

CT Urogram Workflow

VPMC-15857 E

CT Urogram

Overview:

- The CT Urogram can be post-processed in various ways. Auto Bone Removal and Vessel Grow provide a quick overview. Vessel Probe creates a centerline of the ureter. 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 CT Urogram protocol
 - Click Remove Fragments to remove background noise
 - Click Trim to remove anatomy on the MPR views
 - Select Window/level and Ruler tools to aid diagnosis
 - Select Vessel Probe to generate a centerline of the ureters and Extend to add additional segmentation
 - Edit the centerline if needed
 - Click the Organ tool to segment the kidneys or additional anatomy
 - Create 3D Batch Rotation
 - Take a snapshot
 - Create and Export snapshots and batches

CT Urogram - 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 **Urogram Analysis** Application.

The screenshot displays the Canon CT software interface. At the top, a table lists patient studies. A red arrow points to the row for 'ABDOMEN CTA RENAL ANEURYSM' (Patient: F, ID: IA1V-ADV-190, Date: 04 Mar 2016). Below the table, the 'Applications' tab is active, showing a grid of application thumbnails. The 'Urogram Analysis' thumbnail is highlighted with a red box. Below the applications, the 'Results' tab shows three dynamic series thumbnails labeled 'DYNAMIC DYNAM...' with a red arrow pointing to them. At the bottom right, an 'Open' button is highlighted with a red arrow.

Study Name	Patient	ID	Modality	Series Count	Date	Application	Notes
ABDOMEN CTA FIRST	F	IA1G-AUH-004	CT	471	09 Nov 2015 ...	GENESIS	CANON EVSP AAA
ABDOMEN CTA RENAL ANEURYSM	F	IA1V-ADV-190	CT	962	04 Mar 2016 ...	VISION	CANON RENAL ANEURYSM LEFT
ABDOMEN LIVER 4PHASE	F	CA1P-AH-104	CT	1293	20 Nov 2020 ...	PRISM_ABD	AICE
Abdomen Liver DE +	M	IA1V-ADE-007	CT	7364	17 Jun 2014 ...	R01283788	58y
ABDOMEN LIVER MASS	M	FUSION	CT, SR	1460	11 Aug 2016 ...		CT Abdominal 3 Phase
ABDOMEN LIVER MET	M	IA1-ADV-062	CT	7362	11 Nov 2013 ...	ONE	CANON 4D DUAL INPUT LIVER
Abdomen Tumor with Liver Mets	M	000179	CT	930	03 Feb 2006 ...	947e34bd8343...	CT ABD/PELVIS WITH CON
AICE Inner ear Precision 1		Precision UHR-CT	CT	2020	13 Jan 2023 ...		Inner ear
AICE THORAX COVID DLP 180		PRIME SP	CT	3558	23 Sep 2020 ...		
AICE THORAX COVID DLP 51		PRIME SP	CT	2606	25 Sep 2020 ...		

Applications: Results Study Algorithm Processing

Abdominal Analysis Renal Endovascular Stent Planning Colon Analysis **Urogram Analysis** Liver Resection Planning Liver Tumor Response Body Perfusion 4D 4D Dual Input Liver Subtraction Viewer Head CT Carotid Auto Vessel Circle of Willis Head/Neck Subtraction Head Subtraction

ABDOMEN CTA RENAL ANEURYSM IA1V-ADV-190 (F) CT 04 Mar 2016 11:23 CANON RENAL ANEURYSM LEFT

DYNAMIC DYNAM... 161/320 DYNAMIC DYNAM... 161/320 DYNAMIC DYNAM... 161/320

Tools List Images

Open

CT Urogram - Load the study from Gallery

Select the Protocol
Urogram CT

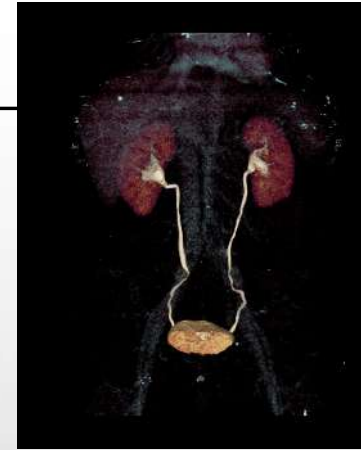
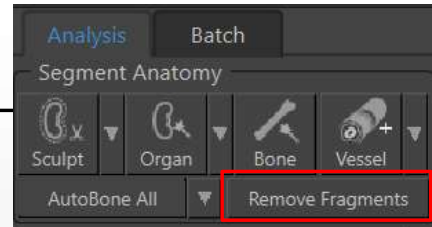
Select **3D Analysis**. Click
Pick.

The screenshot shows the software interface with the following elements:

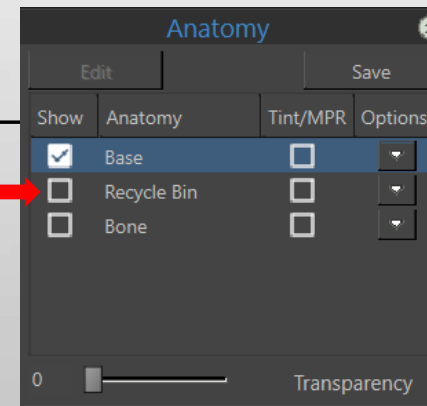
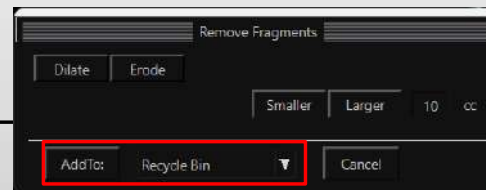
- Study List** tab selected.
- Protocol** list on the left sidebar, with **Urogram CT** highlighted.
- 2D** and **3D** viewports showing axial CT slices.
- 3D Analysis** button at the bottom center, with a red arrow pointing to it.
- Pick** button next to the 3D Analysis button.

