Functional reorganization strategies associated to motor rehabilitation Gesture Therapy

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Technical Report: Functional reorganization strategies associated to motor rehabilitation Gesture Therapy

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Abstract:

We report on the functional reorganization strategies occurring in a small cohort of 8 patients undergoing motor rehabilitation with virtual reality based Gesture Therapy. All the patients had suffered a vascular cerebral event. We aim at depicting the histogram of these strategies as they occurred following the aforementioned therapy. In this longitudinal experiment, the patients' brain behaviour is interrogated before, after and in two intermediate points during the therapy application. Their clinical progress is assessed with validated scales of motor skills –Fugl-Meyer and Motricity index-. Finally psychological aspect of motivation in carrying out the therapy is evaluated by means of the Intrinsic Motivation Inventory. In bringing together medical history, clinical progress and brain monitoring, this report aims to give a comprehensive picture of the reorganization changes associated to the so called Gesture Therapy.

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Important information:

The experiment to which data is analysed here was carried out at the Instituto Nacional de Neurología y Neurocirugía (INNN) in Mexico City, Mexico. The experiment was designed and data acquired by personnel of the INNN and carried out over patients recruited from this institution. In this sense, this work would have been impossible without this prior work of the INNN rehabilitation therapy group lead by Dr. Jorge Hernández Franco. Members of this group who have been involved in this experiment include: Dr. Isabel Fernández del Castillo, Mr. Erick Pasaye, and Mrs. Lorena Palafox. The results presented in this report have been generated with the purpose of being helpful to the investigators at INNN. This note is not only an acknowledgement for their help during the analysis but a full recognition of their previous work.

Disambiguation

Throughout this report two terms in particular may cause ambiguity:

- **Session**: The term session is used indistinctly to refer to both a rehabilitation therapy programme session, or an fMRI imaging session. Of the former, the patients carried out their administered therapy along 20 sessions of 45 minutes each. Of the latter, the elite group was scanned in four sessions as further indicated in the text.
- **Compensatory strategies**: In rehabilitation therapy a compensatory movement is a movement made with the patient trunk effectively reducing the range of motion of the affected limb when attempting to perform a certain task. In neuroplasticity compensatory strategy, also referred to as *compensatory plasticity*, refers to a reorganization of function representation in the brain resulting from a cortical area loss whether due to infarct, traumatic injury, sensory damage, aging or other.

Introduction

By now it seems a bit superfluous to once more highlight the high frequency of stroke and its devastating effects in those who survive it [27]. Following brain infarct affecting the motor cortex, motor functions are reorganized to unaffected parts of the cortex. There is evidence suggesting that the rehabilitation therapies for recovery of motor capabilities may at least to some extent influence or guide this brain plasticity, perhaps through the induction of use-dependent cortical reorganization beyond the natural injury-related cortical reorganization [25, 26]. The challenge is to identify which of the many changes are benefitial in mediating recovery [9]. Understanding the reorganization mechanisms and strategies is critical for developing ever more efficient rehabilitation therapies [18]. Scientists have already identified some of the functional reorganization mechanisms and strategies following brain infarct.

Studying the changes associated to a rehabilitation therapy as a way to understand and sheer associated plasticity is not new. Perhaps the first example comes from Liepert et al [24] who used transcranial magnetic stimulation to assess plastic changes associated to constraint-induced movement therapy. Yet functional neural data of this nature is still rare and the relation between functional reorganization and restitution of motor function remains unclear. Moreover, there are still so many open questions, that the topic still demands investigation. For instance, the time elapsed since stroke does not appear to be a limiting factor, and applying passive therapy in the acute stages when the patients cannot move their limbs may help to improve outcome –the rationale being that passive training is known to influence sensorimotor cortex. In this light some of the open questions are: Are benefits of a period of training retained? How early after stroke can the reorganization strategies be manipulated by rehabilitation? [8].

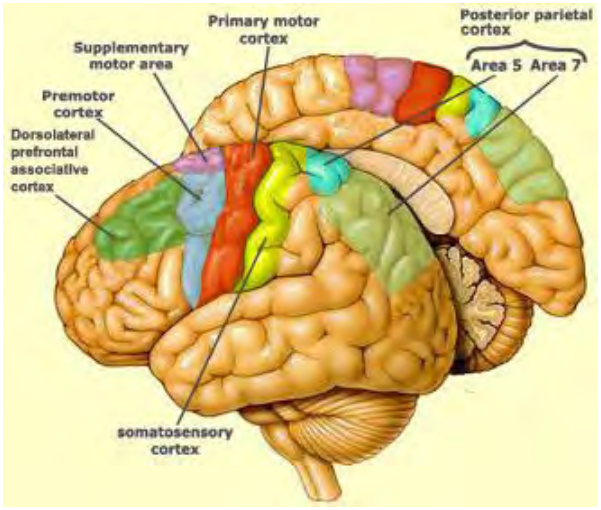
We have followed a small cohort of eight subjects when undergoing a virtual reality based therapy i.e. Gesture Therapy [38, 37, 6], and aim to depict the histogram of reorganization strategies associated to this rehabilitation therapy. The objective is not to prove the benefit of this therapy over other existing therapies but to create a comprehensive picture of the plastic changes occurring as this therapy is administrated. In this sense, we report here not only the evolving map of activity but also report their medical history and concomitant medication. Automatic lesion segmentation has been carried out. We report both brain activation and deactivation and put these in the context of the longitudinal effects. From this we intend to delimit cortical reorganization strategies occurring at subject specific level and overall quantification of brain active volume. A naive attempt to bring together brain behaviour and clinical outcome is also included, but correlation among these two is intentionally avoided.

The motor system

In executing movements, the primary motor cortex is the ultimate responsible for muscle movement. However, a number of other brain regions carry out important tasks so that we can

successfully make coordinated complex movements beyond the mere muscle contraction and relaxation. Indeed, if someone's motor cortex is destroyed, he or she loses the ability to make precise movements, yet for instance learning of new movements is not greatly affected as this takes place in the cerebellum. Moreover, motor sequences learned previously is also largely spared, thus those movements will still be executed except that they will occur more clumsily [1]. This section briefly overviews other regions involved in the execution of movements highlighted in Figure 1.

a)



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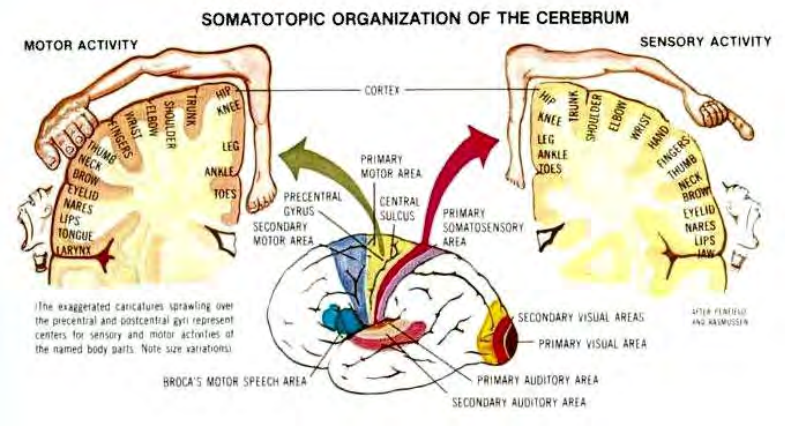

Figure 1 The motor system and the functional representation of the limbs in the motor cortex. Figures reproduced from http://thebrain.mcgill.ca.

- *Primary Motor Cortex*: Responsible for muscle control
- *Supplementary Motor Area (SMA)*: Planning of complex movements and coordinating bi-manual movements
- *Premotor cortex (PMC)*: Integrates sensory information to guide body movements. Control the muscles closest to the body's main axis and trunk.
- *Dorso-lateral prefrontal cortex (DL-PFC)*: In charge of motor intentions, planning, organization and regulation. It is also involved in the working memory and decision making.

- *Posterior parietal cortex (PPC)*: Assess context of movements. Receives somatosensory, propioceptive and visual inputs. Determines body position and target.

Motor rehabilitation therapies following a cerebrovascular event

The effects of the infarct are determined by the location of the lesion. Table 1 summarises some effects of the stroke when it occurs on certain brain major arteries. Those surviving a cerebrovascular event often end up with motor impairment. Much of the focus of stroke rehabilitation is on the recovery of impaired movement and the associated functions [21]. A wide range of approaches regarding rehabilitation now exist capitalising different paradigms [21]. While most of them seem to succeed to a extent in improving the motor skills of the patient, surprisingly none has prove to be unequivocally more effective than the rest [21]. This is particularly striking for high-cost therapies such as robot assisted therapy [28], which although to date they achieve good improvements for the arm, they may still be short on clinical success when compared to more classical constrained induced movement therapy, plus its credentials for recovering the hand function seems questionable [21]. This apparent failure to justify their costs together with the budget limitations in middle or low income countries, means that low cost alternatives are seek vehemently.

Table 1 Stroke effects due to infarct on exemplary arteries.

Artery	Effects
Anterior cerebral artery	Loss of sensitivity and strength in the lower limbs
Internal carotid artery	Damage to consciousness
Middle cerebral artery	Arm and face paralysis, loss of vision and aphasia when it occurs on the left side.
Vertebral/basilar arteries	Drowsiness, stupor, and coma if the lesion occurs in the lowest part of the corticospinal tract. If cerebellum is affected, dizziness and vertigo, difficulty to speak and gait problems.

Virtual reality based therapies

Among the latest addition to the repository of available rehabilitation paradigms is rehabilitation therapy capitalising on virtual reality [5, 10, 36]. Under this paradigm, the patient faces virtual tasks which he negotiates with *ad-hoc* hardware. Among the often claimed advantages of these type of rehabilitation therapies are their low cost both initial and maintenance, the quick and easy development, the capacity to be easily tailored to the user needs, and the less tangible but equally important engaging experience. Virtual reality therapies may be more or less pure, with some hybrid systems merging virtual reality and robotic assisted therapy, such as the TheraDrive [31]. Our group has pushed for the development of a more pure virtual reality based rehabilitation therapy, namely the Gesture Therapy.

Gesture therapy

Gesture Therapy (GT) is a virtual reality based motor rehabilitation therapy which favours movement repetition by virtual simulation of everyday tasks [36]. In GT, patients hold a trackable handgrip incorporating a pressure sensor (Figure 2a). The patient is presented with small games simulating everyday tasks such as picking an apple and putting it into the shopping trolley, or dropping an egg on a pan as depicted in Figure 2b-d.

Figure 3 presents an overview of the gesture therapy system. The system incorporates the following modules:

- *Simulated environment*: Responsible for presenting the game and interacting with the user.
- *Gesture tracking system*: The software bit responsible for tracking the handgrip, proxy of arm movements. The basic algorithm based on Hidden Markov Models is described in [12].
- *Physical system*: Encompasses the hardware platform incorporating a PC, a webcam and the handgrip.
- *Adaptation system*: Capable of adjusting the 3D space in which the exercise occurs. It allows adjusting the difficulty of the task and giving feedback to the user [6].
- *Trunk compensation detector*: Permits detection of the trunk compensation movements by tracking the user head. After trunk compensation movement occur, the system may provide an alarm or block the game.

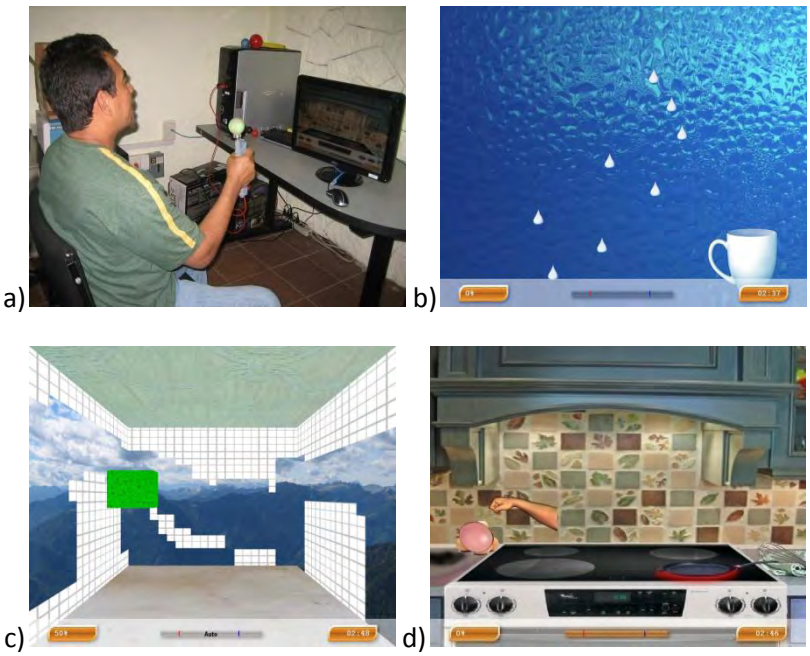

Figure 2 Gesture therapy. a) A healthy user interacting with the platform, b-d) Example of current available games reused from Hocoma Armeo® system http://www.hocoma.com/en/products/armeo/.

Figure 3 Gesture therapy system overview.

Some of the gesture therapy characteristics are:

- Low-cost (approx. 1000 USD)
- Easily adaptable
- Motor recovery similar to occupational therapy as suggested by preliminary clinical evaluation [37]
- Engaging
- Tasks are representative of everyday tasks
- Customizable
- Adjust and gives feedback
- Can be used without therapist supervision

Preliminar clinical evaluation of the Gesture Therapy has already been carried out at the Instituto Nacional de Neurología y Neurocirugía (INNN) in Mexico City and reported in [36, 38]. Motor recovery was assessed by the Fugl-Meyer scale [14] and the motricity index [11]. Motivation was assess by means of the Intrinsic Motivation Inventory (IMI) [32], composed of six subscale scores; interest/enjoyment, competence, effort, value/usefulness, felt pressure, and perceived choice

(pain). It has been suggested that Gesture Therapy allow for motor recovery similar to classical occupational therapy, but provides an extra advantage in terms of evoking a greater motivation.

Mechanisms and strategies of functional reorganization following stroke

The boundaries between mechanisms and strategies of functional reorganization is fuzzy. The reorganization mechanisms often refer to the biological and physiological changes leading to the reorganised brain, in other word it refers to the *when* and *how* does the reorganization occur. Figure 4 summarises the most common reorganization mechanisms [9]. In contrast, the reorganization strategies refer to the remapping of the cortical representation of functions, i.e. the *where* does the reorganization occurs.

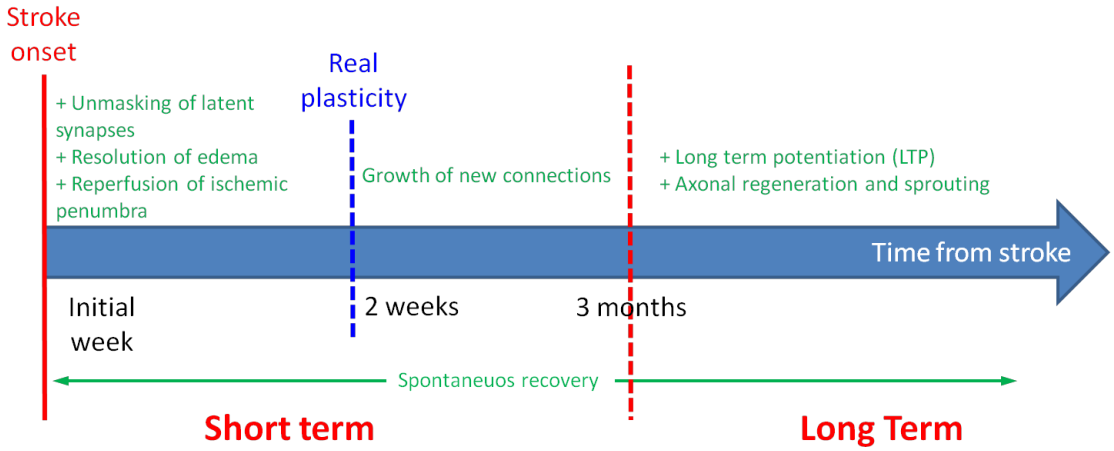

Figure 4 Functional reorganization mechanisms. Short term reorganization occurs during acute and subacute stages. Long term often refers to the chronic stage of the stroke.

We are mostly interested in the latter, the reorganization strategies. The reorganization strategy strongly depends on the extent of the injury and subject's age [9]. When damage to a functional system is partial, within-system recovery is possible. After complete destruction of a functional area, substitution becomes the only alternative. Survival of the penumbra is a major determinant of midterm recovery after ischemic stroke [8]. In turn, age slows down the plasticity and often leads to different reorganization strategy [9]. Injury at younger age is often associated with more extensive reorganization and better functional outcome. Notwithstanding these main biological limitations, a number of reorganization strategies are consistently reported in literature [8, 18, 19, 35, 7]. These are summarised in Table 2. Importantly, the recovery associated to the different strategies varies. For instance, there seems to be agreement that the greater the involvement of the ipsilesional motor network, the better is the recovery. Moreover, effort and motivation may influence the activation pattern. Acknowledging considerable variability, recovery often assumes an exponential shape with faster initial recovery followed by an asymptotic slower recovery pattern [8].

Table 2 Functional reorganization strategies.

Cerebral area	Cortical lesion	Subcortical lesion	Functional interpretation
Ipsilesional activation	Activation shifts towards infarct rim (perilesional activation)	Posterior shift of activity (+ common) or occasional inferior extension(- common)	The shift may represent: • Neural unmasking or disinhibition of existing latent connections, or • Recruitment of new neurons not normally devoted to motor functions (vicariance) and establishment of new synapsis
Bilateral recruitment of secondary motor areas (SMA, PM)	✓	✓	• PM becomes overactivated at late stage of recovery indicating a redistribution of workload • It may reflect recruitment of pre-existing large-scale distributed motor network rather tan genuine reorganization • Even simple tasks become complex for patients, thus it may reflect an increase in executive control as SMA and PM are associated with executing complex tasks
Contralesional activation of unaffected SM1	✓	✓	• Less efficient than ipsilesional activation • It may indicate an unconscious lack of effort
Recruitment of non-motor areas (PFC, PPC, ACingC, insula)	Not studied (2003)	✓	• May reflect compensatory cognitive strategies • Lesser with time suggests a recourse to normal baheviour; compensatory strategies become less necessary as recovery procedes
Recruitment of the Basal Ganglia	Not studied (2003)	✓	• fMRI is not well suited for the study of the basal ganglia (PET better?) • Basal ganglia is involved in motor skill learning
Recruitment of the cerebellum	N/A	N/A	• Cerebellum is involved in learning and memory storing of new movements.
Recovery of the damaged corticospinal tract	N/A	N/A	• The new tract joins the pons further low.

When data is not available up to a certain date this is indicated as Not studied (year). Posterior data may be available but the authors are unaware of them. Not Apply (N/A) is indicated for cerebellum and corticospinal tract as these are parts of the central nervous system independent of the cortex and subcortical white matter.

Materials and methods

Embedded within a larger experiment involving three groups including a control occupational therapy group, this experiment focus on one of the main experiment groups; the *elite* (see Figure 5). Briefly, the main experiment involving 28 subjects studies the benefits (or lack of) in terms of motor recovery in patients undergoing Gesture Therapy against a control group exposed to a more classical occupational therapy. The group randomised to Gesture Therapy was further split with a group labelled the *elite* group also being MR scanned at several points during the therapy. It is this *elite* subgroup which conform the cohort of the experiment reported here.

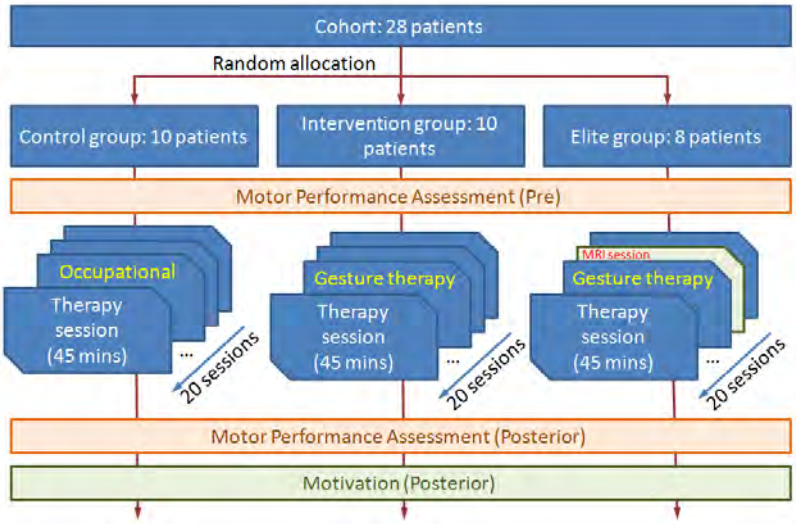

Figure 5 Experimental design. This report focuses on the elite group.

Subjects

Eight patients who had suffered a stroke were recruited from the National Institute of Neurology and Neurosurgery (INNN) in México City. Patients were informed of the nature of the experiment and asked to sign a consent form, before being enrolled. To be eligible patients should have had their last stroke at least 6 months prior to the study and must be able to understand and execute the task under investigation. Patients hemiparesis should be of one of their upper limbs. In addition, there should be an adequate control of concomitant diseases. All patients were right handed. Severe pain during movement or articulation instability (shoulder, elbow or wrist), severe medical problems such as congestive heart failure or convulsive seizures preventing adequate attention to task, as well as aphasia and apraxia were all sufficient as exclusion criteria. Cohort characteristics, medical history and concomitant drug administration are detailed below in the Results section.

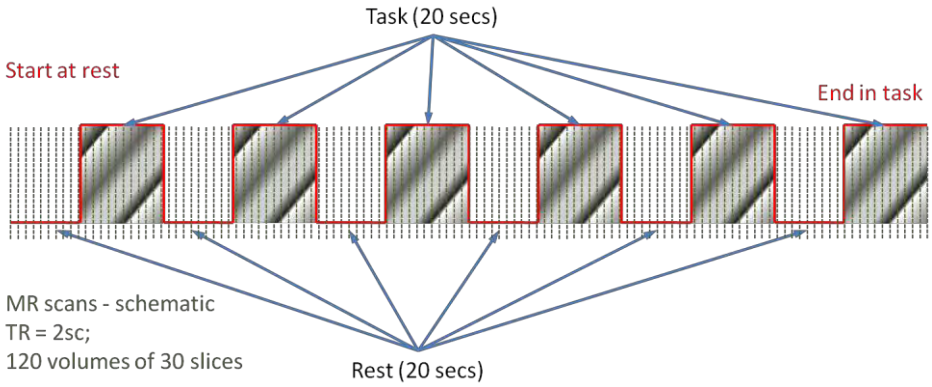

Figure 6 Schematic representation of the stimulus train

Experiment description and image acquisition

The 8 patients underwent a motor rehabilitation Gesture Therapy consisting of 20 sessions of 45 minutes each. Behavioural performance metrics were acquired before the first session and after the end of the therapy. Four 3T (General Electric, GE HDXT) MR sessions were recorded from each patient at the following times; 1) before the first rehabilitation session, 2) after the 7th rehabilitation session, 3) after the 14th rehabilitation session, 4) and at completion of the planned therapy. During the MR scans subjects head and arm movements were restricted and hold a phantom gripper with their affected hand. A video of a Gesture Therapy game was displayed, and patients were asked to imagine the cursor hand displacement in the screen at the same time that they indeed tried to move the affected hand.

At each MR session both a structural and a functional sequence scans were acquired. Series T1 weighted spoiled gradient echo (SPGR) was selected as the anatomical MRI scan (180 slices sized 256x256 with isotropic 1x1x1 mm voxel size), and echo planar imaging blood oxygen level dependent (EPI-BOLD) was the contrast for the functional image (30 slices sized 64x64 with 3.75x3.75x5 mm voxel size). Following a block design, sessions consisted of six 20 seconds task blocks interspersed with the same number of 20 seconds rest blocks starting on rest. 120 volumes were acquired (TR=2sc; TE=40 ms; FOV=24 cm) in total. The train of stimulus is presented in Figure 6.

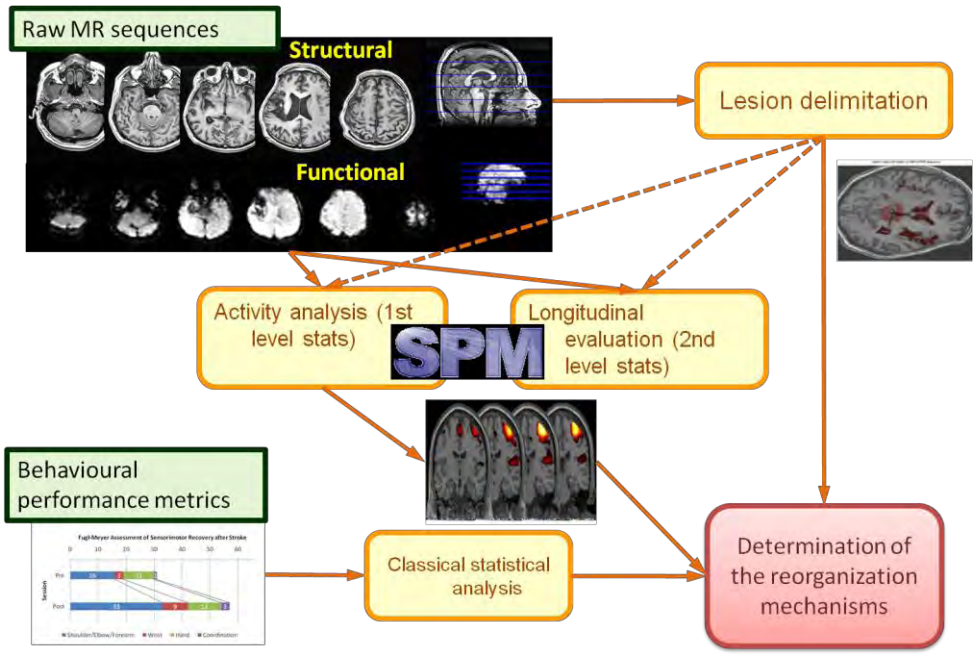

Figure 7 Data analysis strategy. Functional sequence of the neuroimage was analysed using SPM both at 1st (intra-subject and session) and 2nd level (group level) to determine active and deactive volume. Structural sequence of the neuroimage was passed onto a lesion segmentation algorithm. Classical statistical analysis was carried out over clinical performance and motivation data. All of the individual analyses were taken into account to yield a final comprehensive picture of the reorganization mechanisms.

