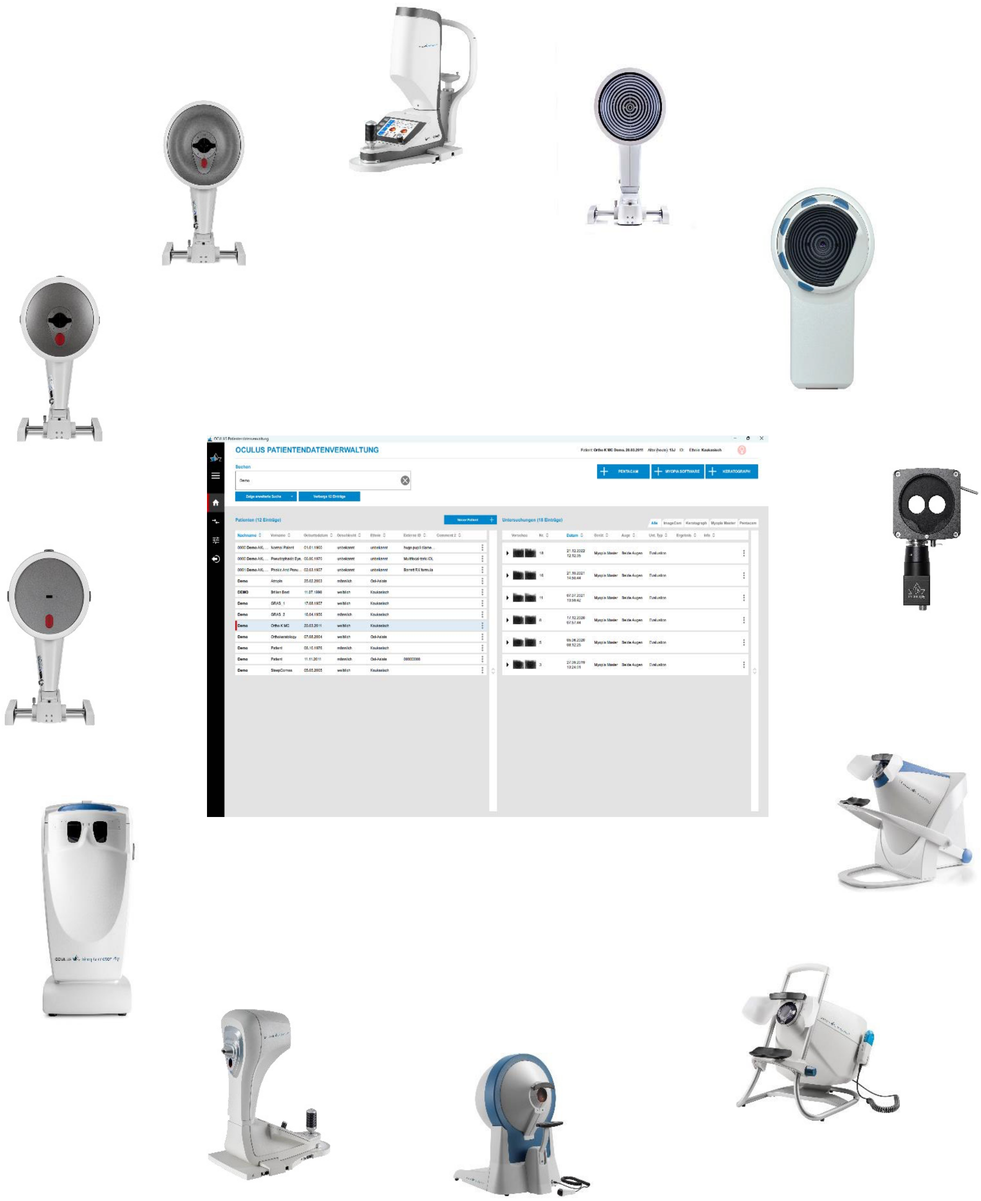
OCULUS
Patient Data Management



INSTRUCTION MANUAL

OCULUS®

Preface

The Patient Data Management is the central tool for managing all patient and examination data.

Due to development, minor deviations between the images shown here and the version actually installed are possible.

For example, the devices shown on the cover of this instruction manual will only be gradually converted to the patient data management described in these instructions.

If you have any queries or would like additional information about the patient data management, do not hesitate to call or send us an email or a fax. Our service team will gladly assist

OCULUS Optikgeräte GmbH

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1 Starting the Patient Data Management

After starting the patient data management the user interface is displayed first.

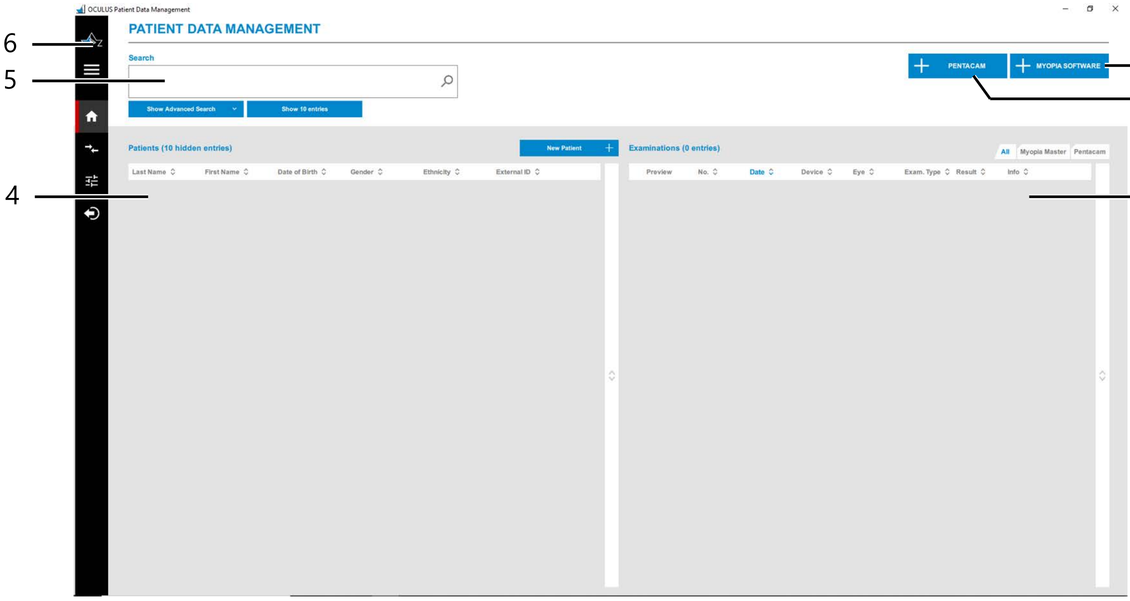

Fig. 1: Patient data management

No.	Description	No.	Description
1	[+ MYOPIA SOFTWARE] button	4	Patient list
2	[+ PENTACAM] button	5	Search filter
3	Examination list	6	Side menu bar

Note
To access the device software later, either a new patient must be created or a patient already in the list must be selected.

