

Harmonization of protocols for the manual tracing of the hippocampus - an EADC-ADNI joint effort

AUTHOR-CERTIFIED PROTOCOL FEATURES AND TRACINGS

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

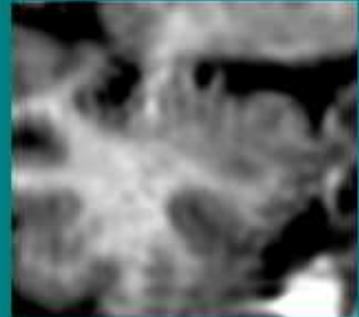
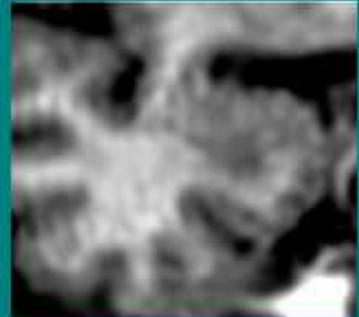
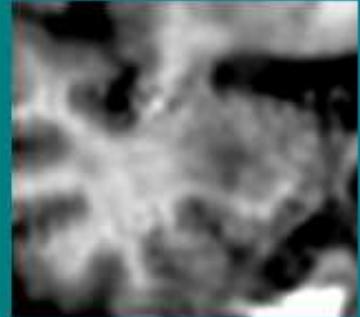
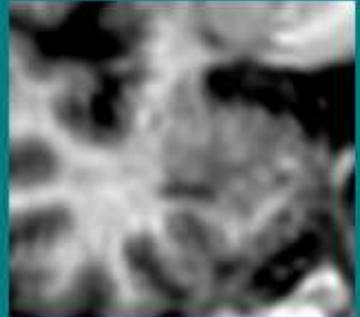
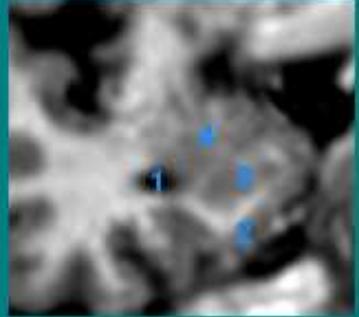
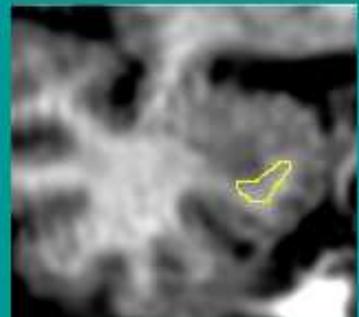
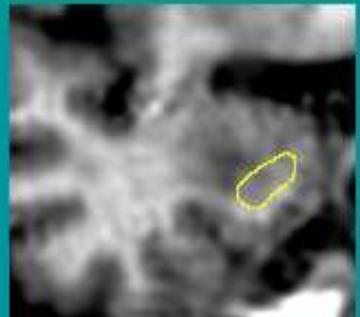
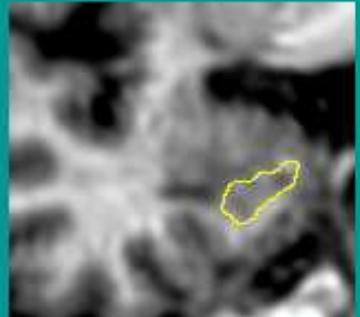
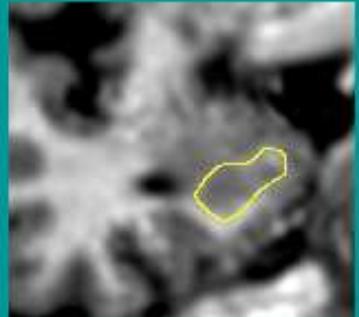
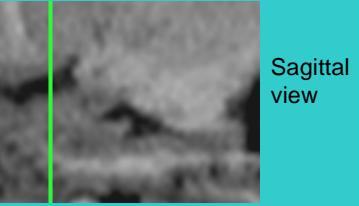
In the following section you can find:

