



Applied Chest Imaging Laboratory

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BRIGHAM AND
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HARVARD
MEDICAL SCHOOL

AV Ratio

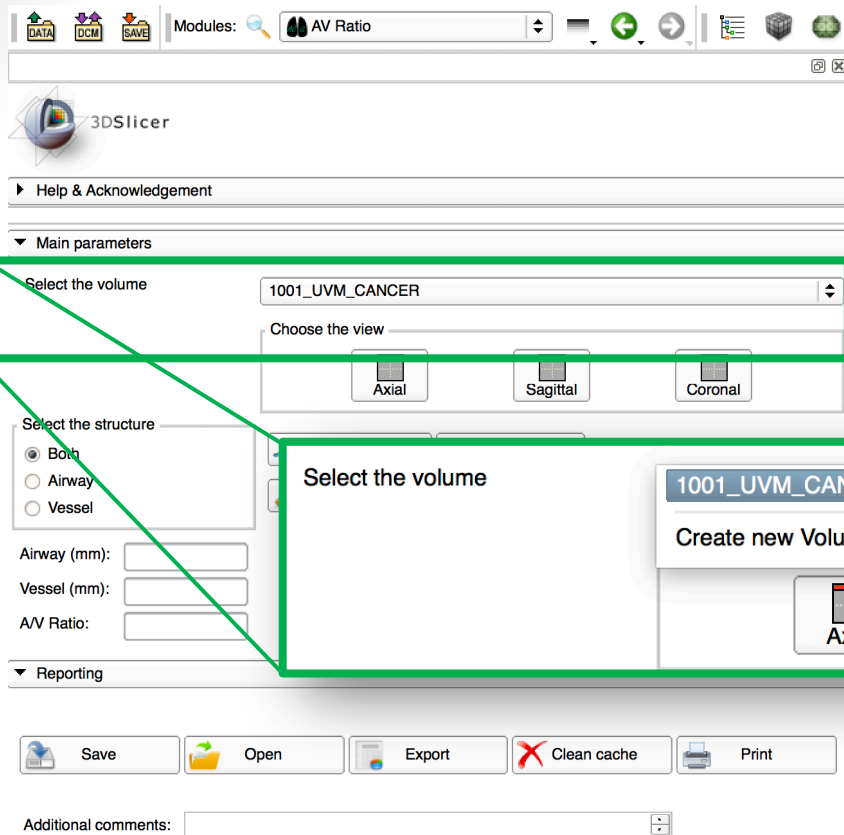
A Chest Imaging Platform Slicer Extension module

Overview

- Goal: Quickly measure the ratio between the airway and the vessel on the air cell in a semi-automatic basis.
- This ratio is a biomarker of Bronchiectasis prediction in COPD
- Export the results to a .CSV file, easy to manage for study.



AV Ratio



1- Select an input CT image

2- Choose the desired view

AV Ratio

3- Select the desired measurement.

Tip: If "both" selected, the system will place 2 rulers

4- Click "zoom in on region" and click on the desired region.

Tip: the selected projection will show the selected zoomed image. Zoom out to return to the full view.

The screenshot shows a software interface for measuring the AV Ratio. On the left, under 'Select the structure', the 'Both' radio button is selected. Below this are three input fields: 'Airway (mm):', 'Vessel (mm):', and 'A/V Ratio:'. In the center, there are three buttons: 'Zoom in on region' (with a magnifying glass icon), 'Zoom out' (with a magnifying glass icon and a minus sign), and 'Place ruler/s' (with a pencil icon). On the right, there is a button 'Remove ALL rulers' (with a red X icon). A blue arrow points from the 'Both' radio button to step 3. An orange arrow points from the 'Zoom in on region' button to step 4. A green arrow points from the 'Place ruler/s' button to step 5.

