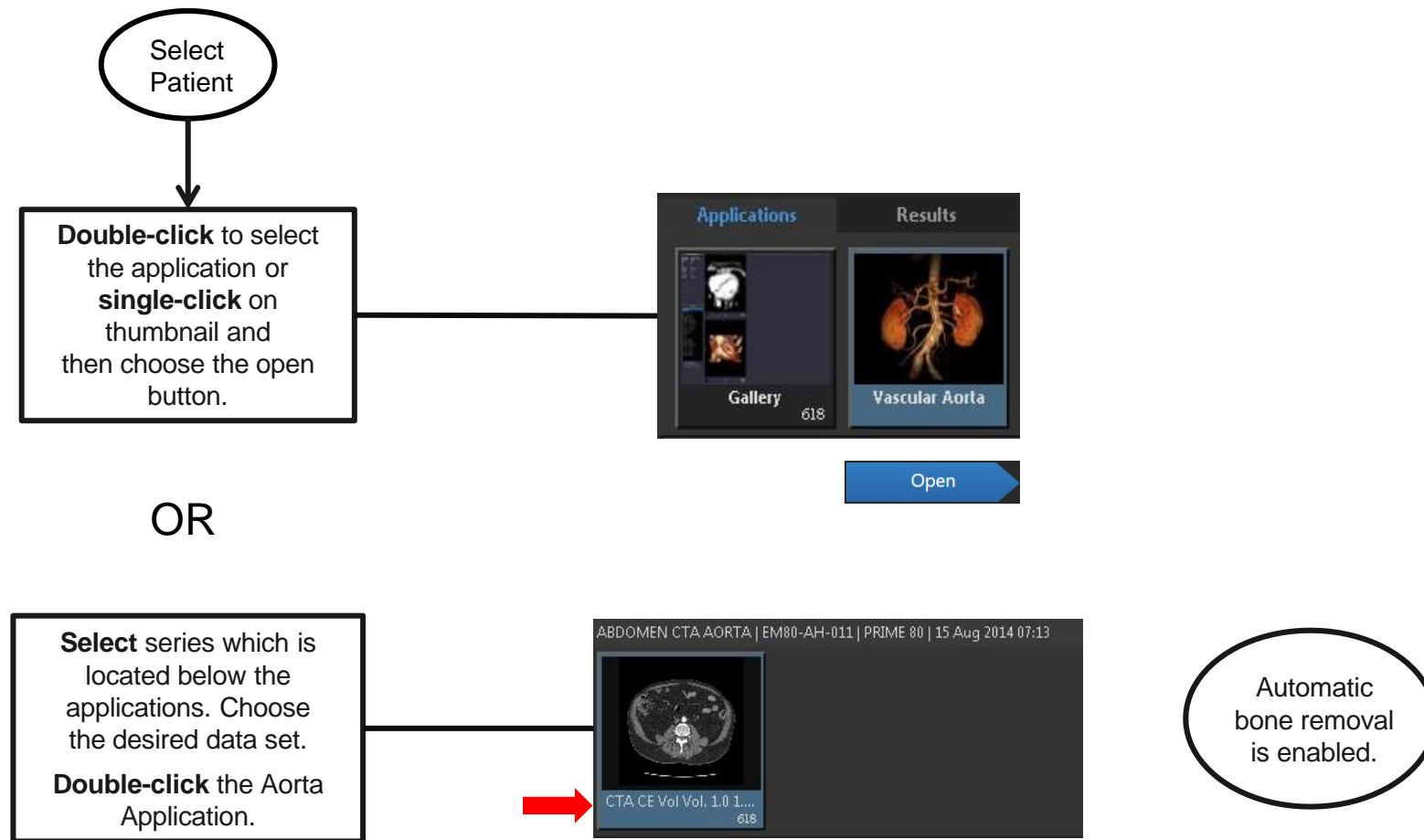# Aorta CTA

Aorta CTA – Workflow Overview

Overview:

The aorta can be post-processed in various ways. Auto Bone Removal and Vessel Pick and Glow provide a quick overview of the entire aorta. Vessel Probe creates a centerline of the vessel. Extend allows users to extend existing vessel. The Organ tool adds 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.
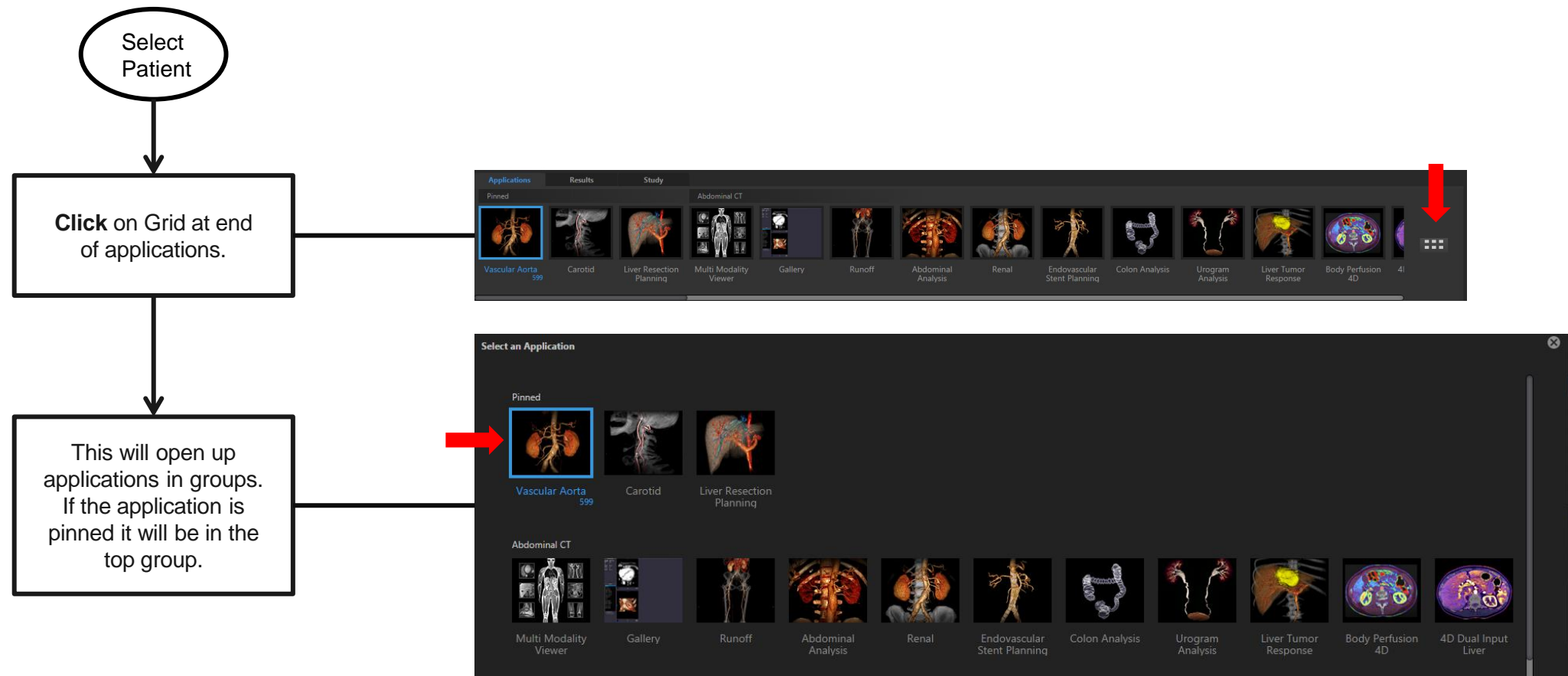
The Steps:

- **Load** the data and select the **Vascular Aorta CT Application.**
- The Viewer tab displays the aorta. **Select AutoBone** from the Segmentation Tools.
- **Click** Remove Fragments to remove background noise.
- **Click** Vessel Pick and manually segment vessels when the Hounsfield Unit density is too low for auto segmentation.
- **Trim** to remove anatomy on the MPR views.
- Window/level and Ruler tools to aid diagnosis.
- **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** snapshots and batches.
- **Export** to PACS.

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Aorta CTA – Load Study

Select Patient

Double-click to select the application or **single-click** on thumbnail and then choose the open button.

OR

Select series which is located below the applications. Choose the desired data set.

Double-click the Aorta Application.

Automatic bone removal is enabled.

Tip: **Right-click** on application and Pin. This will put the application in a pinned category (favorite)

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Aorta CTA – Load Study

Select Patient

Click on Grid at end of applications.

This will open up applications in groups. If the application is pinned it will be in the top group.
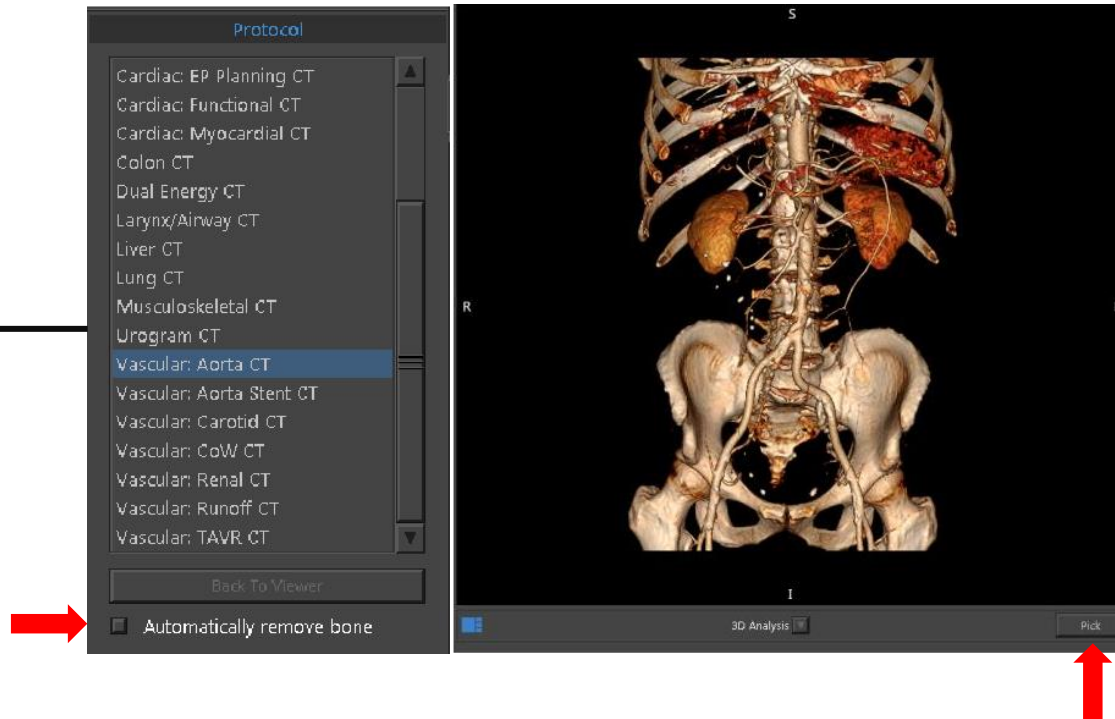
Aorta CTA – Load From Gallery

If loading from **Gallery Page** - Select Protocol Vascular Aorta CT.
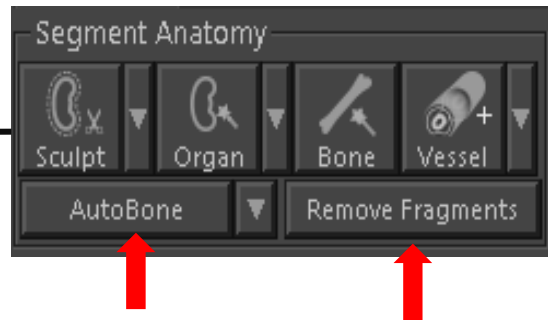Ensure Automatically remove bone is checked.

Select 3D Analysis.

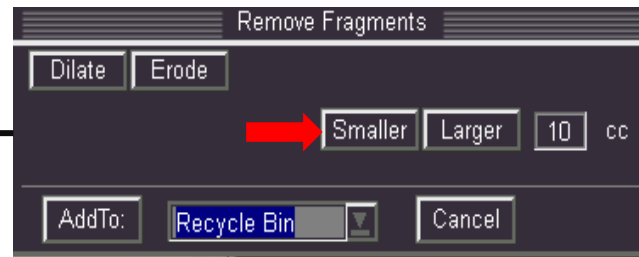**Click Pick**

Aorta CTA – AutoBone Segmentation

Click **AutoBone** to remove bone.

