

CT Renal Workflow

* Designed and manufactured by Canon Medical Informatics

VPMC-15855 E

Canon CANON MEDICAL SYSTEMS CORPORATION

Made For life

CT Renal CTA

Overview:

- The Renal arteries can be post-processed in various ways. Auto Bone Removal and Vessel Pick and Grow provide a quick overview of the entire Aorta. Vessel Probe creates a centerline of the vessel and extend will allow the user to add to the vessel. The Organ tool adds additional organs. A single click changes the 3D from VR (Volume Rendered) to MIP. 3D batch rotations and snapshots are easily created for export to PACS.
- Load the data and select the Renal Aorta CT protocol
- Select Automatically remove bone on the Gallery page
- Click Remove Fragments to remove background noise
- Click Trim to remove anatomy on the MPR views
- Click Vessel Pick and manually segment vessels when the Hounsfield Unit density is too low for auto segmentation
- Select Vessel Probe to generate a centerline of the vessel and Extend to add vessels
- Edit the Centerline if needed
- Click the Organ tool to add the kidneys or additional anatomy
- Create 3D Batch Rotation of the aorta with Semi-Transparent Bone
- Create 3D Batch Rotation of the aorta in MIP rendering
- Create and Export snapshots and batches

CT Renal CTA - Load the Study

Select the Patient.

Double click to select the application or single click on thumbnail and click on the open button.

OR

The series are located below the applications. Choose the desired series. Double click the **Renal** Application.

Tip: Automat bone removal is enabled.

The screenshot displays the Canon CT software interface. At the top, a table lists patients with columns for application, patient ID, modality, and date. The second row, 'A/P CTA AAA', is highlighted. Below this, a row of application thumbnails is shown, with 'Runoff' highlighted. At the bottom, a series list shows 'Vol. CTA 1.0' with a thumbnail. A red arrow points to the 'Open' button in the bottom right corner.

Application	Patient	Modality	Date	Age	Open
A/P CTA AAA	CM80-AH-154	CT	26 Jul 2018 14:12	38y	Open
A/P CTA ANEURYSM	EA1G-AUH-020	CT, SR	01 Sep 2018	38y	Open
A/P CTA ENDOGRAPH	UA1G-AUH-272	CT	27 Dec 2017	37y	Open
A/P CTA STENT W DELAY	EA1G-AUH-283	CT	06 Oct 2018		Open
A/P ENTEROGRAPHY DLP 144	CA1P-AUH-22100	CT	01 Jan 2000		Open
A/P HEMATURIA	CM80-AH-141	CT	01 Aug 2017	37y	Open
A/P LIVER 3PH HCC	IA1V-AUH-248	CT, SR	10 Aug 2017	37y	Open

Applications: Results Study Algorithm Processing

Pinned: Multi Modality Viewer, Carotid, Gallery, Vascular Aorta, Runoff, Abdominal Analysis, Renal, Endovascular Stent Planning, Colon Analysis, Urogram Analysis, Liver Resection Planning, Liver Tumor Response, Body Perfusion 4D, 4D Dual Input Liver

Vol. CTA 1.0 252/303, Vol. CTA 1.0 81/161

Tools | List Images

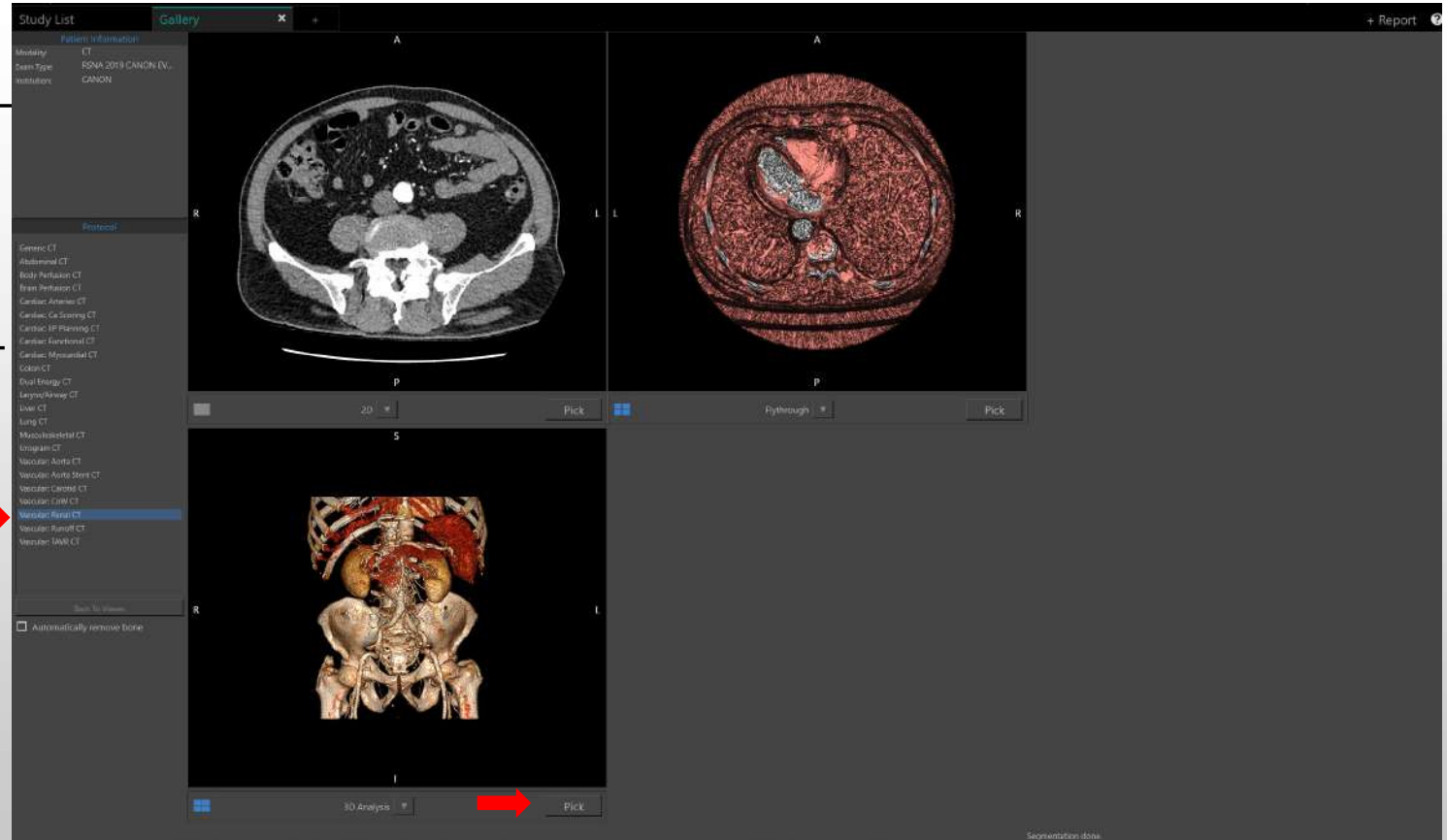
Open

CT Renal CTA - Loading from Gallery

Select Protocol **Vascular Renal CT**.
Pick the 3D Analysis.

