

3D Analysis

Scan data are viewed in the evaluation program in XY, XZ, YZ and 3D MPR (Multi-Planar Reformatting) representations. Material density can be viewed in several units including mg HA/ccm or Hounsfield, and density profiles can be inspected interactively. In addition, distances between features can be measured in both 2D and 3D.

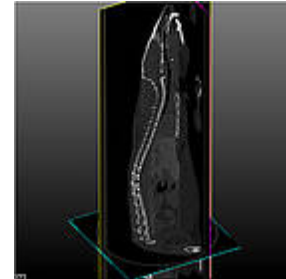
Regions- and volumes-of-interest (ROI or VOI) are easily and flexibly defined by drawing contours in slices, with morphing interpolating contours between slices semi-automatically. In addition, for definition of ROI/VOI around trabecular regions in bone samples, an automated procedure is available.

Evaluation of 3D scan data is handled by IPL (Image Processing Language), an advanced script-based 3D-volume analysis tool. Standard [evaluation scripts](#) are provided for a range of analyses including quantitative evaluation of trabecular and cortical bone. Evaluations are performed non-interactively in batch mode to streamline workflow during analysis of large data sets.

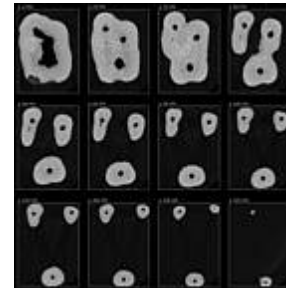
Customized analysis protocols can be designed interactively using IPL's command line interface. After verification of results, these protocols can be scripted for efficient reuse.

Feature summary:

- › XY, XZ, YZ and 3D MPR viewing axes
- › Distance measurements (2D/3D)
- › 2D density profile
- › Image processing functions: -
 - › segmentation and filtering
 - › separation or combination of object -histograms
 - › regular or irregular volume of interests (ROI/VOI)
 - › automatic contouring and 3D morphing (VOI)
- › [2D and 3D histomorphometry](#)
- › moment of inertia
- › distance transformation
- › component labeling
- › erosion-dilation
- › volume registration
- › Density measurements (2D/3D)
 - › in user-defined regions ranging from a single voxel up to a complete volume
 - › several units are available including Hounsfield and mg HA/ccm (HA Calibration Phantom is included with systems)

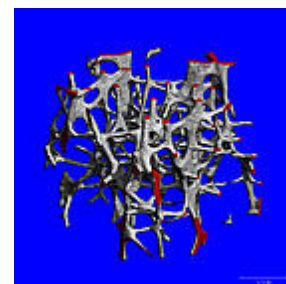


MPR view of scan

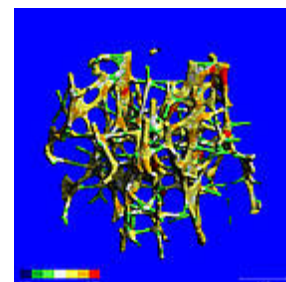


Overview Slices of
Tooth

3D analysis steps for trabecular bone



Segmented bone



Trabecular
thickness



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