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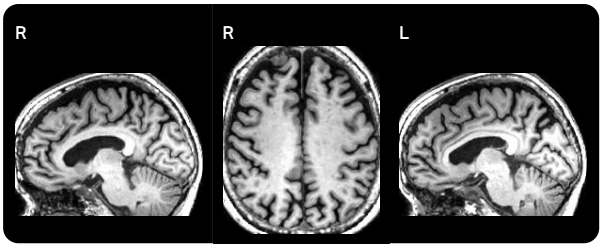
PATIENT ID	NAME	SEX	DATE OF BIRTH	STUDY DATE	SEQUENCE(S)
052_S_4807		F	- (75Y)	04.08.2015 *3 previous studies considered.*	Accelerated Sag IR-FSPGR (T1) ... (+3)

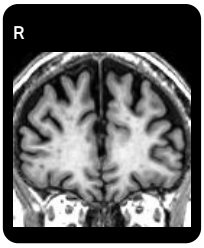
Clinically Relevant Slices

Mesiotemporal

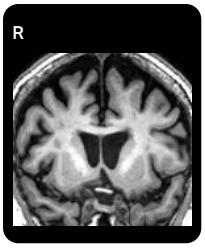
Fronto-parietal



Fronto-polar



Temporo-polar

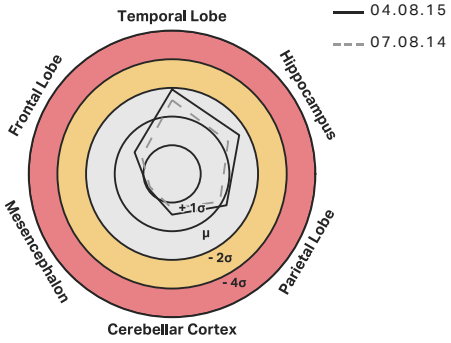


Mesencephalon/pons

Total Volumes

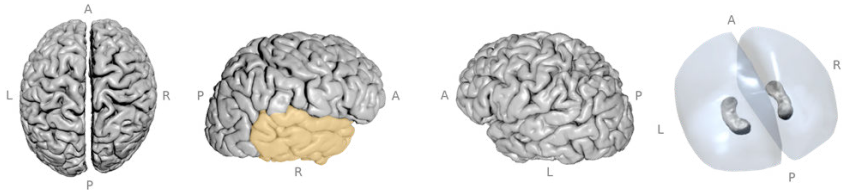
reduced (-2σ)
significantly reduced (-4σ)

REGION	PERCENTILE* 07.08.14	PERCENTILE* 04.08.15	VOLUME [ml] 07.08.14	VOLUME [ml] 04.08.15	NORMAL RANGE [ml] 04.08.15
WHOLE BRAIN	25.0 %	**12.9 %**	1,141.0	**1,111.0**	1,078.3–1,229.1
TOTAL WHITE MATTER	8.2 %	**5.2 %**	481.0	**469.6**	461.3–550.5
TOTAL GREY MATTER	55.3 %	**40.0 %**	660.0	**641.4**	588.5–709.7
CEREBRAL CORTEX	52.4 %	**36.1 %**	452.6	**437.4**	397.7–494.5

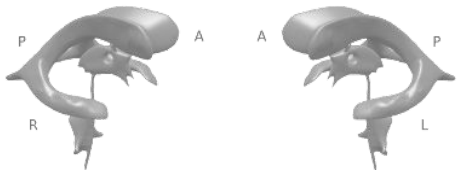


Schematic Overview (04.08.2015)