Verify that Automatically remove bone is selected.

Tip: When the HU contrast density is too low, auto bone segmentation will not adequately display the vessels. You may need to manually segment the renal arteries.

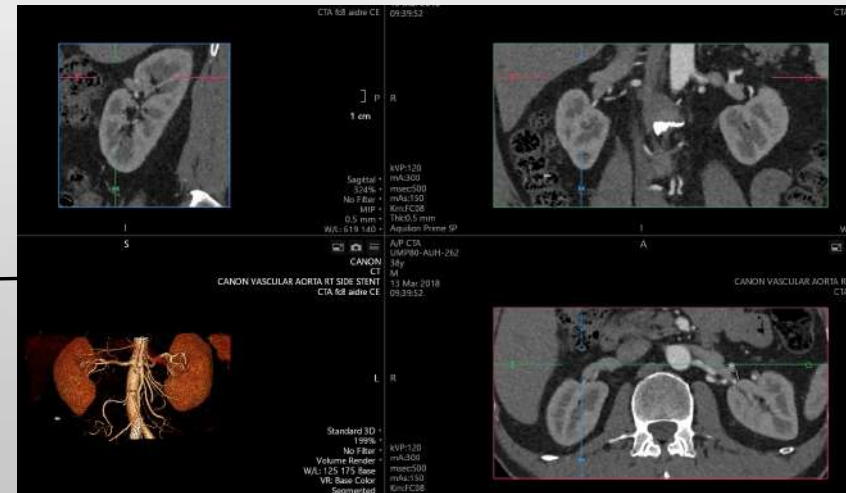


CT Renal CTA - Isolate the Renal Arteries

Right mouse and scroll on the MPR images to locate the kidneys on all 3 views.

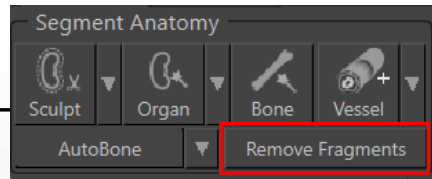
Select the trim tool from the common tool bar.

Or, if an orthogonal view is selected, hover the mouse over the line to move. The cursor changes to a star. Simply drag the line to reduce the size of the box.



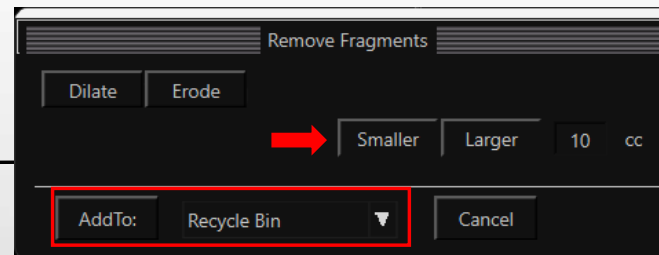
CT Renal CTA - Remove Fragments

Click **Remove Fragments**.
The background noise will
appear blue.

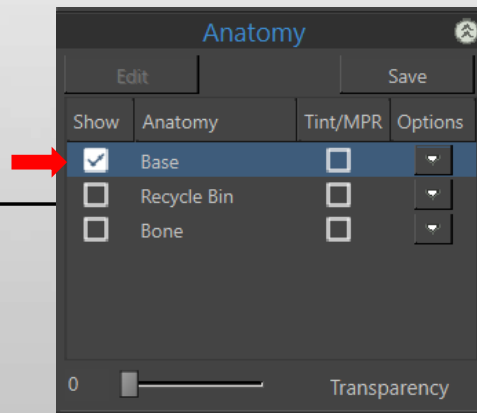


Tip: Try using the window/level tool to
remove background noise.

Click **Smaller** or **Larger** to
adjust the size of the
selected fragments. Click
Add To.

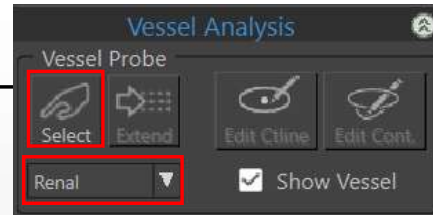


The **Recycle Bin** is added to
Anatomy Management area.



CT Renal CTA - Probe the Renal Artery

Under Vessel Analysis, click on Select.



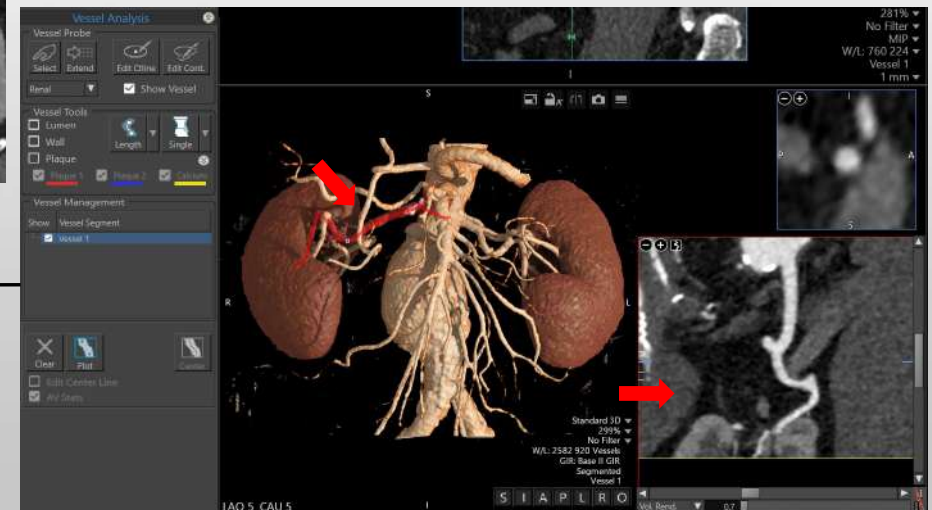
Tip: Verify that Renal is selected. The vessel is automatically chosen based on the protocol selection.

