If you connect the meter to the Accu-Chek Smart Pix device (model 2), this driver is not required.

Proceed as follows to read out data from the Accu-Chek Performa Insight Diabetes Manager:

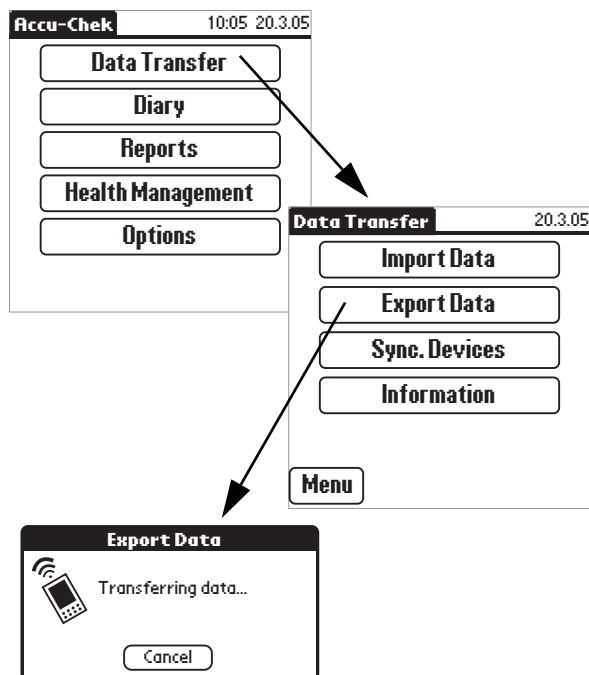
- Connect the micro B plug of the USB cable to the meter.
- If you are not using the Accu-Chek Smart Pix device (model 2): Connect the USB A plug to a USB port on your computer.
- In the *Communication* menu of the meter, select the *Connect to PC* option. (If the *Connect to PC* option is set as default in your device, this step is omitted.)
- The data transfer starts automatically and the transfer in progress is displayed.
- When data transfer has been completed, *Data transfer complete* briefly appears on the display. The meter automatically turns itself off (and switches to charging mode). You can now remove the USB cable.



If you use the meter together with an Accu-Chek Insight insulin pump, the saved data from both devices is automatically transferred (see page 171).



6.12 Accu-Chek Pocket Compass software



The Accu-Chek Pocket Compass software uses the infrared-port of a handheld for data transfer. In order to read data from the handheld, proceed as follows:

- Place the handheld no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Switch on the handheld and start the Accu-Chek Pocket Compass software.
- On the main menu screen, touch **Data Transfer**.
- Then touch **Export Data**.
- Data transfer starts automatically.

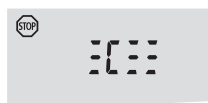
6.13 Accu-Chek Voicemate Plus voice unit





The Accu-Chek Voicemate Plus voice unit has a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another. On the Accu-Chek Voicemate Plus voice unit, the infrared port is located on the right side of the device near the numeric keypad.
- Switch on the voice unit, press the **0** key once and the **3** key twice (*Data transfer* menu, Transfer data to PC via IR).
- Data transfer starts automatically.


6.14 Accu-Chek D-TRONplus insulin pump Disetronic D-TRONplus insulin pump



The Accu-Chek D-TRONplus and Disetronic D-TRONplus insulin pumps have a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Make sure that your insulin pump is in **STOP** mode and that the key lock (KeyLock) is deactivated or unlocked.
- Press the  button 4 times to select the “Data Transfer” function.
- Confirm the selection with the  button. The built-in infrared port is now activated, and data transfer starts automatically.

When data transfer has been completed and the report is displayed on the screen:

- Press the  button to quit data transfer mode.
- Resume operation of the insulin pump (**RUN** mode) so as not to interrupt the supply of insulin according to your basal rate for longer than necessary.

6.15 Accu-Chek Insight insulin pump



Communication with an Accu-Chek Insight insulin pump takes places exclusively via the Accu-Chek Aviva Insight Diabetes Manager or the Accu-Chek Performa Insight Diabetes Manager. Setting up the Bluetooth® connection of these devices which are used together normally takes place when configuring them. No additional preparation of the insulin pump is required for data transfer.

The insulin pump data is always saved in the meter and automatically read out (together with meter data) and saved to your computer. In order for additional information (settings) to be transferred, the insulin pump must be located close to the meter while data is being read.

If **only** the meter is available, the insulin pump data saved on the meter is also transferred. If the meter **and** the insulin pump are available, both the data and the insulin pump settings (e.g. programmed basal rate profiles) are transferred.

In order to read data from the Accu-Chek Insight insulin pump, proceed as follows:

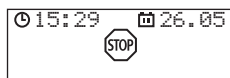
- If you also want to transfer the settings, ensure that the insulin pump is located near the meter (e.g. on your belt).
- Perform the data transfer from the meter as described on page 159 or page 167.

6.16 Accu-Chek Spirit insulin pump




The Accu-Chek Spirit insulin pump has a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.




- Make sure that your insulin pump is in **STOP** mode.




- Press the  button repeatedly until the *COMMUNICATION* screen is displayed.



