

Bartzokis G, Altshuler LL, Greider T, Curran J, Keen B, Dixon WJ. *Reliability of medial temporal lobe volume measurements using reformatted 3D images.* Psychiatry Res. 1998; 82:11-24

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
subiculum		enthorinal cortex and parahippocampal gyrus, fimbria and alveus	level at which the alveus appears and distinguishes the amygdala from hippocampus. If alveus is not visible temporal horn of the lateral ventricle (Bartzokis 1993)	first slice where the inferior and superior colliculi are jointly visualized (anterior to posterior)
BOUNDARIES				
	Lateral border	Inferior border	Medial border	Superior border
HEAD	adjacent WM of temporal stem	white matter of the parahippocampal gyrus	the subiculum has to be cut off from the cortex of the parahippocampal gyrus through a horizontal line	temporal horn of the lateral ventricle/alveus
BODY	adjacent WM of temporal stem	white matter of the parahippocampal gyrus	the subiculum has to be cut off from the cortex of the parahippocampal gyrus through a horizontal line	temporal horn of the lateral ventricle/fimbria
TAIL	crus of fornix	white matter of the parahippocampal gyrus	the subiculum has to be cut off from the cortex of the parahippocampal gyrus through a horizontal line	atrium of lateral ventricle/alveus

Plane of tracing: axis of the left hippocampus

Tracing start from the head of hippocampus to the hippocampal tail

**Convit A, De Leon MJ, Tarshish C, De Santi S, Tsui W, Rusinek H, George A.
Specific hippocampal volume reductions in individuals at risk for Alzheimer's disease.
 Neurobiol Aging. 1997; 18:131-8**

Survey table

Areas explicitly included	Areas explicitly excluded	Most anterior slice	Most posterior slice	
Portion of subiculum directly underneath the hippocampus, alveus and fimbria	Portion of subiculum not underneath the hippocampus	Level at which the head of hippocampus first appears below the amygdala as a transversely oriented oval structure	Level where the crus of fornix was visible in full profile	
BOUNDARIES				
	Lateral border	Inferior border	Medial border	Superior border
HEAD	temporal horn of lateral ventricle	White matter of parahippocampal gyrus	Vertical line drawn from the CA of hippocampus to the white matter of parahippocampal gyrus	Alveus/orizontal line connecting the middle of the medial border of the lateral ventricle to the surface of the uncus
BODY	temporal horn of lateral ventricle	White matter of parahippocampal gyrus	Vertical line drawn from the CA of hippocampus to the white matter of parahippocampal gyrus	not mentioned
TAIL	temporal horn of lateral ventricle	White matter of parahippocampal gyrus	Vertical line drawn from the CA of hippocampus to the white matter of parahippocampal gyrus	not mentioned

Plane of tracing: axis of the hippocampus

Tracing start from the head of hippocampus to the hippocampal tail

deToledo-Morrell L, Stoub TR, Bulgakova M et al. *MRI-derived entorhinal volume is a good predictor of conversion from MCI to AD. Neurobiol of aging 2004; 25:1197-203.*

Survey table

Areas explicitly included		Areas explicitly excluded		Most anterior slice	Most posterior slice
fimbria, alveus, dentate gyrus, hippocampus proper and subiculum		fornix, amygdala, entorhinal cortex, posterior cerebral artery, head of the caudate		w here the hippocampus could be clearly differentiated from the amygdala by the alveus	slice before the full appearance of the fornix
BOUNDARIES					
	Medial border	Lateral border	Inferior border	Superior border	
HEAD	transverse fissure, crural cistern	temporal horn of the lateral ventricle, w hite matter of the temporal stem	w hite matter of the parahippocampal gyrus, entorhinal cortex (horizontal line from parahippocampal w hite matter to CSF of the cistern)	amygdala, temporal horn of the lateral ventricle	
BODY	transverse fissure, crural cistern	temporal horn of the lateral ventricle, w hite matter of the temporal stem	w hite matter of the parahippocampal gyrus, entorhinal cortex (horizontal line from parahippocampal w hite matter to CSF of the cistern)	head of the caudate, temporal horn of the lateral ventricle/choroid plexus, transverse fissure	
TAIL	transverse fissure, ambient cistern	temporal horn of the lateral ventricle, w hite matter of the temporal stem	w hite matter of the parahippocampal gyrus, parahippocampal gyrus gray matter (horizontal line from parahippocampal w hite matter to CSF of the cistern)	temporal horn of the lateral ventricle/choroid plexus, transverse fissure, crus of fornix	