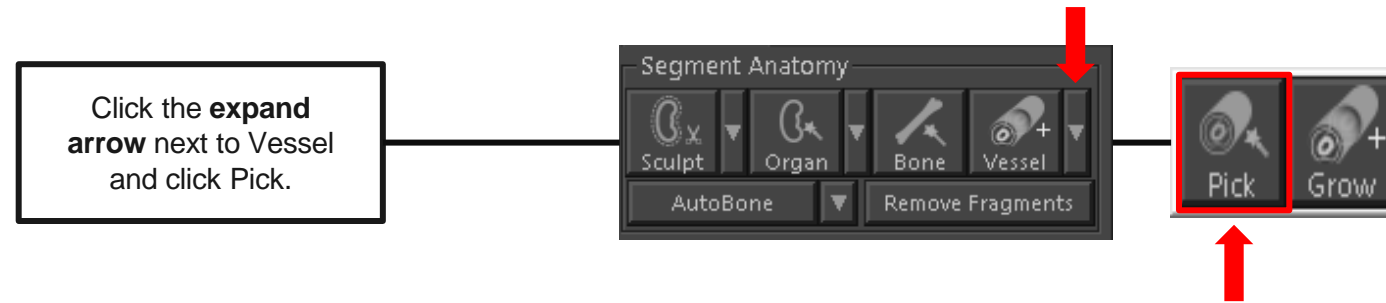Click **remove** Fragments to highlight background noise. These will appear blue.

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: Recycle Bin.

Aorta CTA – Vessel Pick – Manual Vessel Segmentation

Click the **expand arrow** next to Vessel and click Pick.

Aorta CTA – Vessel Pick

Click on the contrast in the aorta.

All vessels in HU range will be blue.

Click More or Less will change the HU range by 20 in both directions.