In order to obtain a comprehensive picture of the reorganization strategies it is necessary to look at the lesion localization, clinical outcomes, patient history as well as functional response longitudinally across the rehabilitation process. In this sense, the planned analysis strategy followed that illustrated in Figure 7. In addition tabulated information of the cohort characteristics including medical and pharmacological history was also take into account for functional image understanding.

Image processing

Image processing was carried out using SPM8 (http://www.fil.ion.ucl.ac.uk/spm/). After conversion from DICOM to NIFTI format, images were realigned to compensate for motion. Structural and functional were first co-registered and then normalized to a standard template (ICBM). Finally a low pass spatially filtered (8 pixels FWHM Gaussian filter). Overview of the image pre-processing is illustrated in Figure 8. Slice timing correction was not used.

Behavioural metrics of performance

Motor recovery was assessed by the Fugl-Meyer scale [14] and the motricity index [11]. In both cases after confirming deviation from normality by means of the Shapiro-Wilk test and QQ-plots, non-parametric Mann-Whitney U test was used to assess statistical significance (α=5%).

Motivation was assessed by means of the Intrinsic Motivation Inventory (IMI) [32], composed of six subscale scores; interest/enjoyment, competence, effort, value/usefulness, felt pressure, and perceived choice (pain).

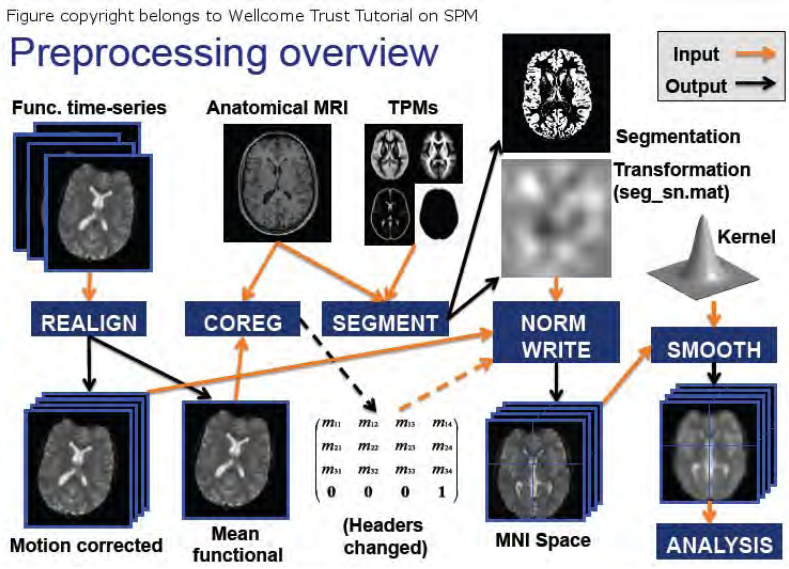

Figure 8 Preprocessing overview. Image reproduced from Wellcome Trust Tutorial on SPM [http://www.fil.ion.ucl.ac.uk/spm/course/slides10-zurich/]. The functional sequence of the neuroimage were realigned to compensate for motion (REALIGN). Structural and functional images were co-registered (COREG) and then normalized to a standard template (ICBM) (NORM WRITE). Finally a low pass spatial filter was applied to the functional images (SMOOTH). Segmentation of TPMs was not employed (SEGMENT).

Lesion delimitation

A number of automatic brain tissue segmentation techniques exist in literature (see [2] introduction for a short review). Of these, a subset focuses on lesion delimitation following traumatic [16] or stroke [23] injury. Most of these techniques are multispectral, making use two or more MR sequences [3, 2]. Notwithstanding, in clinical situations acquisition of multispectral images is rare given time and cost limitations [33]. Among those necessitating a single MR sequence there are techniques based on T1 Fluid Attenuation Inversion Recovery (FLAIR) [16], diffusion weighted imaging (DWI) [29, 20, 15], diffusion tensor imaging (DTI) [23] and structural T1 weighted [33, 34]. The attempt to segment directly structural T1 weighted is not new and a number of attempts have been tried [34]. However, when using structural T1 weighted for lesion segmentation image intensity between lesion and healthy voxel is highly similar, which has often resulted in poor accuracy and/or missing of small lesions. Recently, Shen et al [33, 34] published an algorithm claimed to overcome this problem. Capitalizing on the idea that when lesions are present, the voxel intensity based segmentation and the spatial location based tissue distribution should be inconsistent, they have proposed a fuzzy c-means clustering based approach achieving high levels of sensitivity and specificity across different lesion sizes [34] illustrated in Figure 9.

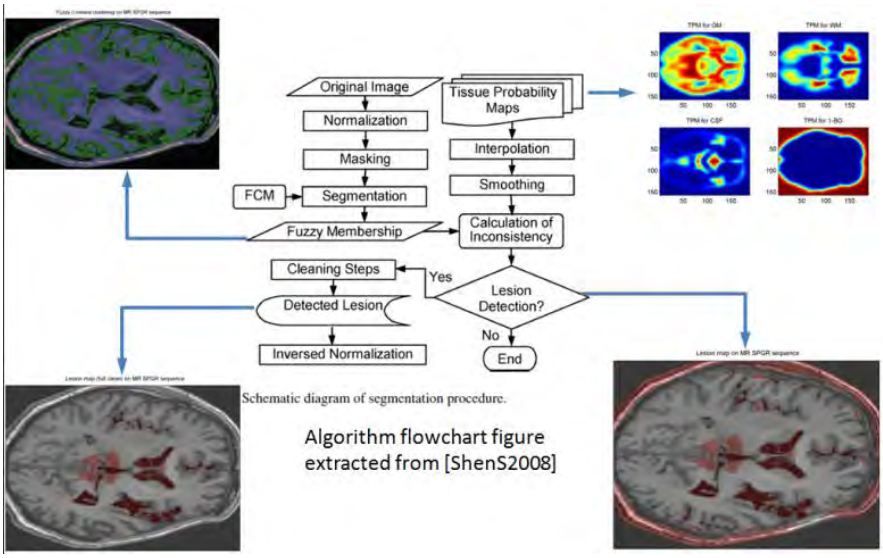

Figure 9 Flowchart of the lesion segmentation algorithm [33]. The central schematic diagram has been reproduced from the original. Briefly using a fuzzy c-means clustering the algorithm groups image voxels into four tissue classes corresponding to grey matter (GM), white matter (WM), cerebrospinal fluid (CSF) and Background (BG) including the skull. The segmented image is then compared to tissue probability maps (TPMs) from a standard template in SPM under the assumption that at lesions, the segmented and the TPMs images should exhibit large discrepancies. Finally, a cleaning stage smoothes out the output.

After implementing both versions of the algorithm; i.e. 2008 [33] and 2010 [34], we found that the most recent version tend to be more unstable; in particular in its step to remove the ventricles by erosion and dilation, plus differences in the rest of the segmentation are mostly negligible. Thus, we

here employ 2008 Shen's algorithm [33] to delimitate lesions from the structural images in our dataset and just keep in mind the known limitations of the algorithm when interpreting the results.

Intra-subject intra-session analysis of functional activation and deactivation

Analysis of brain activity was performed using SPM8. An example of the 1st level design matrix for the general linear model used during the activity of analysis is illustrated in Figure 10. *t*-test maps were derived. Rest was explicitly modelled in the design matrix facilitating the analysis of activation (contrast [-1 1]) and deactivation (contrast [1 -1]). Under explicit modelling, the rest condition is incorporated as an extra column in the design matrix and the train of rests is naturally convolved with the haemodynamic response function (HRF). This is in contrast to implicit modelling whereby rest is absent in the design matrix. There seems to be lack of consensus among the scientists about whether rest or baseline should be modelled implicitly or explicitly. Those authors favouring implicit modelling claim that baseline is a condition naturally implicit and that by explicitly modelling the rest, 1 degree of freedom is lost [30]. Moreover, why should the baseline be convolved with the HRF? On the other hand, those authors favouring explicit modelling claim that this approach is less noisy, and that explicit modelling is particularly convenient with more than 2 conditions assuming a certain redundancy [4]. In general however, there is no difference whether the rest period is explicitly modelled or not; the only difference may arise because of edge effects during the convolution with the expected HRF [30].

Voxel-wise statistic image threshold was set to $p<0.001$ (FWE). In our case, because the last block correspond to a task block, upon convolution of the haemodynamic response function (HRF) with the stimulus train, the response corresponding to the last block is truncated. Active volumes were quantified in pixels and longitudinal progression of it was assessed using Friedmann test ($p<0.05$).

After obtaining the statistical parametric maps, each map was anatomically labelled using the SPM Anatomical Automatic Labelling (AAL) toolbox. This toolbox provides an automatic anatomical parcellation of the MNI standard single-subject volume. Areas are labelled as indicated in [39] using the cluster labelling procedure. After the original parcellation with AAL, clusters were grouped according to the anatomical location.

In addition, pairwise subtraction of activation/deactivation maps were computed. For this activity maps were binarised at the statistically significant threshold and then subtracted. Detailed pairwise subtraction highlights areas switching activity and rest from between the sessions.

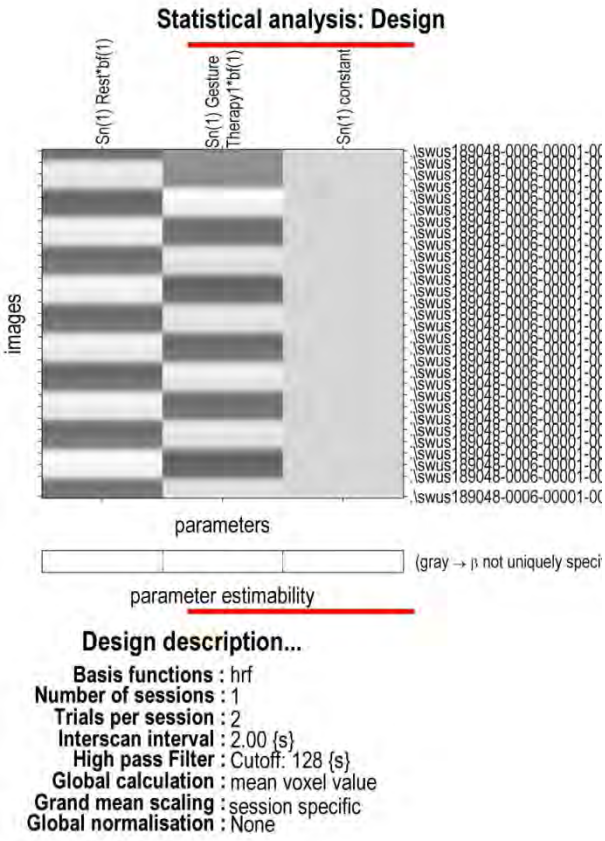

Figure 10 An example of the design matrix for the GLM used for the analysis of activity. Each column of the design matrix represents a different regressor or explanatory variable in the general linear model. Rest is modelled explicitly (please refer to main text for details on the consequences of this decision). Each row of the design matrix corresponds one of the 120 volumes or scans acquired during the session. The stimulus train is convolved with a double gamma haemodynamic response function (HRF) to obtain the matrix coefficients which are then colour coded for visual representation.

Inter-subject analysis of functional activation

Following the first level analysis a second level analysis was carried out in SPM8 to infer any common behaviour inter-subject. A one way ANOVA within subject factorial design formulation was set, and the design matrix is shown in Figure 11. Covariates such as age or gender were not included because of the low number of subjects. Model was estimated using classical Restricted Maximum Likelihood (ReML). Four contrasts were used to reveal common active foci, one per session across subjects. An example of the contrast used for session 1 follows:

1	0	0	0	0	0	0	0	1	0	0	0
0	1	0	0	0	0	0	0	1	0	0	0
0	0	1	0	0	0	0	0	1	0	0	0
0	0	0	1	0	0	0	0	1	0	0	0
0	0	0	0	1	0	0	0	1	0	0	0
0	0	0	0	0	1	0	0	1	0	0	0
0	0	0	0	0	0	1	0	1	0	0	0
0	0	0	0	0	0	0	1	1	0	0	0

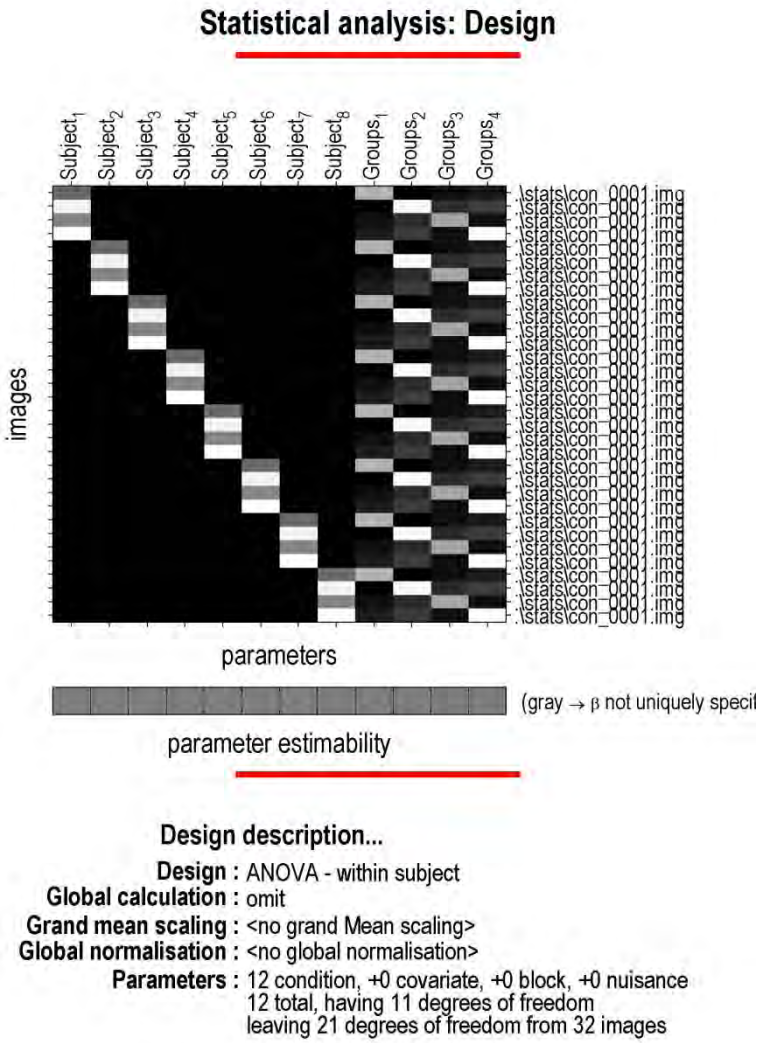

Figure 11 2nd level analysis design matrix. No covariates such as age were used because of the small number of patients. Each column represents a regressor or explanatory variable. Each row corresponds to the contrast obtained for a single session and subject. The 2nd level analysis brings together all previous individual analysis per session and subject to estimate significance of common behaviour. An ANOVA within subject model specification was chosen.

In the above contrast the first eight columns correspond to each subject when used as a 3nd level regressor, and the last 4 columns correspond to the different sessions.

Results

Incidences and data integrity

Functional MRI session 1 for subject 5 abruptly ended when the equipment was suspended 7 minutes before the study was completed leaving only 3360 images instead of 3600. Nevertheless, this data was included in the study but the last block of the stimulus train was discarded. Five

sessions required repetition because of patient movement. Sessions 1 and 2 from subject 4 show remarkable similarity. We have been unable to trace whether this is due to an error during image storage with both neuroimages coming from only 1 session, yet we remain suspicious.

Cohort characteristics; Clinical history and pharmacological treatment

Subjects included 4 males and 4 females but gender was not considered as a regressor. Ages ranged from 24 to 55 (mean 38.71 years). All were right handed and have suffered hemorraghic stroke affecting one of its upper limbs, but affected limb may be the right (6 cases) or the left (2 cases). Only one presented multiple strokes, and another one presented it infarct at cortical level. Cohort characteristics and clinical evaluation of the lesion extent by doctors at INNN is indicated Table 3. Their medical history and medication are summarised in Table 4 and Table 5, respectively.

Behavioural analysis

Motor recovery

Individual improvements according to the Fugl-Meyer scale was observed in all participants as illustrated in Figure 12. However improvement was uneven with regards to the criteria. For instance subject 4 and 6 experienced large improvements in wrist, hand and coordination, while subject 7 and 8 demonstrated greater improvement in the shoulder/elbow/forearm. Cohort mean behaviour is represented in Figure 14 indicating overall increments in all Fugl-Meyer criteria. All criteria reached statistical significance ($p<0.05$). Similarly, all patients exhibited improvements at individual level according to the motricity index as depicted in Figure 15. Cohort mean motricity index scoring is shown in Figure 17 and the overall increment is evident, but this improvement is mainly due to the better performance of the hand grip. Indeed, only hand grip and overall scoring improvements reached statistical significance at $p<0.05$. Importantly, the elbow flexion criterium was assessed with Mann-Whitney U test despite having tested positive in the Shapiro-Wilk normality test. This decision was taken by the researcher based upon visualization of the QQ plot (not shown) against the normal distribution.

Table 3 Cohort characteristics and clinical evaluation of the lesion extent

Subject	Age	Gender	Handedness	Affected upper limb	Last stroke		Location and extent of lesion at Session 1					Other affected functions (e.g. lenguage)
					Time from stroke at rehabilitation therapy onset	Stroke date	Multiple strokes?	Cortical / Subcortical	Hemorrhagic/ Ischemic	Origin	Brain regions affected by lesion	
1	24	F	RH	Right	29 months	05/06/2008	no	subcortical	hemorrhagic	left internal carotid artery	supratentorial and extra-axial	right pyramidal syndrome
2	35	M	RH	Right	9 months	17/02/2010	no	subcortical	hemorrhagic	middle cerebral artery	internal capsule	no
3	49	M	RH	Right	21 months	11/02/2009	no	cortical	hemorrhagic	left middle cerebral artery	Basal ganglia	no
4	24	M	RH	Right	66 months	03/06/2005	no	subcortical	hemorrhagic	posterior cerebral artery and left anterior cerebral artery	right temporal-occipital region	no
5	55	F	RH	Left	28 months	27/07/2008	no	subcortical	hemorrhagic	subarachnoid	thalamus and posterior limb of the right internal capsule	pyramidal and sensitive syndromes
6	30	M	RH	Right	127 months	18/04/2000	no	subcortical	hemorrhagic	anterior cerebral artery	left parietal-temporal	right pyramidal syndrome
7		F	RH	Left	78 months	23/06/2004	no	subcortical	hemorrhagic	right posterior communicant artery	left sylvian valley	no
8	54	F	RH	Right	10 months	10/03/2010	yes	subcortical	hemorrhagic	basilar artery	mesencephalon and pons Varolii	no

Table 4 Cohort medical history

Subject	Musculoskeletal problem	Diabetes	Mental Health Condition	Sleep disorder	Glaucoma or cataract	Myocardial infarction	Congestive heart failure	Cancer	Peripheral vascular disease	Chronic pain syndrome	Angina	Chronic obstructive pulmonary disease	Other
1	no	no	no	no	no	no	no	no	no	no	no	no	no
2	no	no	no	no	no	no	no	no	no	no	no	no	hypertension
3	no	no	no	no	no	no	no	no	no	no	no	no	no
4	no	no	no	no	no	no	no	no	no	no	no	no	epilepsy, dislipidemy, obesity
5	no	no	no	no	no	no	no	no	no	no	no	no	hypertension
6	no	no	no	no	no	no	no	no	no	no	no	no	dislipidemy
7	no	no	no	no	no	no	no	no	no	no	no	no	no
8	no	no	no	no	no	no	no	no	no	no	no	no	evc

Table 5 Cohort concomitant medication

Subject	Lipid-lowering agent	Aspirin or antiplatelet agent	Antihypertensive agent	Warfarin	Antidepressant	Antianxiety agent	Prescription pain drug	Baclofen	Tizanidine	Other muscle relaxant	Other
1	no	no	no	no	no	no	no	no	no	no	no
2	no	no	no	no	no	no	no	no	no	no	captopril
3	no	no	no	no	no	no	no	no	no	no	enalpril, amiodarona, metoprolol, aldactone
4	no	no	no	no	no	no	no	no	no	no	no
5	no	no	homeopathic	no	no	no	no	no	no	no	no
6	no	no	no	no	no	no	no	no	no	no	no
7	no	no	no	no	no	no	no	no	no	no	no
8	no	no	no	no	no	no	no	no	no	no	captopril

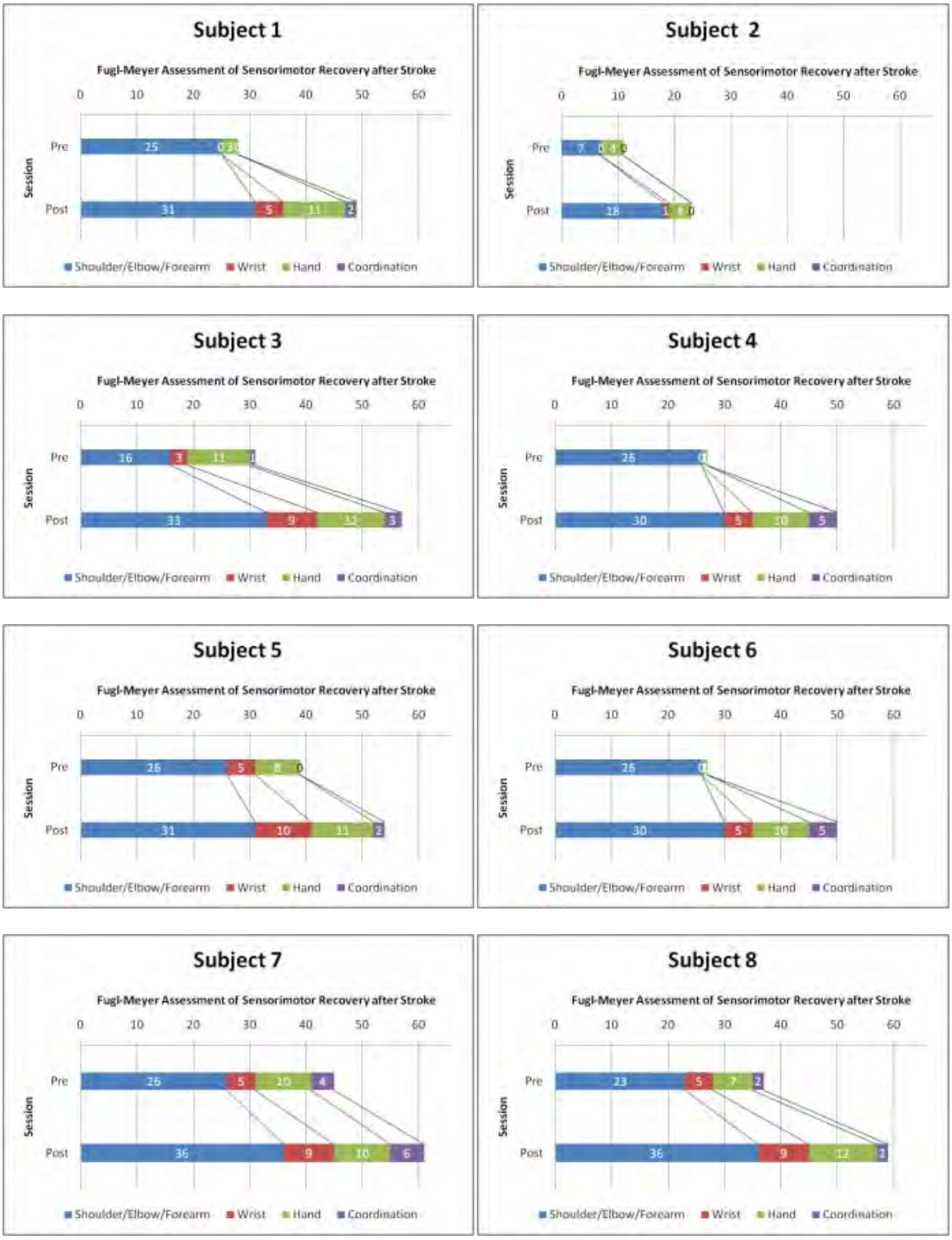

Figure 12 Results of the Fugl-Meyer score for the elite cohort, prior to undertake the gesture therapy (pre) and after having finished the therapy (post). Colour bands correspond to the Fugl-Meyer scoring criteria; shoulder/Elbow forearm (blue), Wrist (red), Hand (green) and Coordination (purple) respectively.

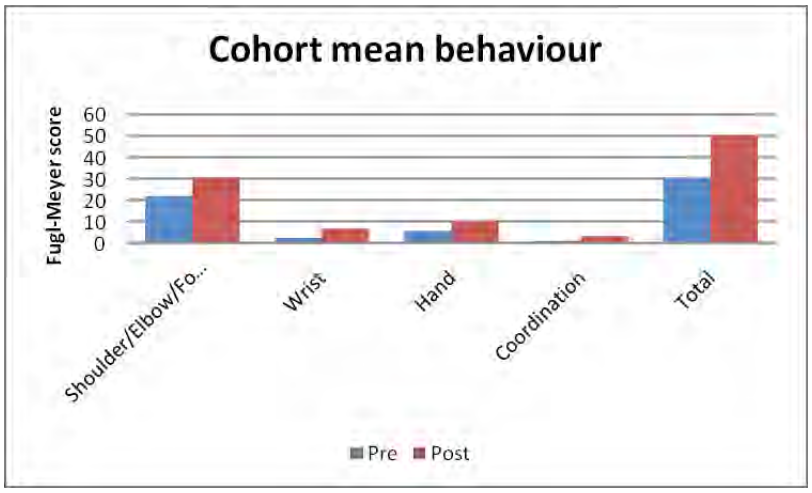

Figure 13 Summary of the Fugl-Meyer scores for the elite cohort, prior to undertake the gesture therapy (pre) and after having finished the therapy (post). An absolute increase in all criteria is evident.

