

ACETABULAR IMPLANT – CT SCAN PROTOCOL

Overview

The patient-specific acetabular implants are designed using the **CT scan** of the patient. Good quality scan data is, therefore, critical to the process of designing an accurate prosthesis and surgical guides.

Please review the following information before proceeding with the CT scanning process. Feel free to contact us if you have any queries about the scanning process or data transfer.

Protocol

Procedure

Remove any non-fixed metal prosthesis or jewelry that might interfere with the scan region.

Instruct the patient to remain still until the scan is complete. Any movement will render the scan unusable.

The patient must lie in a supine position, with legs extended. The legs should be in a natural alignment with neutral rotation. Ensure there is no unnatural tilt or lift of the pelvis.

Ensure that the scan is performed within the scan area and according to the scan parameters as indicated below.

Only axial image data is required. Please provide the scan with constant slice intervals between 1mm – 1.5mm slice thickness. **Do not reconstruct** the axial slice data into a different (thicker) slice interval.

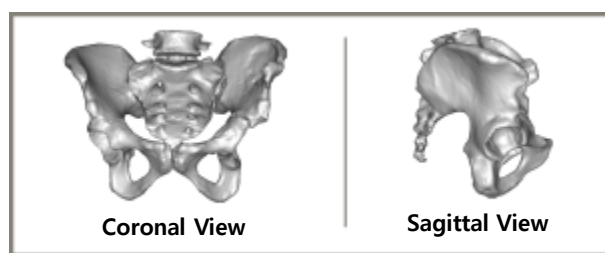
Send the images in **uncompressed standard raw DICOM** format to Craniotech, either digitally or on a CD.

If possible, retain the raw CT data until the scan has been reviewed by Craniotech.

Scan Area

Scan area should include all of the affected anatomical regions. Ensure that the outer limits adhere to the specifications listed below and shown in the image:

- Upper limit – 1cm above most superior point of the ilium
- Lower limit – 1cm below most inferior point of the ischium.
- Field of View (FOV) must include both sides of the pelvis



Scan Parameters

Scan Area	<ul style="list-style-type: none"> • 1cm above most superior point of ilium to 1cm below most inferior point of ischium • Include entire pelvis • Include both sides of pelvis
FOV	Adjust to best fit patient anatomy
Pitch	1:1
Slice Thickness	1mm – 1.5mm
Gantry Tilt Angle	0°
Matrix	512 x 512
Algorithm	Bone Kernel (\pm B65s) or High Resolution

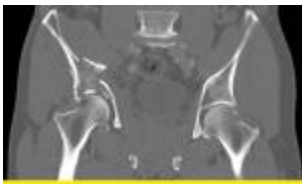
Scan Results

Satisfactory scans have clear, crisp boundaries and bone features. Boundaries between bone and surrounding soft tissue can clearly be observed in these images.

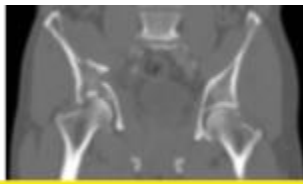
Unsatisfactory scans are blurry and have poor contrast between bone and surrounding tissue. Such images are difficult to segment and run the risk of being unusable.

Refer to the image below.

Satisfactory Scan



Unsatisfactory Scan



POPI

CranioTech respects the POPI Act. Great care is taken to protect all patient information shared with CranioTech.

Ensure that the **patient provides written permission** that allows CranioTech to obtain the patient scan data, as well as use it for the development of patient-specific solutions.