

Supplementary material *and/or* Additional information

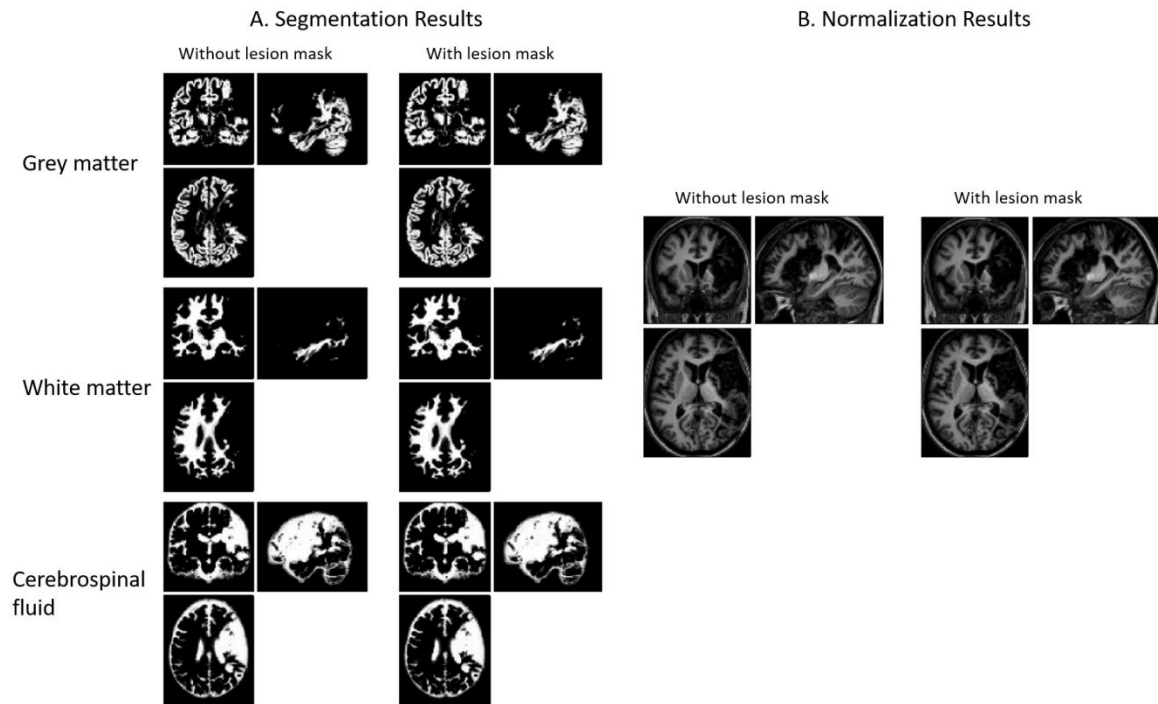


Figure S1. Segmentation (A) and normalization (B) results for a patient with a large stroke lesion after using or not the lesion mask during the preprocessing of the patient' fMRI data. No difference is observed between the two preprocessing strategies.

The MNI coordinates and the t values for each activated area are reported in the supplementary tables.

Table 1. Cerebral regions showing activation in the baseline comparisons.

Contrast / Anatomical Region	Corresponding Brodmann Area (BA)	Ipsilesional Hemisphere				Contralesional Hemisphere			
		x	y	z	t-value	x	y	z	t-value
1.Passive movement of the unaffected hand (PMvt_UH)									
Pre/Postcentral Gyrus	4,6,3,2					33	-22	53	11.9
Cerebellum_8		-21	-61	-55	8.5				
Cerebellum_4_5		-21	-49	-19	10.4				
2.Passive movement of the affected hand (PMvt_AH)									
Postcentral Gyrus	2,3,5,40					24	-37	68	7.1
Insula	13	-33	-22	11	6.7				
Parietal_inferior	40,2					54	-31	50	6.6
Thalamus						12	-10	14	6.6
Rolandic_Oper (Precentral Gyrus)	44	-45	-4	11	5.6	48	2	8	6.5
Supplemntary_Motor_Area	6					9	-7	65	6.5
Precentral Gyrus	4,6,3,2	-48	-19	-53	5.5				

MNI coordinates of activated regions with their corresponding Brodmann Areas (BA), in the baseline comparisons: 1. Passive extension movement with the unaffected hand (PMvt_UH) and 2. Passive extension movement of the affected spastic hand (PMvt_AH). Significant peaks are reported at a threshold of $p < 0.05$ corrected for Family Wise Error at the voxel level for (PMvt_UH) and at a threshold of $p < 0.001$ uncorrected with an extent cluster volume at $k=40$ voxels for (PMvt_AH).