Click Keep Vessels
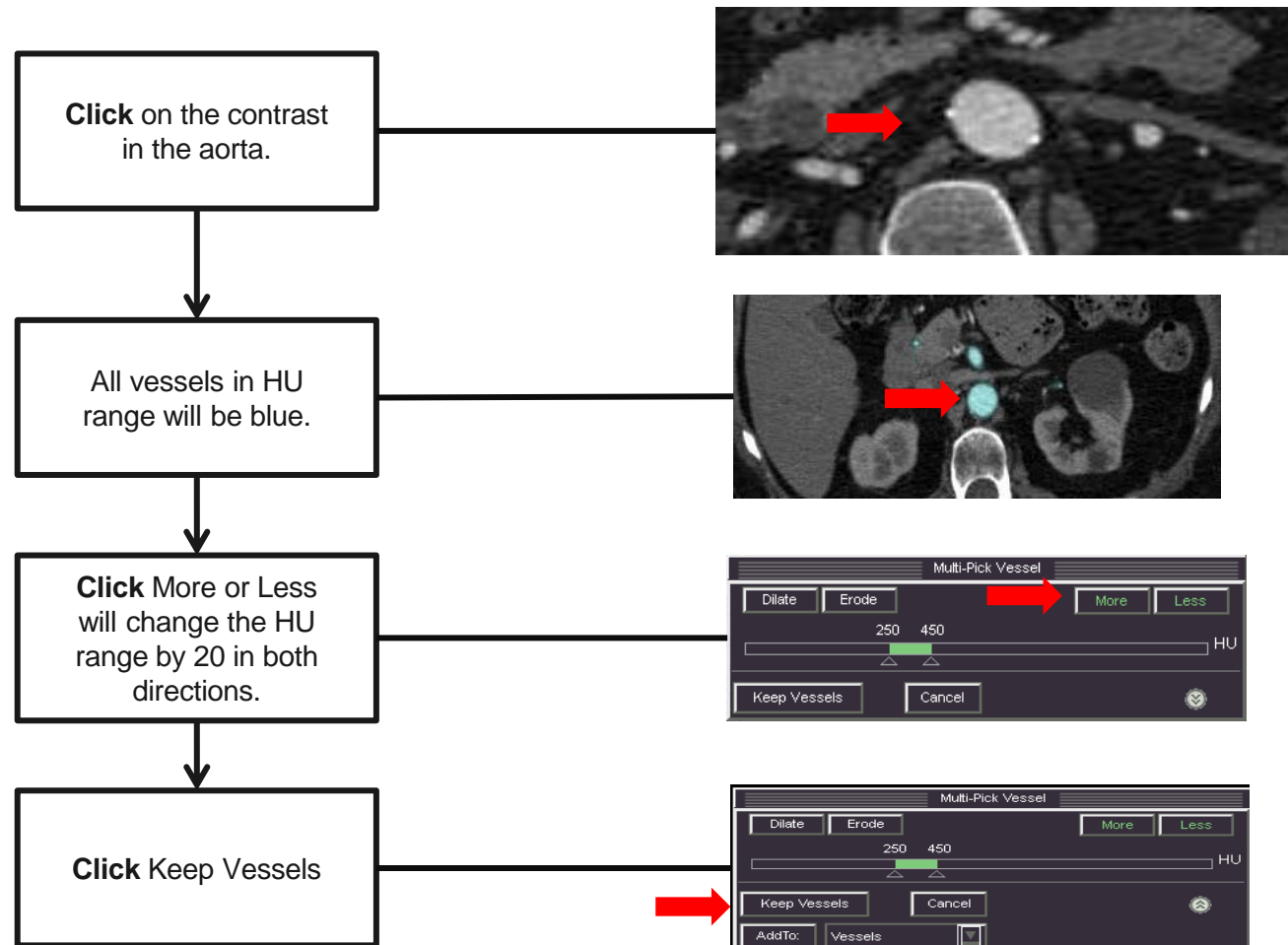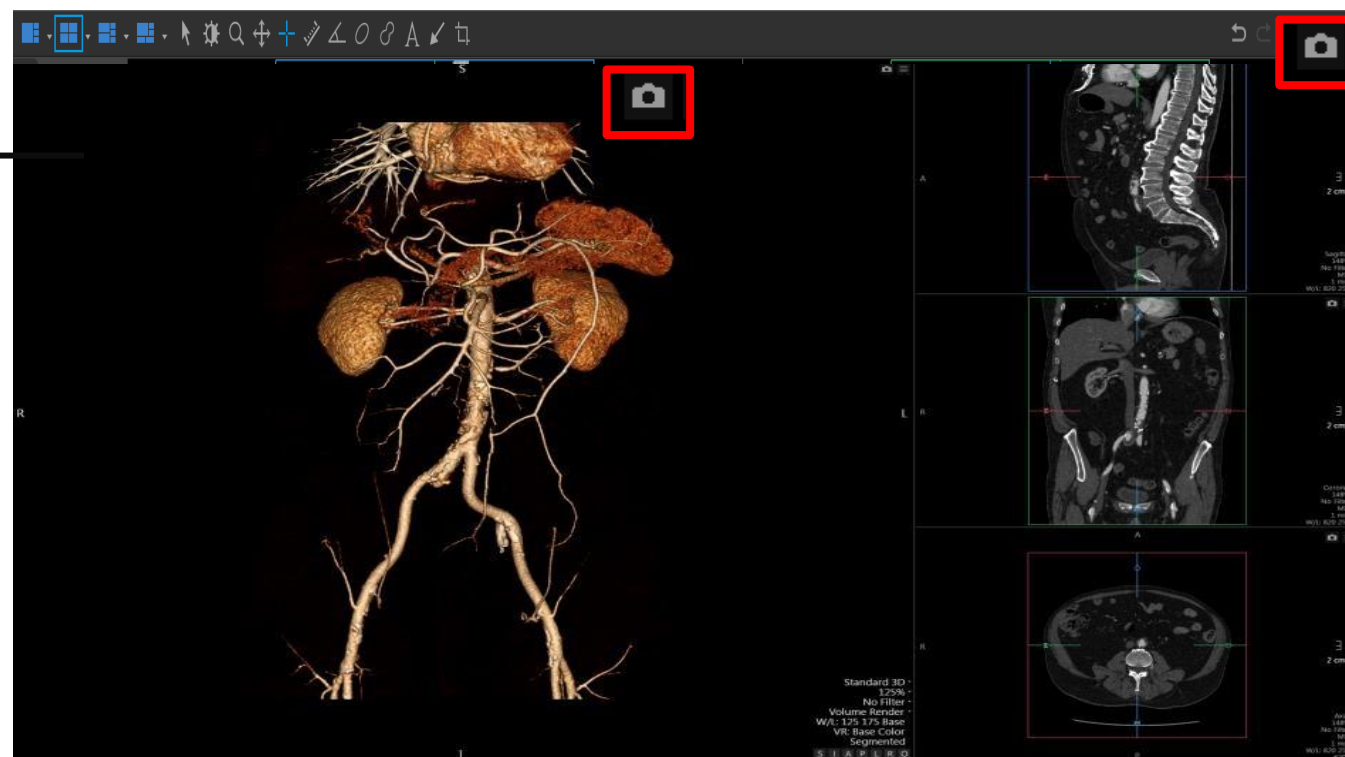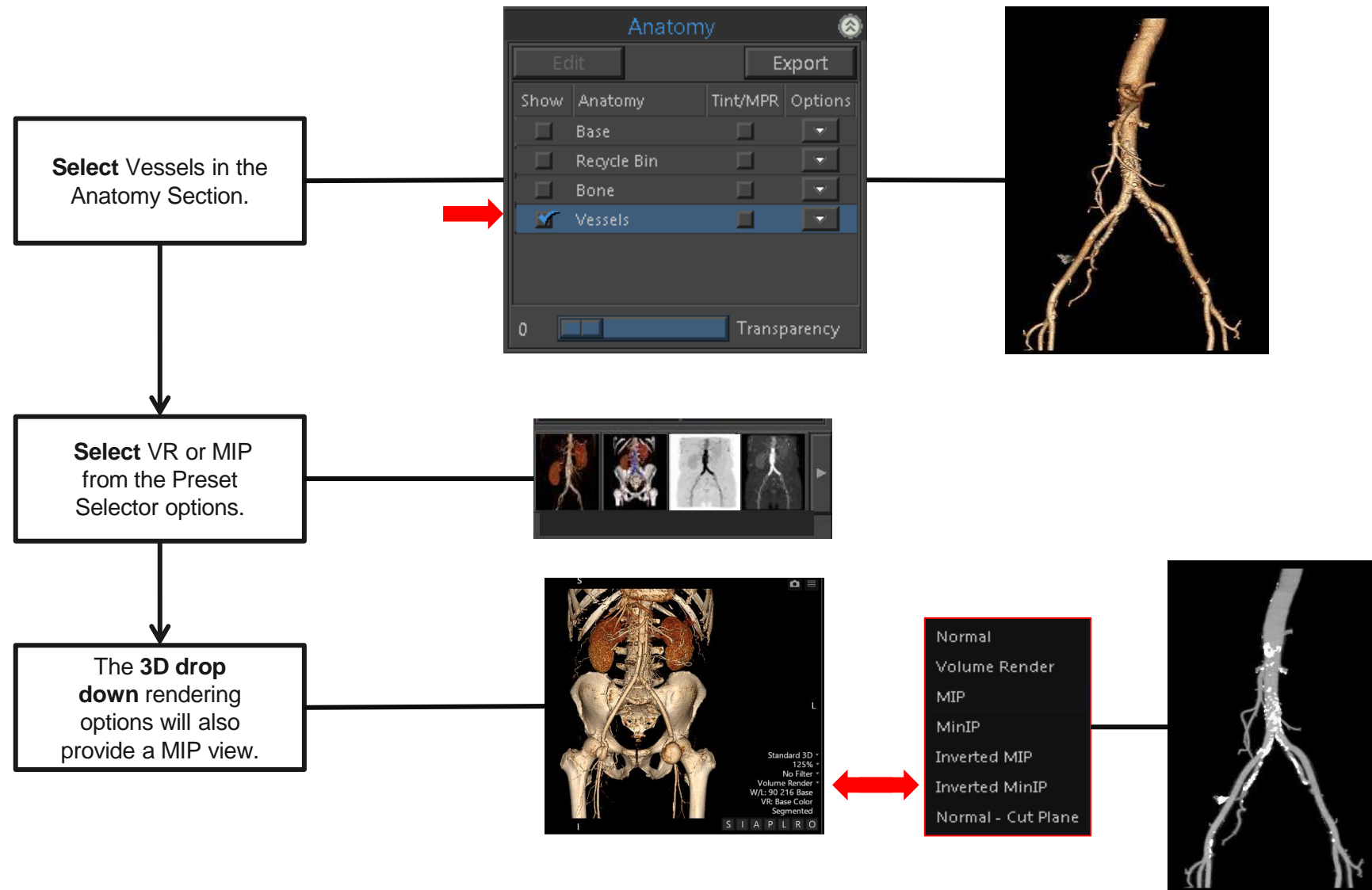
Aorta CTA – Snapshot

