



IMAGEnet i-base

USER MANUAL

This manual is based on i-base advanced.
It will be mentioned if other licenses are required.

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Preface

Displays for safe use





To encourage safe and proper use and to prevent loss of data, important messages are inserted in the User Manual.


Presentation of notes and cautions in this manual are done confirm the following table:

Icon		Meaning
	NOTE	This symbol indicates that the message has special interest or importance to the reader. Failure to read the note will not result in physical harm to the reader, equipment or data.
	CAUTION	This symbol indicates that if this information is ignored, data loss or material damage may occur.

	NOTE	We strive for a manual with screenshots of the latest version of IMAGEnet i-base, but it could be possible that there are screenshots of older versions.
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Safety cautions

	CAUTION	Do not use IMAGEnet i-base when there is visible damage to cables connecting the PC to the instrument or visible damage to any other part of your set up. In such event please contact your local Topcon representative.
	CAUTION	Make sure that you always have an up to date virus scanner and firewall installed on your system.
	CAUTION	Avoid disconnecting cables from the PC when the IMAGEnet i-base software is running.
	CAUTION	Avoid resetting or turning off the PC when the IMAGEnet i-base software is running.

	CAUTION	Avoid resetting or turning off the instrument when the IMAGEnet i-base software is running.
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User maintenance

Unexpected events

In case of an unexpected event, such as a power failure, PC crash or i-base crash, IMAGEnet i-base is shut down without saving, the following actions need to be taken.

When possible, restart i-base in the usual way. i-base will open all data that was buffered at the time of the event and display the information on the data that was available in the capture tab. Additional information will be available from the data properties window.

This data needs to be reviewed and stored at the correct patient.

If, due to circumstances, the patient to which the data belongs cannot be deduced, this data must absolutely not be used.

Should you be unable to do this, or have different problems, please contact your local Topcon representative.


Storage location

When running IMAGEnet i-base as a capture station in a network, it is recommended to create an extra database and image save location on the local PC where i-base is installed. Should you have any problems with your network connection, you will be able to switch to this location to save your data. This data needs to be moved to your normal database when your network connection becomes available again.

To do so create an extra database in the usual way. In case of problem you can switch to this database by logging in (select File > Login). In the dialog box: select your local database and enter your credentials and click Ok. Also make sure that your local save location is selected (File > Options > File locations > Current image save location). Your data will now be saved locally.


When you wish to save in the usual location again repeat these steps for your network save location. Data stored locally needs to be moved to the usual location using Patient packs, see the Help file: Patient packs.

Measurements

	CAUTION	For maximal accuracy in measurements made on fundus images the Littman formula needs to be used to correct the measured values for the aberrations in the human eye.
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Measurements in fundus images

The accuracies for all measurements are estimated to be 10 %

	CAUTION	The accuracy of line or area measurements conform to those of the Gullstrand test eye.
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Measurements in OCT datasets

The measurement function on the OCT images – caliper function – is enabled for Posterior Segment images and can be used for Cornea Thickness measurements on Anterior segment images.

The following table gives an overview of the applied measurement function:

	Vertical measurement	Horizontal measurement
Anterior	Applied for Cornea Thickness	Applied for Cornea Thickness
Posterior (Hand-held lens)	Applied	Not applied
Posterior (FV-1L)	Applied	Applied

Posterior measurements



In case of Posterior Segment images the vertical axis i.e. depth axis or z axis is always enabled and independent of the optics used. The horizontal component of the measurement function strongly depends on the magnification of the optics, and on the alignment of the components in the optical system. Since the alignment can not be guaranteed for hand-held lenses, the horizontal component is only enabled when the Fundus Viewer FV-1L is used.

A combination of vertical and horizontal component allows the user to measure free-forms on the OCT images.

The system tolerances of the measurement components are:

Vertical Measurement is a summation of pixels where the size of each individual pixel is 4.2 μm with an error < 2%.

Horizontal Measurement is a summation of pixels where the size of each individual pixel depends on the optical magnification. The error of the measurement component is <10% for the central region of the retina. The central region of the retina is defined as an area with a radius of approximately 4 mm around the fovea.

	CAUTION	The horizontal component of the measurement function depends on the relation between the optics settings i.e. magnification of the slitlamp and hand-held lens AND the settings selected in the application plug-in. The horizontal measurement function is not reliable if this is not set correctly by the user.
	CAUTION	The accuracy of the horizontal component of the measurement function is based on the Gullstrand Eye conditions.




Anterior Top of Cornea measurement

In case of Anterior Segment images the vertical axis i.e. depth axis or z axis is always enabled and independent for the optics used. The horizontal component of the measurement function strongly depends on the magnification of the optics, and on the alignment of the components in the optical system. Since the alignment can not be guaranteed for all the possible variation of the position of the Slitlamp in relation to the position of the anterior segment of the eye, the horizontal component is only intended to be used as part of the measurement of the Cornea Thickness, where the error contribution of these effects are limited.

In order to perform this measurement take an image by aiming at the centre of the pupil and adjust the SL SCAN-1 alignment until you find the optical reflex, that will be clearly visible as a bright vertical line in the SL SCAN-1 image. Usually this is done by moving the slitlamp up or down a little.

When you find the optical reflex, press the trigger to take an image. You will need to save this image to be able to measure on it. Measurement will need to be done just next to the optical reflex.

Top of Cornea measurement is a summation of pixels where the size of each individual pixel depends on the optical magnification. **The error of the measurement component is < 5% for the central region of the cornea.** The central region of the cornea is defined as an area with a diameter of approximately 4 mm around the centre of the pupil.

	CAUTION	Anterior measurement is intended for central cornea thickness measurement only.
	CAUTION	The horizontal component of the measurement function depends on the relation between the optics settings i.e. magnification of the slitlamp AND the settings selected in the application plug-in. The measurement function is not reliable if this is not set correctly by the user.
	CAUTION	The accuracy of the Top of Cornea measurement function is based on comparison to OCT 2000 FA plus and measurement of glass plates of known thickness.

Measurements in OCT datasets

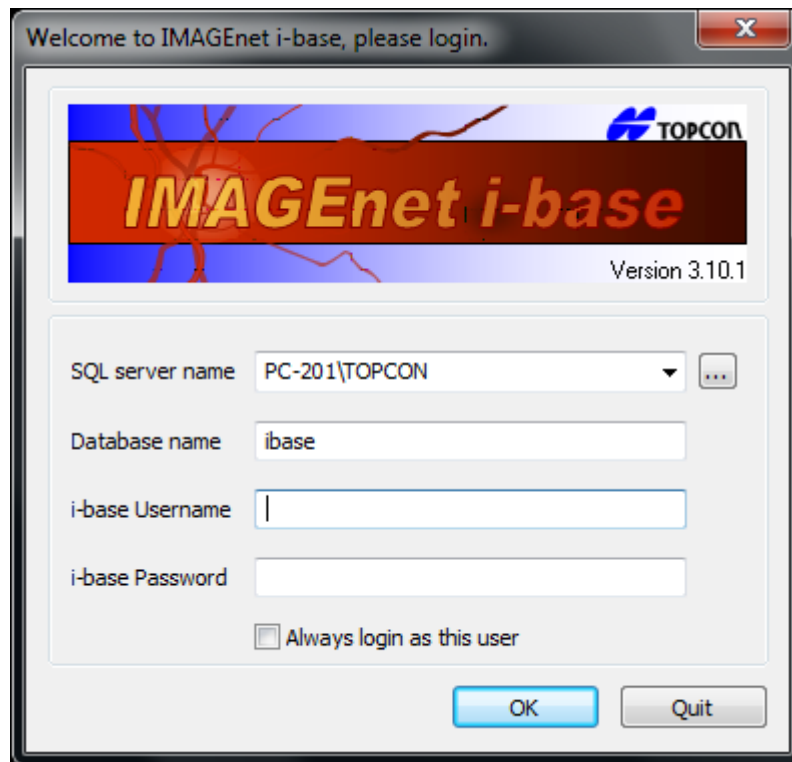
The measurement function on the OCT images – caliper function – is enabled for Posterior Segment images and can be used for Cornea Thickness measurements on Anterior segment images.

Start IMAGEnet i-base

Login



To startup IMAGEnet i-base double click the shortcut icon on your desktop. The IMAGEnet i-base login window will appear.

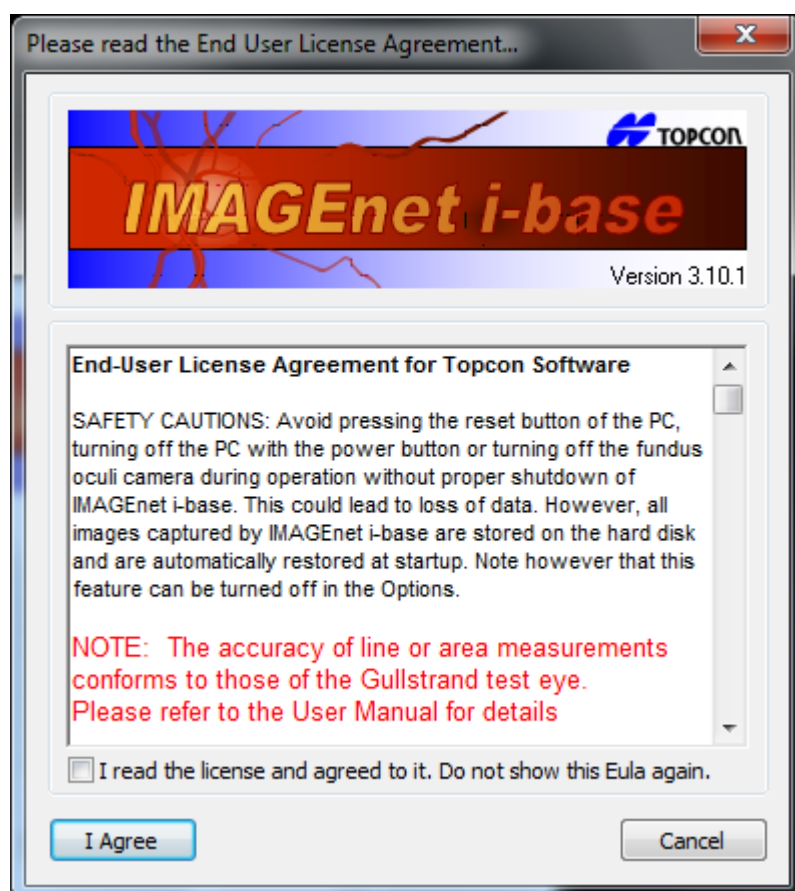


If only one IMAGEnet i-base user is active on this pc, you can mark "Always login as this user"
After filling in all necessary fields click "OK"

As Default the database name is "ibase" username and password are "ibaseAdmin". If these parameters are not correct to login please contact your dealer.

✓	NOTE	For safety reasons it is recommended to change this default password. To do this goto IMAGEnet i-base menu: File > Change password.
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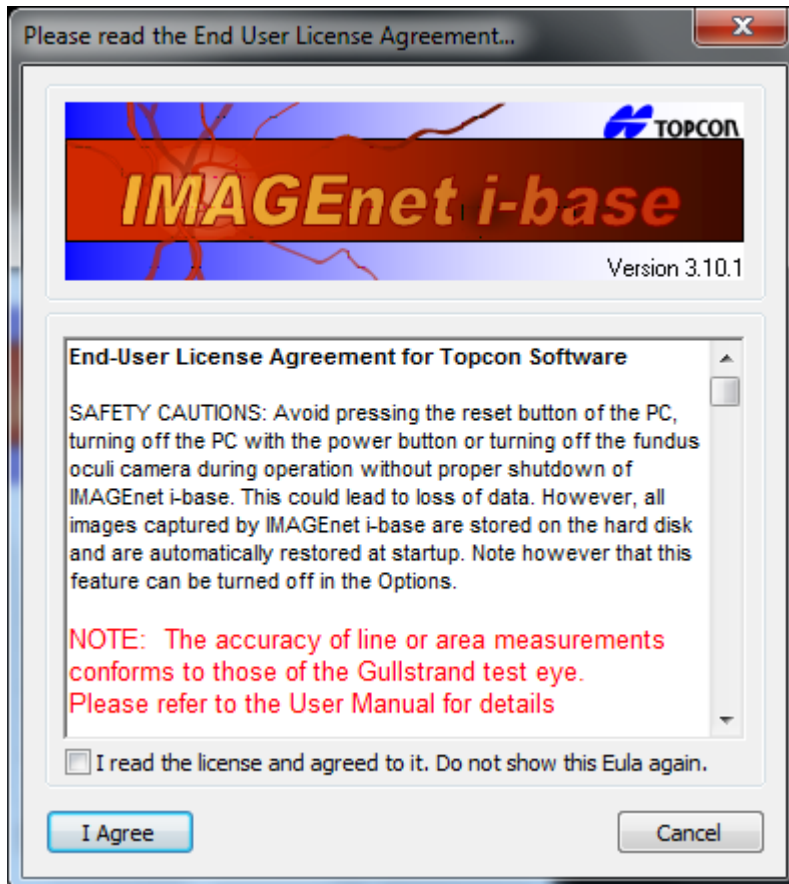
Agree license agreement



Read the end user license agreement for Topcon software and Press **"I Agree"** to continue with ibase.