- Confirm the selection with the  button. The built-in infrared port is now activated, and data transfer starts automatically.




When data transfer has been completed and the report is displayed on the screen:

- Press the  button to quit data transfer mode.
- Resume operation of the insulin pump (**RUN** mode) so as not to interrupt the supply of insulin according to your basal rate for longer than necessary.


6.17 Accu-Chek Spirit Combo insulin pump



The Accu-Chek Spirit Combo insulin pump has a built-in infrared port for data transfer. In order to read data from these devices, proceed as follows:

- Place the device no more than 10 cm away from the infrared window on the Accu-Chek Smart Pix device. Both infrared windows must be facing one another.
- Make sure that your insulin pump is in **STOP** mode.
- Press the  button repeatedly until the *DATA TRANSFER* screen is displayed.
- Confirm the selection with the  button.
- Press the  button again to start data transfer. The built-in infrared port is now activated, and data transfer starts automatically.

When data transfer has been completed and the report is displayed on the screen:

- Press the  button to quit data transfer mode.
- Resume operation of the insulin pump (**RUN** mode) so as not to interrupt the supply of insulin according to your basal rate for longer than necessary.

6.18 Note on time settings for the Accu-Chek insulin pumps

If you have to correct the time set in your Accu-Chek insulin pump, observe the following:



Do **not** change the time on your Accu-Chek insulin pump if you have programmed time-based changes of insulin delivery (e.g. temporary basal rate, extended bolus or multiwave bolus) and this change is still in effect (i.e. the programmed period of time has not yet elapsed).

In this case, the Accu-Chek Smart Pix system may not be able to analyse the stored insulin pump data. Therefore, only change the time set in your insulin pump if it is in STOP mode.

If you want to reset the time programmed in your Accu-Chek insulin pump (e.g. at the end of summer time or due to time zone changes when travelling in Western directions) and to analyse the existing data using the Accu-Chek Smart Pix system:



Before changing the time, read the existing data from your Accu-Chek insulin pump. The next time data is read, the Accu-Chek Smart Pix system only analyses the insulin pump data which was stored **for the day of the changeover** (i.e. as of 0:00) **after** the time was reset.

If you are using your insulin pump together with a blood glucose meter and want to analyse the data of both devices using the Accu-Chek Smart Pix system, **always change the time for all devices** at once. This ensures that the information represented in the reports is assigned correctly. Combined reports are only created for devices which have the same date and time settings.

7 Error signals and troubleshooting

Sometimes situations can occur in which a report is not created or printed, or other problems arise. We would like to provide you with several solutions below for most conceivable situations in which a problem might occur. If you do not find an appropriate solution here, contact your customer support and service centre (you can find the address in chapter 10).

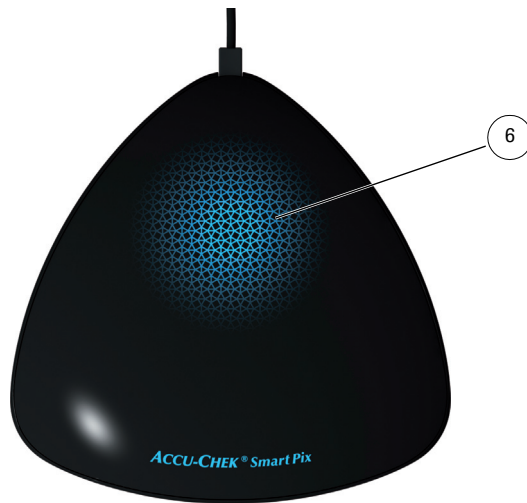
7.1 Errors without error signals

The Accu-Chek Smart Pix system fails to appear on the PC as a drive:

- Check whether your PC or operating system meets the system requirements for the Accu-Chek Smart Pix system (see page 2).
- Check to make sure the USB plug is firmly plugged into the correct socket on the PC.
- If the Accu-Chek Smart Pix system is still not recognised as a drive, plug the device into a different USB port on your PC (you may be able to use a USB hub or choose between USB ports on the front and rear of your PC).

If the Accu-Chek Smart Pix system fails to emit any status indicator signals whatsoever and if all the above checks are unsuccessful, try testing the device on a different PC. If there is still no sign of operation, the device is probably faulty. This also applies if there are error signals (luminous surface flashing) which are not associated with data transfer. Contact your customer support and service centre (you can find the address in chapter 10).

7.2 Error signals on the device



The Accu-Chek Smart Pix system reports potential errors (e.g. during data transfer) by causing the luminous surface **6** to flash quickly.

If such an error occurs, the following options are available to solve the problem:

- In the Accu-Chek Smart Pix software user interface, click the *Read device* button. By flashing slowly again, the luminous surface should now indicate that it is actively searching for devices and that it is ready for data transfer.
- If the error signal continues, you can unplug the Accu-Chek Smart Pix device and plug it back in again. Any Microsoft Windows error message about removing the disk is of no further consequence.

Then repeat data transfer.

If this error signal occurs again, check the following points:

- Has the meter been properly prepared for data transfer? For more information, see chapter 6.
- Is the optical contact (infrared port) unimpaired?
Is the distance correct (too far away)?
- Is there any interference from extraneous light (sunlight, another infrared port, fluorescent tubes or energy-saving lamps)?
- Is the USB cable correctly plugged in under the device?

