To Perform Dosimetry using Sequential SPECT/CT Images:[[1]](#endnote-1)

**1) Co-register Images**

-BIGDOSE will use built-in registration parameters to batch run Elastix.

**2) Segmentation**

-Integrate **ITK-SNAP**, a free, open-source, multi-platform software application used to segment structures in 3D and 4D biomedical images.

-Manual segmentation and fusion display.

-Deep learning-based tumor and organ segmentation is under development.

**3) Curve-fitting**

-**Voxel-Based Curve Fitting:**

* Perform curve fitting at the voxel level to analyze the distribution of radioactivity within specific voxels over time.
* The running speed is slow.

-**Organ-Based Curve Fitting:**

* Implement curve fitting techniques to assess radioactivity distribution across delineated organs based on segmented images.

**4) Dose conversion**

-Voxel-S-value generated by **GATE**, an advanced opensource software developed by the international OpenGATE collaboration and dedicated to numerical simulations in medical imaging and radiotherapy. GATE is based on the Geant4 toolkit.

Process Kinetics Tab: Runs the processing routine

-Output: \*.mhd image with disintigrations per voxel (Bq\*Hrs/mL)

The personalized 3D Targeted Radionuclide Therapy Dosimetry ("BIGDOSE ") has been developed with the support of the XXX.

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For questions, feedback, or to collaborate on development email [GretaMok](mailto:Gretamok@um.edu.mo)

**Disclaimer:**

BIGDOSE is intended for educational, research and informational purposes only and may be used only for such purposes and may not under any circumstances whatsoever be used for clinical or diagnostic purposes (ie for treatment planning, risk assessment).

1. [↑](#endnote-ref-1)