KAPREN Desktop

User manual — Windows and macOS

Version 1.0.17

Online, always up to date: subscription.radpicsai.com/manual

KAPREN Desktop is a DICOM viewer for Windows and macOS. This manual covers version 1.0.17: bringing studies in, reading and measuring them, reporting, and sharing the results.

Contents

1. How to use this manual
2. Getting started
3. Bringing studies in
4. Study list and libraries
5. Viewing images
6. Measuring
7. Advanced views
8. Specialist tools
9. Dental and CBCT
10. Reports, key images and printing
11. Sharing and exporting
12. Send and receive DICOM
13. Server sync and moving to a new computer
14. Settings
15. Keyboard and mouse quick reference
16. Troubleshooting and FAQ

How to use this manual

This manual is task-based: find the job you want to do, then follow the numbered steps. You do not need to read it from start to end.

- **New to KAPREN?** Read Getting started, then Bringing studies in, then Viewing images. That covers a normal day's reading.
- **Looking for one feature?** Use the section headings, or search the page for the feature's name as it appears in the app.
- **Want speed?** The Keyboard and mouse quick reference near the end fits on one printed page.

Each task follows the same pattern: what it is for, where to find it (menu, toolbar button or key), the steps, and a short tip or warning. Menu names are written like this: **Settings › Measurements**. This manual covers both Windows and macOS. Most steps are the same on both; where they differ, the step shows a Windows line and a macOS line. Keys are written Ctrl / Cmd (Ctrl on Windows, Cmd on macOS).

KAPREN is a viewing and reading tool for trained staff. Always check measurements and findings against the original images.

The pictures were taken on Windows with test (phantom) studies. On macOS the windows look the same, except that the Mac also has a menu bar.

Getting started

Install KAPREN, activate it once, and learn the four parts of the main window: sidebar, top bar, study list and viewer.

Install KAPREN on Windows

Use the Windows installer to put KAPREN on a PC.

1. Run **KAPREN-Setup-\.exe**.
2. If Windows shows "Windows protected your PC", click **More info**, then **Run anyway**.
3. Allow the installer to make changes when Windows asks. It needs administrator rights.
4. Tick **Create a desktop shortcut** if you want one, then finish the installer.
5. Start KAPREN from the Start menu.

> **Note:** The installer adds **Open with KAPREN** to the right-click menu of folders, .zip and .dcm files (Windows 11: under **Show more options**). It also lets DICOM receiving through the Windows firewall on private and domain networks.

Install KAPREN on macOS

Use the disk image to copy KAPREN to your Mac.

1. Double-click **KAPREN-\.dmg**.
2. Drag **KAPREN** onto the **Applications** folder in the window that opens.
3. Open KAPREN from Applications or Launchpad.
4. When macOS asks if you are sure you want to open an app downloaded from the Internet, click **Open**.

> **Tip:** In Finder, right-click a folder, a .zip or a .dcm file and choose **Open With › KAPREN**.

Uninstall KAPREN

Windows	macOS
Open **Settings › Apps**, or Start menu › **Uninstall KAPREN**. When asked "Also delete my studies and settings?", answer **No** to keep your studies.	Drag KAPREN from Applications to the Trash. Your studies stay on the Mac.

Activate your subscription

KAPREN asks you to activate it the first time it starts on a computer.

1. On **Activate your subscription**, type the email address or mobile number your subscription is under.
2. Click **Send verification code**.
3. On **Enter your verification code**, type the code you received and click **Verify**.
4. When you see "Subscription activated successfully", click **Open DICOM Viewer**.

> **Tip:** No subscription yet? Click **Start free trial**, fill in your name and email or mobile, then follow the same code steps.

> **Note:** If every seat is in use, KAPREN lists the computers using it. Click **Activate on This Computer** to move the seat here.

Check or end your sign-in

1. Click your initials at the far right of the top bar.
2. Read the status line: whether the subscription is valid and until when.
3. Choose **Manage subscription…**, **About KAPREN and licence…**, or **Sign out of this computer…**.

Find your way around the main window

Left sidebar (on every page):

Item	What it opens
Worklist	The study list of your library
Study Viewer	The images of the open study
Data Sources	PACS, cloud stores, folders and other places to fetch studies from
Reports	Every report written on this computer
Logs	What KAPREN has done, kept for 30 days
Exports	Every file KAPREN has saved: movies, images, PDFs, STL, disc images, DICOM exports
Settings	All settings in one window
Help	About, **Check for updates…**, **Keyboard shortcuts…**, **Report templates…**

Click the arrow at the bottom of the sidebar to collapse it to icons. In the viewer it collapses by itself to give the images more room.

Top bar:

- **Receive (DICOM)** – whether modalities can send to this computer: **Not listening**, **Listening**, **Receiving…** or **Error**. Click it to open the Receive window.
- **Server sync** – **Off**, **On**, **Syncing n of N** or **Error**. Click it to open **Settings › Server sync**.
- **radpics.ai** (study list only) – settings for opening radpics.ai worklist studies.
- **Templates** – report templates for every modality.
- **About** – version, manufacturer, intended use and licences.
- In the viewer: **Studies** (back to the list), **Upload DICOM**, **Export** ▾, the patient and study, **Copy ID**, **Second screen** and **Window**.

Study list: the top bar of the **Worklist** page shows the library (**Main** ▾), the study count and **Import** ▾. Below are the date chips, filters, **Export list…**, the search box and the studies. Double-click a study to open it.

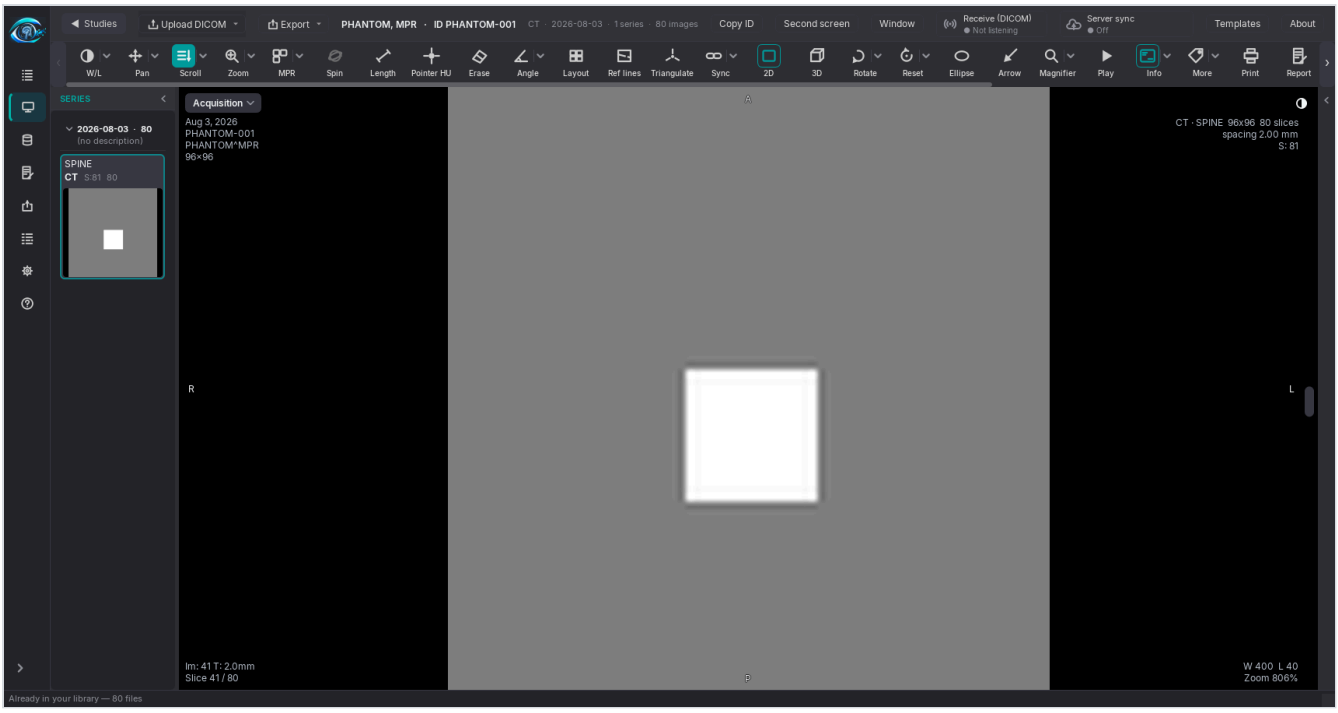


Figure 1. The viewer: header, toolbar, series panel and image.

> **Tip:** On a smaller screen the toolbar may not fit. Click ‹ or › at its ends, or turn the mouse wheel over it, to reach the other tools. To keep only the tools you use, see **Settings › Toolbar**.

Menus and keys on each system

Most commands are buttons in the window, so both systems work the same way.

	Windows	**macOS**
Menu bar	None; use the buttons, sidebar and top bar	**File**, **View** and **Help** in the Mac menu bar
Settings	Sidebar › **Settings**	Sidebar › **Settings**
Open files	**Ctrl+O**	**Cmd+O**
Study list	**Ctrl+L**	**Cmd+L**
Search the list	**Ctrl+F**	**Cmd+F**
Pick several studies	Ctrl-click, Shift-click	Cmd-click, Shift-click
Context menu	Right-click	Right-click, or Control-click
All shortcuts	**?**	**?**

> **Tip:** You can change most keys in **Settings › Keyboard**.

Bringing studies in

Studies come in four ways: import from disk or disc, drag and drop, fetch from a data source, or receive from a modality or PACS.

Import DICOM files, a ZIP or a folder

Copy studies from your disk into the KAPREN library.

1. Go to **Worklist**.
2. Click **Import**.
3. Choose the item for your system:
4. Windows: **DICOM files or ZIP...**, or **Folder...** (**Ctrl+O**).
5. macOS: **DICOM files, ZIP or folder...** (**Cmd+O**).
6. Pick the files, ZIP or folder and click **Open**.
7. If asked, choose **Copy Files** or **Copy Links**.

> **Note: Copy Files** puts an encrypted copy in the library. **Copy Links** leaves files where they are; the study will not open if they move. To stop the question, set **Settings › Storage › When importing files**.

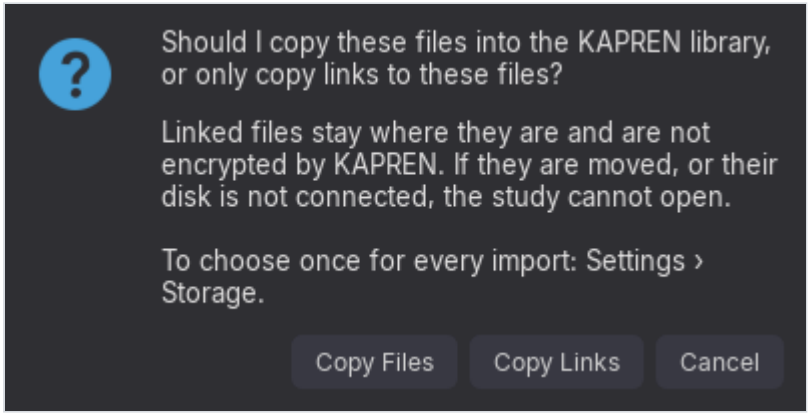


Figure 2. The import question: Copy Files or Copy Links.

Drag studies in

1. Drag a folder, DICOM files or a ZIP from Explorer (Windows) or Finder (macOS).
2. Drop it on the study list to import it.
3. Or drop it on the viewer to import it and open it straight away.

> **Tip:** An empty study list shows a drop area with **Open folder...**, **Open files...**, **Open ZIP...**, **Data Sources...** and **Receive...**.

Import a CD or DVD

1. Insert the disc.
2. Click **Import**, then the folder item (Windows: **Folder...**; macOS: **DICOM files, ZIP or folder...**).

3. Select the disc drive itself and click **Open**.
4. Choose **Copy Files**, so the study stays after the disc is removed.

Open studies from Explorer or Finder

1. Right-click a folder, ZIP or .dcm file.
2. Windows: choose **Open with KAPREN** (Windows 11: under **Show more options**). macOS: choose **Open With › KAPREN**.
3. The study is imported and opens in the viewer.

> **Note:** If a study is already open, the new one opens in its own window.

Add a data source

Connect KAPREN to a PACS, a DICOMweb server, a cloud store, a RIS or a folder.

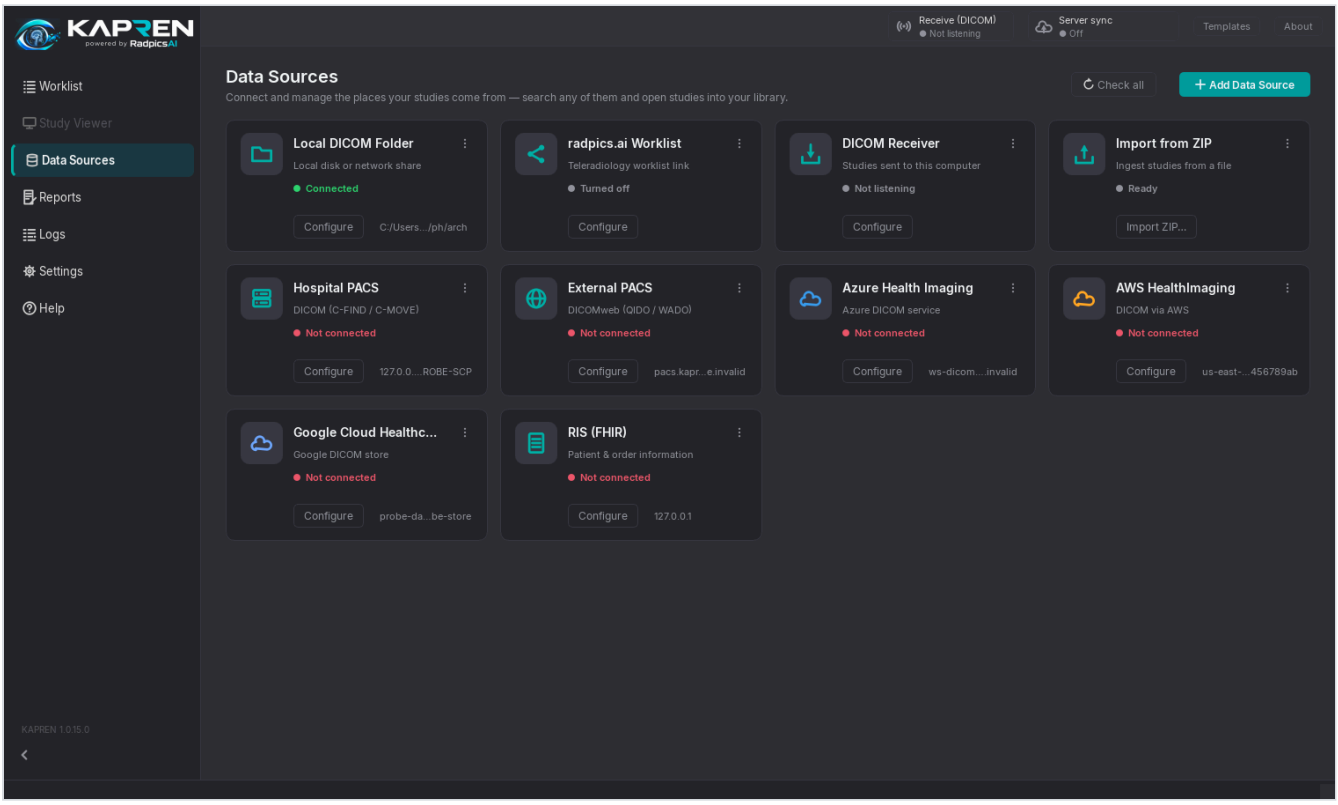


Figure 3. The Data Sources page, one card per source.

1. Click **Data Sources** in the sidebar.
2. Click **Add Data Source**.
3. Choose a type: **DICOM Server (PACS)**, **DICOMweb Server**, **Cloud Provider** (Azure, Google Cloud or AWS), **Local Folder**, **Object Storage** (S3 / MinIO), **RIS / EMR** (FHIR), **Study Import (ZIP)**, **Teleradiology / Remote** or **Custom (Advanced)**.
4. Click **Next**. Fill in the connection fields; those marked * are required.
5. Click **Test Connection** and wait for "Connection works".
6. Click **Finish**. Tick **Open its studies now** to search at once.

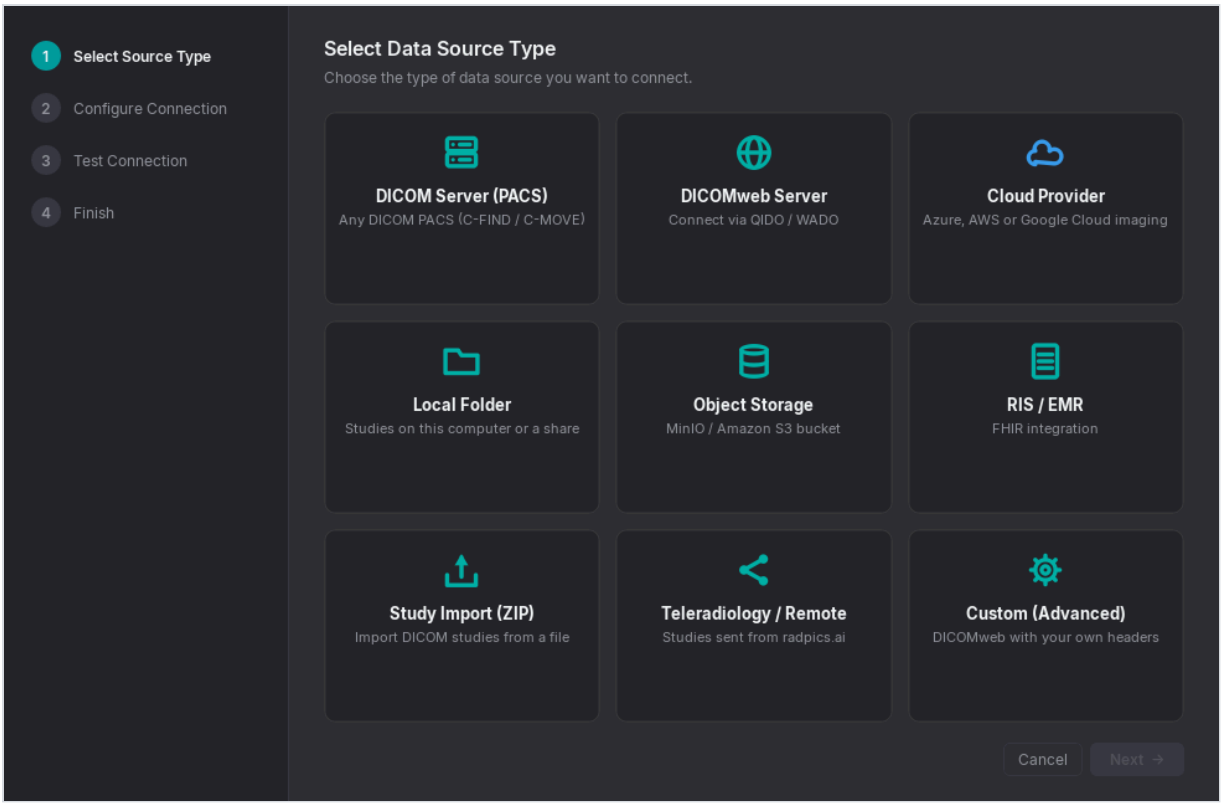


Figure 4. Add Data Source, step 1: choose the kind of source.

> **Note:** For a PACS, give the PACS administrator **Our AE Title** and the **Receive port (C-MOVE)**. The PACS connects back to that port, so the firewall must let it through.

Search a data source and retrieve studies

1. Click **Data Sources**, then click the source's card.
2. On the **Studies** tab, set **Date Range** and **Modality**, and type a name or ID.
3. Click **Query**.
4. Tick the studies you want.
5. Click **Open Selected** (or **Open N Studies**). They are retrieved into the library and opened.

> **Tip:** Click **Save…** under **Saved searches** to keep the filters under a name, and pick it later to run it again. The **Activity** tab lists what was done with the source.

Manage data sources

1. On **Data Sources**, click a card's **More** button.
2. Choose **Open studies**, **Configure…**, **Test connection**, **Duplicate** or **Delete…**.
3. In **Configure…**, use the **Connection**, **Query Settings**, **Permissions** and **Advanced** tabs.

> **Tip: Check all** tests every source at once. **Permissions › Offer it as a destination when sending studies** lists a PACS when you send.

Receive studies from a modality or PACS

Let a scanner, PACS or another workstation send studies straight to KAPREN with **Receive (DICOM)** in the header. The steps, the firewall, testing and what to do when it fails are in the chapter **Send and receive DICOM**.

Import from a Bluetooth or drop folder

1. Open **Settings › Storage** and its **Import** tab.
2. Under **Receive from a folder (Bluetooth)**, tick **Import automatically from**.
3. Click **Choose…** and pick the folder.
4. Windows: in Bluetooth settings choose **Send or receive files via Bluetooth › Receive files** and save into that folder. macOS: turn on Bluetooth Sharing in **System Settings › General › Sharing** and point it at that folder.

> **Note:** DICOM files are moved into the library. Other files are left alone.

Open a radpics.ai worklist study in KAPREN

1. On the study list, click **radpics.ai** in the top bar (or **Settings › radpics.ai link**).
2. Tick **Open studies sent from the radpics.ai worklist**.
3. Type your **User ID** (login e-mail) and **Password**.
4. Fill in **Tenant ID** and **Institute ID** if your site gave them; otherwise leave them empty.
5. Click **Test connection**, then **Save**.
6. In the radpics.ai web worklist, click the KAPREN link on a study.
7. When the browser asks to open KAPREN, allow it.

The study appears within seconds. Images download in the background, nearest to the image you are viewing first.

> **Note:** MPR, 3D and fusion wait until a series has fully downloaded. **Clear downloaded studies…** on the same page removes radpics.ai studies from this computer.

Study list and libraries

The **Worklist** page lists every study in the open library. Use it to find, open, organise and delete studies.