In the event of error messages associated with data transfer, it is not the Accu-Chek Smart Pix system which is faulty, there is interference with the data transfer between the devices. In individual cases, this may be due to the meter or insulin pump.

8 Appendix

8.1 Cleaning the Accu-Chek Smart Pix device

Unplug the Accu-Chek Smart Pix device before cleaning it. Use cloths slightly moistened with cleaning fluid and make sure no liquid gets inside the device.

Clinical staff: Observe the regulations applicable at your institution concerning protection against infection.

8.2 Disposal of the Accu-Chek Smart Pix device

The product itself may come into contact with blood during testing. Used products therefore carry a risk of infection. Dispose of used products according to local regulations. For information about correct disposal, contact your local council or authority. The product falls outside the scope of the European Directive 2002/96/EC (Directive on waste electrical and electronic equipment, WEEE).

8.3 Cleaning the USB flash drive

Clean the USB flash drive while it is disconnected. Use cloths slightly moistened with cleaning fluid and make sure that no liquid gets inside the device casing.



8.4 Disposal of the USB flash drive

The USB flash drive falls inside the scope of the European Directive 2002/96/EC (Directive on waste electrical and electronic equipment, WEEE). Do not dispose of it in household waste. Dispose of the USB flash drive according to environmental regulations by handing it in to a collection point or to your distributor.

8.5 Using a USB flash drive



Important note: Do not remove the USB flash drive containing the Accu-Chek Smart Pix software while data is being exchanged. Doing so could cause irreparable damage to files. The USB flash drive itself could be damaged, rendering it unusable. To prevent this, follow these instructions for safe removal of the USB flash drive:

- Look for the “Safely Remove Hardware and Eject Media”  icon on the Windows taskbar.
- Double-click the  icon.
- In the menu displayed, select the removable media (USB flash drive) to be ejected.
- When the “Safe to remove hardware” message appears, you may unplug the USB flash drive.

8.6 Abbreviations

bG	Blood glucose
SD	Standard deviation
AST	Alternative site testing
TBR	Temporary basal rate
HI	Result above the measuring range (indicated on the meter as HI)
LO	Result below the measuring range (indicated on the meter as LO)
Hypo	Hypoglycaemia
U	Insulin dose in International Units
U/h	Insulin dose delivered per hour (basal rate)
HBGI	High blood glucose index
LBGI	Low blood glucose index

9 Accu-Chek Smart Pix software Terms of Use

Using the Accu-Chek Smart Pix software is subject to the following provisions ("Terms").

1 Data Protection, Privacy and Data Backup

- 1.1 Roche Diagnostics GmbH, Sandhofer Strasse 116, 68305 Mannheim, Germany ("Roche Diagnostics") does not have any access to data you generate using the Accu-Chek Smart Pix software.
- 1.2 The data you generate using the Accu-Chek Smart Pix software are generated locally on your computer and only stored to the system that you actively select, e.g. the location on your computer where you store the Accu-Chek Smart Pix software.
- 1.3 The Accu-Chek Smart Pix software USB flash drive is the original media used to provide the software but it is not a suitable media for storing data you have generated using the Accu-Chek Smart Pix software. Avoid potential data loss (e.g., from damages to or loss of the USB flash drive) and always store all data locally on your computer or on a network server. It is your own responsibility to back up your data.

2 Proprietary Rights

All right, title and interest including, but not limited to, copyright, trademarks and other intellectual property rights in and to the structure, design and labeling of the Accu Chek Smart Pix software are owned by Roche Diagnostics and its licensors. Roche Diagnostics retains all rights not expressly granted herein.

3 Limitation of Liability

- 3.1 Irrespective of the cause of action, Roche Diagnostics' liability shall be limited to damages caused by Roche Diagnostics, its employees or subcontractors due to willful misconduct, gross negligence or, in case of a violation of an essential obligation, i.e. an obligation that is of crucial relevance to the usability of the Accu-Chek Smart Pix software, simple negligence.
- 3.2 If Roche Diagnostics is held liable for simple negligence under Section 3.1, Roche Diagnostics' liability shall be limited to those typical damages that were reasonably foreseeable at the time you were provided with the Accu-Chek Smart Pix software or, at the latest at the time of the violation of the relevant obligation.
- 3.3 Roche Diagnostics' liability for any damages caused by the breach of a specific warranty or for damages to be compensated under the Product Liability Act and for damages due to loss of life, injury or prejudice to health remains unaffected.

4 Miscellaneous

- 4.1 These Terms shall be governed by the laws of Germany; the application of the UN Convention on Contracts for the International Sale of Goods is excluded.
- 4.2 For disputes arising from or in connection with these Terms, the courts of Mannheim, Germany have exclusive jurisdiction internationally and locally, if you are a merchant, enterprise or public institution.
- 4.3 If any individual clause of these Terms is invalid or unenforceable, the remainder of the Terms shall not be affected in any way. Ineffective clauses shall be replaced by the legal regulation.

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