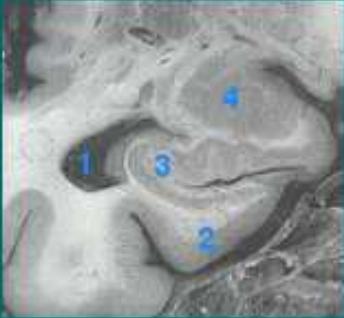
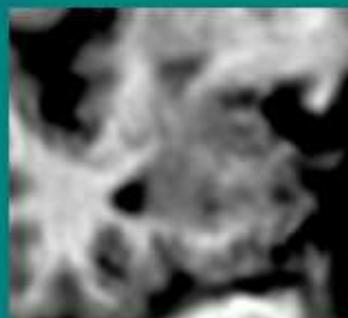
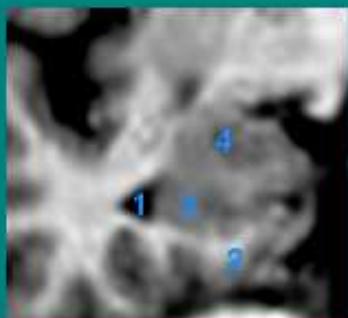
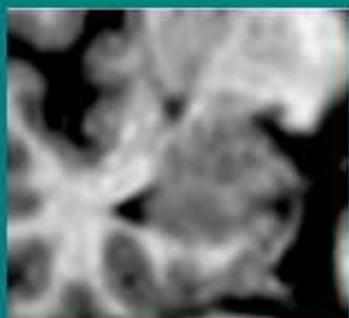
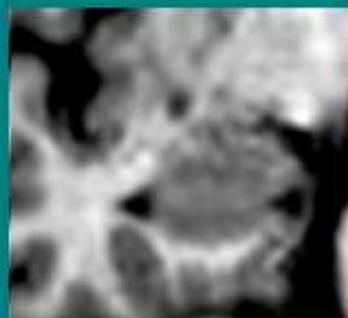
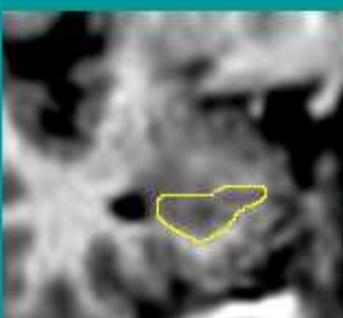
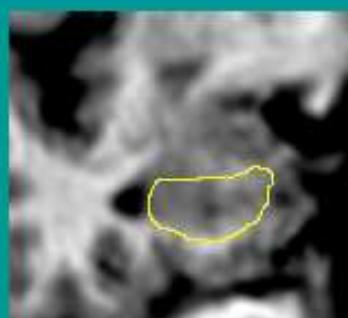
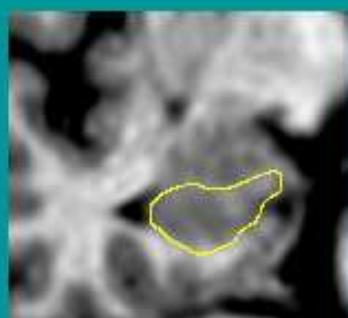
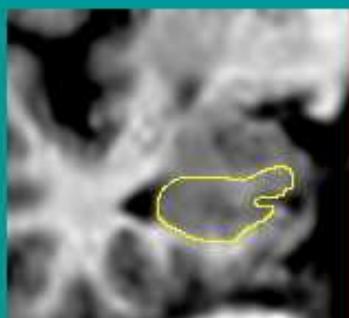
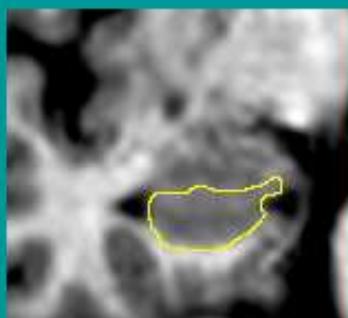
- 1) An excerpt of the Survey of anatomical landmarks according to Soininen et al.'s criteria.
- 2) The hippocampal tracing on consecutive coronal slices of a 1.5T ADNI control subject (**2A**) and AD patient (**2B**).

1) Excerpt of the Survey of anatomical landmarks according to Soininen et al.'s criteria.

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

2A)CTRL

	117	118	119	120	121
Anatomical section					
Native MRI					
Tracing					
Notes		<p><u>Most anterior slice</u>: level at which the head of hippocampus first appears below the amygdala</p>  <p>Sagittal view</p>			<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Hippocampal head 4=Amygdala</p>

2A)CTRL	122	123	124	125	126
Anatomical section					
Native MRI					
Tracing					
Notes			<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Hippocampal head 4=Amygdala</p>		