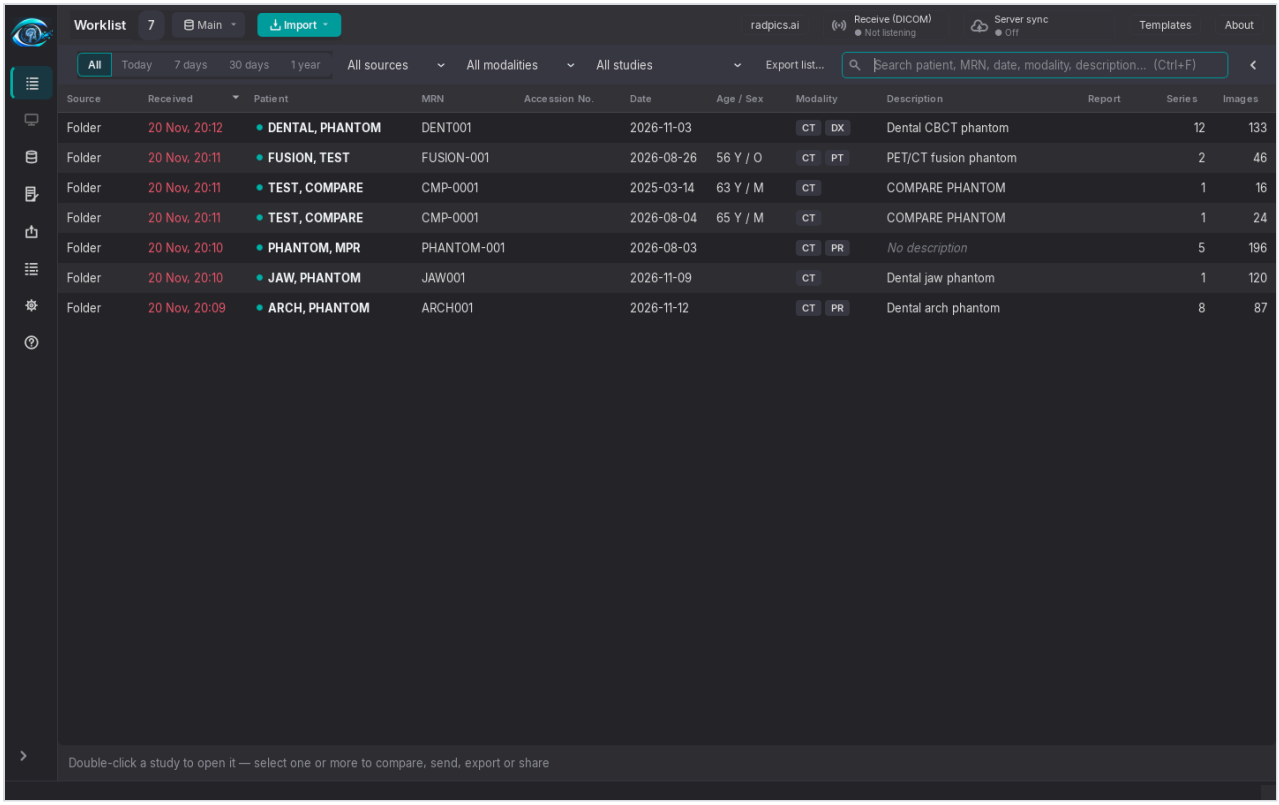


Figure 5. The Worklist: every study in the library.

Find a study

1. Click **Worklist** (**Ctrl+L** / **Cmd+L**).
2. Type in the search box (**Ctrl+F** / **Cmd+F**): patient, MRN, date, modality or description.
3. Click a date chip: **All**, **Today**, **7 days**, **30 days** or **1 year**.
4. Pick a source in **All sources**, or tick modalities in **All modalities**.
5. Click a column heading to sort by it.

> **Tip:** Right-click a column heading to show or hide columns, such as **Accession No.** or **Referring**.

Show studies with key images

1. Open the key-image filter (it shows **All studies**).
2. Choose **With key images**, or one title such as **For Teaching**.

Export the study list

1. Set the filters and sort you want.
2. Click **Export list...**.
3. Choose a name and folder, then click **Save**.

> **Note:** The file is CSV and contains patient details. Store it safely.

Open a study

1. Double-click the study, or right-click it and choose **Open**.
2. To use another monitor, right-click › **Open on second screen**.

Switch between libraries

Keep separate libraries, for example teaching cases apart from daily work.

1. Click the library button beside the study count (it shows **Main** ▾).
2. Click a library to switch to it. The open one is ticked.

> **Note:** Switching closes the open study. It is refused while an import or sync is running.

Create or add a library

1. Click **Main** ▾.
2. Choose **New library…**, type a name, and pick an **empty** folder.
3. Or choose **Add existing library folder…** and pick a folder that is already a KAPREN library.

> **Tip: Rename "…"…** renames the open library. **Remove from the list** hides a library; its folder and studies stay on disk. Main cannot be removed.

> **Note:** Each library has its own encryption key. Reports and report templates are shared by all libraries. Server sync works for **Main** only.

Choose which library receives studies

Studies sent by modalities go into one chosen library, even when another is open.

1. Click **Receive (DICOM)** to open the Receive window.
2. If listening, click **Stop**.
3. Choose the library in **Received studies go into**.
4. Click **Start listening**.

> **Tip:** The **Main** ▾ menu marks the receiving library with "— receives (N new)".

Copy studies to another library

1. Select one or more studies.
2. Right-click › **Copy to library…**.
3. Pick the library and click **OK**.

> **Note:** The studies are copied, not moved. The original stays in this library.

Combine studies

Join series from several studies into one study. The DICOM files are changed.

1. Select two or more studies (Ctrl-click / Cmd-click).
2. Right-click the study the others should join › **Merge N studies into this one…**.
3. In **Combine studies**, untick any series you do not want.
4. Check or edit the patient name, ID, birth date and description.
5. Under **How**, choose **New combined study** (originals kept) or **Combine into one study** (other studies removed).
6. Tick **Make the ticked series one series** if needed.
7. Read **Result**, then click **Make new study** or **Combine**.

> **Note:** A warning appears when the studies are not all the same patient. Reports move with their study.

Give several studies the same patient

Correct studies filed under different patient details. They stay separate studies.

1. Select the studies.
2. Right-click the one with the correct patient › **Unify patient identity to this one…**.
3. Check the details and click **Apply**.

Separate series into a new study

1. Right-click a study with two or more series › **Separate series into a new study…**.
2. Tick the series for the new study.
3. Edit the patient and description if needed.
4. Choose **Copy into a new study** (original kept) or **Move into a new study**.
5. Click **Copy** or **Move**.

Merge series, or view them as one stack

In the viewer, right-click a series in the left series list:

- **Merge series into one…**: tick the series that join it, then click **Merge**. The files change.
- **View with other series as one stack…**: tick the series, then click **View**. Nothing is saved.
- To end the stack view, right-click it › **Close the one-stack view**.

Delete studies

1. Select the studies.
2. Click **Delete…** in the selection bar.
3. Read the warning and click **Yes**.

> **Warning:** Stored studies are deleted for good and cannot be restored. For linked studies only the link is removed; the files stay.

Viewing images

Open a study, pick a layout, then scroll, window and zoom. On Windows there is no menu bar: every menu item is also on the toolbar or the sidebar, and its key still works.

Open a study

1. Click **Worklist** in the left sidebar (Ctrl+L / Cmd+L from any page).
2. Double-click the study row, or select it and press Enter. You can also right-click the row and choose **Open**.
3. To open files that are not in the library, click **Upload DICOM** in the viewer header and pick files, a ZIP or a folder.

> **Tip:** You can also drop DICOM files or a folder onto the KAPREN window.

Open a study from Explorer or Finder (Open With)

1. Windows: in File Explorer, right-click a DICOM file, folder or ZIP and choose **Open with › KAPREN**.
2. macOS: in Finder, right-click or Control-click the item and choose **Open With › KAPREN**.
3. If KAPREN was not running, the study opens in the main window.
4. If a study is already open, the new one opens in its own study window, with its own measurements.
5. To close a study window, click **Close window** in its header. Its measurements are kept.

Choose the pane layout

1. Click **Layout** on the toolbar.
2. Move the pointer over the grid to choose rows and columns, up to 3 × 4, then click.
3. Click a pane to make it the active pane. It gets a coloured outline.
4. Double-click a pane to fill the viewer with it. Double-click again to go back to the grid.
5. Press Tab for the next pane, Shift+Tab for the previous one.

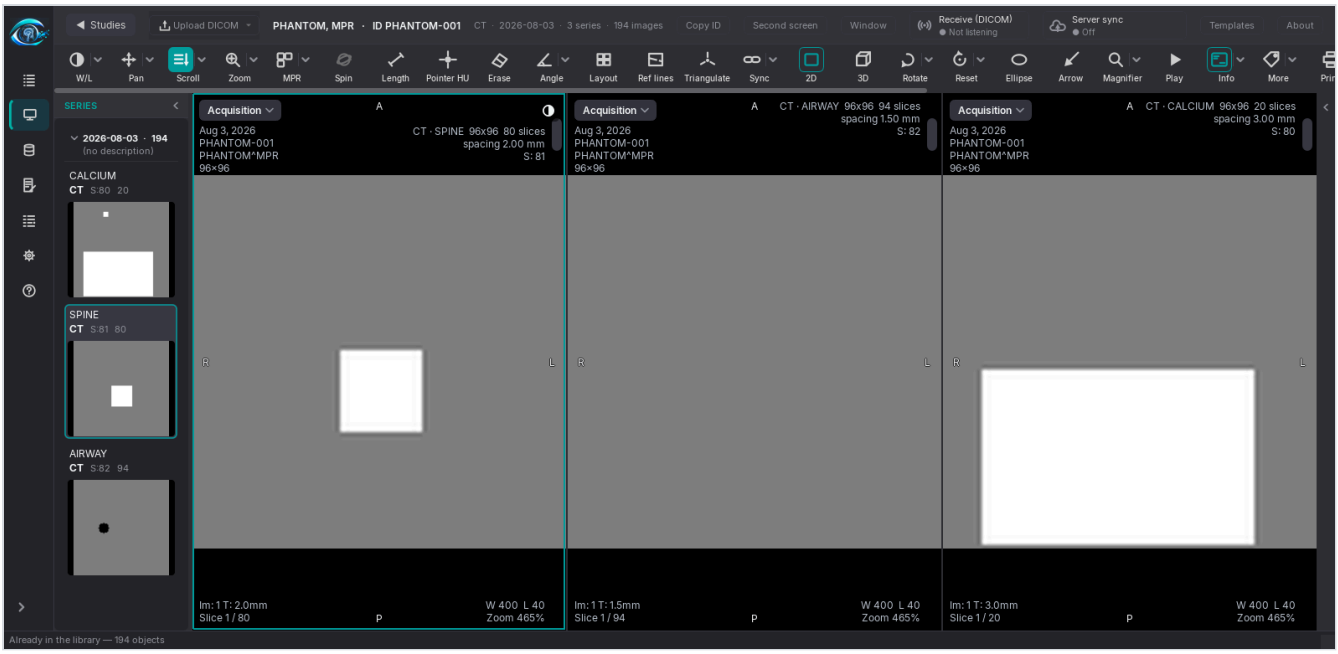


Figure 6. Three series side by side in a 1 × 3 layout.

Choose a series

1. Open the series panel on the left (Ctrl+1 / Cmd+1 shows or hides it).
2. Click a series card. It loads into the active pane.
3. Or drag a series card onto any pane.
4. Press Right Arrow or Page Down for the next series, Left Arrow or Page Up for the previous one.

Scroll through images

1. Turn the mouse wheel, or swipe with two fingers on a trackpad.
2. Or press Down Arrow for the next image and Up Arrow for the previous one.
3. Press Home for the first image and End for the last.
4. To jump several images, press Ctrl+Page Up / Ctrl+Page Down (macOS: Cmd+Page Up / Cmd+Page Down).
5. Or choose **Scroll** (S) and drag up or down on the image, or drag the pane's scroll bar.

> **Note:** The jump size is set in **Settings › Viewport › Images** (default 10). On a Mac keyboard without Page keys, press Fn with Up or Down Arrow.

> **Tip:** The bottom-left corner shows **Im:** and the scanner's image number. Quote that number in a report.

Set the window/level

Change brightness and contrast.

1. Drag with the middle mouse button on the image.
2. Or click the **W/L** button and drag with the left button. Use this on a trackpad.
3. To use a preset, click the arrow on **W/L** and pick one.
4. Or press a number key: **1** is DICOM default, **2** is Invert, **3** to **0** are the modality's presets.

5. To undo your window, press **1**, or click **Reset** (R).

On CT the number keys give 3 Abdomen, 4 Bone, 5 Brain, 6 Liver, 7 Lung, 8 Mediastinum, 9 Pelvis and 0 Posterior Fossa. **Angio** (600 / 300) is at the end of the list without a key. **Auto (from data)** sets the window from the image's own values. Turn on **Preview in viewport** to see a preset while you point at it.

> **Note:** Until you set a window, each image uses the window stored with it. After you set one, every image in the pane uses yours.

Make your own window/level preset

1. Click the arrow on **W/L** and choose **Custom window...**.
2. Under **Set by**, choose **WL / WW** or **Min / Max** and type the values.
3. To keep it, fill in **Keep as my preset (optional)** and give it a **Name**.
4. Under **For**, choose this modality only or **Every modality**.
5. Click in **Key** and press one key, or click **No key**.
6. Click **Apply**.

Your presets appear in the W/L list under **My presets**. To remove one, open **Custom window...**, pick it under **My presets** and click **Delete**.

> **Note:** A key already in use is refused, and the message names what uses it.

Zoom, pan, rotate and flip

Action	Windows	macOS
Zoom	Right-button drag, Ctrl+wheel, or **Zoom** (Z) and drag	Right-button drag, Cmd+scroll, trackpad pinch, or **Zoom** (Z)
Zoom in / out	Alt+= / Alt+-	Option+= / Option+-
Zoom to selection (drag a box)	Ctrl+9	Cmd+9
Pan	Shift + left drag, or **Pan** (P)	Shift + left drag, or **Pan** (P)
Fit to screen	Ctrl+0	Cmd+0
Rotate right / left	Ctrl+] / Ctrl+[	Cmd+] / Cmd+[
Flip horizontal / vertical	Ctrl+Shift+[/ Ctrl+Shift+]	Cmd+Shift+[/ Cmd+Shift+]
Clear rotation and flips	Ctrl+Shift+\	Cmd+Shift+\
Rotate to any angle	**Pan** ▾ › **Rotate freely**, then drag	Same, or twist two fingers on the trackpad
Align left / centre / right	Shift+T / Shift+Y / Shift+U	Shift+T / Shift+Y / Shift+U
Reset pan, zoom, rotation and W/L	R	R

> **Tip: Magnify** ▾ **› Magnifier** shows a loupe while you hold the button down. **Magnify probe** shows a loupe that follows the pointer. Hold Shift and turn the wheel to change its strength.

Change the image order and split a series

1. Right-click a series card in the series panel.
2. Under **Sort images by**, choose **Position (default)**, **b-value**, **Instance number**, **Acquisition time** or **File name**.
3. Choose **Reverse order** to show the last image first.
4. To split the series, choose **Split series** and pick **By acquisition number**, **By orientation**, **By acquisition time**, **Every N images…** or **By phase**.
5. Each part appears as its own series. To join them again, choose **Remove the split parts**.

> **Note:** Image 1 is shown first by default. Measurements stay on their own image after a re-sort. The files are not changed.

Show reference lines

1. Click **Ref lines** on the toolbar.
2. Click a pane and scroll it.
3. Other panes show a green line where the current image is. In the same orientation, orange lines mark that series' first and last images.

> **Tip: Triangulate** marks one point in every pane while you hold the mouse button down.

Sync panes

1. Open the **Sync** ▾ list.
2. Tick **Scroll sync** to scroll every pane together by patient position.
3. Or tick **Scroll sync by image count** to move every pane by the same number of images. Use it when the positions do not match.
4. Tick **Window sync**, **Pan/Zoom sync** or **Rotate sync** as needed.

> **Note:** Only one of the two scroll syncs can be on at a time.

Apply a display filter

1. Open **Filter** ▾ and pick **Sharpen**, **Sharpen strong**, **Smooth**, **Edges** or **Emboss**.
2. A filter bar appears at the top of the pane. Use ◀ and ▶ to step through the filters.
3. Click **×** on the bar, or choose **No filter**, to remove it.

> **Note:** Filters change only how the image looks. HU and measurement values stay the stored values.

Play a series as a movie (cine)

1. Click **Play** (Alt+C on Windows, Option+C on macOS).
2. A player appears at the bottom of the pane. Use **‹** and **›** to set the frames per second.
3. Click the play button to pause. Click **×** or **Play** again to stop.

Show or hide information on the image

1. Click **Info** to hide or show the corner text.
2. Open **Info** ▾ and tick or untick **Patient data**, **Measurements** or **DICOM overlay**.
3. To read all tags of the image, press Ctrl+T / Cmd+T, or choose **More** ▾ **› Tags**.

Use a second screen

1. In the viewer header, click **Second screen**. With more monitors, choose **Open screen 2** to **Open screen 5**.
2. To send another study, select it in the study list and click **Second screen**, or right-click it › **Open on second screen**.
3. To close it, click **Close screen 2** in its header.
4. To scroll and window both screens together, tick **Settings › Viewport › Sync scroll and window/level between screens**.
5. To choose the monitor, set **Open screen 2 on** on the same page.

> **Note:** With one monitor, screen 2 opens as a window. The same study on both screens shares its measurements.

Open another viewer window

1. In the viewer header, click **Window**.
2. Choose **New window** for an empty viewer, or **Duplicate window** for this study again.

> **Note:** A duplicate window shares the study's measurements but has its own layout and tools.

Close a study

1. Click **Worklist** (Ctrl+L / Cmd+L).
2. Open the next study. It replaces the one in the viewer.

> **Note:** Measurements are kept with the study in the library. There are no saved hanging protocols yet; the **Diffusion** and **PET/CT** buttons set up those two reads for you.

Measuring

Every measurement tool is on the toolbar. **Length**, **Pointer HU**, **Ellipse**, **Arrow** and **Erase** have their own buttons; all other tools are in the **Measure** ▾ list. Most tools work on 2D, MPR and oblique panes.

Measuring tools

Tool (key)	What it measures	How to draw
Length (L)	Distance	Drag from end to end, or click both ends
Height	Vertical distance only	Drag
Bidirectional	Long and short axis	Drag the long axis; the short axis is added for you
Angle (A)	Angle between two rays	Three clicks: end, vertex, end
Cobb (C)	Cobb angle between two lines	Four clicks, two for each line
Ellipse (E)	Area, mean, SD, min, max	Drag out from the centre
Rect (U)	Area and statistics in a rectangle	Drag corner to corner
Circle	Area and statistics in a circle	Drag out from the centre
Pointer HU (H)	Value at one point	Click
Closed poly (G)	Area, statistics, perimeter on a smooth curve	Click the corners; click the last corner again, or double-click
Open poly	Length of a smooth curve	As Closed poly; if the ends almost meet it also gives area
Polygon, ROI, Flex poly	Area of a straight-sided outline	Click points, double-click to close
Spline	Area inside a curved outline	Click points, double-click to close
Livewire	Area; clicks snap to edges	Click points, double-click to close
Freehand	Area inside a hand-drawn outline	Hold the button down and draw
Polyline	Length of a path	Click points, then double-click
Pencil	Freehand line	Hold the button down and draw
Ruler	Scale bar in whole centimetres	Drag
Goniometry	Joint angle	Six clicks: a circle, then two bone axes
Vertebra	Endplate tilt against the horizontal	Drag along the endplate
TTTG	Tibial tuberosity to trochlear groove offset	Four clicks
CTR	Cardiothoracic ratio	Six points: midline, heart, chest
Flatfoot	Arch angle and arch height	Three clicks
HTO	High tibial osteotomy panel	One click places nine handles; drag them into place

Tool (key)	What it measures	How to draw
Spine labels	Vertebra names	Click the middle of each disc on a sagittal or coronal view
US directional	Ultrasound time, velocity or depth	Drag
Calibration	Sets the pixel size of a series	Drag a line of known length
Arrow (Y)	Arrow with text	Drag, then type the text
Text	Text label	Click, then type the text

Draw a measurement

1. Pick the tool by its button, its key, or **Measure** ▾.
2. Draw it as shown in the table.
3. Press Esc to cancel a measurement you are still drawing.
4. While drawing a Closed poly or Open poly, press Delete or Backspace to remove the last corner.

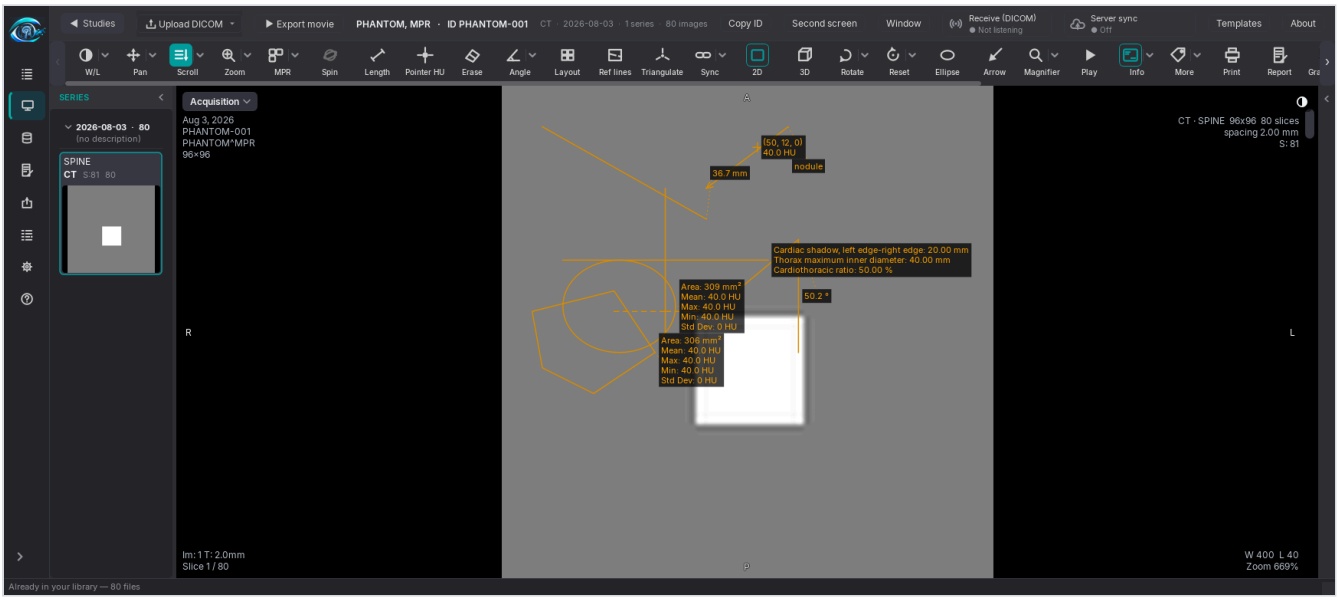


Figure 7. Measurements on one image, each with its value box.