Plane of tracing: axis of the hippocampus

Tracing start from the head of hippocampus to the hippocampal tail

Haller JW, Banerjee A, Christensen GE, Gado M, Joshi S, Miller MI, Sheline Y, Vannier MW, Csernansky JG. *Three-dimensional hippocampal MR morphometry with high-dimensional transformation of a neuroanatomic atlas.* Radiology. 1997; 202:504-10.

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
Cornu Ammonis, subiculum, vertical digitation		alveus and fimbria	the separation of amygdala and hippocampal head was facilitated by sagittal and transverse views	coronal section in which the hippocampus first appeared adjacent to the trigone of lateral ventricle
BOUDARIES				
	Medial border	Lateral border	Inferior border	Superior border
HEAD	Gyrus ambiens	identified by the contrast of the WM or CSF	WM of parahippocampal gyrus (PHG)	identified by the contrast of the WM or CSF
BODY	The medial border of the HC was continued with a straight horizontal line (marking the inferior border of CA and subiculum) across the cortex of the PHG. The cortex below this line was considered the PHG, and the cortex above this line was included as a part of the HC	identified by the contrast of the WM or CSF	WM of parahippocampal gyrus	identified by the contrast of the WM or CSF
TAIL	The medial border of the HC was continued with a straight horizontal line (marking the inferior border of CA and subiculum) across the cortex of the PHG. The cortex below this line was considered the PHG, and the cortex above this line was included as a part of the HC	identified by the contrast of the WM or CSF	WM of parahippocampal gyrus	identified by the contrast of the WM or CSF, and Thalamus and caudate nucleus

Plane of tracing: AC- PC line

Tracing start from the tail of hippocampus to the hippocampal head

Survey table

Areas explicitly included		Areas explicitly excluded	Most posterior slice	Most anterior slice
CA1 through CA4 sectors of the hippocampus proper, dentate gyrus, subiculum, ucal apex (intralimbic gyrus), fimbria, and alveus.		choroid plexus , parahippocampal gyrus	Where the crura of the fornices on both sides are seen in full profile	full anterior extent of hippocampal head
BORDERS				
	Medial border	Lateral border	Inferior border	Superior border
HEAD	CSF in the uncal and ambient cistern	Temporal horn of lateral ventricle (uncal recess)	White mater of the parahippocampal gyrus	Alveus
BODY	CSF in the uncal and ambient cistern	Temporal horn of lateral ventricle (uncal recess)	White mater of the parahippocampal gyrus	CSF in the choroidal fissure
TAIL	same as body	same as body	same as body	same as body

Plane of tracing: Perpendicular to the long axis of the left hippocampal formation.

Tracing start from posterior, the tail of hippocampus, to anterior, the hippocampal head, of the brain

**Killiany RJ, Moss MB, Albert MS, Sandor T, Tieman J, Jolesz F.
 Temporal lobe regions on magnetic resonance imaging identify patients with early Alzheimer's disease.
 Arch Neurol. 1993; 50:949-54.**

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
portion of subiculum, CA fields		choroid plexus of inferior horn, amygdala, alveus and fimbria	level at which the alveus appears and distinguishes the amygdala from hippocampus	slice where the crus of fornix was visible in full profile
BOUNDARIES				
	Lateral border	Inferior border	Medial border	Superior border
HEAD	temporal horn of the lateral ventricle	white matter of the parahippocampal gyrus	a oblique line following the same inclination of WM of PG connect the inferior part of the subiculum to the quadrigeminal cistern	temporal horn of the lateral ventricle
BODY	temporal horn of the lateral ventricle	white matter of the parahippocampal gyrus	a oblique line following the same inclination of WM of PG connect the inferior part of the subiculum to the quadrigeminal cistern	temporal horn of the lateral ventricle
TAIL	temporal horn of the lateral ventricle	white matter of the parahippocampal gyrus	a oblique line following the same inclination of WM of PG connect the inferior part of the subiculum to the quadrigeminal cistern	temporal horn of the lateral ventricle

