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HARVARD MEDICAL SCHOOL

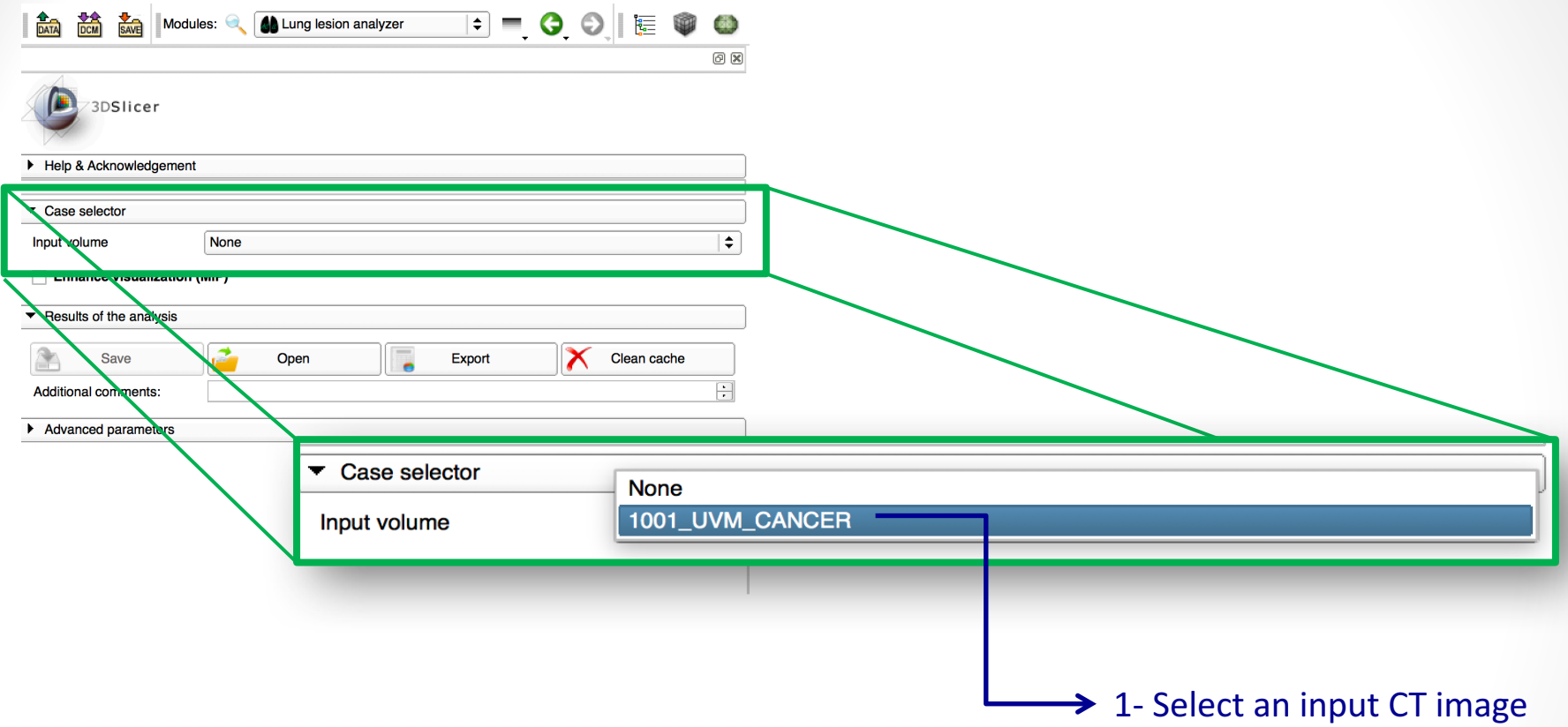
Lung Lesion Analyzer

A Chest Imaging Platform Slicer Extension module

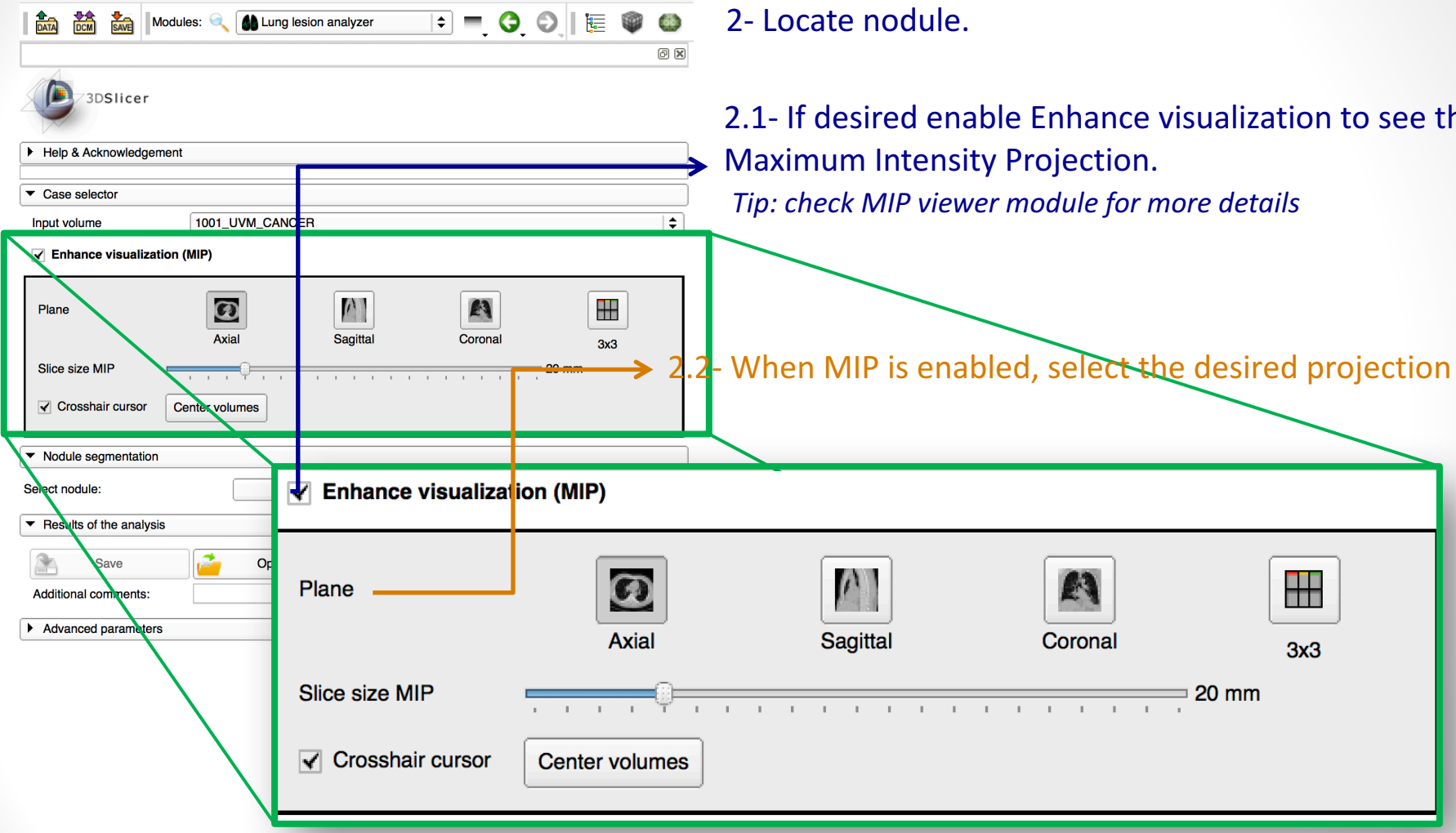
Overview

- Goal: localize, segment and analyze lung lesions and their surroundings
- Localize:
  - The module includes Maximum Intensity Projection tools in order to help to localize the lesions faster.
- Segment:
  - Starting from a landmark in the lesion, the module performs an automatic segmentation
- Analyze:
  - Choose between dozens of metrics not only in the lesion, but also in custom radius spheres surrounding it