> **Note:** If a measurement is selected, your first click in an empty area only deselects it. Drag to start a new one straight away.

> **Tip:** To see a magnifier while you place Length and Pointer HU points, tick it in **Settings › Viewport › Measurements**.

Move, change or delete a measurement

1. Click a measurement to select it.
2. Drag a handle to change it. Drag the line or the inside to move it all.
3. Drag the value box to move only the text.
4. To delete it, select it and press Delete (Mac keyboard: the delete key). Or choose **Erase** and click it, or right-click it › **Delete measurement**.

5. To name it, right-click it › **Add Label** or **Edit Label**.

On a Closed poly or Open poly, click the outline to add a corner. Click a corner so it turns red, then press Delete to remove it.

macOS: Control-click or a two-finger trackpad click opens the right-click menu.

Copy, paste and duplicate measurements

1. Select a measurement and choose **Edit** ▾ **› Copy measurement** (Ctrl+Alt+C / Cmd+Option+C), or right-click it › **Copy**.
2. To copy them all, choose **Edit** ▾ **› Copy all on this image**.
3. Go to another image and choose **Edit** ▾ **› Paste measurements** (Ctrl+V / Cmd+V), or right-click an empty spot › **Paste measurement**.
4. To copy to other images at once, choose **Duplicate in other panes** or **Duplicate in all images of the series**.

> **Note:** Pasted measurements are measured again on the new image.

Delete measurements in bulk

1. Open **Edit** ▾.
2. Choose **Delete selected**, **Delete all in this series** or **Delete all in every pane**.

Or choose **Reset** ▾ **› Clear** to delete every measurement on the image.

> **Warning:** Bulk deletes cannot be undone.

Change measurement text and style

1. Choose **Edit** ▾ **› Smaller text** or **Bigger text**. This changes the text of every measurement.
2. For colour and lines, choose **Edit** ▾ **› Style…**, or right-click a measurement › **Style…**.
3. Set **Colour**, **Line width** and **Fill (closed shapes)**.
4. Tick **Apply to the selected measurement** and/or **Use for new measurements**.
5. To keep this look, click **Save as…** under **Preset** and give it a name. **Default** is the standard look.

> **Tip: Settings › Measurements › Appearance** holds the same text size and new-measurement style.

Choose mm or cm

1. Open **Settings** from the left sidebar and choose **Measurements**.
2. On the **Units** tab, set **mm** or **cm** for each tool, or click **All mm**, **All cm** or **Defaults**.
3. Click **OK**. Every pane updates at once.

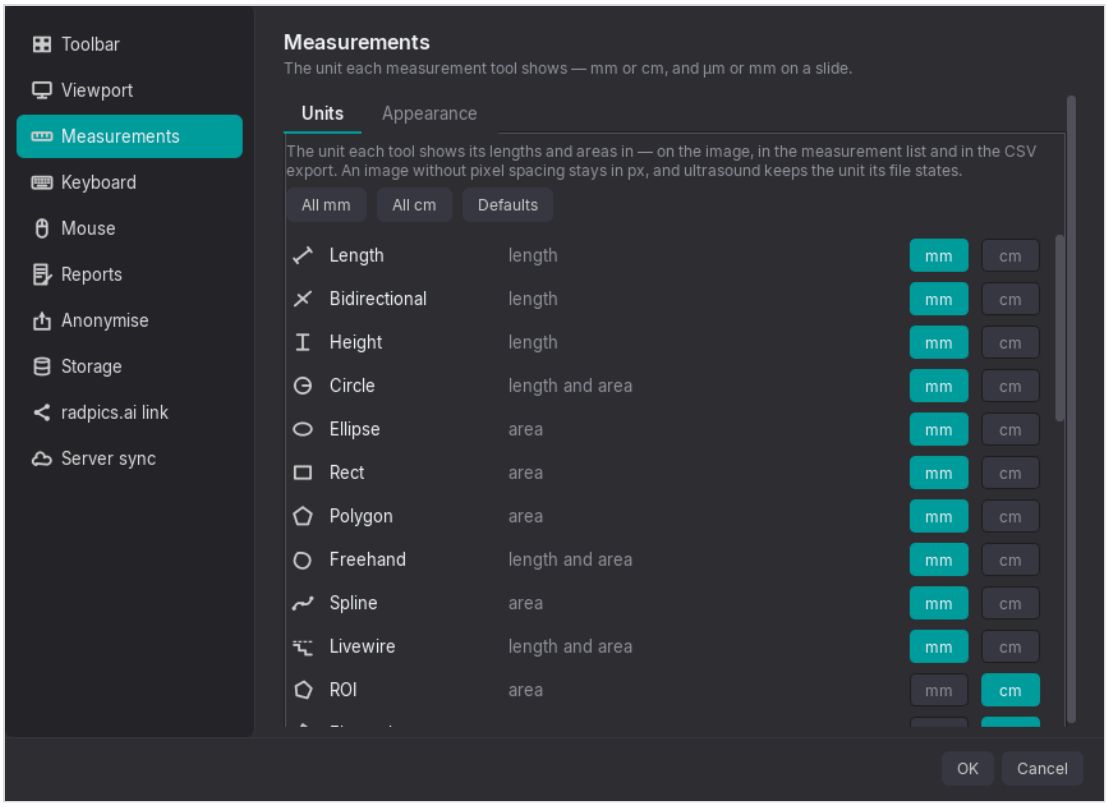


Figure 8. Settings › Measurements: mm or cm for each tool.

> **Note:** An image without pixel spacing measures in pixels (px). Ultrasound regions keep their own units.

Calibrate an image

Use this when an image has no pixel size, or a wrong one.

1. Choose **Measure** ▾ **› Calibration**.
2. Drag along an object of known length.
3. In **Known length:**, type the length and choose **mm**, **cm**, **inch** or **French (Fr)**.
4. Click **OK**. The series is measured with the new pixel size.

> **Note:** 1 inch = 25.4 mm and 1 Fr = 1/3 mm. Readouts after calibration stay in mm or cm.

Calculate a volume or a ratio

1. Draw three **Length** lines for volume, or two for a ratio, on one image.
2. For volume, choose **Calc** ▾ **› Ellipsoid / bullet volume** (Ctrl+Shift+L / Cmd+Shift+L). It gives the ellipsoid and bullet volume in cm^3.
3. For a ratio, choose **Calc** ▾ **› Length ratio** (Ctrl+Alt+L / Cmd+Option+L). It gives A:B and B:A.
4. Click **Copy** to copy the result, or **Close**.

> **Note:** KAPREN uses the selected line, then the newest lines. Run it again after you move a line.

Show a histogram or line profile

1. Right-click an area measurement (ellipse, rectangle, circle or polygon) › **Histogram…**.
2. Or right-click a **Length** › **Line profile…**.
3. For a histogram, set **Bins:** to change the bars.
4. Click **Copy values (CSV)** to copy the numbers.

> **Note:** The window updates when you move the measurement. Values are in HU, SUV or grey levels, as the image stores them.

Compute a volume from polygons

1. Draw one **Closed poly** on each of at least two images of the series.
2. Optional: right-click one › **ROI Volume › Generate Missing ROIs** to fill the gaps.
3. Choose **ROI Volume › Compute Volume…**. The volume appears in cm^3.
4. **ROI Volume › Delete Generated ROIs** removes only the filled-in ones.

> **Note:** The images must be evenly spaced, with one polygon on each image.

Read ultrasound Doppler and M-mode

Use this on ultrasound images with a calibrated Doppler, M-mode or ECG strip.

1. Choose **Pointer HU** and click inside the strip. It shows the time and the velocity, depth or voltage.
2. Choose **Measure ▾ › US directional** and drag inside one strip.
3. Drag mostly across to get the time between the ends and the heart rate.
4. Drag mostly up or down to get the velocity, depth or voltage difference.

Plot a time-intensity curve

1. Draw an **Ellipse** or **Circle** in the same place on two or more series (**Edit ▾ › Duplicate in other panes** helps).
2. Choose **Calc ▾ › Time-intensity curve** (Ctrl+Shift+E / Cmd+Shift+E).
3. Tick the series to include.
4. Read the chart and table. Click **Copy** or **Save CSV…** to keep the values.

> **Note:** A series that holds every phase also works; each phase becomes one time point.

List and export measurements

1. Press Ctrl+2 / Cmd+2 to open the measurements panel.
2. Click **Export…** in the panel, or press Ctrl+E / Cmd+E, to save them as a file.

Advanced views

MPR, 3D, 4D, curved MPR, endoscopy, PET/CT fusion and registration all start from a study open on the 2D page. Most need a volume series with many thin slices.

Read a series in three planes (MPR)

Use this to see axial, sagittal and coronal views together, for example on a CT or a 3D MR.

1. Open the series on the 2D page.
2. Click **MPR** on the toolbar, or press Ctrl+M / Cmd+M. Press it again to go back.
3. The panes are titled **AXIAL**, **SAGITTAL** and **CORONAL** by anatomy, even when the scan was taken sagittally or coronally. Each plane is shown upright.
4. Drag in a pane to move the crosshair. The other two panes follow.
5. Scroll a pane with the wheel, or the Up and Down arrow keys.
6. To change the arrangement, open the arrow beside **MPR** and choose **Quad**, **Horizontal**, **Vertical**, **Axial primary** or **Axial secondary**.
7. Use the **Crosshairs** menu for **Small** arms, **Show** (lines on or off) or **Recentre**.
8. To leave, choose **Close MPR** from the same menu.

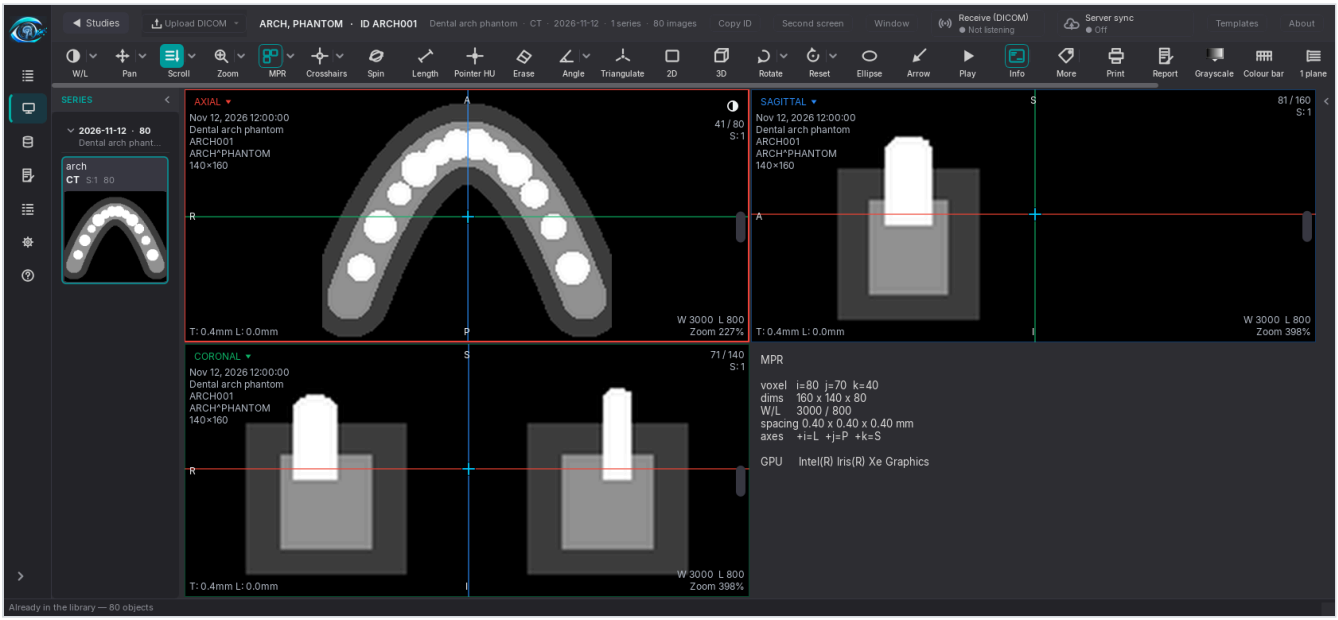


Figure 9. MPR: axial, sagittal and coronal panes with the crosshair.

> **Tip:** On the 2D page, Shift+A, Shift+C and Shift+S show the active pane as axial, coronal or sagittal. Shift+O goes back to the plane the scan was taken in.

Make a thick slab (MIP, MinIP, average)

Show vessels, nodules or airways across a thicker slab. Works on the MPR and Oblique pages.

1. On the MPR page, click **Slab** on the toolbar.
2. Type the **Thickness** in mm.

3. Choose **MIP** (brightest), **MinIP** (darkest) or **AvgIP** (average).
4. **Crosshairs › Recentre** sets the slab back to one image.

Tilt a plane (Oblique)

Line a plane up with a structure that is not straight, such as a valve or a vertebra.

1. Choose **Oblique** from the arrow beside **MPR**, or press Ctrl+B / Cmd+B.
2. Drag a reference line's handle to turn the plane.
3. To tilt a pane on the MPR page instead, choose **Spin** and drag in the pane.
4. Click **Back to orthogonal**, or **Reset** ▾ **› Planes**, to return to axial, coronal and sagittal.

Look at the volume in 3D

The 3D view is for orientation, not for exact measuring.

1. Click **3D** on the toolbar, or press Ctrl+3 / Cmd+3.
2. Drag to turn the volume. Right-drag or the wheel zooms. Middle-drag pans.
3. Click **A**, **P**, **L**, **R**, **S** or **I** for a standard view.
4. Open the **3D SETTINGS** panel. Under **Look**, click **Preset** and pick a look, such as CT-Bone or CT-Lung.
5. Adjust **Colour**, **Opacity**, **WL/WW**, **Shift** and **Bright** if needed.
6. Under **Render**, set **Mode** to **VRT**, **MIP** or **X-ray**, and **Quality** to **Smooth**, **Balanced** or **Sharp**.
7. Click **Reset 3D** to put the camera back and remove the crop.

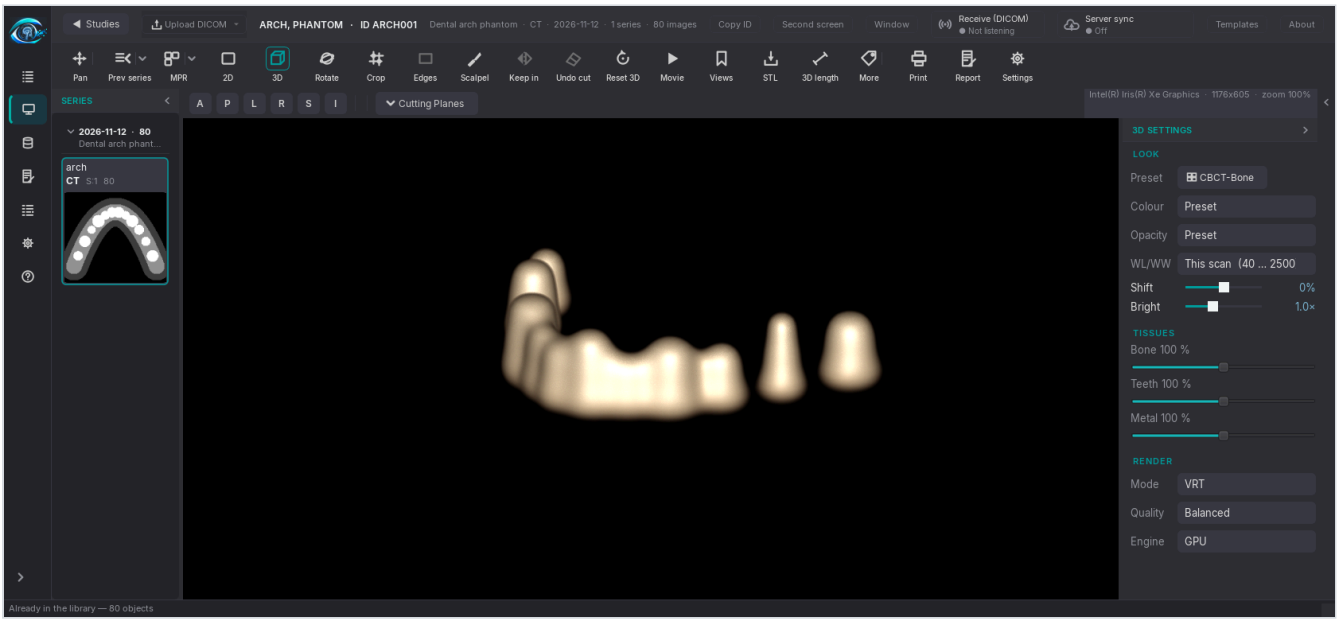


Figure 10. The 3D page with the 3D SETTINGS panel.

> **Note: Engine** offers **GPU** only when the graphics card can draw the volume; otherwise only **CPU**. The picture is the same; GPU is faster. Windows needs an up-to-date graphics driver (Vulkan) for GPU.

Cut away part of the 3D volume

1. On the 3D page, click **Crop** and drag the box's knobs. **Edges** shows or hides the box.

2. Or click **Scalpel** and draw round a region to remove it. Switch on **Keep in** to keep what you drew round instead.
3. **Undo cut** takes back the last cut.
4. For exact limits, open **Cutting Planes** and set the six planes in mm.

Save and reuse a 3D view

1. Click **Views › Save this view…** and type a name.
2. To go back to it, open **Views** and pick the name.
3. To remove one, choose **Views › Delete a view**.

> **Note:** Saved views belong to the study.

Measure a length on the 3D surface

1. On the 3D page, click **3D length**.
2. Choose a surface: **On bone (300 HU)**, **On skin (-300 HU)**, **On the automatic surface** or **On a value of my own…**.
3. Click two points. The line and its length appear.
4. Drag an end to move it along the surface. Shift-drag still turns the volume.
5. Use **3D length › Stop measuring** or **Clear 3D lengths** when done.

> **Note:** 3D lengths are not saved. Measure on MPR for an exact value.

Make a turning 3D movie or an STL file

1. Click **Movie** on the 3D page.
2. Choose **Turn**: **Round the body (head-foot axis)** or **Head over feet (left-right axis)**. Set length, frames per second, size and quality.
3. Save the MP4 file.
4. For a 3D-print file, click **STL** and choose **Bone (300 HU)**, **Skin (-300 HU)**, **Automatic for this scan** or **A value of my own**.
5. Tick **Fewer triangles (smaller file)** for a smaller file.

Play the phases of a series (4D)

For a series with several time points, such as a cardiac CT or a perfusion series.

1. Right-click the series in the series list › **Open in 4D (N phases)**. It only appears when the series has phases.
2. A **4D** bar opens under the images.
3. Click **Play**, or press Space on the bar. Use the arrows or slider to step one phase.
4. Set **Speed** in phases per second.
5. Switch to MPR or 3D: they play the same phases, and the slice, crosshair and camera stay put.
6. Click **Close 4D** to return to the original series.

> **Note:** The Oblique page does not change phase. Measurements belong to the phase they were drawn on.

Straighten a vessel (Curved MPR)

Follow a vessel, such as the aorta or a coronary artery, along its whole length on a contrast CT or MR.

1. On the MPR page, click **Curved MPR**.
2. Click along the vessel on any pane. After each click the crosshair moves to the new point; click the next point on another pane.
3. Drag a point to move it. **Remove point** deletes the picked point or the last one.
4. Choose **Straightened** or **Stretched**. Turn the view round the vessel with **Angle**.
5. Set **Slab** in mm, with **MIP**, **MinIP** or **Mean**.
6. Click on the long view to place cross-section **B**. **A** and **C** sit **Sections apart** mm either side.
7. The bottom line shows the path length and the distances A–B, B–C and A–C.
8. **Clear path** starts again. **Close** removes the panel and the path.

> **Tip: Open on screen 2** moves the panel to a second monitor (one monitor: **Open in own window**). **Back to MPR page** puts it back.

Fly through an airway or colon (virtual endoscopy)

An inside view of an air-filled structure on a CT volume.

1. On the MPR page, put the crosshair inside the lumen and click **Endoscopy**.
2. Drag in the view to look round. Right-drag, the wheel or Up/Down fly forward and back. Left/Right turn.
3. Hold F to fly toward the point under the mouse.
4. For a path, put the crosshair at the start and click **Start here (A)**. Move to the end, click **End here (B)**, then **Find path**.
5. Click **Play** to fly along the path. Set **Speed** in mm/s. **Look back** turns the camera round.
6. **Save movie…** saves the fly-through as an MP4.
7. **Clear path** starts again. **Close** removes the panel.

> **Tip:** If the wall looks wrong, change **Wall at** (in HU). Contrast-filled vessels are not set up for this view.

Fuse PET or SPECT with CT

The fusion buttons appear only on a study with both PET (or SPECT) and CT.

1. Open the study on the 2D page.
2. Click **PET/CT** for nine panes: CT, fused and PET, each axial, coronal and sagittal.
3. Or click **Fused | PET** for two panes: the fused CT and the PET alone.
4. Or switch **Fusion** on to fuse the active pane only.
5. Open **Blend** to choose the series on top and set the blend percentage.
6. Change the palette with **Colour LUT**.
7. Click **Un-fuse** to return to the viewer as it was.

> **Note:** PET values show as SUV when the file has the patient's weight and the dose. Otherwise the app says why SUV is not available.

Line up two studies (registration)

Compare two scans of the same patient taken at different times.

1. Use **Layout** to make 1 × 2 panes. Put the series that stays fixed in one pane and the one to move in the other.
2. With **Pointer HU**, click the same landmarks on both series: at least three, the same number on each.
3. Right-click each point › **Add Label**. Give matching points the same name: 1, 2, 3…
4. Click in the fixed series' pane and choose **More** ▾ **› Register**.
5. The **Registration** window shows **Fixed**, **Moving — registered** and **Both**. Set the overlay with **Blend**.
6. Move through images with **Image** or the wheel. Zoom and pan are linked across the three views.