Click on the right renal artery in the 2D/3D image.

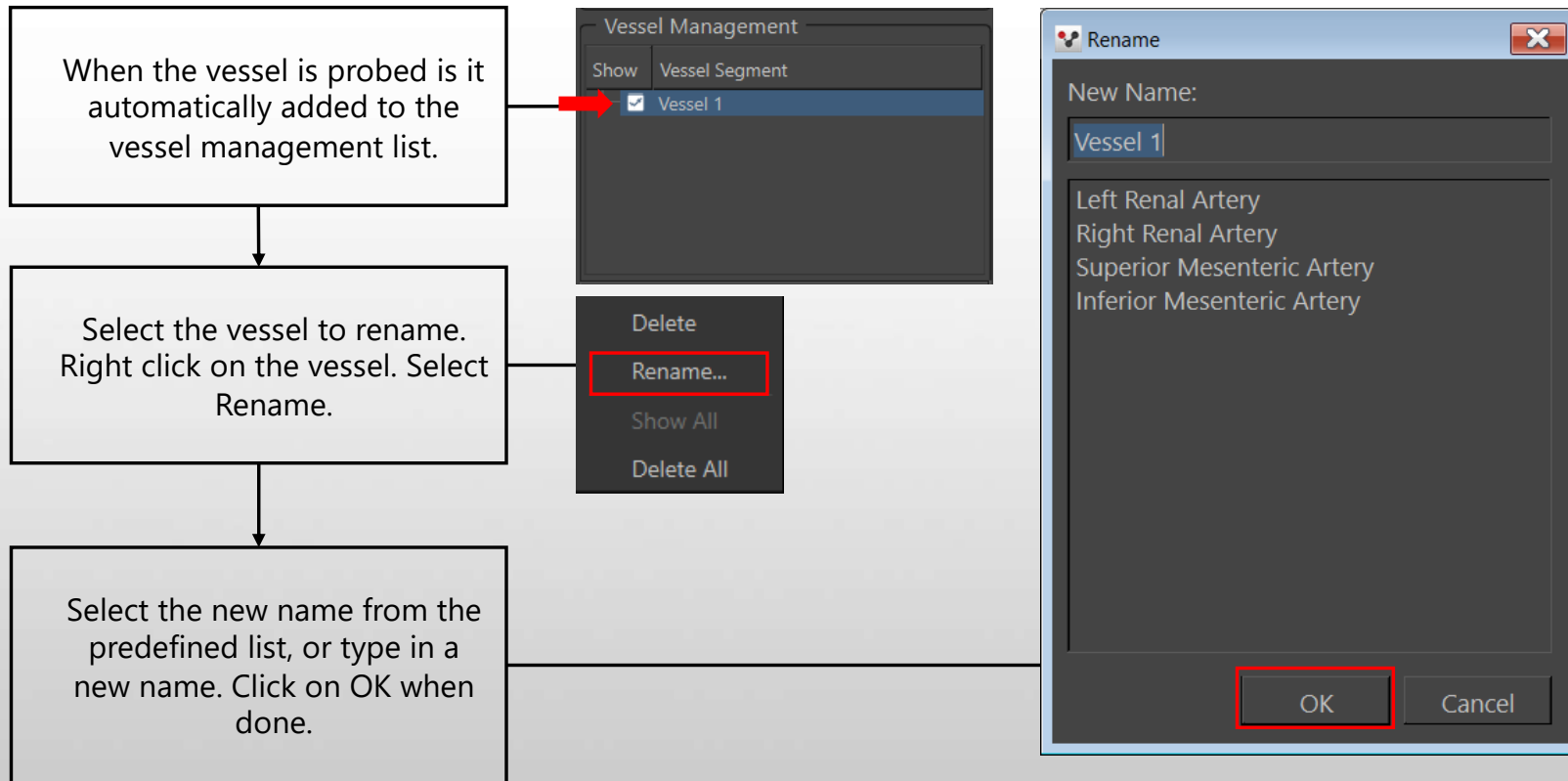


Tip: Try to select the renal artery distal to the bifurcation.

When the vessel is probed, the centreline is automatically generated, as well as a CPR view.

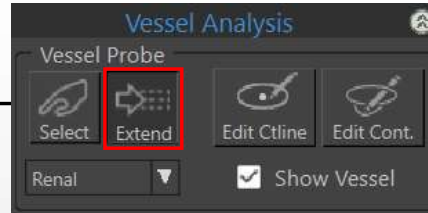


CT Renal CTA - Rename the Vessel

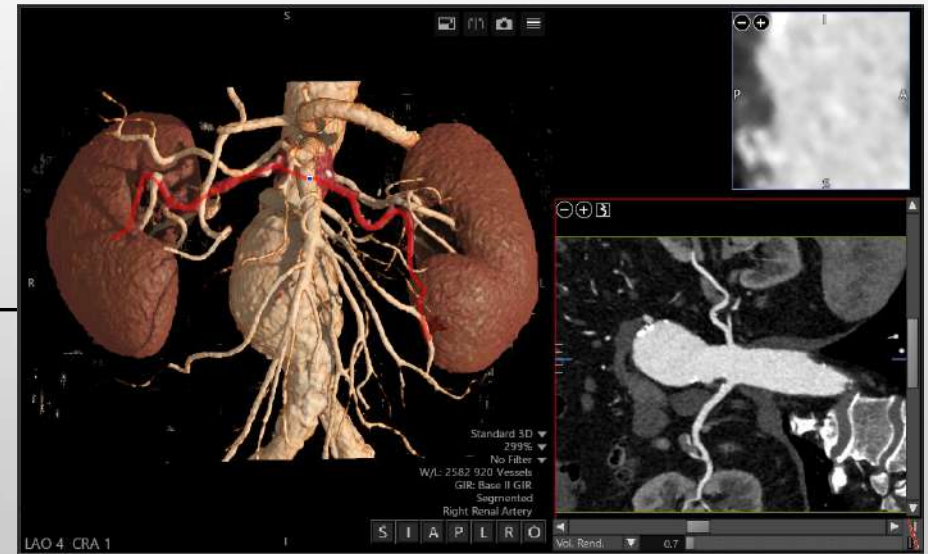
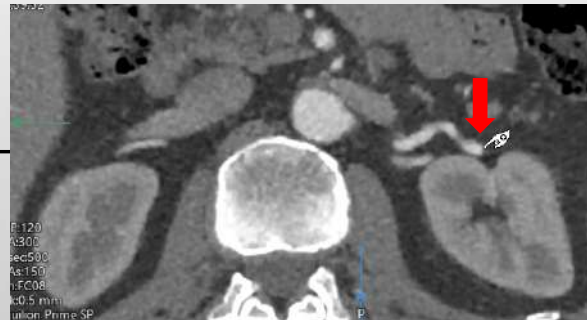