Table 2. Cerebral regions showing activation resulting from the pairwise comparisons for the unaffected hand

Contrast / Anatomical Region	Corresponding Brodmann Area (BA)	Ipsilesional Hemisphere				Contralesional Hemisphere			
		x	y	z	t-value	x	y	z	t-value
Test 1 : PM_UH > PM_UH + mT1A									
Pre/Postcentral Gyrus	4,6,3					33	-22	56	11.7
Cerebellum_8		-21	-61	-52	7.9				
Cerebellum_4_5_6		-21	-49	-25	9.6				
Test 2: PM_UH > PM_UH + EACov									
Pre/Postcentral Gyrus	4,6,3,2					33	-25	53	11.3
Cerebellum_4_5_6		-18	-49	-19	9.5				
Cingulum_Mid						3	-22	47	9.0
Test 3: PM_UH > PM_UH + PhysCov									
						45	-28	59	12.4
Precentral Gyrus	4					39	-16	59	10.9
Postcentral Gyrus	3					33	-34	59	10.6
	1					42	-31	62	10.1
Precentral Gyrus	4					33	-25	65	9.1
Test 4: PM_UH > PM_UH + EAPhysCov									
Postcentral Gyrus	2					45	-28	56	11.7
Precentral Gyrus	4					36	-22	62	10.2
Postcentral Gyrus	3					33	-34	56	9.4

Regions in the MNI space with their corresponding Brodmann Areas (BA), showing activation resulting from the pairwise comparisons between the contrast images resulting from the different processing pathways and the baseline comparison. Test1: Effect of the addition of the lesion-masked T1 in the 1st level analysis (PM_UH > PM_UH + mT1). Test2: Effect of the addition of extension amplitude regressor as covariate in the 1st level analysis (PM_UH > PM_UH + EACov). Test3: The addition of physiological regressor as nuisance covariate (PM_UH > PM_UH + PhysCov). Test4: Effect of the addition of extension amplitude and physiological noise regressors as nuisance covariates (PM_UH > PM_UH + EAPhysCov). Significant peaks at a threshold of $p < 0.05$ corrected for Family Wise Error at the voxel level are shown.

Table 3. Cerebral regions showing activation after the pairwise comparisons for the affected hand

Contrast / Anatomical Region	Corresponding Brodmann Area (BA)	Ipsilesional Hemisphere				Contralesional Hemisphere			
		x	y	z	t-value	x	y	z	t-value
Test 2 : PMvt_AH > PMvt_AH + mT1A									
Poscentral Gyrus	2,3,5	-45	-19	53	5.1	33	-37	56	5.2
		-36	-34	59	5				
Cerebellum_6		-27	-55	-28	4.1				
Test 3: PMvt_AH > PMvt_AH + EACov									
Postcentral Gyrus	2,3,5					24	-37	65	6.5
Precentral Gyrus	6	-27	-16	59	5.6				

Regions in the MNI space with their corresponding Brodmann Areas (BA), showing activation resulting after small volume correction (SVC) applied on the pairwise comparisons between the contrast images resulting from the different processing pathways and the baseline comparison for the affected spastic hand. Test1: Effect of the addition of the lesion-masked T1 in the 1st level analysis (PMvt_AH > PM_AH + mT1). Test2: Effect of the addition of extension amplitude regressor as covariate during the 1st level analysis (PMvt_AH > PM_AH + EACov). Significant peaks are shown after small volume correction (SVC) applied on the activation maps, thresholded at $p < 0.001$ uncorrected.