Lung Lesion Analyzer



Lung Lesion Analyzer



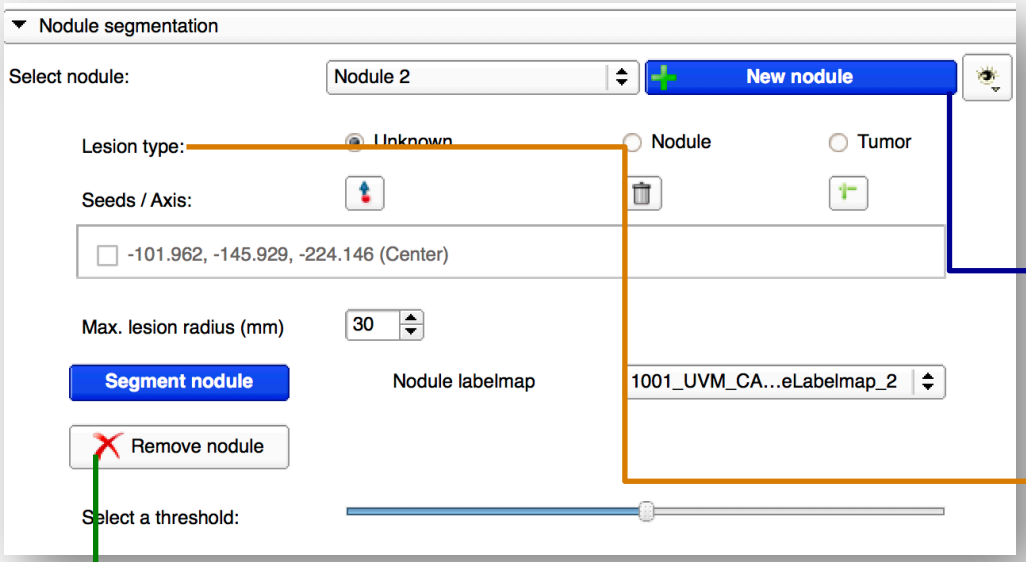
2- Locate nodule.

2.1- If desired enable Enhance visualization to see the Maximum Intensity Projection.

Tip: check MIP viewer module for more details

2.2- When MIP is enabled, select the desired projection

Lung Lesion Analyzer

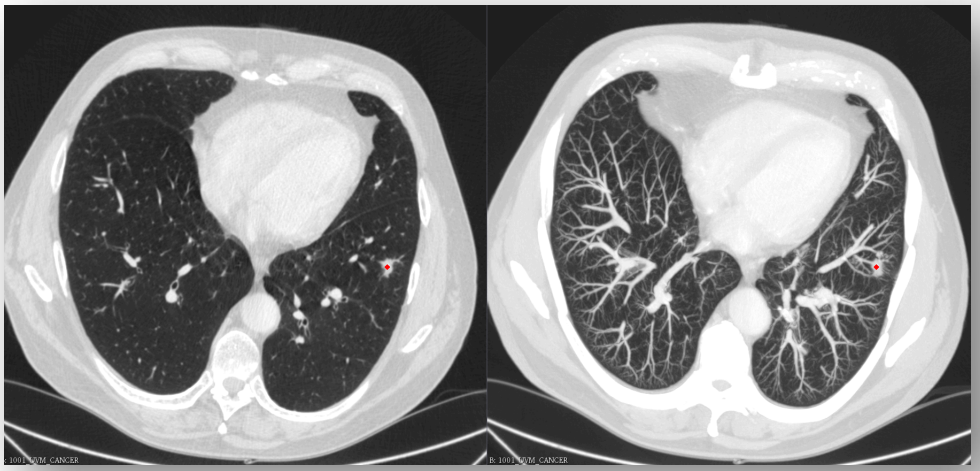


3- Place Seeds

3.1- Click on ”New nodule” and click on a point that is clearly inside the lesion to add a new detected nodule.
Tip: localize the nodule on the MIP view but add it in the regular window. (view picture)

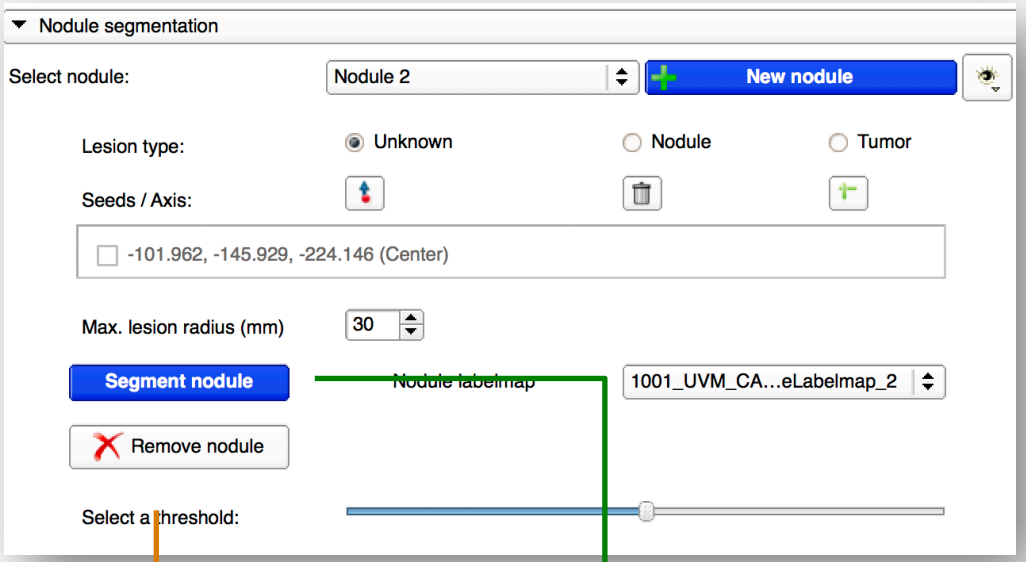
3.2- If known, select the lesion type. (Nodule/Tumor).