CT Renal CTA - Extend the vessel

Click **Extend** to extend the visualized vessel.



Click the opposite renal artery to extend Vessel Probe.

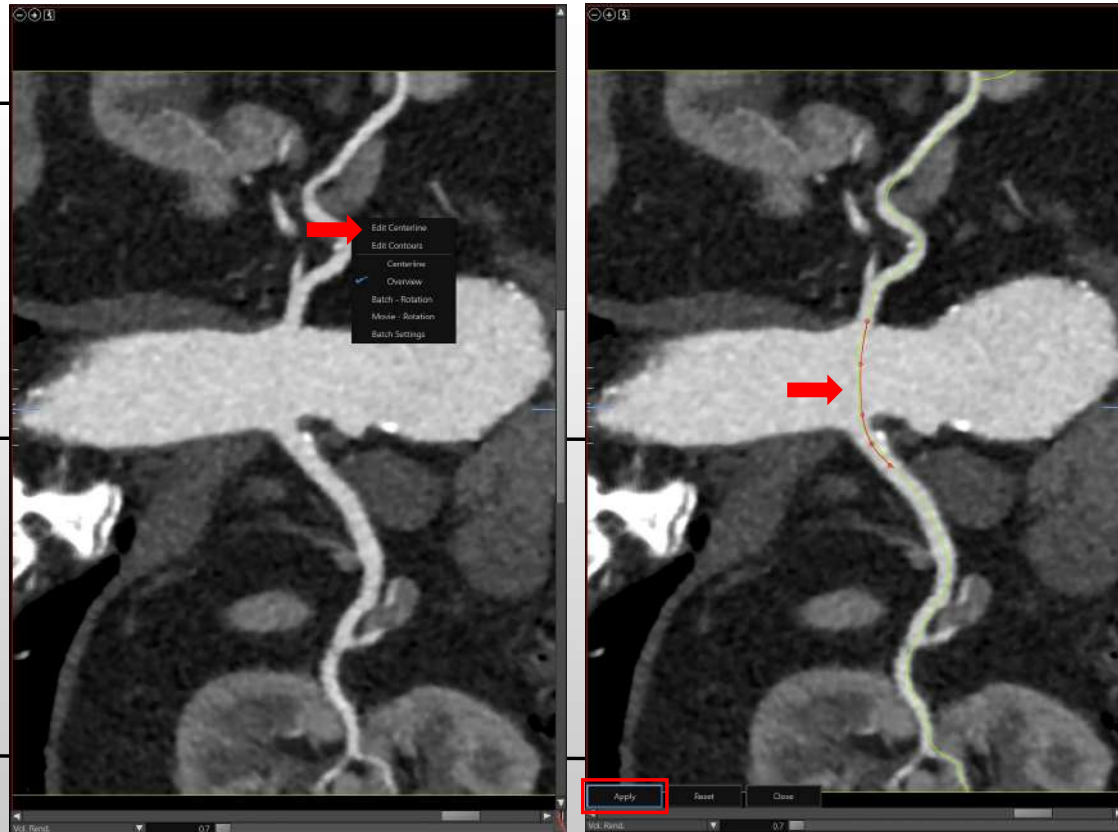


CT Renal CTA - Edit the Centerline

Right-click in the **CPR** view. Select **Edit Centreline**.

Click and **deposit points** to adjust the centreline in either longitudinal view.

Click **Apply** to save the edits. Click **Close** to end.



Alternatively click and drag the red line to edit.

Can be edited in the MPR views as well.