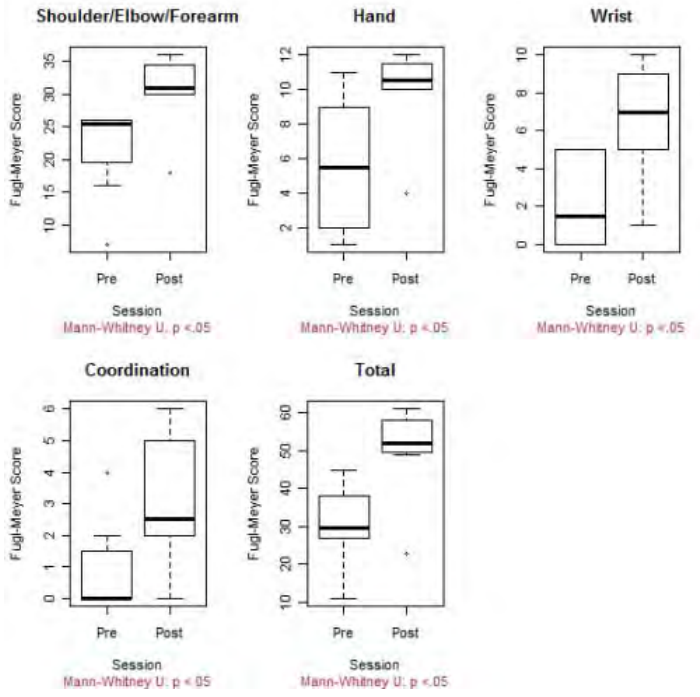

Figure 14 Boxplots of the Fugl-Meyer scores for the elite cohort, prior to undertake the gesture therapy (pre) and after having finished the therapy (post). Improvements in all criteria reached statistical significance (p<0.05).

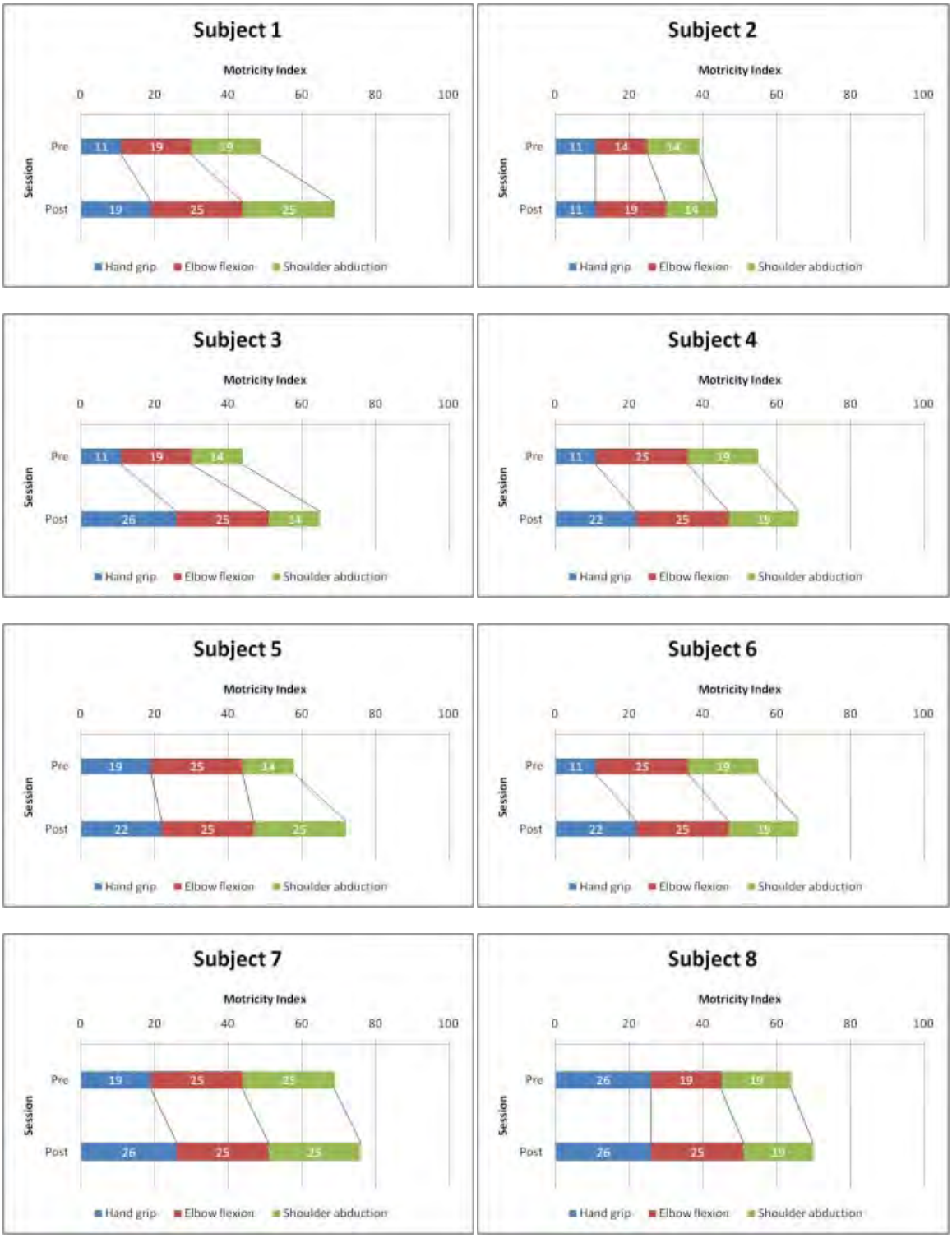

Figure 15 Results of the Motricity Index score for the elite cohort, prior to undertake the gesture therapy (pre) and after having finished the therapy (post). Colour bands correspond to the Motricity Index scoring criteria; hand grip (blue), elbow flexion (red) and shoulder abduction (green) respectively.

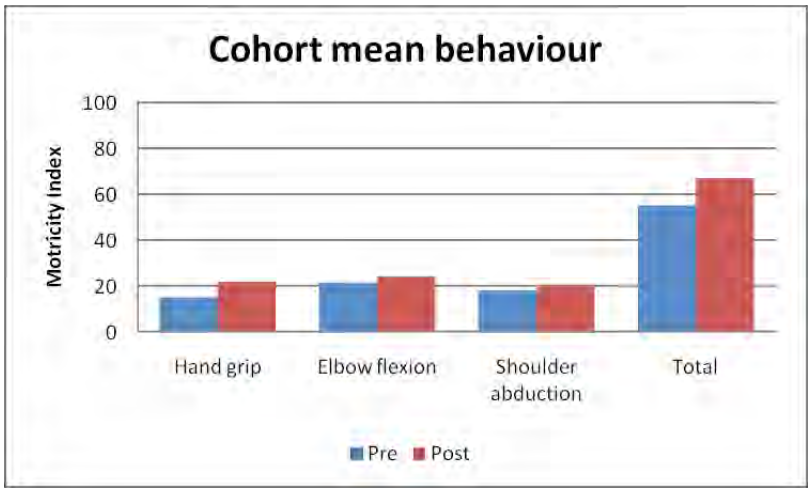

Figure 16 Summary of the Motricity Index score for the elite cohort, prior to undertake the gesture therapy (pre) and after having finished the therapy (post). An absolute increase in all criteria is evident.

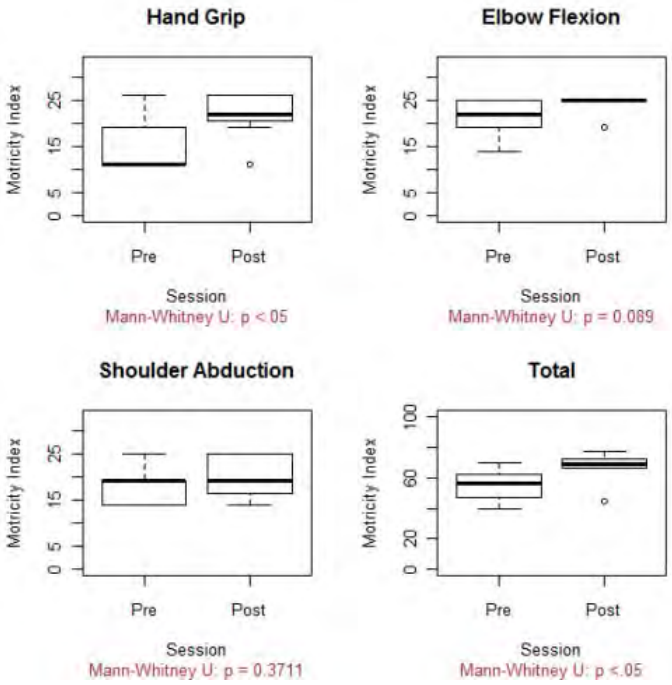

Figure 17 Boxplots of the Motricity Index scores for the elite cohort, prior to undertake the gesture therapy (pre) and after having finished the therapy (post). Global improvements, and improvement in hand grip reached statistical significance (p<0.05).

While both motor skill scoring systems agree in an overall improvement and in particular with respect to the hand, there is mild discrepancy on whether the improvement in the elbow may be significant (Fugl-Meyer) or not (Motricity Index). This is perhaps a crude statement as both criteria are not directly comparable.

Motivation

Since there is only one motivation score available for the cohort, this was compared against results from the control group of the main experiment. Figure 18 illustrates the motivation scoring for the elite and control groups. Very slight improvements in motivation can be appreciated in competence, pain and global scoring for the elite group undergoing GT over the control group undergoing occupational therapy. Moreover, enjoy and tension criteria seem to be favourable to the control group. None of the criteria reached statistical significance (see Figure 19). This is in contrast with our own previous findings [37] which suggested that GT may exhibit a motivational edge over more classic occupational therapy across all motivational criteria. Although the original study in [37] recruited a bigger cohort; 42 patients randomly divided into 22 control and 20 GT groups, thus accounting for a bigger statistical power, the cohort was also less homogeneous, including ischemic and haemorrhagic patients. Moreover the original study claim; "a stronger motivation and attachment to the treatment is observed for the patients that used Gesture Therapy" was made without stating statistical significance findings regarding motivation. Thus more investigation is required to dilucidate whether GT indeed evokes greater motivation among the patients. Notwithstanding, GT is still an evolving therapy and the improvements to it may prove decisive.

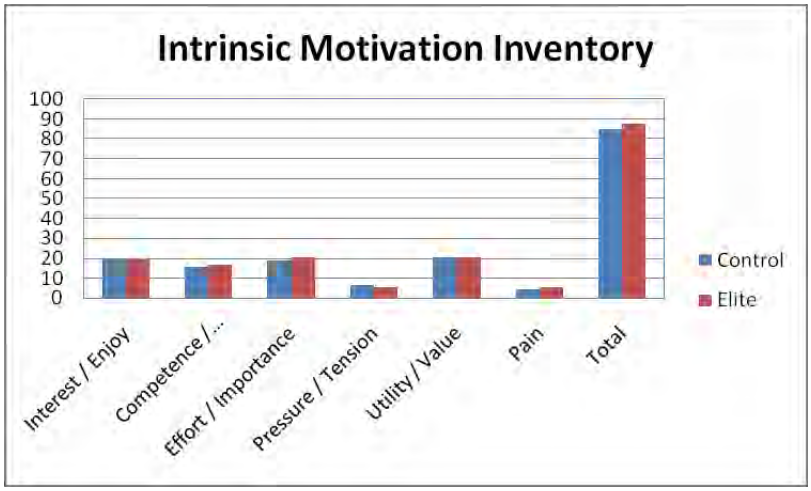

Figure 18 Summary of the Intrinsic Motivation Inventory score for the control versus the elite groups.

Lesion delimitation

Comprehensive results from lesion delimitation can be found in Appendix A. In general, the segmentation achieved is extremely poor and noisy, and hardly suffices for qualitative assessment of the lesion location and extent for which human visual assessment is further required. Nevertheless, automatic segmentation grossly confirms clinical evaluation of the lesion location and extent in Table 1. Unfortunately, lesion volume quantification and longitudinal evolution at this point is unfeasible because of the shortcomings of the segmentation algorithm. Manual segmentation of the lesion is perhaps a bad choice as subsequent quantification will be greatly affected by "hand" precision. As already discussed other algorithms for lesion segmentation exist but they do require other MR sequences to be acquired.

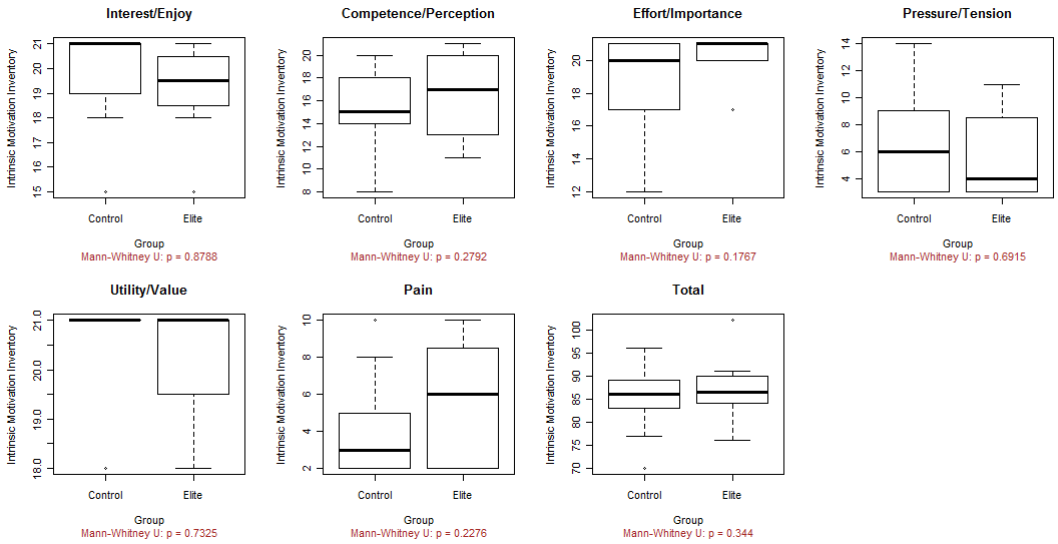

Figure 19 Boxplots of the Intrinsic Motivation Inventory scoring for the control versus the elite groups and the corresponding statistics. No criterium reached statistical significance; this is in clear contrast to prior findings [37].

Intra-subject intra-session analysis of functional activation and deactivation

The full statistical parametric maps of activity and the associated labelling of active areas can be found in Appendix B. Figure 20 summarises the map of activity for the dataset and Figure 21 summarises the active volume quantification. From the map of activity, a few interesting patterns can be appreciated. Subject 2 exhibits strong lateralization of his response with most activity being concentrated in the contralesional hemisphere. Subjects 3 and 7 opposed in their activity with subject 3 almost lacking any activity (in any sessions) whilst subject 7 presenting frenetic brain activity, especially as from session 2. Some subjects i.e. 4 and 7 tend to increase their activity as the therapy progresses whilst others such as subject 2 tend to attenuate it. This is confirmed in Figure 22 illustrating the evolution of active volume per subject. These uneven patterns are exemplary of the large inter subject differences. Changes in active volume have a peak on the second session (Figure 21b; higher median) but this was not found to be significant (Friedmann test; $p<0.05$).

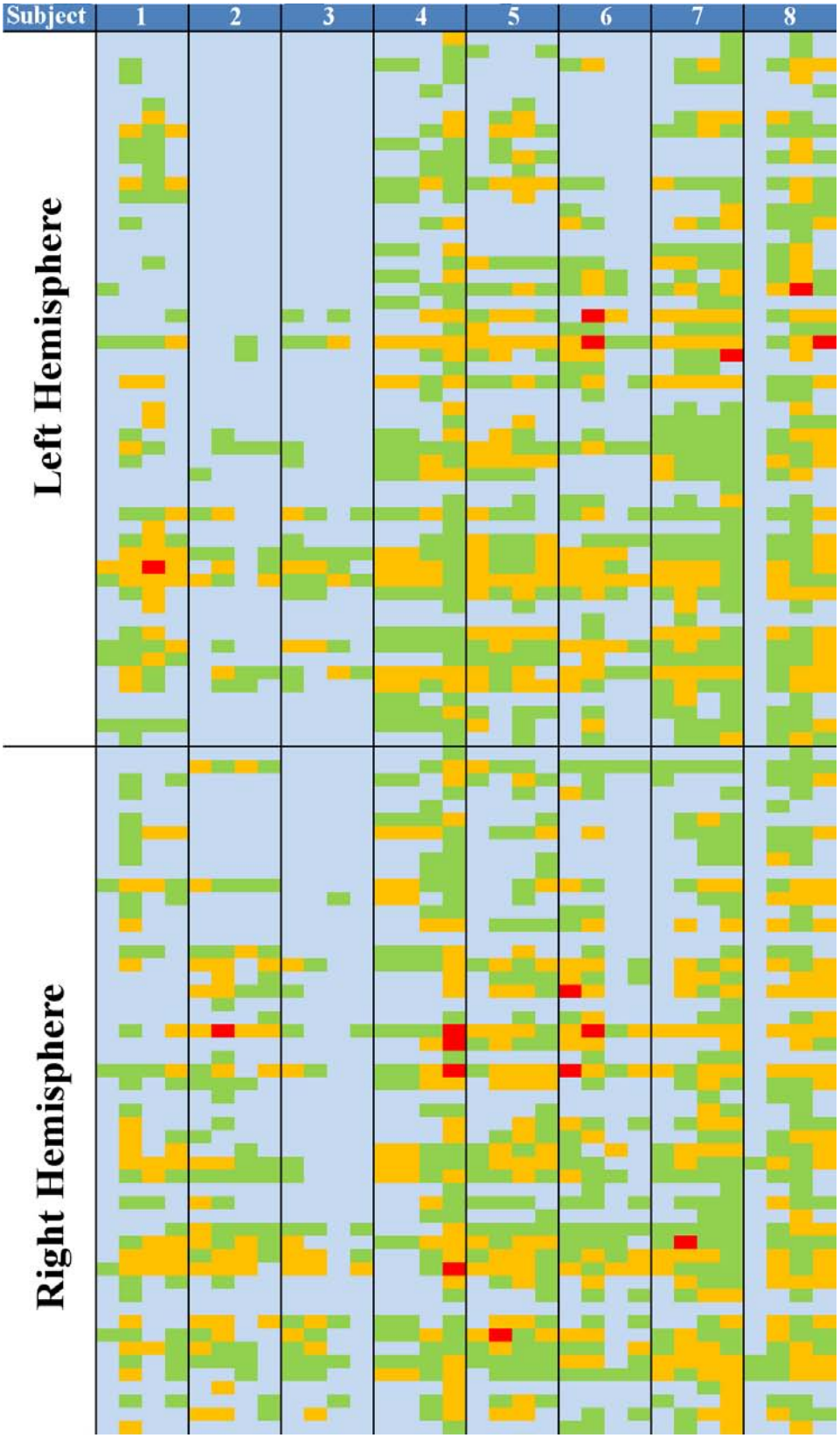

Figure 20 Map of activity for brain regions across the whole dataset. Colors represent number of active clusters found in each region: Blue) No activity, Green) 1 active cluster, Orange) Between 2 and 4 active clusters, Red) Between 5 and 10 active clusters, Purple) (if any) More than 10 active clusters. Top half correspond to the left hemisphere, and bottom half to the right hemisphere. Each row correspond to a segmented labelled area as reported by the Anatomical Automatic Labelling toolbox [39] paired across hemispheres and sorted alphabetically.Vertical bounded bands corresponds to each of the 8 subjects and each session is represented as a column sorted longitudinally.

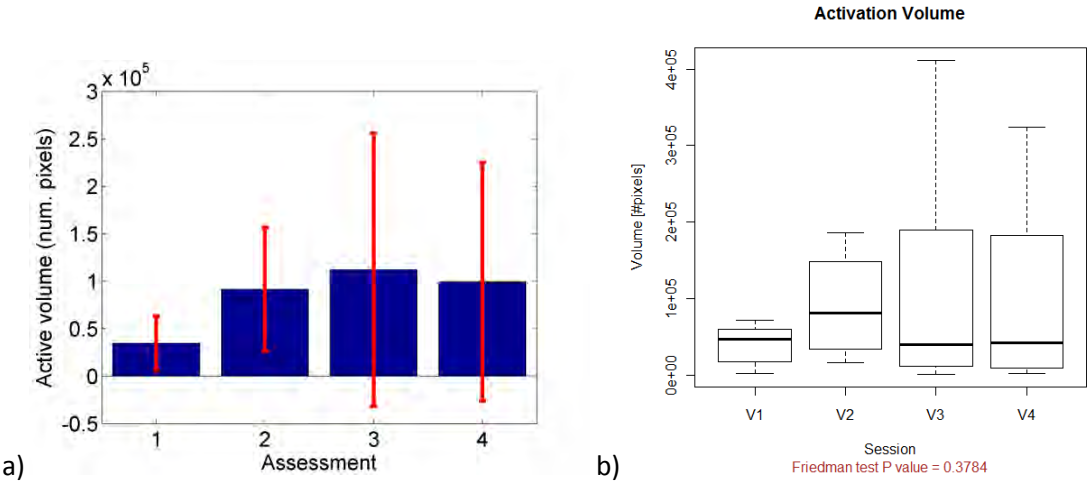

Figure 21 Longitudinal changes in active volume along sessions. a) Mean active volume [pixels] and standard deviation b) Boxplot and Friedmann test results.

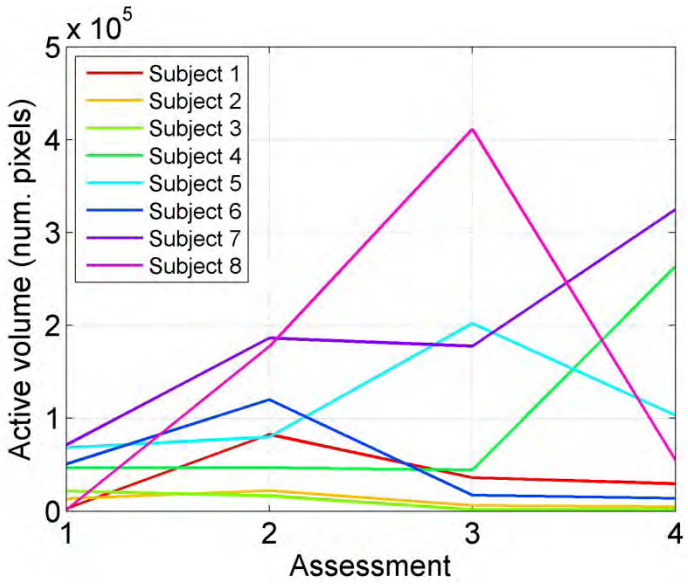

Figure 22 Evolution of active volume per subject

Finally, the histogram of the functional reorganization strategies is quantified in Table 6. This is of course the central result of this report. In general terms, GT fails to accentuate the ipsilesional activation. Instead, contralesional activation of the unaffected SM1 seems to be favoured. This is unfortunate as the latter has not as good prognosis. Recruitment of the anterior cingulate cortex and insula appear to be rare in this group. An overall abandon of compensatory strategies can be inferred from Figure 21b. In addition, every subject's brain undergoes different reorganization likely to be partly due to the different lesion location and extent. In particular:

- Subject 1: Mild recruitment of the PFC, PPC and subcortical structures, and strong recruitment of the cerebellum.
- Subject 2: Medial recruitment of the PFC accompanied by large recruitment of the PPC.
- Subject 3: Decreasing bilateral recruitment of the secondary motor areas SMA/PM concomitant with mild recruitment of the PFC and PPC.
- Subject 4: Mild bilateral recruitment of the secondary motor areas SMA/PM. Progressive recruitment of the PFC from mild to very strong, and heavy reliance on the cerebellum. Late recruitment of the subcortical structures and limbic areas.
- Subject 5: Large bilateral recruitment of the secondary motor areas SMA/PM as well as PFC. Medial recruitment of the PPC and late recruitment of the insula, subcortical and limbic areas. Cerebellum activity is demanded in the third session, perhaps when therapy difficulty is at its peak demanding relearning of certain movements.
- Subject 6: Progressive abandon of compensatory strategies marked by a decline in activity in virtually the whole brain; cerebellum, subcortical structures, limbic areas, PFC, ACC and insula as well as SMA/PM. Only PPC activity seems to be maintained.
- Subject 7: Progressive demand of the cerebellum and heavy reliance on the PFC. As from the second session other brain structures are further recruited; subcortical, limbic and insula.
- Subject 8: Following an initial session of virtual inactivity, strong recruitment of PFC is accompanied by also strong use of cubcortical structures and limbic areas, as well as the cerebellum.

The large modification of recruitment patterns, proxy of massive reorganization, and extensive activation proxy of therapy induced hyperexcitability, are characteristics of the changes in the sensorimotor cortex of recovered stroke patients [24, 25].

Table 6 Histogram of functional reorganization strategies. Numbers indicate the number of statistically significant clusters found on the regions. When pairs of numbers appear (x/x) it indicates the left and right hemispheres. The ipsilesional and contralesional activation of the primary motor cortex was looked for in the corresponding precentral gyrus. PFC: Prefrontal cortex; PPC: Posterior parietal cortex; ACingC or ACC; Anterior Cingulate Cortex; SMA: Sup. Motor Area; PM: Premotor cortex; CST: Cortico Spinal Tract. The value N.O. indicates Not observed.