2 Entering a New Patient's Data

1. To enter a new patient in the patient data management, click [New Patient].

All patients already created are displayed first under the input fields. The list is narrowed down further and further as the patient data is entered (according to the details entered).

2. Enter the patient's last name, first name and date of birth.

The above fields are outlined in red, as these must **always** be filled in.

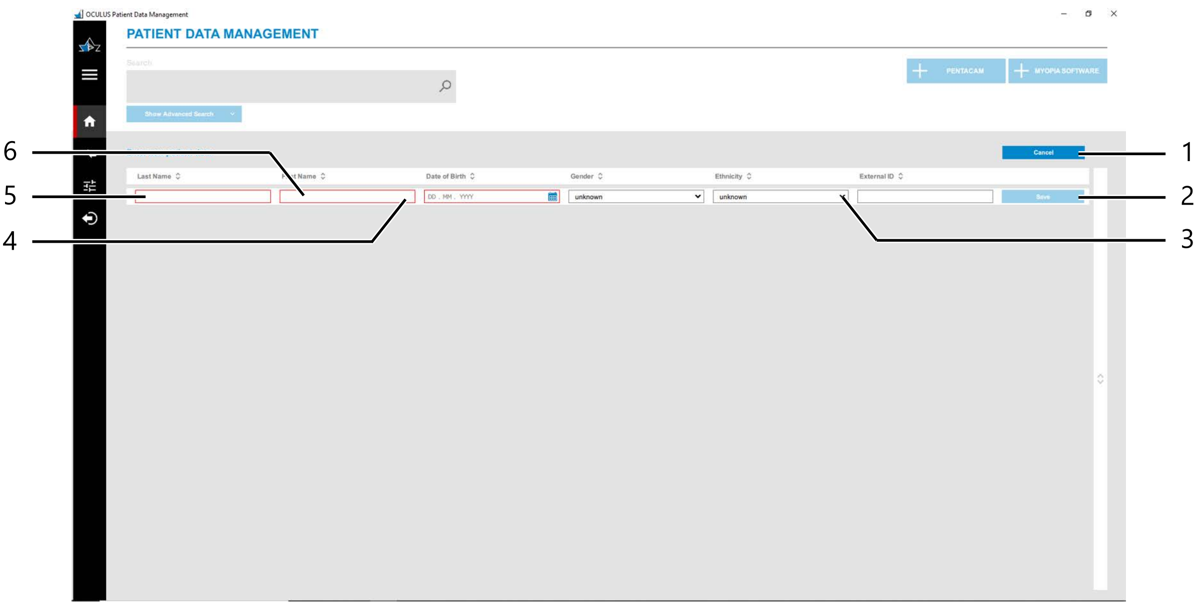

Fig. 2: Entering a new patient's data

No.	Description	No.	Description
1	[Cancel] button	4	Mandatory field "Date of Birth"
2	[Save] button	5	Mandatory field "Last Name"
3	Further input fields	6	Mandatory field "First Name"

3. If possible, also fill in the other fields with the patient's information (including an External ID, if available).

If you do not fill in these fields (at first), a corresponding message will appear when you start the device software.

Tip

The "Gender" and "Ethnicity" fields must also be filled in. These are necessary to select the associated percentile curves for the evaluation of the examination results that comes later.

4. To accept the entries you have made, click [Save].
   The patient you have just entered now appears in the patient list.

3 Selecting an Existing Patient

The patient list on the left side of the screen lists all patients previously examined. In the settings *(sect. 6.7, page 25)* you can specify whether an empty patient list is displayed by default for data protection reasons.

1. If no entries are shown in the patient list: click on the [Show X entries] button.
2. If, for example, a single patient is displayed for examination after exiting the actual program, delete the patient name from the "Search" field.