Risk controls related to the instructions for use

The end-user is notified at start-up of the software with the 'End-User License Agreement' as shown below. This agreement will be shown to all (new) users until they agree to it.

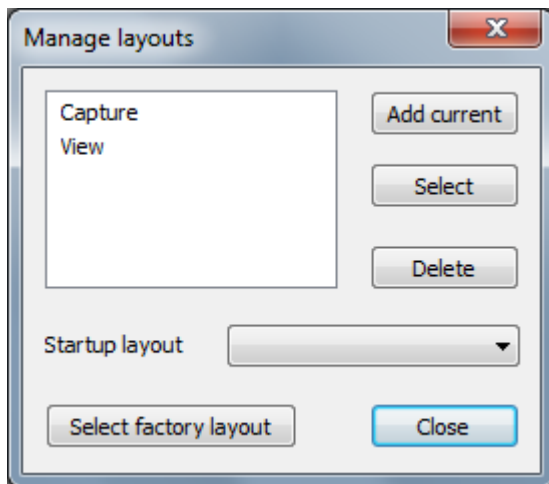


IMAGEnet i-base layout's

A layout in IMAGEnet i-base is the i-base screen overview with all the shown windows and toolbars. Also i-base main window position (including which monitor) and size (including minimized or maximized state) are parts of the layouts. Settings and options for windows are not included in a layout, except for the thumbnail window state.

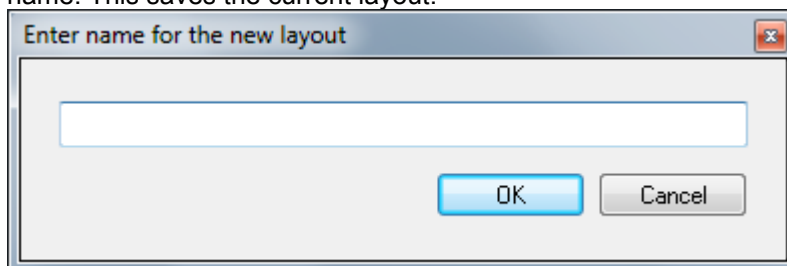
From the View menu it is possible to show and hide all the windows and toolbars to create a different layout. Most bars and windows can be moved, docked and undocked with the normal Windows functionality.

It can be useful to have different layouts for different i-base actions. For example, capturing and viewing. Layouts can be managed with the 'Manage layouts' dialog, which can be started from the menu (View > Layouts > Manage layouts) or from the 'Windows toolbar'.



Create layout

To create a new layout press in the 'Manage layouts' dialog the 'Add current' button and enter the preferred name. This saves the current layout.



The same action can be done with the 'Save current layout' button in the 'Windows' toolbar.



Select a layout

Selecting a layout can be done from the layout management by choosing the layout from the list box and pressing the 'Select' button.

Another way is to select the preferred layout from the dropdown in the 'Windows' toolbar.



Configure a startup layout

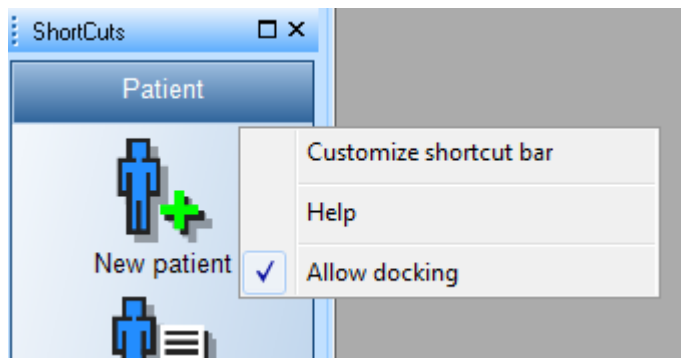
If it is desired to startup i-base always with the same layout, select in the 'Manage layout' dialog the preferred layout at 'Startup layout'.

✓	NOTE	If no layout is selected as 'Startup layout' IMAGEnet i-base will remember his last layout and startup with it the next time.
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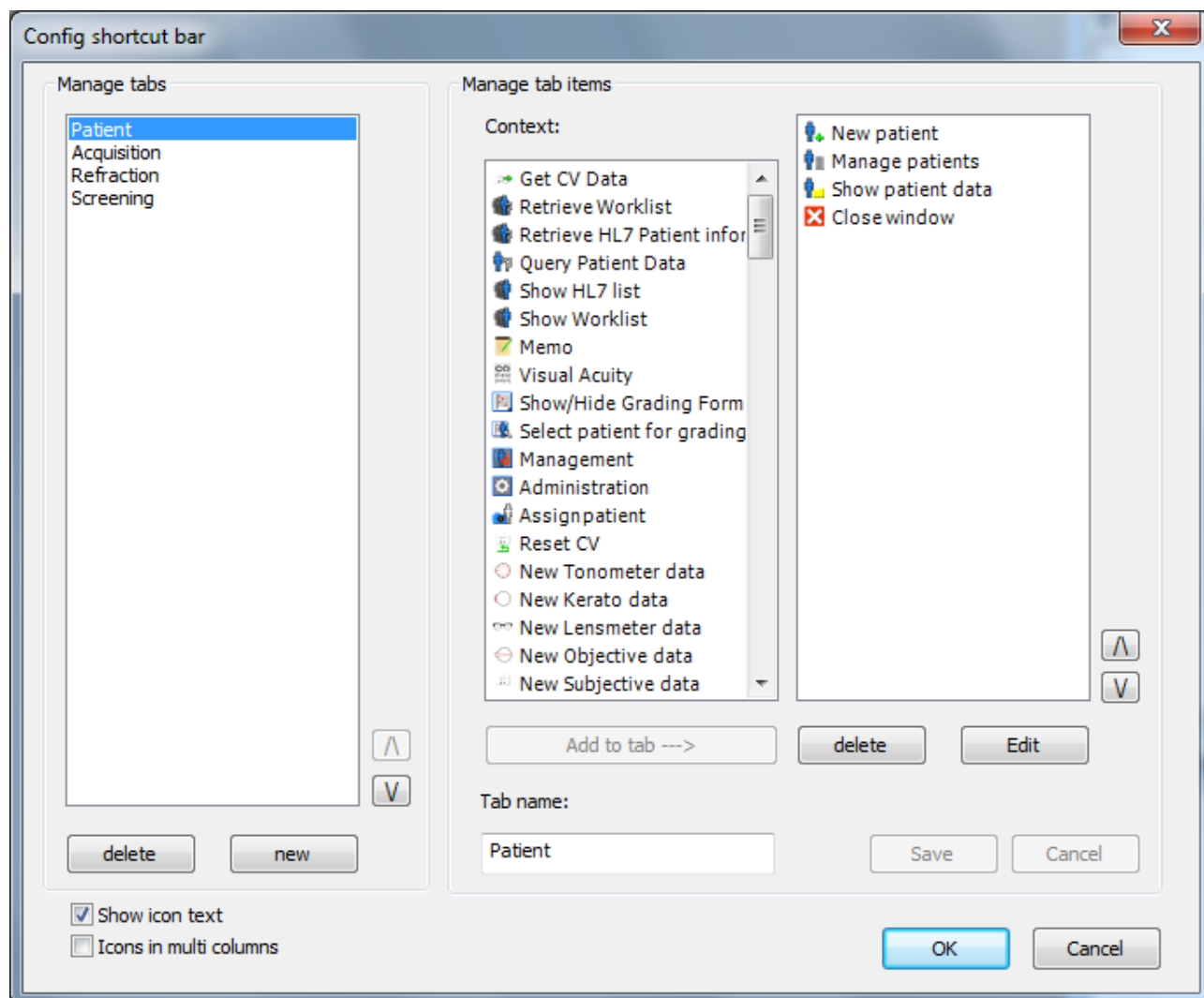
Shortcuts Window

If you want to make the buttons smaller or bigger in the Shortcuts windows, just hold down the Control key on your keyboard and click one time in an empty space on the Shortcuts window. Now scroll with your mouse wheel while still holding the control key.

To customize the shortcut bar right click on the shortcut bar and click "Customize shortcut bar".



A screen appears to configure the tabs:

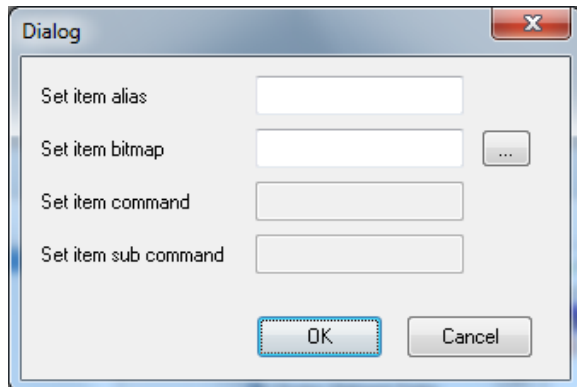


Add a tab

To add a new tab press "new" and enter the name of the tab. Add item(s) by clicking an item and then the button "Add to tab --- >" or double click the item. Press "Save" when you are satisfied with the new tab.

Modify a tab

To modify a tab, just select the tab name you want. Now it is possible to add, delete or modify the items in this tab. Modifying of the items in tab can be done with the "Edit" button or double click. A new dialog appears where it is possible to change the text and the icon of the item. Press "Save" when you are done.



Delete a tab/item

To delete a tab/item select the tab/item name you want to delete and press the "delete" button. The tab with all the items will be removed from the shortcut bar and the item will be removed from your tab. Press "Save" when you are done.

Start an external file

To start from i-base an external program or open a file.

Examples:

To open a MS Word document:

alias:	Open my file
bitmap:	choose here a picture
commando:	browse to WINWORD.EXE
sub commando:	the file you want to open

To start Excel:

alias:	Start Excel
bitmap:	choose here a picture
commando:	browse to EXCEL.EXE
sub commando:	leave it empty

Start/Config a plugin:

To start or config a plugin.

Example:

To Start the Cell Count module :

alias:	Start Cell Count
bitmap:	choose here a picture
commando:	Cell Count
sub commando:	Cell Count (automatically)

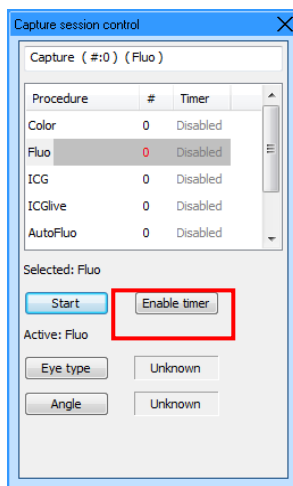
Capture Session Procedure (only with eyedocor license)

Select capture layout

If there is created a special layout for capturing select this from the 'Windows' toolbar or the 'View' menu. If there is no layout for capturing show the 'Capture session control' window by selecting this window from the 'View' menu.

Start a capture session

From the capture session control window you can select the different capture procedures. In this menu you can start a new procedure by double click or select a procedure and press the "start" button with the mouse pointer.



Note, When you select for example "Fluo" procedure, a capture session window will come up. IMAGENet Ibase is now ready to receive images.




Note, To enable timer press the "Enable timer" button. The time information will be red colored and is in standby mode.

Note, By grabbing the first image automatically the timer will start. When prefer to start the timer manually press the "start timer" button, that's appear when you enable the timer.

Note, The images will be shown in your capture window, below the capture window there is a thumbnail overview of the images.

Note, The thumbnails size can be modified from: File→options→General→Thumbnail size.


You also can hold the control key and scroll with your mouse wheel.