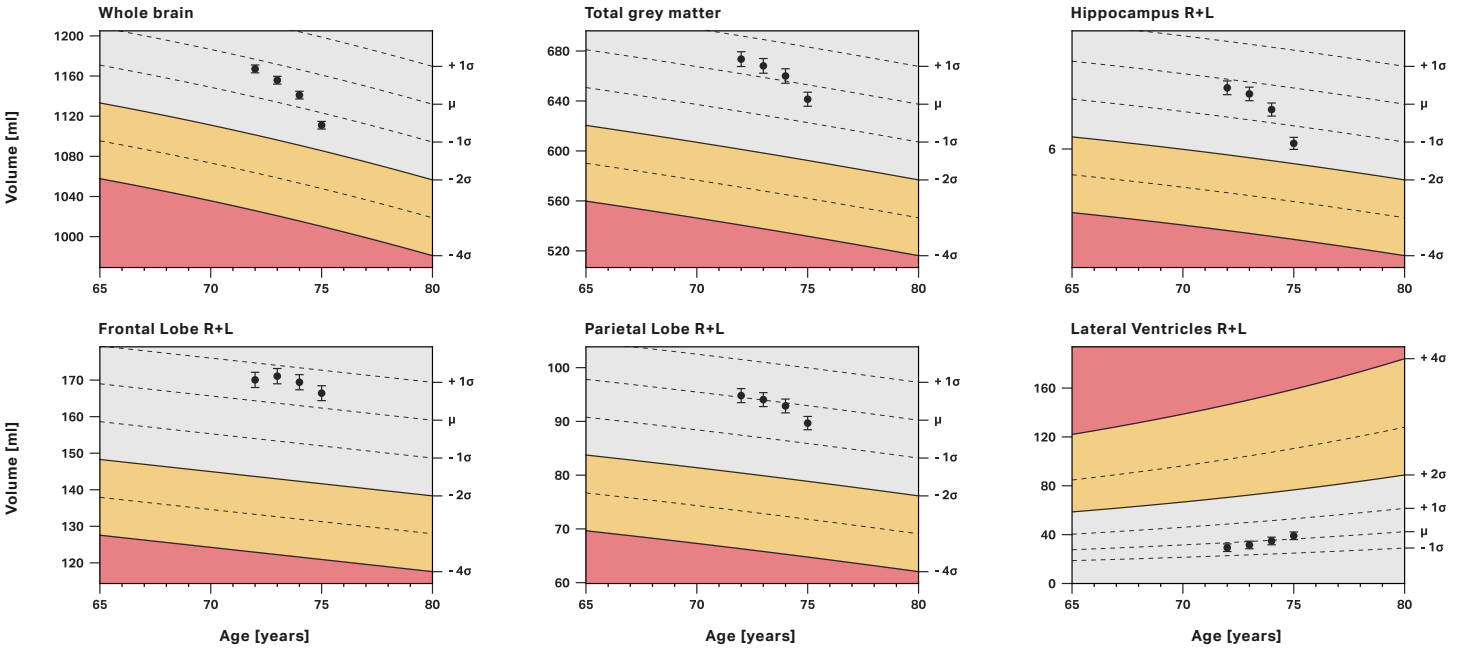
reduced (-2σ)
significantly reduced (-4σ)



increased (+2σ)
significantly increased (+4σ)



Percentile Graphs (04.08.2015 + 3 previous studies considered)



Error bars indicate 90% confidence intervals based on a large cohort of longitudinal measurements where sequence parameters were kept constant.

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IHR LOGO

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052_S_4807		F	- (75Y)	04.08.2015 *3 previous studies considered.*	Accelerated Sag IR-FSPGR (T1) ... (+3)

Supratentorial Volumes

reduced (-2σ)
significantly reduced (-4σ)

	RIGHT					LEFT				
	PERCENTILE*		VOLUME [ml]		NORMAL RANGE [ml]	PERCENTILE*		VOLUME [ml]		NORMAL RANGE [ml]
REGION	07.08.14	04.08.15	07.08.14	04.08.15	04.08.15	07.08.14	04.08.15	07.08.14	04.08.15	04.08.15
FRONTAL LOBE	74.0 %	**69.8 %**	85.6	**84.1**	70.9–91.9	72.4 %	**67.7 %**	83.8	**82.3**	69.8–90.1
PARIETAL LOBE	42.5 %	**28.0 %**	45.6	**43.7**	38.7–52.7	50.9 %	**42.6 %**	47.3	**46.0**	39.6–53.7
PRECUNEUS	11.8 %	**5.5 %**	9.9	**9.4**	9.0–13.0	16.1 %	**7.4 %**	9.8	**9.3**	8.7–12.8
OCCIPITAL LOBE	86.9 %	**73.0 %**	36.6	**34.9**	27.8–38.6	65.3 %	**52.5 %**	37.4	**36.0**	30.0–41.7
TEMPORAL LOBE	4.2 %	**1.1 %**	58.1	**55.1**	56.2–72.3	17.3 %	**6.6 %**	58.3	**55.3**	53.4–69.1
HIPPOCAMPUS	20.0 %	**7.9 %**	3.4	**3.2**	3.0–4.3	33.4 %	**7.9 %**	3.2	**2.9**	2.7–3.8
PARAHIPPOCAMPAL GYRUS	7.4 %	**1.7 %**	2.7	**2.5**	2.5–3.5	82.0 %	**56.3 %**	3.4	**3.2**	2.7–3.7
ENTORHINAL CORTEX	2.8 %	**0.7 %**	1.8	**1.6**	1.8–2.7	10.2 %	**4.6 %**	1.9	**1.8**	1.7–2.7
CAUDATE	88.5 %	**87.3 %**	3.9	**3.8**	2.6–4.2	75.6 %	**78.9 %**	3.5	**3.5**	2.4–3.9
PUTAMEN	79.1 %	**70.9 %**	4.5	**4.4**	3.5–4.9	67.6 %	**59.7 %**	4.5	**4.4**	3.6–5.0
PALLIDUM	77.9 %	**81.9 %**	1.5	**1.5**	1.2–1.7	94.8 %	**84.7 %**	1.6	**1.6**	1.2–1.7
THALAMUS	39.1 %	**29.3 %**	7.7	**7.5**	6.9–8.6	53.6 %	**48.2 %**	7.9	**7.8**	7.0–8.7

Infratentorial Volumes

reduced (-2σ)
significantly reduced (-4σ)