2A)CTRL

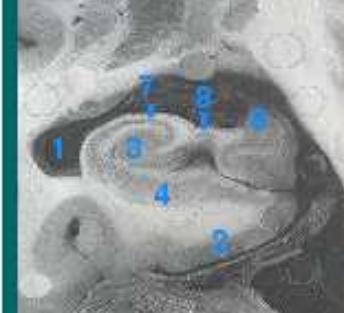
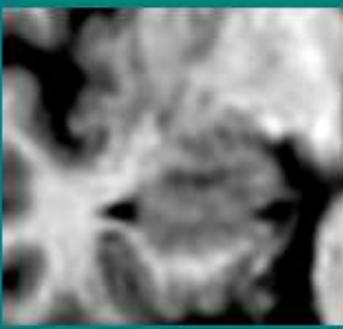
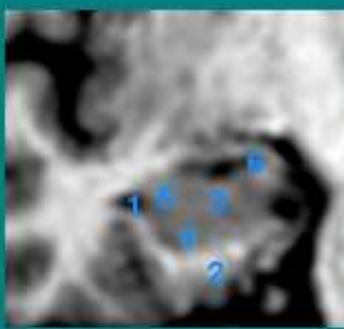
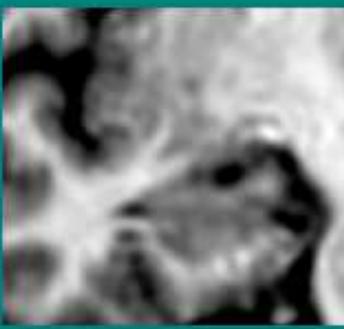
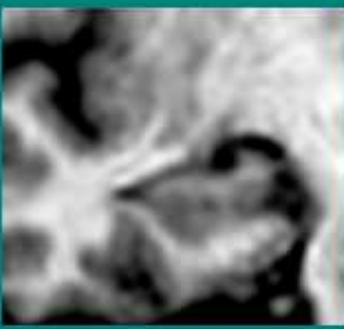
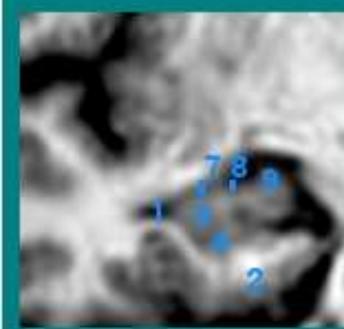
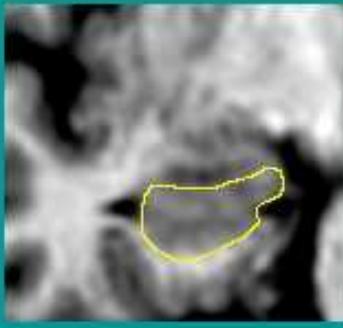
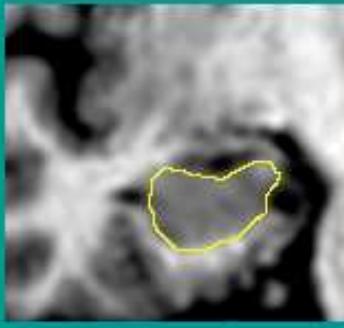
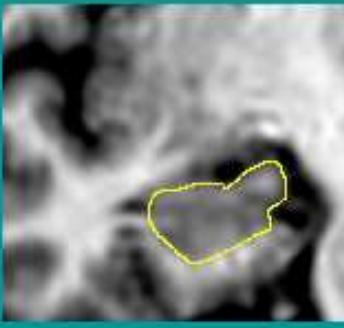
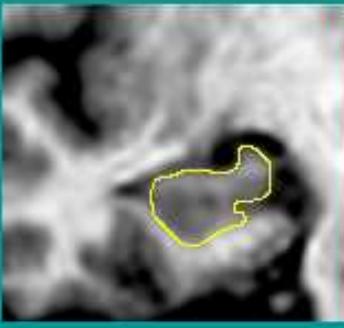
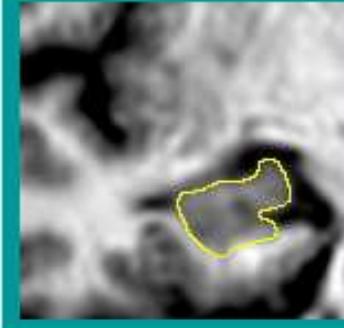
127

128

129

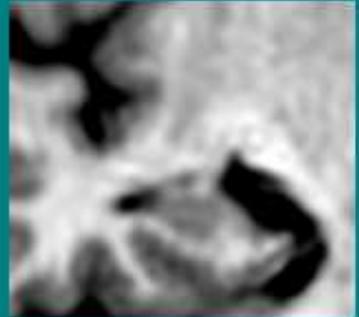
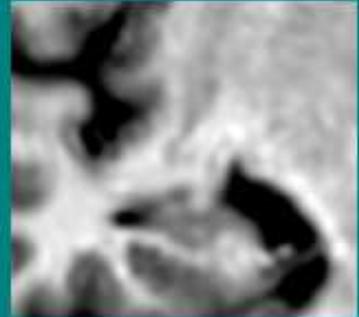
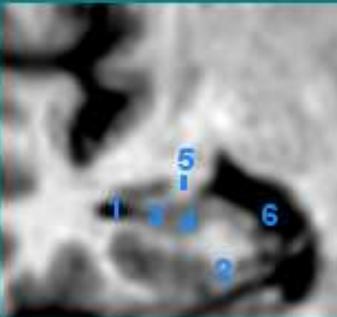
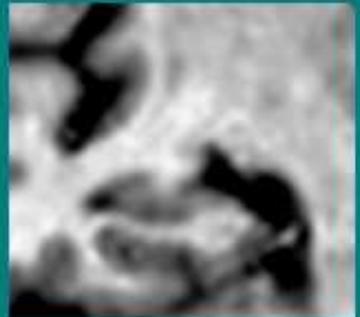
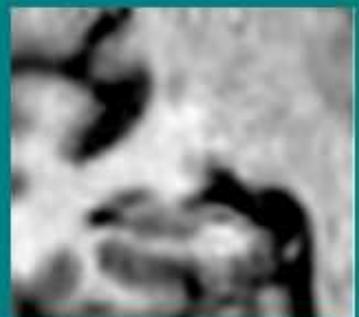
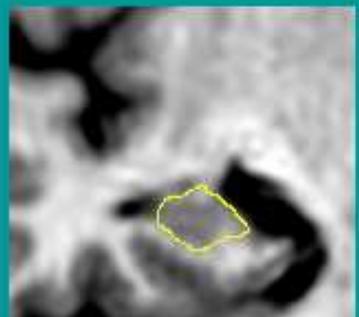
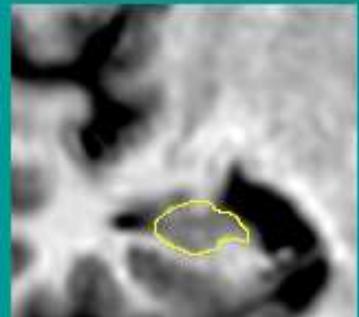
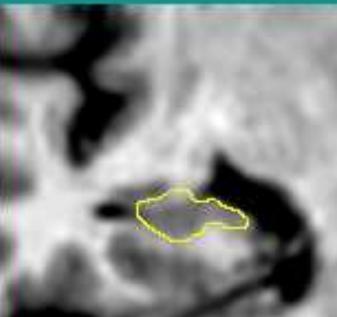
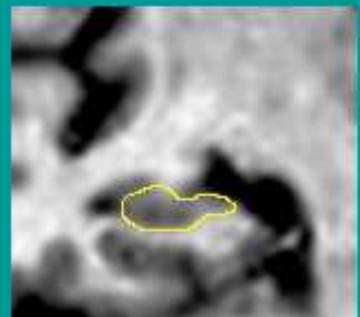
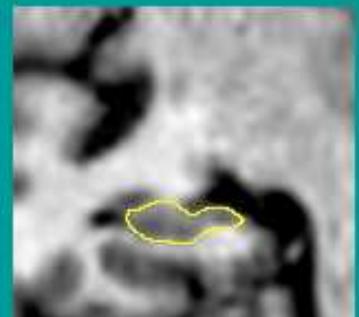
130

