

Supplementary Materials

BOLD Coupling between Lesioned and Healthy Brain Is Associated with Glioma Patients' Recovery

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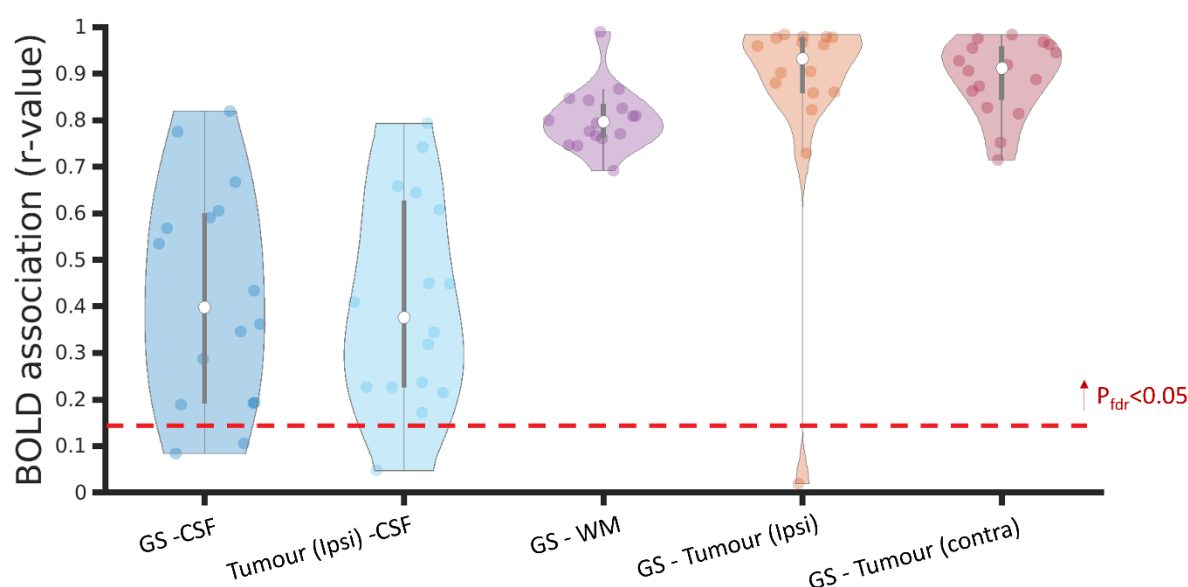


Figure S1. Correlation distribution across brain tumour patients (represented by individual dots) between BOLD signals derived from different tissue compartments: Gray Matter (that is, from which the GS is extracted), Cerebrospinal Fluid (CSF), White Matter (WM), Tumour (Tumour -ipsi-) and cortical regions contralateral to the tumour (Tumour -contra-). R-values over the dashed red line represent significant associations.

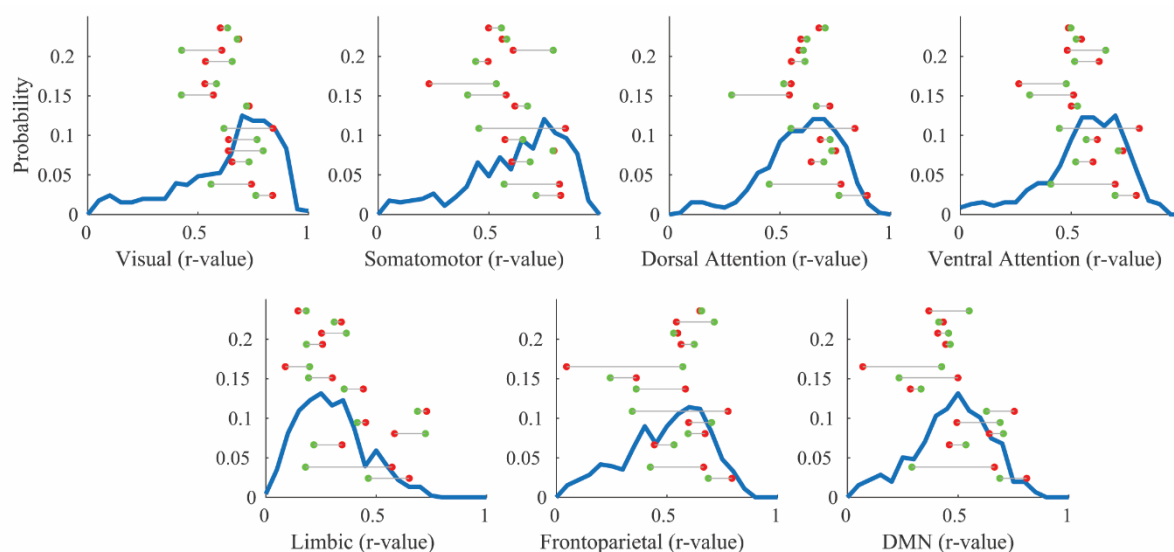


Figure S2. Average correlation within canonical networks in HC and brain tumour patients before and after surgery. Blue lines represent the distribution of the average correlation within each of the 7 canonical networks for 653 HCs. Individual

points illustrate the within network correlation for each brain tumour patient in the hemisphere containing the tumour before (red points), and immediately after surgery (green points). The Y-axis represents probability values only for HC, not for the individual points.