> **Note:** If the points do not match, nothing is lined up and the message shows each point's error. The lined-up series is shown only in this window and is not saved.

Specialist tools

Tools for one kind of study: segmentation, calcium scoring, spine labels, dental CBCT, microscopy slides, ECG and DSA. The time-intensity curve and ultrasound Doppler readings are under Measuring.

Measure a volume by segmentation

Outline a lesion or organ and get its volume and values, on any 2D series.

1. On the 2D page, open **Segment** ▾ and choose a tool. The **Segment** panel opens.
2. **Brush**: press and drag to paint. Set **Size** in pixels.
3. **Brush erase**: drag to remove paint.
4. **Growing region**: click inside the structure. Connected pixels in the range join the segment.
5. Set the range as **Clicked value ±** a width, or **From** … **to** ….
6. Choose **This image** or **Whole series (3D)**. A long grow shows progress with **Stop**.
7. **Result** shows the volume in cm³ and the mean, SD, min and max (HU for CT).
8. **Fill between images** fills the gaps between painted images. **Undo** and **Clear** are in the panel.

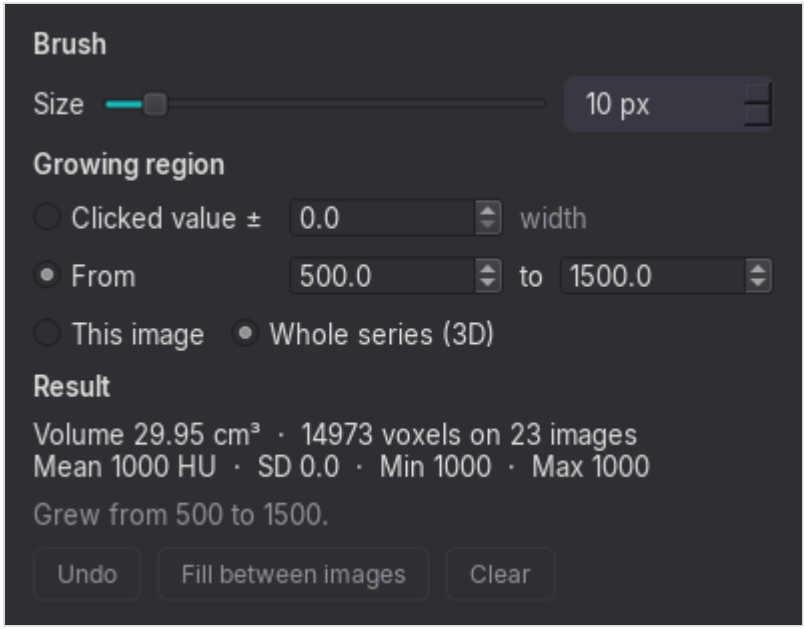


Figure 11. The Segment panel: brush, growing region and the volume result.

> **Note:** Paint on the 2D page only; MPR and 3D show the segment. It is kept while the study is open but is not saved.

Score coronary calcium

An Agatston calcium score on a non-contrast cardiac CT.

1. On the 2D page, choose **Calc** ▾ **› Calcium score**. Pixels over the threshold are tinted pink.
2. Check **Threshold** (130 HU is the standard).
3. Pick the artery: **Left main**, **LAD**, **LCx** or **RCA**.

4. Click each calcification in that artery. It turns the artery's colour.
5. Click a lesion again to remove it. **Undo** brings it back. **Clear** empties all.
6. Read the lesions, Agatston score, volume and mass per artery and in **Total**, with the risk group.
7. **Copy** puts the table on the clipboard. **Save PDF...** saves it with the patient and study details.

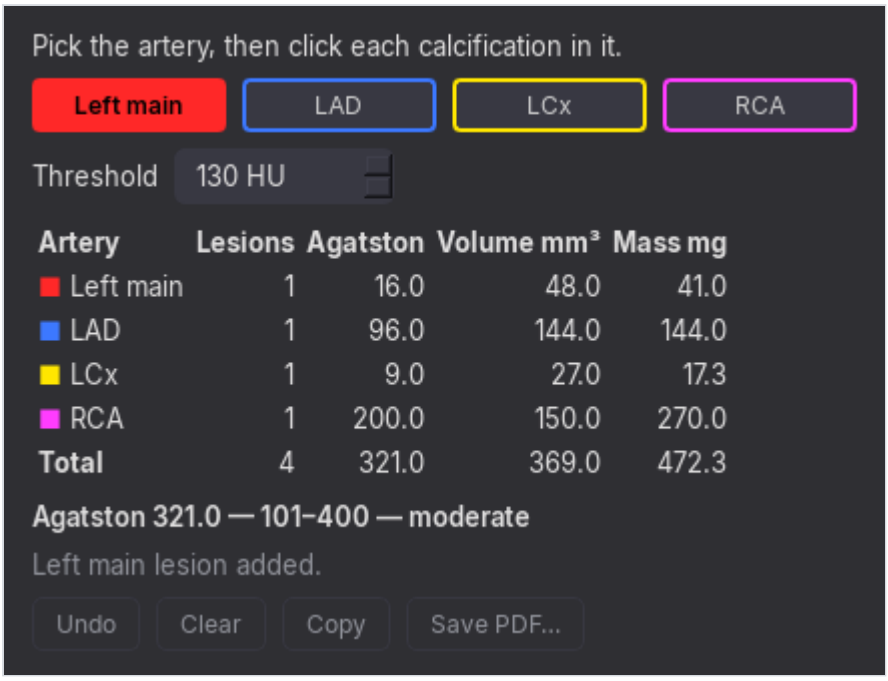


Figure 12. Calcium score per artery: Agatston, volume and mass.

> **Note:** A click below the threshold, or a region spreading into bone, is refused with a reason. Lesions are kept only while the study is open.

Label the spine

Name discs and vertebrae, and show the level on axial images. Needs a sagittal or coronal view (stored, or a reformat).

1. On the 2D page, choose **Measure** ▾ › **Spine labels**.
2. Pick the **Region**: **Lumbar**, **Thoracic** or **Cervical**. Check **First disc you click**.
3. Under **Then**, choose **going up (to the head)** or **going down**.
4. Click the middle of each disc in turn.
5. Tick **Extra vertebra T13** or **L6** for an anatomical variant.
6. Axial images of the same scan now show the level, such as **Level L4**, or the disc name near a disc.
7. Use **Remove last**, **Clear** or **Hide labels** as needed.

Plan with a dental CBCT

The Dental workspace (Overview, Panoramic, nerve canals, tooth numbers, implant and surgical guide planning, TMJ, ceph, airway, STL and the report sheet) has its own chapter: see **Dental and CBCT**, after this one.

View a whole-slide microscopy image

Read a digital pathology slide (SM). The slide opens on its own page when you open its card.

1. Open the slide card. The slide opens fitted to the screen.
2. Zoom with the wheel at the pointer. Right-drag or Shift-drag to zoom to a box.
3. Middle-drag pans, or left-drag with **Pan**.
4. Use the overview at bottom left to find your way. The position in mm is at top right.
5. On a fluorescence slide, click a channel in the legend to turn it off or on.
6. Measure with **Length**, **Arrow**, **Text**, **Polygon**, **Circle**, **Rect**, **Freehand** or **Polyline**.
7. Choose µm, mm or Auto in **Settings › Measurements › Microscopy (slides)**.

> **Note:** Marks are saved with the study when you leave it. Only the first focal plane is shown.

Read an ECG waveform

View and measure a 12-lead ECG stored in the study.

1. Open the ECG series. It shows as ECG paper at 25 mm/s and 10 mm/mV.
2. Choose a **Layout**: **1x10s**, **2x5s**, **4x2,5s**, **4x2,5s+1** or **4x2,5s+3**.
3. Change **Speed** (mm/s) and **Gain** (mm/mV) with the buttons.
4. The wheel moves through the recording. Ctrl+wheel / Cmd+wheel zooms. **Reset** returns to 1x.
5. Measure with **Measure** (interval and height), **QT points** (QT, RR and QTc), **Hr** or **QRS axis**.
6. **Save** keeps the measurements with the study. **Clear** deletes them.
7. **Measurements** shows the recording's own heart rate, intervals and interpretation.

Subtract a mask (DSA)

Remove bone and tissue from an angiography run so only the filled vessels remain.

1. Scroll to a frame taken before the contrast.
2. Choose **DSA ▾ › Use this image as mask**.
3. If the patient moved, choose **Shift mask** and drag on the image, or choose **Auto fit mask** to find the best shift.
4. The corner shows "Subtracted · mask image N" while it is on.
5. Choose **Subtraction off** to return to the plain images.

> **Note:** Measurements read the frame's own values, not the subtracted picture.

Dental and CBCT

KAPREN reads a cone-beam CT (CBCT) of the jaws in its own Dental workspace. The **Overview** shows three planes and a 3D view. The **Panoramic** page shows the arch, cross-sections and a tools panel: trace nerve canals, number teeth, plan implants and a surgical guide, then print a report sheet. Your work is saved with the series.

Which tool to use

You want to	Use	Most useful for
See the jaw and teeth in 3D	**Overview** with a dental 3D preset	Everyone
Read a panoramic and the bone in cross-section	**Dental — Panoramic**	Everyone
Look along one root (endodontics)	**Dental — Single tooth**	General dentist, endodontist
Number the teeth (FDI)	**Teeth** in the tools panel	Everyone
Mark the mandibular nerve canal	**R canal** / **L canal**, **Follow**, **Find canals**	Implantologist, oral surgeon
Mark the sinus floor	**R sinus floor** / **L sinus floor**	Implantologist
Plan implants, check bone and distances	**Implants** in the tools panel	Implantologist
Plan guide sleeves and drill depth	**Surgical guide** in the tools panel	Implantologist
Compare the two jaw joints	**Right TMJ** / **Left TMJ**, **Compare TMJs**	Orthodontist, TMJ clinic
Measure a lateral ceph (SNA, SNB, ANB…)	**Dental — Lateral ceph** and **Ceph landmarks**	Orthodontist
Measure the airway	**Dental — Airway volume…**	Orthodontist, sleep clinic
3D-print the jaw	**Dental — Export 3D surface (STL)…**	Lab, surgeon
Give the patient or a colleague the plan	**Report sheet…**, **Save to study**	Everyone

> **Note:** KAPREN is a planning aid. Check every canal, implant and distance in the cross-sections before treatment.

Open a CBCT in the Dental workspace

The **Dental** cell (the tooth) appears on the toolbar for a CT, CBCT or intraoral volume, on the 2D and reformat pages.

1. Open the study and choose the CBCT volume series.
2. Click the toolbar's **Dental** cell › **Dental / CBCT**. On macOS you can also use **View › Dental / CBCT…**.
3. Wait while "Preparing Dental / CBCT" shows. The **Overview** opens.
4. To go straight to the arch, choose **Dental › Dental — Panoramic** instead (macOS: **View › Dental — Panoramic…**).

5. To leave, choose another layout (**2D**, **MPR** or **3D**).

While the workspace is open the toolbar keeps only the tools that work there (window/level, pan, zoom, scroll, length, angle, Pointer HU, erase, crosshairs, reset, info, Dental and Settings). The Series panel folds away. Both come back when you leave.

> **Note:** KAPREN refuses a series that is not one clean volume and says why: slices missing, unevenly spaced or tilted, two reconstructions mixed in one series, or not enough memory. Re-export the complete volume from the scanner with a fixed slice increment and no tilt. The panoramic needs an axial scan.

Values are not HU

CBCT grey values are the scanner's own. They differ from scanner to scanner and from scan to scan. While a series is open in Dental, every value and ROI reads **(uncalibrated)** instead of HU.

- Do not compare CBCT values with CT HU thresholds, or between machines.
- "Dense bone" readouts are relative to this scan, not a bone density class.
- The report sheet says: "Grey values are the scanner's own — not calibrated HU."

Read the Overview (three planes and 3D)

The Overview shows the axial, coronal and sagittal slices with a linked crosshair, and a 3D view in the fourth pane. Slab, window/level and the measuring tools work as on the MPR page. Implants, canals, sinus floors and crowns you plan on the Panoramic also show here.

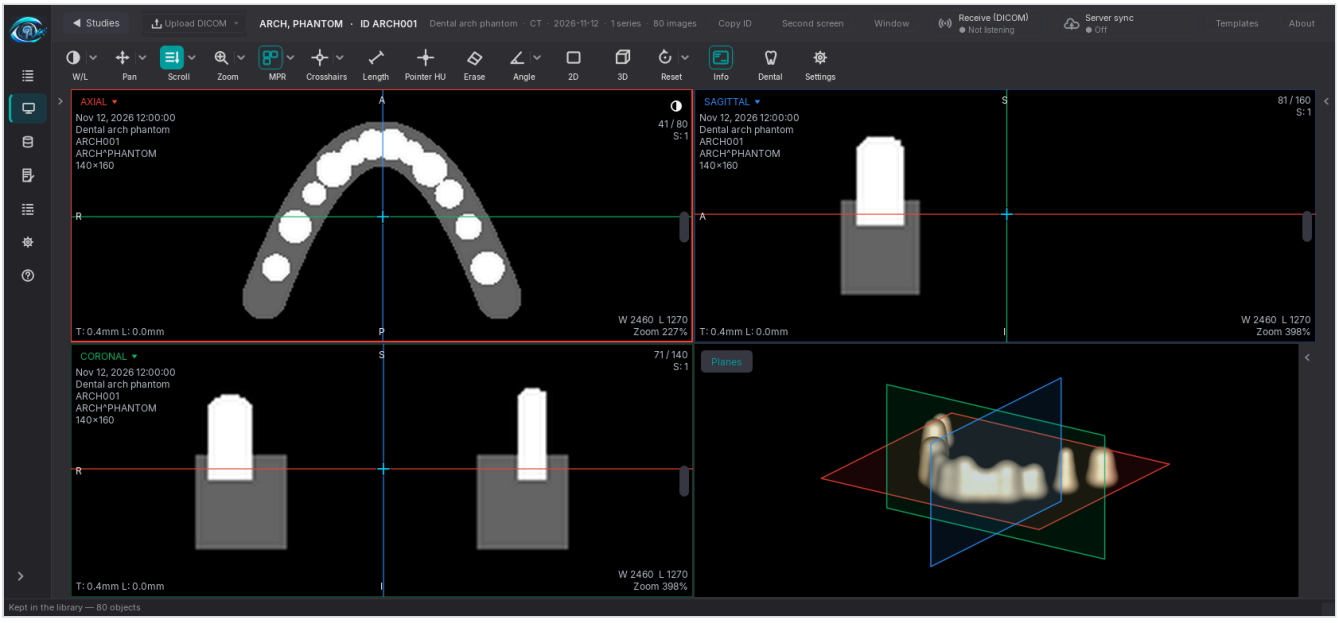


Figure 13. Dental / CBCT Overview: three planes and 3D.

1. Click a slice to move the crosshair; the other slices follow.
2. Drag in the 3D view to turn the jaw.
3. Pick a dental 3D preset for the 3D view (the default is **CBCT-Bone**).
4. Use the **TISSUES** sliders to show more or less of **Bone**, **Teeth** and **Metal** (0–200 %, default 100 %). Presets with skin also have **Soft tissue**.

Preset	Shows
CBCT-Bone	Solid ivory bone, near-white teeth (the default)
CBCT-Bone-Shiny	The same with a strong highlight
CBCT-Bone-Teeth	Bone peach, teeth white
CBCT-Teeth	Bone like glass, so crowns and roots show through
CBCT-Soft-Tissue	A faint skin over the bone
CBCT-Grayscale	CBCT-Bone in grey
CBCT-Face	The skin surface (the face profile)
CBCT-Airway	The air as clear channels
CBCT-Realist / CBCT-Realist-Shiny	Natural colours
CBCT-Endo	Pulp and canals as hollows; best on a small field of view

Each preset fits itself to the scan when you choose it. Metal (fillings, crowns, implants) draws grey-blue. **Shift** moves all thresholds together; **Reset** goes back to the scan's own range.

> **Note:** Only enamel separates from bone by its grey value. Dentine and roots draw with the bone. The 3D view is for orientation; measure on the slices.

Draw the arch and read the panoramic

The Panoramic page has four parts: the axial slice where you draw the arch (left), the panoramic (top right), five cross-sections (bottom, numbered 1–5 on all three) and the tools panel (far left). The patient's right is on the left of the panoramic. In the cross-sections **B** is buccal (cheek) and **L** is lingual (tongue).

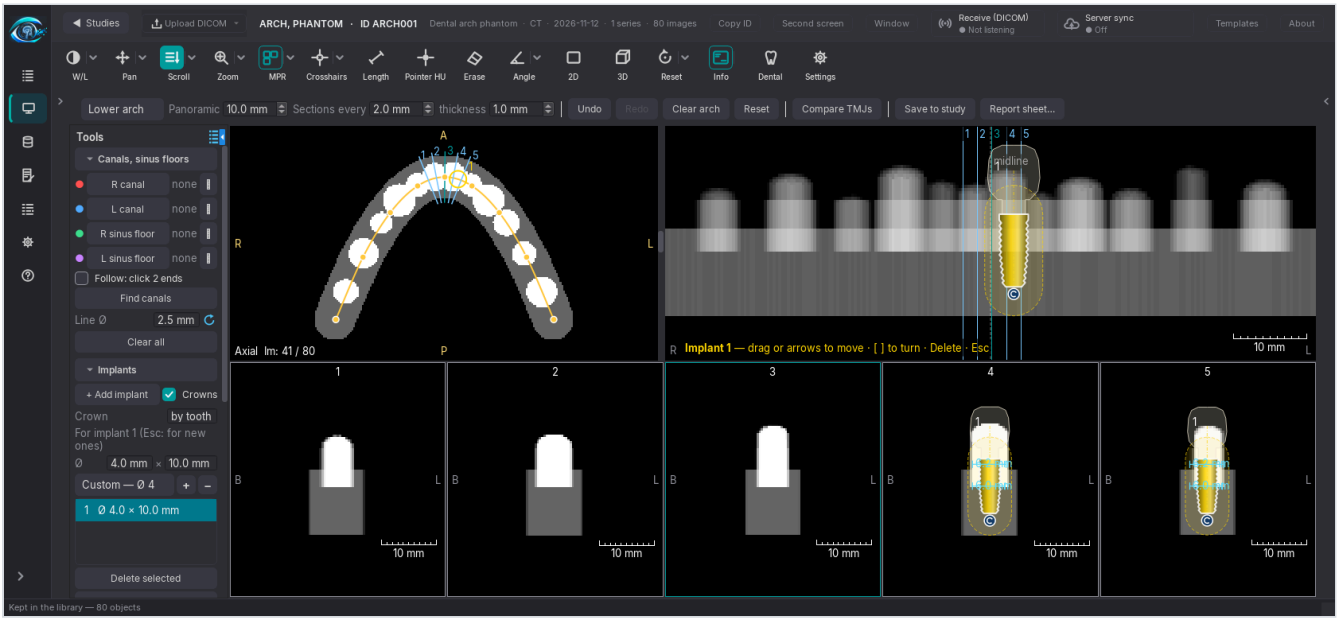


Figure 14. Dental — Panoramic: arch, cross-sections and a planned implant.

1. Choose **Dental › Dental — Panoramic**.
2. In the top bar choose **Lower arch** or **Upper arch**.
3. Scroll the axial slice (mouse wheel) to the level of the roots.

4. Click along the middle of the arch, from one end to the other. The panoramic and the sections draw as you go.
5. Drag a point to move it. Right-click a point to delete it.

Top bar	What it does	Default
Lower arch / **Upper arch** / **Right TMJ** / **Left TMJ**	Which jaw or joint you work on; each keeps its own work	Lower arch
Panoramic	Thickness of the panoramic across the arch (0–40 mm)	10 mm
Sections every	Distance between cross-sections (0.5–20 mm)	2 mm
thickness	Thickness of each cross-section (0–20 mm)	1 mm
Undo / **Redo**	Step back or forward	—
Clear arch	Start the arch again	—
Reset	Back to the defaults above	—

The arch length and the pixel size show at the bottom left of the panoramic. A dashed amber **end of scan** line marks where the scan's field of view stops inside the teeth or bone.

> **Note: Clear arch** asks whether to also remove that arch's canals, sinus floors, implants and tooth numbers. **Keep** (the default) brings them back when you redraw the arch. Moving the arch clears its measurements.

Move through the cross-sections and measure

1. Click or drag on the panoramic, or press **Left** / **Right**, to move the five sections along the arch.
2. Double-click a section to enlarge it. Press **Esc** to go back.
3. Measure with **Length**, **Angle** and the other toolbar tools on the panoramic or any section. Measure bone height and width in the sections; a length on the panoramic runs along the arch.
4. Zoom with the **Zoom** tool or **Ctrl+wheel** (Cmd on macOS). Pan with the **Pan** tool or a middle-drag. **Reset** on the toolbar fits the views again.

Measurements are kept with each arch position and saved. **Delete** removes the selected one.

Look at a single tooth

1. In the Dental workspace, click the tooth on the slices so the crosshair is on it.
2. Choose **Dental › Dental — Single tooth**. The three slices magnify about 40 mm round the crosshair.
3. To cut along the root, drag a slice's rotate handle until the line lies along the root.
4. Choose **Dental — Single tooth** again, or **Reset**, to go back.

Trace the nerve canal and the sinus floor

The **Canals, sinus floors** section of the tools panel has four lines, each in its own colour: **R canal**, **L canal**, **R sinus floor** and **L sinus floor**. Each shows its traced length, or "none". Implants are measured against these lines, so trace them before you plan.

There are three ways to trace a canal:

Way	How	Best when
By hand	Click **R canal**, click along the canal on the panoramic, press **Esc**	The canal is faint or unusual
Follow: click 2 ends	Tick it, click **R canal**, click one end of the canal, then the other; KAPREN finds the path between	The canal shows clearly from end to end
Find canals	Click it (lower arch only); KAPREN looks for both mandibular canals behind the mental foramen	A first draft to correct

1. Choose the line (for example **R canal**). The banner reads "Tracing … — click along it · Esc to finish".
2. Click along it on the panoramic. Drag a point to move it; right-click a point to delete it.
3. In a cross-section, click the canal's centre: that sets its exact buccal–lingual position and height.
4. Press **Esc** to finish. ✕ beside a line clears it; **Clear all** clears every line on this arch.