131

Anatomical section					
Native MRI					
Tracing					
Notes		<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Gyrus dentatus 4=Subiculum 5=Cornu Ammonis 6=Vertical digitation</p>			<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Gyrus dentatus 4=Subiculum 7=Alveus 8=Fimbria 9=Uncus</p>

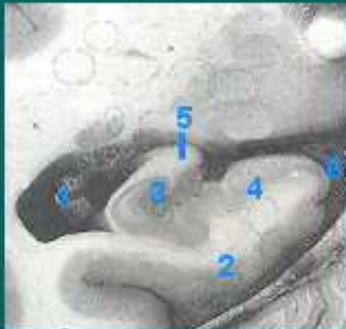
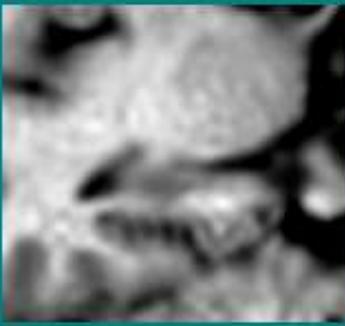
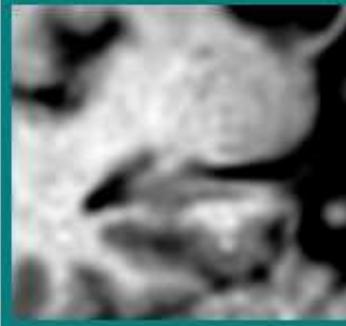
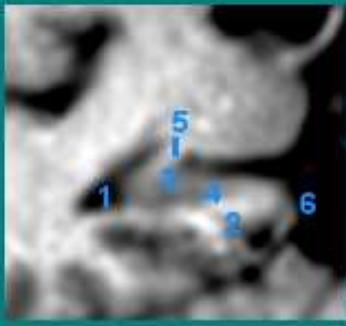
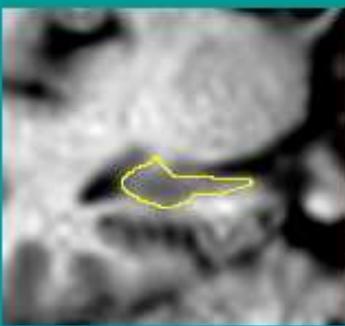
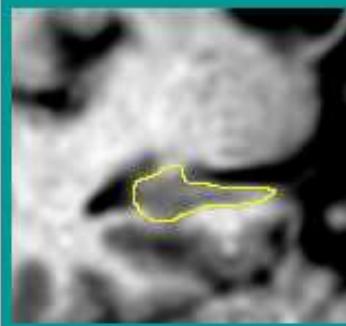
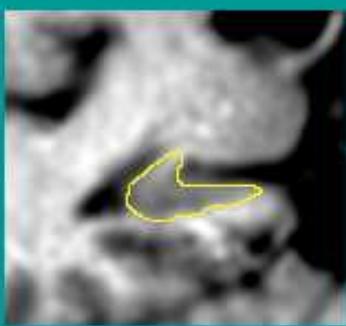
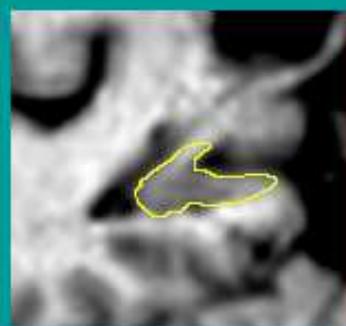
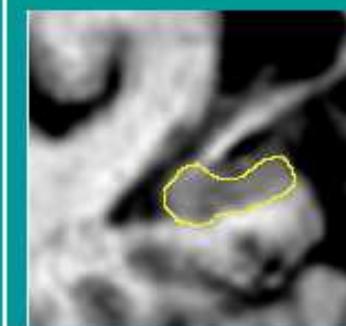
2A)CTRL