3.3- If needed, click remove nodule and place a new one.



Slicer Chest Imaging Platform – Module Name

Lung Lesion Analyzer



4- Segment Nodule

4.1- Click segment nodule to start the segmentation

4.2- If desired, after the segmentation process is complete, move the bar to fine tune the segmentation

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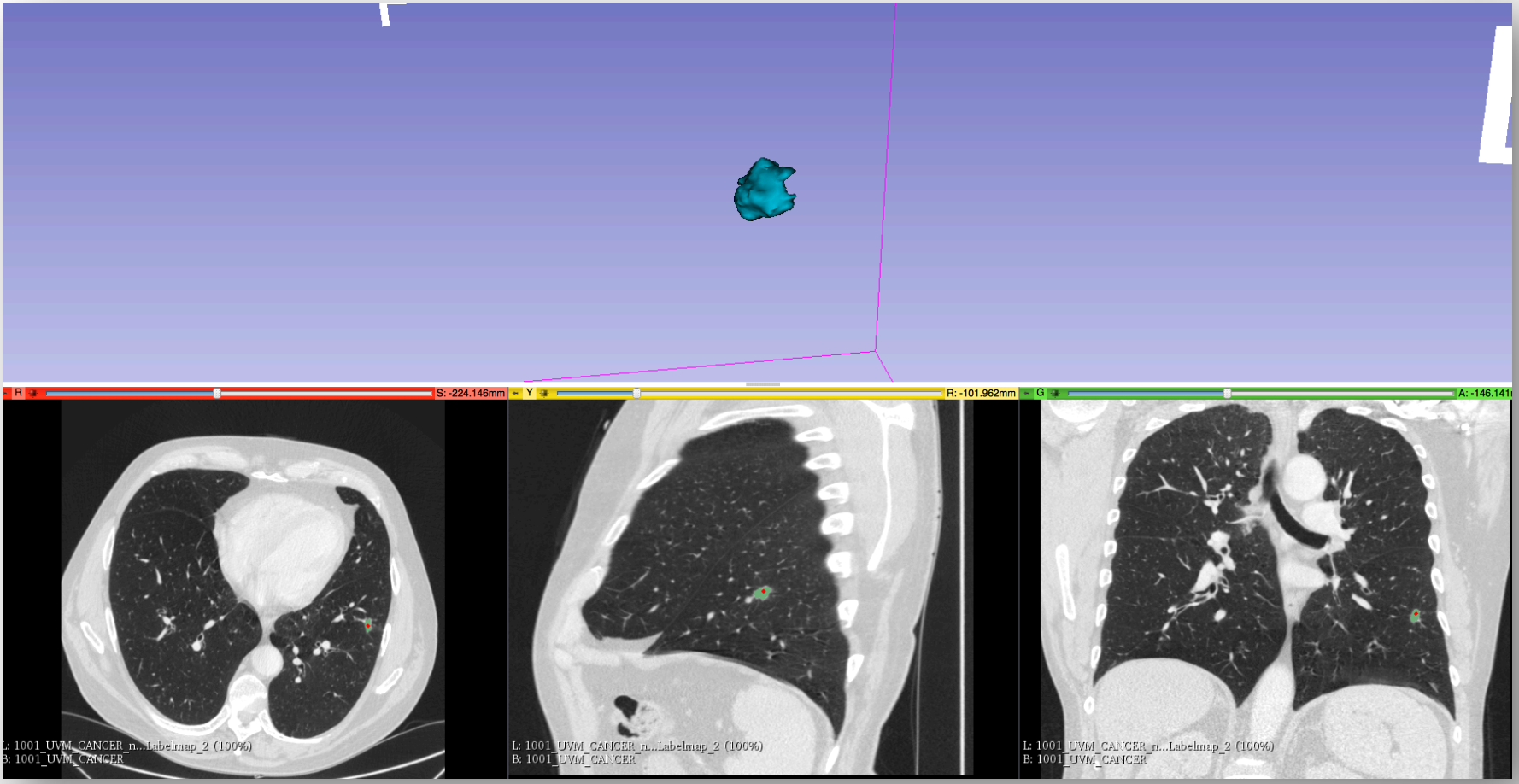
Expected results.