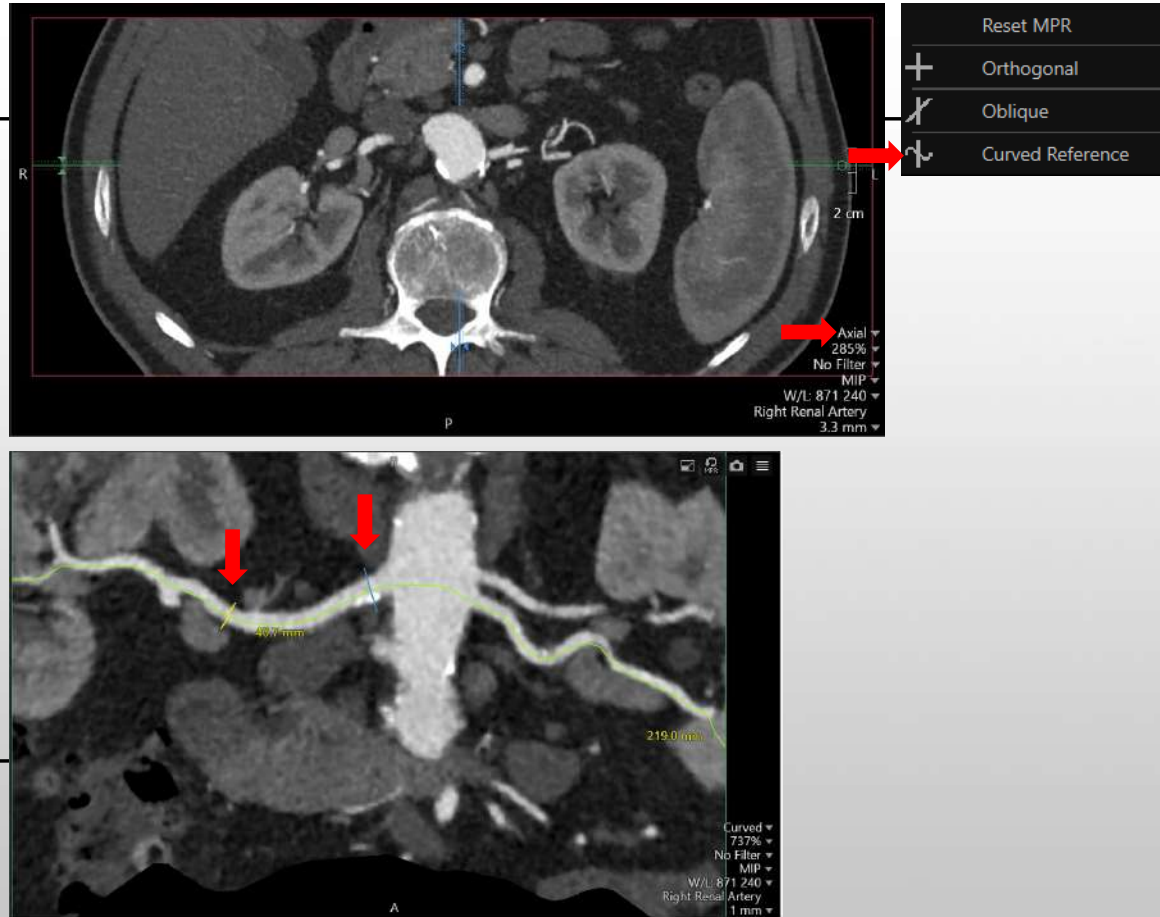
The yellow line is the centreline. The red line is the corrected centreline.

CT Renal CTA - Perform Measurements

In the Axial MPR view, click on the arrow next the Axial, and change the mode to a curved reformatted view.

A yellow centreline is populated across the entire vessel on the curved view.

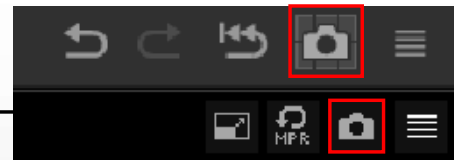
Move the yellow and blue line to the points where the measurements needs to be made.



CT Renal CTA - Snapshot

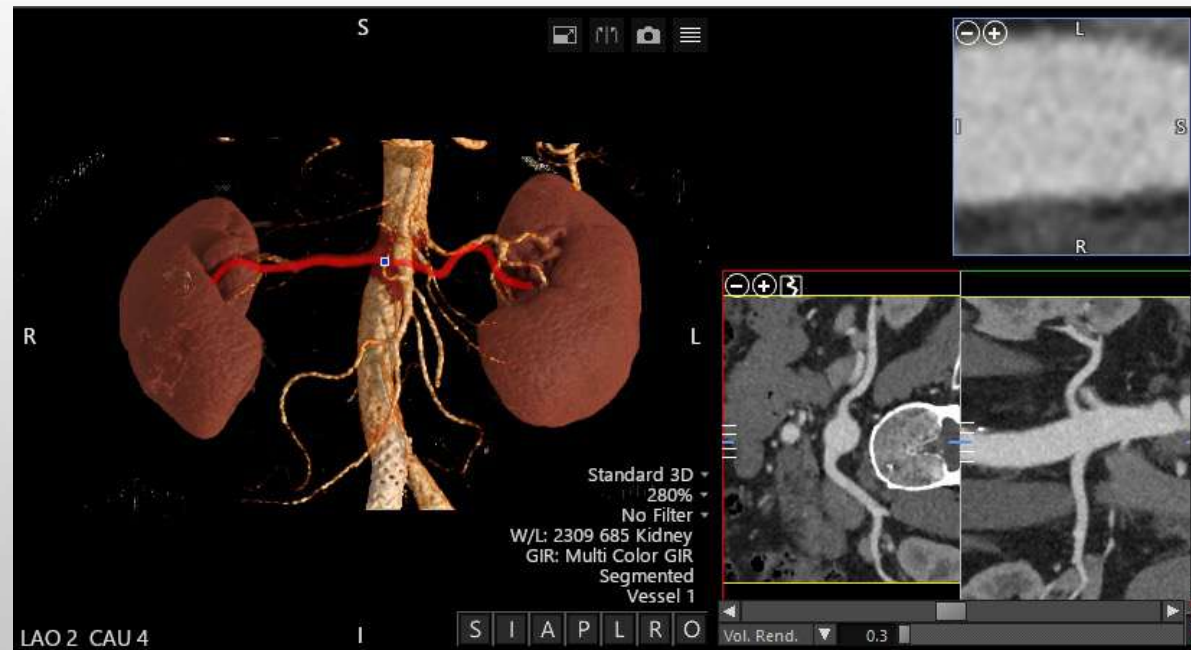
Click **Camera** in desired viewport to take a snapshot or on common tool bar for full screen capture.

Tip: Remember to take a snapshot. Only a snapshot can be restored at a later date to continue post processing.