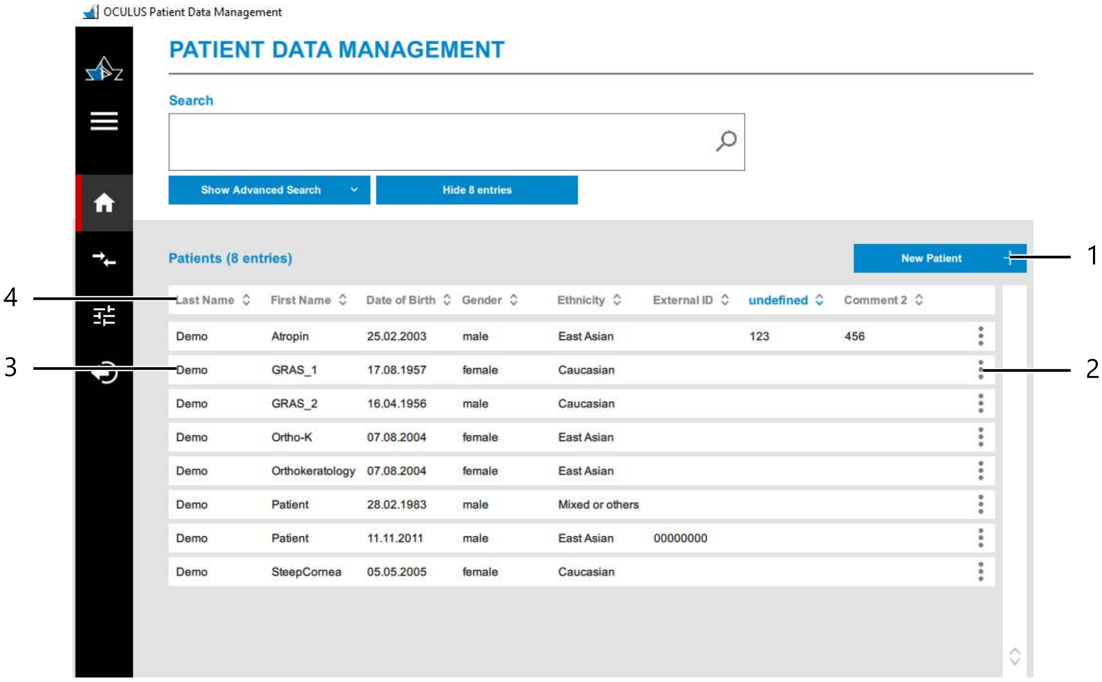

Fig. 3: Patient list

No.	Description	No.	Description
1	[New Patient] button	3	Patient record
2	[More functions] button	4	Caption

3. Click on a column heading in the list to sort the list in ascending order according to this criterion.
   Click on the heading again to reverse the sort order.
4. Click on the desired list item.
   The selected patient is highlighted in blue and marked with a red bar. The examination list shows all examinations that have been saved for the selected patient.
5. If necessary, narrow down the patient list further using the search functions as described below.
6. If required, customize the columns displayed in the patient list as described below.
7. If necessary, select an additional examination from the examination list.

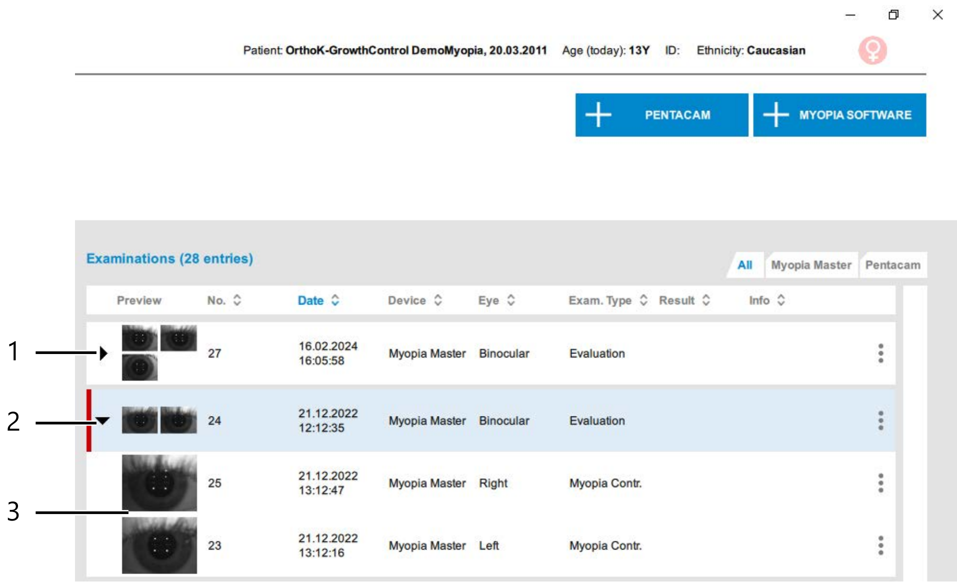

Fig. 4: Examination list

No.	Description	No.	Description
1	Grouped examination	3	Individual examination view
2	Selected examination		

Examinations that belong together are initially displayed in groups.

1. Click on the black arrow in front of the grouped examination to display the individual view of the examinations.

   Clicking the black arrow again will group the examinations again.
2. Click on the button for the desired device in the top right corner to start the actual examination program.

   If you have selected an examination in addition to the patient name, this data will be displayed in the examination program.

Note

You can browse through all the patient's examinations independently of a previously selected examination and display the results accordingly in the device software.

“Search” field

The patients displayed in the list can be further narrowed down using the “Search” field.

1. Enter at least three characters in the “Search” field.

   Only patients whose last name, first name or External ID matches the search pattern are displayed in the list.
2. If necessary, enter additional characters to further limit the patient list.

Advanced search with the search filter

A search filter can be specified in addition, or as an alternative. This makes it possible to search for patient and examination data in more detail.

1. Click on the [Show Advanced Search] button.

   An additional bar opens. All patient and examination data are displayed in the lower part.
2. Enter a character in one of the search fields.

   Only patients or examinations that match the search pattern in the corresponding field are displayed in the list.

Customizing the columns shown in the patient and exam lists

The columns shown in the patient and exam lists can be customized.

1. Right-click the title of the list you want to customize.

   A screen page opens on which all possible columns of the respective list are shown.

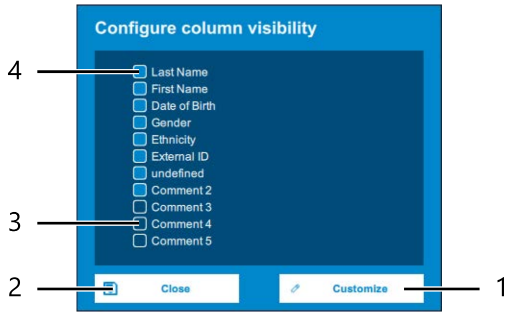

Fig. 5: Customizing the columns (here patient list)

No.	Description
1	[Customize] button
2	[Close] button
3	Not-activated columns (Comment 4)
4	Activated column (Last Name)

2. Activate the columns that should be shown in the respective list or deactivate the columns that should not be shown.

   A preview of the respective list with the currently activated columns is shown in the background.

Note

In the advanced search, only these fields are available that are visible (activated) as columns in the list.

3. Click on the [Close] button to save the selection accordingly.
4. Alternatively, click the [Customize] button.

   A screen will open where you can customize the names of the columns and their importance.