Subject		Ipsilesional activation	Contralesional activation of unaffected SM1	Recruitment of bilateral SMA and PM	Recruitment of non-motor areas				Recruitment of the cerebellum (inc. Vermis)	Recovery of the damaged CST	Recruitment of Basal Ganglia	Others	
					PFC	PPC	ACingC	Insula				Subcortical	Limbic (exc.ACC)
(Affected limb)	Session	#	#	# (L/R)	#	#	# (L/R)	# (L/R)	#	#	#	# (L/R)	# (L/R)
1 (R)	1	1	1	(1/1)	3	0	(0/0)	(0/0)	3	N.O.	N.O.	(0/0)	(0/0)
	2	2	4	(1/1)	5	5	(0/1)	(0/2)	18	N.O.	N.O.	(2/4)	(1/3)
	3	3	3	(1/0)	3	7	(0/0)	(2/0)	14	N.O.	N.O.	(2/0)	(4/0)
	4	2	4	(2/1)	7	6	(0/0)	(0/0)	12	N.O.	N.O.	(0/0)	(0/0)
2 (R)	1	3	3	(0/1)	7	10	(0/0)	(0/0)	2	N.O.	N.O.	(0/0)	(0/0)
	2	1	4	(1/2)	16	4	(0/0)	(0/1)	1	N.O.	N.O.	(0/0)	(0/0)
	3	0	2	(0/0)	5	6	(0/0)	(0/0)	1	N.O.	N.O.	(0/0)	(0/0)
	4	1	0	(0/0)	11	4	(0/0)	(0/0)	1	N.O.	N.O.	(0/0)	(0/0)
3 (R)	1	1	3	(4/2)	8	5	(0/0)	(0/0)	0	N.O.	N.O.	(0/0)	(0/0)
	2	1	3	(2/1)	3	2	(0/0)	(0/0)	0	N.O.	N.O.	(0/0)	(0/0)
	3	3	0	(1/0)	3	1	(0/0)	(0/0)	1	N.O.	N.O.	(0/0)	(0/0)
	4	1	2	(0/0)	1	2	(0/0)	(0/0)	0	N.O.	N.O.	(0/0)	(0/0)
4 (R)	1	3	0	(1/1)	7	3	(0/0)	(0/0)	11	N.O.	N.O.	(0/0)	(0/0)
	2	3	0	(1/1)	7	3	(0/0)	(0/0)	11	N.O.	N.O.	(0/0)	(0/0)
	3	2	1	(1/3)	14	5	(0/1)	(0/0)	15	N.O.	N.O.	(0/0)	(1/3)
	4	1	5	(1/1)	45	11	(0/1)	(1/2)	23	N.O.	N.O.	(6/5)	(5/4)
5 (L)	1	2	4	(1/2)	15	10	(0/0)	(0/0)	1	N.O.	N.O.	(0/0)	(0/0)
	2	2	3	(4/6)	21	5	(0/0)	(0/0)	13	N.O.	N.O.	(0/0)	(0/1)
	3	2	2	(1/1)	21	6	(0/0)	(2/3)	23	N.O.	N.O.	(3/1)	(0/1)
	4	1	3	(1/3)	15	9	(0/0)	(0/1)	13	N.O.	N.O.	(0/1)	(0/3)
6 (R)	1	4	3	(2/2)	33	5	(1/1)	(0/2)	3	N.O.	N.O.	(1/3)	(2/1)
	2	2	1	(2/4)	42	7	(0/1)	(0/1)	4	N.O.	N.O.	(2/4)	(1/2)
	3	2	2	(2/0)	7	6	(0/0)	(0/0)	0	N.O.	N.O.	(0/0)	(0/0)
	4	2	2	(1/0)	7	3	(0/0)	(0/1)	0	N.O.	N.O.	(0/1)	(0/0)
7 (L)	1	2	3	(1/1)	14	5	(0/0)	(1/0)	3	N.O.	N.O.	(0/0)	(0/0)
	2	1	2	(2/2)	29	10	(0/0)	(1/1)	7	N.O.	N.O.	(5/2)	(3/2)
	3	1	2	(1/1)	22	5	(0/0)	(1/2)	14	N.O.	N.O.	(2/2)	(1/4)
	4	1	1	(1/1)	42	6	(3/1)	(1/3)	14	N.O.	N.O.	(7/8)	(4/4)
8 (R)	1	0	0	(0/0)	0	0	(0/0)	(0/0)	0	N.O.	N.O.	(0/0)	(0/0)
	2	2	3	(1/3)	16	5	(1/0)	(0/0)	20	N.O.	N.O.	(1/0)	(1/2)
	3	1	1	(1/1)	36	7	(1/1)	(1/1)	20	N.O.	N.O.	(9/7)	(4/4)
	4	1	4	(3/1)	26	8	(1/0)	(1/0)	12	N.O.	N.O.	(1/0)	(3/2)

Deactivation is not commonly reported in papers regarding functional reorganization following stroke. We do report deactivation here but at this point do not proceed to deeper analysis. The full statistical parametric deactivation maps and the associated labelling of deactive areas can be found in Appendix C. A mild increase in deactive volume as the therapy progresses does not reach statistical significance as illustrated in Figure 23. The general increasing trend of the cohort is broken by subject 3 which in contrast show a clear decreasing deactivation pattern as shown in Figure 24. Subject 3 has shown one of the strongest recoveries and his functional reorganization is relatively mild. Its nemesis, subject 2 evokes greater increase in deactivation volume, and with also mild functional reorganization and also doubles its Fugl-Meyer score. In this sense, no clear relation between deactivation changes and clinical outcome is appreciated. Nevertheless, it is possible that it is the GT which is evoking these increments in deactivation.

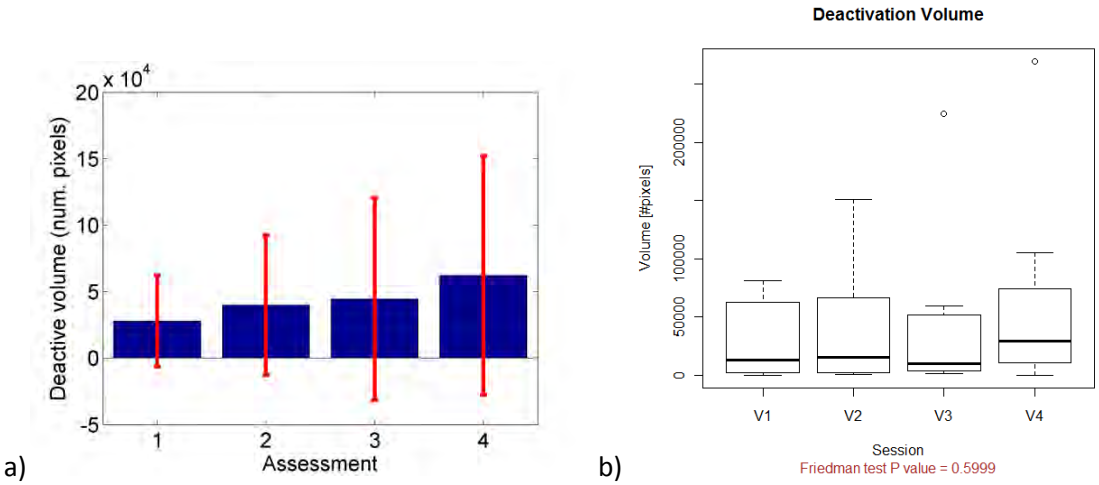

Figure 23 Longitudinal changes in deactive volume along sessions. a) Mean active volume [pixels] and standard deviation b) Boxplot and Friedmann test results.

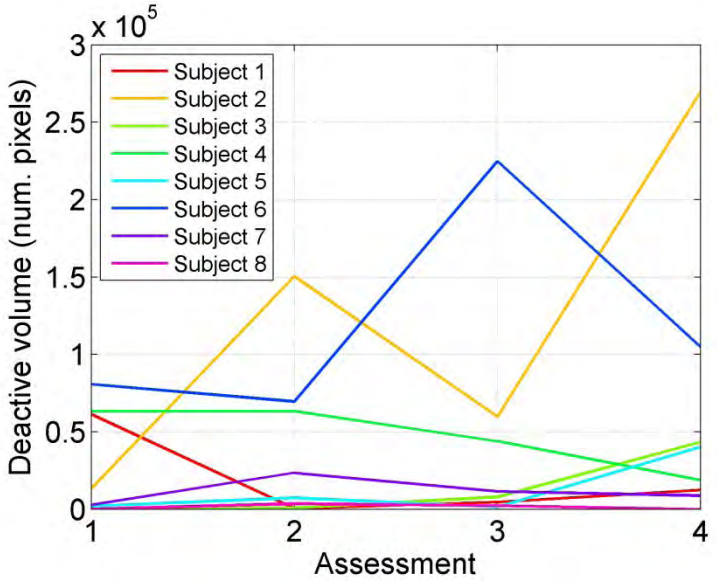

Figure 24 Evolution of deactive volume per subject

Relation of functional reorganization and clinical outcome

A naive qualitative relation between functional reorganization and clinical outcome suggests that greater reorganization occurs for those subjects whose damage at the beginning of the therapy seems to be lower. Those such as subject 1 and 2 present the lowest motor skills scores upon arrival and can only mildly recruit non-motor areas. On the other hand, subjects with high motor skill scores at entering the therapy, e.g. 7 and 8, seems to make the greater reorganization demands mostly either increasing active volume or late recruiting subcortical and limbic areas. This suggests that large reorganization is only possible when brain damage is not too strong, which does not sound insensible. No apparent relation is observed between functional reorganization strategies and affected hand.

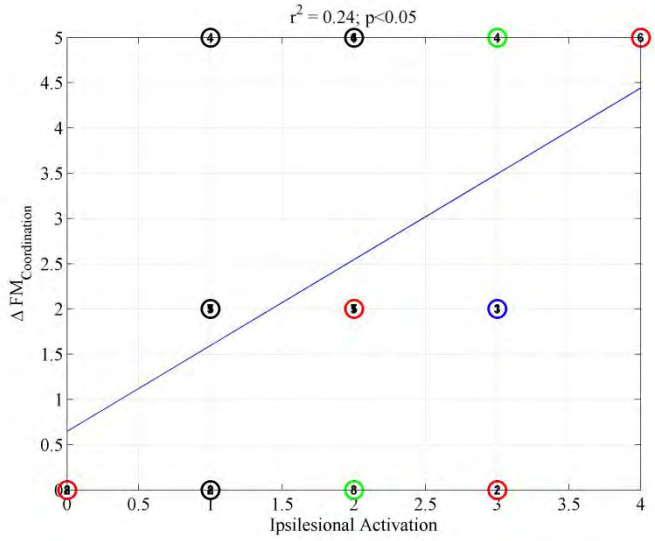

Figure 25 Ipsilesional activation reorganization strategy as explanatory variable of the differential improvements (Post-Pre) in coordination motor skills according to the Fugl-Meyer score. Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line. The values given to the reorganization strategies correspond to the number of active clusters identified during the analysis of active foci and have been reported in Table 6.

In order to establish a more quantitative relation basic linear regressions have been systematically fit between cohort characteristics and behavioural outcomes versus reorganization strategies (see Appendix E) and one of the best examples is shown in Figure 25. However, this associational exercise must be read carefully. No attempt is made to get the best curve fitting, neither to generate multifactor/multiregressor models. No assumption is made and no hypothesis is launched a priori about possible relations. Moreover, the temporality of the longitudinal scan is color coded in the representation but otherwise ignored. Finally, no attempt is made to exclude any possible outliers or to correct/exclude for missing data (e.g. age is set to 0 when missing). Because the brain is inherently non-linear [13], it is expected most if none all of these regressions are futile for establishing solid associations, as the possible relation between cortical reorganization during

therapy and the clinical performance by the patients if exist it will be strongly non linear. Nonetheless, this naive exercise is still valid to hint any non-obvious relation among these variables. Common parameters regression coefficient (r) and p value are computed for each regression. The associational analysis is presented in two sections:

1. Cohort characteristics vs reorganization strategies (Table 7)
2. Reorganization strategies vs clinical performance metrics (Table 8)

Table 7 Correlation coefficient and p-value of the correlation for associations between four cohort characteristics (age, affected limb, gender and time from last stroke and reorganization strategies. Correlation coefficients r^2 are highlighted by range; red (r^2>0.25), yellow (0.2>r^2>0.25), green (0.15>r^2>0.2). Significant p-values (<0.05) are highlighted in red.

Cohort Characteristic	Reorganization Strategy	r^2	p
Age	Ipsilesional Activation	0.01	0.5857
Affected Limb		0.01	0.5196
Gender		0.04	0.2613
Time from stroke [months]		0.13	<0.05
Age	Contralesional SM1	0.01	0.6434
Affected Limb		0.01	0.5231
Gender		0.04	0.2653
Time from stroke [months]		0.02	0.4852
Age	Bilateral SMA/PM (L)	0.02	0.4829
Affected Limb		0.02	0.4802
Gender		0.01	0.6009
Time from stroke [months]		0.03	0.3596
Age	Bilateral SMA/PM (R)	0.03	0.3657
Affected Limb		0.12	0.0543
Gender		0.03	0.3623
Time from stroke [months]		0.01	0.6735
Age	Bilateral SMA/PM (T)	0.03	0.3549
Affected Limb		0.08	0.1141
Gender		0.02	0.3996
Time from stroke [months]		0.02	0.4755
Age	PFC	0.04	0.2455
Affected Limb		0.1	0.0759
Gender		0.02	0.43
Time from stroke [months]		0.14	<0.05
Age	PPC	0.01	0.6171
Affected Limb		0.12	0.0539
Gender		0.04	0.2947
Time from stroke [months]		0.01	0.6706
Age	Ant. Cing. Cortex (L)	0.02	0.4616
Affected Limb		0.02	0.4104
Gender		0.07	0.1491
Time from stroke [months]		0.01	0.5882
Age	Ant. Cing. Cortex (R)	0.05	0.2234
Affected Limb		0.02	0.4751
Gender		0.01	0.6809
Time from stroke [months]		0.13	<0.05
Age	Ant. Cing. Cortex (T)	0.04	0.2738
Affected Limb		0	0.8204
Gender		0.02	0.4294
Time from stroke [months]		0.06	0.1888
Age	Insula (L)	0.06	0.168
Affected Limb		0.16	<0.05
Gender		0.23	<0.05
Time from stroke [months]		0	0.9333
Age	Insula (R)	0.09	0.1019
Affected Limb		0.15	<0.05
Gender		0.04	0.2669
Time from stroke [months]		0.11	0.0627
Age	Insula (T)	0.1	0.0732
Affected Limb		0.21	<0.05
Gender		0.13	<0.05
Time from stroke [months]		0.06	0.1813
Age	Cerebellum	0	0.7516
Affected Limb		0.05	0.2302
Gender		0.22	<0.05
Time from stroke [months]		0.01	0.6447
Age	Subcortical (L)	0.06	0.1948

Affected Limb		0.05	0.2405
Gender		0.1	0.079
Time from stroke [months]		0.01	0.5473
Age	Subcortical (R)	0.08	0.109
Affected Limb		0.02	0.4043
Gender		0.03	0.3346
Time from stroke [months]		0.09	0.0951
Age	Subcortical (T)	0.08	0.1243
Affected Limb		0.03	0.3331
Gender		0.06	0.1713
Time from stroke [months]		0.04	0.2456
Age	Limbic (L)	0.08	0.1277
Affected Limb		0	0.8959
Gender		0.06	0.1672
Time from stroke [months]		0.02	0.4497
Age	Limbic (R)	0.05	0.2228
Affected Limb		0.09	0.1026
Gender		0.12	0.0575
Time from stroke [months]		0.02	0.3956
Age	Limbic (T)	0.07	0.1302
Affected Limb		0.03	0.3422
Gender		0.1	0.0708
Time from stroke [months]		0.03	0.3772

Table 8 Correlation coefficient and p-value of the correlation for associations between reorganization strategies and observed increment in performance (Post-pre). Correlation coefficients r^2 are highlighted by range; red (r^2>0.25), yellow (0.2>r^2>0.25), green (0.15>r^2>0.2). Significant p-values (<0.05) are highlighted in red.

Reorganization Strategy	Clinical Performance Parameter	r^2	p
Ant. Cing. Cortex (T)	ΔFM_{S/E/F}	0	0.843
	ΔFM_{Wrist}	0	0.9167
	ΔFM_{Hand}	0.01	0.5281
	ΔFM_{Coordination}	0.01	0.6997
	ΔFM_{Total}	0.01	0.6164
	ΔMI_{Hand Grip}	0	0.8407
	ΔMI_{Elbow Flexion}	0.02	0.4842
	ΔMI_{Shoulder Abduction}	0.05	0.2241
	ΔMI_{Total}	0.06	0.1699
Bilateral SMA/PM (T)	ΔFM_{S/E/F}	0.04	0.289
	ΔFM_{Wrist}	0.08	0.1074
	ΔFM_{Hand}	0.01	0.6395
	ΔFM_{Coordination}	0.03	0.3446
	ΔFM_{Total}	0	0.8385
	ΔMI_{Hand Grip}	0	0.7877
	ΔMI_{Elbow Flexion}	0.08	0.1135
	ΔMI_{Shoulder Abduction}	0.1	0.0828
	ΔMI_{Total}	0.01	0.5416
Cerebellum	ΔFM_{S/E/F}	0.1	0.0749
	ΔFM_{Wrist}	0.02	0.3938
	ΔFM_{Hand}	0.08	0.1172
	ΔFM_{Coordination}	0	0.7832
	ΔFM_{Total}	0	0.9253
	ΔMI_{Hand Grip}	0.04	0.2852
	ΔMI_{Elbow Flexion}	0.03	0.3407
	ΔMI_{Shoulder Abduction}	0.09	0.1007
	ΔMI_{Total}	0	0.7351
Contralesional SM1	ΔFM_{S/E/F}	0.01	0.6955
	ΔFM_{Wrist}	0	0.974
	ΔFM_{Hand}	0	0.8774
	ΔFM_{Coordination}	0.02	0.502
	ΔFM_{Total}	0.02	0.4418
	ΔMI_{Hand Grip}	0.01	0.5318
	ΔMI_{Elbow Flexion}	0	0.7066
	ΔMI_{Shoulder Abduction}	0.09	0.0862
	ΔMI_{Total}	0.02	0.4393
Insula (T)	ΔFM_{S/E/F}	0.04	0.2496
	ΔFM_{Wrist}	0	0.8271
	ΔFM_{Hand}	0	0.7879
	ΔFM_{Coordination}	0	0.703
	ΔFM_{Total}	0.04	0.2556
	ΔMI_{Hand Grip}	0.01	0.6838

	ΔMI_{Elbow Flexion}	0.12	0.0514
	ΔMI_{Shoulder Abduction}	0.02	0.4189
	ΔMI_{Total}	0.02	0.4366
Ipsilesional Activation	ΔFM_{S/E/F}	0.17	<0.05
	ΔFM_{Wrist}	0.07	0.1503
	ΔFM_{Hand}	0.18	<0.05
	ΔFM_{Coordination}	0.24	<0.05
	ΔFM_{Total}	0.04	0.2546
	ΔMI_{Hand Grip}	0.1	0.077
	ΔMI_{Elbow Flexion}	0.07	0.1468
	ΔMI_{Shoulder Abduction}	0.01	0.6245
	ΔMI_{Total}	0.05	0.2407
Limbic (T)	ΔFM_{S/E/F}	0.01	0.5679
	ΔFM_{Wrist}	0	0.7464
	ΔFM_{Hand}	0.02	0.4787
	ΔFM_{Coordination}	0	0.7648
	ΔFM_{Total}	0	0.8187
	ΔMI_{Hand Grip}	0.01	0.6262
	ΔMI_{Elbow Flexion}	0.03	0.3163
	ΔMI_{Shoulder Abduction}	0.01	0.5461
	ΔMI_{Total}	0.06	0.1703
PFC	ΔFM_{S/E/F}	0.05	0.2132
	ΔFM_{Wrist}	0	0.8566
	ΔFM_{Hand}	0	0.786
	ΔFM_{Coordination}	0.03	0.3315
	ΔFM_{Total}	0.02	0.5019
	ΔMI_{Hand Grip}	0.02	0.4994
	ΔMI_{Elbow Flexion}	0.22	<0.05
	ΔMI_{Shoulder Abduction}	0.01	0.6228
	ΔMI_{Total}	0.17	<0.05
PPC	ΔFM_{S/E/F}	0.08	0.117
	ΔFM_{Wrist}	0.04	0.2711
	ΔFM_{Hand}	0	0.7756
	ΔFM_{Coordination}	0	0.9523
	ΔFM_{Total}	0.15	<0.05
	ΔMI_{Hand Grip}	0.09	0.0962
	ΔMI_{Elbow Flexion}	0.11	0.0694
	ΔMI_{Shoulder Abduction}	0.05	0.2354
	ΔMI_{Total}	0.08	0.1116
Subcortical (T)	ΔFM_{S/E/F}	0	0.773
	ΔFM_{Wrist}	0	0.8938
	ΔFM_{Hand}	0	0.8061
	ΔFM_{Coordination}	0	0.8157
	ΔFM_{Total}	0	0.9616
	ΔMI_{Hand Grip}	0	0.7796
	ΔMI_{Elbow Flexion}	0.03	0.3462
	ΔMI_{Shoulder Abduction}	0.02	0.4502
	ΔMI_{Total}	0.05	0.2103

Perhaps the most relevant result from this part of the analysis is effect of the reorganization strategy ipsilesional activation and the Fugl-Meyer variation. This may suggest that in order to get higher improvements as measured with the Fugl-Meyer score it is required a stronger ipsilesional activiation. This is of course an abservation in agreement with the current perception that ipsilesional activation yields good prognosis.

This unsophisticated regression analysis highlight the complexity of establishing a link between observed clinical performance and the underlying reorganization strategies. Even although a few values in Table 7 and Table 8 reached statistical significance that only characterises the lack of randomness in obtaining the results. A common misconception in the clinical community is that a significant p-value for a regression is enough to claim the existence of a relation. It is not our intention to discuss on this fallacy, and educate the reader on the need to take into account on the r^2 value, plus analyse the residuals. Still, we stress

our word of caution in interpreting the regressions, moreover when the highest r^2 value is 0.24, i.e. an extremely weak statistical dependence.

Inter-session differences

Detailed binarised contrast maps are collected in Appendix D. Remarkable similarities can be appreciated row-wise, roughly resembling the activity pattern of the rowed session. This translates in great disparity among each session since overlapping between sessions is most times virtually negligible.

Inter-subject analysis of functional activation

Figure 26 summarises the 2nd level statistical parametric maps of common active loci for each fMRI session across subjects. The remarkable map similarity may represent a default network during therapy. The left visual ventral/parvocellullar (inferotemporal cortex) and the dorsal/mangocellular (parietal cortex) pathways, appears to be active. This is not surprising, but reassuring, as the stimulus is visual. Lack of a wider default network may be due to the large differences in the lesions leading to very different brain functional reorganization which has already been discussed above.

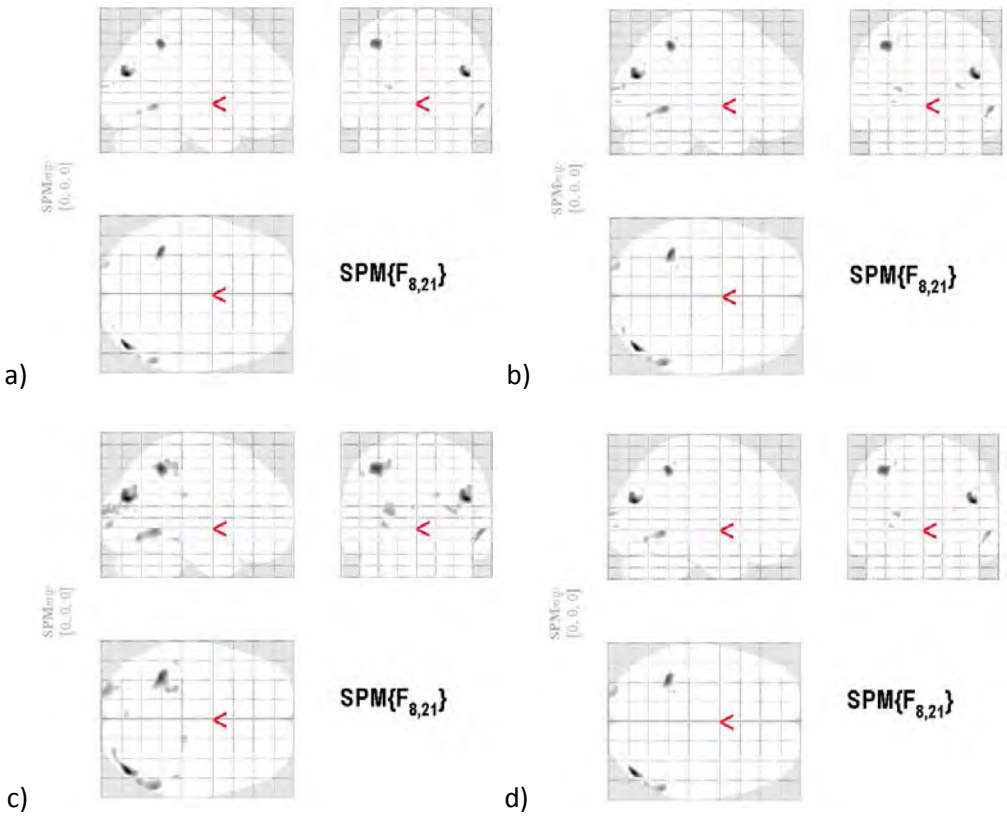

Figure 26 2nd level statistical parametric maps of common active loci for each fMRI session across subjects. a) Before rehabilitation therapy starts, b) After the seventh rehabilitation therapy session, c) After the 14th rehabilitation therapy session, d) At the end of the therapy

Conclusions

This report has delineated the histogram of functional reorganization occurring in a small cohort of patient surviving a cerebrovascular event undergoing the so called Gesture Therapy. The picture is completed with the patients' clinical history, medication and clinical evaluation in terms of motor skills as well as the motivation evoked by the therapy. We believe this to be the first in-depth picture of the longitudinal plastic changes of patients in GT. Results suggests that the therapy in its current form may be short from stimulating ipsilesional activity often associated with better prognosis, but results are far from definitive. This must not be necessarily disheartening as the well established constraint induced movement therapy also keeps smaller cortical representation on the affected side than on the healthy side [26]. While each damaged brain proceeds with its own reorganization strategy, there is a common tendency to drop compensatory strategies as the therapy progresses. This pattern has already been identified in recovery from stroke [8], suggesting that this effect may be independent of the therapy.

An interesting finding is perhaps the peak of activity in the second measure. It has been hypothesized that initial trial for complete novices on a surgical task is used to explore the challenges of the task to better direct attention and concentration resulting in a comparative lack of PFC engagement during the initial trial [22]. It may be that we are observing a similar effect, and the first neuroscan carried out before the therapy caught the patients in their most naïve phase of learning the basics of GT.

We have also found an expected increase in motivation when compared to a control group undergoing occupational therapy. Yet in contrast with previous findings from our own group, in this case, the difference didn't reached statistical significance.

Finally, a primitive linear regression analysis between reorganization strategies and cohort characteristics and/or clinical parameters has highlighted the difficulty in relating brain plasticity and progress in motor rehabilitation. Of course this was expected, and analytical limitations of the approach have already been discussed. Nonetheless the exercise has hinted a weak relation between improvements as captured by Fugl-Meyer score and the continuous recruitment of not fully destroyed ipsilesional motor area, which is consistent with the general perception that this strategy is associated with good prognosis.

Limitations

Arguably the most important limitation of this study, and perhaps of many others similar studies, is the intrinsic group heterogeneity. Despite efforts during cohort recruiting to maintain group homogeneity as evidenced by the inclusion/exclusion criteria and cohort characteristics, the large variability of stroke and the brain region it affects bounds the amount of group inference that can be done. Moreover, age variability although accounted at recruiting time, has been ignored here during

results interpretation. Notwithstanding, we believe there is value in the findings in this report both at subject level and group level.

The present study suffers from an inherent limitation when normalizing lesioned brains to a template. In addition, the lack of a rest period after the last stimulus, and the consequent early abrupt ending of the convolved response, put further stress on the statistics. The option of discarding the last block for the analysis was rejected in an attempt to keep the most data. Some further incidences during the experiment have also been stated.