Anatomical section	132	133	134	135	136
Native MRI					
Tracing					
Notes					

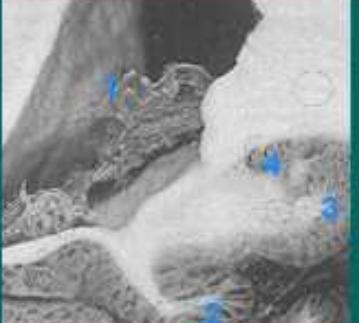
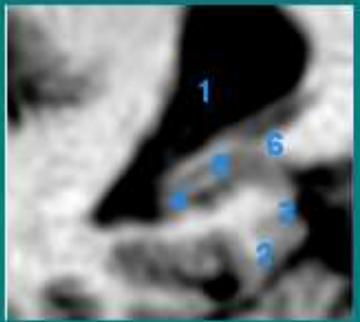
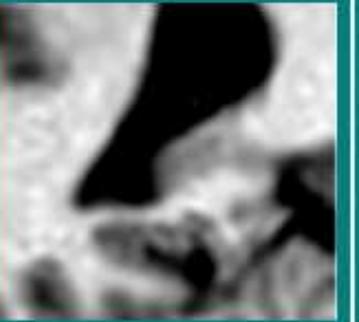
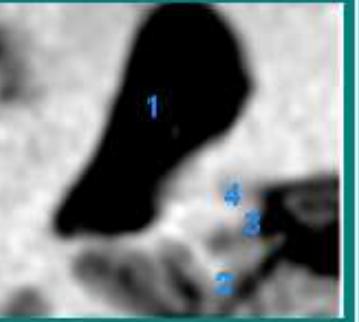
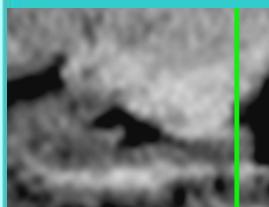
2A)CTRL	137	138	139	140	141
Anatomical section					
Native MRI					
Tracing					
Notes			<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Gyrus dentatus 4=Subiculum 5=Fimbria 6= Ambient cistern</p>		

2A)CTRL	142	143	144	145	146
Anatomical section					
Native MRI					
Tracing					
Notes					

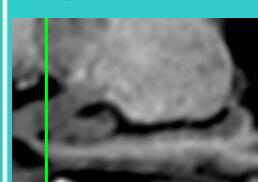
2A)CTRL

	147	148	149	150	151
Anatomical section					
Native MRI					
Tracing					
Notes			<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Gyrus dentatus 4=Subiculum 5=Fimbria 6= Ambient cistern</p>		

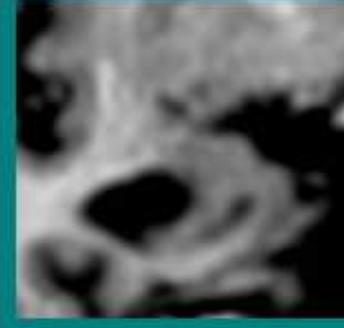
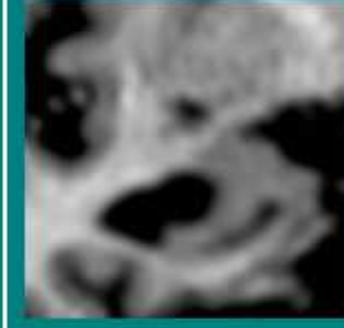
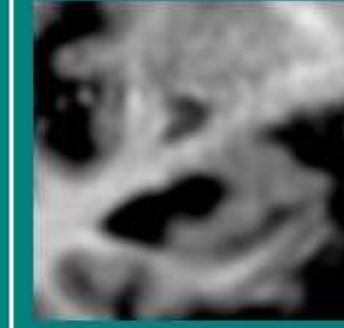
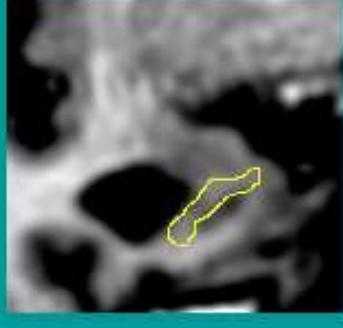
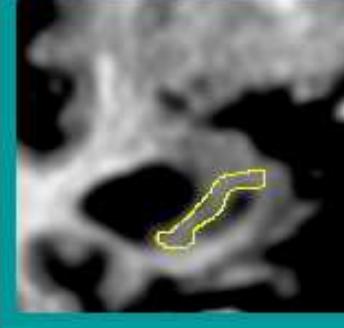
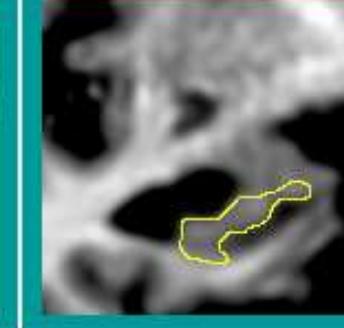
2A)CTRL

	152	153	154	155	
Anatomical section					
Native MRI					
Tracing					
Notes	<p><u>Most posterior slice</u>: slice in which the fornices were still detectable in full length</p>  <p>Sagittal view</p>	<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Isthmus 4=Cornu Ammonis 5=Gyrus dentatus 6=Crus of fornix</p>		<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Isthmus 4=Cornu Ammonis</p>	