CT Urogram - Auto Bone Removal

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

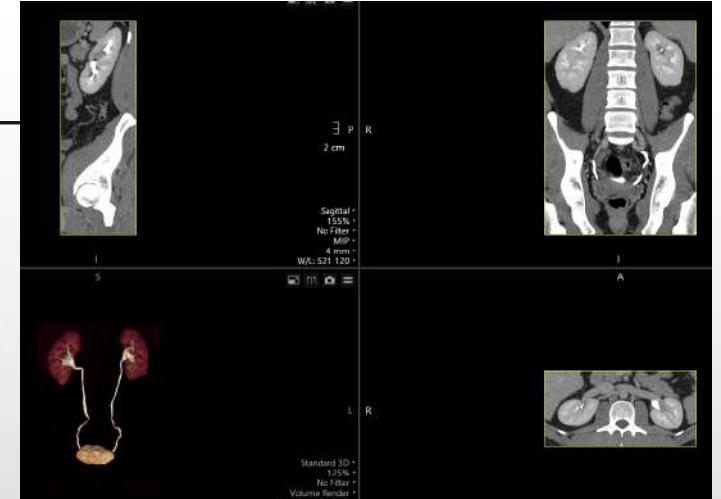
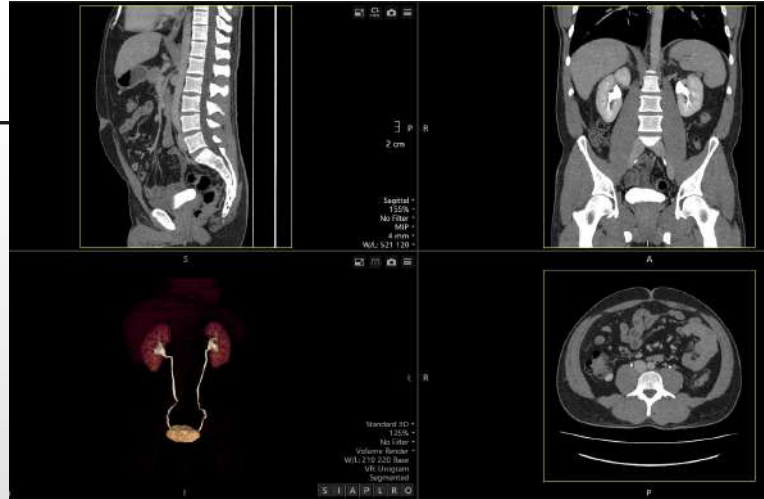


Click Smaller or Larger to
adjust the size of the selected
fragments. Click **Add To**. The
Recycle Bin is added to
Anatomy Management area.



CT Urogram – Trim Tool

Select **Trim**. Click and hold the mouse on the yellow lines. **Drag** the trim box to exclude unwanted anatomy.

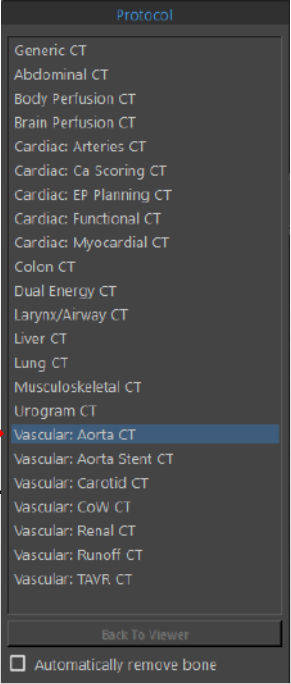


CT Urogram - Manual Segmentation

Select **Vascular Aorta CT** Protocol. Select 3D Analysis. Click Pick.

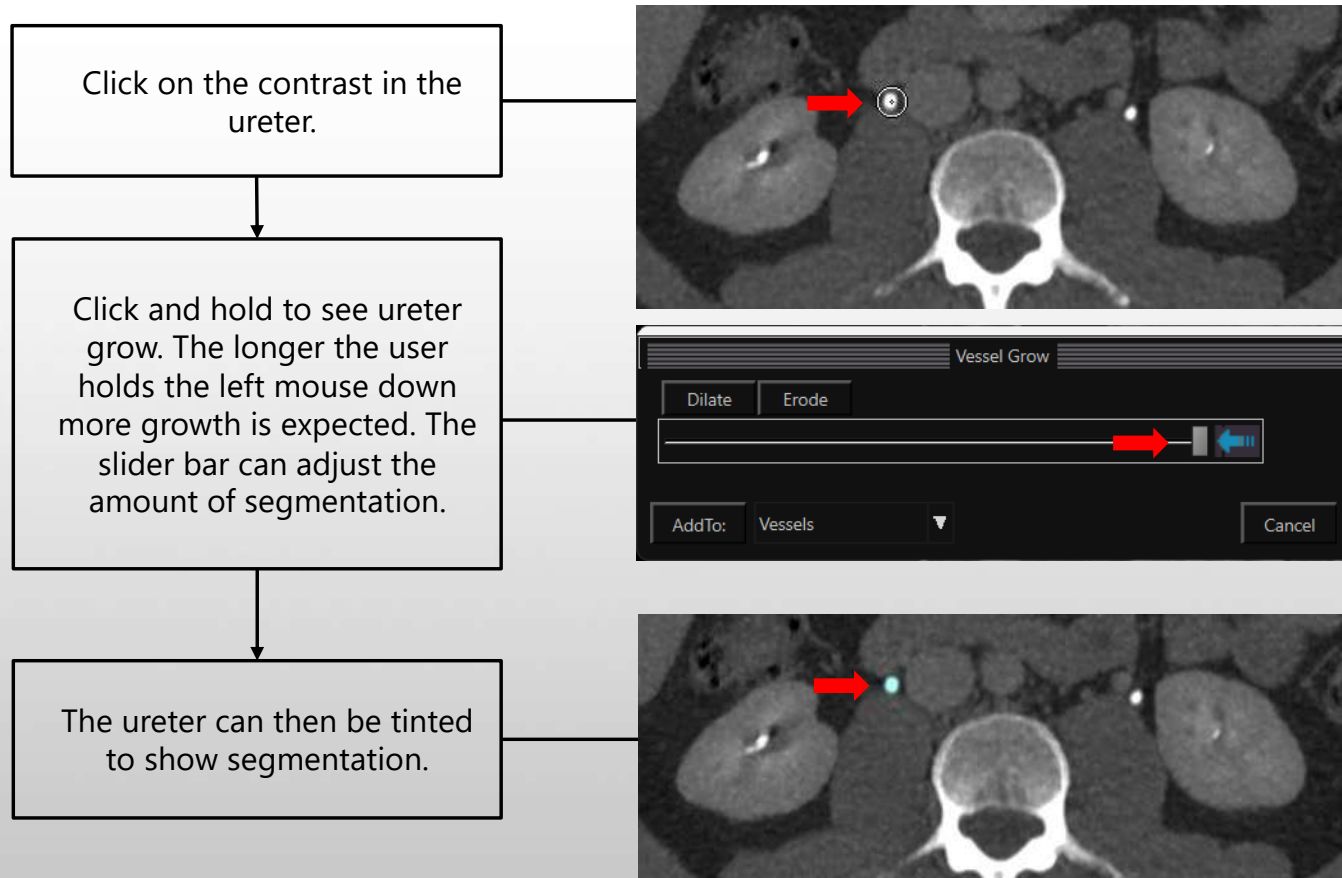
Make sure Automatically remove bone is not selected.