The lack of a control group on the neuroimaging side is justified when the goal is neither to evaluate the clinical effects of the therapy nor to compare against other physiotherapeutic approaches but to assess therapy induced plastic changes [25, 26]. Yet, its absence means that we can only speculate about therapy induced effects and naturally occurring effects. Nevertheless, naturally occurring recovery is more likely to occur in the subacute stage rather than the chronic stage. Since the patients in this study are already in the chronic stage it is more probable that the results presented here are consequence mainly of the therapy.

With regard to the task, it is difficult to assess whether the demanded *imagining that the game is responding to the arm movements* of a tied limb can be claimed to be a good proxy of the real situation. Perhaps, a different neuroimaging modality e.g. EEG or fNIRS, allowing for testing in a more realistic environment should be considered. Finally, contrary to experimentation with healthy patients, it is extremely difficult to homogenise the cohort as the brain infarcts will always present individual characteristics. Thus, the cohort heterogeneity should be considered a strong limitation when interpreting and accepting inter-subject 2nd level analysis.

Finally, at present we lack of a good automatic lesion segmentation thus preventing quantitative assessment of the lesion location and extent. The current segmentation using the algorithm in [33] has yielded poor results. Visual assessment on top of the automatic segmentation by one of the authors has been required for qualitative assessment of the lesion. Importantly, the lack of an objective automatic delimitation of the lesion localization and extent means that the interpretation of the presence of certain reorganization strategies can at present not be related to the partial or full damage to the main motor area, which would have much enrich the discussion of the results.

Further work

The limited success in the automatic segmentation of the brain lesion demands further attention. Segmenting using structural T1 weighted image is a difficult task, but Shen's is not the only algorithm available in literature, as it has been discussed in the section about lesion delimitation. Our dataset lacks MR sequences such as for instance FLAIR or DWI, but we have a DTI sequence which may be

more appropriate for segmenting the brain lesion. Semi-automatic approaches represent a compromise between subjectiveness and time consumed and may be the way forward.

We have now established the longitudinal changes in the location of activity resulting from the reorganization strategies. Yet we have not yet dilucidate how the compensatory plasticity establishes new cortical networks. We plan to carry out a functional connectivity analysis possibly using graph theory tools. Moreover, the new networks are likely to exhibit different efficiencies, perhaps with ipsilesional cortical recruiting being more efficient than contralesional cortical recruiting. Measures such as the cognitive burden [17] can shed light on the cortical network efficiency. Another interesting related question still open is how the different strategies do join forces among them to recover function.

Finally, establishing the reorganization strategies associated to Gesture Therapy in such a small cohort is far from telling the whole story about how this rehabilitation therapy (can) help the patient to ensure an optimum prognosis. Moreover, since the time at which data used in this report was acquired, a newer GT including an adaptation module has now been proposed [6], which is likely to have consequences at cortical level.

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Appendix A: Lesion delimitation

Automatic lesion delimitation has been carried out using [ShenS2008] algorithm. In interpreting the lesion extension it is necessary to keep into account the acknowledged limitations of the algorithms (e.g. ventricles are always included in the lesion), and even so, segmentation remains poor, requiring further human assessment. Segmentation is presented from the axial view (left hemisphere at bottom) at a number of equidistant planes throughout the scan overimposed over the structural image.

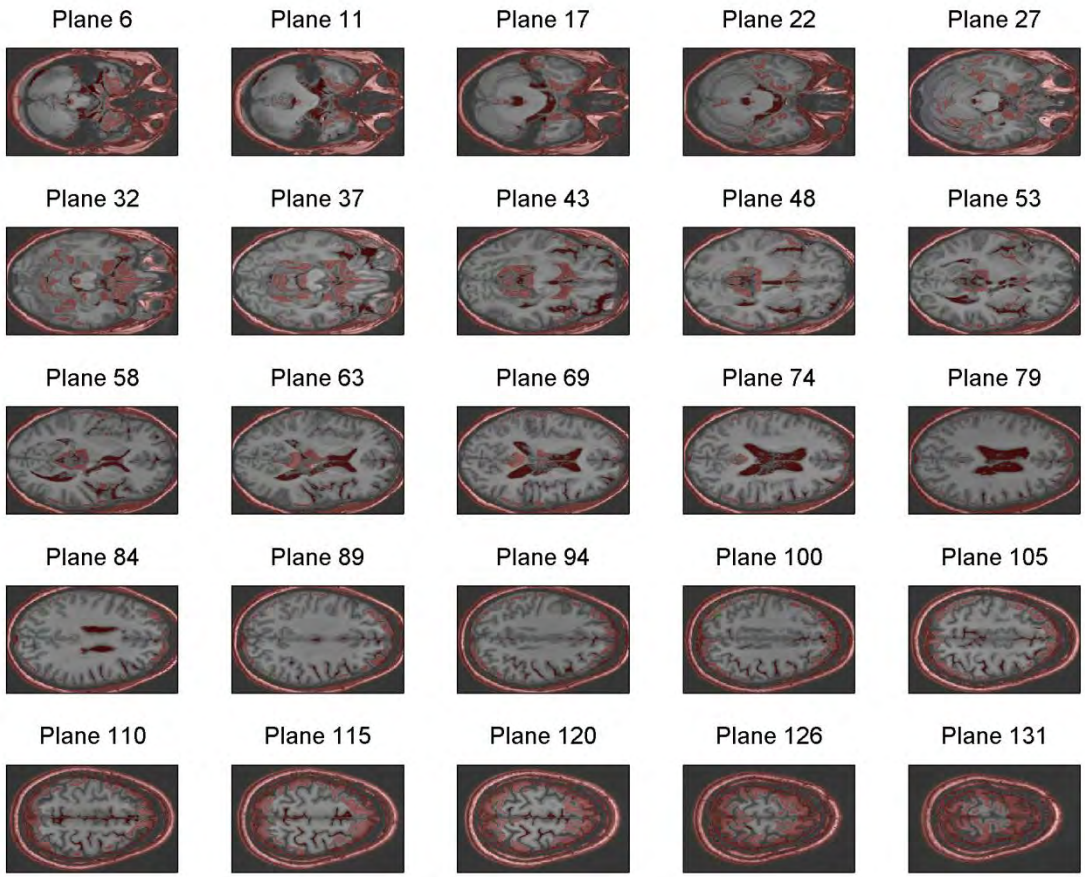


Figure 27 Lesion segmentation for Subject 1, fMRI session 1.

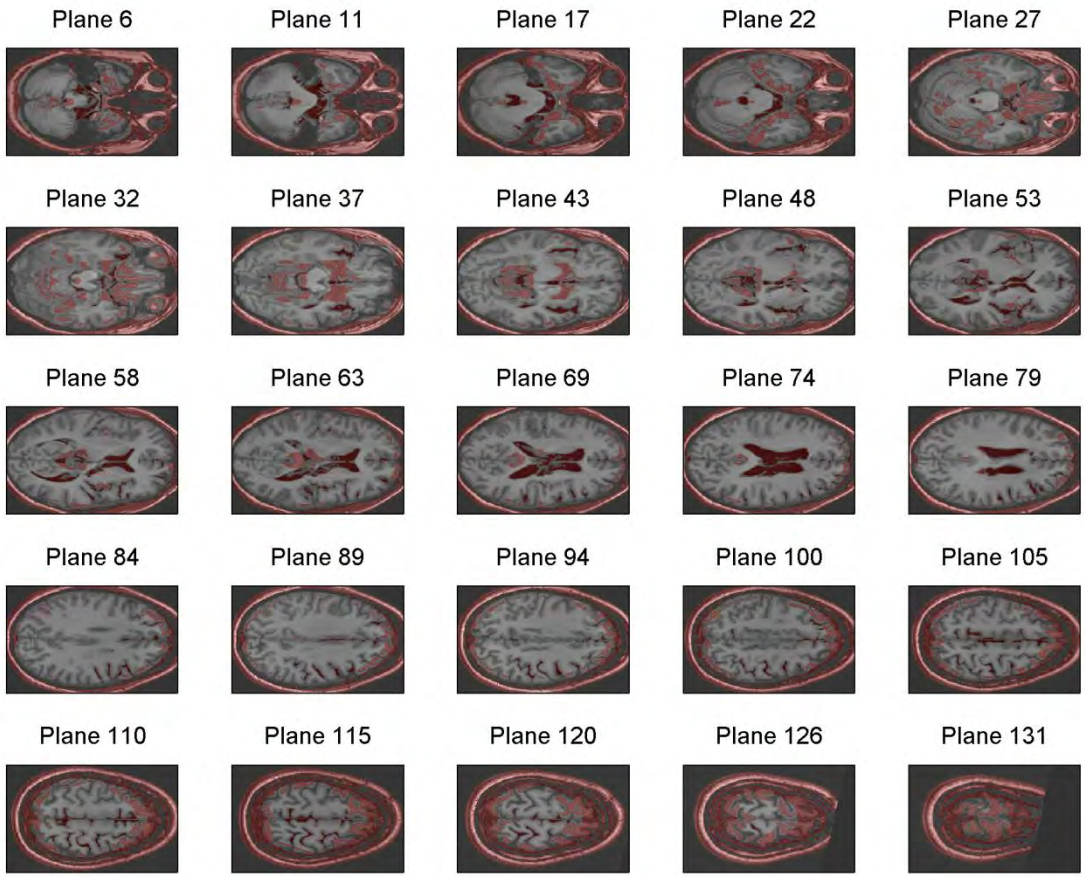


Figure 28 Lesion segmentation for Subject 1, fMRI session 2.

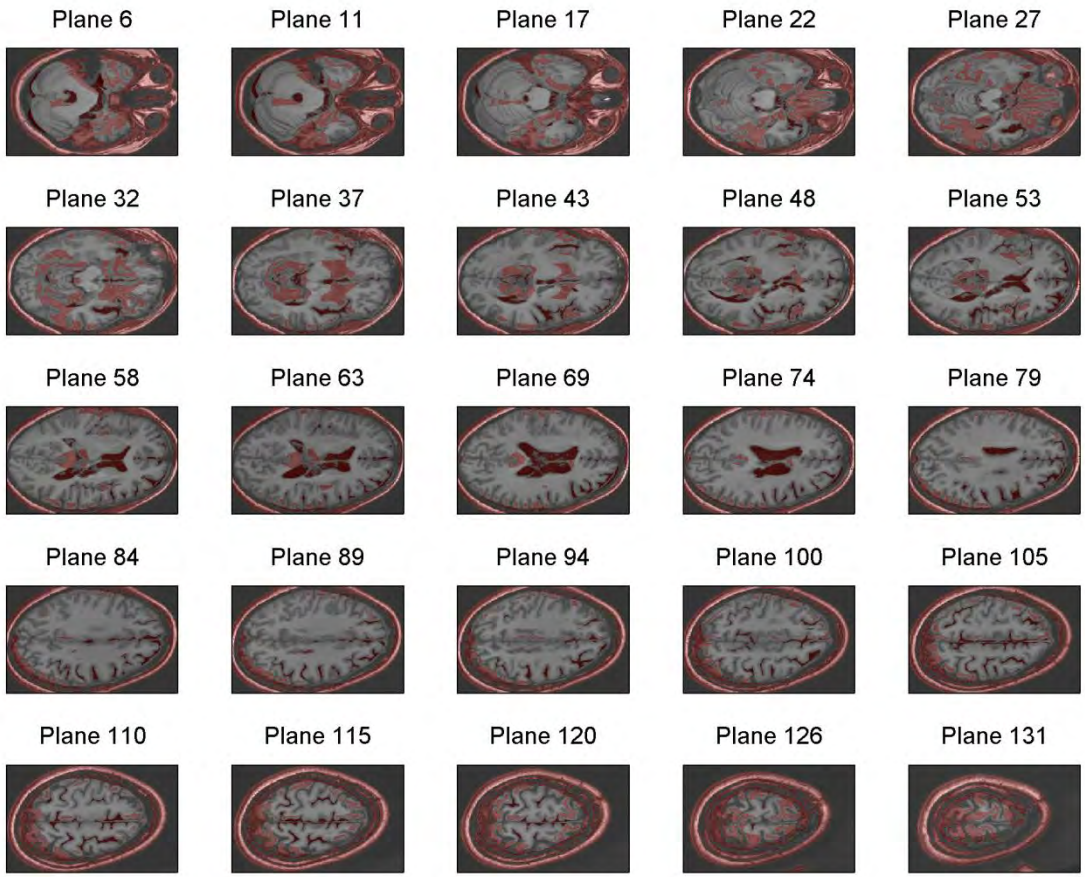


Figure 29 Lesion segmentation for Subject 1, fMRI session 3.

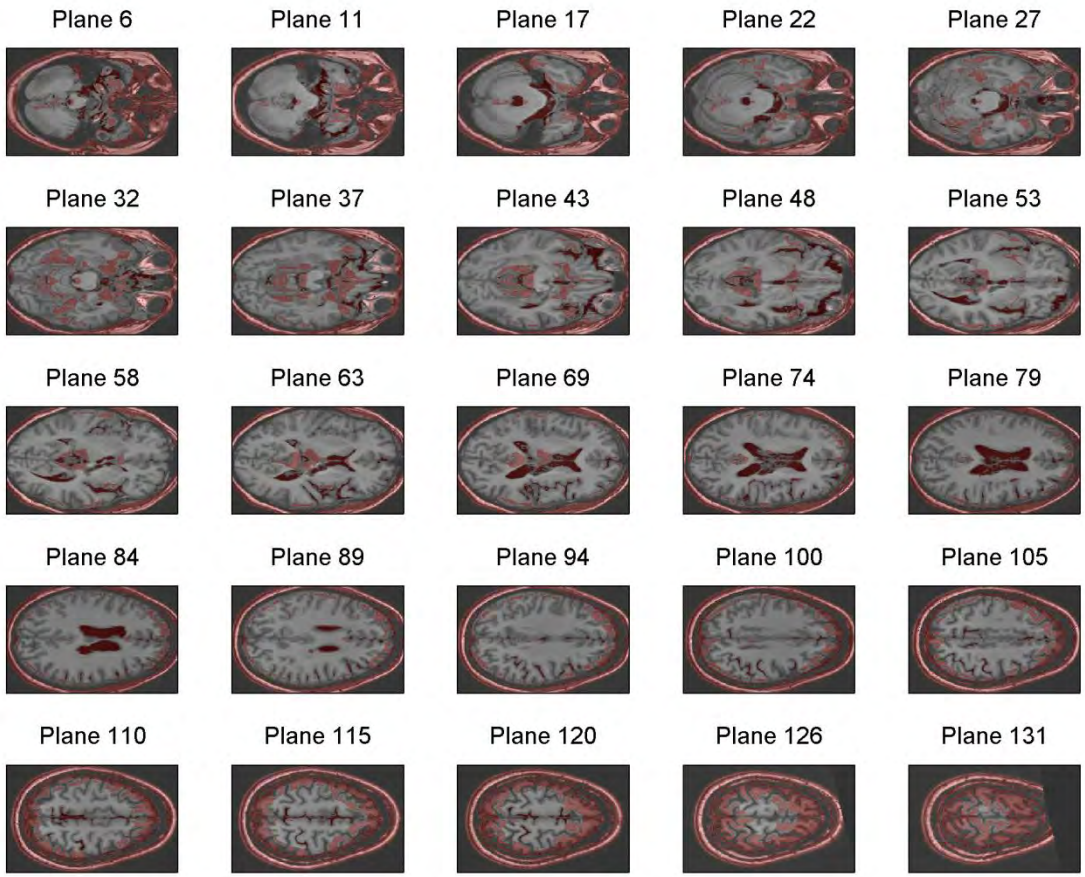


Figure 30 Lesion segmentation for Subject 1, fMRI session 4.

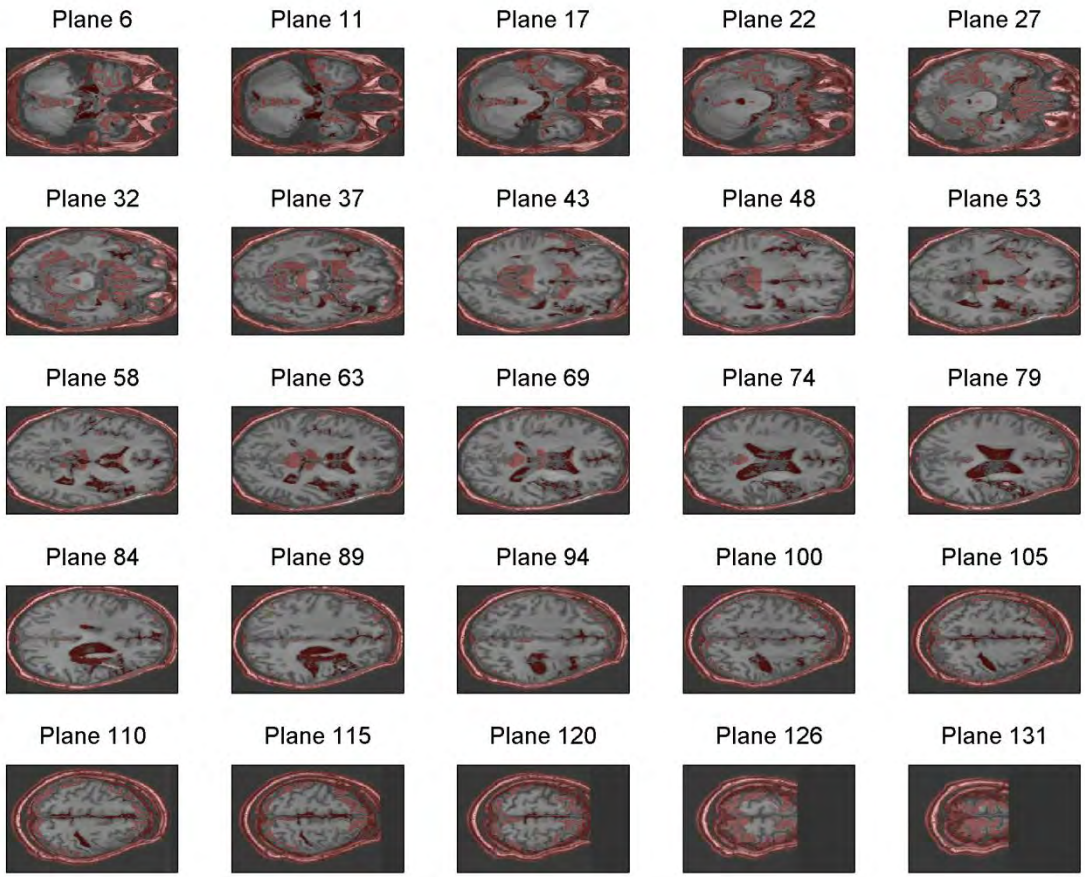


Figure 31 Lesion segmentation for Subject 2, fMRI session 1.

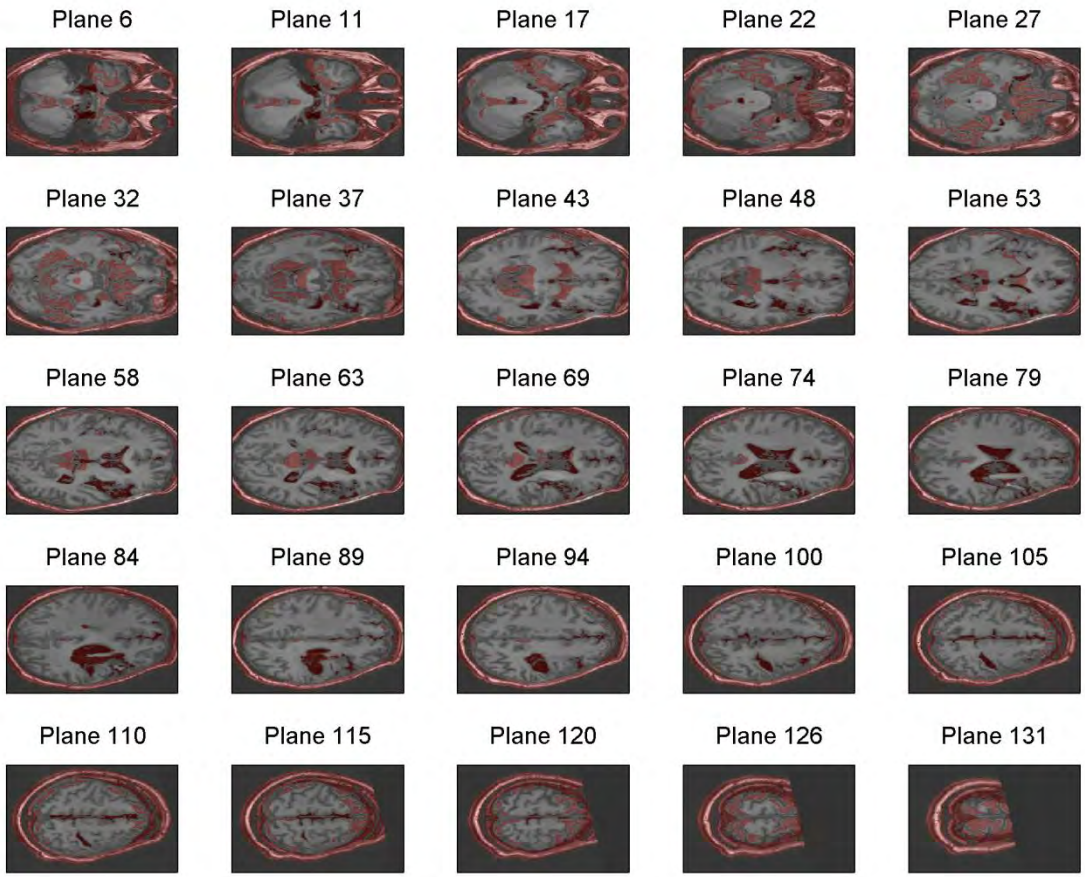


Figure 32 Lesion segmentation for Subject 2, fMRI session 2.

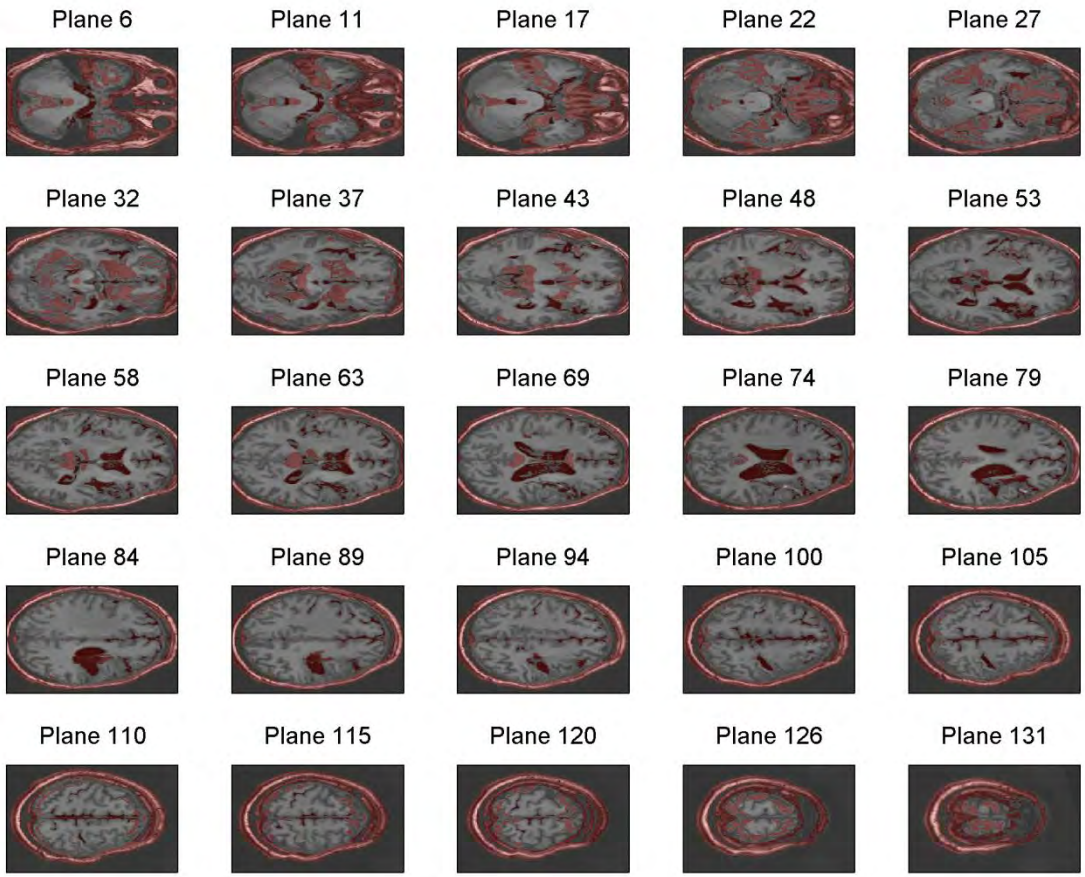


Figure 33 Lesion segmentation for Subject 2, fMRI session 3.

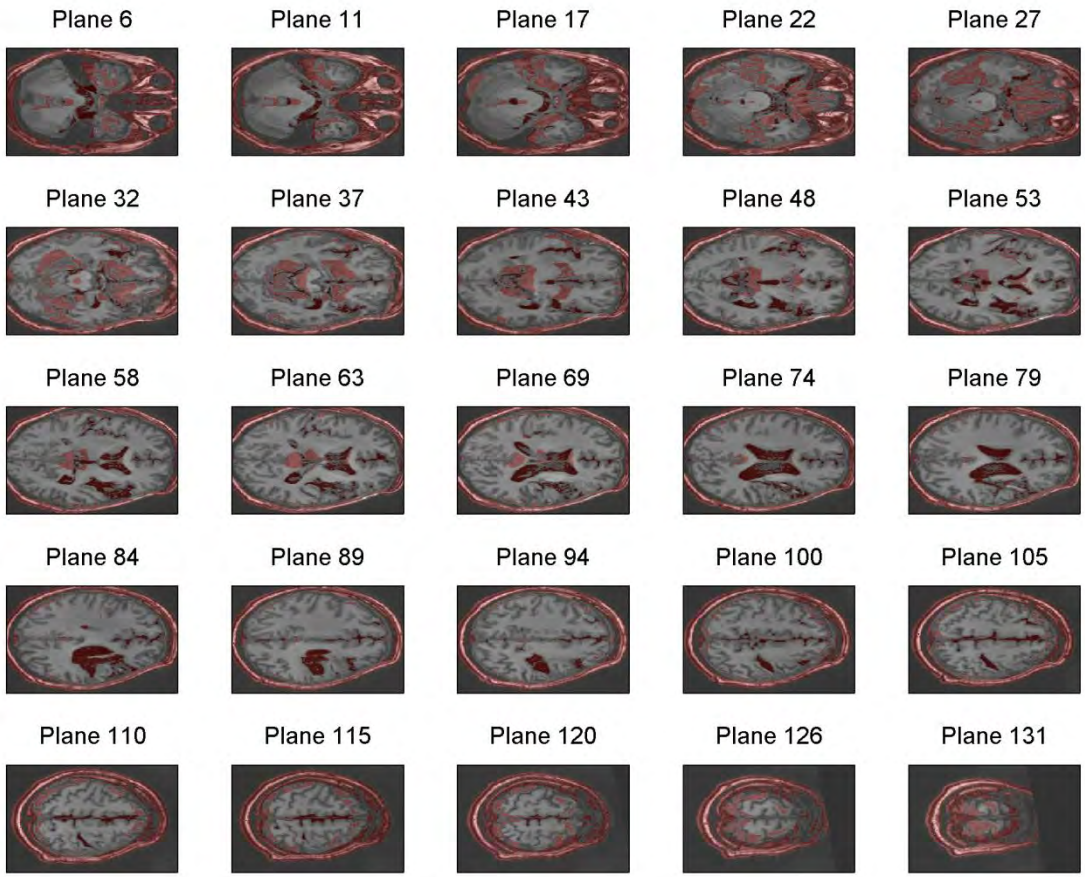


Figure 34 Lesion segmentation for Subject 2, fMRI session 4.

