

Scan Recommendations - Anatomical Mapping

How to Scan MR and CT Data for Anatomical Mapping

Cranial Region	
General MR Imaging Requirements	<ul style="list-style-type: none"> • High tissue contrast resolution • High signal-to-noise ratio • Always use 3D distortion correction if available
MR Scan Instructions	<p>To achieve the best segmentation results in the cranial region, it is recommended to provide at least a T1 and a T2 or FLAIR sequence based scan with the following parameters:</p> <p>MR T1 Complete Head (e.g., MPRAGE):</p> <ul style="list-style-type: none"> • ≤ 1 mm slice resolution • ≤ 1 mm slice thickness • > 100 slices of the complete head <p>MR T2 and/or FLAIR:</p> <ul style="list-style-type: none"> • ≤ 2 mm slice resolution • The region of interest must be covered
Additional MR Scan Instructions for specific organ structures	<p>To achieve the best segmentation results, it is recommended to provide the following:</p> <p>Basal ganglia organ segmentation:</p> <ul style="list-style-type: none"> • MR T2 and/or FLAIR sequences • ≤ 1 mm slice resolution • ≤ 1 mm slice thickness • Additional sequences, such as susceptibility weighted imaging (SWI) and/or proton density (PD) <p>Vessel segmentation:</p> <ul style="list-style-type: none"> • 3D MR TOF images or • CT with contrast
Extracranial Region	
CT Scan Instructions	<ul style="list-style-type: none"> • ≤ 1 mm in-plane resolution without artifacts (e.g., pins) • ≤ 2.5 mm slice thickness • > 20 slices • High signal-to-noise ratio • Field of view should completely cover the region of interest and surrounding organs • CT data must be calibrated
Anonymization of Patient Data	
Anonymization Instructions	<p><i>Note: If DICOM data is anonymized, ensure that the scanning properties are maintained in the DICOM headers as these are utilized for image analysis.</i></p> <ul style="list-style-type: none"> • Gender information is used to recognize gender-specific structures (e.g., breast). • If possible, select a lower level of anonymization.

For additional information contact Brainlab support.

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