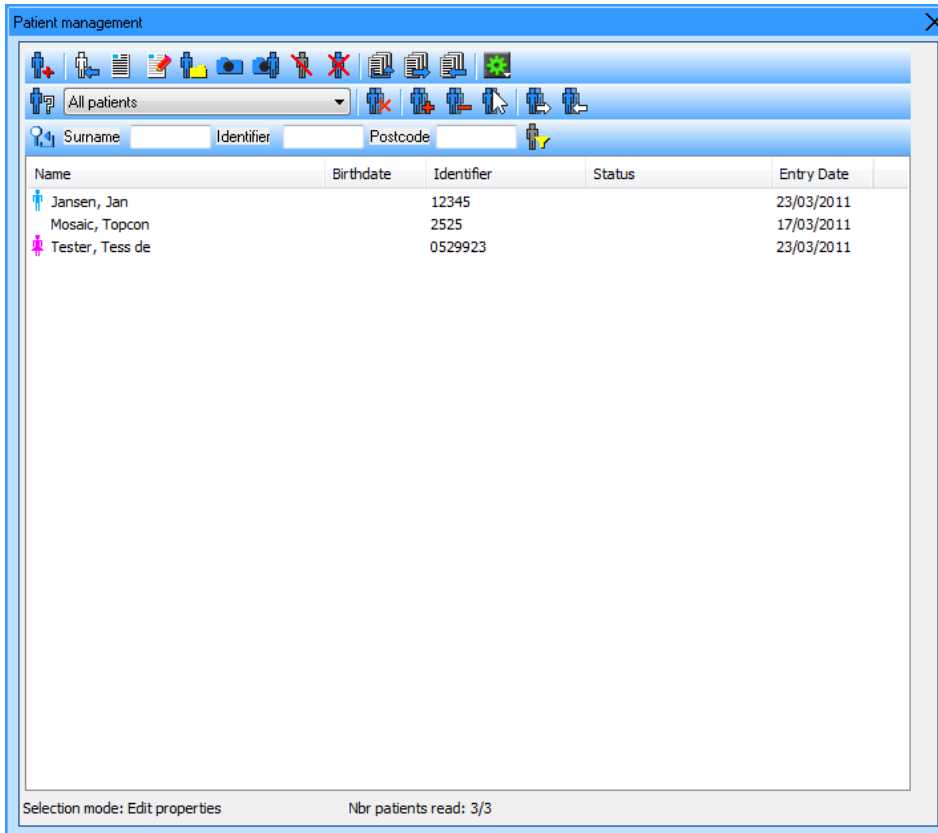
	NOTE	Procedures can also be start from the Procedures menu and for some instruments, from the instrument.
	CAUTION	When changing procedure, by means of the instrument, take into account that the instrument can be faster than IMAGENet i-base. Therefore delay capturing until IMAGENet i-base has the correct procedure in place. You can check the procedure name in the capture session tab.
	CAUTION	When capturing data from an instrument, the user must not change any instrument or camera settings until the data is downloaded into i-base. Otherwise data properties may not be correct.

Add a new patient or Select a patient

When starting a new capture session, we need to add patient information to this capture. IMAGENet i-base patient management window will pop up automatically every time when you start a new capture session. We can add a new patient or select an existing patient from the patient list.

Add a new patient

From the patient management window we select the new patient button  from the action bar.

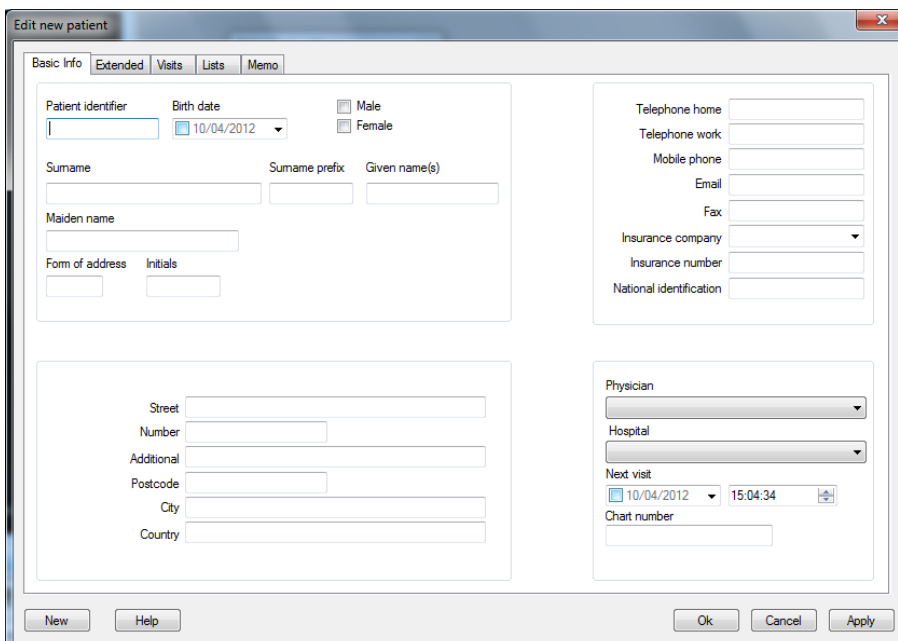


The screenshot shows the 'Patient management' window. It features a toolbar at the top with various icons, including a 'New patient' button (a person icon with a plus sign). Below the toolbar is a search bar with fields for 'Surname', 'Identifier', and 'Postcode'. A table lists three patients:

Name	Birthdate	Identifier	Status	Entry Date
Jansen, Jan		12345		23/03/2011
Mosaic, Topcon		2525		17/03/2011
Tester, Tess de		0529923		23/03/2011

At the bottom, it indicates 'Selection mode: Edit properties' and 'Nbr patients read: 3/3'.

Fill in all necessary patient information, basic information as Patient ID and Surname are required.

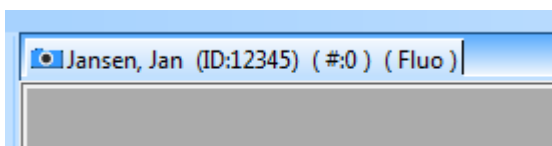


The screenshot shows the 'Edit new patient' window. It has tabs for 'Basic Info', 'Extended', 'Visits', 'Lists', and 'Memo'. The 'Basic Info' tab is active, showing fields for:

- Patient identifier (text field)
- Birth date (calendar icon, dropdown showing 10/04/2012)
- Gender (Male/Female checkboxes)
- Surname, Surname prefix, Given name(s) (text fields)
- Maiden name (text field)
- Form of address, Initials (text fields)
- Street, Number, Additional, Postcode, City, Country (text fields)
- Telephone home, Telephone work, Mobile phone, Email, Fax (text fields)
- Insurance company (dropdown), Insurance number (text field)
- National identification (text field)
- Physician (dropdown)
- Hospital (dropdown)
- Next visit (calendar icon, dropdown showing 10/04/2012, time dropdown showing 15:04:34)
- Chart number (text field)

Buttons at the bottom include 'New', 'Help', 'Ok', 'Cancel', and 'Apply'.

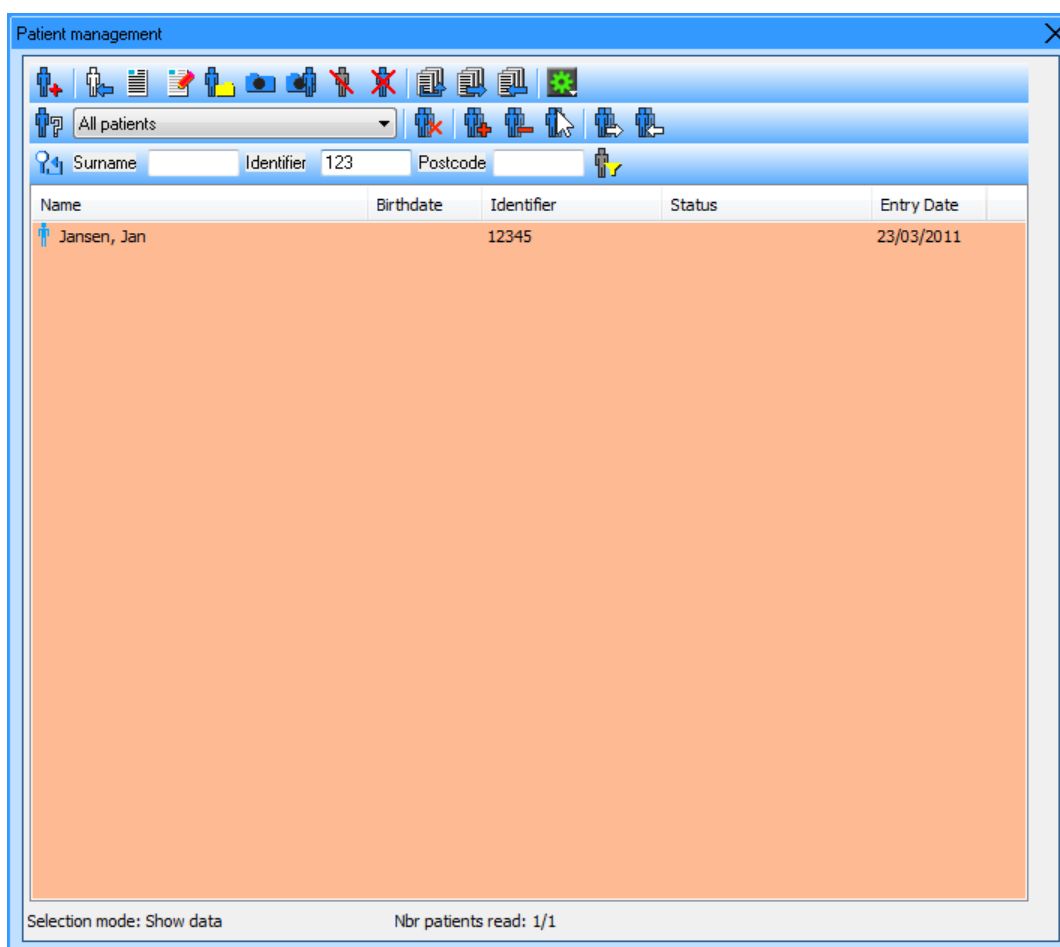
Press OK to return to the capture session window.
Patient information is now also available in your capture session window.



Patient name = Jan Jansen
 Patient ID = 12345
 “#” amount of captured images
 Fluo = procedure name

Select a patient

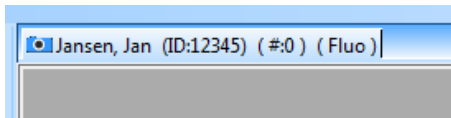
The patient management window will start automatically when a new capture session starts. Now we will select a patient from the patient list. From the query bar we can filter patient on surname, patient ID and postcode. To start the capture for this patient double click on the patient name.



NOTE

The background of the patient list will be colored Tan when a query is active.

Capture window ready to capture images

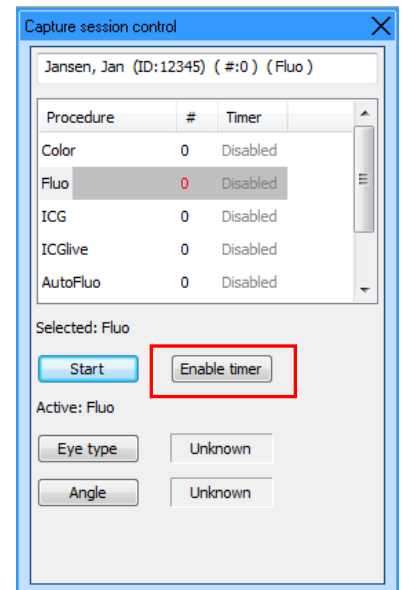


Check if procedure and patient information are correct when capture session window is open.
Now you are ready to start grabbing images.