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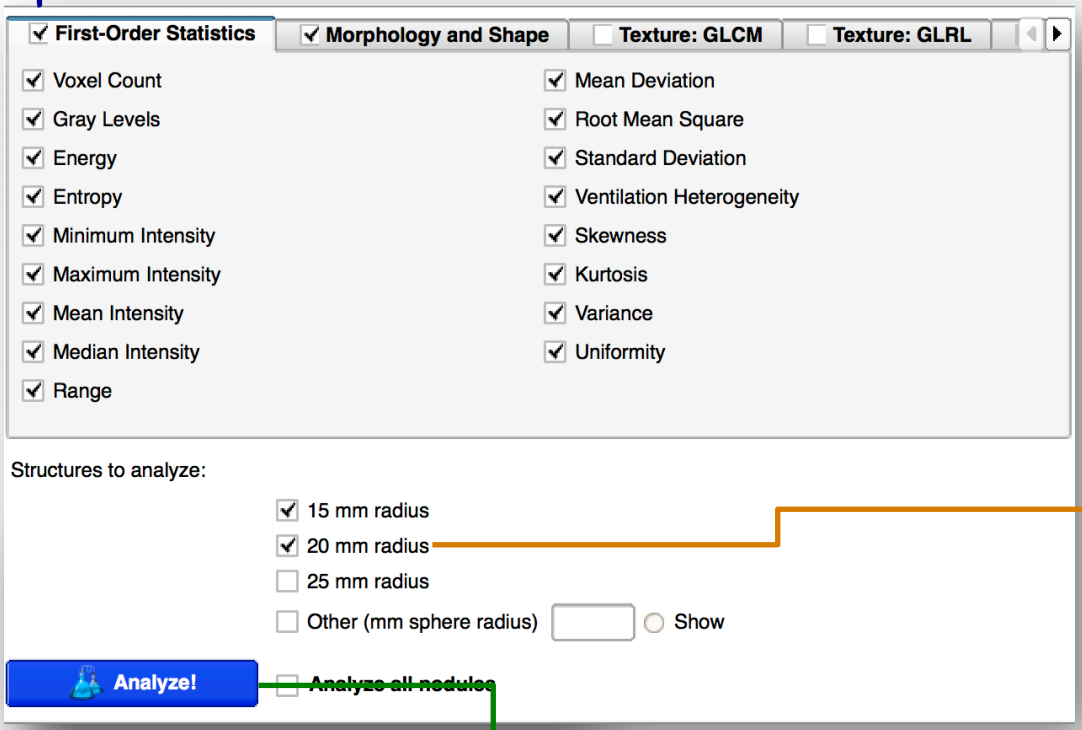
5- Run analysis

5.1- Select all the desired parameters for the selected nodule.

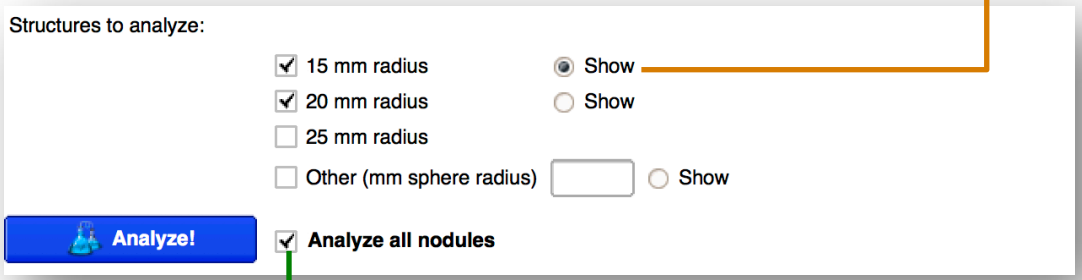


5.2- Select all the desired radius of the sphere around the nodule to analyze.

