

## CT SCANNING GUIDELINES for BIOMODELS

AART, Inc. uses advanced computer techniques to create three-dimensional polymer Biomodels which physically replicate the anatomy captured on a CT or MRI scan. AART Biomodels are powerful tools for surgical planning and custom prosthesis fabrication. The accuracy of the biomodel depends upon the quality of the scan data. AART Biomodels require high spatial resolution and eliminating patient motion during the scan. Following these guidelines is crucial to ensure that your CT or MRI data will be usable for fabricating the AART Biomodel of your patient.

1. **Settings:** Provide both soft tissue (standard) and bone algorithm scanning parameters for AART Biomodels of hard tissues. Minimize artifacts in the region of interest. If you are ordering a AART Biomodel of soft tissues, the radiologist should contact us well in advance.
2. **Patient Immobilization:** Any movement of the patient during the scan will distort the biomodel. If possible, the patient should be immobilized during the scan. Do not use gantry tilt. Following immobilization, slices should be acquired rapidly and sequentially. The integrity of the total scan is more important than any individual slice. Patient motion will necessitate repeating the scan.
3. **Scanning Field of View (SFOV):** must contain the entire region of interest with at least a 5mm margin. However, the SFOV should not be more than 10mm larger than the region of interest; in order to achieve the highest spatial resolution possible. Caution do not confuse SFOV with DFOV (Display Field of View).
4. **Spatial Resolution:** Scan slices should be as small as the radiologist feels is safe. Acquisition of 0.5mm/0.5mm on the newest generation of MDCT is encouraged if available. If the radiologist feels that the slice thickness and spacing should be greater than 1mm x 1mm, please notify us prior to scanning, as this will affect the accuracy of the biomodel and may not meet the end use requirements.
5. **Media Format:** Uncompressed DICOM scan data must be sent on CD disk. Label the media clearly with the patient name, scan date, physician name and telephone, make and model of the CT or MRI machine, scan parameters and any other pertinent information. If possible please provide a brief medical report.

The staff of AART Inc. thanks you for your attention to these guidelines. Please feel free to contact them at:

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