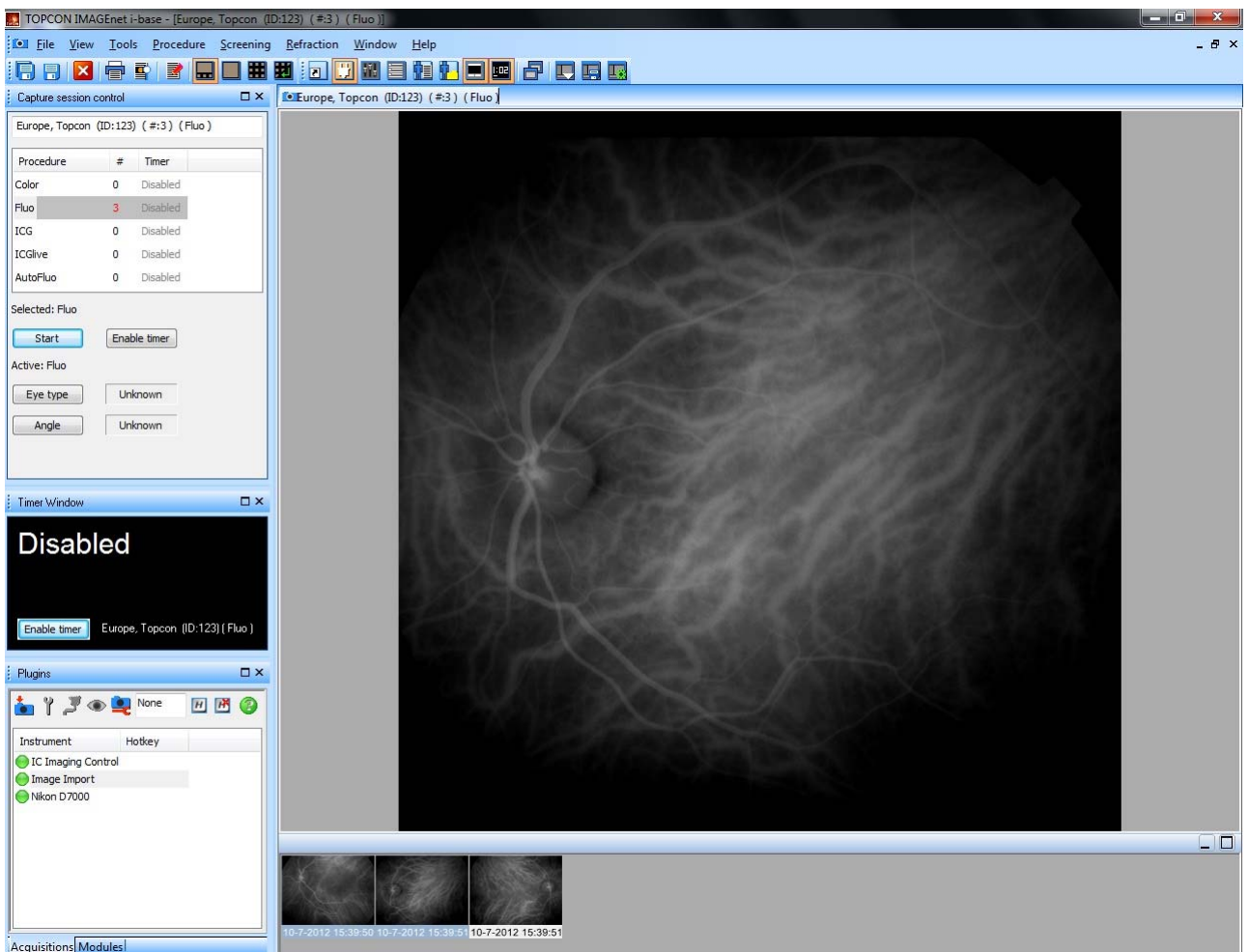
Start Timer

To enable the timer press the “Enable timer” button.
The timer information will be red colored and is in standby mode.

By grabbing the first image automatically the timer will start.
When you prefer to start the timer manually press the “Start timer” button. “Start timer” button appear when you enable the timer.



Delete images during capture



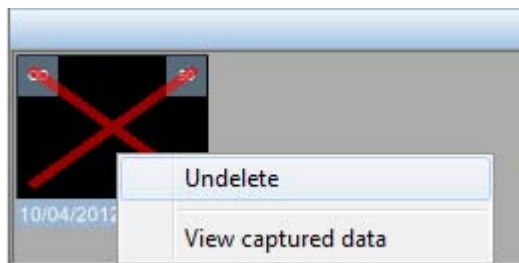
During the capture you can scroll back through the thumbnails and view the captured images by making the thumbnail active. Images that are not correct you can delete by selecting 1 or more (with shift or ctrl) thumbnails and use the delete key or with the right mouse on a thumbnail and select "delete selected"

Undelete images during capture

Restore of deleted images can be done through the shortcuts window → acquisition and use the recycle bin button "show/hide deleted".



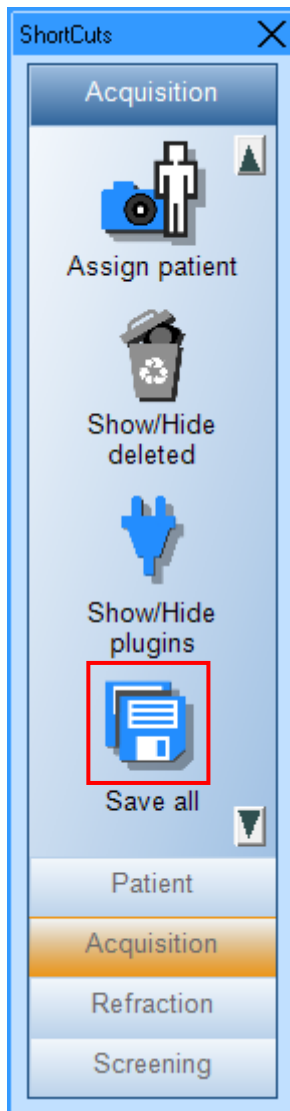
Right mouse on the thumbnail and use undelete option.



✓	NOTE	Images that are deleted can only be restored when the capture session is active
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Save captured images

To save all the captured images you can use the “Save all” button from the shortcuts window or the “Save all” button in the standard tool bar



Button to save all images




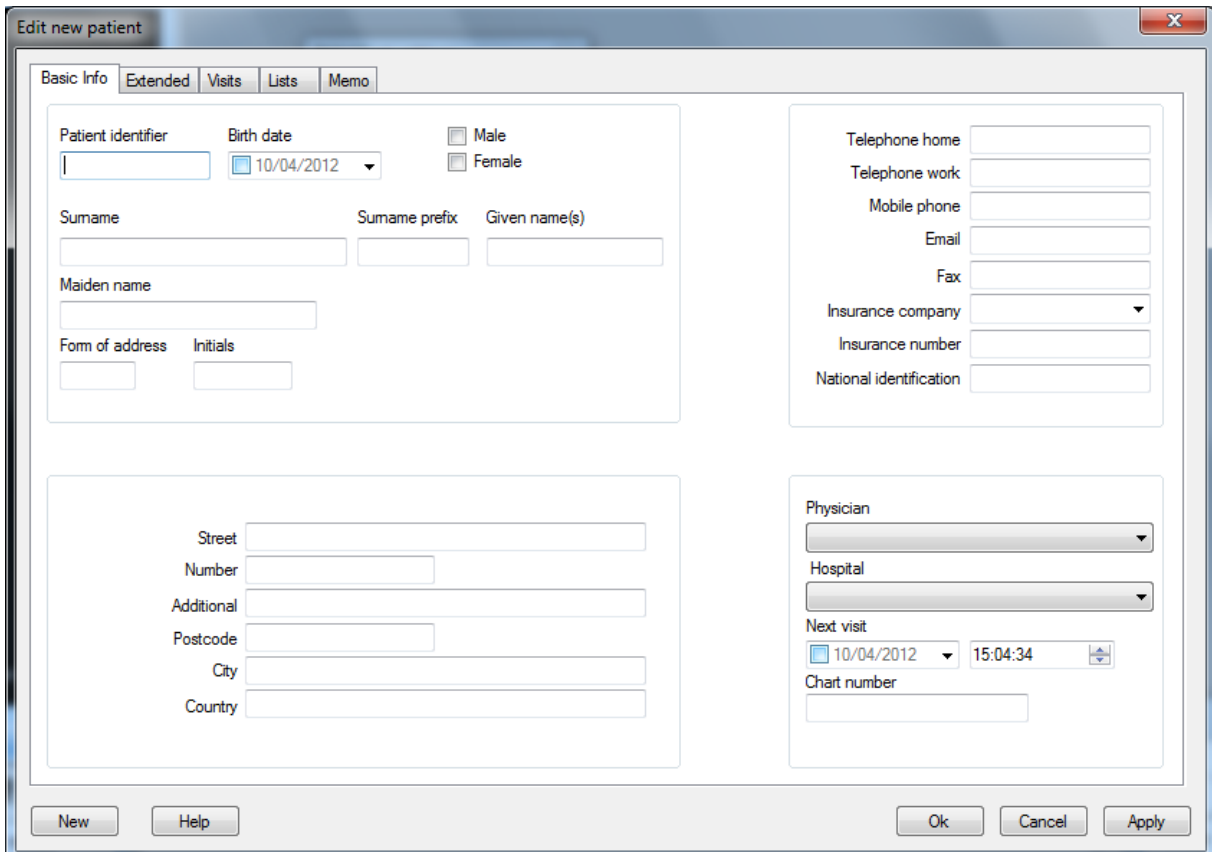
Button to save selected images

Patient Management / Data

From the shortcuts bar → Patient, you can add a new patient, edit the patient and show the patient data.

Add new patient

From the patient management window we select the new patient button  from the action bar or from the file menu from the windows tool bar select “new patient” and fill in all necessary patient information.

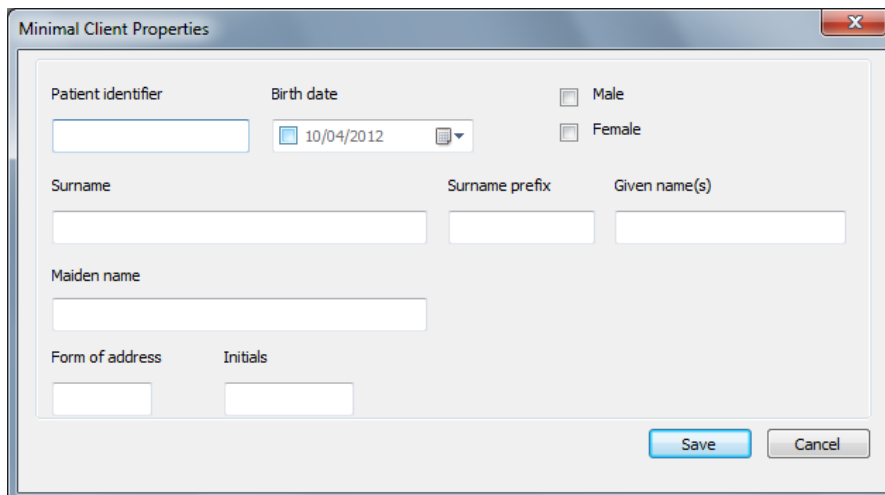


Basic information as Patient ID and surname are required, press “OK” and the patient will be added to the patient list and the patient management window will close.

Press “New”: Your patient is added to your patient list, but you are able to continue adding new patient.

Press “Apply”: Your patient is added to your patient list, now you can add also other information from the different tabs in the patient properties window.