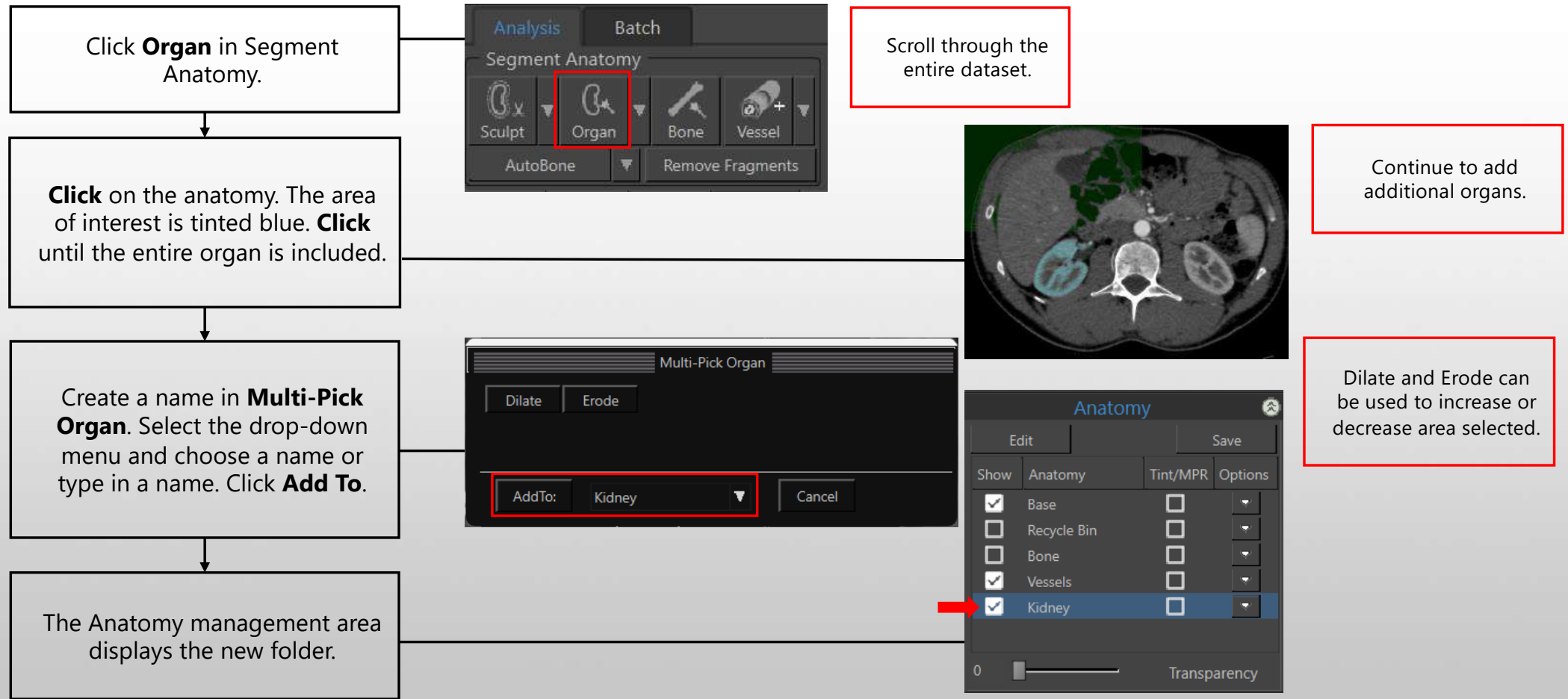


Full screen capture

Individual Viewpoint

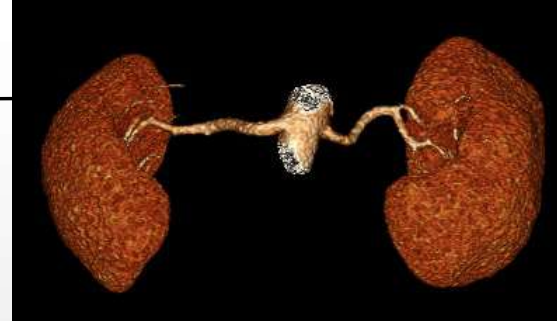
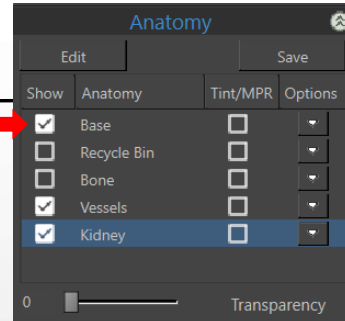


CT Renal CTA – Organ Tool

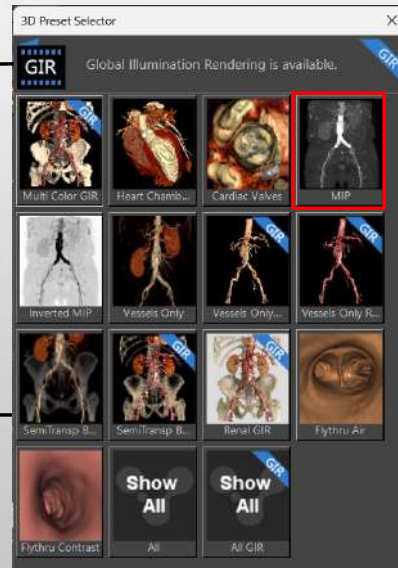


CT Renal CTA - VR and MIP

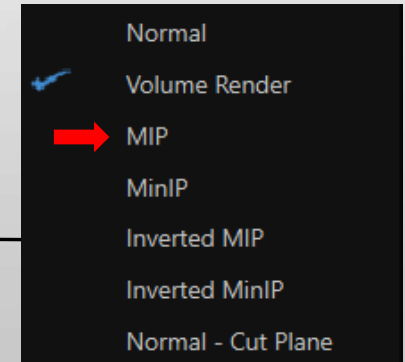
Uncheck **Base**.
Select or highlight the
anatomy option **Vessels**.



Select **MIP** from the Preset
Selector options.



The 3D drop-down
rendering options will also
provide a MIP view. Select
MIP.

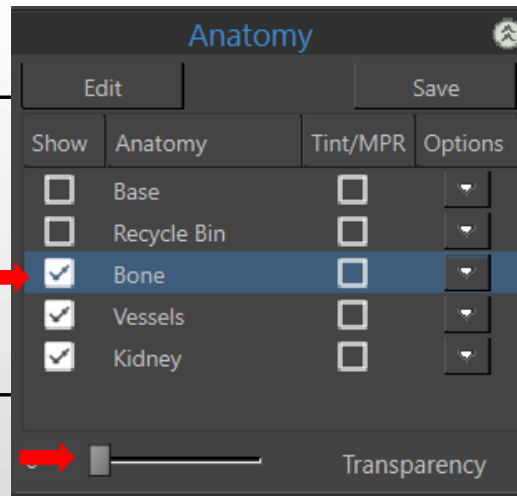


CT Renal CTA - Transparent Bone

Check the box next to **Bone** in the Anatomy management area.

Slide the **Transparency** bar to the right to adjust Bone transparency to desired level.

The result is based on the percentage of Transparency.



Tip: These steps display 3D transparent bone and provides bony landmarks.