Click **camera** in desired viewport to take a snapshot or on top right for full screen capture.
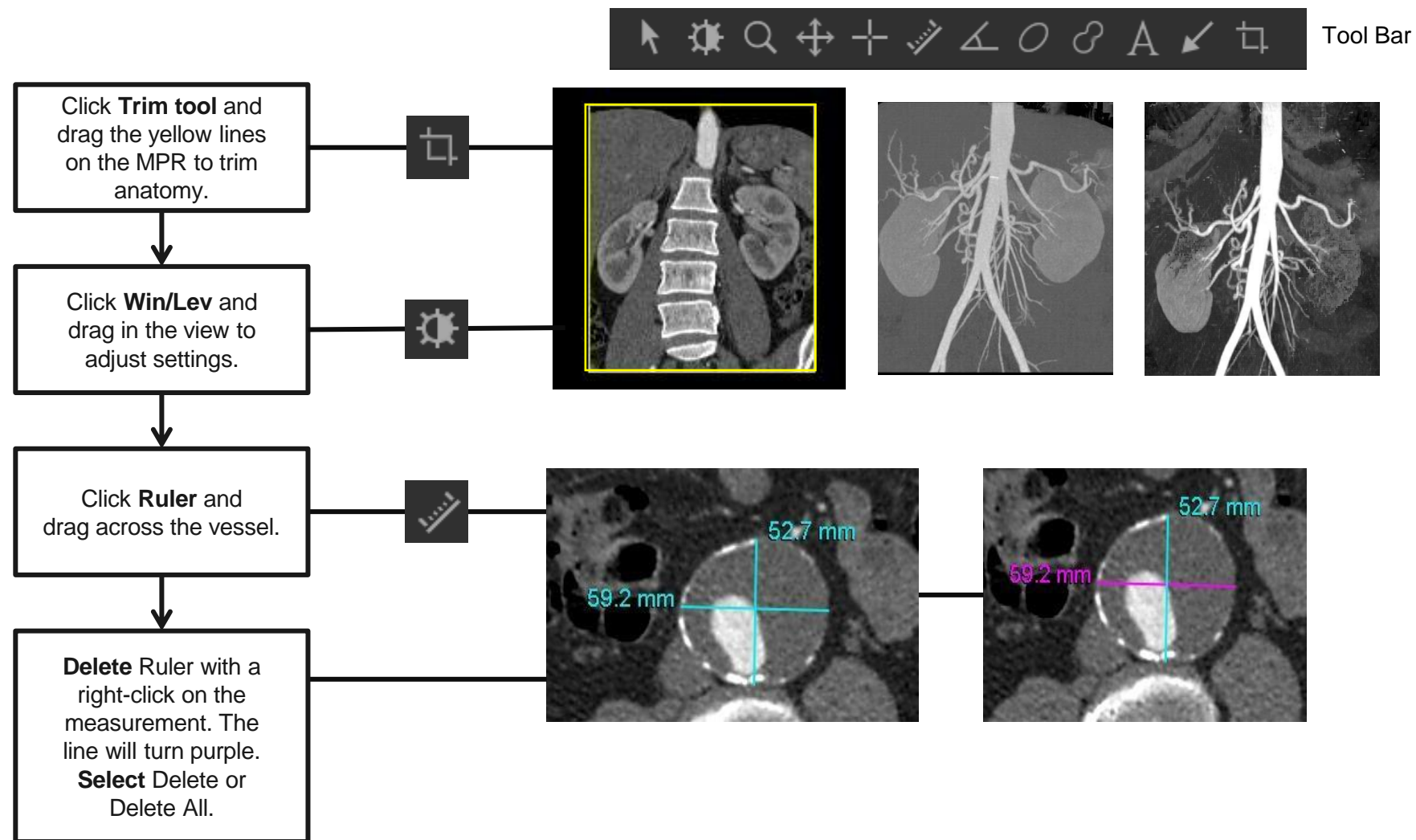
Full screen capture

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

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Aorta CTA – VR and MIP

Select Vessels in the Anatomy Section.

Select VR or MIP from the Preset Selector options.

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

Aorta CTA – Tools

Tool Bar

Click **Trim tool** and drag the yellow lines on the MPR to trim anatomy.

Click **Win/Lev** and drag in the view to adjust settings.

Click **Ruler** and drag across the vessel.

Delete Ruler with a right-click on the measurement. The line will turn purple. **Select** Delete or Delete All.

Aorta CTA – Vessel Probe Analysis

Click **Select** under Vessel Analysis.

Click on 2D or 3D Aorta.

Vessel probe will generate a centerline.

Click **Extend**

Click proximal or distal on the 2D or 3D. This extends the visualized vessel.