✓	NOTE	There is also a minimal patient properties window available. To use this, select in the option menu → general → patient management “minimal patient dialog”
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Minimal Client Properties

Patient identifier:

Birth date:

☐ Male
☐ Female

Surname:

Surname prefix:

Given name(s):

Maiden name:


Form of address:

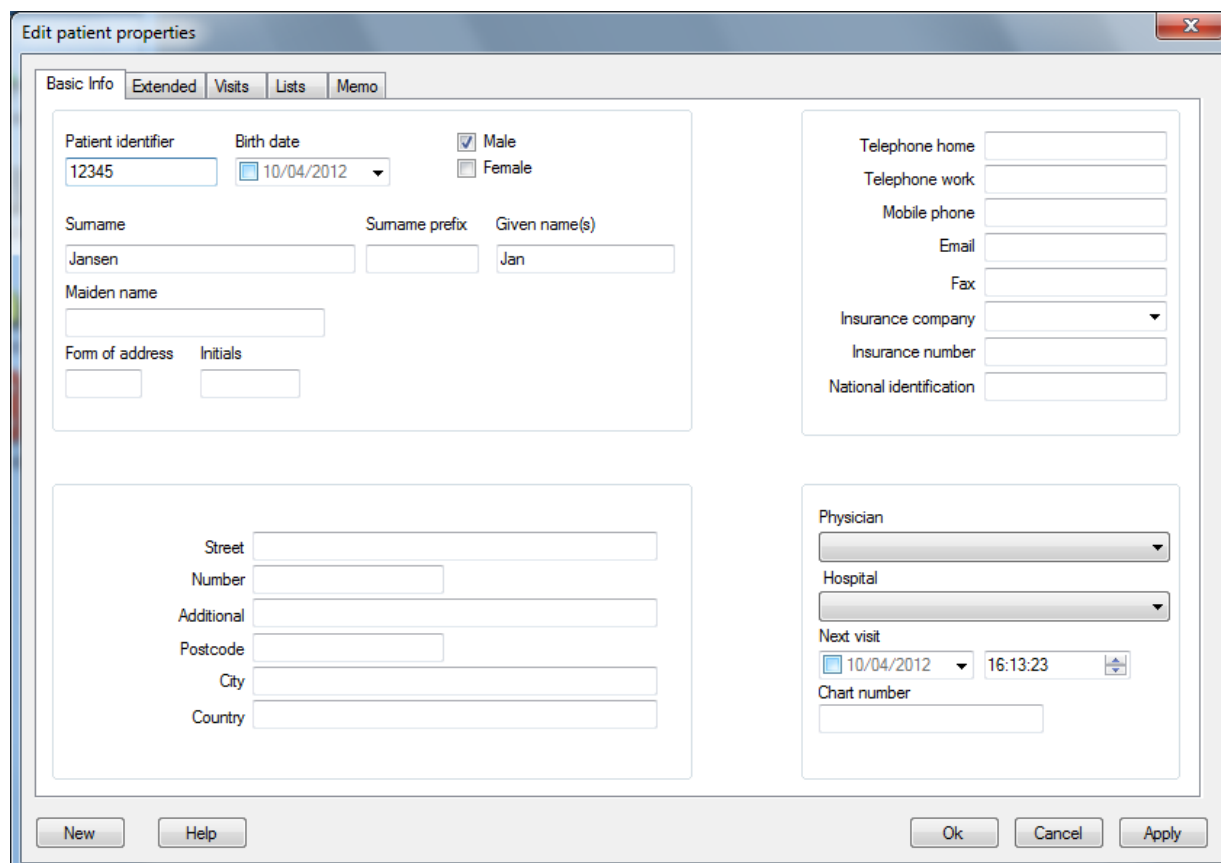
Initials:

Save Cancel

Edit (manage) patient information

From the shortcuts bar select "Manage Patient", now you are in the edit patient mode.

Select a patient and press the "edit properties" button  or double click on the patient name. The edit properties window will appear, now you are able to edit patient information. Press the OK button to save your changes.



Edit patient properties

Basic Info Extended Visits Lists Memo

Patient identifier:

Birth date:

☒ Male
☐ Female

Surname:

Surname prefix:

Given name(s):

Maiden name:

Form of address:

Initials:

Telephone home:

Telephone work:

Mobile phone:

Email:

Fax:

Insurance company:

Insurance number:

National identification:

Street:

Number:

Additional:

Postcode:

City:

Country:

Physician:

Hospital:


Next visit:

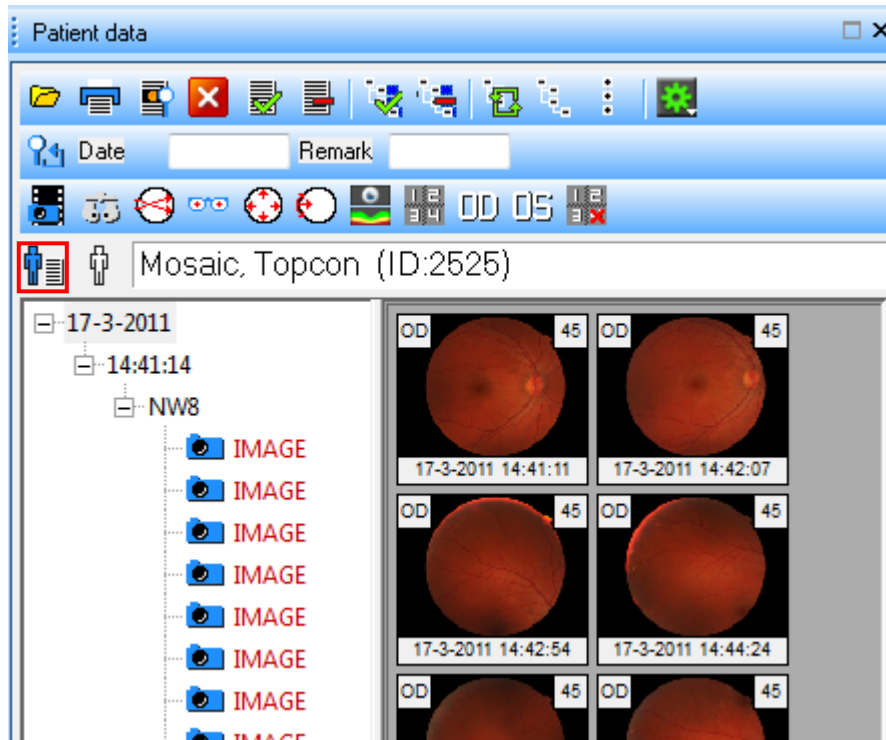
Chart number:

New Help Ok Cancel Apply

Show Patient data

From the shortcuts bar select "show patient data"


Select a patient and press the "show data" button  or double click on the patient name
The patient data window will shown, now your are able to view patient data.

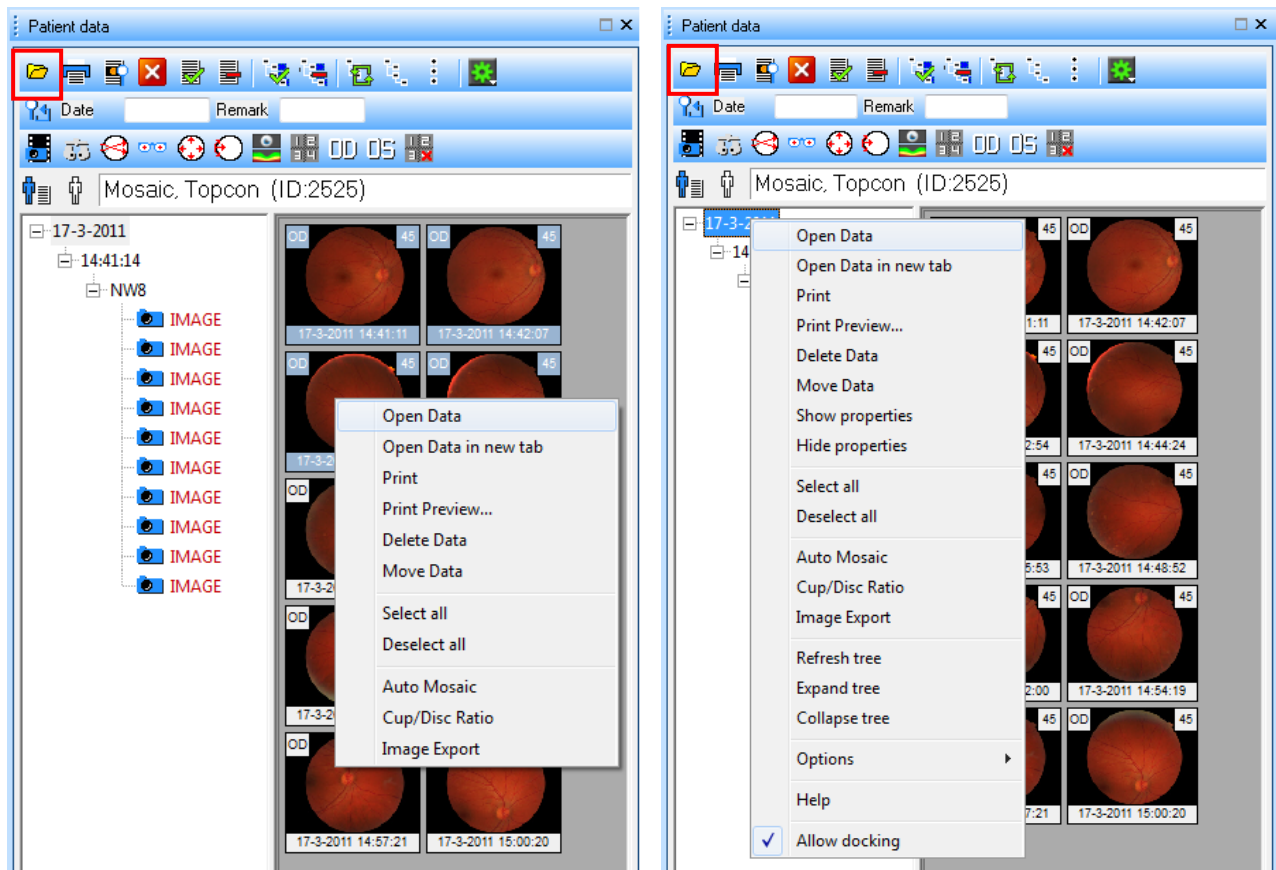



NOTE



From the patient management window you can also select new, edit, show data etc with the right mouse button

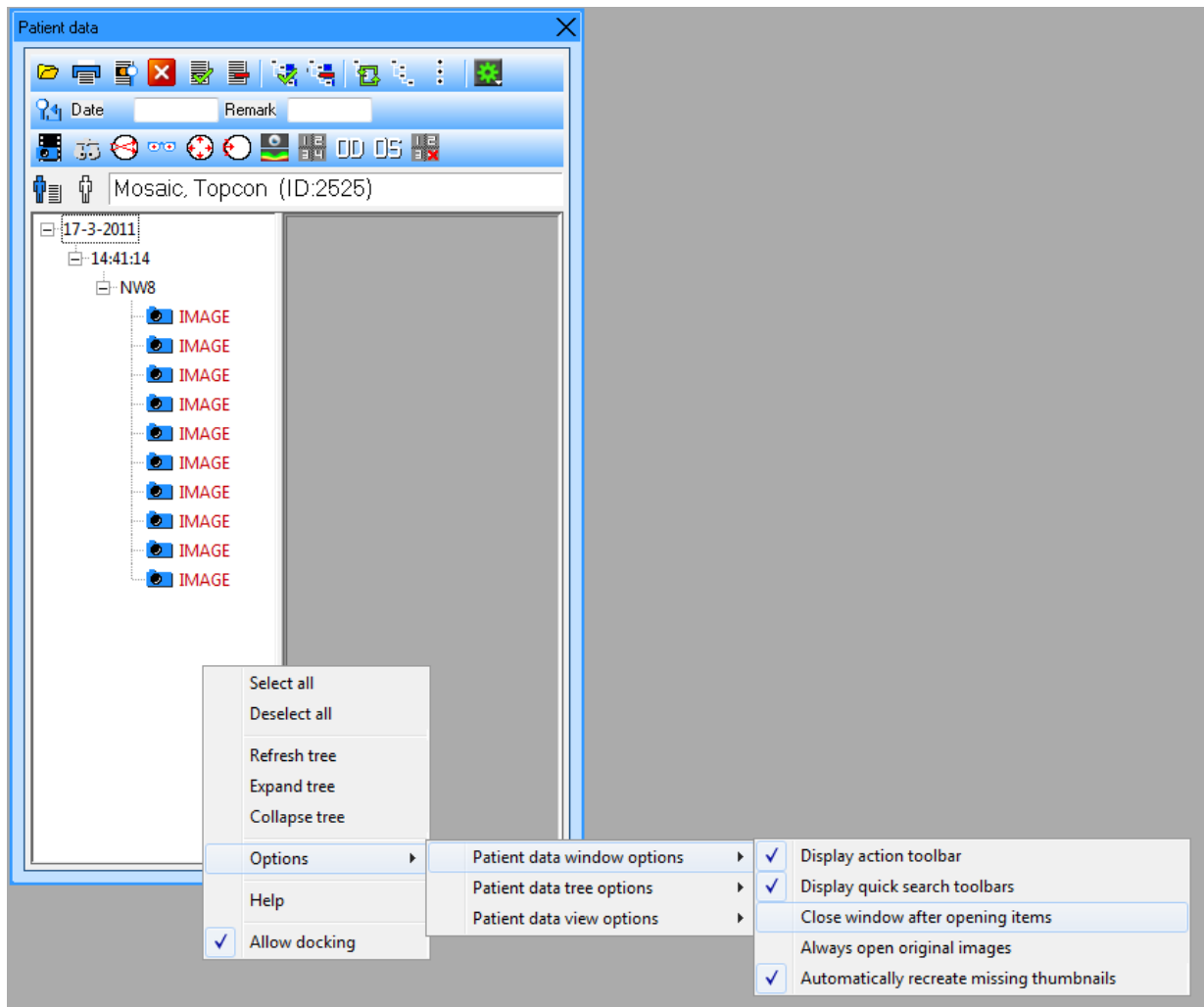
Open patient data

To open data or images use the open data button  or select a visit or procedure and use right mouse button to select open data. If you only want to open one image, you can double click the image.