Plane of tracing: AC-PC line

Tracing start from the head of hippocampus to the hippocampal tail

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
CA regions, subiculum, dentate gyrus, alveus and fimbria		parahippocampal gyrus, isthmus of the cingulate gyrus	level at which the head of hippocampus first appears below the amygdala	slice where the crus of fornix was visible
BOUNDARIES				
	Lateral border	Inferior border	Medial border	Superior border
HEAD	medial wall of the temporal horn	parahippocampal gyrus	a oblique line following the same inclination of WM of PG connect the inferior part of the subiculum to the quadrigeminal cistern	hippocampal recess or uncus recess of alveus. If nothing was visible the limit was arbitrarily drawn as an horizontal line connecting the middle of the medial border of the lateral ventricle to the surface of the uncus
BODY	lateral ventricle	the limit between the subiculum and the parahippocampal gyrus was arbitrarily defined by a line in continuation with the inferior border of the subiculum	a oblique line following the same inclination of WM of PG connect the inferior part of the subiculum to the quadrigeminal cistern	CSF of the temporal horn of the lateral ventricle
TAIL	lateral ventricle	isthmus	a oblique line following the same inclination of WM of PG connect the inferior part of the subiculum to the quadrigeminal cistern	CSF of the lateral ventricle

Plane of tracing: axis of the hippocampus

Tracing starts from the hippocampal tail to the head of hippocampus

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
subiculum, dentate gyrus, uncinata gyrus, fimbria, alveus		fornix, pulvinar of thalamus, choroid plexus, subsplenial gyrus, tail of the caudate nucleus	Along the anterior - posterior axis of hippocampus, level where the parahippocampal white matter becomes visible	Slice where an ovoid mass of gray matter started to appear inferomedially to the trigone of lateral ventricle
BOUNDARIES				
	Lateral border	Inferior border	Medial border	Superior border
HEAD	temporal horn of the lateral ventricle/adjacent WM of temporal stem	WM of the parahippocampal gyrus	alveus/a oblique line following the same inclination of WM of PG connect the inferior part of the subiculum to the quadrigeminal cistern	alveus/temporal horn of lateral ventricle
BODY	temporal horn of the lateral ventricle/adjacent WM of temporal stem	WM of the parahippocampal gyrus	WM of parahippocampal gyrus/a oblique line following the same inclination of WM of PG connect the inferior part of the subiculum to the quadrigeminal cistern	fimbria/quadrigeminal cistern
TAIL	crus of fornix	WM of the parahippocampal gyrus	CSF of quadrigeminal cistern	crus of fornix/pulvinar of the thalamus

Plane of tracing: AC-PC line

Tracing starts from the hippocampal body to the tail and from the posterior part of hippocampal head to the rostral part.

Pantel J, O'Leary DS, Cretsinger K, et al. *A new method for the in vivo volumetric measurement of the human hippocampus with high neuroanatomical accuracy.* Hippocampus 2000; 10:752-8.

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
CA regions, dentate gyrus, subiculum, alveus, fimbria*			level at which the head of hippocampus first appears below the amygdala as a transversely oriented oval structure	slice where an ovoid mass of gray matter started to appear inferomedially to the trigone of lateral ventricle
BOUNDARIES				
	Lateral border	Inferior border	Medial border	Superior border
HEAD	temporal horn of the lateral ventricle/adjacent WM of temporal stem	WM of the parahippocampal gyrus (PG)	a line following the same inclination of WM of PG defines the medial border of hippocampal head	temporal horn of the lateral ventricle/alveus
BODY	temporal horn of the lateral ventricle/adjacent WM of temporal stem	white matter of the PG	CSF of ambient cistern/ crus cerebri	fimbria
TAIL	atrium of the lateral ventricles/crux of fornix	white matter of the PG	CSF of quadrigeminal cistern	pulvinar of the thalamus

*Inclusion of the alveus/fimbria depending on MRI resolutions

Plane of tracing: AC-PC line

T2 – weighted images are used as reference

Pruessner JC, Li LM, Serles W et al. *Volumetry of hippocampus and amygdala with high-resolution MRI and three-dimensional analysis software: minimizing the discrepancies between laboratories.* Cereb Cortex. 2000; 10:433-42.