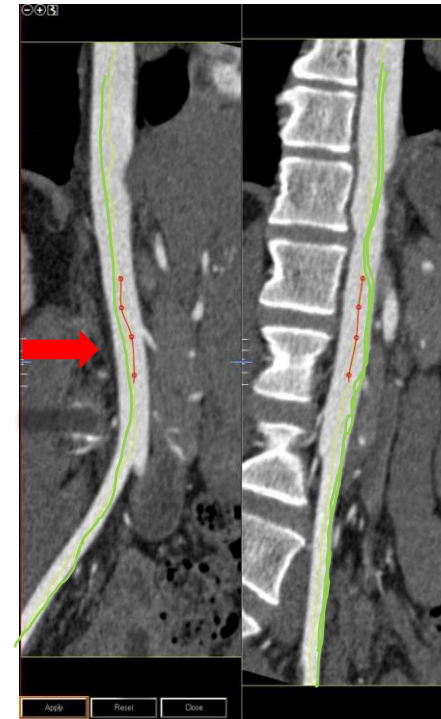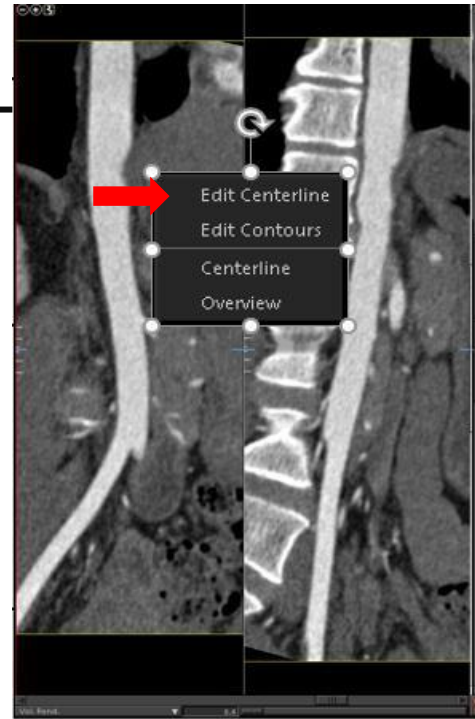Extend will not go beyond the point you select.
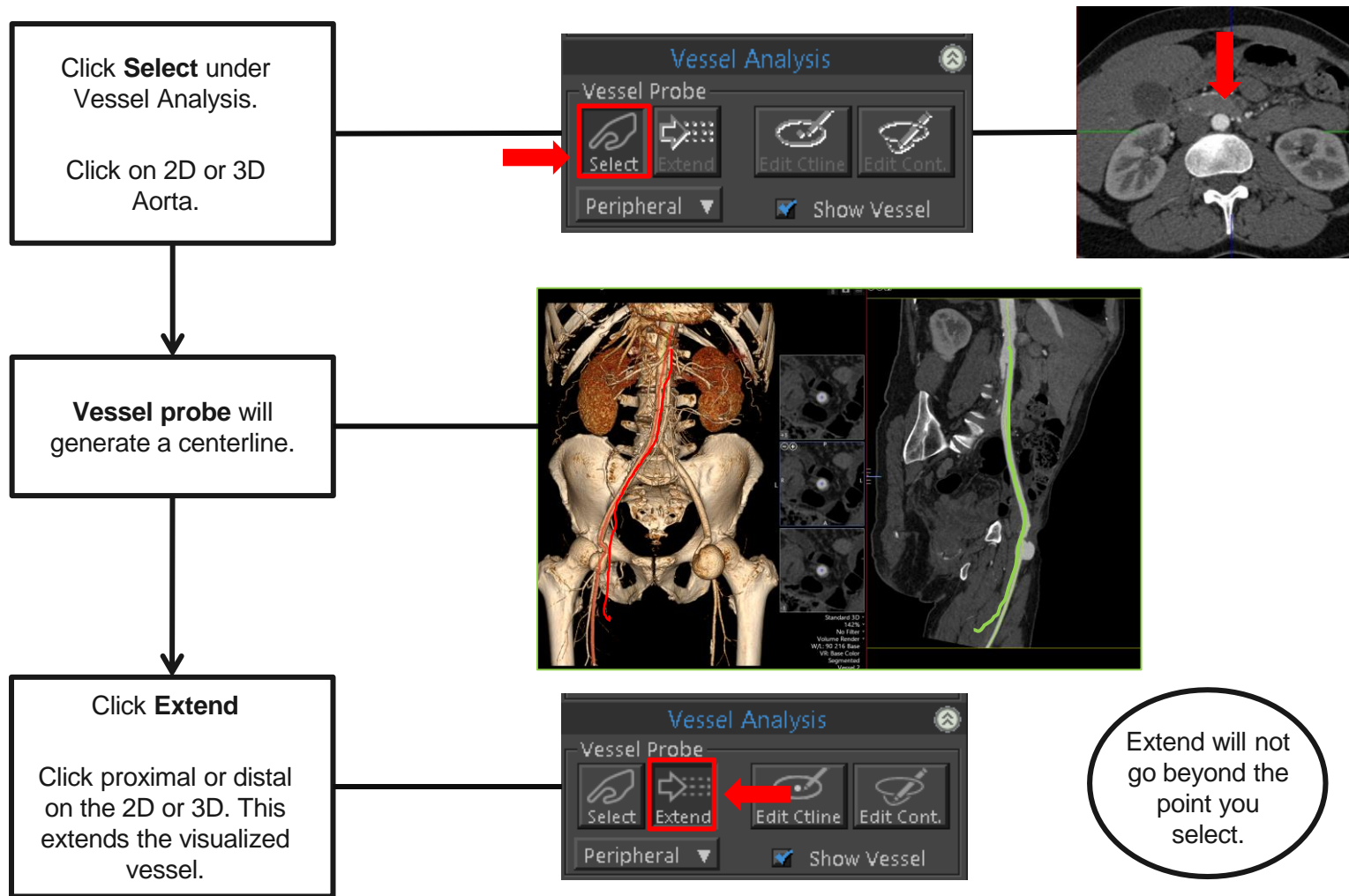
Aorta CTA – Centerline Editing

Right-click in the CPR view. Choose Edit Centerline option.

Click and deposit points to adjust the centerline.

Click **Apply** to save the edits.

Click Close to end.

Edit Centerline
Edit Contours
Centerline
Overview

Apply   Reset   Close

Alternatively Click and drag the red line to edit.

The green line is the centerline. The red line is the corrected centerline.