Click on the arrow next to vessel and select Grow.



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

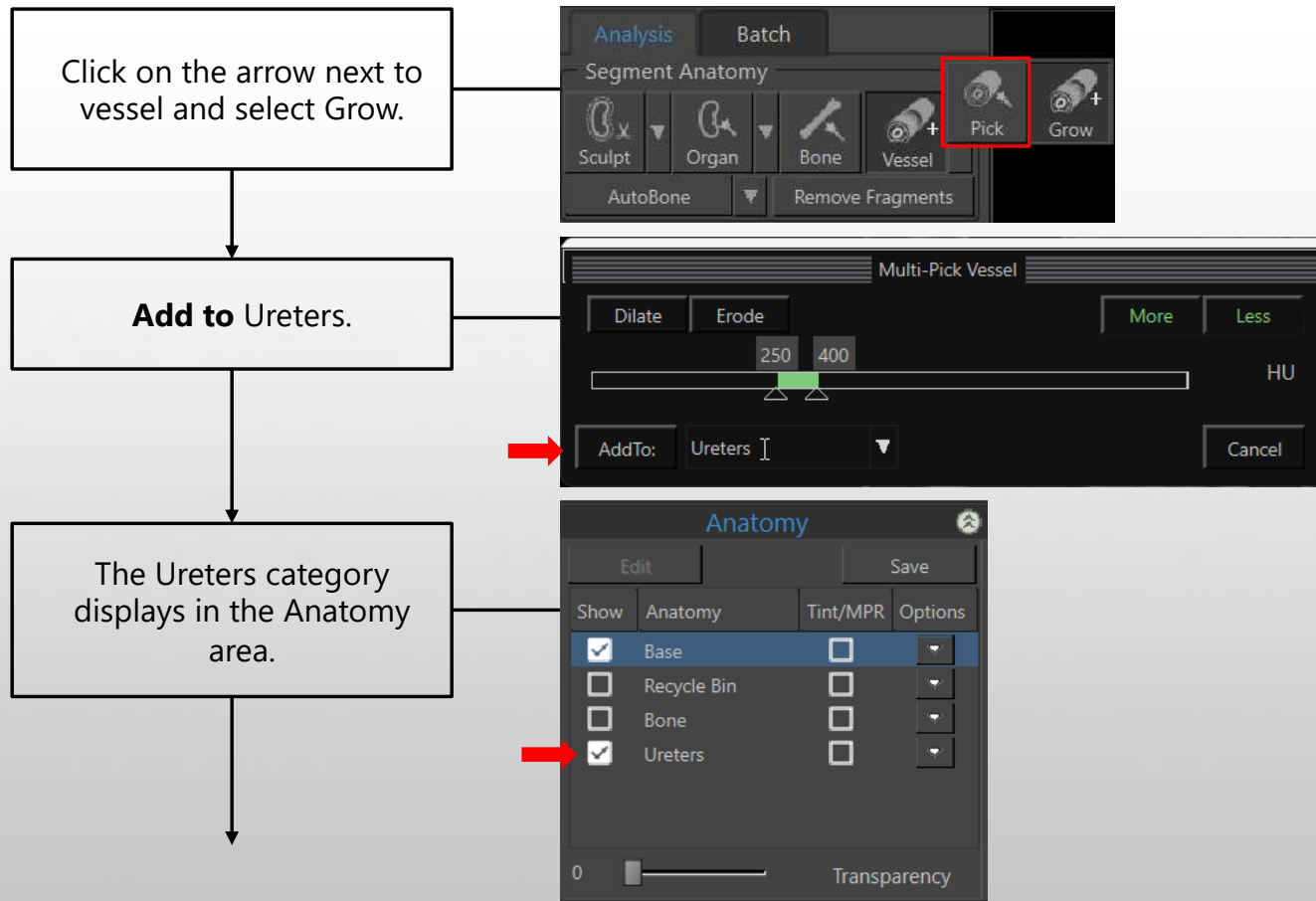
CT Urogram - Vessel Grow



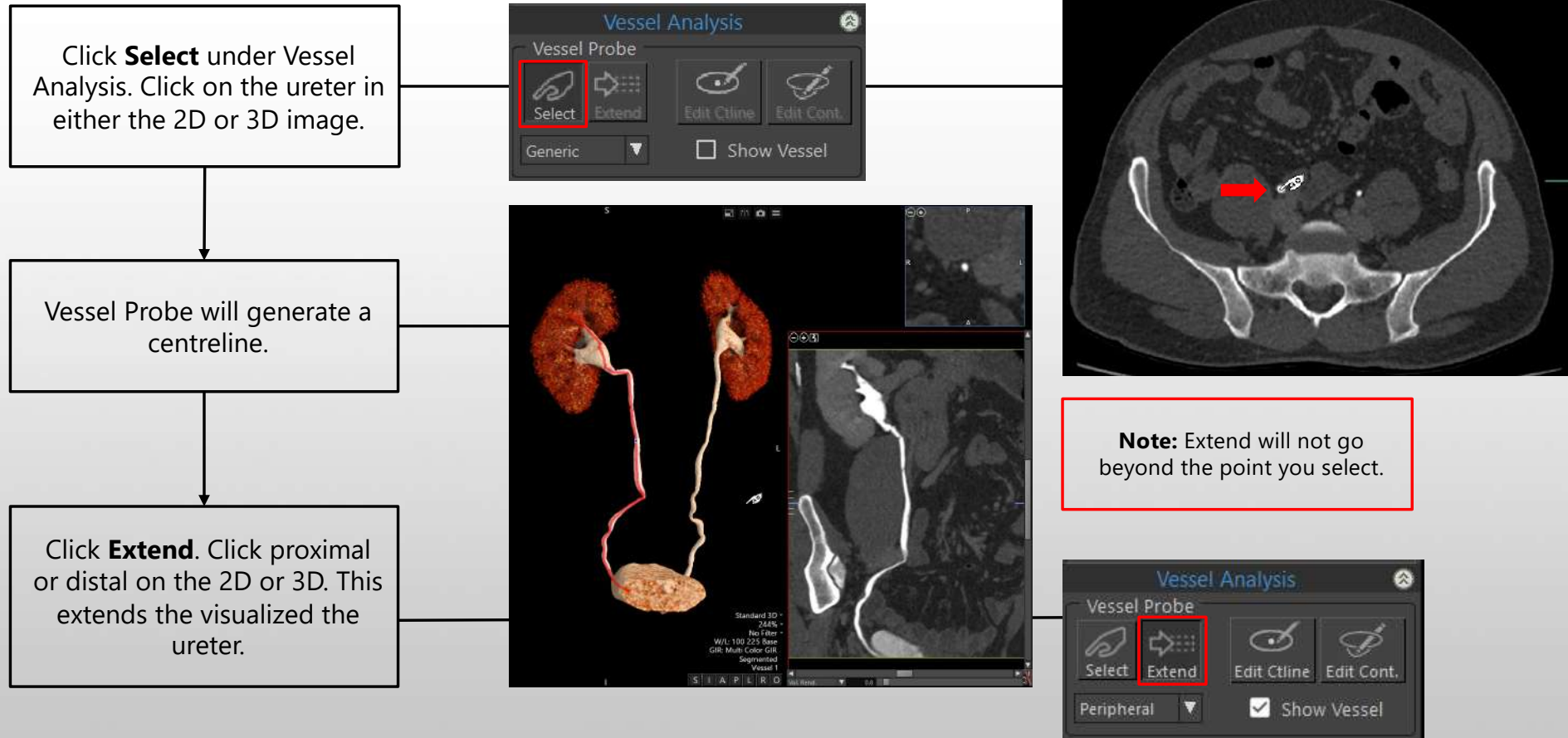
Note: Vessel Pick & Grow does not generate a centreline. Use Vessel Probe to generate a centreline.