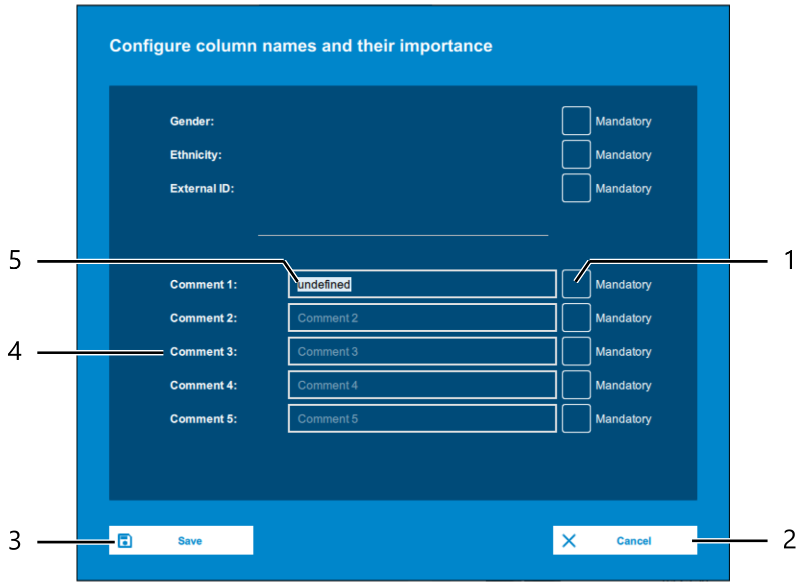

Fig. 6: Configuring column names and their importance

No.	Description
1	"Mandatory" checkbox
2	[Cancel] button
3	[Save] button
4	Column (Comment 3)
5	Custom column name (Comment 1)

5. If necessary, adjust the names of the individual comment columns.
6. Activate the checkboxes for the columns for which an entry must be made when creating a new patient.
7. Click the [Save] button to apply the settings and close the screen.
   The screen for configuring column visibility appears again.

4 Managing Patient Data

There is the ⋮ [More functions] button at the end of each entry in the patient list.

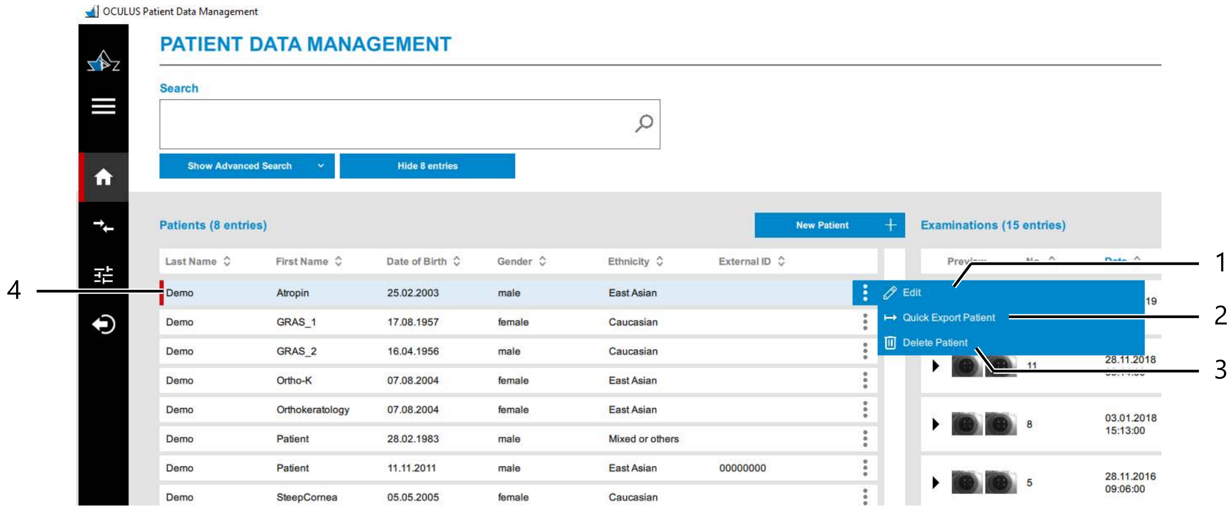

Fig. 7: Additional Functions

No.	Description	No.	Description
1	[Edit] button	3	[Delete Patient] button
2	[Quick Export Patient] button	4	Selected patient

1. Click on the [More functions] button.
   A menu opens with the following options:

- Edit
- Quick Export Patient
- Delete Patient

4.1 Adjust patient data

Patient data can be changed retroactively after it has been added.

1. Click the [Edit] button in the patient data management menu.
   The “Edit Patient” dialog opens.
2. Adjust the patient data here accordingly.
3. Finally, click on the [Save] button to apply the changes to the patient data.
4. Alternatively, click the [Cancel] button to exit the dialog and leave the patient data unchanged.

4.2 Exporting Patient Data

Tip

Use the “Export” function on the “Import/Export” screen to export several patient and examination data to a common file *(sect. 5.3, page 20)*.

Each patient’s data, including all examination data, can be exported.

1. Click the [Quick Export Patient] button in the patient data management menu.

   The “Save as” dialog opens.
2. If necessary, change the directory to which the patient data is to be exported.
3. If necessary, adjust the name of the file to which the patient data is to be exported.

   By default, the current date in the form “YYYYMMDD” and the current time separated by an underscore in the form “HHMMSS” are used as the file name.

   Example: “20210211_135713.u12” for an export on 11/02/2021 at 13:57 and 13 seconds.
4. If necessary, also select whether to export as a U12 file or as an pseudonymized U12 file.

   The patient's first and last name are replaced by placeholders in an pseudonymized file.

Patient data exported in this way can, for example, be forwarded to another practice and imported again there via the import function of the patient data management *(sect. 5.1, page 17)*.

4.3 Deleting Patient Data

Note

When deleting patient data, there is generally a risk of unintended data loss. Deleted patient data can only be restored from a previous backup *(sect. 5, page 16)*.

Each patient’s data can be deleted, including all examination data.

1. Click the [Delete Patient] button in the patient data management menu.

   A confirmation dialog opens displaying the selected entry’s patient data.
2. Click the [Delete] button to completely delete the selected patient data.
3. Alternatively, click the [Cancel] button to exit the dialog and keep the patient data.

5 Import and Export Patient Data

In addition to exporting and importing individual patient data, this can also be done for several patient data together into or from one file.

Note

Recommendation: Export the patient data using the “Single File (U12)” option.

1. Click on the [Import/Export] button.
   The “Import/Export” screen opens and the button is marked with a red bar on the left edge.