Line Ø sets how thick the line is drawn (0.5–6 mm, default 2.5 mm). It is only for display, not a measurement.

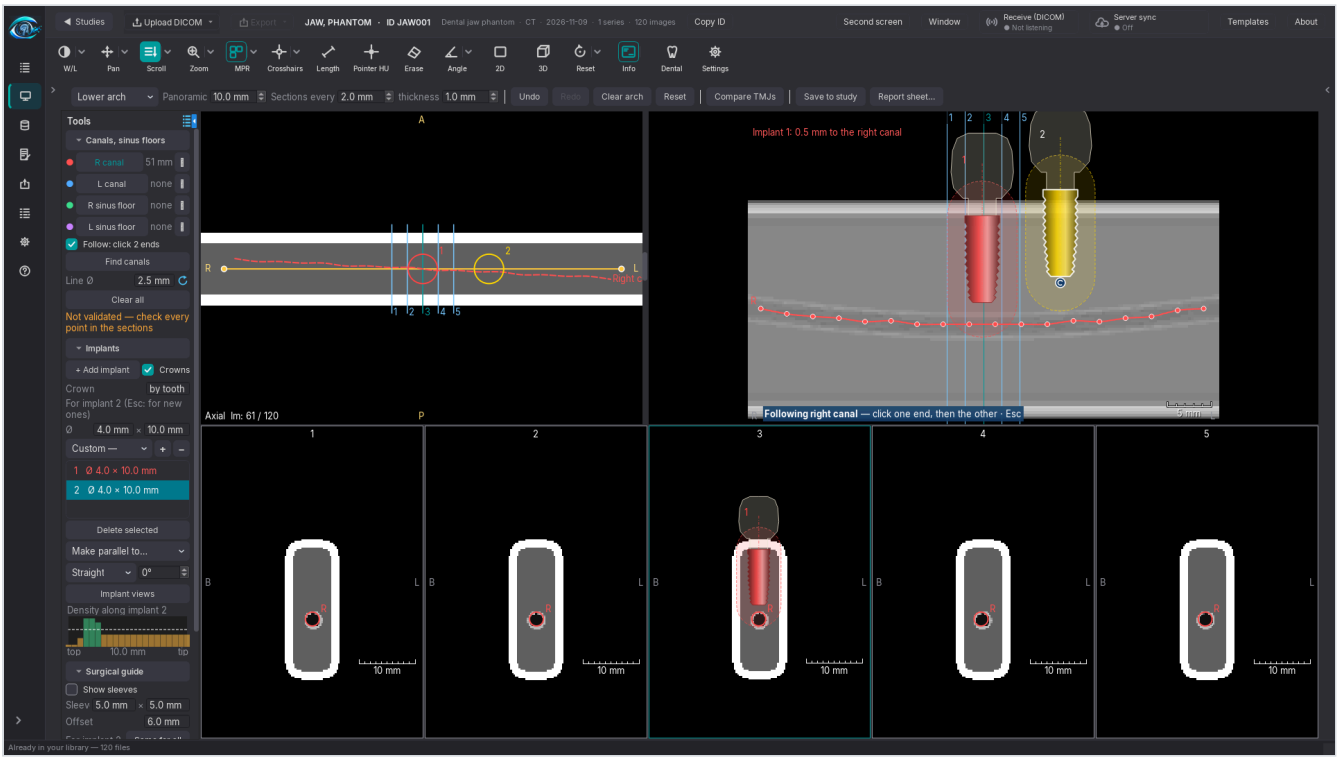


Figure 15. A traced right canal; implant 1 is red because it is 0.5 mm from the canal.

> **Warning:** "Not validated — check every point in the sections" shows while a canal exists. An automatic trace is a draft. Check every point in the cross-sections.

> **Note: Find canals** reports "not found" with a reason when a canal is too faint or shorter than 15 mm. A line cannot cross the midline. The sinus floor is your own line: measure the bone height under it with **Length**.

Number the teeth

Tooth numbers use the FDI system: upper 18–11 and 21–28, lower 48–41 and 31–38.

1. In the tools panel's **Teeth** section, choose a tooth in the drop-down ("Number a tooth…").
2. Click that tooth on the panoramic. The next tooth is chosen for you, so you can click along the arch.
3. Click again to move a number; right-click to delete it. Press **Esc** to stop.

The numbers show on the panoramic, the axial slice and the nearby sections ("Tooth 46"). An implant within 4 mm of a number is named after it, for example "Implant 1 at 46". A number on the wrong side of the midline is refused.

Plan an implant

Plan on the Panoramic page, in the tools panel's **Implants** section. Trace the canal first: KAPREN then warns when an implant comes too close.

1. Set the size in the **Ø × length** boxes (Ø 2.5–7.0 mm, default 4.0; length 4–20 mm, default 10).
2. Click **+ Add implant**.
3. Click the panoramic or a cross-section where the implant's top (platform) should be. It goes in upright, down into the lower jaw or up into the upper jaw.
4. Click the implant to select it (white outline). The banner reads "Implant 1 — drag or arrows to move · [ ] to turn · Delete · Esc".
5. Move and turn it until it sits in the bone (see the table below). Check it in every cross-section.
6. Press **Esc** to deselect it. Add the next implant the same way.

To	Do this
Move it	Drag its body, or press the arrow keys: 0.5 mm a press (with **Shift** 0.1 mm). **Left** / **Right** move along the arch, **Up** / **Down** move it up or down
Move it toward the cheek or tongue	**Ctrl+Left** / **Ctrl+Right** (Cmd on macOS)
Turn it across the arch	Drag the round handle past its tip in a section, or press **[** / **]** (5° a press)
Turn it along the arch	Drag the handle on the panoramic, or press **Shift+[** / **Shift+]**
Change its size	Select it, then change Ø or length; its top stays where it is
Delete it	Select it and press **Delete**, or **Delete selected** under the list

Warnings while you plan

A dashed safety zone surrounds each implant. An implant turns **red**:

- when it is less than **2 mm** from a traced canal;
- when two implants are less than **3 mm** apart (both turn red).

The panoramic shows a short line such as "Implant 1: 1.2 mm to the right canal, 2.0 mm to implant 2". "INTO the …" means the implant crosses that line. The distance to a sinus floor is shown but not judged.

Check the bone round the implant

Select an implant to see its bone in the panel:

- the bone width across the arch 1 mm below its top and at mid-length (drawn as cyan lines in its section);
- how far its top is below the crest (or above it);
- how much of its surface is in dense bone, relative to this scan;
- **Density along implant**: a small graph from top to tip, green above the bone level and amber below.

Line implants up, add crowns and abutments

- **Make parallel to…** turns the selected implant parallel to another one ("Implant 2 (7.5° now)"). Its top and length stay. It needs two implants.
- **Crowns** (on by default) draws a virtual crown on each implant. Crown width "by tooth" sizes it from the tooth number, or set it in mm.
- The abutment drop-down gives **Straight abutment**, **15° abutment** or **25° abutment**, with a lean angle: 0° toward the cheek, 90° along the arch, 180° toward the tongue.

Look along the implant (Implant views)

Click **Implant views** to see two slices through the implant's own axis: along the arch and across it.

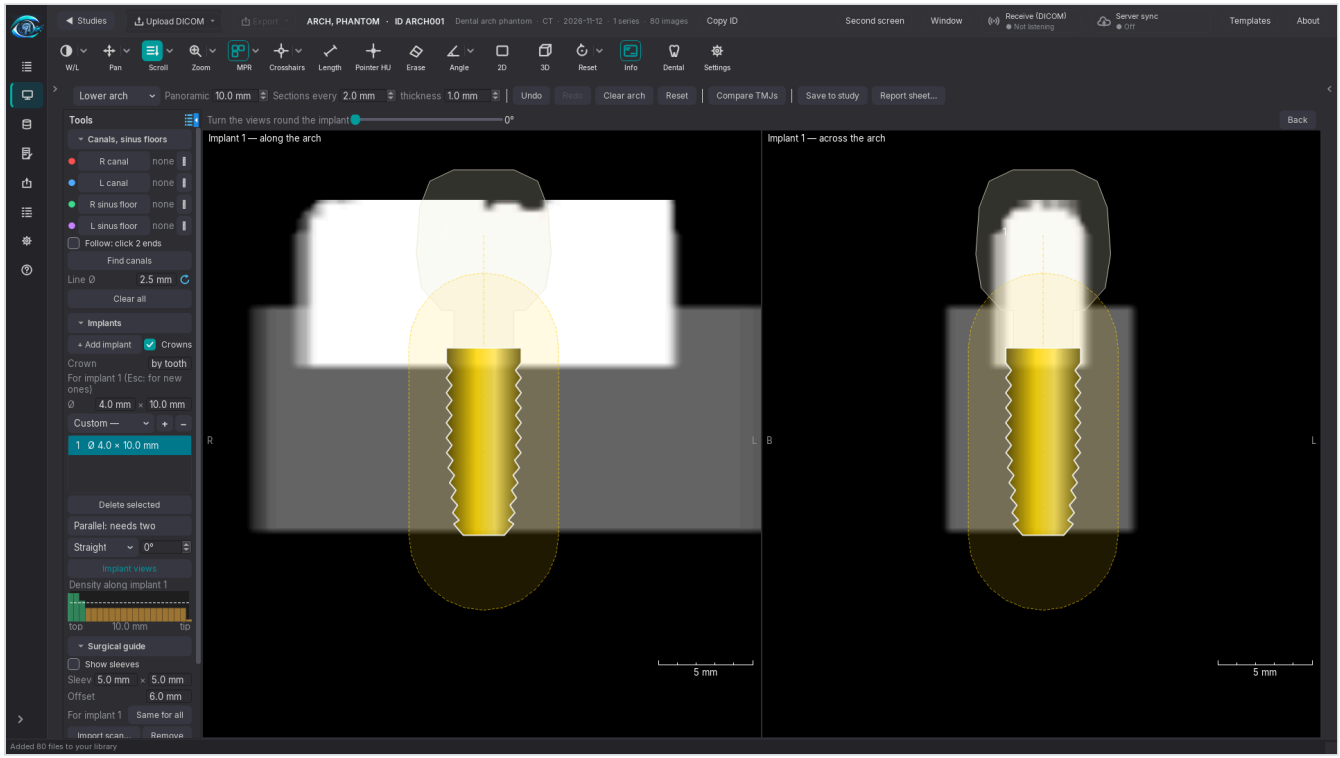


Figure 16. Implant views: the implant, its safety zone and crown, along and across the arch.

1. Turn both slices round the implant with the slider or the mouse wheel (0–175°).
2. Zoom with **Ctrl+wheel**; pan with a middle-drag; double-click to fit.
3. Measure here with **Length**. These measurements are saved with that implant.
4. Press **Esc** or **Back** to return.

Your implant sizes and maker libraries

The size drop-down above the list holds **Custom size**, your saved sizes and **Import a library...**.

- **+** saves the current Ø × length under a name, such as the maker and line. **−** removes it.
- **Import a library...** reads a maker's file (JSON) with its lines, diameters, lengths and drills. KAPREN says, for example, "Maker: 13 implant sizes imported".

> **Note:** KAPREN does not ship a maker's catalogue. Ask your implant supplier for the library file, or save your own sizes with **+**.

Plan a surgical guide

The **Surgical guide** section (folded at first; click its title) plans a guide sleeve over each implant and gives the drill depth. KAPREN plans the sleeves; your lab builds the guide itself.

1. Tick **Show sleeves**.
2. Set the sleeve **Ø × height** (default 5 × 5 mm) and the **Offset** from the implant's top to the sleeve's bottom (default 6 mm).
3. With an implant selected, the boxes change that implant's sleeve ("For implant 1"). With none selected, they set the size for new implants. **Same for all** gives every implant the boxes' sleeve.
4. Read the **drill depth from the sleeve top** (implant length + offset + sleeve height) in the implant's summary and on the report sheet.

KAPREN warns "sleeve in bone" when a sleeve goes into the bone and "sleeves touch" when two sleeves overlap.

The **drill sequence** comes from the imported maker library for that implant size. Without a library KAPREN shows a generic sequence (a 2.0 mm pilot, then 0.5 mm steps) marked "(generic — check the maker's protocol)".

Lay an intraoral scan on the CBCT

1. Click **Import scan...** and choose the STL file of the same jaw (in millimetres).
2. KAPREN fits the scan to the CBCT by its teeth (about 3 seconds) and says how close the fit is.
3. Tick **Show scan** to see its outline (cyan) on the sections and the axial slice. Check the outline against the teeth. **Remove** takes the scan away.

> **Note:** A jaw without teeth cannot be fitted this way. A scan of another jaw, or one not in millimetres, is refused: "The scan does not fit this CBCT".

Export the guide plan for the lab

1. Click **Export guide plan...** and choose a folder.
2. KAPREN writes three files: **KAPREN-guide-sleeves.stl**, **KAPREN-guide-implants.stl** and **KAPREN-guide-plan.txt** (positions, sizes, drill depths).

The files use the intraoral scan's coordinates when a scan is laid on, so the lab can design the guide on the scan. Otherwise they use the CBCT's own coordinates.

> **Warning:** The plan says "Planning aid — check every position before a guide is made." It is not a printable guide: the lab designs the guide shell from it.

Check the jaw joints (TMJ)

1. On the Panoramic page, choose **Right TMJ** in the top bar's jaw drop-down.
2. On the axial slice, click the condyle's two poles (inner and outer). The sections become corrected sagittal slices and the panoramic becomes the corrected coronal slice. A thin **Panoramic** thickness reads best.
3. Do the same with **Left TMJ**.
4. Click **Compare TMJs** to see both joints side by side. Press **Esc** or the button again to go back.

Make a lateral ceph and measure it

1. In the Dental workspace, choose **Dental › Dental — Lateral ceph**. KAPREN averages the whole volume from side to side into a lateral view, facing right.
2. Choose **Dental › Dental — Ceph landmarks (S, N, A, B, Go, Me, Po, Or)**.
3. Click the landmarks in that order. The status bar names each one, for example "click S (sella, the centre of the pituitary fossa)". Drag a landmark to move it.
4. Read the values as they appear. After the eighth landmark a **Ceph analysis** window lists them all.
5. To end the ceph, double-click, choose another layout, or choose **Dental — Lateral ceph** again.

Value	Needs	Norm	Shows
SNA	S, N, A	82° ± 2	Upper jaw position
SNB	S, N, B	80° ± 2	Lower jaw position
ANB	S, N, A, B	2° ± 2	Upper to lower jaw (skeletal class)
SN-GoMe	+ Go, Me	32° ± 5	Mandibular plane angle
FMA	+ Po, Or	25° ± 5	Frankfort to mandibular plane

Each value is marked within, above or below the norm.

> **Note:** This ceph has no film magnification (a film ceph is about 1.1×), so lengths differ from a film's. A small field of view gives a ceph of that field only.

Measure the airway

1. On the Overview's slices, put the crosshair inside the airway.
2. Choose **Dental › Dental — Airway volume…** and enter a height round the crosshair (5–150 mm, default 40 mm).
3. KAPREN gives the airway volume in cm^3 and the narrowest cross-section in mm^2, and how far it is from the crosshair. The air shows cyan on the slices and in 3D, and the crosshair moves to the narrowest point.
4. **Dental — Clear airway** removes it.

> **Note:** If the crosshair is not in air, KAPREN asks you to put it inside the airway. If the air reaches the edge of the scan, the airway is not closed and the volume includes that air.

Export the jaw as an STL file

1. Choose **Dental › Dental — Export 3D surface (STL)...**.
2. Accept the suggested surface value (where CBCT-Bone shows bone), or enter your own in the scan's values. Lower brings in soft tissue; higher keeps only teeth and metal.
3. Choose **Full detail** or **Reduced — about half the size**, then save the file.

KAPREN removes small specks and smooths the surface. Use it for planning or 3D printing, not for diagnosis.

Make a dental report sheet and save it to the study

1. On the Panoramic page, click **Report sheet...**. KAPREN makes a one-page A4 landscape PDF named after the patient ("... dental report.pdf").
2. To keep it with the images, click **Save to study**. KAPREN adds the sheet to the study as a new DICOM series, which goes with the study when you send it to a PACS.
3. Choose **Open it now** to see it (your Dental work is saved), or **Later**.

The sheet holds the patient header, the panoramic, the axial slice with the arch, the five sections, the implant table (tooth, size, distance to canal and sinus floor, nearest implant, bone width, top against crest, dense bone, drill depth, check), the drill sequence, the measurements and the settings.

> **Note:** Each **Save to study** adds another copy. Delete an unwanted one with right-click on its series card › **Delete series...**.

Saving, undo and keys

KAPREN saves your Dental work by itself, half a second after each change and when you close the page: arches, canals, sinus floors, implants, tooth numbers, measurements and settings. It comes back when you open the series again, also after a restart. The Overview's 3D preset and rotation are not saved.

On the Panoramic page **Undo** and **Redo** step through up to 200 changes (a drag counts as one).

Key or mouse	Does
Click / drag / right-click on the axial slice	Add / move / delete an arch point
Mouse wheel on the axial slice	Change slice
Left / **Right**	Move the sections along the arch (or the selected implant)
Up / **Down**	Move the selected implant up or down
Ctrl+Left / **Ctrl+Right** (Cmd on macOS)	Move the selected implant toward the cheek or tongue
Shift with an arrow	Move 0.1 mm instead of 0.5 mm
[/ **]**	Turn the selected implant 5° across the arch
Shift+[/ **Shift+]**	Turn the selected implant 5° along the arch

Key or mouse	Does
Delete	Delete the selected measurement, else the selected implant
Esc	Finish a tool, deselect, or leave Implant views, Compare TMJs or an enlarged section
Double-click a section	Enlarge it
Ctrl+wheel (Cmd on macOS)	Zoom
Middle-drag	Pan
Ctrl+Z / **Ctrl+Y** (macOS **Cmd+Z** / **Shift+Cmd+Z**)	Undo / redo

Reports, key images and printing

A report is a Word file that KAPREN fills with the study's details and keeps with the study. Key images are the images you mark as important. Printing puts images onto paper, a PDF or DICOM film.

Add a report template

Templates are Word files with fields such as «patientName» and «studyDate», which KAPREN fills in from the study.

1. Click **Templates** in the header, or **Help › Report templates…** in the left sidebar.
2. Click **Upload template…**, or drop .docx or .rtf files onto the list.
3. Choose the modality the template is for, or keep it for all modalities.
4. Click **Done**.

> **Note:** KAPREN copies each template in, so you can move the original afterwards. Old .doc files are refused; save them as .docx in Word first.

Manage templates

1. Click **Templates** in the header.
2. Select a template and use **Edit**, **Duplicate…**, **Rename…**, **Change modality…**, **Set as default** or **Delete**.
3. Click **Map fields…** to set where a template wants patient details, or **Fields…** to see every field you can use.
4. Click **New template…** to start from the KAPREN starter template.

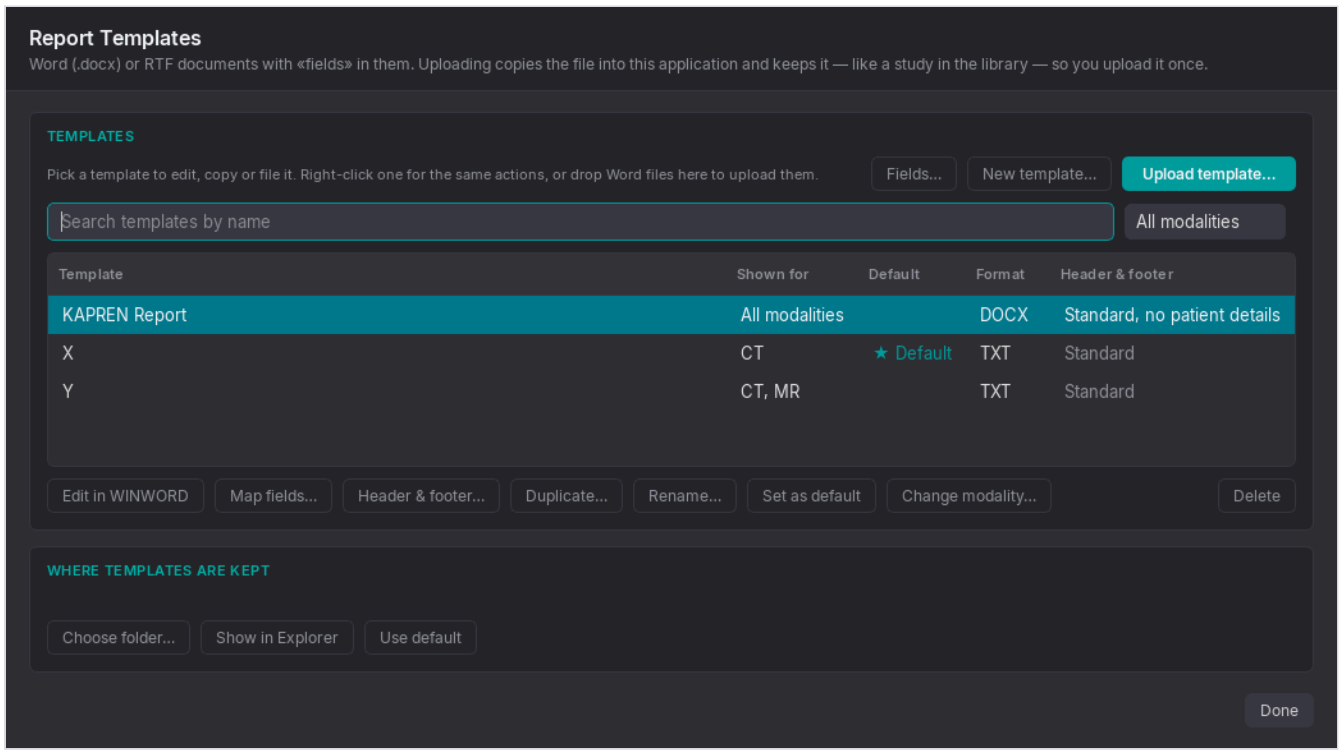


Figure 17. The Report Templates window.