Tip: Move history bar to adjust the amount of contrast included.

CT Urogram - Vessel Pick



CT Urogram - Vessel Probe Analysis

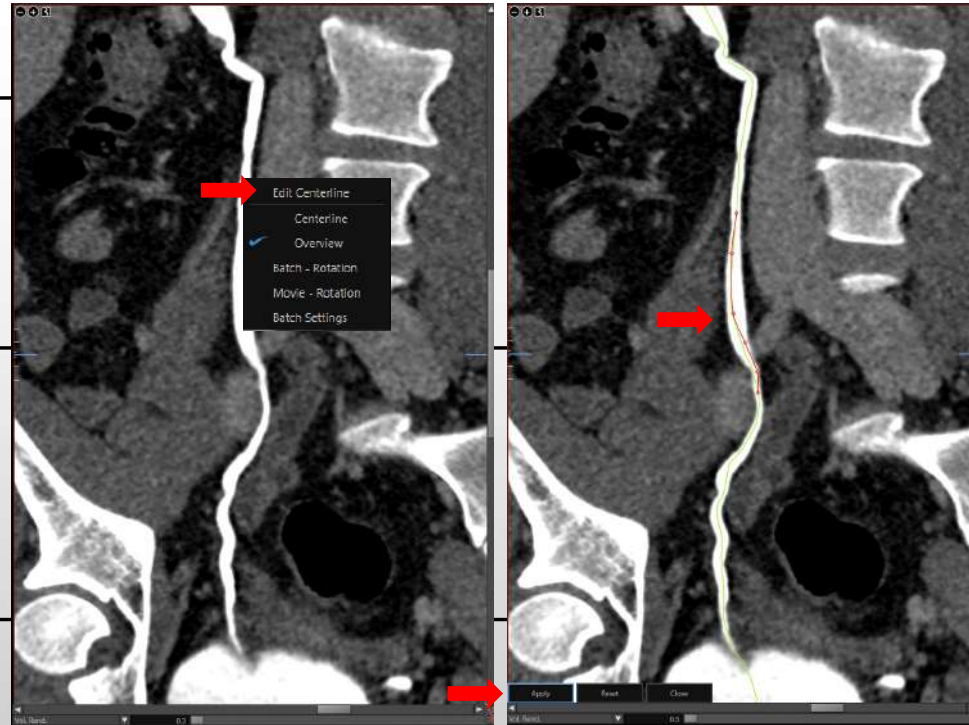


CT Urogram - Centerline Editing

Right click in the CPR view.
The Edit Centreline tool is active.