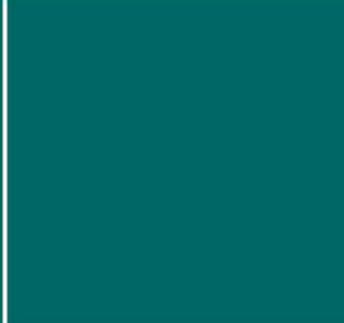
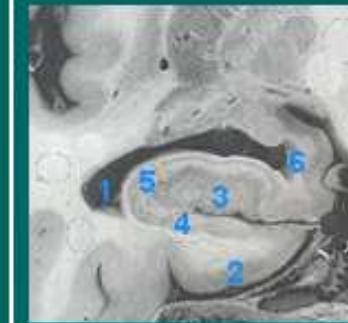
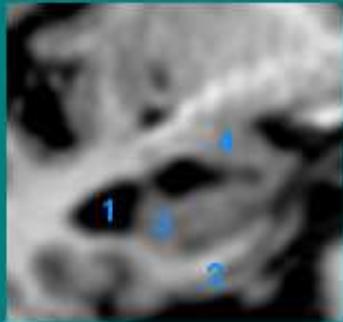
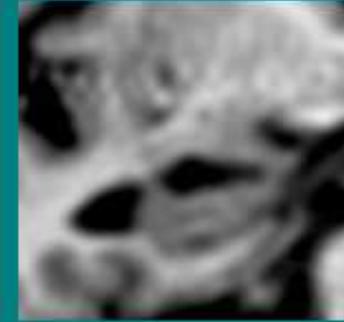
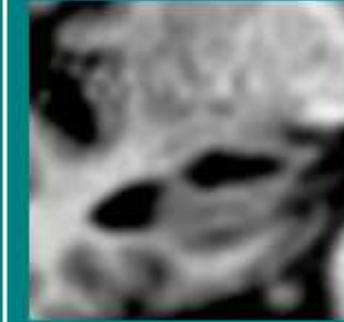
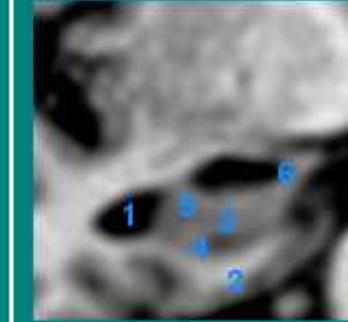
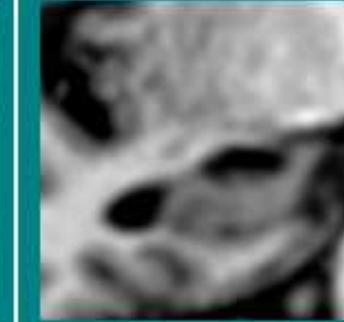
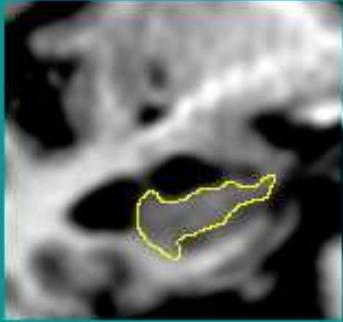
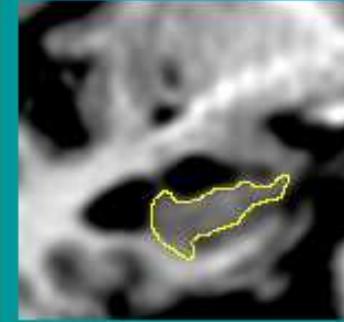
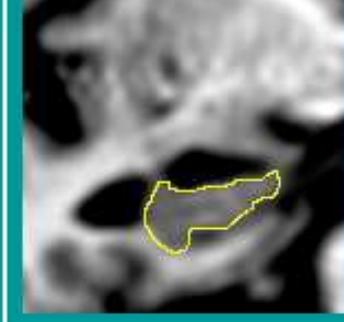
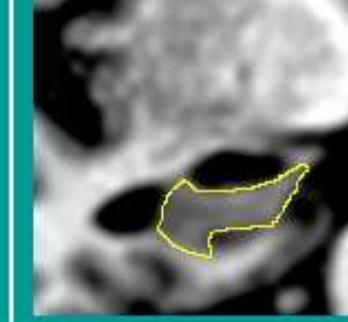
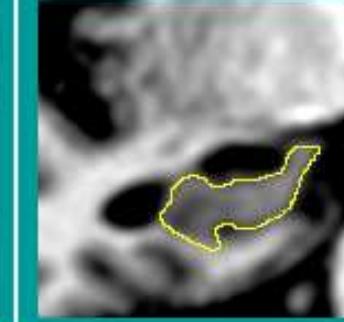
2B) AD

	159	160	161	162	163
Anatomical section					
Native MRI					
Tracing					
Notes			<p><u>Most anterior slice</u>: level at which the head of hippocampus first appears below the amygdala</p>  <p>Sagittal view</p>		