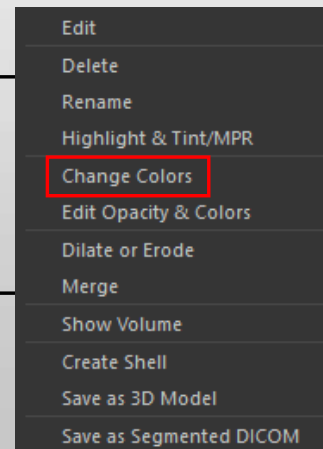
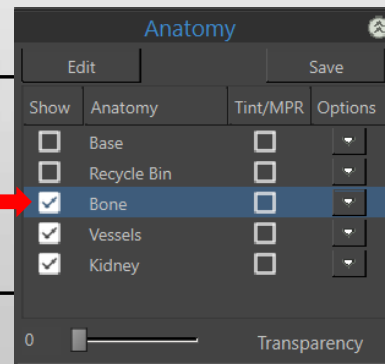
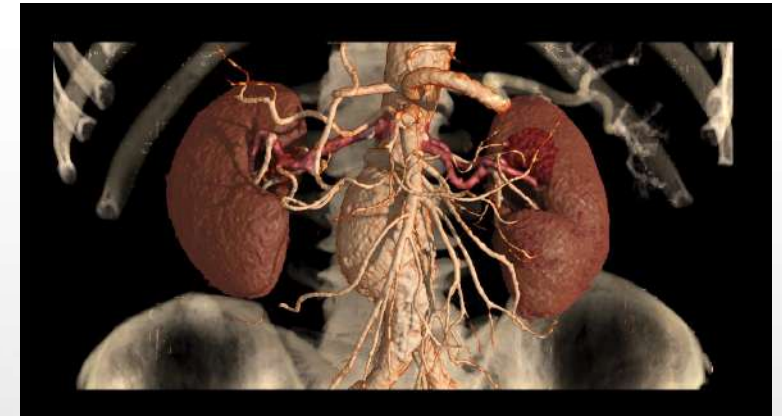
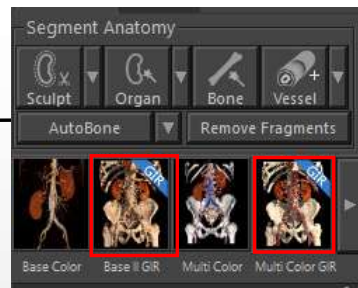


CT Renal CTA – Apply GIR to 3D View

Select one of the presets with a blue GIR ribbon in the top right corner. Click on the arrow to find additional GIR presets.

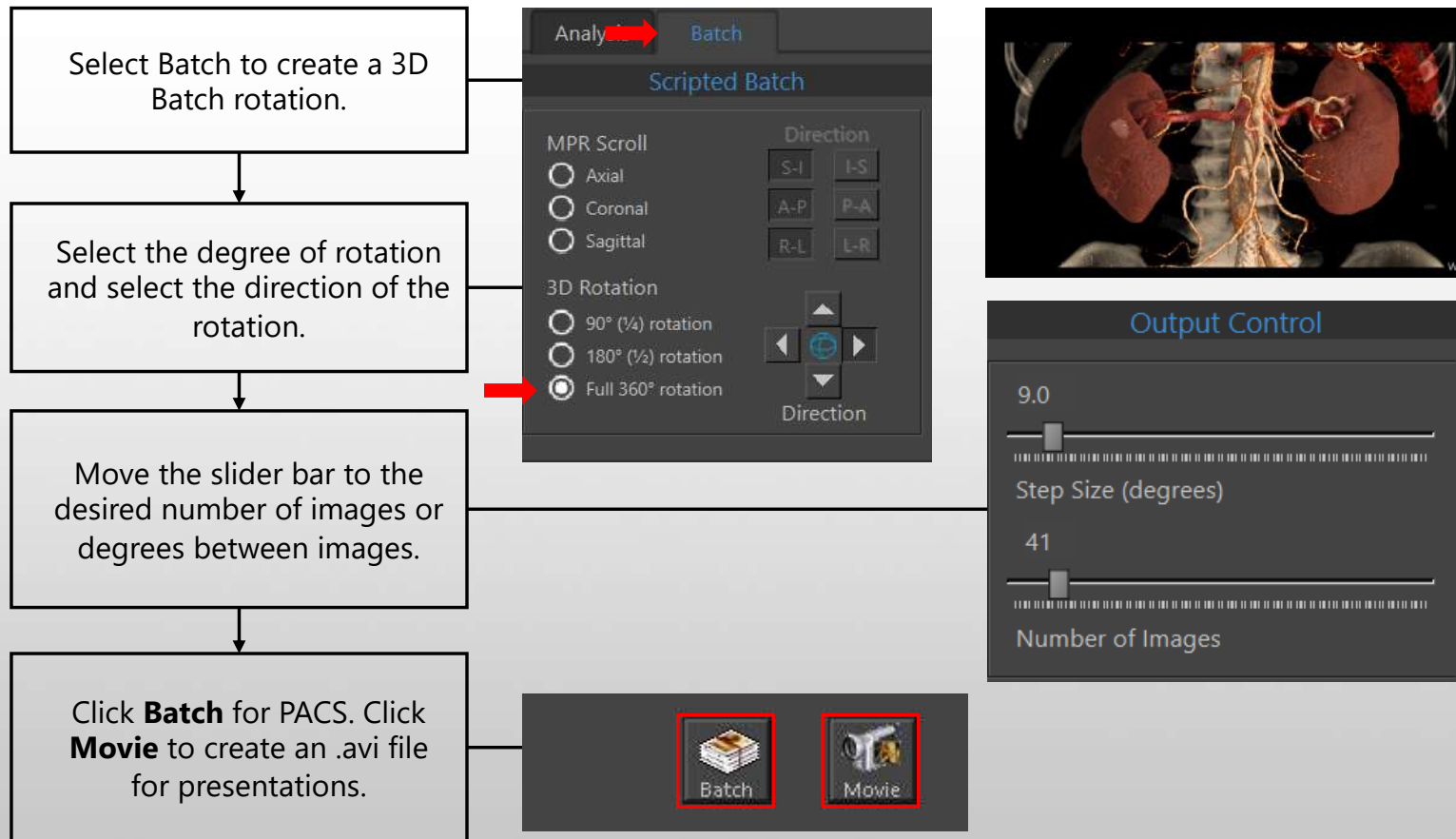
Select the region in the anatomy management list. Click on the arrow under options and select Change Colors.

