

Supplementary Material: Pre-Surgery Cognitive Performance and Voxel-Based Lesion-Symptom MAPPING in Patients with Left High-Grade Glioma

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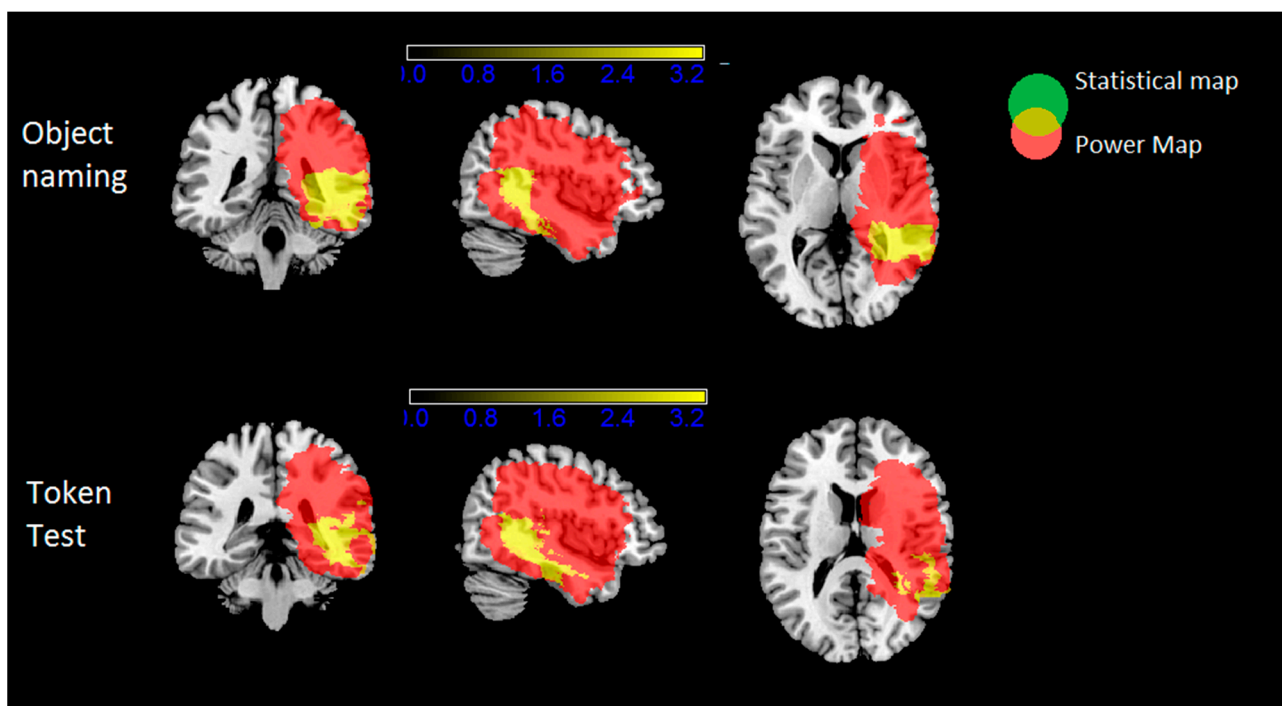


Figure S1. Power map. Maps of statistical power for each of the two tasks. Red areas have sufficient statistical power to detect a significant effect at $p < 0.05$ (FDR), as calculated by the Non-Parametric Mapping (see Methods for details). Yellow areas show the overlap of statistical VLSM results at $P < 0.05$ (FDR) with the power map.

