

## AceOS CT & MRI Scan Protocol

Thank you for taking the time to read this protocol. The quality of the CT scan is the most important aspect of creating patient specific anatomical models; supplemental MRI scans are also essential for the correct visualisation of tumours in oncology cases. Your observation of the recommendations made in this protocol will have a significant impact on the accuracy of the final model. Please do not hesitate to contact Ossid on (+64) 3 365 7369 with any questions or prior to using this protocol for the first time.

### SCAN REQUIREMENTS:

<b>Scanner type:</b>	<b>Any conventional brand of CT or MRI machine can be used, as appropriate.</b>
<b>Anatomy to be scanned:</b>	The complete pelvis needs to be scanned, being from <u>just above the most superior point of the ilium</u> down to <u>just below the most inferior point of the ischium</u>
<b>Radiological Marker (oncology only)</b>	In oncology cases, a radiological skin marker or similar should be placed over the patient's Anterior Superior Iliac Spine (preferably both spines) or Pubic Symphysis. Ensure the placement is the same for both the CT and MRI scan. This marker will be used later to align both scans.
<b>Patient position and posture</b>	<ul style="list-style-type: none"> <li>- Patient supine, both legs mutually aligned to simulate positioning when standing.</li> <li>- No un-natural tilt or lift of the pelvis</li> <li>- Arms folded upward away from the pelvis.</li> </ul>
<b>Resolution, slice thickness, and slice spacing:</b>	<p>Choose and maintain a fixed value between 0.625 and 1.25mm for both in-plane pixel resolution and slice thickness. Slice spacing should be the same or slightly less than slice thickness (err on the side of overlap).</p> <ul style="list-style-type: none"> <li>- <i>All slices must be contiguous or overlapping. If slice spacing is limited, slice thickness may be increased to ensure contiguous or overlapping slices.</i></li> <li>- <i>The smaller the value, the better for creating accurate patient specific anatomical models.</i></li> <li>- <i>If using a single slice scanner, please do not reconstruct images to slices that are thinner than the original acquisition. This simply interpolates between slices and does not improve the resolution of the exam.</i></li> <li>- <i>Guideline: aim for obtaining cubic voxels in the resulting image data set (e.g. 0.625 mm x 0.625 mm x 0.625 mm)</i></li> </ul>
<b>Field of view (FOV):</b>	Magnify or zoom the image so it fills the entire screen without cutting off any of the anatomy for imaging. Include the entire pelvic girdle and the radiological marker, if present.
<b>Table Position:</b>	<ul style="list-style-type: none"> <li>- <i>Keep one stable table position during scanning.</i></li> <li>- <i>Gantry tilt 0°</i></li> </ul> <p><b>IMPORTANT: Do not change FOV, table position, or X and Y centering between slices during scanning</b></p>
<b>Reconstruction algorithms:</b>	<p>CT: A STANDARD or SOFT TISSUE algorithm, without edge or bone enhancement should be used.</p> <p>MRI: A T1, T1 FS, or PD sequence should be used.</p>
<b>File format:</b>	The image data must be provided in standard axial DICOM format. The additional provision of a directory file is helpful to expedite image processing by Ossid.
<b>Transfer scan data to OSSIS:</b>	<p>NZ: Patient scan data can be transferred from your PACS system to CDHB PACS system. After transferring scan data, please notify Ossid.</p> <p>AU: Patient scan data can be securely transferred from your PACS system to DICOM Grid using the Ossid share code: <a href="http://ossis.dicomgrid.com/share/ossis">http://ossis.dicomgrid.com/share/ossis</a>. For upload instructions, see Ossid's website: <a href="http://www.ossis.com/resources">www.ossis.com/resources</a></p>

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