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Aorta CTA – CPR View

Click the box at bottom of CPR view to change layout:
- Single view
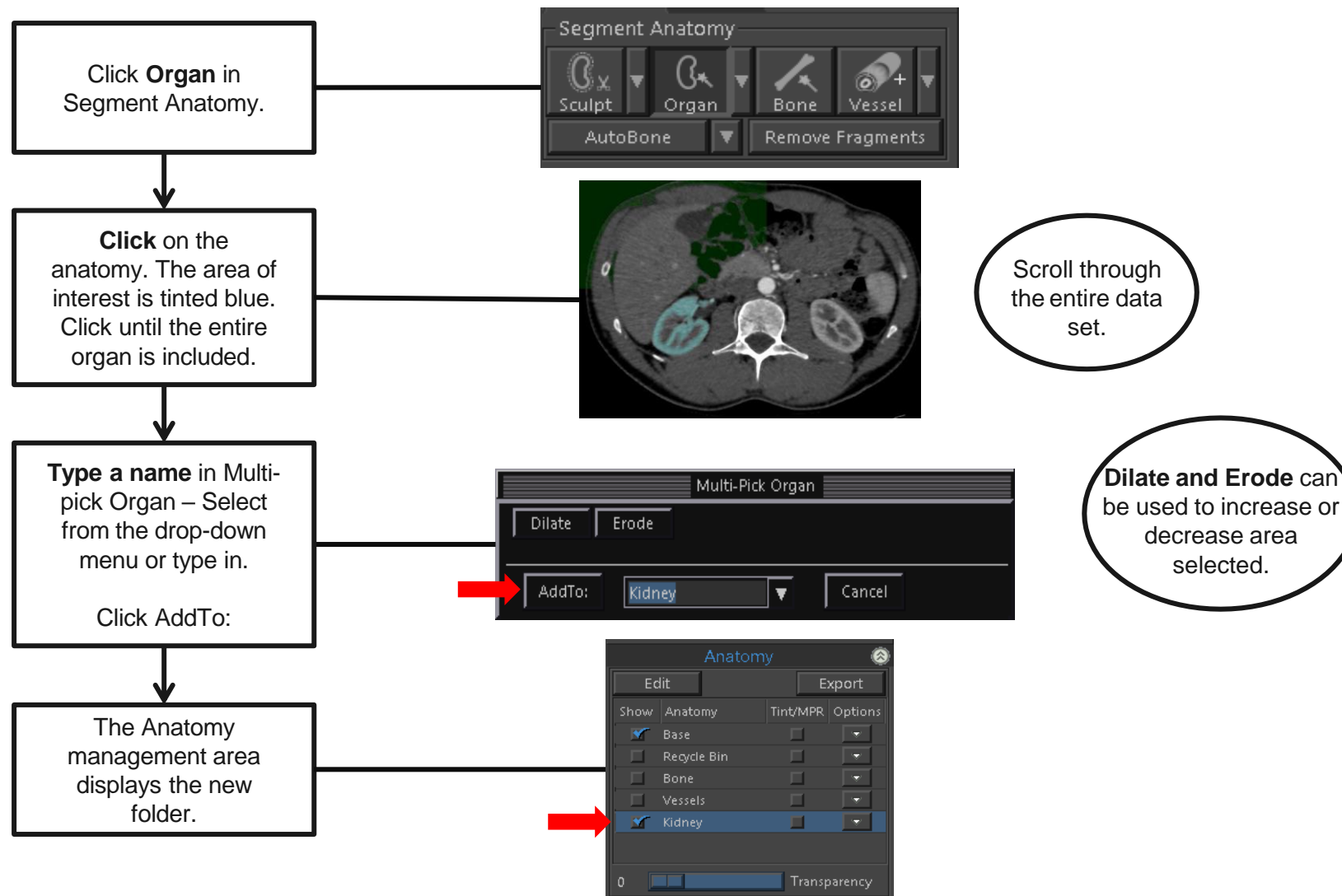- AP and lateral view
- Straight view with histogram
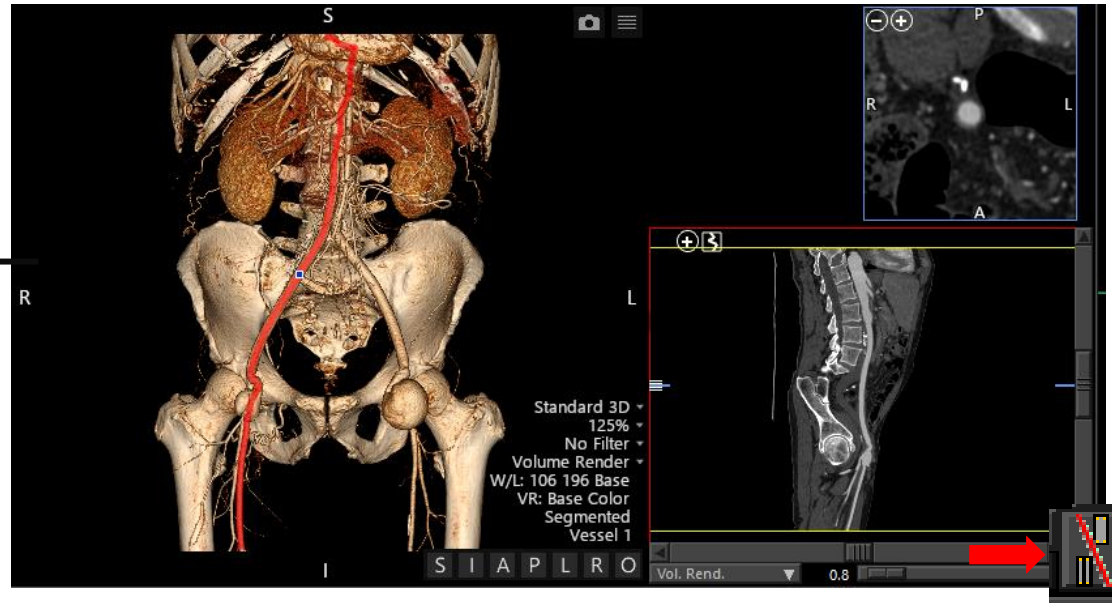
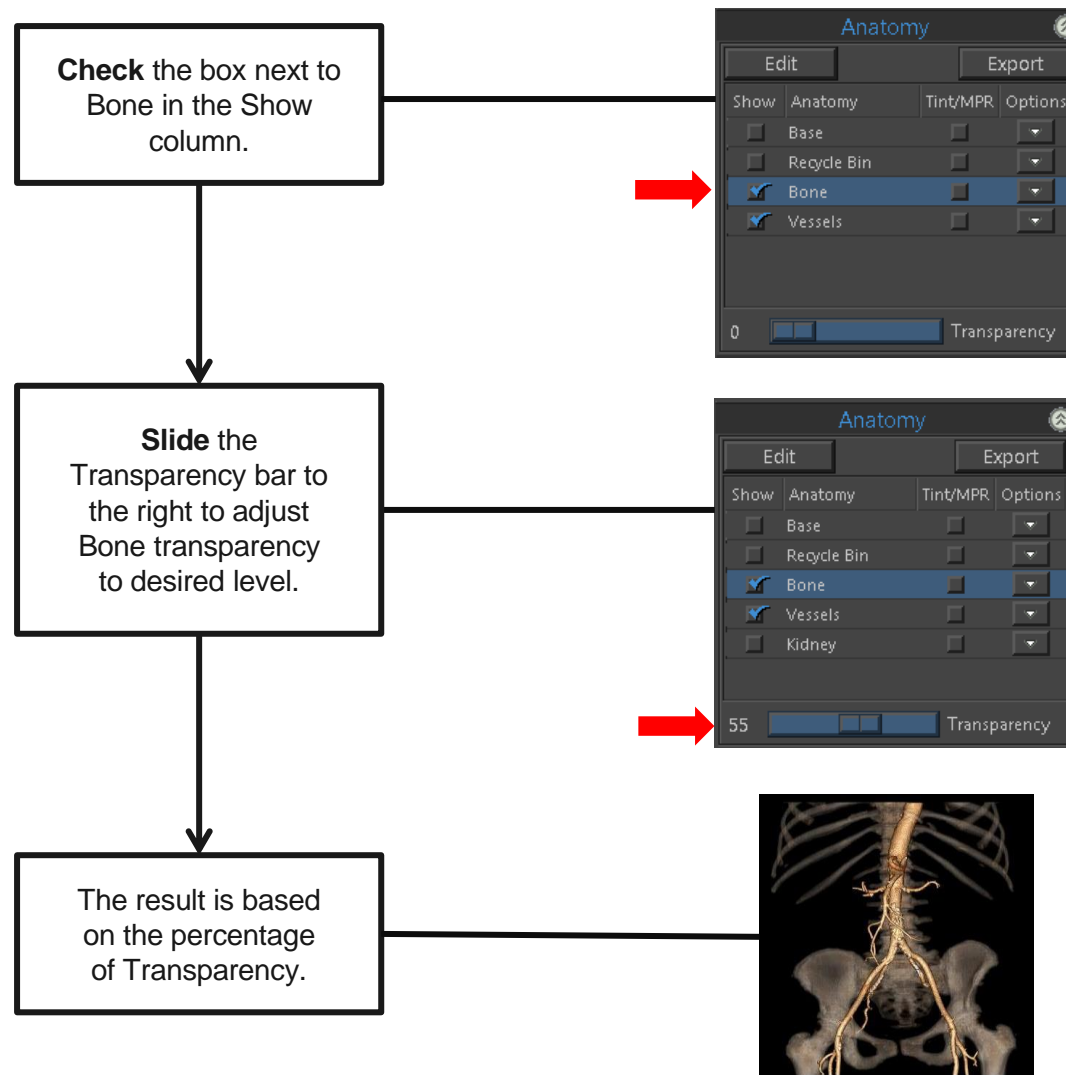In **histogram view** - Right mouse click to batch straight view.
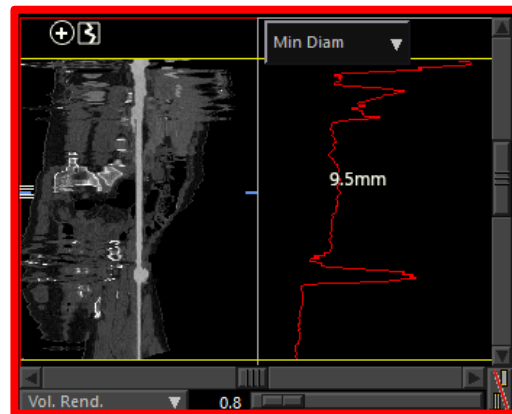
Tip: To batch curved CPR view, go to an MPR viewport and change orientation to curved reference. Right mouse click to batch on curved image.