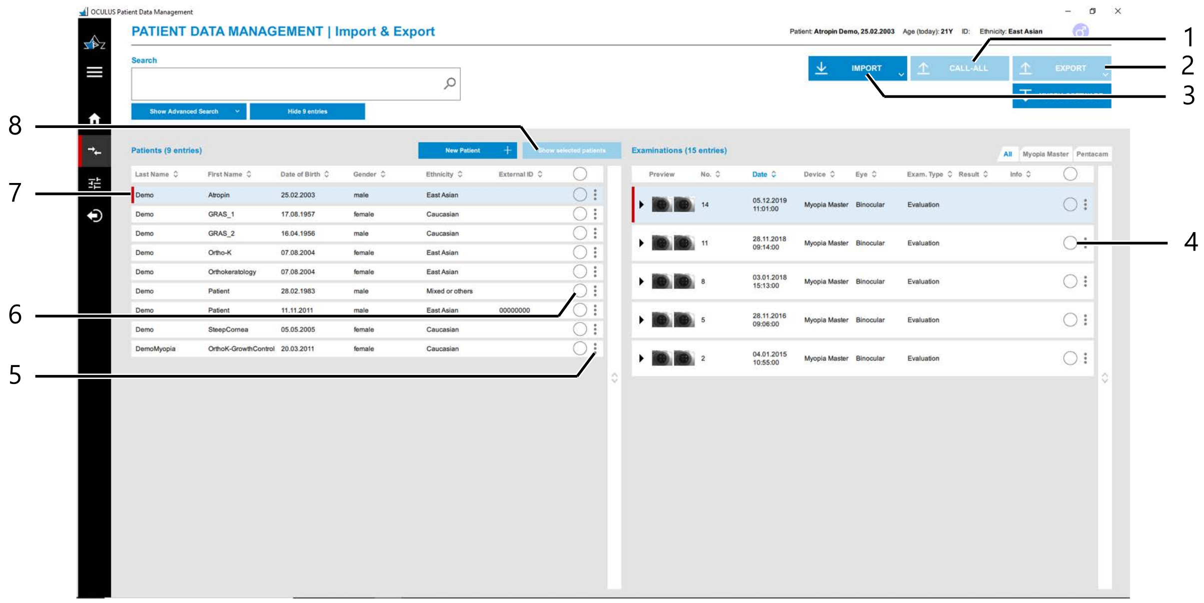

Fig. 8: “Import/Export” screen

No.	Description	No.	Description
1	[Call-All] button	5	[More functions] button
2	[Export] button	6	[Patient selection] button
3	[Import] button	7	Selected patient
4	[Examination selection] button	8	[Show/Hide Selected] button

The following functions are available here via the buttons:

- Import
- Call-All
- Export
- If applicable, buttons to call up further devices, e.g. Corvis®

5.1 Importing Patient Data

In case you keep patient data on a USB stick, you can import this data.

Note

Only patient and examination data that are not already contained in the patient data management are automatically imported.

Import from an U12 file

1. Click on the [Import] button.
   The “Open” dialog opens.

Note

Alternatively, you can drag and drop a U12 file containing the patient and examination data to be imported into the patient data management window.

2. If necessary, change the directory in which the file with the patient data is located.
3. Select the file with the patient data and click on the [Open] button.
   A screen opens showing the patient and examination data stored in the file.

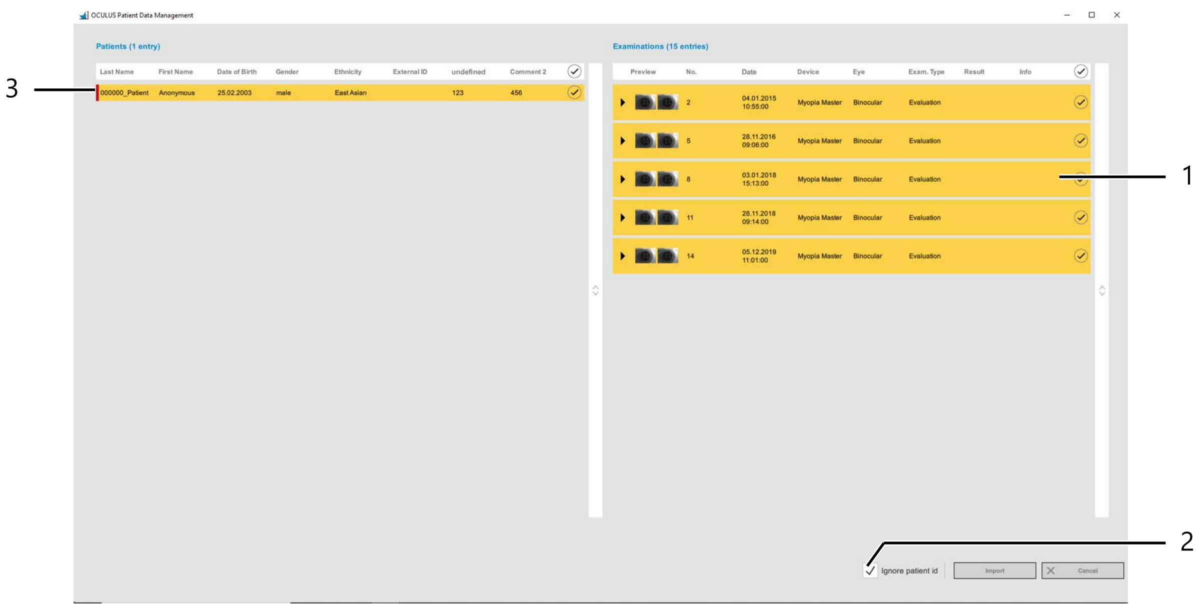

Fig. 9: Displaying saved data

No.	Description	No.	Description
1	Examination data	3	Patient data
2	“Ignore patient id” checkbox		

4. Activate the checkboxes of the patient and examination data to be imported into the patient data management.
5. Activate or deactivate the “Ignore patient id” checkbox.
   If this checkbox is activated, patient data will be combined during import if the first name, last name and date of birth are identical, regardless of any possible differences in the patient ID.
6. Click on the [Import] button.
   All activated patient and examination data are imported into the patient data management, if they do not already exist.
   A dialog opens showing how many examination data and patient data have been added or updated.