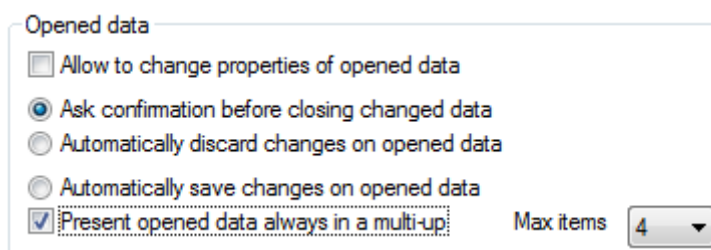


You can also make a selection of images (ctrl + left mouse button) and use the open data button  or use right mouse button to select open data.

	NOTE	<p>To close the patient data window after opening images or data, select in options  from the patient data window "Close window after opening items" or use the right mouse button and go to options.</p>
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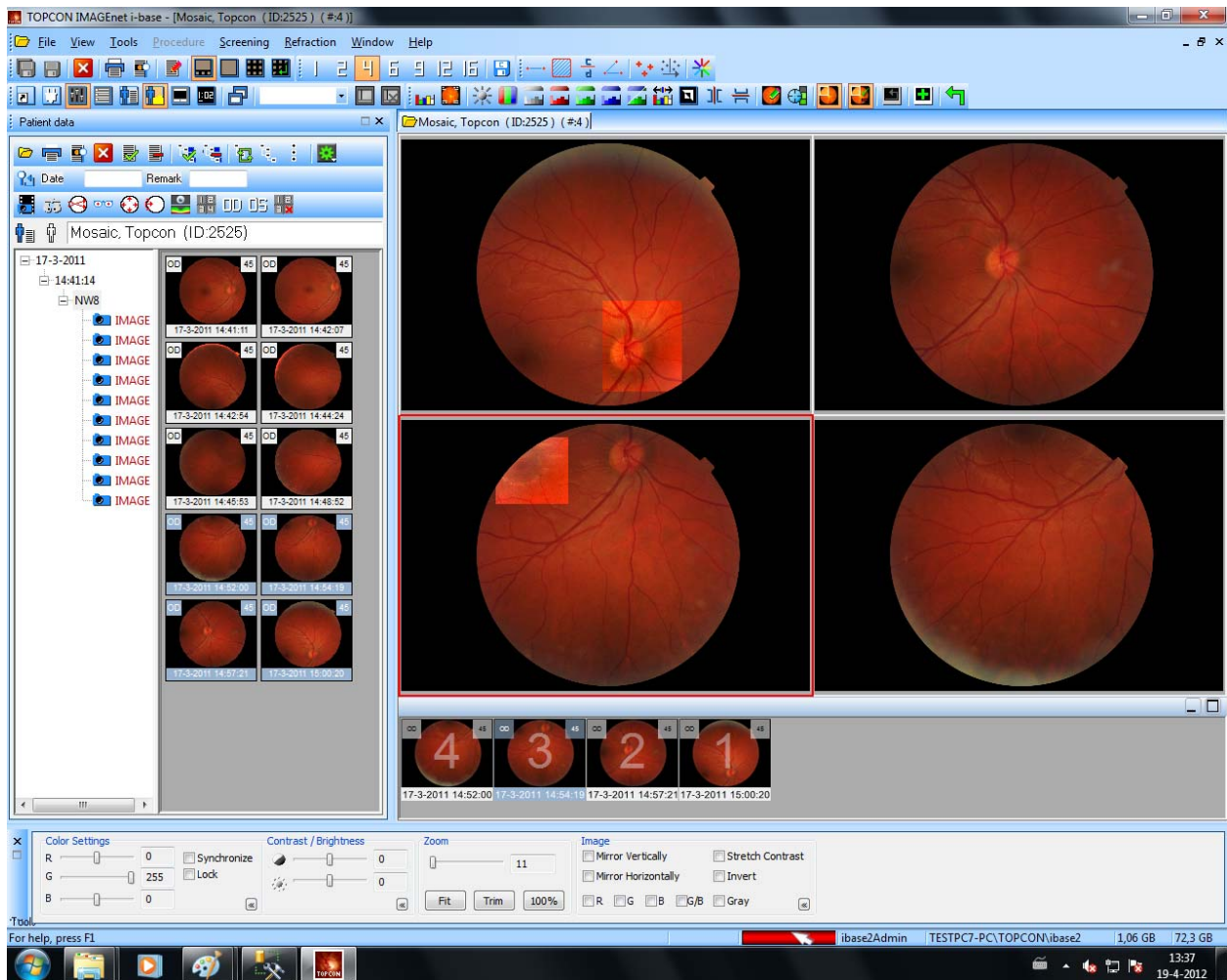
✓	NOTE	To open data or images directly in a multi-up window, select from File > options > general > opened data, "Present opened data always in a multi-up"
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Working in a multi-up

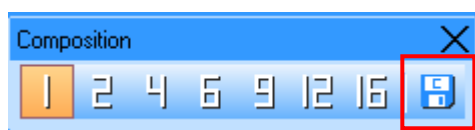
Open data in a multi-up view is by default disabled, you can work manually by opening images and double click on the first image, a 4 up will be displayed. By selecting images from the thumbnail bar you can add, removed or swap (hold ctrl key) images.

By double click in the 4-up you will be switch again to your single-up

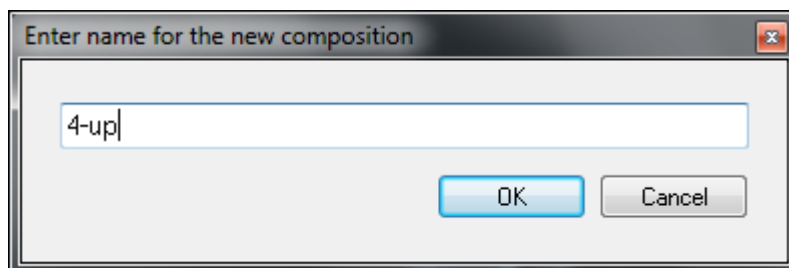


Composition Tool Bar

The composition toolbar provides fast access to several composition functions.



To save the current views in the selected acquisition or viewing tab as a composition select the "Save button". A dialog pops up where you can enter the composition name, press OK to Save









✓	NOTE	To open data or images directly in a multi-up window, select from File > options > general > opened data, "Present opened data always in a multi-up"
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Fitting images by zoom

The image zoom toolbar provides fast access to several zooming functions.



	Normal size:	zoom the image or movie to the original size.
	Trim zoom:	zoom the image so that the black background is hidden.
	Zoom fit:	zoom the image or movie to fit the view.
	Rectangle zoom:	when this option is enabled, you can draw a rectangle in the image to zoom in to.
	Zoom glass:	with this option you get a zooming glass, which you can use to zoom into the image (this option is only available in the EyeDoctor and EyeViewer modules).
	View pan window:	shows a window with a thumbnail of the currently viewed image and the current 'Zoom rectangle'. Within this 'Pan window', you can drag the 'Zoom rectangle' with the mouse to pan over the image.

To fit open your images as default in your window fully visible you have to set some media options. Select File → Options → Media .

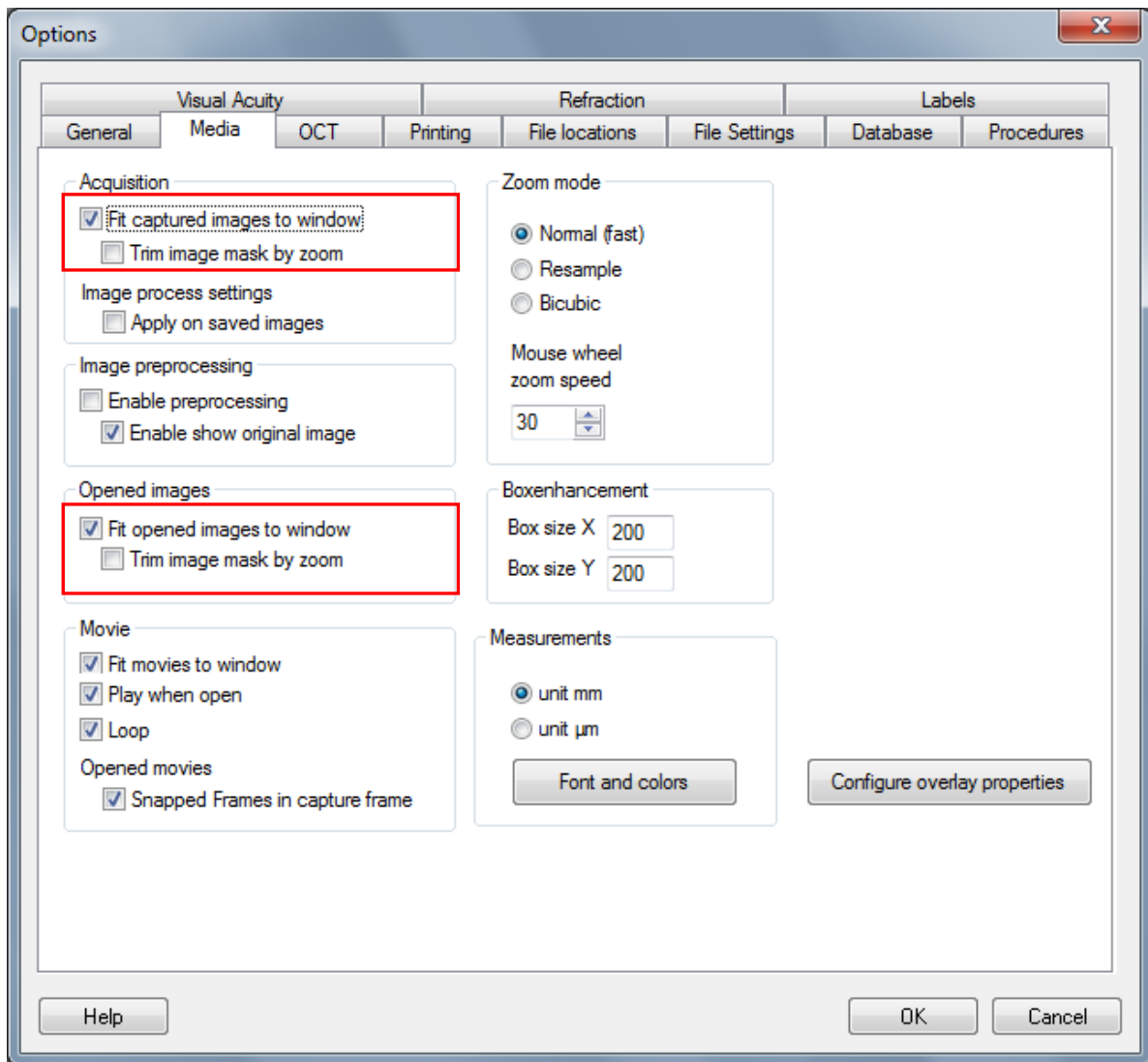


Image Process

When select a image you can adjust manually or automatically with help of the Image process bar.



Shows color histogram



Shows Image properties (you also can use the F8 key)



Contrast and brightness adjust



Adjust color balance



Separate colors- 8 bit grey, red, green and blue free.



Shows red free image



Auto stretch contrast



Invert



Mirroring



Annotate



Sharpening



Box enhancement



Show / hide box enhancement



Open original image



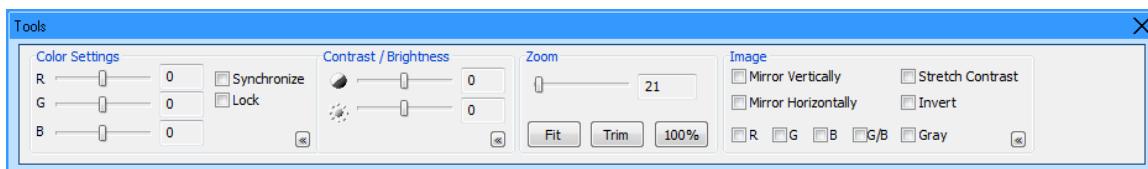
Apply adjustments in new image



Undo

Tools window

To show this tool window please go to view and then select tools.



This tool can be used as an easy and fast way to process opened or captured images. For captured images this tool can only be used for viewing. Captured images can never be changed. For opened images this tool can be used for viewing, but if needed you can also apply the changes in a new image with 'Apply in new image' from the Tools menu or with the 'Apply in new image' button in the Image process toolbar. Now a new image is created and saved. Original captured images can never be changed.