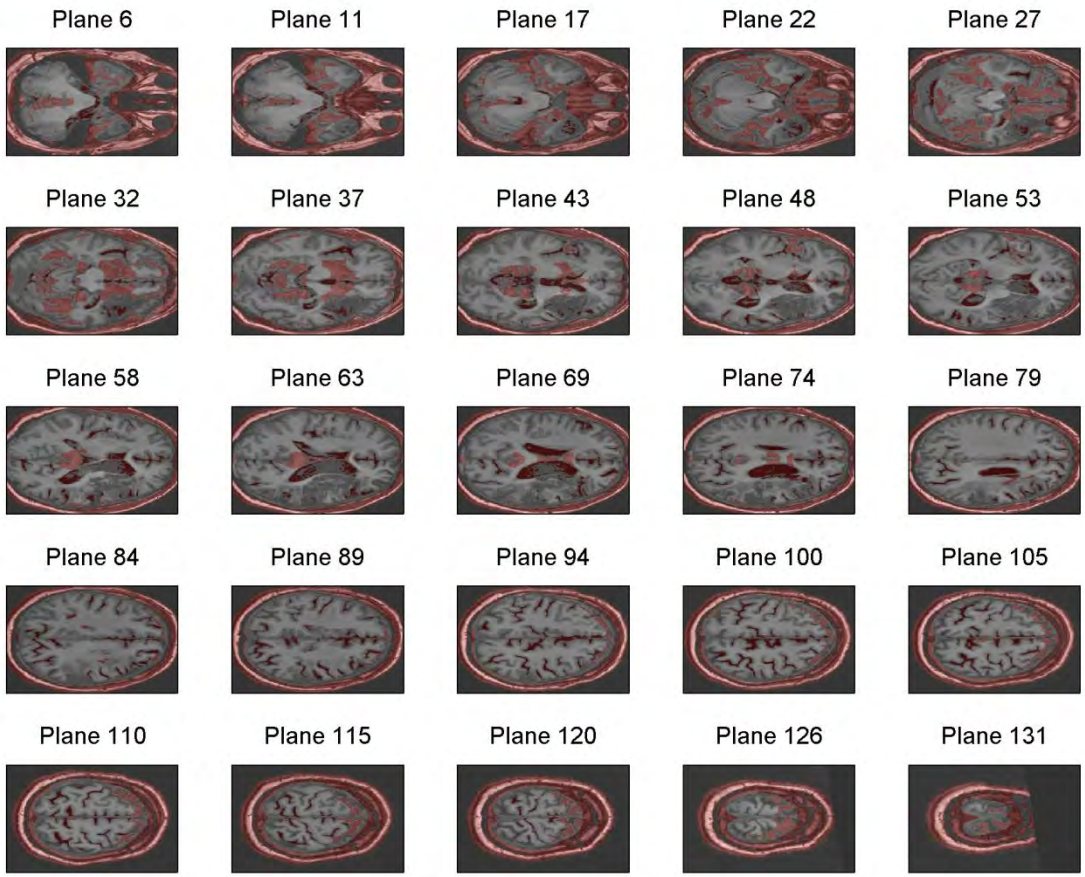


Figure 35 Lesion segmentation for Subject 3, fMRI session 1.

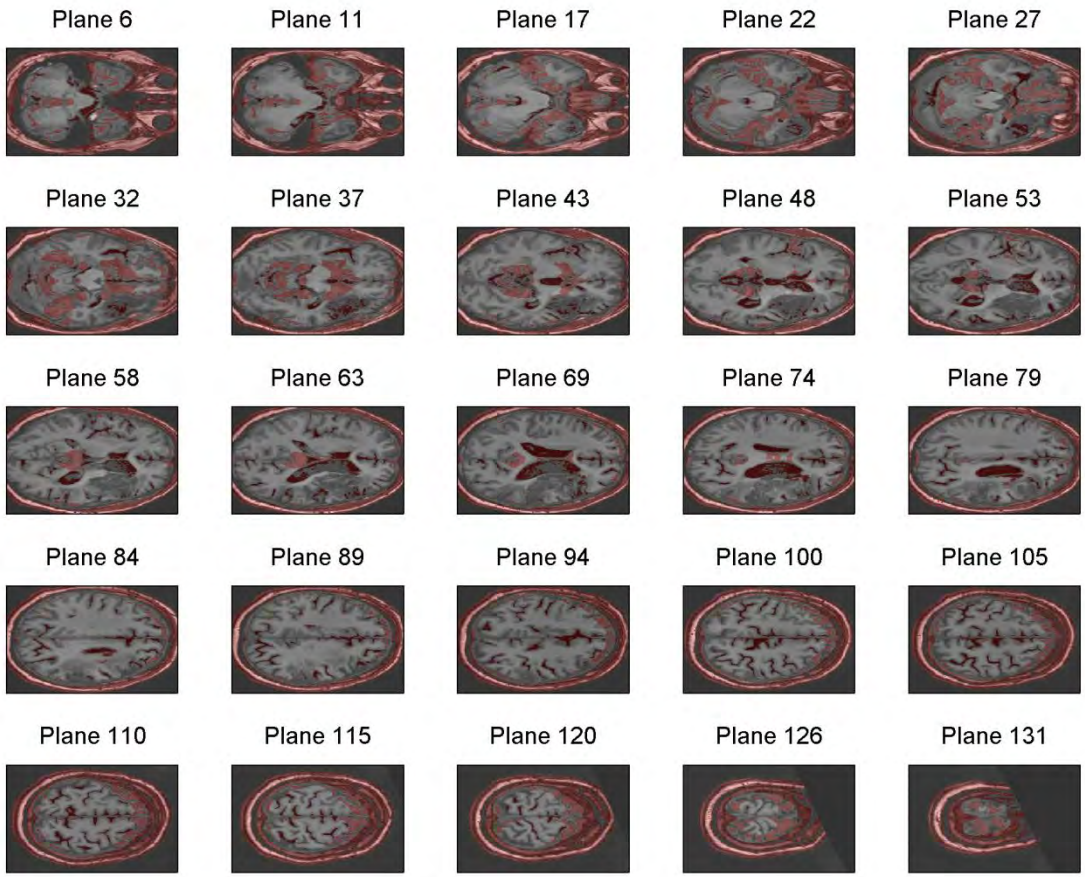


Figure 36 Lesion segmentation for Subject 3, fMRI session 2.

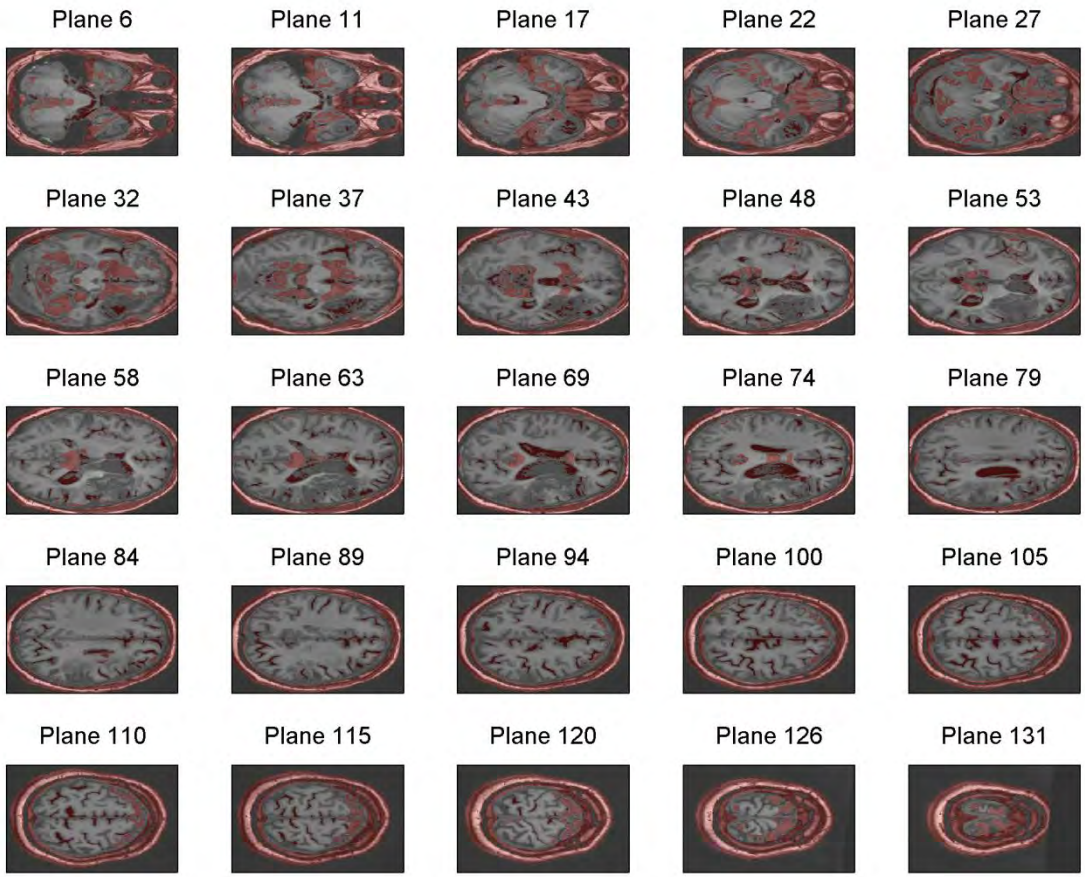


Figure 37 Lesion segmentation for Subject 3, fMRI session 3.

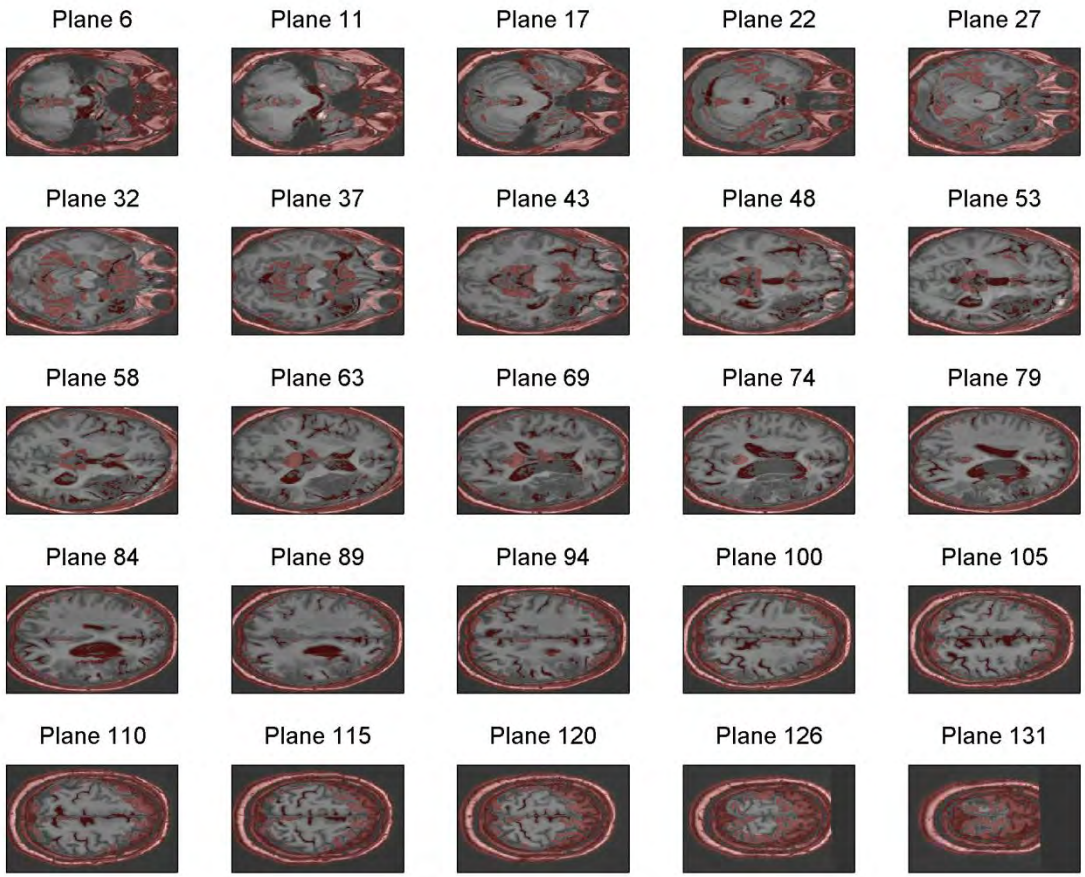


Figure 38 Lesion segmentation for Subject 3, fMRI session 4.

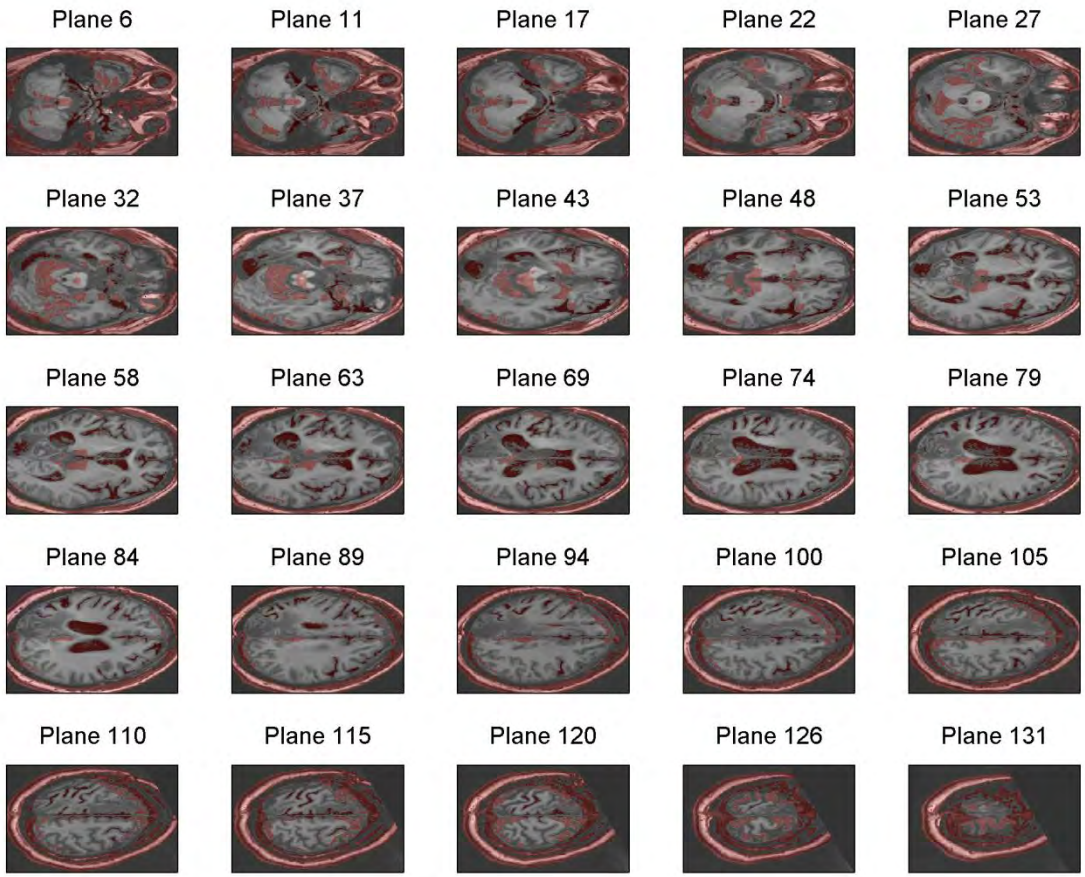


Figure 39 Lesion segmentation for Subject 4, fMRI session 1.

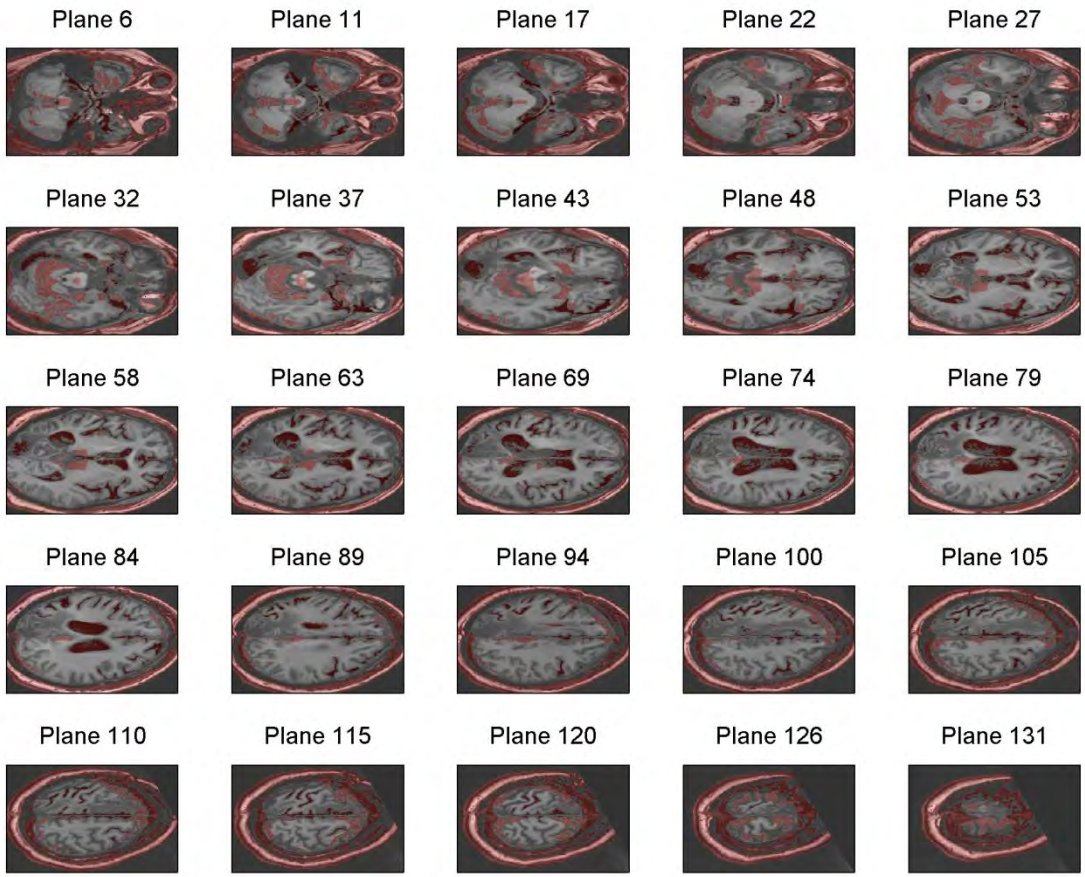


Figure 40 Lesion segmentation for Subject 4, fMRI session 2.

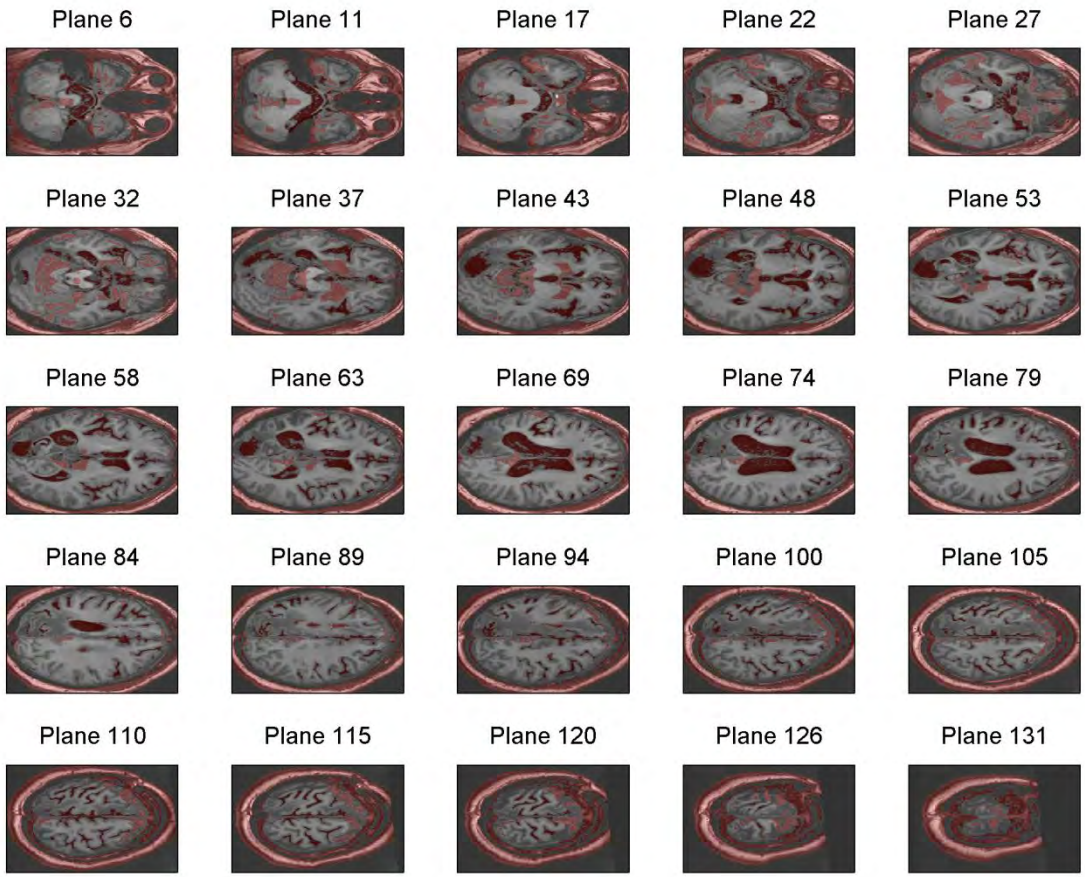


Figure 41 Lesion segmentation for Subject 4, fMRI session 3.

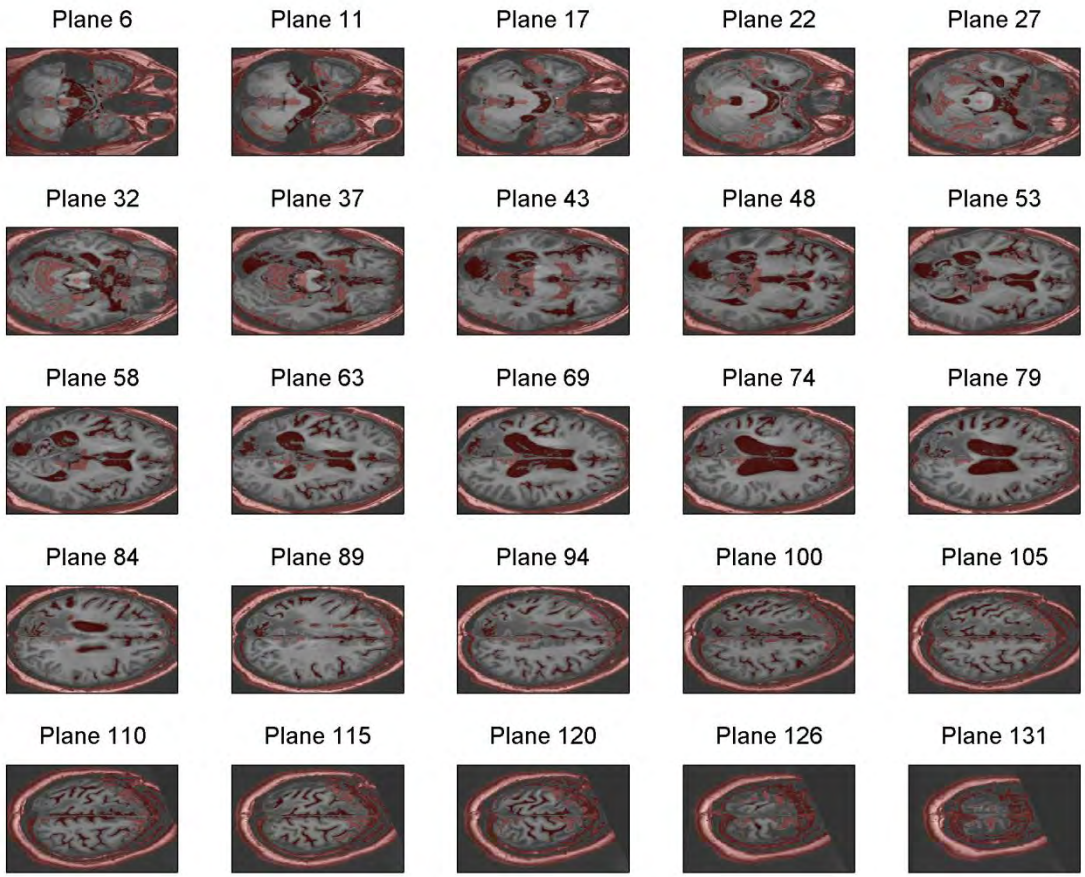


Figure 42 Lesion segmentation for Subject 4, fMRI session 4.