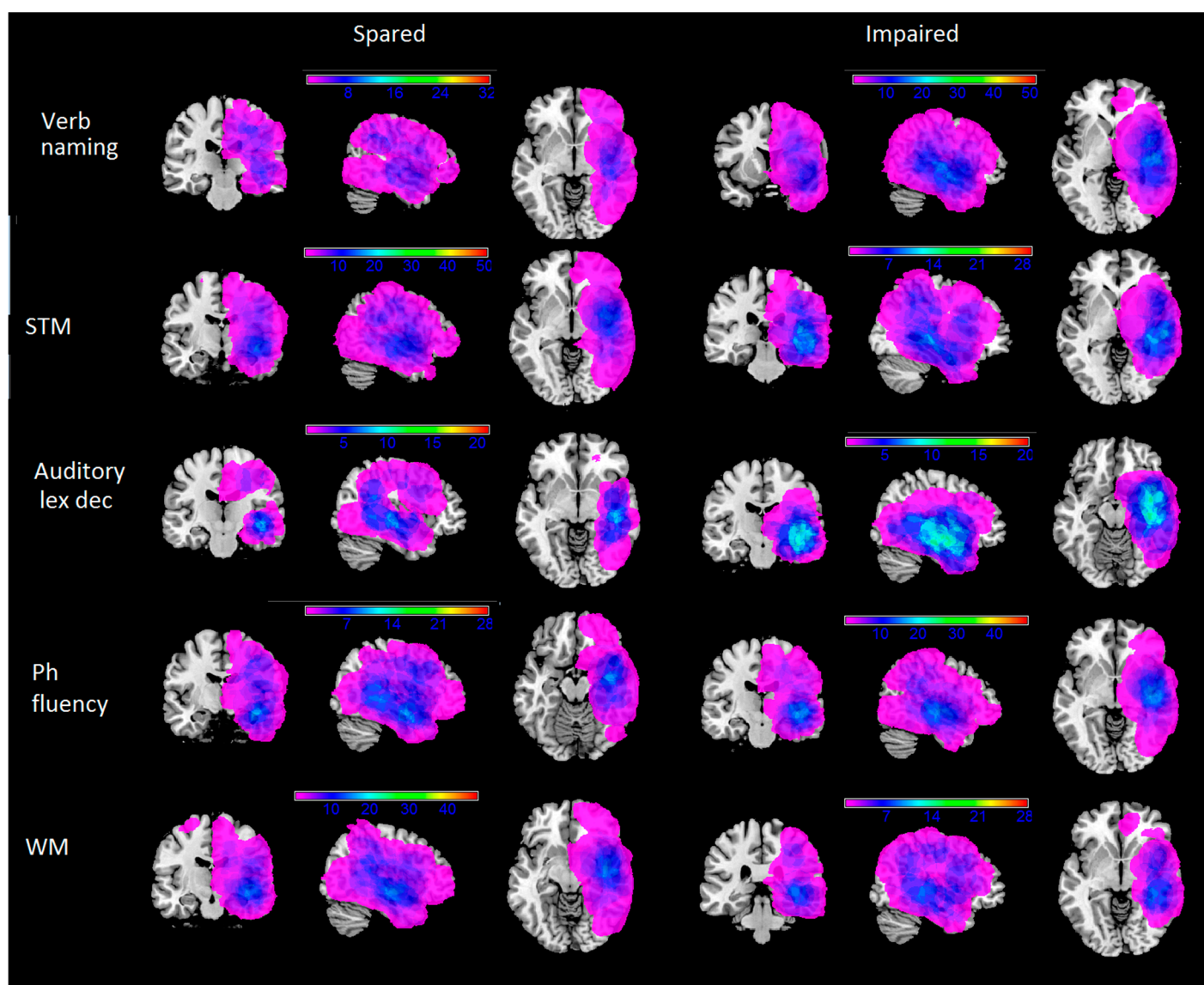


Figure S2. Overlaps of lesion masks of patients with spared (on the left side of the panel) and impaired (on the right side of the panel) performance. MR images are given in radiological convention (right is left and vice versa). The output is an overlay plot showing on a color scale the percentage of overlapping lesions.

Table S1. Subtraction analysis was performed for each cognitive test.

Area	Reading P			
	Max	MaxX	MaxY	MaxZ
Calcarine gyrus	37	27	-52	11
Middle temporal gyrus	37	45	-48	-3
Inferior temporal gyrus	37	47	-45	-4
Fusiform gyrus	34	40	-42	-13
Superior temporal gyrus	33	36	-32	12
Precuneus	32	27	-49	11
Lingual gyrus	29	23	-51	4
Hippocampus	29	28	-35	-2
Heschl's gyrus	29	33	-28	16
Postcentral gyrus	29	44	-26	45
ParaHippocampal gyrus	28	35	-41	-4
Thalamus	26	24	-23	13
Supramarginal gyrus	26	49	-30	33
Rolandic Operculum	24	25	-23	20
Insula	24	32	-25	18
Inferior parietal gyrus	21	38	-38	45
Angular gyrus	21	31	-45	39
Posterior thalamic radiation	39	34	-46	10
Retrolenticular part of the corona radiata	37	30	-37	13
Posterior corona radiata	37	27	-42	19
Superior longitudinal fasciculus	37	37	-52	14
Tapetum	37	27	-52	11
Sagittal stratum (IFOF+ILF)	34	40	-40	-6
Posterior limb of the internal capsule	29	26	-23	13
Splenium	26	18	-48	8
External capsule	26	28	-22	12
Fornix	26	23	-32	7
Superior corona radiata	24	24	-23	19
	Reading W			
Superior temporal gyrus	57	43	-38	12
Middle temporal gyrus	52	37	-50	14
Heschl's gyrus	46	36	-31	13
Inferior temporal gyrus	39	47	-46	-3
Calcarine cortex	37	30	-51	12
Precuneus	37	30	-49	11
Fusiform gyrrus	36	33	-44	-3
Hippocampus	34	33	-36	0
ParaHippocampal gyrus	34	35	-41	-4
Lingual gyrus	34	30	-46	-5
SupraMarginal gyrus	32	47	-42	22
Rolandic operculum	29	37	-31	19
Angular gyrus	29	41	-48	23
Inferior parietal gyrus	27	49	-43	39
Postcentral gyrus	24	46	-23	32
Insula	24	35	-29	19
Superior longitudinal fasciculus	57	40	-42	15
Posterior thalamic radiation	47	34	-45	9
Retrolenticular part of the corona radiata	44	34	-34	7
Sagittal stratum (IFOF+ILF)	36	37	-41	-5
Tapetum	32	28	-52	11
Fornix	31	29	-32	-1