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

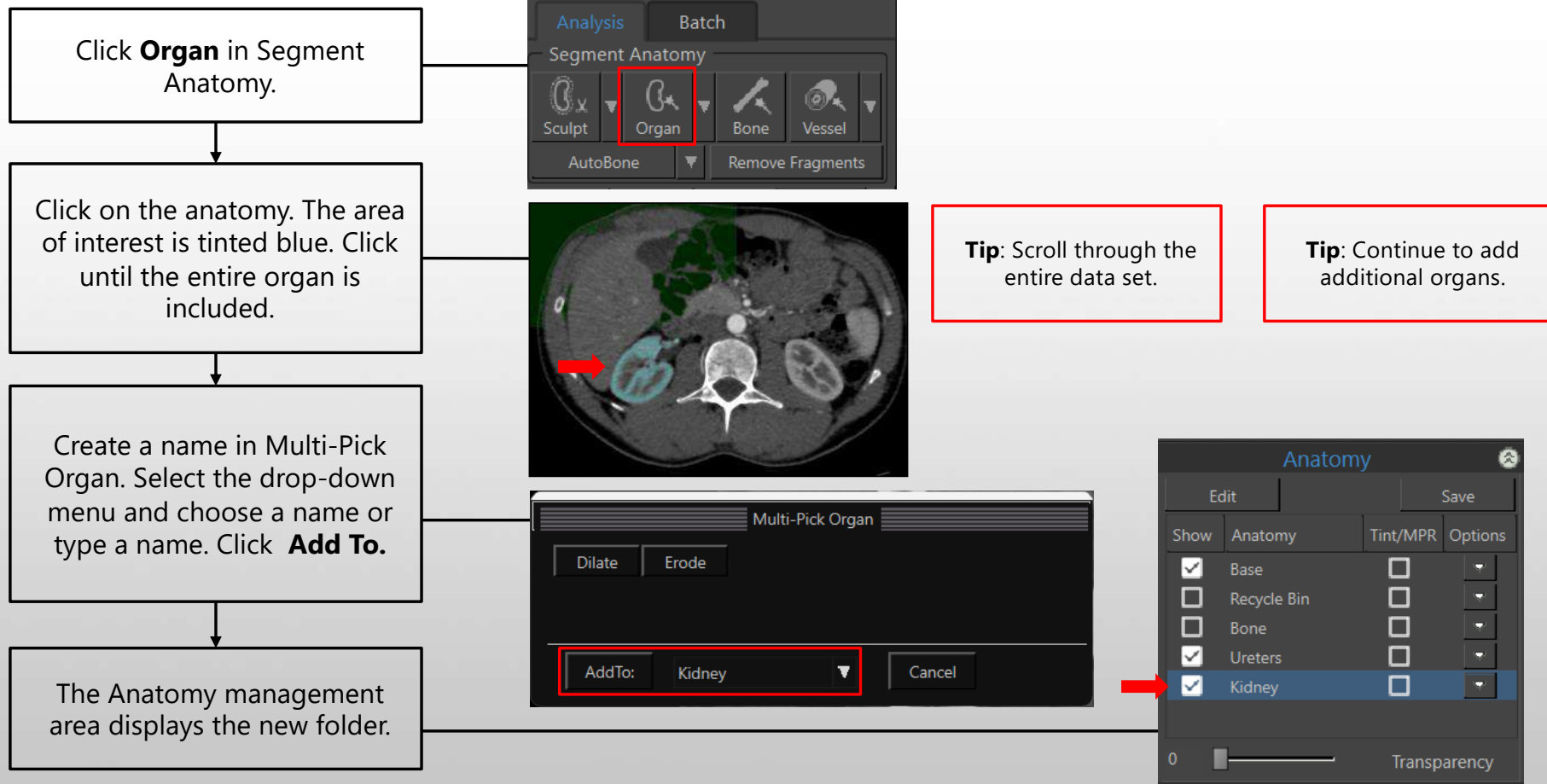
Click **Apply** to save the edits.
Click **Close** to end.



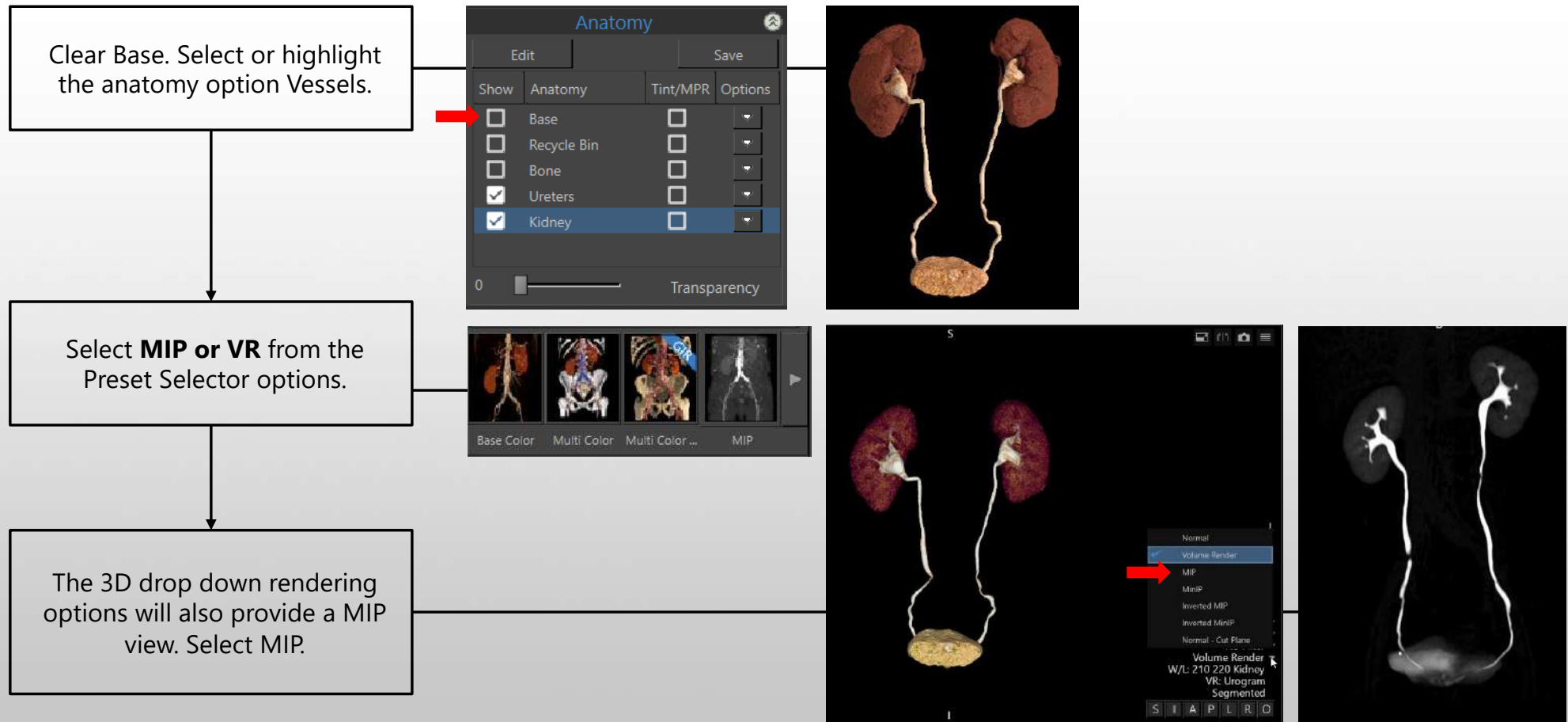
Note: The yellow line is the
centreline. The red line is the
corrected centreline.

Tip: Alternatively click and
drag the red line to edit.