Write a report

1. Open the study.
2. Click **Report** on the toolbar, or press Ctrl+Shift+R / Cmd+Shift+R.
3. Pick a template. Only templates for this modality and for all modalities are listed; click **Show all templates** for the rest.
4. Tick **Include the key images** to add your marked images, and **Draw the measurements on them** if you want them shown.
5. Click **Create report and open**.
6. Type your findings in Word. Save with Ctrl+S / Cmd+S.
7. When you are done, click **Finish**. The report is marked Reported and your signature is added.

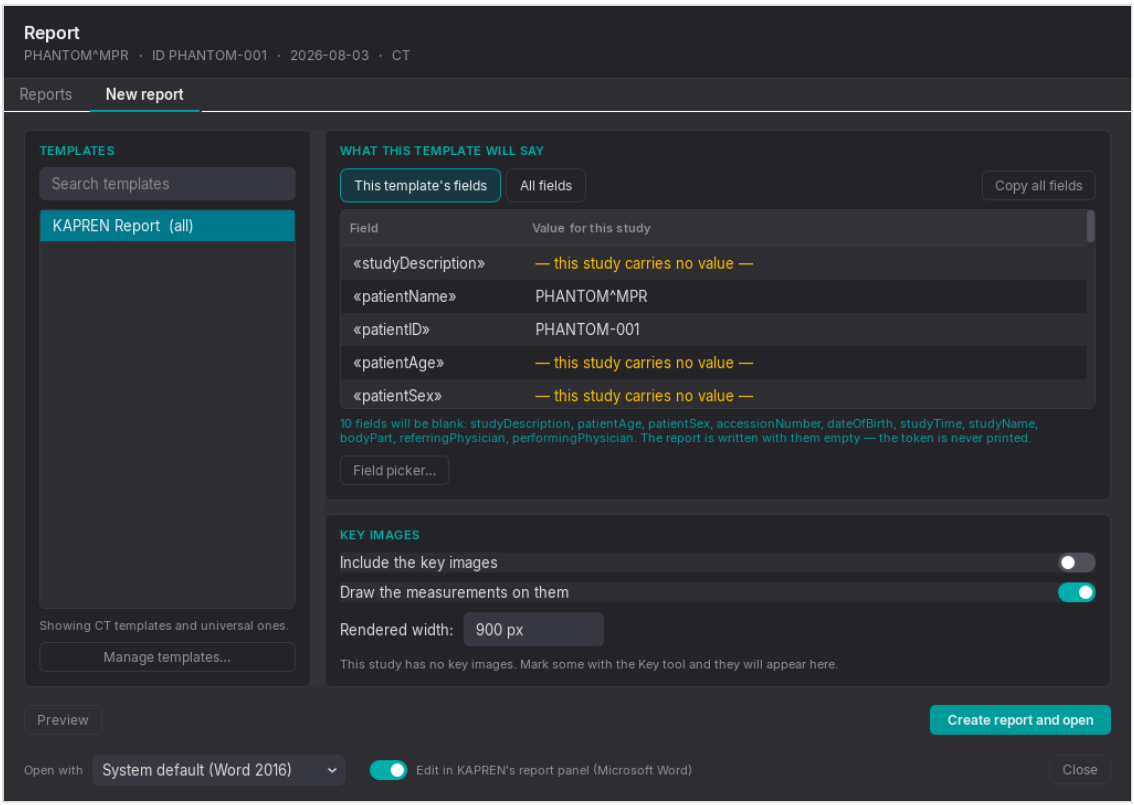


Figure 18. New report: pick a template, check its fields, add key images.

Windows	macOS
Word opens inside the report panel. Choose **Beside images**, **Full width** or **Separate window**.	Word opens in its own window beside KAPREN.

Add key images to a report that is already open

1. Mark the images first (see Mark a key image).
2. Windows: click **Insert key images**. They go in at Word's cursor.
3. macOS: click **Copy key images**, click in Word where they should go, and press Cmd+V.

> **Tip:** In a .docx template, key images go where the template has «keyImages», or at the end if it has none.

Reopen, share or change a report

1. Click **Reports** in the left sidebar.
2. Search by patient, MRN, study or modality. Double-click a report to open it.
3. Each report row has **Open** and **Share…**. The ⋯ button holds **Mark as draft** or **Mark as reported**, **Replace from template…** and **Delete…**.

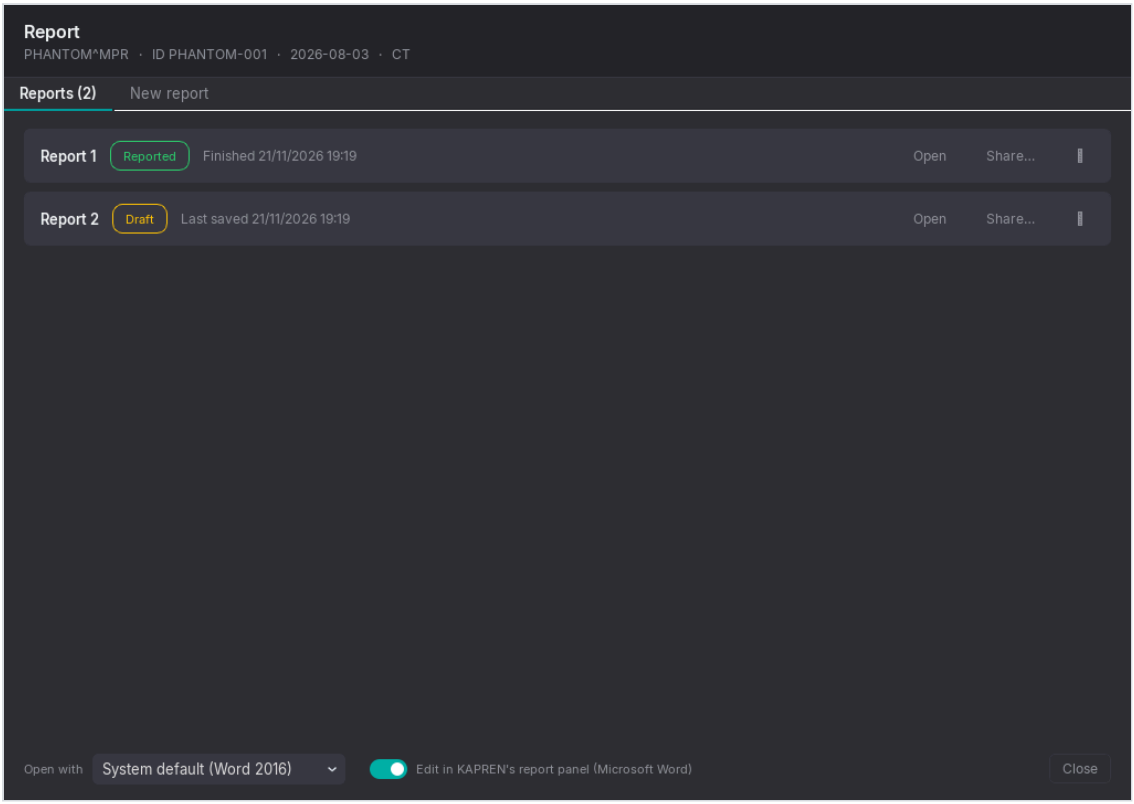


Figure 19. A study's reports: one finished, one draft.

> **Note:** If you change a finished report, it shows "Changed … after it was finished — Finish again". Click **Finish** again to record the change.

Make a PDF of a report

In Word, use **Save As** and choose PDF. KAPREN also makes PDFs by itself when a disc export includes reports and when server sync is on. Word makes these PDFs on Windows; Pages makes them on macOS, which asks once whether KAPREN may control Pages.

Set your name, signature and page layout

1. Open **Settings › Reports**.
2. **General**: fill in **Your name on reports** and choose the **Report editor**.
3. **Patient details**, **Header and footer** and **Signature**: set these for new reports.
4. **Preview** shows a template's pages with an example patient.

Mark a key image

1. Open the study on the 2D page.

2. Click **Key** on the toolbar, or press Ctrl+K / Cmd+K.
3. Choose **Mark this image...**.
4. Choose a reason under **Why**, and add an optional **Note**.
5. Click **Mark**.

> **Tip:** Press K for the next key image and Shift+K for the previous one. To remove a mark, choose **Unmark this image** from the same menu.

Save or send key images

1. Click **Key** on the toolbar.
2. Choose one of these:
3. **Save as DICOM Key Object...** saves the standard key-image object that PACS and other viewers read.
4. **Store to PACS...** puts the key images and annotations into the record.
5. **Export key images as DICOM images...** saves the images themselves.

Print images on paper or to a PDF

1. Open the study. Click **Print**, or press Ctrl+P / Cmd+P.
2. In the series panel on the left, click a series. Click its frames to place them, or drag them onto a cell.
3. Click **Add all** to fill pages with a whole series, or **Place key images** for your marked images.
4. In the **PAGE** tab, under **Page setup**, choose **Paper** and **Orientation**. Click **Layout...** to set the grid.
5. In the **IMAGE** tab, adjust brightness, contrast, zoom and window for each cell.
6. Click **Print...**. Your computer's print window opens.

Windows	macOS
For a PDF, choose the **Microsoft Print to PDF** printer.	For a PDF, use the **PDF** button in the print window.

> **Tip: Capture view** puts the current MPR or 3D view into a cell.

Print to a DICOM film printer

1. In the Print window, click **Film...**.
2. Enter the printer's **Host**, **Port** and **Printer AE title**.
3. Choose the **Film size** and the number of **Copies**.
4. Click **Send film**.

Save the print pages as pictures or DICOM

1. In the Print window, click **Export...** to save the pages as PNG files.
2. Or click **As DICOM...** to add the pages to the study as DICOM pictures.

Sharing and exporting

Copy or save images, movies and DICOM files from the viewer. Export, burn, share or send whole studies from the study list. In the viewer, everything that takes images out is in the **Export** ▾ menu in the header, beside **Upload DICOM**: **Export DICOM...**, **Export movie...**, **Copy image**, **Copy all panes**, **Save image...** and **Save to study (DICOM)**.

Copy an image

1. On the 2D page, open **Export** ▾ in the viewer header.
2. Choose **Copy image** (Ctrl+C / Cmd+C), or **Copy all panes** (Ctrl+Shift+C / Cmd+Shift+C).
3. Paste into any program that takes pictures.

Save an image or a whole series

1. Choose **Export** ▾ › **Save image...**, or press Ctrl+Shift+S / Cmd+Shift+S.
2. Choose **This image** or **Every image of this series**.
3. Choose a **Format** (JPEG or PNG) and a **Size**: **As on screen** or **Image's own pixels (1:1)**.
4. Choose the **Text**: **Full**, **Basic — no patient name, ID or birth date**, or **None**, and whether to include **Measurements**.
5. Choose the **Folder**, **Into folder** and **File name**, then click **Save**.

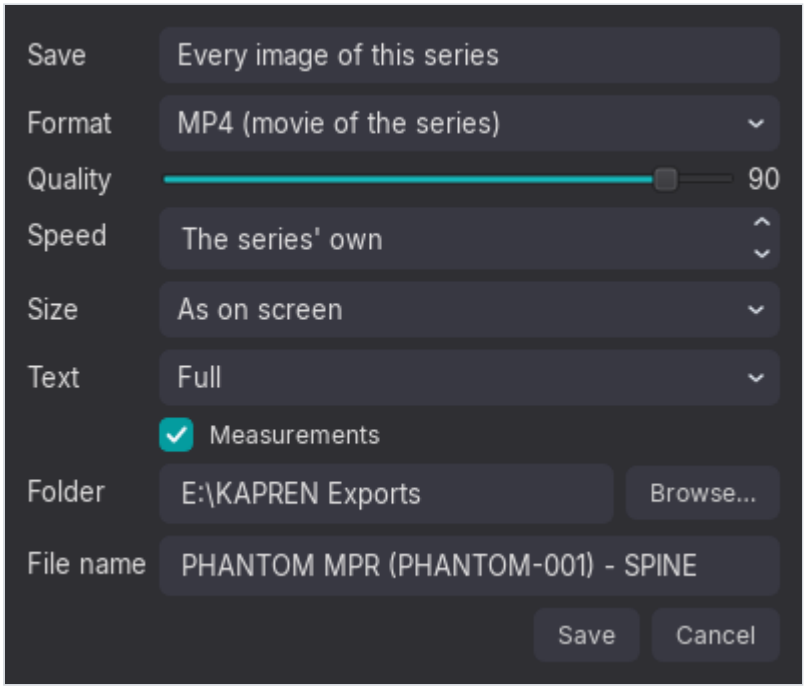


Figure 20. The Save image window.

> **Note:** An existing file is never overwritten; a new file gets "-2", "-3" and so on.

> **Tip:** Every save window starts in the last folder you used for that kind of file, and fills in a file name such as "NAME (ID) - CT Chest". You can change both. With **Text** set to **Basic** or **None**, the file name leaves out the patient's name too.

> **Tip: Into folder** (in Save image, Export movie and Export DICOM) is a folder named after the patient, such as "NAME (ID)", made inside the folder you save to. Rename it, or empty it to save straight into the folder.

Make a movie (MP4)

1. Choose **Export** ▾ **› Save image...**.
2. Set **Format** to **MP4 (movie of the series)**.
3. Set the **Speed** (**The series' own**, or fixed frames per second) and the **Quality**.
4. Click **Save**.

> **Tip:** For a turning 3D movie, see Advanced views. Nothing extra needs installing on Windows or macOS.

Export a movie of one pane, all panes, or 4D phases

Use **Export movie** for more control than Save image: a range of images, back and forth, repeats, or every pane playing together.

1. Open the study on the 2D page.
2. Choose **Export** ▾ **› Export movie...** in the viewer header.
3. Under **Movie of**, choose **This pane's series**, **All panes together**, or **The 4D phases** (only while 4D is open).
4. Set **Images** from ... to ... to choose a range.
5. Under **Play**, choose **Forward** or **Back and forth**. Set **Repeat** if you want it to play more than once.
6. Set **Speed** (**The series' own**, or frames per second) and **Size**: **As on screen**, **Image's own pixels (1:1)**, **720p (1280 × 720)** or **1080p (1920 × 1080)**.
7. Choose **Text**, **Measurements** and **Quality**, then click **Save**.

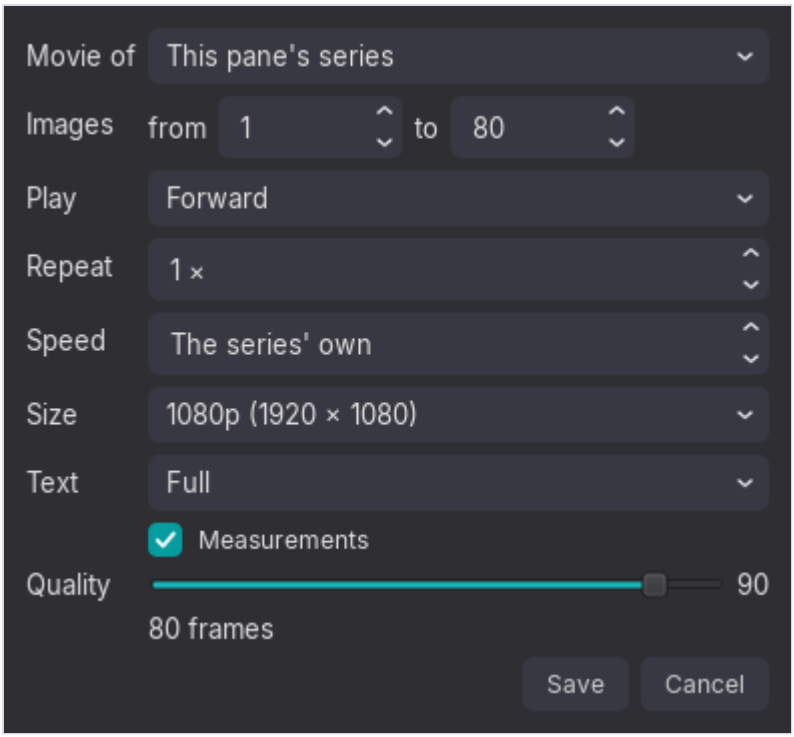


Figure 21. The Export movie window.

> **Note:** Export movie works on the 2D page. It is greyed out on the MPR and 3D pages; use **Movie** on the 3D page for a turning 3D movie.

Save a picture into the study

1. Set up the pane the way you want it.
2. Choose **Export** ▾ **› Save to study (DICOM)**.

> **Note:** The picture goes into a "screen captures" series at the end of the study. It is a picture, not a diagnostic image, and travels with the study to PACS and discs.

Export images or a series as DICOM

Save the DICOM files of one image, a range of images, a series or the whole study to a folder, or send them to a PACS, straight from the viewer.

1. Open the study on the 2D page and click the pane that shows the series.
2. Choose **Export** ▾ **› Export DICOM…** in the viewer header. Or right-click a series in the series panel and choose **Export series as DICOM…**.
3. Choose what to export: **Current image**, **Images** from … to … (take **All images**, **Every 2nd image**, **Every 3rd image** or **Every Nth image…**), **Whole series** or **Whole study**. The first and last images of a range are shown as pictures.
4. Under **Files**, tick **Original images — as stored, unchanged**, **Image as shown — a copy with the drawings in its pixels**, or both. For the copy, choose the **Text** (**None**, **Basic — no name, ID or birth date** or **Full**) and whether to include **Measurements**.
5. Tick **Remove patient details (anonymise)** if the files are leaving your organisation. The template is the one set in **Settings › Anonymise**.

6. Check **Into folder**: a folder named after the patient, made where you save. Rename it, or empty it.
7. Under **Send to**, choose **A folder on this computer** or **A PACS / DICOM destination**, then click **Export** (or **Send**). For a PACS, tick one or more destinations.

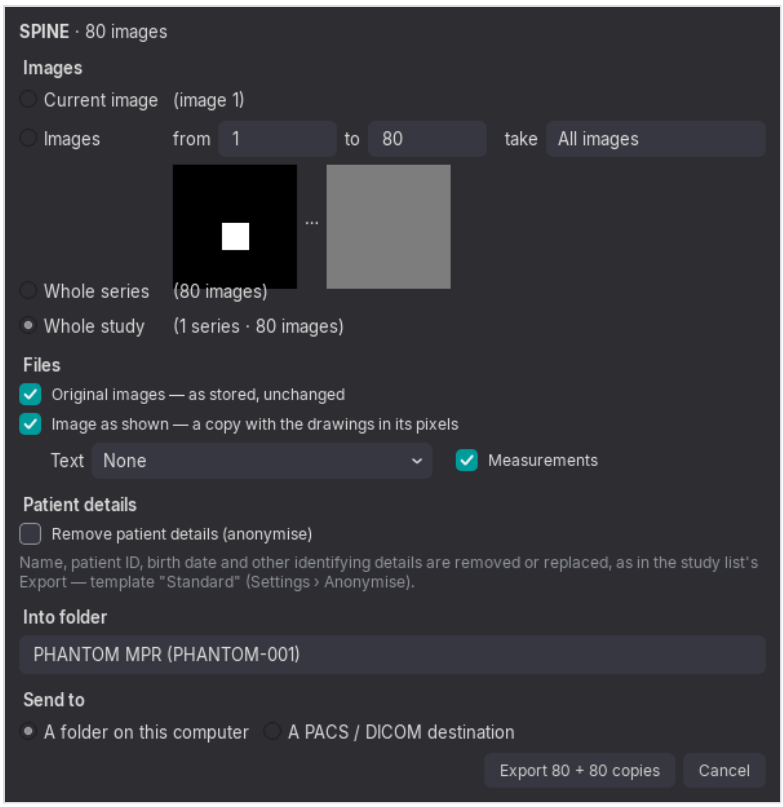


Figure 22. The Export DICOM window.

> **Note:** The originals are the stored files, unchanged. Other DICOM viewers do not show KAPREN's measurements on them; choose **Image as shown** for a copy with the measurements drawn in. From an ultrasound cine or another multi-frame file, a range of frames becomes a new file with only those frames.

> **Tip:** Every export is listed on the **Exports** page, where you can share it or send it to a PACS later. You can give Export DICOM its own key in **Settings › Keyboard**.

Export studies to a folder, USB stick or disc image

1. In the study list, select one or more studies.
2. Click **Export...**.
3. Choose a **Format**:
4. **Folder**: the studies in folders with readable names.
5. **Folder with DICOMDIR (USB stick)**: the layout DICOM viewers and PACS expect.
6. **ISO disk image**: a disc image you can burn.
7. For an ISO, choose a **Volume size**: **Unlimited volume**, **CD (700 MB)**, **DVD (4.7 GB)** or **Dual-Layer DVD (8.5 GB)**.
8. For a **Folder**, choose the patient folder. One patient: **Into folder** (rename it or empty it). Several patients: **Patient folders** — **NAME (ID)**, **ID only**, **Name only** or **None — the study folders straight in**.

9. Tick **Include finished reports** to add them as PDF. Drafts are never included.
10. Click **Export...**, then choose a folder or file name.

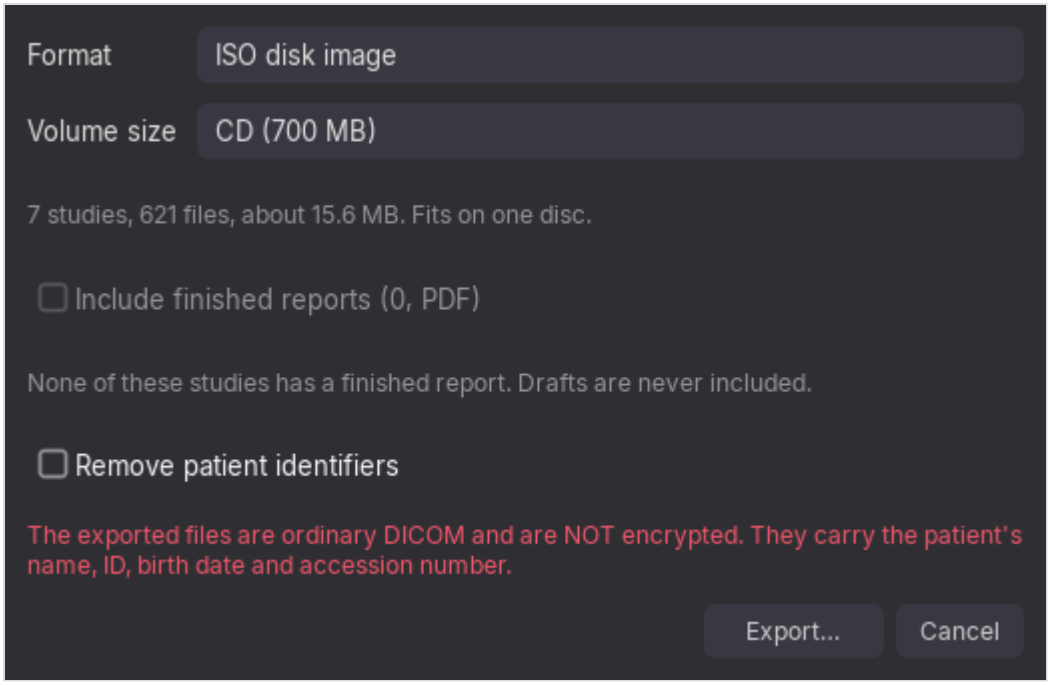


Figure 23. The Export window, set to an ISO disk image of CD size.