Auditory Lexical decision				
Superior temporal gyrus	40	59	-9	-7
Insula	36	41	-1	-13
Hippocampus	36	40	-20	-17
Roladic_Oper	35	38	-4	12
Amygdala	35	32	-1	-18
Fusiform	35	30	-29	-15
Caudate	35	40	-29	-15
Hrschl	35	48	-12	9
Superior temporal pole	35	45	3	-18
Middle temporal gyrus	35	45	3	-22
Temporal_Pole	35	47	4	-17
ParaHippocampal gyrus	31	37	-19	-21
Inferior temporal gyrus	31	43	-21	-20
Inferior frontal gyrus (opercular part)	30	50	12	0
Inferior frontal gyrus (orbital part)	30	36	17	-21
Pallidum	30	29	-12	-4
Inferior frontal gyrus (triangular part)	25	46	21	0
Olfactory	25	28	12	-19
Thalamus	25	22	-19	-1
Sagittal stratum (IFOF+ILF)	36	40	-21	-16
External_capsule	35	33	-12	-1
Uncinate fasciculus	35	36	1	-21
Retrolenticular part of the corona radiata	30	30	-21	-2
Fornix	26	30	-8	-18
Posterior limb of the internal capsule	25	21	-19	-4
Writing				
Superior temporal gyrus	58	42	-28	11
Heschl	54	36	-31	13
Rolandic Operculum	42	44	-31	19
Rolandic Operculum	42	44	-31	19
Middle temporal gyrus	42	46	-43	12
SupraMarginal	38	46	-34	24
Insula	37	36	-29	19
Hippocampus	26	33	-36	0
Caudate	26	16	6	19
Putamen	24	35	-3	-1
Superior temporal pole	24	39	9	-26
ParaHippocampal gyrus	22	32	-39	-5
Fusiform	22	33	-40	-3
Inferior temporal gyrus	22	47	-46	-3
Frontal_sup	21	23	18	38
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Superior longitudinal fasciculus	45	39	-41	14
Retrolenticular part of the corona radiata	36	35	-34	6
Posterior thalamic radiation	31	38	-39	-2
Superior corona radiata	26	22	1	22
Sagittal stratum (IFOF+ILF)	26	38	-36	-4
Superior fronto occipital fasciculus	26	18	8	19
Short term memory				
Superior temporal gyrus	30	41	-32	13
Middle temporal gyrus	28	41	-32	13
Heschl's gyrus	26	38	-26	12
Hippocampus	24	34	-28	-6

Fusiform gyrus	24	38	-26	-17
Rolandic Operculum	22	43	-30	19
ParaHippocampal gyrus	22	28	-42	-3
Inferior temporal gyrus	22	54	-24	-4
Lingual gyrus	21	29	-43	-6
Retrolenticular part of the corona radiata	26	39	-32	-3
Sagittal stratum (IFOF+ILF)	26	39	-30	-12
Verb naming				
Superior temporal gyrus	25	47	-39	11
Middle temporal gyrus	24	47	-40	11
Inferior temporal gyrus_	20	56	-15	-23
Phonological Fluency				
Hippocampus	22	31	-37	3
Precuneus	21	28	-47	5
Retrolenticular part of the corona radiata	26	33	-37	3
Posterior thalamic radiation	24	38	-39	-2