

Robustness of 3D hippocampal shape reconstruction across 3T and 7T MRI depends on
reconstruction pipeline

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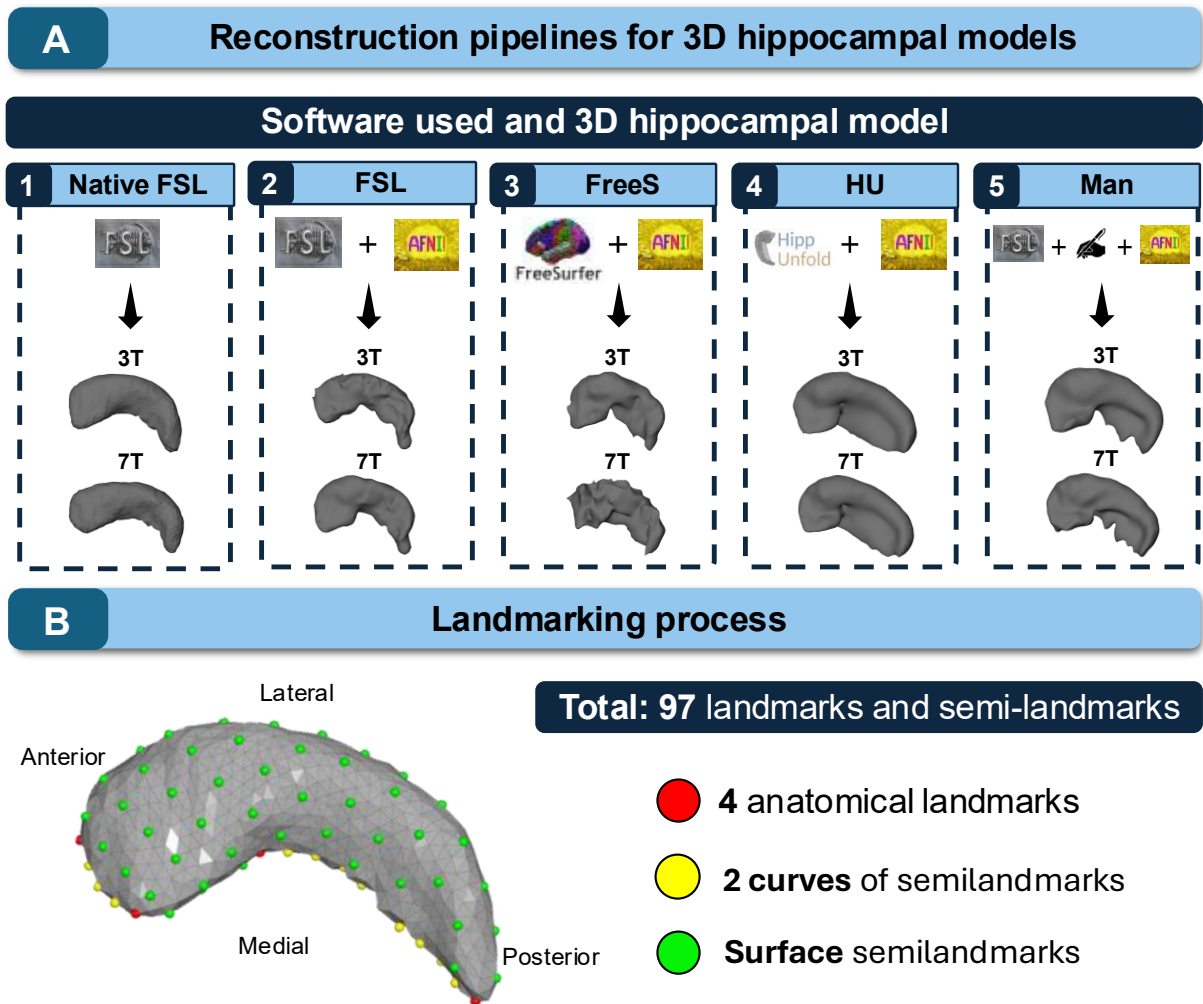


Fig. S1 Overview of hippocampal reconstruction pipelines and landmarking procedure. A) Representative three-dimensional hippocampal surfaces obtained at 3T and 7T. The leftmost column shows the native surface mesh generated directly from the FSL FIRST output before AFNI post-processing and is included for illustrative purposes only. The four reconstruction pipelines analyzed in this study consisted of FSL, FreeS, HU, and Man segmentations, all processed using the same AFNI-based surface generation and smoothing workflow. **B)** Distribution of 97

landmarks used for geometric morphometric analysis, including 4 anatomical landmarks, 10 curve semilandmarks distributed along two anatomical curves (6 along the medial curve and 4 along the anterior curve), and 83 surface semilandmarks covering the hippocampal surface.

Table S1 Comparison of right hippocampal volumes between 3T and 7T MRI across reconstruction pipelines.

Reconstruction pipeline	3T (mm ³)	7T (mm ³)	<i>P</i> value
FSL	4024.1 ± 396.6	4196.9 ± 311.6	0.298
FreeS	4585.1 ± 367.2	3947.3 ± 344.9	0.005*
HU	3646.2 ± 271.4	3360.2 ± 265.7	<0.001*
Man	4074.6 ± 361.4	3898.9 ± 237.2	0.185

Note: Values are presented as mean ± SD (mm³). *P* values were obtained using paired *t*-tests comparing 3T and 7T volumes within each reconstruction pipeline. **Abbreviations:** FSL, FMRIB's Integrated Registration and Segmentation Tool; FreeS, FreeSurfer; HU, HippUnfold; Man, manual segmentation; SD, standard deviation. *Statistically significant difference at *P* < 0.05.