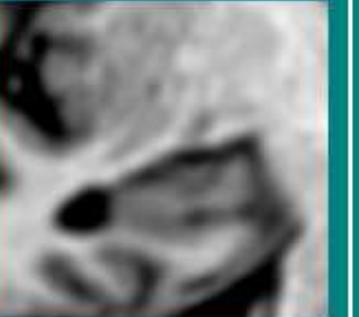
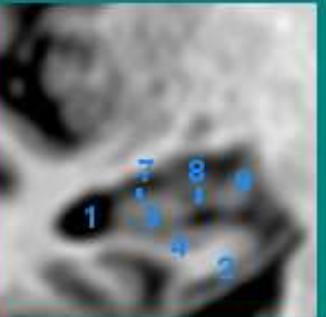
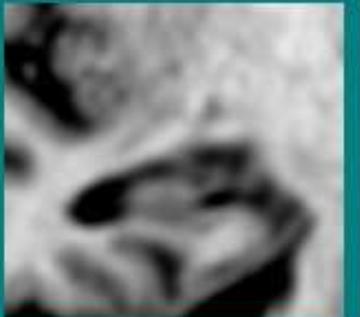
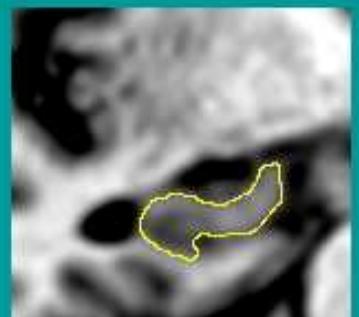
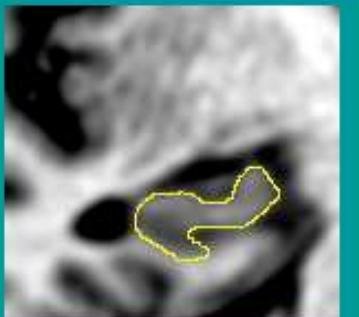
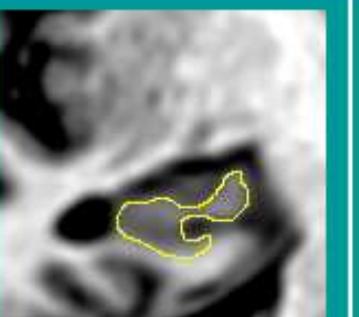
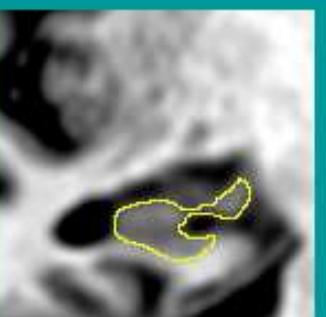
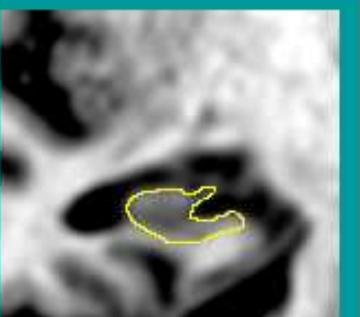
2B) AD

	164	165	166	167	168
Anatomical section					
Native MRI					
Tracing					
Notes	1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Hippocampal head 4=Amygdala				

2B) AD

	169	170	171	172	173
Anatomical section					
Native MRI					
Tracing					
Notes	1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Hippocampal head 4=Amygdala			1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Gyrus dentatus 4=Subiculum 5=Cornu Ammonis 6=Vertical digitation	

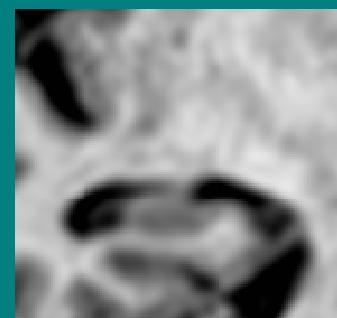
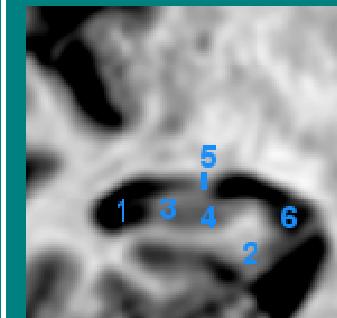
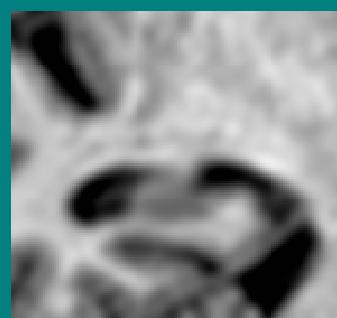
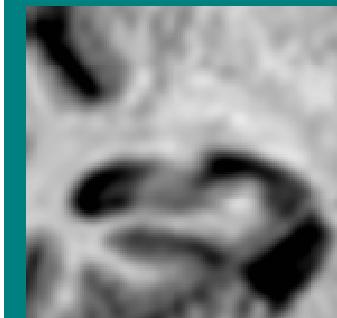
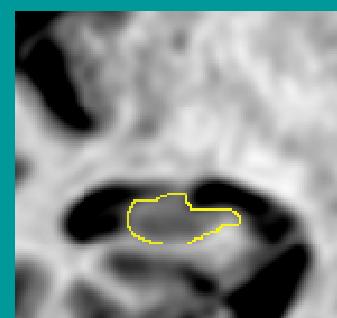
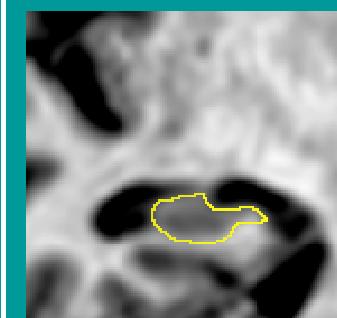
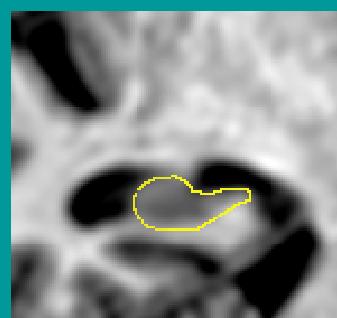
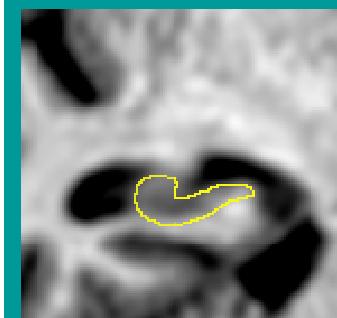
2B) AD