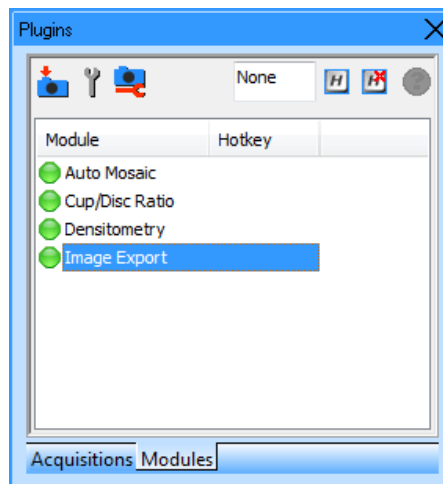
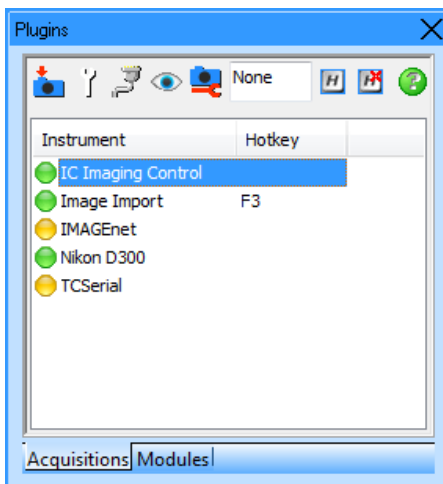
Plugin Window

From the plugins window the installed plugins can be managed.

Two types of plugins are available within IMAGENet i-base: 'Acquisition' plugins and 'Module' plugins. The two types are separated in the plugins window with two tabs. When you select a tab you get a list of the installed plugins of that type.

Acquisition plugins can send data from external sources (for example a digital camera) to IMAGENet i-base.

Module plugins can receive data and patient information from IMAGENet i-base and optionally send data back to IMAGENet i-base.



Note, A plugin can have three statuses:

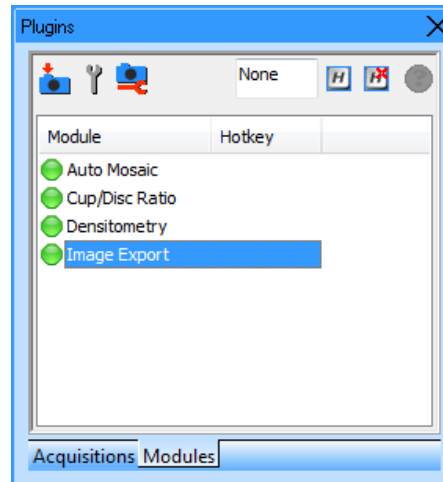
green: available
yellow: not available
red: not loaded

start the selected plugin;
for acquisition plugins this usually means trigger the camera; for module plugins this usually means start the module with the selected data items.

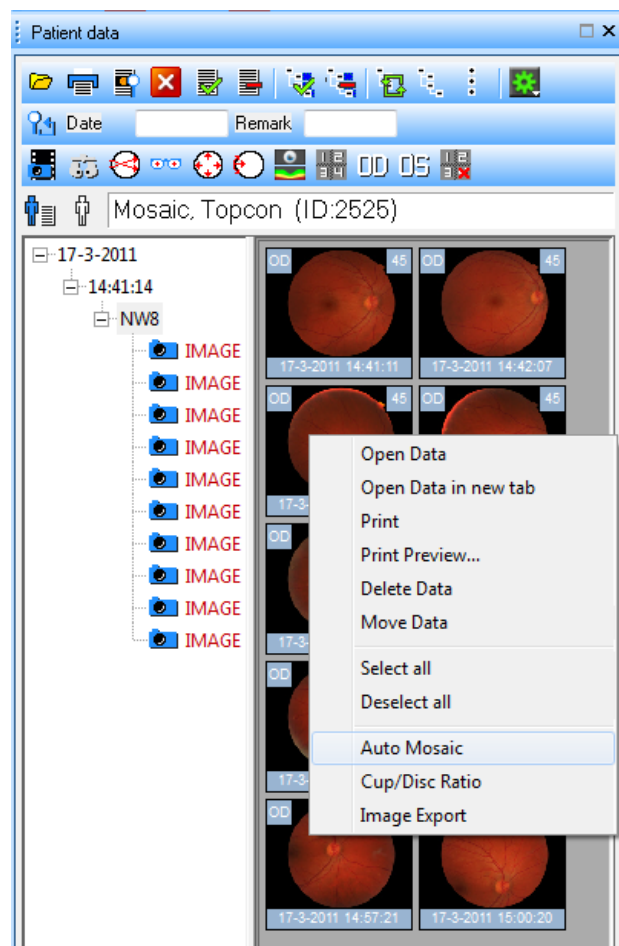
To setup a plugin just right-click on it.

Modules can start by:

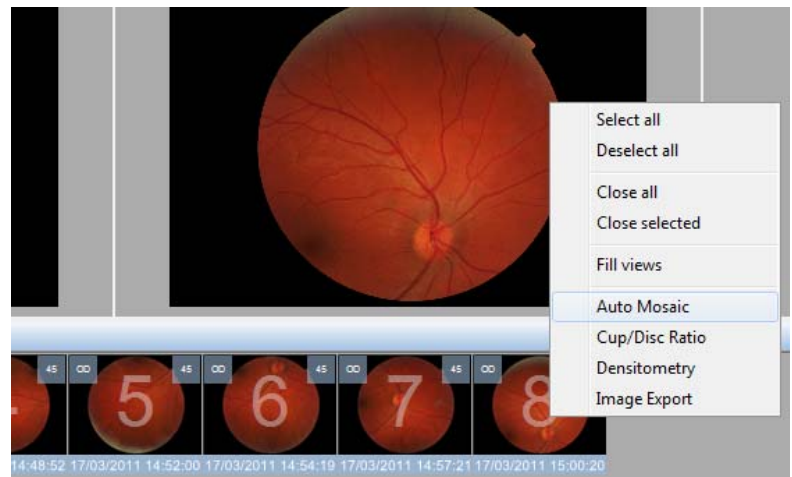
Double click in plugin window



Selecting the thumbnail(s) in patient data window and right click



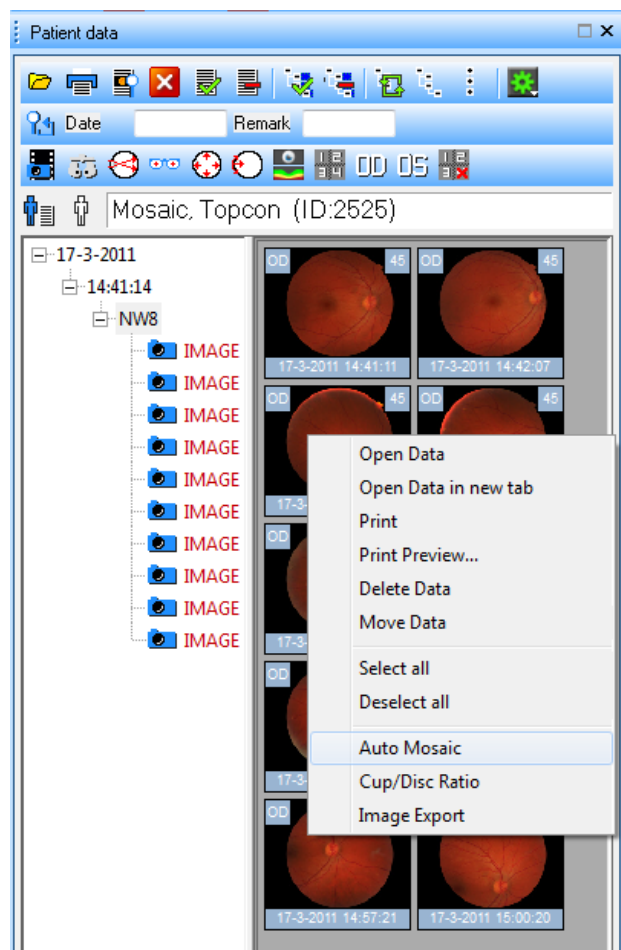
Selecting the thumbnail(s) of open image(s) and right click



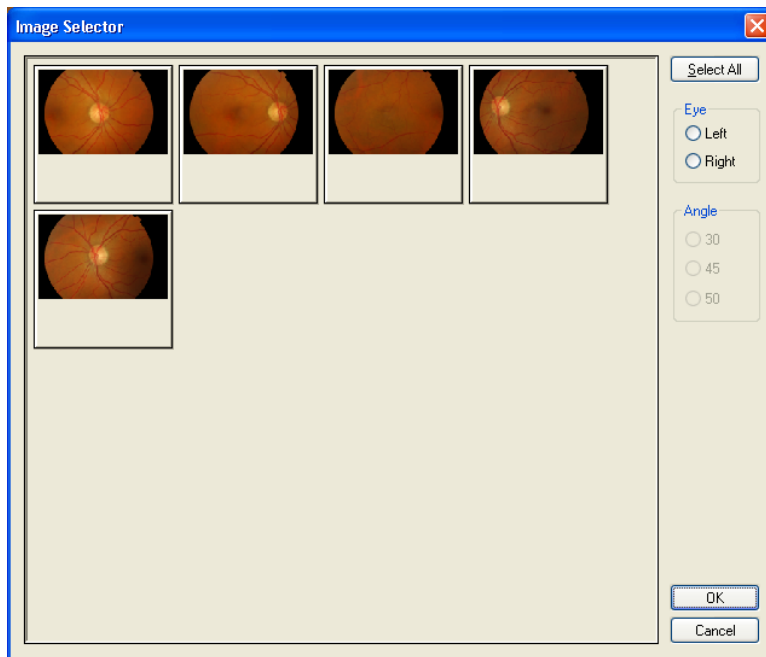
Modules

Example Automosaic:

Select all your mosaic images in the Patient data window and right click on one image, now select Automosaic and the Automosaic window will open.



If there is different information about eye and angle in the selected images, this screen will open first:



Here you can select eye and angle. Only the images that meet the selection are going to the Automosaic module.

Example Image Compare:

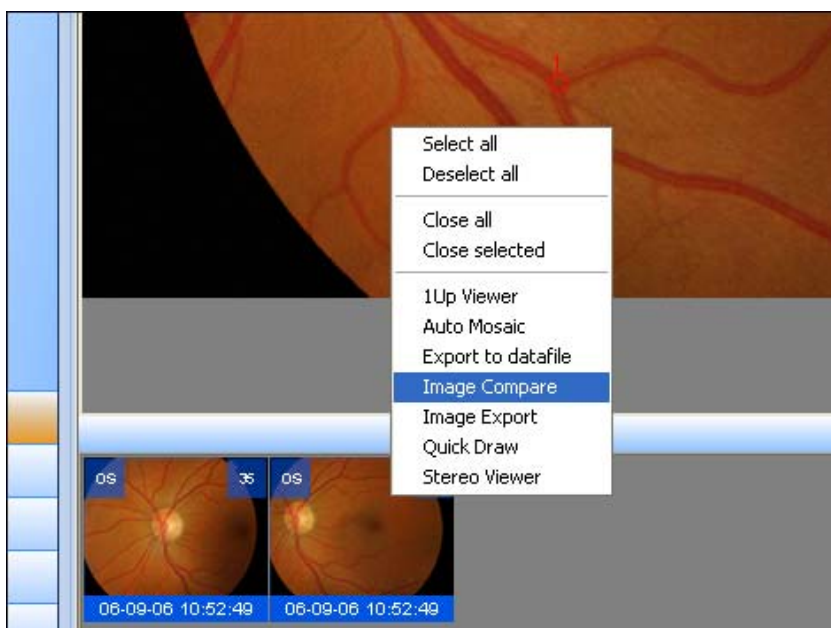
If you want to use Image Compare, you first have to make some registration points on the 2 images. You have to make 3 registration points at least and save the images with the registration points.