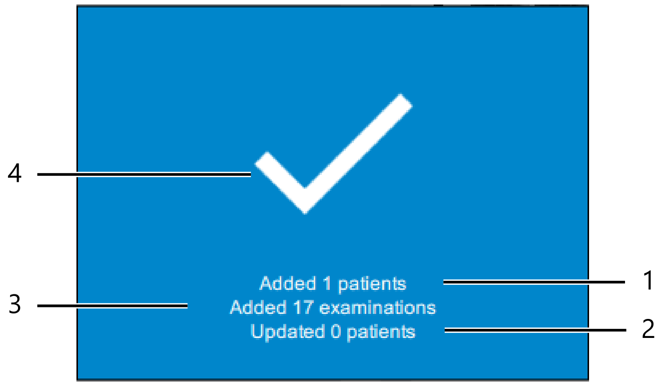

Fig. 10: Display of changes during import

No.	Description
1	Number of patients added
2	Number of updated patients
3	Number of examinations added
4	Import successful

7. Alternatively, click the [Cancel] button to exit the dialog without importing patient and examination data.

Import from a directory

In principle, importing patient and examination data from a directory is done in the same way as importing from a U12 file.

1. However, click on the white arrow on the [Import] button.
   The [Folder] button appears.

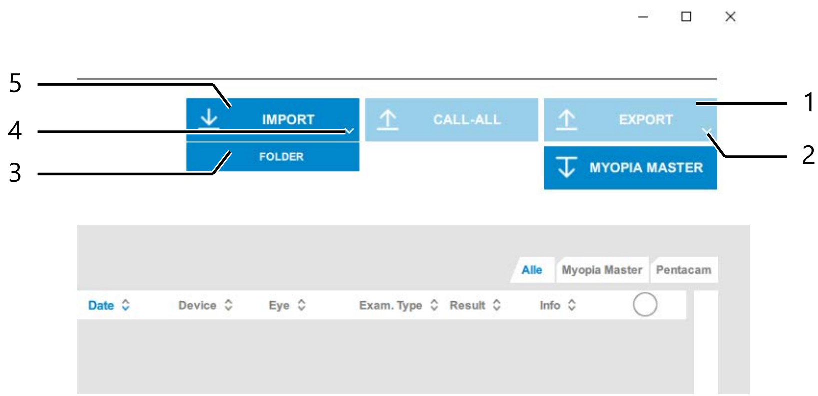

Fig. 11: Import from a directory

No.	Description	No.	Description
1	[Export] button	4	White arrow (Import)
2	White arrow (Export)	5	[Import] button
3	[Folder] button		

2. Click on the [Folder] button.
   The "Select folder" dialog opens.
3. Select the directory in which the patient and examination data is stored and click on the [Select folder] button.

Note

For an import, the subfolders must be named TOPO.BMP and TOPO.DAT or the same as the parent folder.

5.2 "Call-All"

The patient and examination data of selected patients can be exported as a CSV file *(sect. 6.6, page 25)*. The selected data is appended to existing CSV files in the program directory of the measuring device, here the Myopia Master® and the Pentacam®.

1. If necessary, first narrow down the list of patient and examination data using the "Search" field or the search filter.
2. Activate all patient data for which you want to export all examination data.
3. If you only want to export individual examination data from the patient data, activate only the desired examination data.
4. If necessary, click on the [Show selected patients] button.
   Only the previously selected patient data is then displayed. Click the button again to display all patient data again (even those not selected).

5. Click on the [Call-All] button.
   The “CALL-ALL confirmation” dialog opens.
6. Click on the [Call-All] button.
   The data is exported to the program directory of the measuring device, here the Myopia Master® and the Pentacam®.

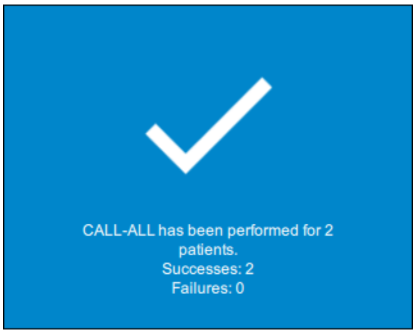

Fig. 12: Message after successful Call-All

After the Call-All is completed, a dialog appears showing the number of patient data exported, divided into “Successes” and “Failures”.
The following files are created here:

- EXPORT-EVALUATIONS.CSV: Patient-relevant data (e.g. name, date of birth, ethnicity, etc.)
- EXPORT-MEASUREMENTS.CSV: Results of individual patient examinations (e.g. eye examined, time of examination, axial length, SNR, etc.)
- EXPORT-TREATMENTS.CSV: Patient treatments (e.g. colour of the representation in the diagram, start and end time of the treatment, etc.)

5.3 Exporting Patient Data

5.3.1 Exporting to an U12 File

For example, patient and examination data can be exported to forward to another clinic in a shared file.

1. In the same way as for the [Call-All] function, select all data records that you want to export *(sect. 5.2, page 19)*.
2. Click on the [Export] button.
   The “Save as” dialog opens.
3. If necessary, change the directory to which the patient data is to be exported.
4. If necessary, adjust the name of the file to which the patient data is to be exported.
   By default, the current date in the form “YYYYMMDD” and the current time separated by an underscore in the form “HHMMSS” are used as the file name.
   Example: “20210211_135713.u12” for an export on 11/02/2021 at 13:57 and 13 seconds.

5. If necessary, also select whether to export as a U12 file or as an pseudonymised U12 file.

   Patients' first and last names are replaced by placeholders in an pseudonymised file.

5.3.2 Exporting to a Directory

In principle, exporting patient and examination data to a directory is done in the same way as exporting to a U12 file.

1. However, click on the white arrow on the [Export] button.

   The [Folder] button appears.
2. Click on the [Folder] button.

   The "Select folder" dialog opens.
3. Select the directory to which the patient and examination data should be exported and click on the [Select folder] button.

5.3.3 Exporting to an X12 File

Exporting to an X12 file is done in the same way as exporting to a U12 file. The patient and examination data are only saved in encrypted form in an X12 file.