	174	175	176	177	178
Anatomical section					
Native MRI					
Tracing					
Notes				<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Gyrus dentatus 4=Subiculum 7=Alveus 8=Fimbria 9=Uncus</p>	

2B) AD

	179	180	181	182	183
Anatomical section					
Native MRI					
Tracing					
Notes					

2B) AD

	184	185	186	187	188
Anatomical section					
Native MRI					
Tracing					
Notes			<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Gyrus dentatus 4=Subiculum 5=Fimbria 6= Ambient cistern</p>		

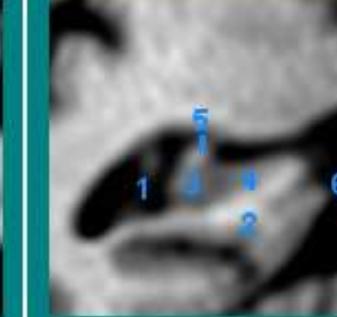
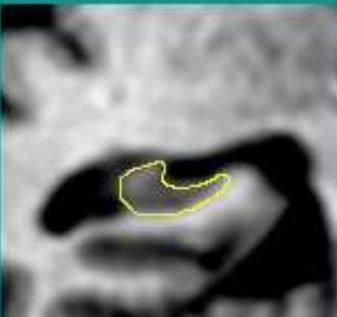
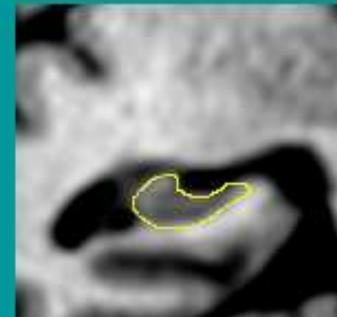
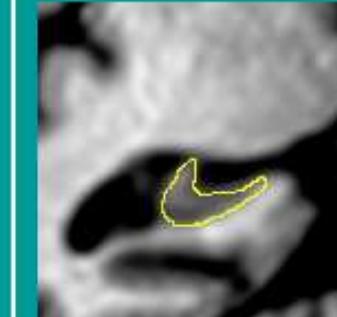
2B) AD

	189	190	191	192	193
Anatomical section					
Native MRI					
Tracing					
Notes					

2B) AD

	194	195	196	197	198
Anatomical section					
Native MRI					
Tracing					
Notes					

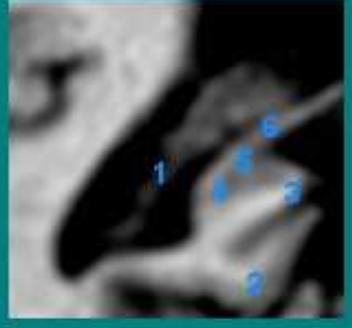
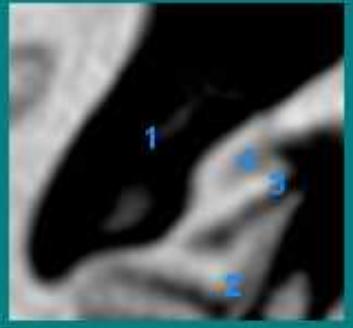
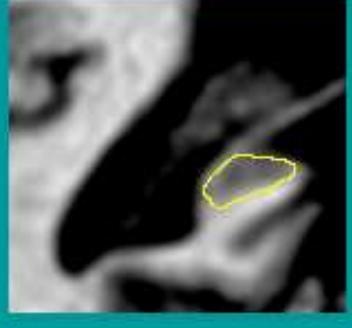
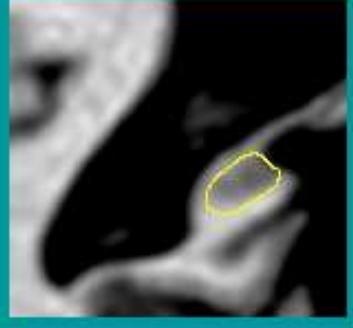
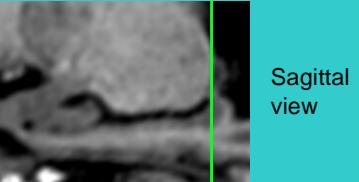
2B) AD

	199	200	201	202	203
Anatomical section					
Native MRI					
Tracing					
Notes					<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Gyrus dentatus 4=Subiculum 5=Fimbria 6= Ambient cistern</p>

2B) AD

	204	205	206	207	208
Anatomical section					
Native MRI					
Tracing					
Notes					

2B) AD

	209	210	211	
Anatomical section				
Native MRI				
Tracing				
Notes	<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Isthmus 4=Cornu Ammonis 5=Gyrus dentatus 6=Crus of fornix</p>	<p>Most posterior slice: slice in which the fornices were still detectable in full length</p>  <p>Sagittal view</p>	<p>1=Temporal horn of the lateral ventricle (uncal recess) 2=Parahippocampal gyrus 3=Isthmus 4=Cornu Ammonis</p>	