CT Urogram - Organ Tool



CT Urogram - VR & MIP

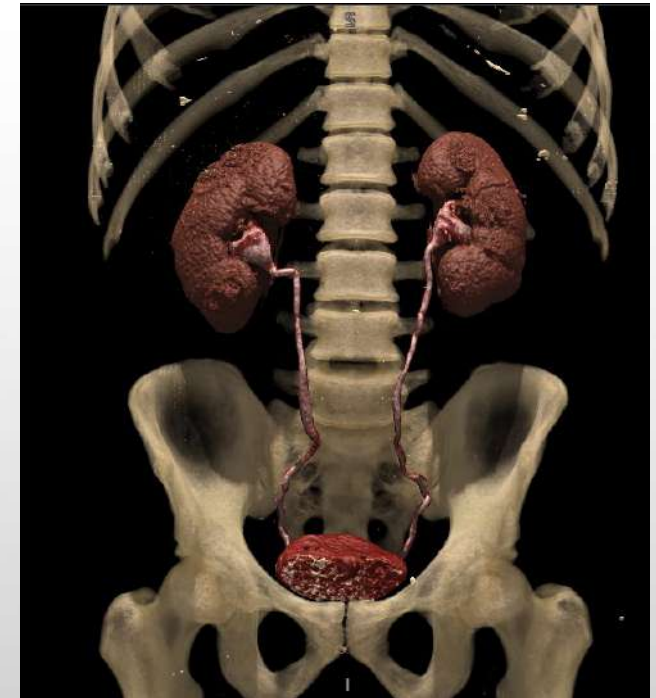
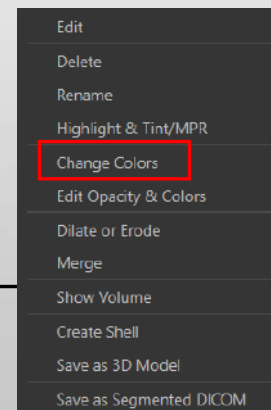
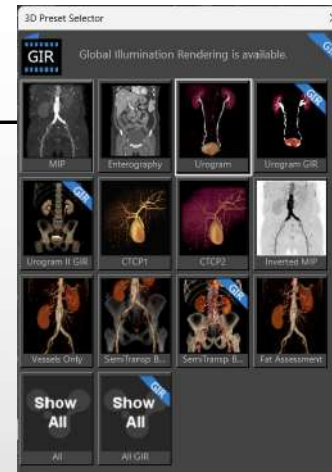
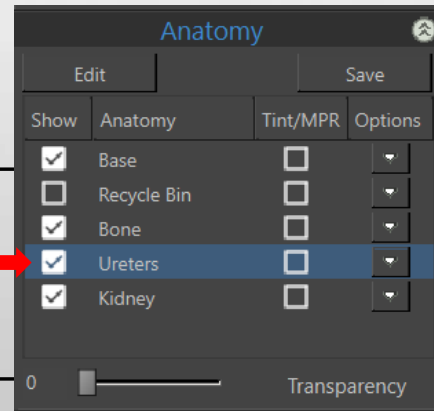
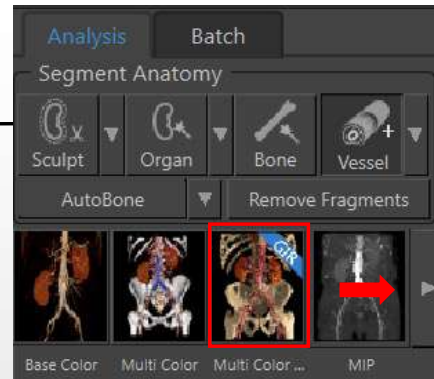


CT Urogram – Apply GIR to 3D View

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

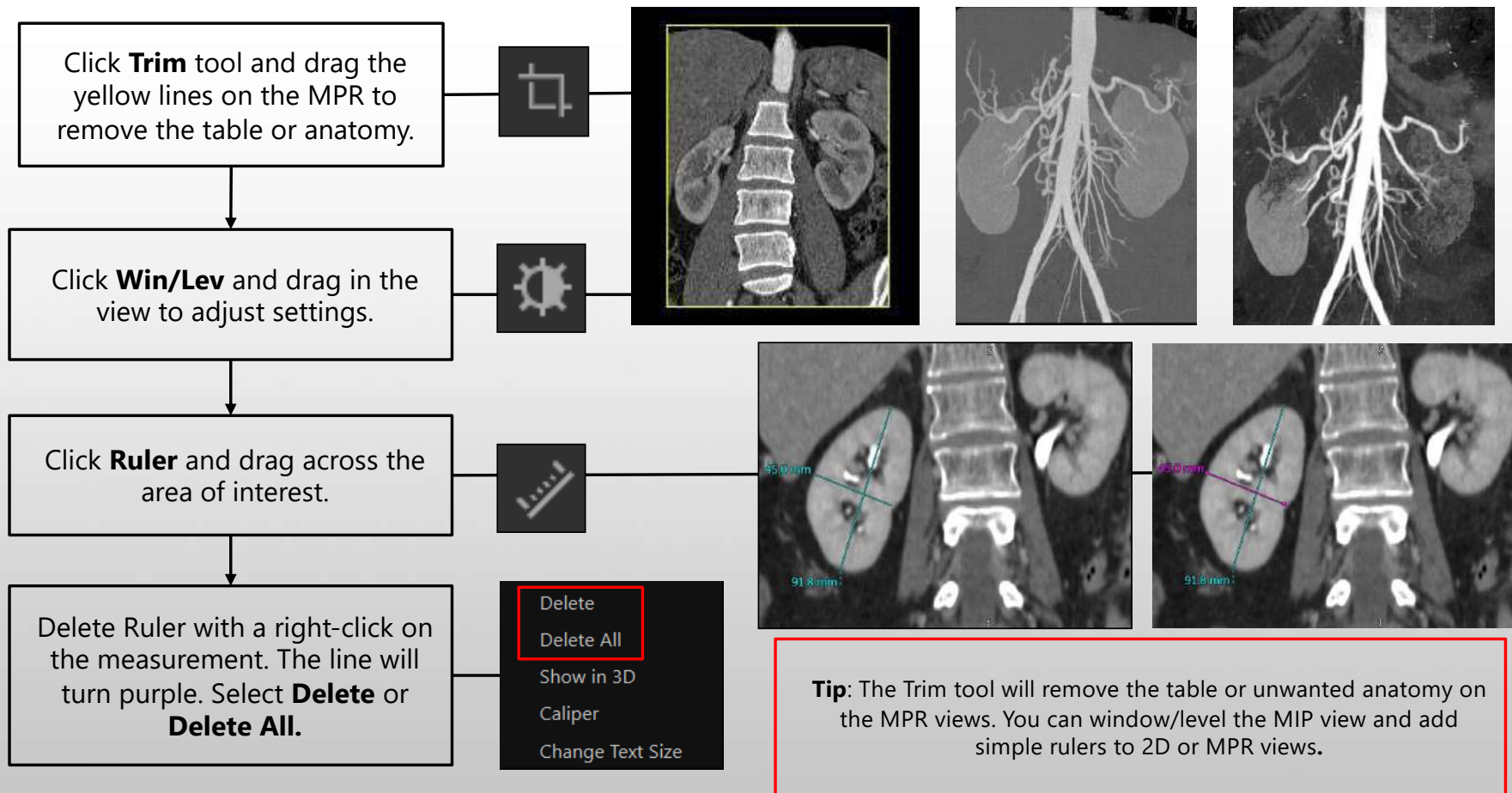
Select the region in the anatomy management list. Click on the arrow under options and select Change Colors.