Table S1. Demographic and pathological information. # Number of patient; M, Male; F, Female; L, Left; R, Right; SFG, Superior Frontal Gyrus; MFG, Middle Frontal Gyrus; IFG, Inferior Frontal Gyrus; ITG, Inferior Temporal Gyrus; MTG, Middle Temporal Gyrus; SMA, Supplementary Motor Area; RT, radiotherapy; Astro – astrocytoma; GBM – glioblastoma multiforme; Oligo – oligodendroglioma; Lesion Vol Pre/Post – Total volume occupied by the tumour (Pre) and total amount of damaged tissue (Post) according to the lesion mask manually drawn on the MPRAGE image and refined with Unified Segmentation Lesion toolbox.

#	Age	Gender	Hand- edness	Presen-tation	Hemi	Location	Histology (WHO grade)	Molecular signature	Tumour/ Lesion Vol (Pre/Post) (cm ³)	Treat- ment
1	41	F	L	Seizures	L	Frontal	Oligo (II)	IDH Mutated 1p19q Lost ATRX Retained	166.8 94.5	Chemo-RT
2	32	M	R	Seizures	R	Insula	Astro (II)	IDH WT 1p19q - ATRX Lost	83.2 47.8	Chemo-RT
3	26	M	R	Seizures	L	Temporal / Insula	GBM (IV)	IDH Mutated 1p19q - ATRX Lost	59.0 30.1	Chemo-RT
4	49	F	R	Incidental	R	Insula	Oligo (II)	IDH Mutated 1p19q Lost ATRX Retained	31.5 37.5	Observatio n
5	55	F	R	Recu-rrence	L	Frontal / SFG / frontal pole	Oligo (II)	IDH Mutated 1p19q Lost ATRX Retained	21.1 43.4	Observatio n
6	22	F	L	Seizures	R	Frontal / IFG	Ganglio- glioma (I)	IDH - 1p19q - ATRX -	4.4 7.5	Observatio n
7	29	M	R	Seizures	R	Frontal / SFG & MFG	Astro (III)	IDH Mutated 1p19q Negative ATRX Lost	31.8 70.0	Chemo-RT
8	29	M	R	Seizures	R	Frontal / MFG	Astro (III)	IDH Mutated 1p19q Negative ATRX Lost	22.6 34.2	Chemo-RT
9	50	M	L	Seizures	L	Temporal / ITG	GBM (IV)	IDH WT 1p19q Negative ATRX Retained	15.6 15.7	Chemo-RT
10	38	F	R	Seizures	L	Frontal / MFG	Oligo (II)	IDH Mutated 1p19q Lost ATRX Retained	34.7 54.9	Chemo-RT
11	29	M	R	Seizures	L	Frontal / SFG / frontal pole	Astro (II)	IDH Mutated 1p19q Negative ATRX Lost	52.1 116.9	Observatio n
12	33	F	R	Head-aches	L	Temporal / MTG	Astro (III)	IDH Mutated 1p19q Negative ATRX Lost	87,0 84,8	Chemo-RT
13	27	F	R	Seizures	L	Superior Temporal Gyrus	Ganglioglio ma (I)	IDH WT 1p19q - ATRX -	7.6 8.5	Observatio n
14	56	F	R	Seizures	L	Superior Temporal Gyrus	Astro (II)	IDH Mutated 1p19q Negative ATRX Lost	37.4 19.2	Chemo-RT

15	32	M	R	Seizures	L	Superior Temporal Gyrus	Astro (III)	IDH Mutated 1p19q - ATRX Lost	18.0 30.3	Chemo-RT
16	27	M	R	Seizures	L	SFG/SMA & Pre-central	GBM (IV)	IDH WT 1p19q Negative ATRX Retained	73.6 43.7	Chemo-RT
17	30	M	R	Seizures	L	Inferior frontal	Astro (III)	IDH Mutated 1p19q - ATRX Lost	26.2 17.4	Chemo-RT

Table S2. MRI scans and neuropsychological assessments completed by each participant. # Number of patient.

#	MRI scanning				Neuropsychological assessment	
	Pre-operative	Post-operative	Month 3	Month 12	Pre-operative	Follow-up
1	Completed	Completed	Completed	Completed	Completed	Completed
2	Completed	Not completed	Completed	Completed	Completed	Not completed
3	Completed	Completed	Not completed	Not completed	Completed	Not completed
4	Completed	Completed	Completed	Not completed	Completed	Completed
5	Completed	Completed	Completed	Completed	Completed	Completed
6	Completed	Completed	Completed	Completed	Completed	Completed
7	Completed	Completed	Not completed	Completed	Completed	Completed
8	Completed	Completed	Completed	Completed	Completed	Completed
9	Completed	Completed	Not completed	Not completed	Completed	Not completed
10	Completed	Completed	Completed	Completed	Completed	Completed
11	Completed	Completed	Not completed	Not completed	Completed	Completed
12	Completed	Completed	Completed	Completed	Completed	Completed
13	Completed	Completed	Completed	Not completed	Completed	Completed
14	Completed	Completed	Completed	Not completed	Completed	Completed
15	Completed	Completed	Completed	Completed	Completed	Completed
16	Completed	Completed	Completed	Not completed	Completed	Completed
17	Completed	Completed	Completed	Completed	Completed	Completed