1. Proceed in the same way as when exporting a U12 file.
2. Instead of "u12", select "encrypted u12 (*.x12)" as the file type.
3. In the corresponding dialog, also enter a password.
4. This password must be entered if the file is to be imported back into the patient data management.

5.3.4 Additional Export Options

Depending on the settings in the patient data management for the interfaces, additional options are available for exporting patient data *(sect. 6, page 22)*.

1. Click on the white arrow on the [Export] button.

Possible entries are:

- GDT
- PeriData

5.4 More Functions

Analogous to the function on the "Start" screen, the [More functions] button is also available on the "Import/Export" screen *(sect. 4, page 14)*.

1. In the same way as for the [Call-All] function, select all data records that you want to export or delete *(sect. 5.2, page 19)*.
2. Click on the [More functions] button.
3. Select the desired function ("Quick Export of X Patients" or "Delete X Patients").

   The functions correspond to those on the "Start" screen, but are carried out jointly for all selected data records.

6 Settings

Basic specifications for working with the patient data management user interface can be made via the screen in the "Settings" area.

1. Click on the [Settings] button.
   The "Settings" screen opens.

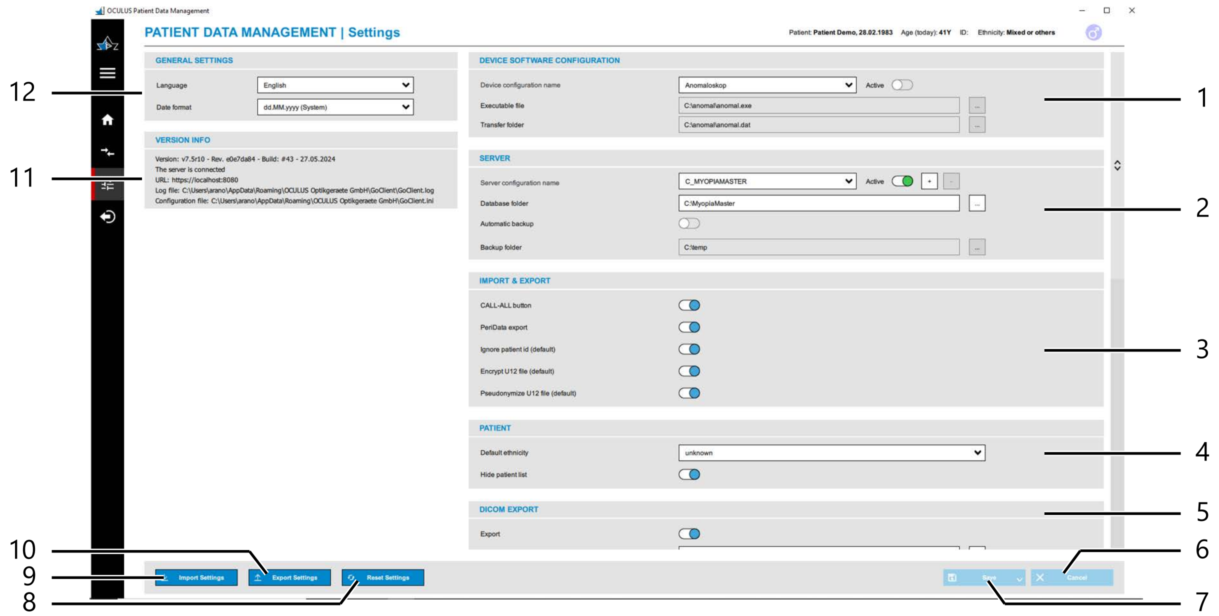

Fig. 13: "Settings" screen

No.	Description	No.	Description
1	Configuration of the unit software	7	[Save] button
2	Server settings	8	[Reset settings] button
3	Import/export settings	9	[Import Settings] button
4	Patient data settings	10	[Export Settings] button
5	Additional settings (DICOM Export etc.)	11	Version information
6	[Cancel] button	12	General Settings

2. Finally, click on the [Save] button on this screen page to save all changes made.
3. Alternatively, click the [Cancel] button to exit the screen and keep existing settings.
   The [Save] and [Cancel] buttons can only be selected after changes have been made on the screen page.

6.1 General Settings

In the “General Settings” area you can set the language for patient data management and the date format.

1. Select the language in the “Language” drop-down list to be displayed on the patient data management user interface.
2. Select the desired format from the “Date Format” drop-down list.

   The date format can be selected independently of the language setting for patient data management.

6.2 Version Information

Various version information on patient data management and the server used is displayed in the “Version info” area.

1. Please have this information ready, especially in case of queries to OCULUS.

6.3 Importing, Exporting and Resetting Settings

Using the [Export settings] and [Import settings] buttons, you can export the patient data management settings and import them to another PC if required. That way, the general patient data management settings will be the same on different PCs. You can also use the [Reset Settings] button to reset the patient data management settings to the factory settings.

1. Click on the [Export settings] button.

   The “Save as” dialog will open.
2. If necessary, change the directory to which the settings are to be exported.
3. If necessary, adjust the name of the file to which the settings are to be exported.

Patient data management settings exported in this way can, for example, sent to another computer and imported again there via the import function.

4. Click on the [Import settings] button.

   The “Open” dialog will open.
5. If necessary, go to the directory in which the file with the settings is located.
6. Select the file with the settings and click on the [Open] button.

   A dialog will open indicating that the patient data management must be restarted in order to apply the settings.
7. Click on the [Restart] button.

6.4 Configuration of the Device Software

Settings for all connected devices whose data are to be managed in the patient data management are made in the “Device software configuration” area.

1. In the drop-down list, select the device for which you want to adjust the settings.
2. Activate a new device to be added using the slider.
3. Using the individual buttons for selecting a directory, select the respective path for
   - the executable file of the device software
   - the transfer folder
4. Use the slider for each configuration to switch it to active or inactive.
5. If necessary, activate the “Data backup” slider.

   This will display an additional button [Myopia Master] under the [Export] button on the “Import/Export” screen in patient data management. If measurements were carried out directly with the Myopia Master® without being started via the myopia software, all measurements on the device can be manually transferred to patient data management using this button.

6.5 Server Configuration

All patient and examination data are stored in a database. Settings for this server are made in the “Server” area.