Here the user can find additional GIR presets.



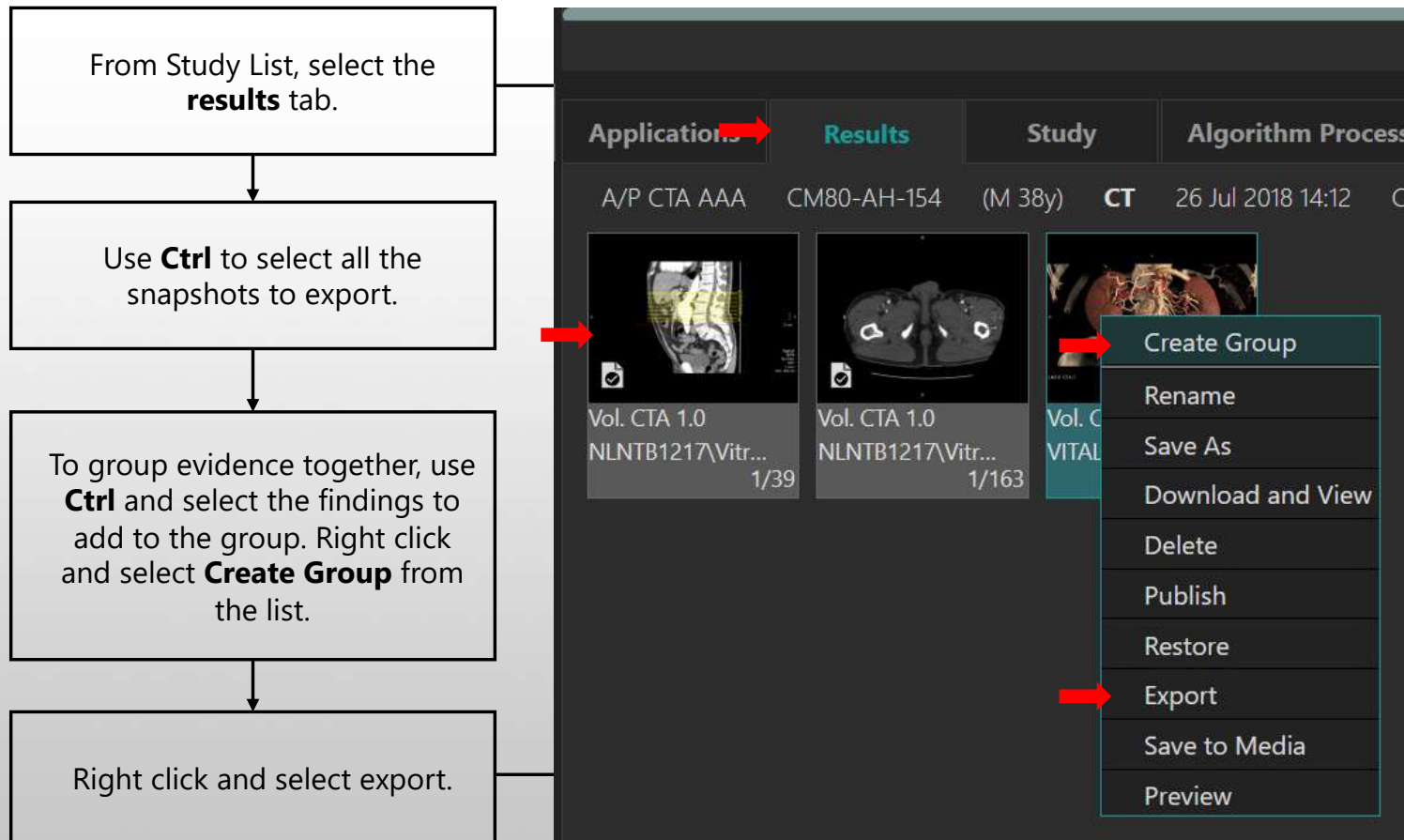
Tip: Segmentation of the anatomy will provide more GIR presets.

CT Renal CTA - 3D Batch Rotation



Tip: As you increase the number of images the step size decreases.

CT Renal CTA - Distribute Findings: Export



Tip: To delete, rename or edit a group description, right click on the group. Hover the mouse over the arrow and select the option from the list.

Grouping	Edit Group Description
Save As	Ungroup All
Download and View	Remove from Group
Delete	Move Up
Publish	
Export Group	
Save to Media	
Preview	

CT Renal CTA - Distribute Findings: Export

Select the relevant DICOM destination.

Click on Export.

Export Studies

Content

☒ 1 Results, reports, and groups selected
☐ Add studies
0 Studies | 0 Results | 0 Reports | 1 Groups will be exported

Destination

No destination archives were found in the system configuration

Options

☐ Include annotations on images
☐ Exclude non-dicom results
☐ Exclude all restorable results

☐ Exclude large Vitrea restorable images
☐ Convert to grayscale
Change all series descriptions:

Edit Patient or Anonymize

☐ Edit Patient ☐ Anonymize

Export

Cancel

CT Renal CTA

Summary:

Workflow for the Renal CTA include a variety of post processing tools depending on the area of interest. Based on the 4-step methodology, select the patient, choose a protocol, perform the analysis and distribute the findings.

The Features most commonly used:

- Automatic Bone Removal.
- Vessel Pick to manually display vascular anatomy.
- Vessel Probe to display the vessel lumen.
- Organ tool to add additional anatomy to your volume rendered image.
- 3D Batch Rotation of aorta with Semi-Transparent Bone. 3D Batch Rotation of aorta in MIP rendering.
- Create snapshots and Batch images.
- Export to multiple destinations.

Made For life

For over 100 years, the Canon Medical Systems 'Made for Life' philosophy prevails as our ongoing commitment to humanity - generations of inherited passion creates a legacy of medical innovation and service that continues to evolve as we do. By engaging the brilliant minds of many, we continue to set the benchmark, because we believe quality of life should be a given, not the exception.

Canon

CANON MEDICAL SYSTEMS CORPORATION