Here the user can find additional GIR presets.



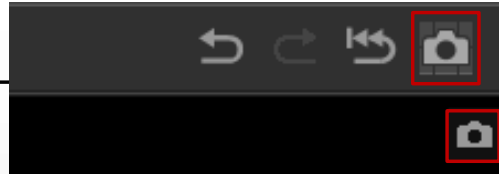
Tip: Segmentation of the anatomy will provide more GIR presets.

CT Urogram - Window Level Ruler Tools



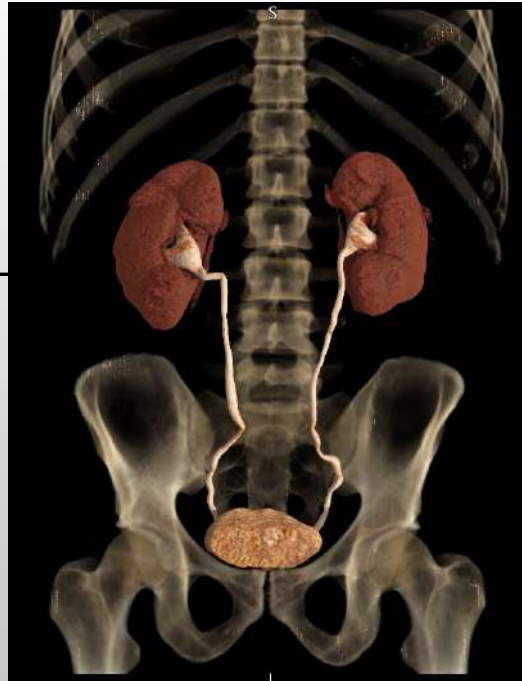
CT Urogram - Snapshot

Click Snapshot tool on common toolbar.



Tip: Press S on the keyboard will also activate the camera.

Click on the camera icon in the 3D or 2D image to create the snapshot.



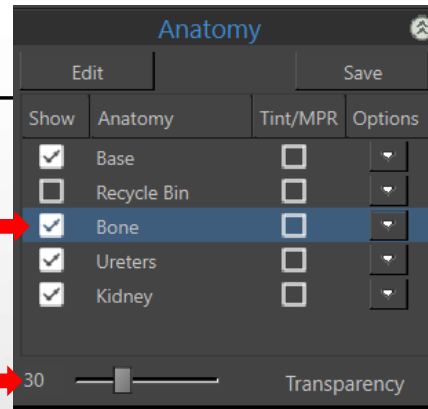
Tip: Remember to take a snapshot. Only a snapshot can be restored at a later date to continue post processing.

CT Urogram - Transparent Bone

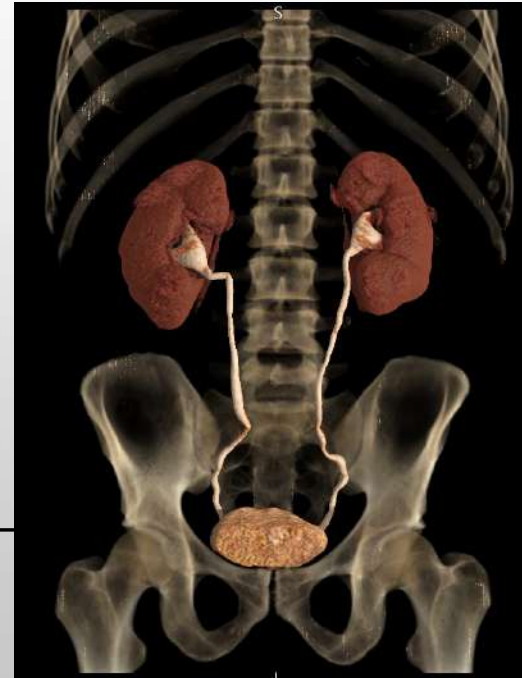
Tick the box next to Bone in the Anatomy management area.

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.



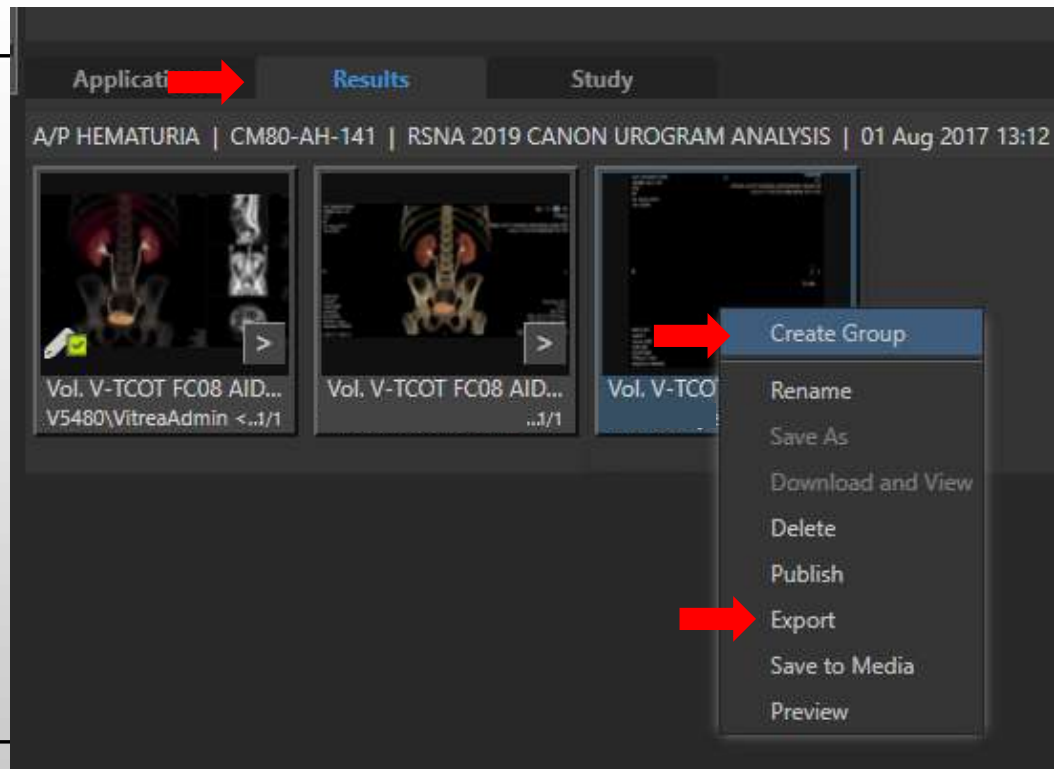
CT Urogram - Distribute Findings: Export