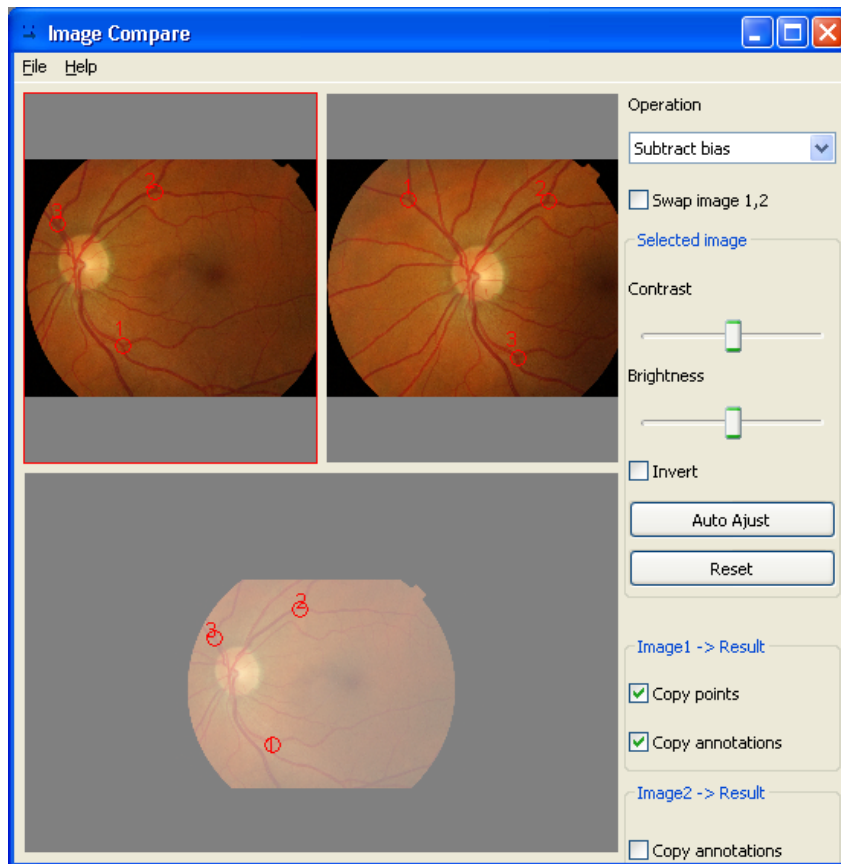
registration points you will find on the Image measure toolbar.



After saving the images you have to select the 2 thumbnails and right-click on them and select image compare or double-click image compare in the plugin window.

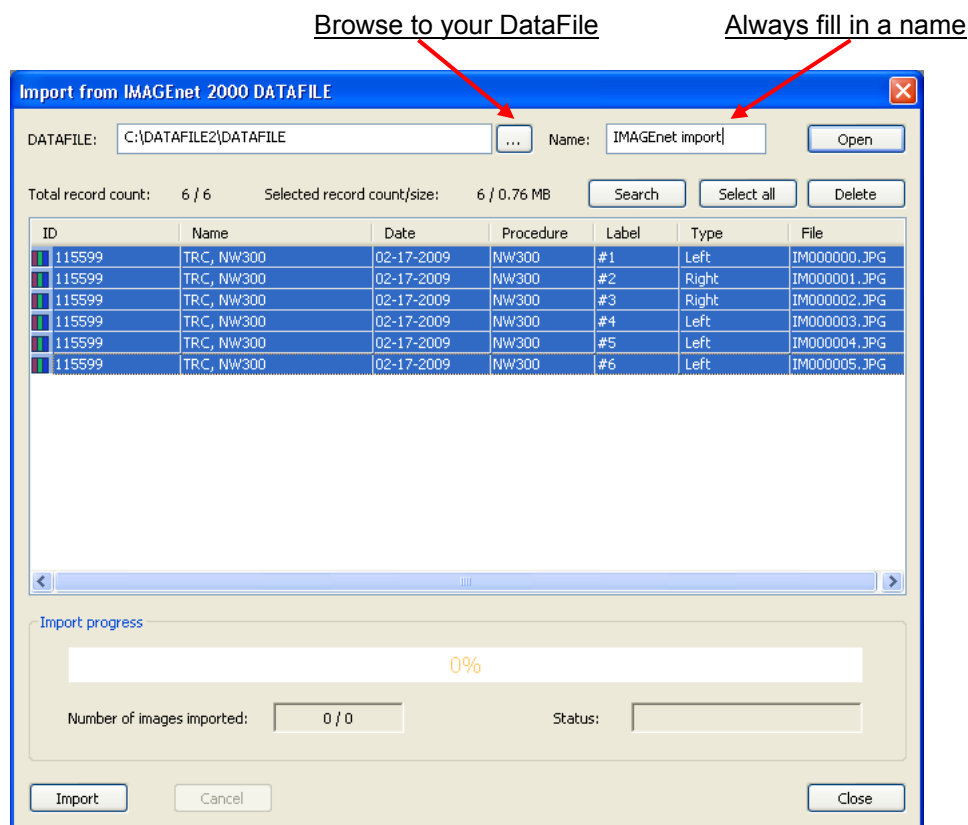


Now this window will open and you can start comparing:



Example DataFile:

To Import a DataFile please double-click the DataFile module in the plugins window or right-click and select start. Now this window will open:



Now click Import and your Selected Patients and images will be imported.

Measurements

To make a measurement on an Image you select the measurement toolbar:



Line Measurement



Area Measurement



C/D Ratio Measurement



I-Torsion Measurement

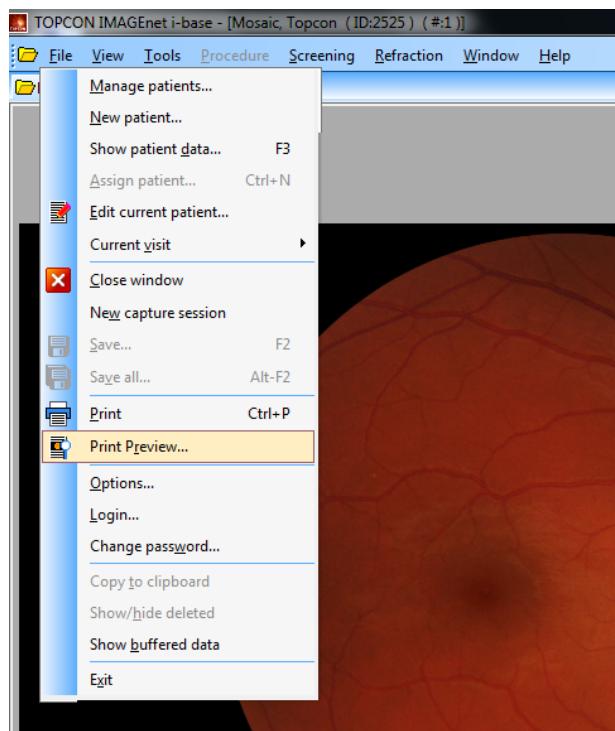
✓	NOTE	The Image measure toolbar is only active with opened data
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Print patient data

The print function to print patient data and/or properties within IMAGENet i-base is based on templates. A default portrait and landscape template are installed.

There are several ways to print patient data:

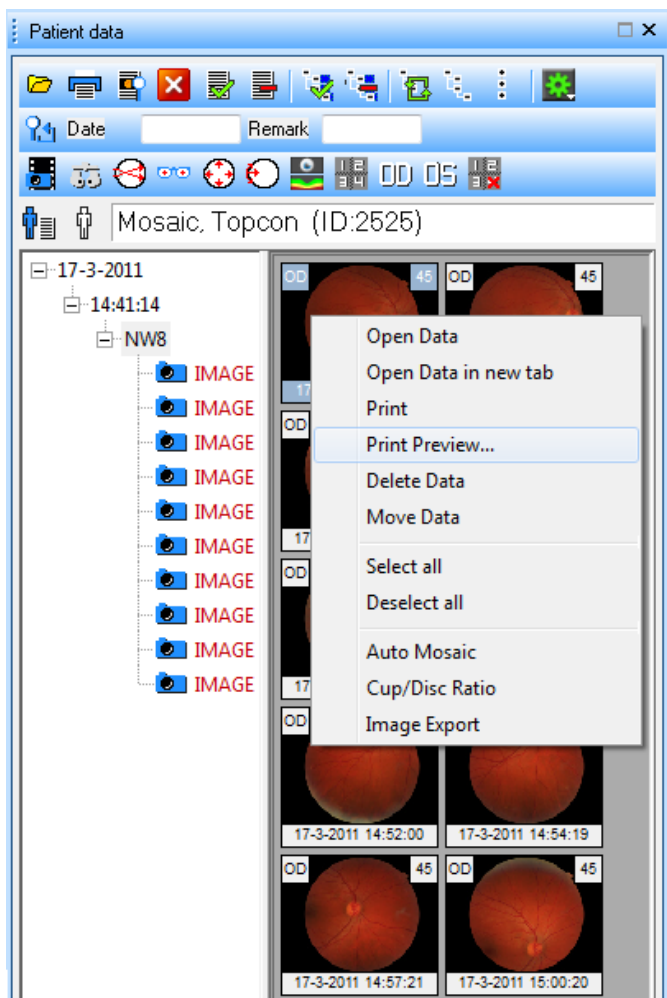
From the File menu



From the standard toolbar



From the Patient data window



Print Preview

Print Preview shows a print preview of the selected acquisition or viewing tab.

The preview window is setup with the default print settings as set in printing options. These settings can be changed in this window.



Mask image: Mask the selected images



Contrast stretch image: Stretch the selected images



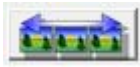
Trim zoom: Trim the selected images



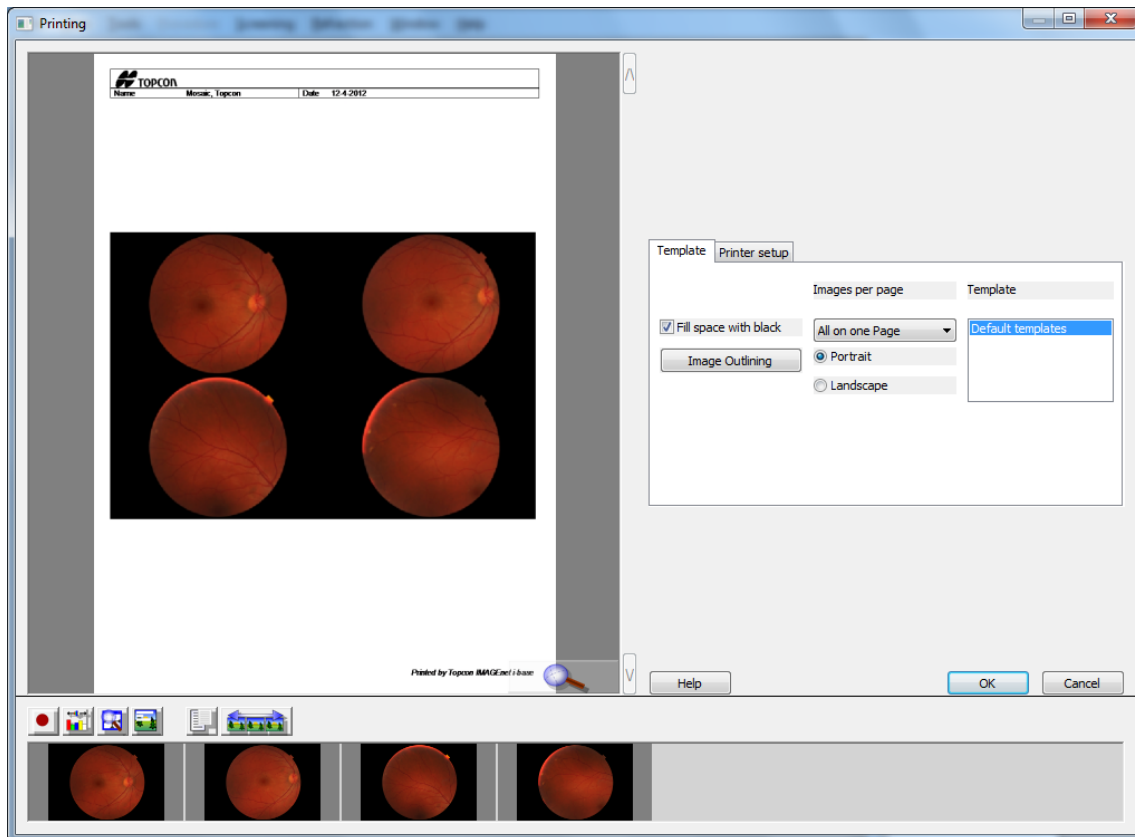
Show/hide properties: Put the overlay properties in the selected images



Configure "show/hide properties": Set here the overlay properties. Use the button 'Overlay' to put the overlay properties in the selected images.



Select all the images in the thumbnail list



Press OK to print, print preview will closed after print task is given.