Aorta CTA – Organ Tool

Click **Organ** in Segment Anatomy.

Segment Anatomy
Sculpt | Organ | Bone | Vessel
AutoBone | Remove Fragments

↓

Click on the anatomy. The area of interest is tinted blue. Click until the entire organ is included.

Scroll through the entire data set.

↓

Type a name in Multi-pick Organ – Select from the drop-down menu or type in.

Click AddTo:

Multi-Pick Organ
Dilate | Erode
AddTo: Kidney | Cancel

Dilate and Erode can be used to increase or decrease area selected.

↓

The Anatomy management area displays the new folder.

Anatomy
Edit | Export
Show | Anatomy | Tint/MPR | Options
Base
Recycle Bin
Bone
Vessels
Kidney
0 | Transparency

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Aorta CTA – Transparent Bone

Check the box next to Bone in the Show column.

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

The result is based on the percentage of Transparency.

Aorta CTA – 3D Batch Rotation

Select the **Batch Tab**.

Analysis | Batch

Scripted Batch

Select degree of rotation and the direction of the rotation.

Scripted Batch

MPR Scroll | Direction
Axial | S-I | I-S
Coronal | A-P | P-A
Sagittal | R-L | L-R

3D Rotation
90° (¼) rotation
180° (½) rotation
Full 360° rotation
Direction

Assign Series Description from dropdown or type in.

Series description
Aorta
Show cover image with label:

Batch | Movie

Show Patient Info
Force Secondary Capture
More Options

Click **Batch** for PACS.

Click **Movie** to create an AVI file.

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Aorta – Export

Return to **Study List**.

Click on the Results Tab.

Each Snapshot and Batch displays in the **Results Tab**. Click and hold CTRL to add additional series.

Right-click to Export to DICOM Destinations**.**

Aorta – Export

Export locations are listed in the Destination section. **Choose** desired destinations, click Export.

Summary:

Workflow for the Abdominal Aorta 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 vascular anatomy.
- **Vessel Probe** to display a CPR view of the vessel.
- **Organ** tool to add/remove 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.