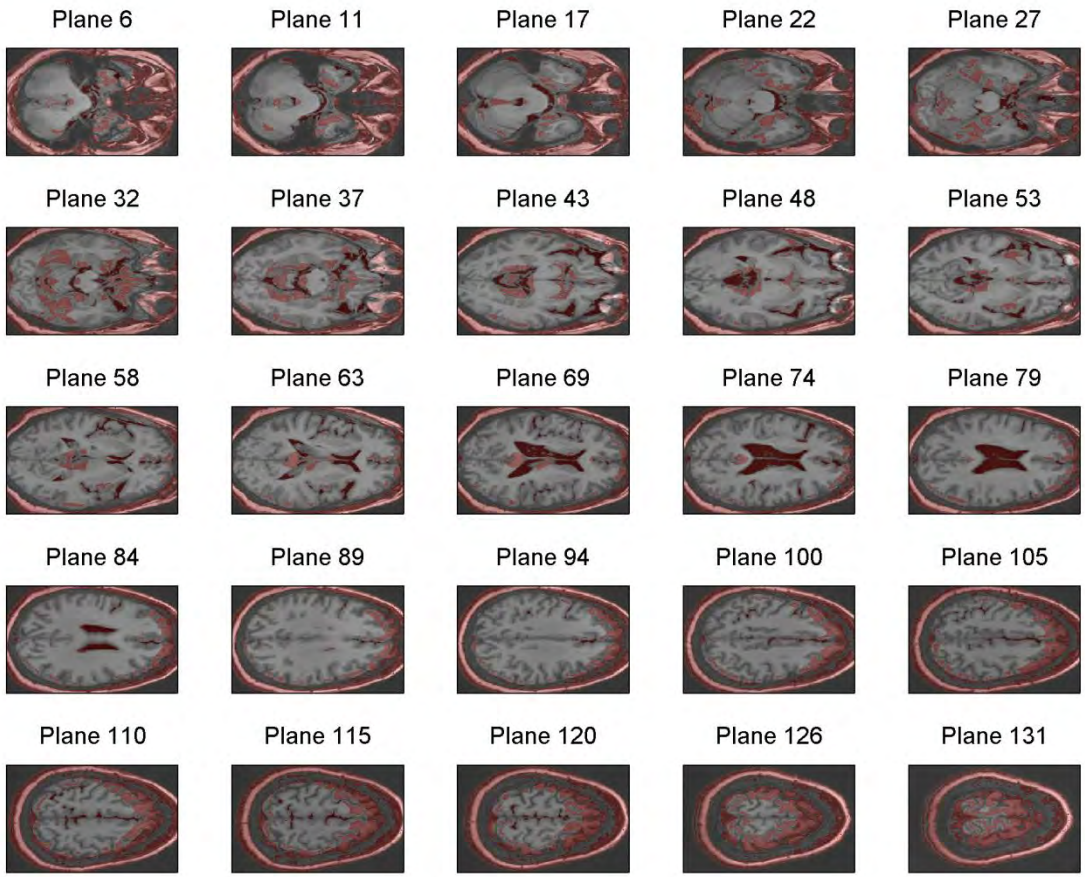


Figure 43 Lesion segmentation for Subject 5, fMRI session 1.

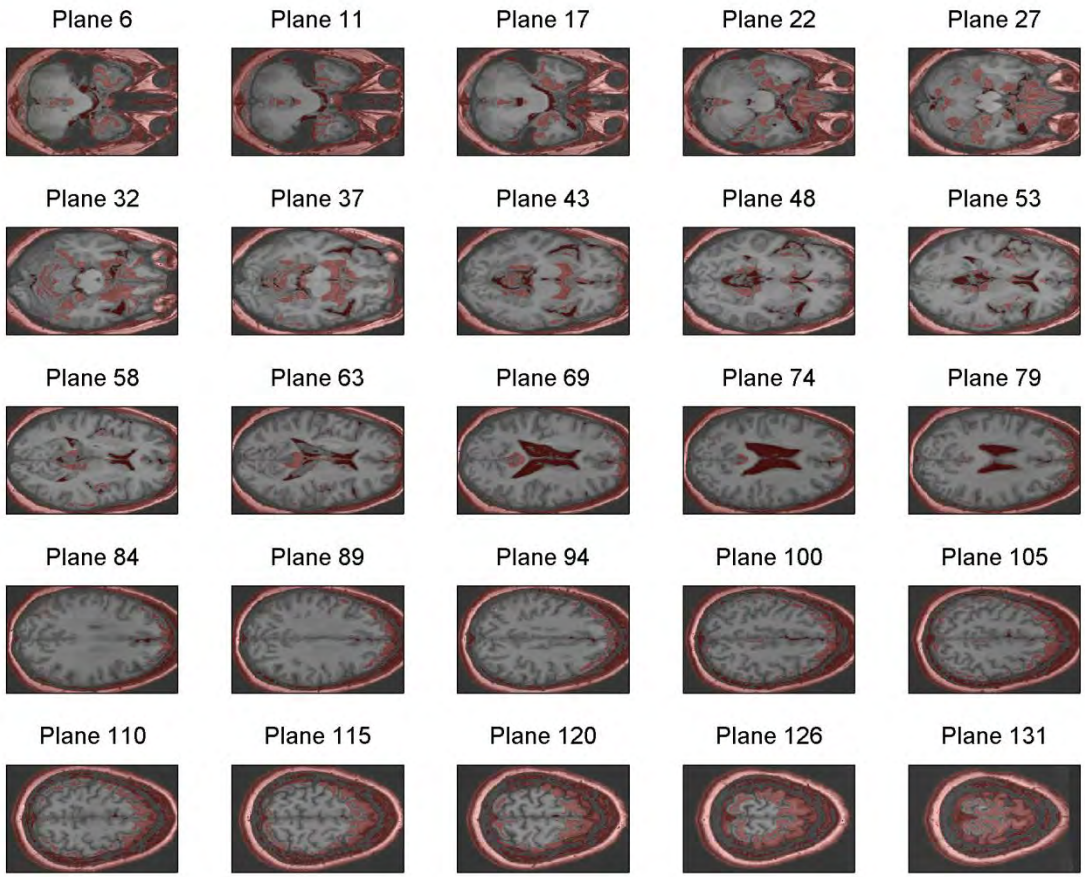


Figure 44 Lesion segmentation for Subject 5, fMRI session 2.

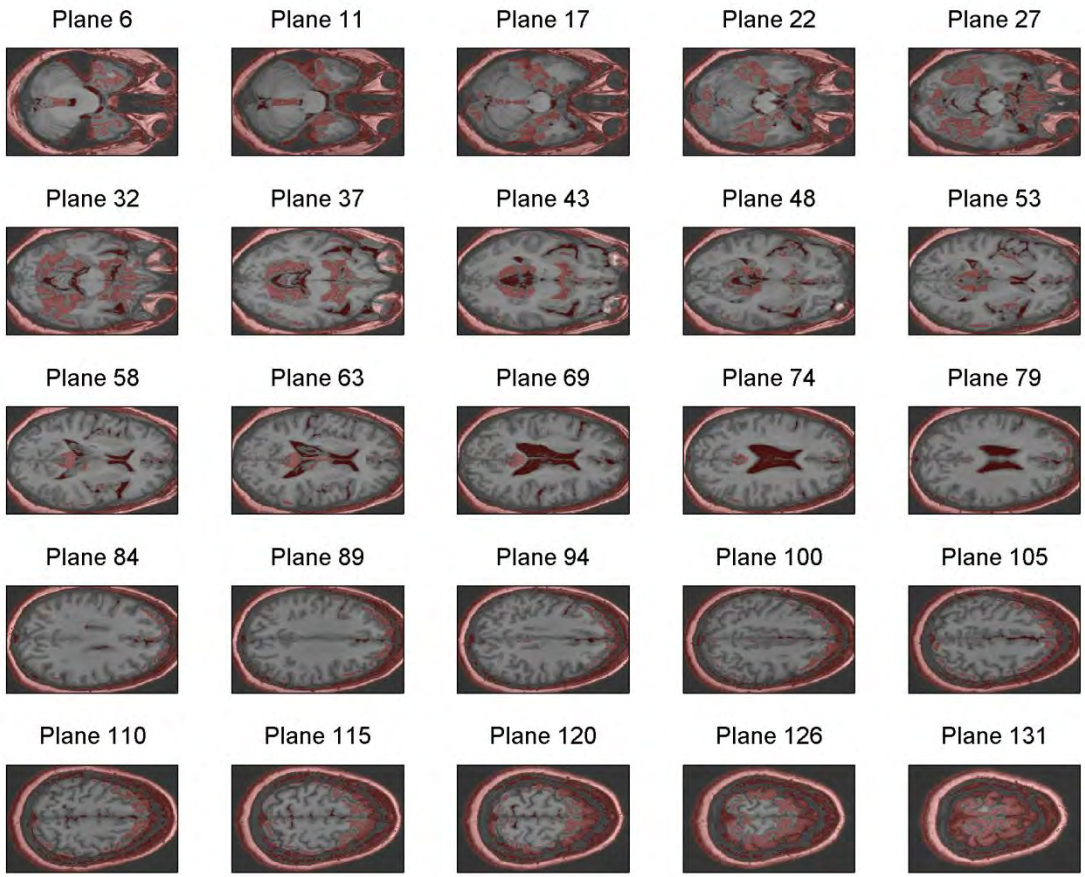


Figure 45 Lesion segmentation for Subject 5, fMRI session 3.

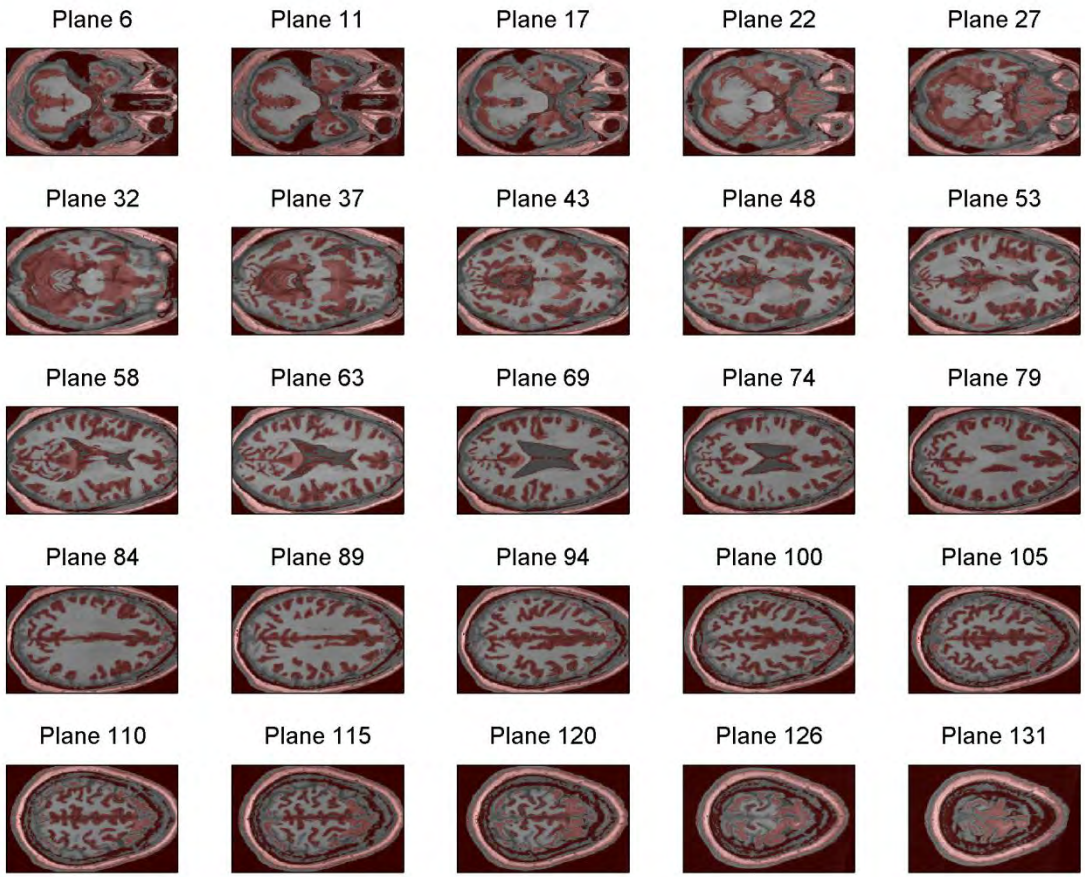


Figure 46 Lesion segmentation for Subject 5, fMRI session 4.

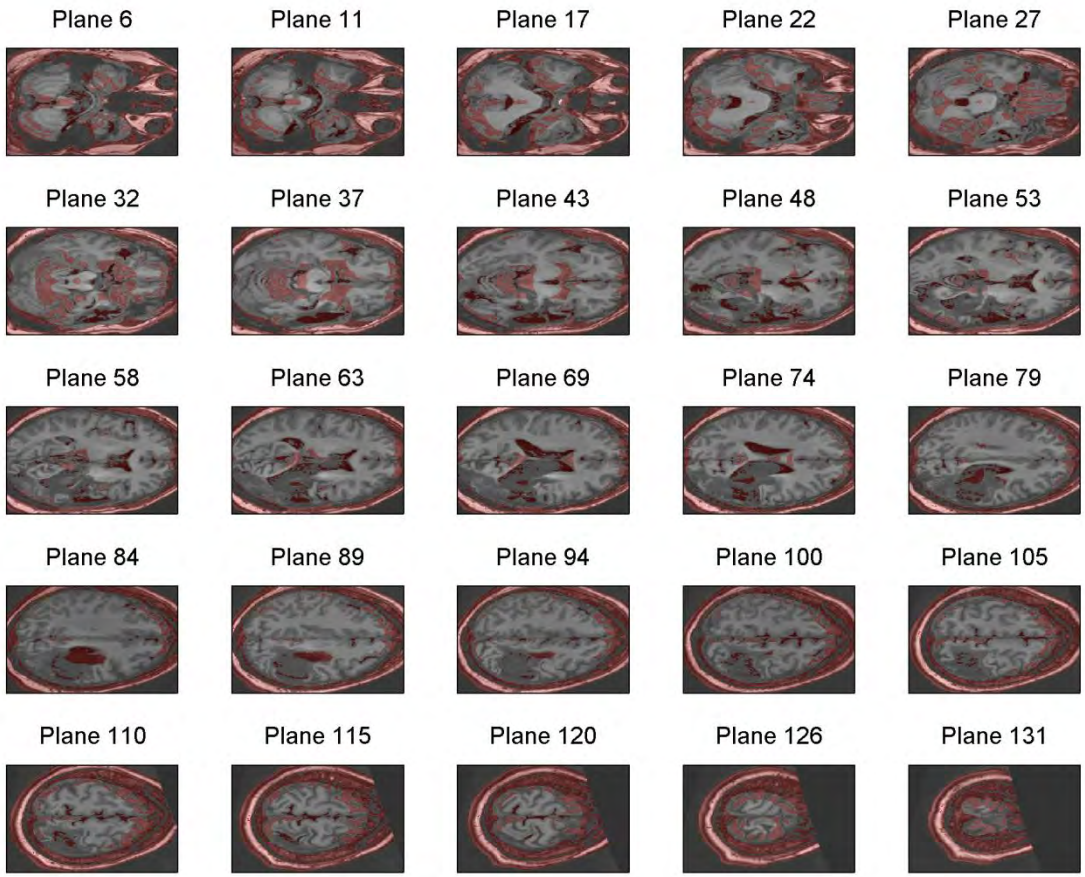


Figure 47 Lesion segmentation for Subject 6, fMRI session 1.

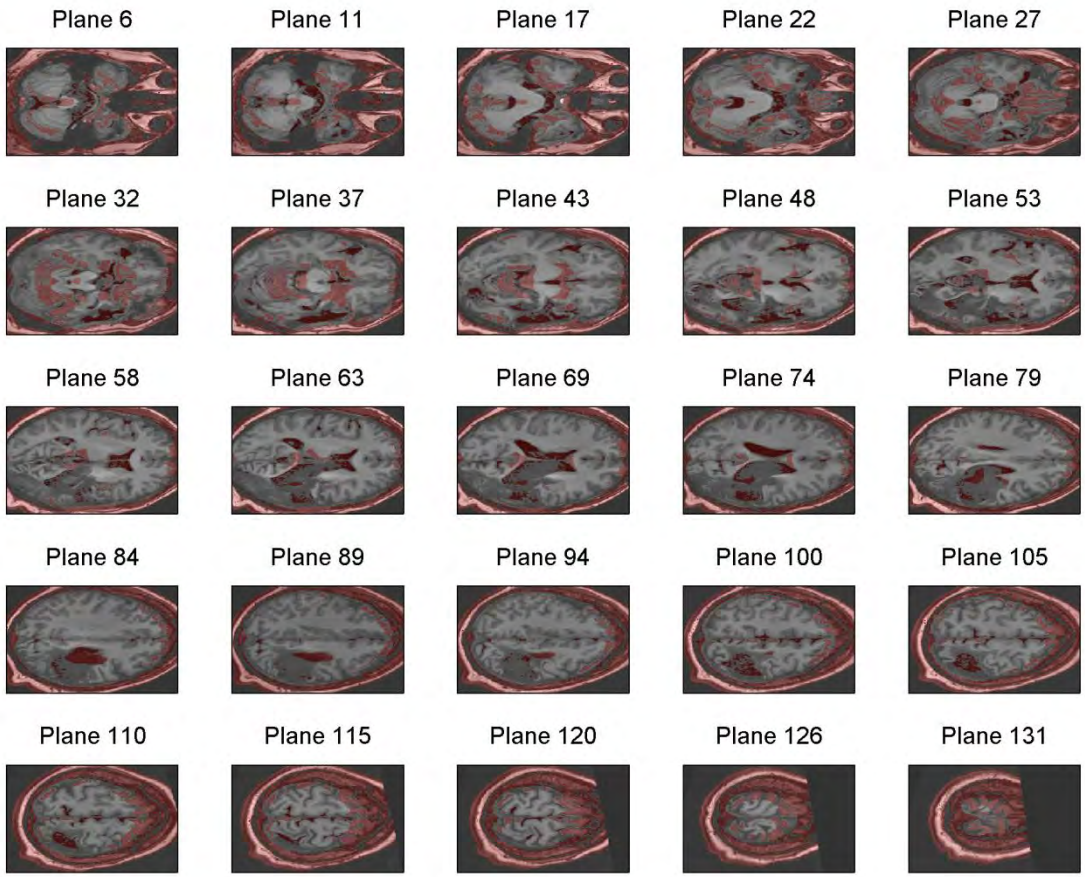


Figure 48 Lesion segmentation for Subject 6, fMRI session 2.

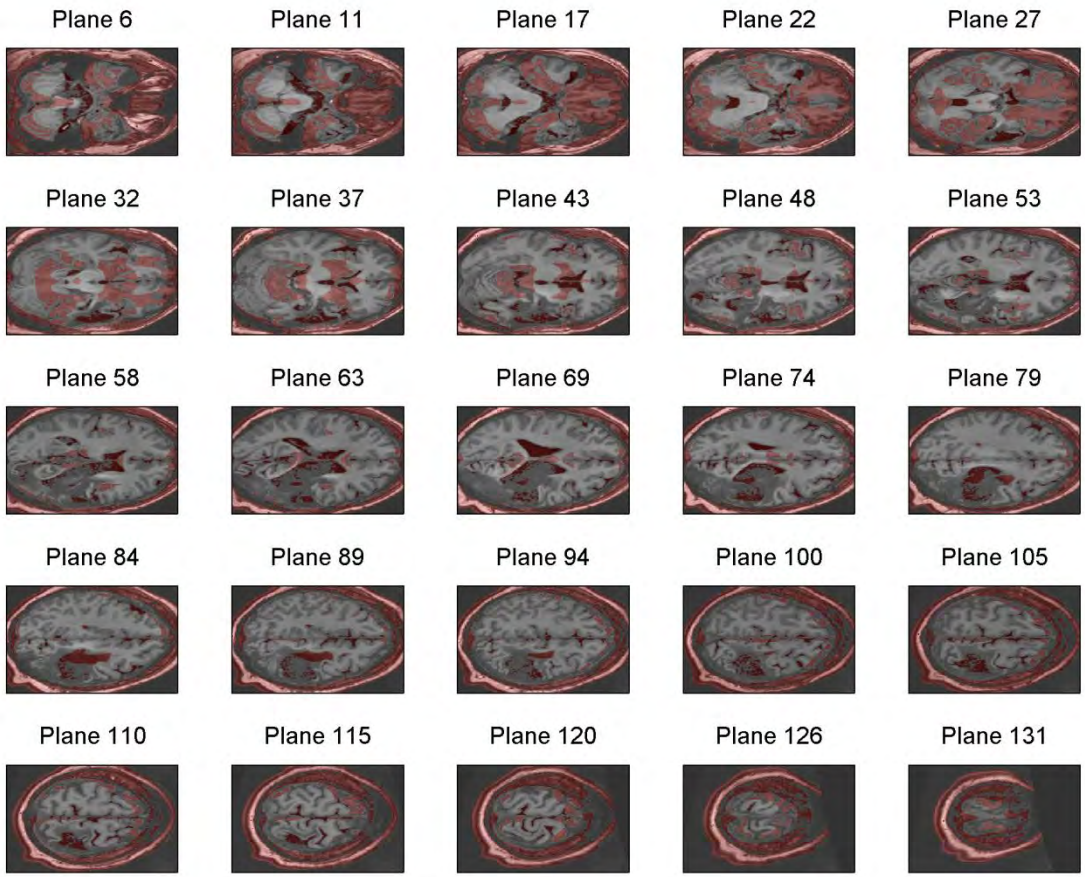


Figure 49 Lesion segmentation for Subject 6, fMRI session 3.

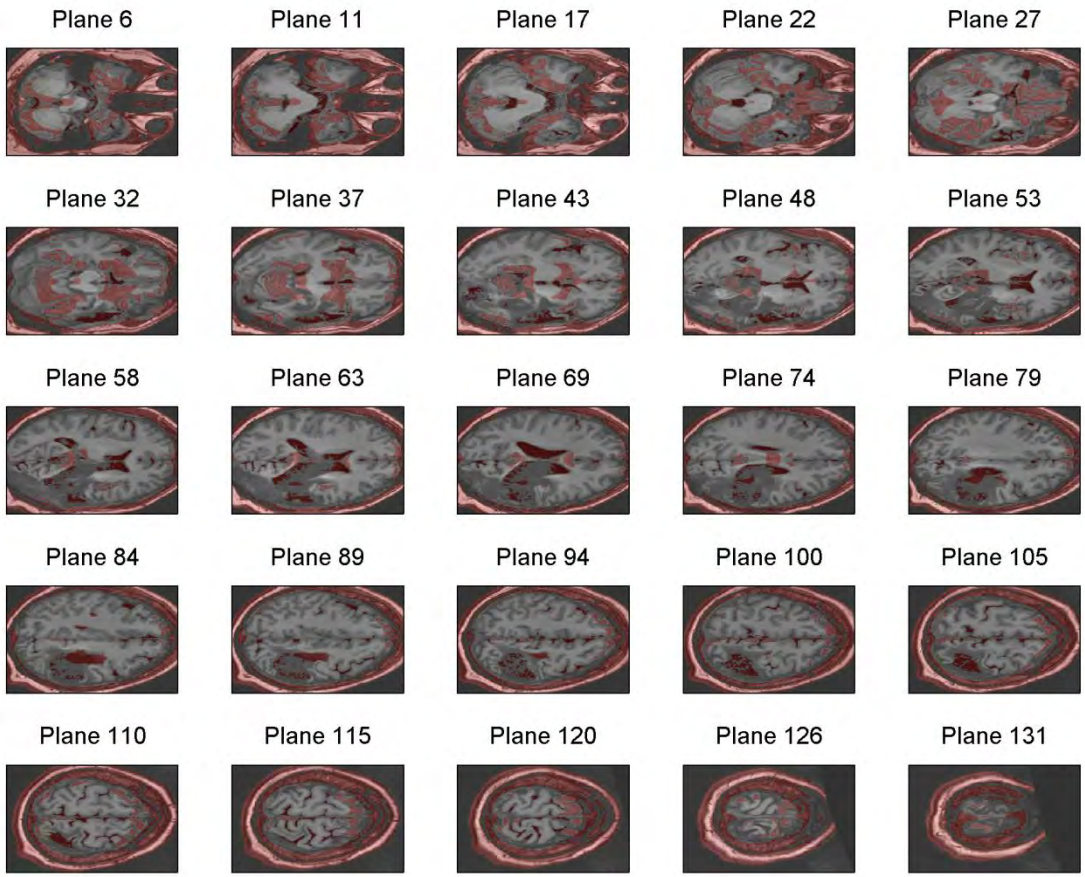


Figure 50 Lesion segmentation for Subject 6, fMRI session 4.

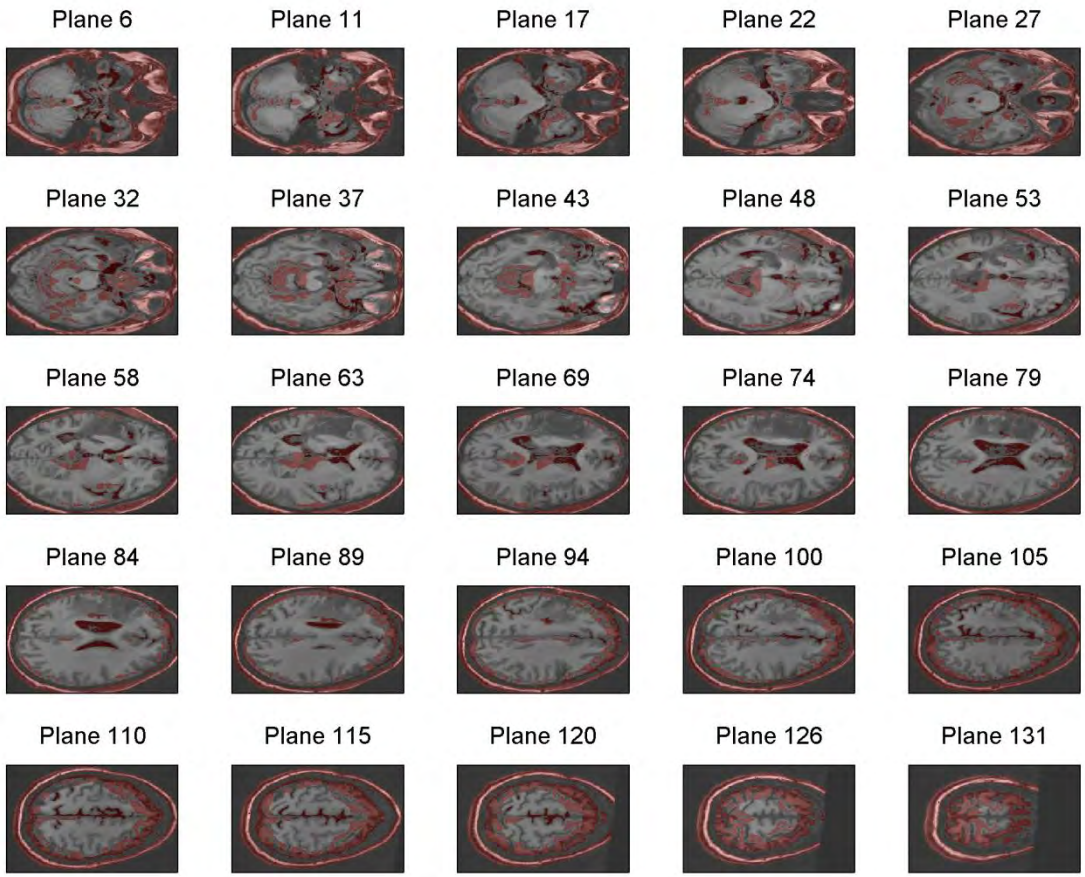


Figure 51 Lesion segmentation for Subject 7, fMRI session 1.