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
CA regions, dentate gyrus, subiculum, alveus, fimbria, part of the fasciolar gyrus (FG)		Andreas-Retzius gyrus (ARG), the part of the FG that is adjacent to ARG, crus of fornix	slice w here one of the following is visible: alveus, temporal horn of lateral ventricle (uncal recess) or amygdala	slice w here an avoid mass of gray matter started to appear inferomedially to the trigone of the lateral ventricle
BOUNDARIES				
	Lateral border	Inferior border	Medial border	Superior border
HEAD	temporal horn of lateral ventricle (uncal recess)	[uncal cleft] White matter of the parahippocampal gyrus	CSF of ambient cistern	temporal horn of lateral ventricle (uncal recess) and alveus
BODY	temporal horn of lateral ventricle (uncal recess)	White matter of the parahippocampal gyrus	CSF of ambient cistern	superior excess of the quadrigeminal cistern
TAIL	Discrimination of HT from FG and crus of fornix using arbitrary borders	adjacent white matter	atrium of lateral ventricle	Discrimination of HT from ARG using arbitrary borders

Plane of tracing: AC-PC line; Normalization to the Talairach space

Tracing start from the tail of hippocampus to the hippocampal head

Soininen HS, Partanen K, Pitkänen A, Vainio P, Hänninen T, Hallikainen M, Koivisto K, Riekkinen PJ Sr. *Volumetric MRI analysis of the amygdala and the hippocampus in subjects with age-associated memory impairment: correlation to visual and verbal memory.* *Neurology.* 1994; 44:1660-8

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
hippocampus proper, dentate gyrus, subiculum, uncal portion of the rostral hippocampus		fornix	level at which the hippocampus head first appears below the amygdala	slice in which the fornices were still detectable in full length
BOUNDARIES				
	Lateral border	Inferior border	Medial border	Superior border
HEAD	not mentioned	not mentioned	not mentioned	uncal portion included
BODY	not mentioned	not mentioned	not mentioned	not mentioned
TAIL	not mentioned	not mentioned	not mentioned	not mentioned

Plane of tracing: axis of the hippocampus

Tracing start from the head of hippocampus to the hippocampal tail

Watson C, Andermann F, Gloor P et al. *Anatomic basis of amygdaloid and hippocampal volume measurement by magnetic resonance imaging.* Neurology 1992; 42:1743-50.

Survey table

Areas explicitly included		Areas explicitly excluded	Most anterior slice	Most posterior slice
Subiculum, uncal sulcus, hippocampus proper, dentate gyrus, fimbria, and alveus.		Parahippocampal gyrus, entorhinal cortex, crus of fornix, isthmus of the cingulate gyrus.	The most anterior section in which the hippocampus is visible	Section with the crus of the fornix clearly separating from the hippocampus and its fimbria.
BOUNDARIES				
	Medial border	Lateral border	Inferior border	Superior border
HEAD	Angle formed by the most medial extent of the subicular complex and the parahippocampal gyrus	Gray matter/w hite matter interface (w hich is readily apparent) or the inferior horn of the lateral ventricle	Gray matter/w hite matter interface (w hich is readily apparent)	Uncal recess of inferior horn of lateral ventricle. If the uncal recess is not visible: - a line was drawn connecting the inferior horn to the sulcus at the inferior margin of the semilunar gyrus - alveus - a straight orizontal line was drawn connecting the plane of the inferior horn with the surface of the uncus.
BODY	Angle formed by the most medial extent of the subicular complex and the parahippocampal gyrus	Gray matter/w hite matter interface (w hich is readily apparent) or the inferior horn of the lateral ventricle	Gray matter/w hite matter interface (w hich is readily apparent)	The interface between the hippocampus/alveus/fimbria and the inferior horn of the lateral ventricle
TAIL	Angle formed by the most medial extent of the subicular complex and the parahippocampal gyrus/isthmus of the cingulate gyrus	Gray matter/w hite matter interface (w hich is readily apparent) or the inferior horn of the lateral ventricle	Gray matter/w hite matter interface (w hich is readily apparent)	The interface between the hippocampus/alveus/fimbria and the inferior horn of the lateral ventricle and/or the subarachnoid space of the transverse cerebral fissure (or choroidal fissure)

Plane of tracing: axis of the left hippocampus

Tracing start from the head of hippocampus to the hippocampal tail