To create a new configuration, proceed as follows:

1. Click on the [+] button.

   The “Create new server configuration” dialog opens.
2. Enter a unique name for the server configuration here and select the directory in which the database file is located.

   The required folders are created automatically in this directory.
3. Using the individual buttons for selecting a directory, select the respective path for the database file.
4. If necessary, use the slider to activate automatic back-up for the database.

Note

If the automatic data backup of the database is subsequently activated, only newly added examination data will be backed up.

5. When backup is activated, use the button for selecting a directory to select the path to which the backup is to be carried out.

Once the backup has been set up, it is automatically run when the myopia software is closed.

6. Click on the [Save] button to save all changes made.

   The database can then be activated.

   OCULUS recommends restarting the myopia software after these steps have been completed.

6.6 Settings for Importing/Exporting Patient and Examination Data

In the "Import/export" area, the settings for importing/exporting patient and examination data can be changed.

1. If required, use the "Call-All button" to select whether this button is shown on the "Import/export" screen page. This button allows you to export patient and examination data in the form of CSV files *(sect. 5.2, page 19)*.
2. If necessary, use the "PeriData Export" slider to enable this button to be displayed as an option under "Export" on the "Import/Export" screen page *(sect. 5.3, page 20)*.
3. If necessary, use the "Ignore patient ID" slider to specify whether data should be combined irrespective of a potentially saved patient ID.

   If this option is activated, patient data is combined if the last name, first name and date of birth match, irrespective of whether or not the patient IDs match.
4. If necessary, use the "Encrypt U12 files" and "Pseudonimize U12 files" sliders to activate whether these options should be preselected by default when exporting patient and examination data.

   Regardless of the settings selected here, these options can be adjusted during the actual export.

6.7 Settings for Patient Data

In the "Patient data" area, you can make settings for entering or displaying patient data.

1. In the "Default ethnicity" drop-down list, select the ethnicity that is already entered by default when entering new patient data.
2. If necessary, use the "Hide patient list" slider to activate whether an empty patient list is initially displayed by default for data protection reasons.

   If you activate this setting, you must first display the desired patient using the [Show X entries] button or the "Search" field.

6.8 Settings for DICOM Export

You can use the DICOM interface (Digital Imaging and Communications in Medicine) to save and transfer examination data in the DICOM environment.

By default, this interface is **not** activated. If you want to use the interface, activate it and configure the following settings:

1. Specify a folder in which the examination data generated should be stored.

6.9 Settings for DICOM Modality Worklist

The DICOM Modality Worklist (MWL) provides the patient information of a radiology information system (RIS). This avoids duplicate data entry and achieves higher data integrity.

All data stored in the Modality Worklist is imported from there, so that there is no need to re-enter this data into the OCULUS patient data management.

By default, this interface is **not** activated. If you want to use the interface, activate it and configure the following settings:

1. Enter the server address, the port, the name of the workstation and the name of the modality worklist.

   If all entries are valid, an additional symbol for activating the “Modality Worklist” view appears in the patient data management menu bar.

   If this view is selected, the data from the modality worklist is retrieved at a specific time interval. By selecting a patient in this view, the data is transferred to the patient data management and the stored device software is automatically started with this data.
2. If necessary, activate one of the options for the patient ID.

   Selection by ID: A check is made to see whether the patient ID in the modality worklist is also present in the OCULUS patient data management. If this is the case, no new patient is created with the values from the modality worklist.

   Ignore ID: A check is carried out to see whether the patient data in the Modality Worklist, **with exception of the ID**, is also stored in the patient data management. If this is the case, no new patient is created with the values from the Modality Worklist.
3. If necessary, configure the additional settings for the “Search” filter and the naming of individual devices.

6.10 Settings for DEFAULT.PAT

The “Default.pat” interface was developed by OCULUS and can be used when patient data management is started by a third-party program. This allows OCULUS devices to be started directly by this third-party program without having to call up OCULUS patient data management. All necessary commands are stored in the “default.pat” file.

By default, this interface is activated. To deactivate the interface:

1. Leave the “Default path” field empty, i.e. do not enter a path there.
2. Alternatively, do not enter a device path for any of the devices.

   In this case, the interface is also deactivated.

If you want to use the interface, configure the following settings:

1. Select the encoding of the “default.pat” file in the “Encoding” field.

2. Activate one of the Patient ID options.

   Replace ID: It is checked whether the patient data in the “default.pat” file, **with exception of the ID**, is also stored in the patient data management. If this is the case, the patient ID in the patient data management is overwritten with the ID from the “default.pat” file.

   Selection by ID: A check is made to see whether the patient ID in the “default.pat” file is also present in the OCULUS patient data management. If this is the case, the data from the “default.pat” file is read in and saved in the patient data management, overwriting the data already stored in the patient data management.

   Ignore ID: As with the “Replace ID” option, a check is made to see whether the patient data in the “default.pat” file, **with the exception of the ID**, is also stored in the patient data management. If this is the case, no new patient is created with the values from the “default.pat” file.

6.11 Settings for Device Data Volumne – GDT

The “GDT” interface is a standardized exchange platform for patient data between third-party programs and the OCULUS patient data management. The patient data can be exchanged in both directions.

When exporting, a GDT file is created with the exported patient data. When importing, the contents of a GDT file is read in and a corresponding patient with the data from this file is created in the OCULUS patient data management.

By default, this interface is deactivated. To activate the interface:

1. Activate the interface using the corresponding sliders, separately for export and import.
2. Select the encoding for GDT files to be used during import.
3. Also specify a folder from which the GDT files should be imported (automatically).

   If GDT files are stored in this directory when the OCULUS patient data management is not started, these files are automatically read when the patient data management is started.

   You specify the directory for exporting the patient data to a GDT file “dynamically” during export.
4. Activate one of the Patient ID options.

   Selection by ID: A check is made to see whether the patient ID in the GDT file is also present in the OCULUS patient data management. If this is the case, the data from the GDT file is read in and saved in the patient data management, overwriting the data already stored in the patient data management.

   Ignore ID: A check is made to see whether the patient data in the GDT file, **with the exception of the ID**, is also stored in the patient data management. If this is the case, no new patient is created with the values from the GDT file.

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