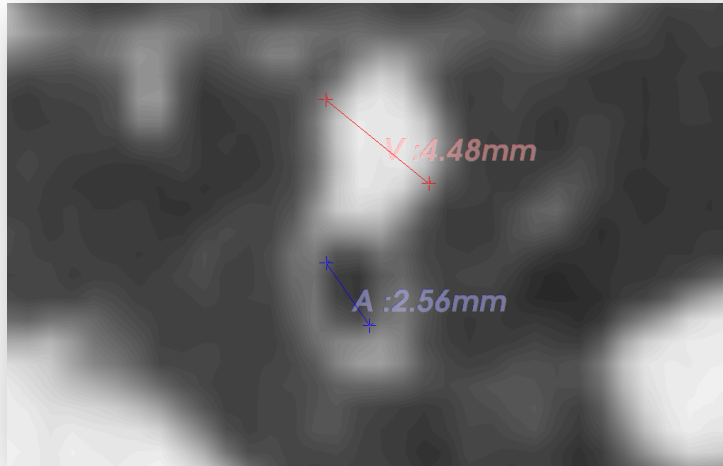
5- Click on "place ruler/s". A ruler will appear on the image.

Tip: Move with the mouse the ends of the ruler to measure the airway and the vessel.



AV Ratio

Expected results



Airway (mm): 2.56478008417

Vessel (mm): 4.47796336782

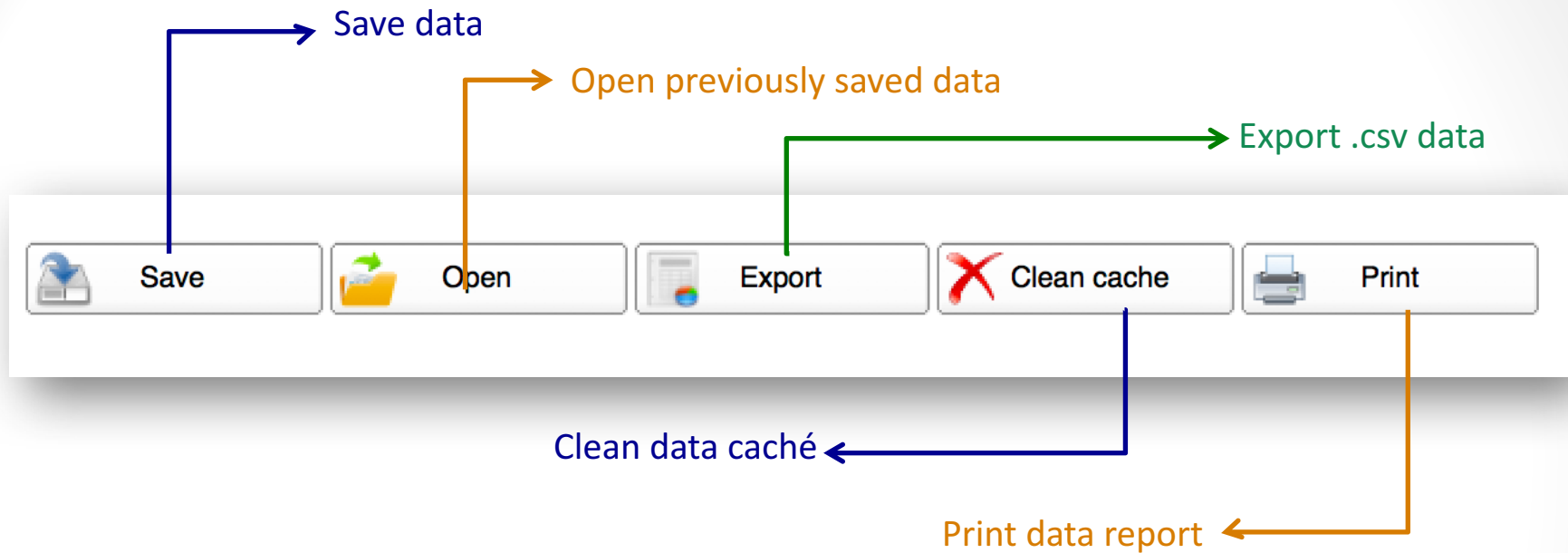
A/V Ratio: 0.572755932441

After placing the rules, measurements will appear on the table.

Tip: A/V Ratio > 1 is a Bronchiectasis indicator.



AV Ratio



AV Ratio

- The AV Ratio is part of the Chest Imaging Platform extension for 3D Slicer (www.chestimagingplatform.org)
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