	PERCENTILE*		VOLUME [ml]		NORMAL RANGE [ml]
REGION	07.08.14	04.08.15	07.08.14	04.08.15	04.08.15
BRAINSTEM	98.7 %	**98.6 %**	31.3	**31.1**	24.1–30.8
MESENCEPHALON	92.4 %	**87.6 %**	8.3	**8.2**	6.9–8.5
PONS	99.6 %	**99.5 %**	18.2	**18.1**	12.8–17.4
CEREBELLAR CORTEX	75.2 %	**71.8 %**	104.1	**102.4**	82.8–113.3

Ventricle Volumes

increased (+2σ)
significantly increased (+4σ)

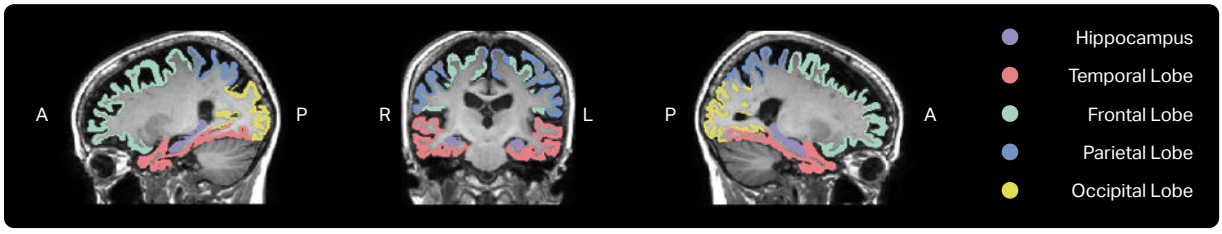
	PERCENTILE*		VOLUME [ml]		NORMAL RANGE [ml]
REGION	07.08.14	04.08.15	07.08.14	04.08.15	04.08.15
RIGHT LATERAL VENTRICLE	36.0 %	**46.5 %**	14.7	**16.6**	7.9–36.4
LEFT LATERAL VENTRICLE	58.7 %	**68.1 %**	20.1	**22.4**	8.7–39.4
THIRD VENTRICLE	82.1 %	**85.3 %**	1.5	**1.6**	0.7–1.9
FOURTH VENTRICLE	73.2 %	**79.4 %**	1.7	**1.7**	0.8–2.1

*The percentile gives the expected proportion of the normal population with the same covariates having a lower volume than the one measured (based on the measurements of a normal collective).

Quality Control (04.08.2015)

IMAGE QUALITY	Good
NOTES	See appendix

Automatic Segmentation (04.08.2015)



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Appendix

The automated quality control yielded a good image quality. However, the following points need attention:

1. The slice thickness of the T1 sequences (04/08/15, 07/08/14, 13/08/13 and 15/02/13) could be further improved. For optimal results, a max. slice thickness of 1.1 mm is recommended.
2. The spacing between slices of the T1 sequences (04/08/15, 07/08/14, 13/08/13 and 15/02/13) could be further improved. For optimal results, a max. spacing between slices of 1.1 mm is recommended.

	04.08.2015 SCAN	07.08.2014 SCAN
DICOM FIELD	T1	T1
SEQUENCE DESCRIPTION	Accelerated Sag IR-FSPGR	Accelerated Sag IR-FSPGR
SCANNER MANUFACTURER	GE MEDICAL SYSTEMS	GE MEDICAL SYSTEMS
SCANNER TYPE	DISCOVERY MR750	DISCOVERY MR750
FIELD STRENGTH	3.0 T	3.0 T
REPETITION TIME	7.32 ms	7.32 ms
ECHO TIME	3.02 ms	3.02 ms
INVERSION TIME	400.00 ms	400.00 ms
PIXEL SPACING	1.1 mm × 1.1 mm	1.1 mm × 1.1 mm
SLICE THICKNESS	1.2 mm	1.2 mm
SPACING BETWEEN SLICES	1.2 mm	1.2 mm
ACQUISITION MATRIX	[0, 256, 256, 0]	[0, 256, 256, 0]
NUMBER OF SLICES	196	196

	13.08.2013 SCAN	15.02.2013 SCAN
DICOM FIELD	T1	T1
SEQUENCE DESCRIPTION	Accelerated Sag IR-FSPGR	Accelerated Sag IR-FSPGR
SCANNER MANUFACTURER	GE MEDICAL SYSTEMS	GE MEDICAL SYSTEMS
SCANNER TYPE	DISCOVERY MR750	DISCOVERY MR750
FIELD STRENGTH	3.0 T	3.0 T
REPETITION TIME	7.32 ms	7.32 ms
ECHO TIME	3.02 ms	3.02 ms
INVERSION TIME	400.00 ms	400.00 ms
PIXEL SPACING	1.1 mm × 1.1 mm	1.1 mm × 1.1 mm
SLICE THICKNESS	1.2 mm	1.2 mm
SPACING BETWEEN SLICES	1.2 mm	1.2 mm
ACQUISITION MATRIX	[0, 256, 256, 0]	[0, 256, 256, 0]
NUMBER OF SLICES	196	196

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