5.3- Click on "Analyze" to run the analysis.

Tip: the result will show the parameters of the selected nodule.

Lung Lesion Analyzer



5.4- Click on Show to highlight a sphere

Expected results.

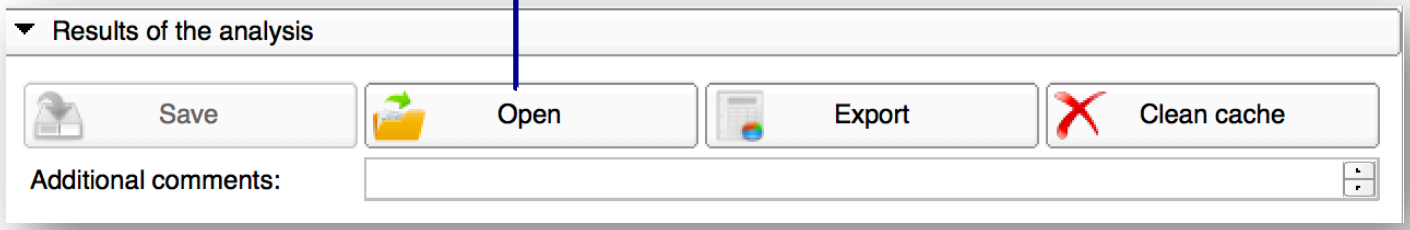
5.5- To obtain the parameters for all the placed nodules, enable analyze all nodules and start analysis.

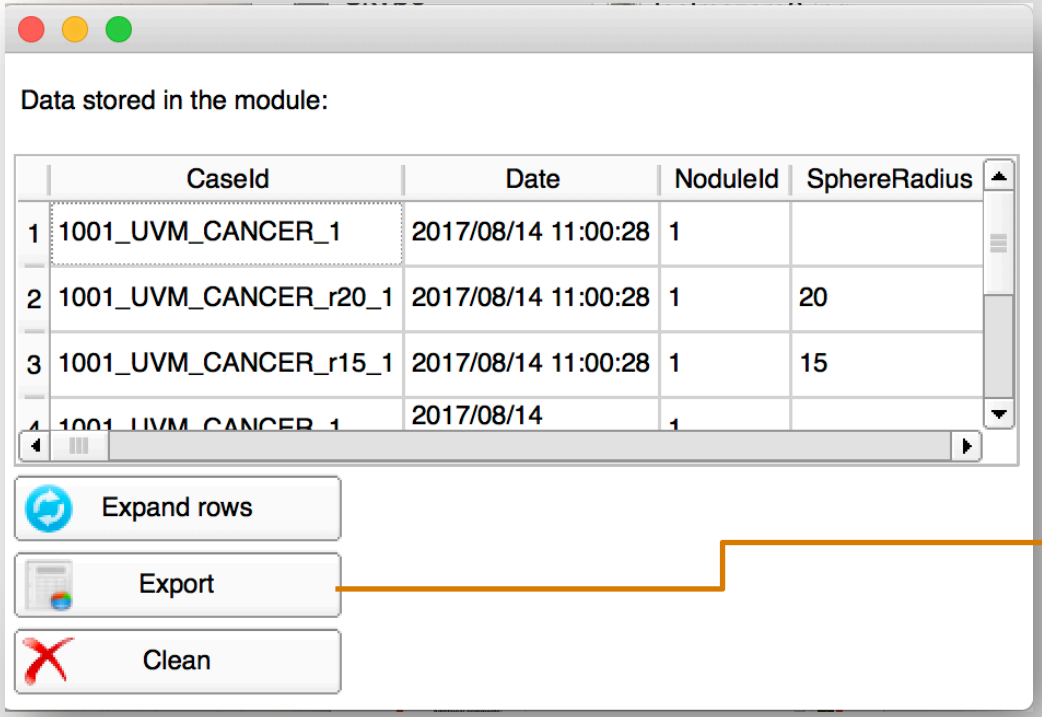
Lung Lesion Analyzer

6- Export data.

6.1- Click ”Open” to view a table with the results

Tip: Export data if desired.





6.2- Export data file.

Tip: Save the file with .csv extension.

Lung Lesion Analyzer

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

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