> **Note:** The window tells you how many discs are needed before you start. Studies are split between discs whole, or by series if needed. Exported files are ordinary DICOM files and are not encrypted. No viewer program is put on the disc in this version.

Burn a CD or DVD

1. Connect a disc writer. **Burn to CD/DVD** appears only when a writer is attached.
2. Click **Export...** and choose **Burn to CD/DVD**. Choose the **Drive** and the disc size.
3. Click **Burn...**.
4. When asked, insert a blank disc and click **Burn**. KAPREN checks the disc before writing.
5. Each disc is burnt, checked and ejected. Insert the next disc when asked.
6. Click **Burn another copy**, or **Done**.

> **Note:** Both Windows and macOS burn with the system's own disc burning. On macOS only the first writer is offered. You can also make an **ISO disk image** and burn it with any burning program.

Remove patient details when exporting

1. In the Export window, tick **Remove patient details (anonymise)**.
2. Choose a **Template**:
3. **Standard**: patients become ANON-001, ANON-002; dates are kept.
4. **Research**: patients become SUBJ-001; dates shift back 100 days.
5. **Strict**: dates and descriptions are removed.
6. Click **Export...**.

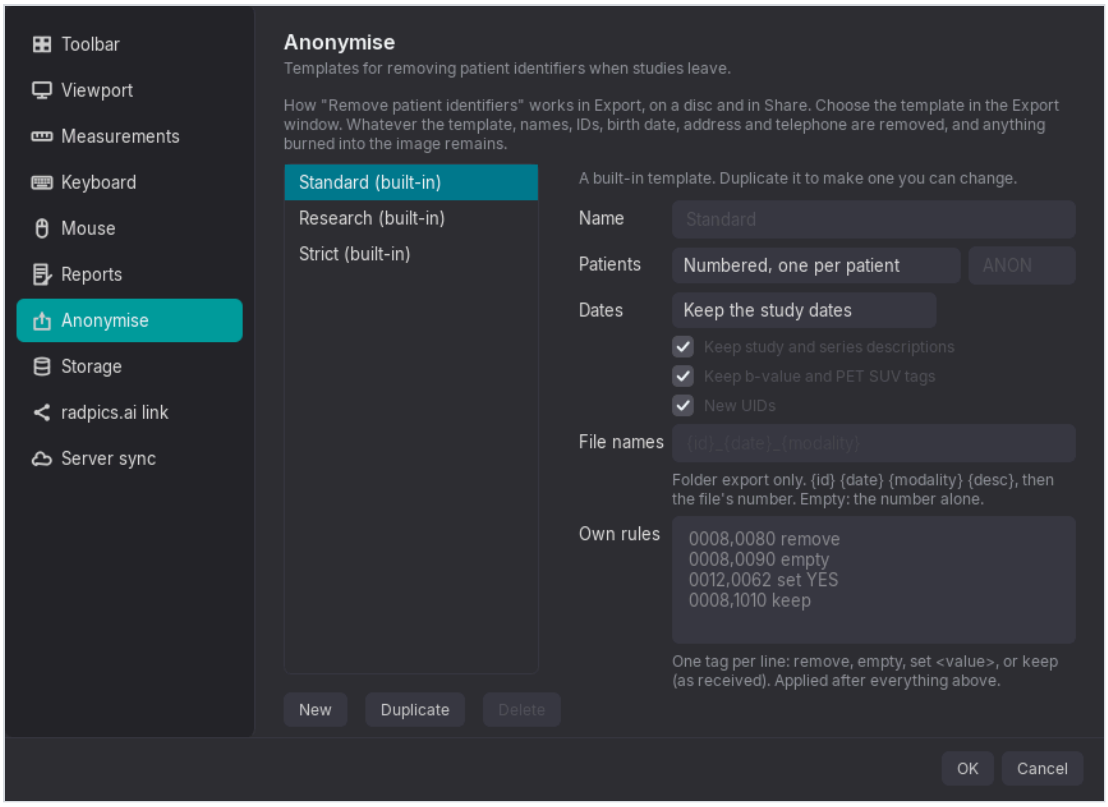


Figure 24. Settings › Anonymise: built-in and your own templates.

> **Note:** Each patient gets one number, the same across all discs of the set. Text burned into the image is not removed. A de-identified export carries no reports. Make your own templates in **Settings › Anonymise**.

Share a study by mail or messenger

1. Select the studies and click **Share…**.
2. Leave **Remove patient details (anonymise) — recommended** ticked unless you need the patient's identity.
3. Click **Share…** to pass the file to another app (Windows: Mail, Outlook, Teams or WhatsApp; macOS: Mail, Messages, AirDrop or WhatsApp).
4. Or click **Save file…** to keep the file on disk.

Send studies to PACS

Select studies and click **Send…**. Destinations, sending to several at once, searching a PACS, sending to a phone, Bluetooth and fixing failed sends are in the chapter **Send and receive DICOM**.

Export a 3D surface as STL

On the 3D page, click **STL**, choose the surface and save. See Advanced views for the options.

Find, open and share saved files (Exports)

The **Exports** page lists every file KAPREN has saved in this library, newest first: movies, images, PDFs, STL, CSV, disc images and DICOM exports.

1. Click **Exports** in the left sidebar.
2. Narrow the list with the kind filter (**All files**, **Movie**, **Image**, **PDF** ...) or **Search by name or folder...**.
3. Select one or more files, then choose what to do:
4. **Open** (or double-click) opens the file with its own program.
5. **Show where it is** opens its folder in Explorer (Windows) or Finder (macOS).
6. **Share...** sends it by mail, Nearby Share (Windows), AirDrop (macOS) or another app.
7. **Send by Bluetooth...** sends it to a phone or computer nearby. Share and Bluetooth send a folder (such as a DICOM export) as one ZIP file.
8. **Send to PACS...** sends the DICOM files of an export (a folder or a .dcm file) to a PACS or another DICOM destination.
9. **Copy** puts the files on the clipboard; paste them into a chat, a mail or a folder.
10. You can also drag rows out onto a chat, a mail or a folder.
11. **Remove from list** takes a file off the list; the file stays. **Delete file...** deletes it (to the Recycle Bin or Trash).

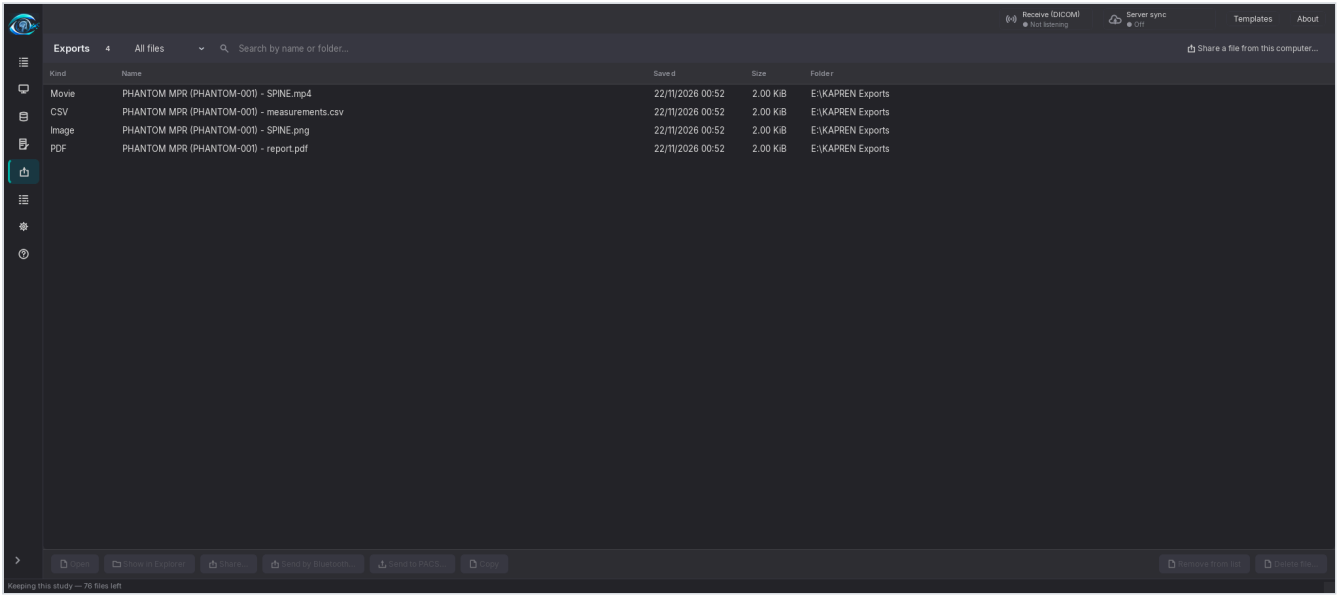


Figure 25. The Exports page: every file saved in this library, newest first.

> **Tip: Share a file from this computer...** lets you pick any file and send it the same ways.

> **Note:** Share and Bluetooth ask first every time, because a movie or PDF can show the patient. A file moved or deleted outside KAPREN shows as "missing". Each library has its own list.

Send and receive DICOM

KAPREN is a DICOM node on your network: a modality or PACS can send studies to it, it can send studies on to one or several machines, and it can search a PACS and bring studies in. Every control is inside the KAPREN window, the same on Windows and macOS.

Two DICOM machines find each other by three values:

Value	What it is	KAPREN's default
AE title	The name a DICOM machine answers to (up to 16 characters)	KAPREN
Address	The computer's IP address on the network	Shown in the Receive window
Port	The network door it listens on	11112

> **Warning:** The computer that receives needs a fixed IP address. On a network that hands out addresses automatically, the address can change and modalities stop reaching it. Ask your IT team for a fixed address.

Receive studies from a modality or PACS

Open the **Receive studies from a modality** window in any of these ways: the **Receive (DICOM)** tile in the header, the study list's **Import** ▾ **› Receive from a modality…**, **Receive…** on an empty study list, or **Data Sources › DICOM Receiver › Configure**. The window can stay open while you type its values into the other machine.

1. Under **Received studies go into**, choose the library (default **Main**).
2. Read **Send studies to** (this computer's address), **Port** and **AE title**. Each has a **Copy** button.
3. Change the port or AE title only if your PACS team asks. The AE title is kept in capitals, letters, digits, - and _ only.
4. Click **Start listening**. The status reads **Listening.** and the port and AE title lock.
5. Click **Test**. It should say it **answered on** this computer's address.
6. On the modality or PACS, add KAPREN as a destination with those three values, and send.
7. To listen every time KAPREN opens, tick **Start receiving when KAPREN opens**. It is off at first.

The header tile shows the state at a glance:

Tile	Means
● **Not listening** (grey)	A modality cannot send to this computer
● **Listening** (green)	Ready; point at it to see the AE title, port, address and library
● **Receiving…** (pulsing)	Images are arriving now
● **Error** (red)	Receiving stopped; point at it for the reason

Received studies appear in the study list by themselves, with **Received** and the sender's AE title in the Source column. If another library is open, KAPREN says how many images went into the receive library. An image already in the library is skipped, not stored twice. If a sender stops halfway, the images that fully

arrived are kept; send the study again to complete it.

> **Note:** KAPREN accepts every common DICOM object (images in any compression, video, PDF, reports, presentation states, RT) and stores each exactly as it arrived, encrypted. Many hospitals do not let modalities send to workstations directly; then search and retrieve from the PACS instead (see Search a PACS and bring studies in).

Let the network through (firewall)

- **Windows:** the installer adds a Windows Defender Firewall rule, **KAPREN DICOM receive**, for Domain and Private networks. On a network marked **Public**, studies are blocked: set the network to **Private** in Windows Settings. The first time KAPREN retrieves from a PACS, Windows may ask whether KAPREN may receive; allow it.
- **macOS:** the first **Test** or send to a local address asks for **Local Network** permission; allow it. If it was refused, KAPREN offers **Open Privacy Settings** (System Settings › Privacy & Security › Local Network). If the macOS firewall is on, allow incoming connections for KAPREN when asked.
- **Both:** the two machines must reach each other, usually on the same network. A firewall or NAT between them blocks receiving and retrieving.

Test a connection

To test	Do	A good result
KAPREN's own receiver	Receive window › **Test**	"answered on … — a modality set up with these values will be able to send"
KAPREN from the other machine	Its "Verify" or "Echo" (C-ECHO) to KAPREN's address, port and AE title	The other machine reports success
A send destination	**DICOM destinations** › select it › **Test connection**	"… answered."
A PACS data source	The card's ⋮ › **Test connection**	**Connection works**

A test waits up to 10 seconds. A failed test explains the cause in plain words (see When sending or receiving fails).

Add a send destination

Destinations are kept once and offered every time you send. They are the same list as the DICOM Server (PACS) cards on **Data Sources**: one added in either place appears in both.

1. In the Send window click **Manage destinations…** (the **DICOM destinations** window).
2. Click **Add destination** and fill in:

Field	Enter
Name	Any name you like, e.g. Department PACS; it is what the Send list shows
Host	The other machine's IP address or network name
Port	Its DICOM port, often 104 or 11112 (104 by default)

Field	Enter
Called AE (them)	The AE title the other machine answers to — ask its administrator
Calling AE (us)	The AE title KAPREN sends as (default KAPREN) — the other machine must know it

1. Click **Test connection**, then **Save**.

Send studies

From	How
Study list	Select one or more studies and click **Send…** in the selection bar
Viewer	Header **Export** ▾ **› Export DICOM…**, choose what to send (current image, a range, the series or the study, originals and/or "image as shown", with or without patient details), then **Send to: A PACS / DICOM destination**
Key images	The key-image menu › **Store to PACS…** (sends the key-image list and annotations)
Exports page	Select a .dcm file or an export folder › **Send to PACS…**

1. In **Send to**, tick one or more destinations (a single destination is ticked already).
2. Click **Send**. KAPREN checks each destination first, then shows **Sending studies** with a progress bar and **Stop**.
3. The status bar ends with **Sent N object(s) to M destination(s)**, or which destinations failed. A failure opens a message that explains why.

Images are sent exactly as stored, never re-compressed. If a destination will not accept one kind of image in its stored encoding, only that kind is refused; the rest is delivered. One failed destination does not stop the others. **Stop** keeps what has already arrived.

> **Note:** Studies are sent with patient details unless you send from **Export DICOM…** with **Remove patient details (anonymise)** ticked.

Search a PACS and bring studies in

1. Open **Data Sources › Add Data Source** and choose **DICOM Server (PACS)**.
2. Enter the **Name**, the PACS's **AE Title**, **Host / IP Address** and **Port** (often 104), **Our AE Title** (KAPREN) and **Receive port (C-MOVE)** (11113).
3. Click through **Test Connection** to **Finish**, and **Add Data Source**.
4. Ask the PACS administrator to add KAPREN as a move destination: **Our AE Title**, this computer's IP address and the **Receive port (C-MOVE)**. Without it a search works but nothing comes back.
5. Open the source, choose a **Date Range** and **Modality**, type a patient name, ID, accession number, study ID or UID, and click **Query**.
6. Tick the studies and click **Open Selected**. They are retrieved into the open library and opened.

> **Tip: Save…** keeps a search for later. The **Activity** tab lists searches and retrievals, without patient names. **Configure…** on the card sets the default date range, modality, maximum results and time-out.

> **Note:** The retrieve port (11113) is separate from the Receive window's port (11112); keep them different. KAPREN retrieves by C-MOVE, and asks for uncompressed images, which most PACS supply.

Send to KAPREN on a phone

1. On the phone, turn on **Receive (DICOM)** and note its address.
2. In KAPREN desktop add a destination: the phone's address, port **11112**, Called AE **KAPREN**.
3. **Test connection**, then send as to any PACS. Both must be on the same Wi-Fi.

Send by Bluetooth

From the study list's **Share… › Send by Bluetooth…**, or the Exports page's **Send by Bluetooth…**, KAPREN hands the file (a folder goes as a ZIP) to the system's Bluetooth sender; choose the device there. It shows how long it will take (about 150 KB a second). Sharing recommends **Remove patient details (anonymise)**.

To take studies in by Bluetooth, turn on **Settings › Storage › Receive from a folder (Bluetooth)** and choose the folder Bluetooth files arrive in.

Check what was received and sent (Logs)

The **Logs** page lists each batch received (filed, already there, unreadable, failed) under **Receive**, and each send (sent, failed, cannot reach) under **Send**. The Receive window's own box shows every connection and file as it arrives.

When sending or receiving fails

You see	Cause	What to do
"… is reachable, but nothing is listening on port N"	Wrong port, or the other DICOM service is stopped	Check the port with its administrator
"This machine could not reach … over the network"	Off, another network, or a firewall	Check power, network and firewall
"… answered, then refused the association"	Wrong AE title (case matters), or KAPREN is not registered there	Fix **Called AE**, or have **Calling AE** (KAPREN) added on the other machine
"… will not take … images in the way these are stored"	It does not accept that image type or compression	Ask for it to be accepted; KAPREN does not re-compress
"… accepted the connection but stopped responding"	A firewall dropping traffic, or a stuck service	Check the firewall; restart the other service
"… may not have permission to reach devices on your local network" (macOS)	**Local Network** permission is off	**Open Privacy Settings** and turn on KAPREN
"C-MOVE … failed … port 11113" or "nothing came back"	The PACS cannot connect back to KAPREN	Have KAPREN added as a move destination; open the firewall for 11113
Status "Not listening — … port N may be in use", tile ● **Error**	Another program holds the port	Close it, or choose another port and tell the senders

You see	Cause	What to do
The study was sent but is not in the list	It went into another library, or Windows calls the network Public	Check **Received studies go into**, the Logs page, and set the network to Private

Server sync and moving to a new computer

Server sync sends your studies, reports and report templates to your organisation's server. It is off until you turn it on. Deleting a study in KAPREN does not delete it on the server.

Turn on server sync

1. Open **Settings › Server sync**, or click the **Server sync** tile in the header.
2. In the **Connection** tab, check the "Signed in as" line. Type your **Password** and click **Connect**.
3. In the **Overview** tab, tick **Sync this computer's studies and reports with a server**.
4. Under **What to sync**, choose a mode for **Studies**, **Reports** and **Templates**.
5. Under **When**, choose **Automatically — soon after new data, and every 15 minutes**, **Every few hours**, or **Only when I press Sync now**.
6. Click **OK**, then confirm **Send to this server?**.

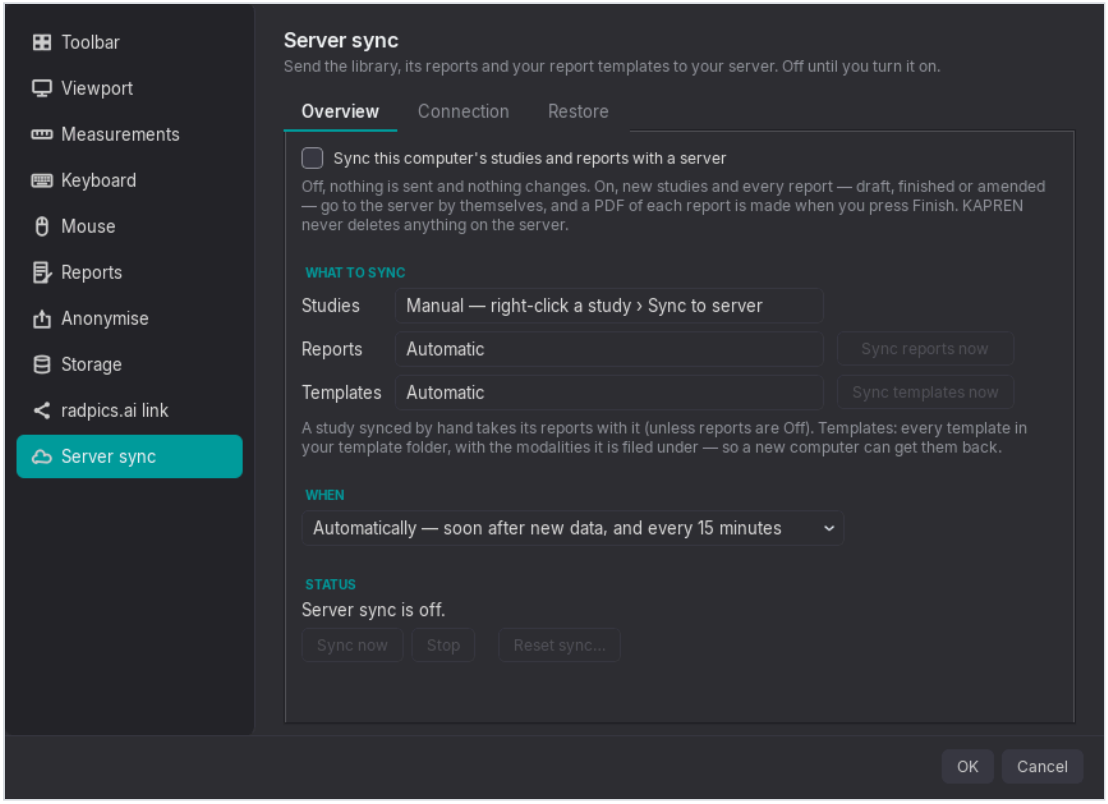


Figure 26. Settings › Server sync › Overview.