From Study List, select the **results** tab.

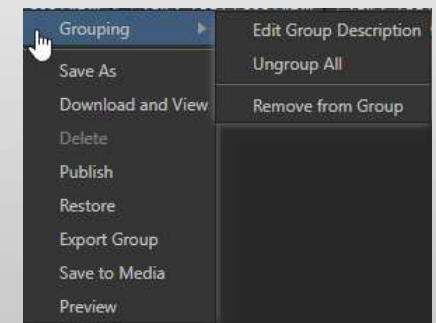
Use **Ctrl** to select all the snapshots to export.

To group evidence together, use **Ctrl** and select the findings to add to the group. Right click and select **Create Group** from the list.

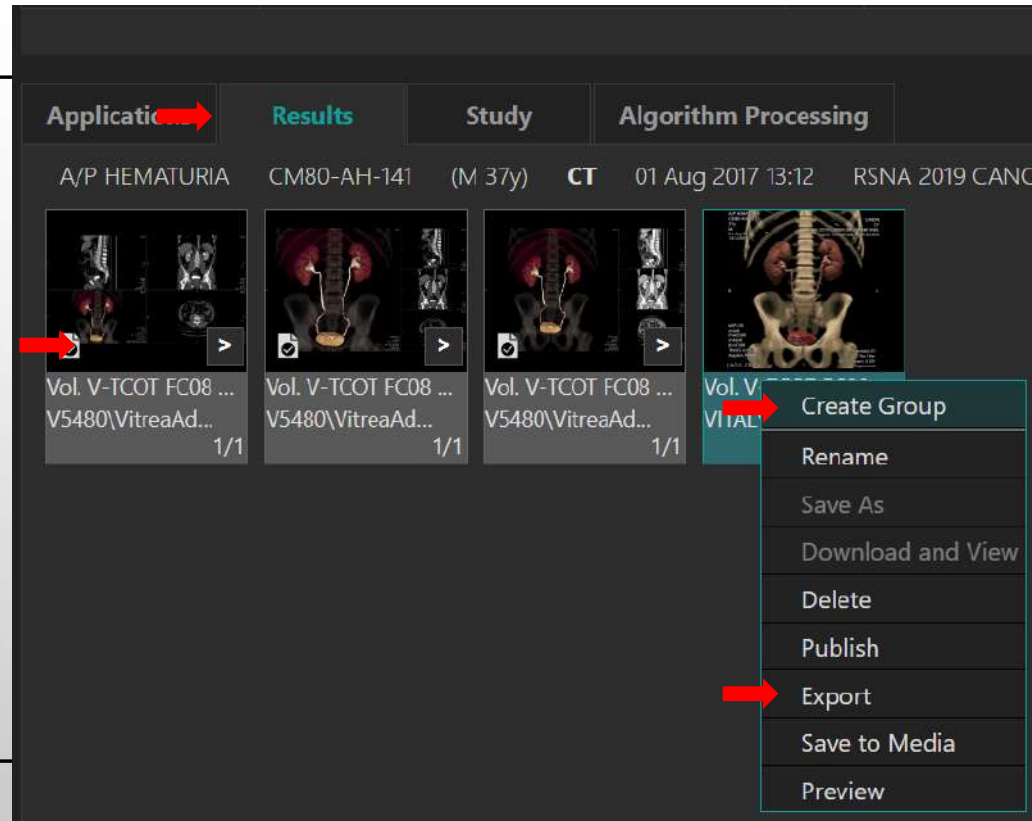
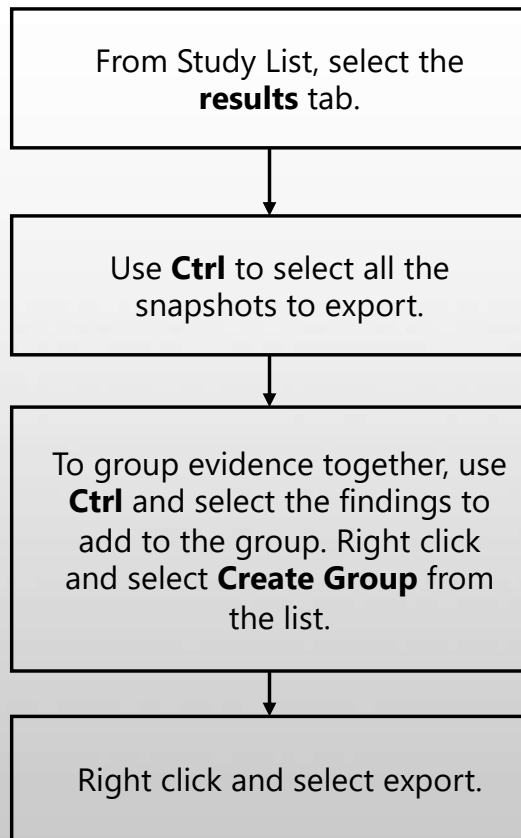
Right click and select export.



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.



CT Urogram- 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 Urogram - 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 Urogram

Summary:

Workflow for the CT Urogram include a variety of post processing tools depending on the area of interest.

The Features most commonly used:

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

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