> **Note:** KAPREN must be activated first; your sync account is your licence. The password is kept in Windows Credential Manager (Windows) or the Keychain (macOS), never in a settings file.

What is sent

Item	What is sent
Images	Every image in the library, with key images, annotations and screen captures

Item	What is sent
Reports	Every report (draft, reported or amended) with its status. A finished report also gets a PDF (Word on Windows, Pages on macOS)
Templates	Only when Templates is not set to **Off**

An edited study is sent again. Deleted studies are never sent.

Choose which studies to sync

1. In **Overview**, set **Studies** to **Manual — right-click a study › Sync to server**.
2. In the study list, right-click one or more studies › **Sync to server**.
3. To stop, right-click › **Stop syncing this study**. The server keeps what it already has.

> **Tip:** With Studies set to Automatic, right-click a study › **Don't sync this study** to leave it out.

Check the sync status

1. The **Server sync** tile in the header shows **On**, **Syncing n of N**, **Off** or **Error**. Hover over it for the reason.
2. The **Server** column in the study list shows **Synced**, **Waiting**, **Failed**, **Not synced** or **Not chosen**.
3. The **Status** area in **Overview** shows what is waiting to be sent.
4. The **Logs** page in the left sidebar shows each sync pass.

> **Note:** Being offline is fine. KAPREN tries again after 1, 5, 15 and 60 minutes, without pop-ups.

Sync now or stop a sync

1. Open **Settings › Server sync › Overview**.
2. Click **Sync now** or **Stop**.
3. For reports or templates set to Manual, click **Sync reports now** or **Sync templates now**.

After the server's copy was deleted

1. Click **Reset sync…** in **Overview**.
2. KAPREN asks the server what it still holds and lists what is missing.
3. Confirm. KAPREN sends the missing items again.

Move to a new computer

1. Install KAPREN on the new computer and activate it with your licence.
2. Open **Settings › Server sync › Connection**. Type your password, click **Connect**, then **OK**.
3. Open the **Restore** tab and click **Restore from server…**.
4. Tick the studies to bring back, or click **Select all**.
5. Tick **Also restore report templates** if you want them.
6. Click **Restore**. Click **Stop** to pause; run Restore again to finish later.

> **Note:** Sync does not need to be on to restore. A study already on this computer is skipped. Restored items are not sent back to the server.

Another way: a library backup

1. Open **Settings › Storage**.
2. Choose a **Backup folder** and click **Back up now**, or turn on automatic backup.
3. Set a **Backup passphrase** so the backup can be restored on another computer.
4. On the new computer, open **Settings › Storage** and click **Restore…**.

Settings

All settings are in one window. It works the same on Windows and macOS.

Open Settings

1. Click **Settings** (the gear) in the left sidebar, or the toolbar's **Settings** button.
2. Pick a page on the left.
3. Click **OK** to save, or **Cancel** to discard.

> **Note:** Some changes save at once, and the page says so (Storage, report editor, patient details, header and footer). **Storage**, **radpics.ai link** and **Server sync** appear only on the main screen, not on screen 2.

Settings pages at a glance

Page	What you set there
Toolbar	Which tools show, pinned tools, their order
Viewport	Corner details, warnings, measurement magnifier, jump size, DWI split, second screen
Measurements	mm or cm per tool, microscopy units, text size and style
Keyboard	Your own keys for every action
Mouse	What each mouse button and wheel does on 2D, MPR and 3D
Reports	Your name, report editor, patient details, header and footer, signature
Anonymise	Your own de-identification templates
Storage	Library location, import mode, inbox folder, backup
radpics.ai link	Opening studies from the radpics.ai web worklist
Server sync	Sync and restore with your organisation's server

Choose the toolbar tools (Toolbar)

1. Tick the tools you want and untick the rest. **Search tools** finds a tool by name.
2. Click the star to pin a tool to the front of the toolbar.
3. Click **Arrange tools...** to change the order, or **Show all** to show every tool again.

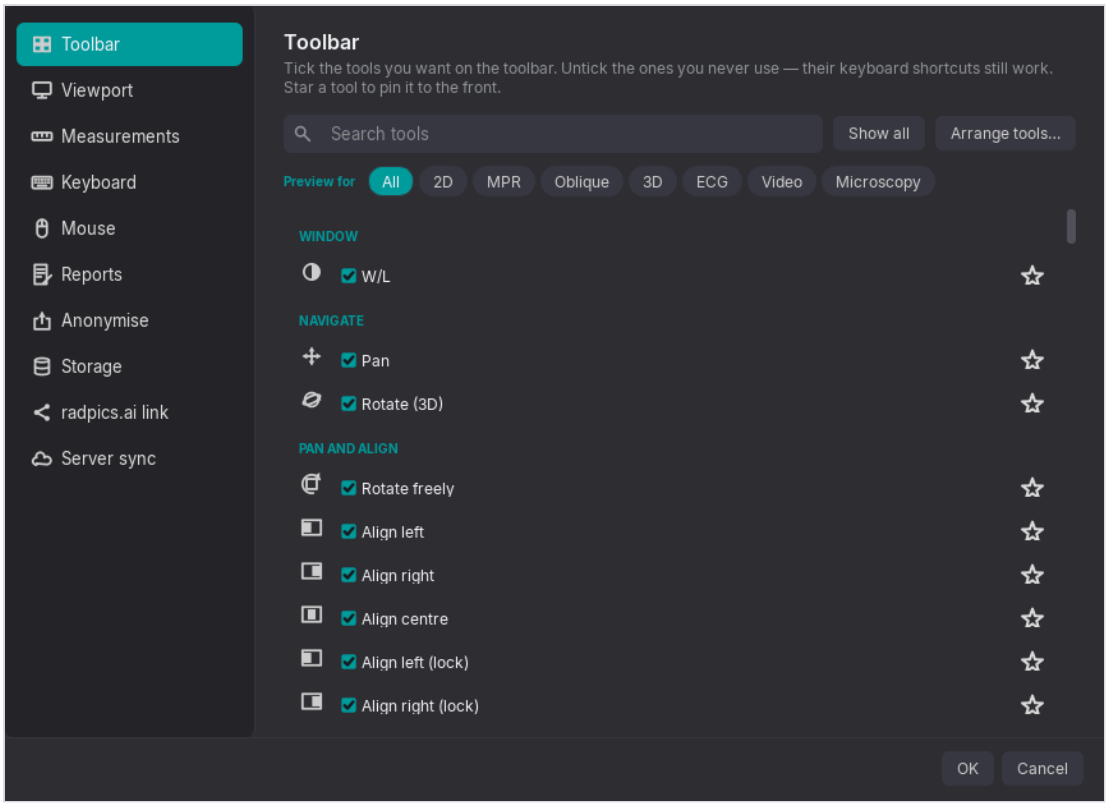


Figure 27. Settings › Toolbar.

Change what is drawn on images (Viewport)

- **Corner details**: patient and study details at top left, series details at top right.
- **Warnings**: show or hide warning banners on images.
- **Measurements**: a magnifier while you place Length and Pointer HU points.
- **Images**: how many images the jump keys move.
- **Diffusion (DWI)**: **Show each b-value as its own series** (on at first; applies to studies opened afterwards).
- **Second screen**: **Sync scroll and window/level between screens**, and **Open screen 2 on** to pick the monitor.

Set your own keys (Keyboard)

1. Find the action, or type its name in **Search actions**.
2. Click its key field and press the new key. Esc cancels.
3. Click **Clear** to leave an action with no key, or **All defaults** to go back to the original keys.

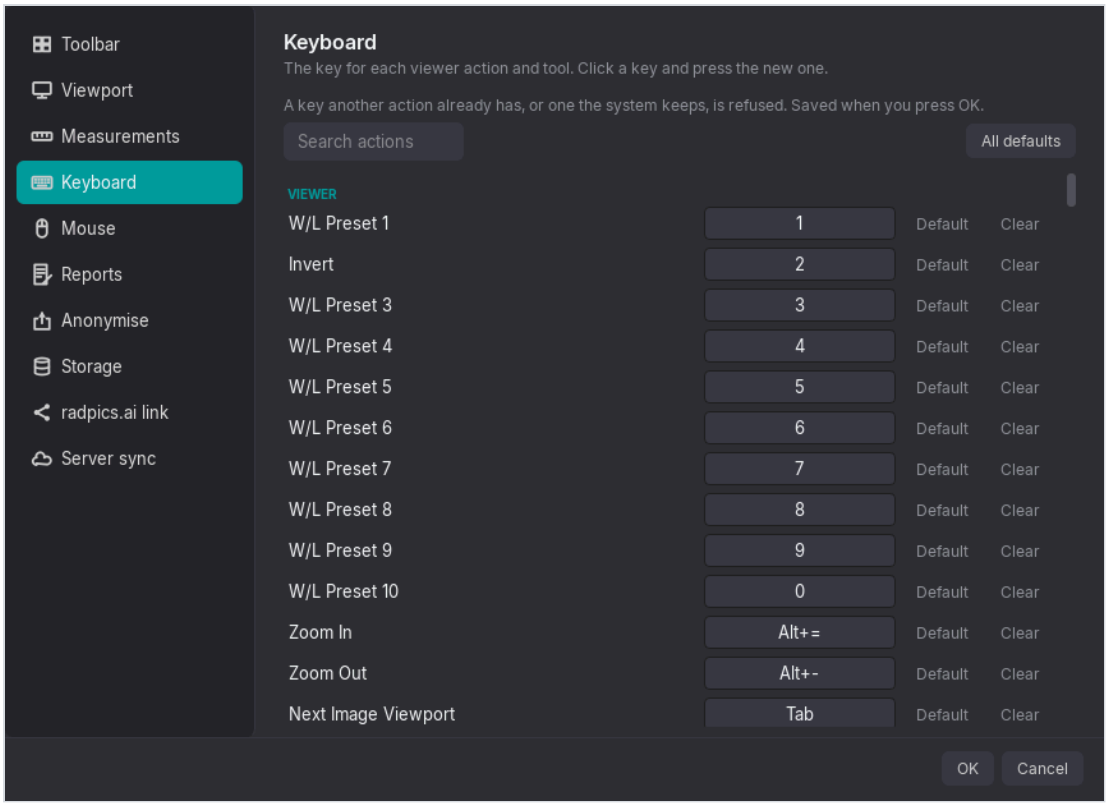


Figure 28. Settings › Keyboard.

> **Note:** A key another action already uses, or one the system keeps, is refused. Open, Quit, Undo, Redo, Find, Select all, ?, Esc and Delete cannot be changed.

Set the mouse buttons (Mouse)

1. Choose a set: 2D images, MPR and oblique, or 3D.
2. For each gesture, choose an action. Gestures: middle drag, right drag, Shift + left drag, Alt (Option on macOS) + left drag, the wheel, and Ctrl (Cmd on macOS) + wheel.
3. Click **All defaults** to go back.

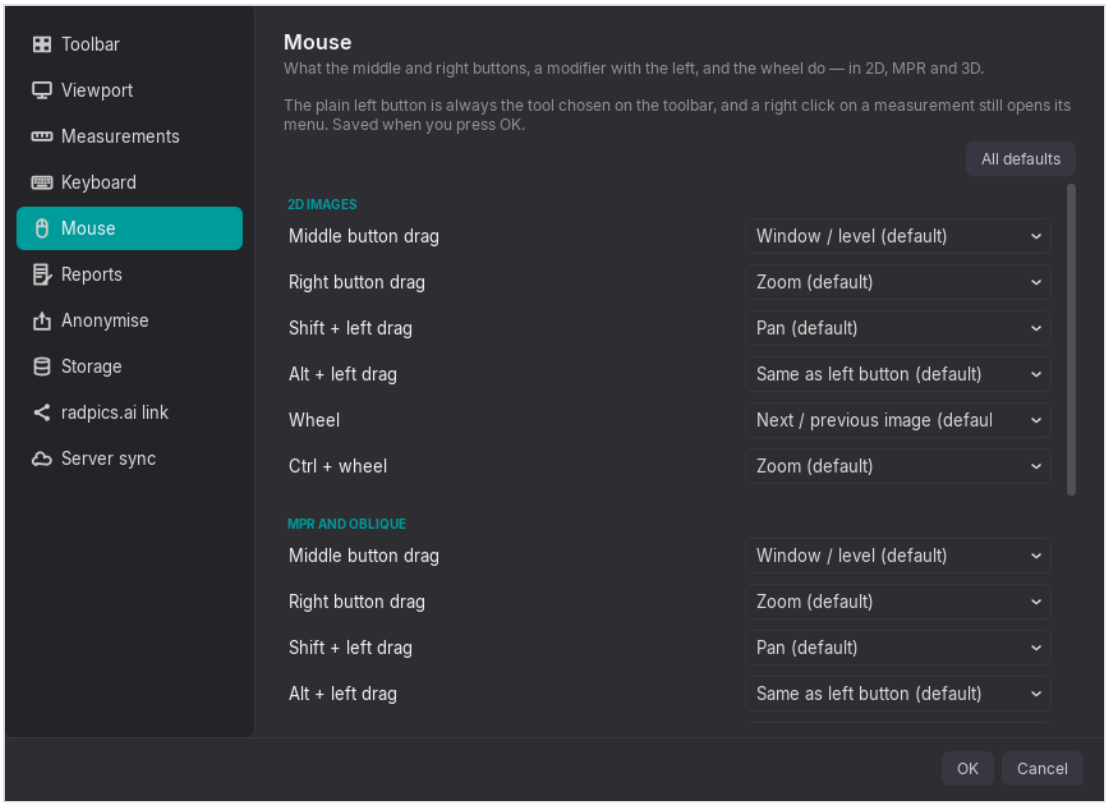


Figure 29. Settings › Mouse.

> **Note:** The left button always uses the tool chosen on the toolbar.

Make an anonymise template (Anonymise)

1. Click **New**, or select a built-in template and click **Duplicate**.
2. **Patients**: **Numbered, one per patient**, **The same for everyone**, or **Keep name and ID**.
3. **Dates**: **Keep the study dates**, **Remove the study dates**, or **Shift the study dates by** a number of days.
4. Tick or untick **Keep study and series descriptions**, **Keep b-value and PET SUV tags** and **New UIDs**.
5. Optional: set **File names** (folder export only) and **Own rules**, one tag per line.

> **Note:** Addresses, telephone numbers and similar details are always removed, whatever the template says.

Storage

Shows where your studies are kept and lets you **Move…** them. It also sets what an import does (**Copy files into the library** or **Copy links only**), an **Inbox folder** imported automatically, and **Backup**.

Other settings found elsewhere

- Measurement units: see Measuring › Choose mm or cm.
- Your own window/level presets: set in the viewer with **W/L › Custom window…** (see Viewing images).
- Receiving from a modality: the **Receive (DICOM)** tile (see Bringing studies in).

- PACS and cloud sources: the **Data Sources** page.

Update KAPREN

1. When an update exists, a strip under the header offers **Update now**.
2. To look yourself, use **Help › Check for updates…** in the left sidebar, or **Check for updates…** in the About box.
3. Click **Install and Restart**.

Windows	macOS
The new installer runs silently. Windows asks once for administrator permission, then KAPREN closes and reopens.	KAPREN replaces itself and restarts.

> **Note:** A required update cannot be skipped. You can update or **Quit**.

Keyboard and mouse quick reference

These are the default keys. Change them in **Settings › Keyboard** and **Settings › Mouse**. Press **?** in KAPREN to see your own current list.

Moving around

Action	Windows	macOS
Study list	Ctrl+L	Cmd+L
Open files	Ctrl+O	Cmd+O
Search the study list	Ctrl+F	Cmd+F
Next / previous image	Down / Up	Down / Up
First / last image	Home / End	Home / End (Fn+Left / Fn+Right)
Jump N images (default 10)	Ctrl+PgDn / Ctrl+PgUp	Cmd+PgDn / Cmd+PgUp
Next / previous series	Right / Left, PgDn / PgUp	Right / Left, PgDn / PgUp
Next / previous pane	Tab / Shift+Tab	Tab / Shift+Tab
Enlarge pane / back	Double-click	Double-click
Full screen	F	F
Series panel / Measurements panel	Ctrl+1 / Ctrl+2	Cmd+1 / Cmd+2
Keyboard shortcuts window	?	?

Image display

Action	Windows	macOS
Window/level	Middle-button drag	Middle-button drag; trackpad: **W/L** tool + drag
DICOM default W/L / Invert	1 / 2	1 / 2
W/L presets	3 … 9, 0	3 … 9, 0
Zoom	Right-button drag, Ctrl+wheel	Right-button drag, Cmd+scroll, pinch
Zoom in / out	Alt+= / Alt+-	Option+= / Option+-
Pan	Shift + left drag	Shift + left drag
Scroll / Pan / Zoom tool	S / P / Z	S / P / Z
Fit to screen / Zoom to selection	Ctrl+0 / Ctrl+9	Cmd+0 / Cmd+9
Rotate right / left	Ctrl+] / Ctrl+[	Cmd+] / Cmd+[
Flip horizontal / vertical	Ctrl+Shift+[/ Ctrl+Shift+]	Cmd+Shift+[/ Cmd+Shift+]
Reset	R	R
Play (cine)	Alt+C	Option+C

Action	Windows	macOS
DICOM tags	Ctrl+T	Cmd+T
Magnify probe strength	Shift+wheel	Shift+scroll

Measuring

Action	Windows	macOS
Length / Angle / Cobb	L / A / C	L / A / C
Ellipse / Rect / Pointer HU	E / U / H	E / U / H
Closed poly / Arrow	G / Y	G / Y
Cancel the drawing	Esc	Esc
Delete selected / last polygon corner	Delete or Backspace	Delete
Copy measurement / Paste	Ctrl+Alt+C / Ctrl+V	Cmd+Option+C / Cmd+V
Ellipsoid volume / Length ratio	Ctrl+Shift+L / Ctrl+Alt+L	Cmd+Shift+L / Cmd+Option+L
Time-intensity curve	Ctrl+Shift+E	Cmd+Shift+E
Export measurements	Ctrl+E	Cmd+E
Right-click menu	Right-click	Right-click, Control-click or two-finger click

MPR, 3D and more

Action	Windows	macOS
MPR on / off	Ctrl+M (or Shift+M)	Cmd+M (or Shift+M)
Oblique / 3D	Ctrl+B / Ctrl+3	Cmd+B / Cmd+3
Pane as Axial / Coronal / Sagittal / Acquisition	Shift+A / C / S / O	Shift+A / C / S / O
3D: rotate / pan / zoom	Left drag / Middle drag or Alt+left drag / Right drag or wheel	Left drag / Middle drag or Option+left drag / Right drag, wheel or pinch
Endoscopy: fly / turn / fly to pointer	Up, Down or wheel / Left, Right / hold F	Same
4D play / pause	Space (on the 4D bar)	Space
Key image / next / previous	Ctrl+K / K / Shift+K	Cmd+K / K / Shift+K
Copy image / all panes / Save image	Ctrl+C / Ctrl+Shift+C / Ctrl+Shift+S	Cmd+C / Cmd+Shift+C / Cmd+Shift+S
Print / Report	Ctrl+P / Ctrl+Shift+R	Cmd+P / Cmd+Shift+R
Undo / redo (dental)	Ctrl+Z / Ctrl+Y	Cmd+Z / Shift+Cmd+Z

Troubleshooting and FAQ

Most problems come from network settings, image data without pixel size, or a path that is too long on Windows. The **Logs** page in the left sidebar shows what KAPREN did and why.

A study will not import. What can I do?

Use **Import** in the study list; it takes DICOM files, a ZIP or a folder. Files that are not DICOM are set aside, and KAPREN reports "Some input could not be read". The **Logs** page shows details.

On Windows, a study in a deep folder fails to import.

Windows limits how long a file path can be. Unzip the study to a short folder, such as C:\Studies, and import that folder.

My modality or PACS cannot send to KAPREN.

Check that the **Receive (DICOM)** tile shows **Listening**, and that the modality uses the same port and AE title. Click **Test** in the Receive window.

- Windows: the installer allows receiving on domain and private networks only. On a "Public" network, ask IT to change the network type.
- macOS: allow incoming connections when asked, and check **System Settings › Privacy & Security › Local Network**.

Sending to PACS fails.

Read the message; it names the cause. "Nothing is listening on port" means the port is wrong. "Refused the association" means an AE title is wrong. On macOS, a "no route" message often means the Local Network permission is off.

Images in one series look brighter or darker than each other.

Each image uses its own stored window until you set one. Once you drag W/L or pick a preset, every image uses it. To go back, press **1** (DICOM default) or **R** (Reset).

Measurements show px instead of mm.

The image has no pixel size. Use the **Calibration** tool: draw a line over something of known length and type the length in mm, cm, inch or French.

Some measurements show cm and others mm.

Each tool has its own unit. Change them in **Settings › Measurements › Units**, or click **All mm** or **All cm**.

An update failed.

The message says "Nothing on this computer was changed". Click **Try Again**, or later use **Help › Check for updates...**. On Windows, accept the administrator prompt, or the update cannot install.

Windows warns "Windows protected your PC" when I run the installer.

Windows shows this for installers it does not know yet. Run it only if it came from your KAPREN download page: click **More info**, then **Run anyway**.

Where are my studies and reports?

Studies are kept encrypted in KAPREN's library, so use **Export...** to get ordinary DICOM files. **Settings › Storage** shows where the library and reports are kept and lets you move the library.

- Windows: studies are in your local app data folder under RadpicsAI\RadpicsAI Viewer; reports and templates are in your roaming app data folder under the same name.
- macOS: both are in the RadpicsAI folder inside Application Support.

I uninstalled KAPREN on Windows. Are my studies gone?

No. Uninstalling keeps your studies and settings unless you tick **Also delete my studies and settings**.

The second screen does not appear.

Click **Second screen** in the viewer header. It opens on a monitor the main window is not using; with one monitor it opens as a window. Choose the monitor in **Settings › Viewport › Second screen**.

My report does not open in Word.

KAPREN opens reports in the program set for that file type. Choose one in **Settings › Reports › General › Report editor**. Report PDFs need Word on Windows or Pages on macOS.

Where is the menu bar on Windows?

KAPREN has no menu bar on Windows. Help and Settings are in the left sidebar, and every keyboard shortcut still works.

Can I change a key or mouse button?

Yes. Use **Settings › Keyboard** and **Settings › Mouse**. Press **?** to see the keys in use now.