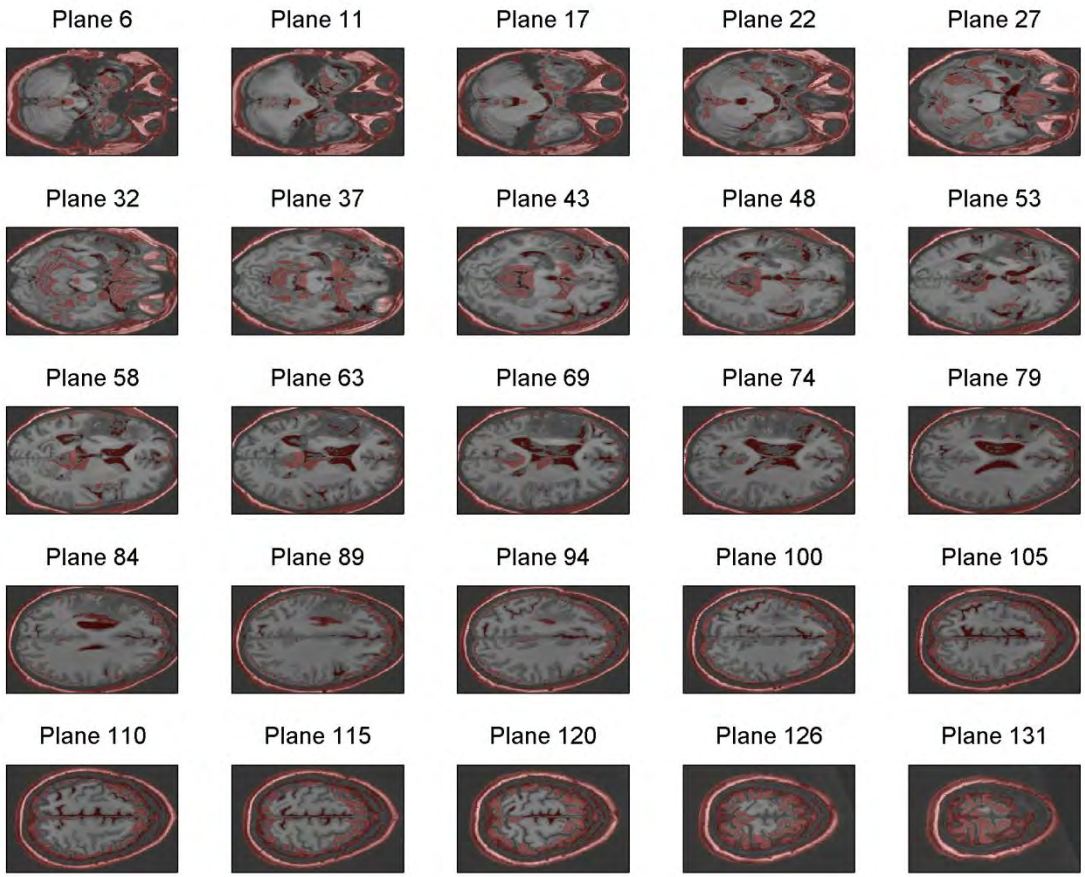


Figure 52 Lesion segmentation for Subject 7, fMRI session 2.

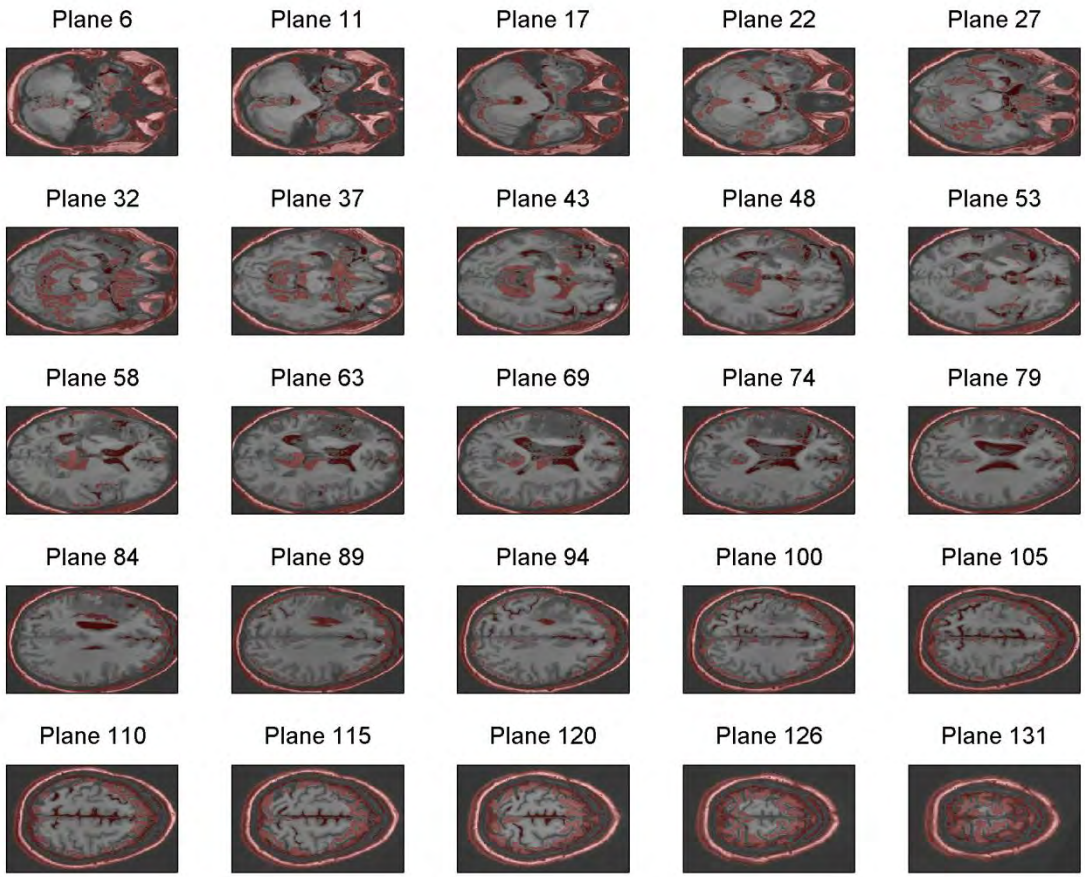


Figure 53 Lesion segmentation for Subject 7, fMRI session 3.

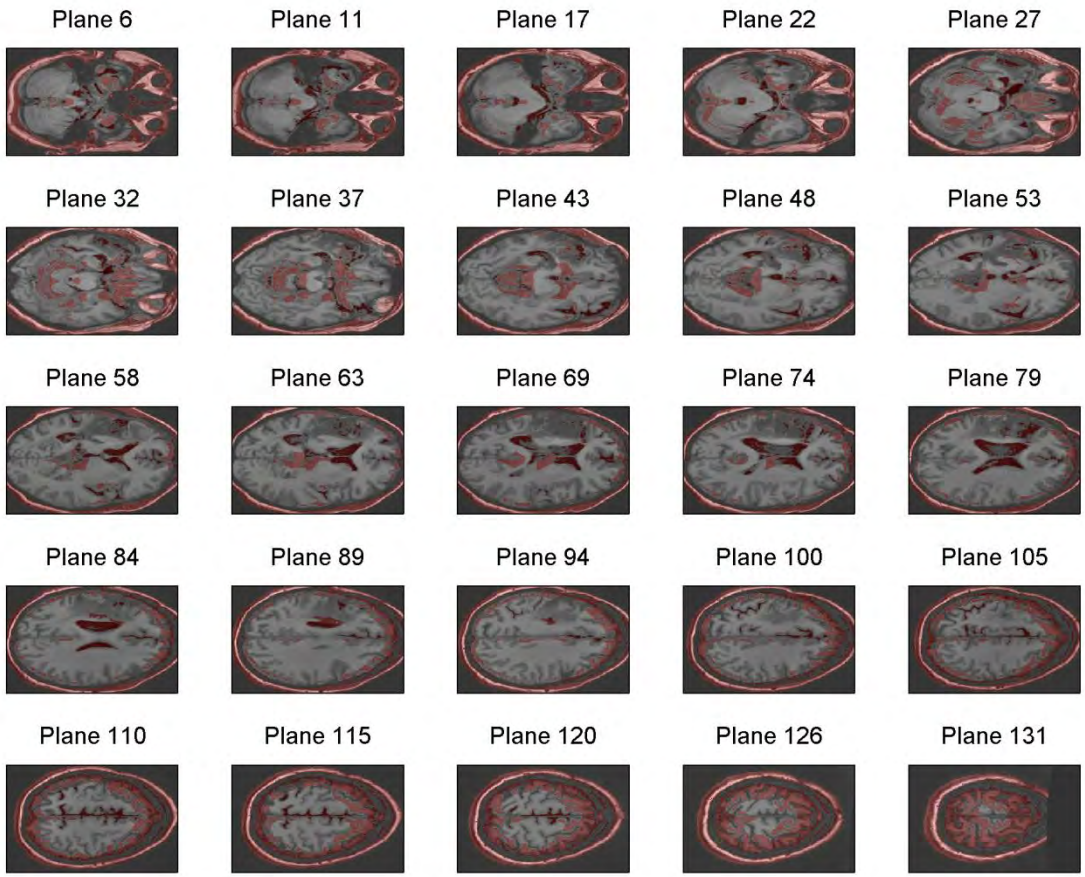


Figure 54 Lesion segmentation for Subject 7, fMRI session 4.

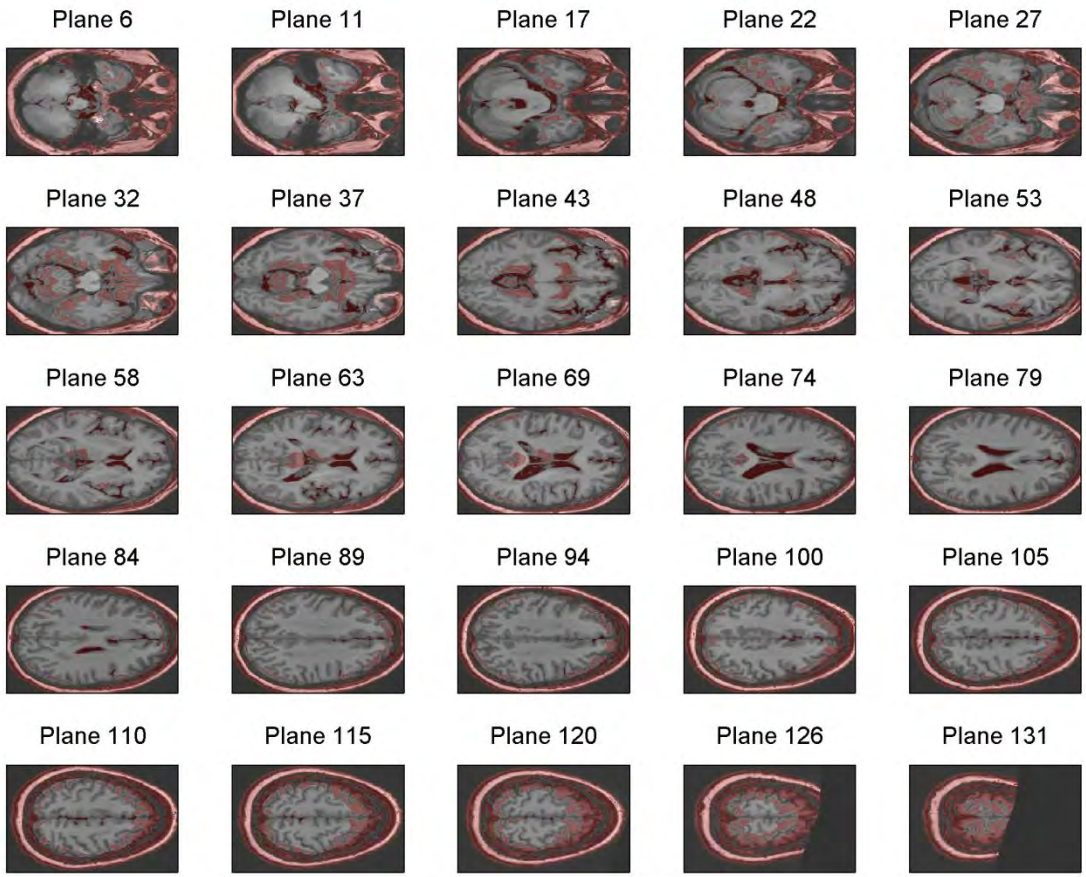


Figure 55 Lesion segmentation for Subject 8, fMRI session 1.

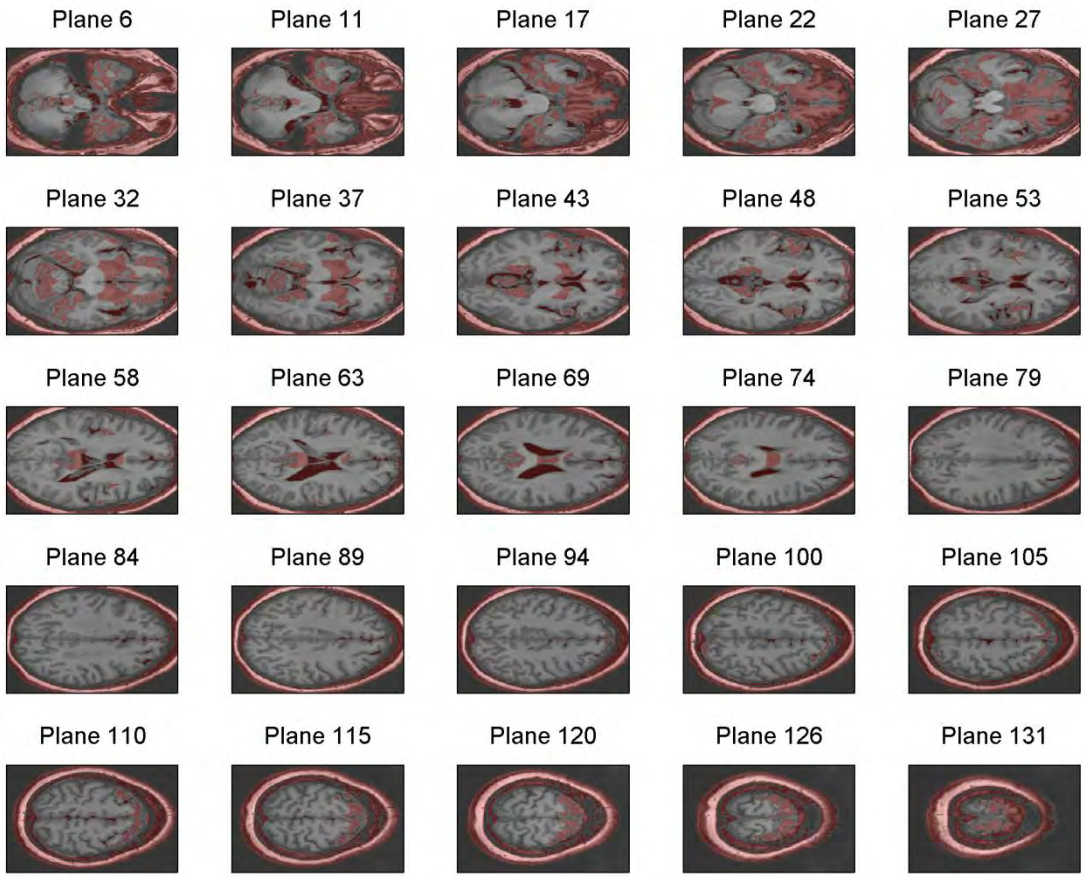


Figure 56 Lesion segmentation for Subject 8, fMRI session 2.

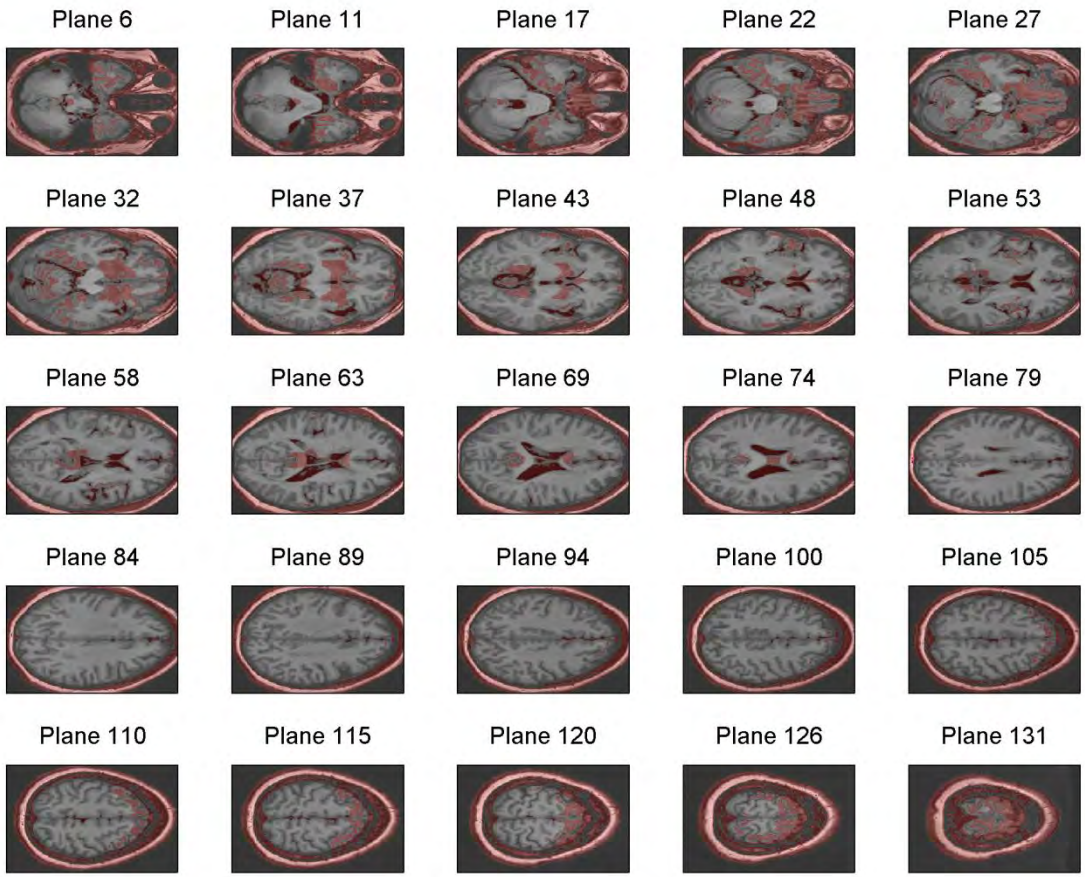


Figure 57 Lesion segmentation for Subject 8, fMRI session 3.

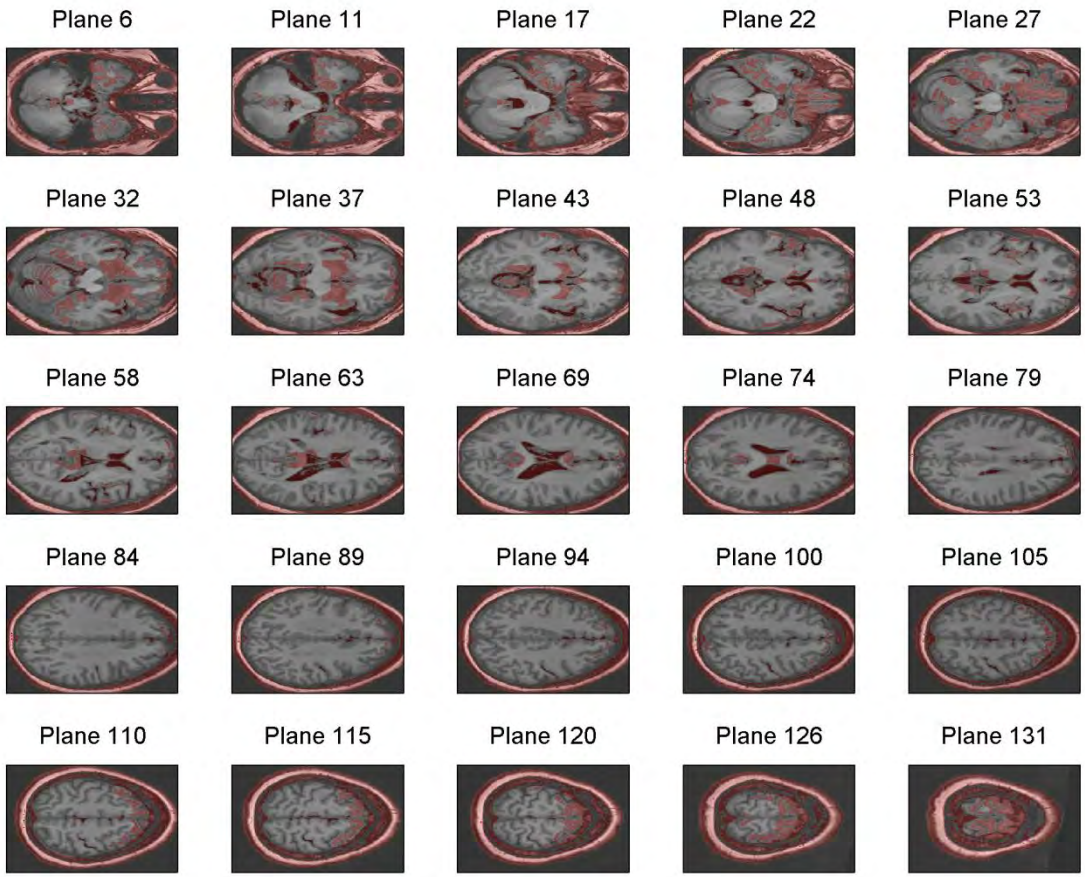


Figure 58 Lesion segmentation for Subject 8, fMRI session 4.

Appendix B: Activity maps and anatomical labelling

Activation

The functional activation maps for all subjects and sessions are presented. The figures presented correspond to the statistical parametric mappings at $p<0.001$ significance level. The darker, the more significant. Glass brain views in the three planes; saggital, coronal and axial are presented. Finally, the anatomical labelling of the active regions are summarized in tables. The region labels can be found in [39].

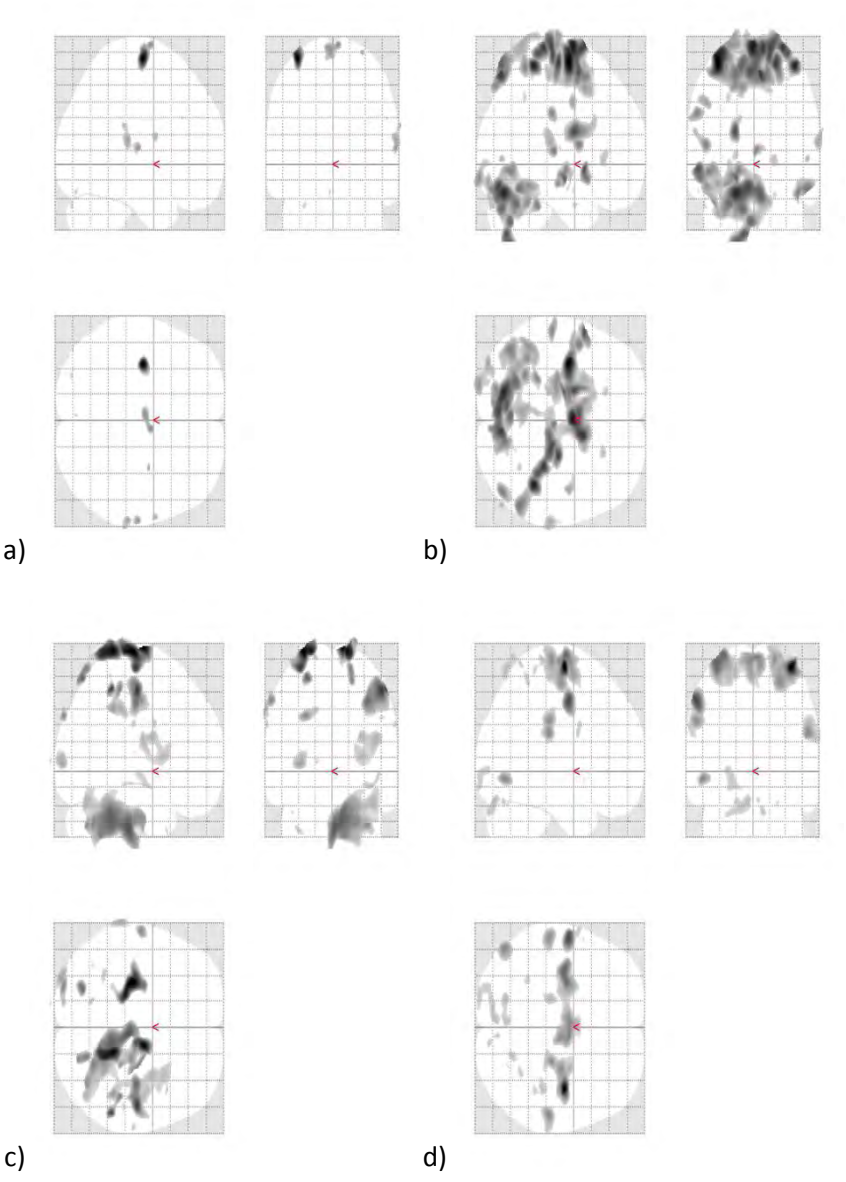


Figure 59 Activation maps for subject 1 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

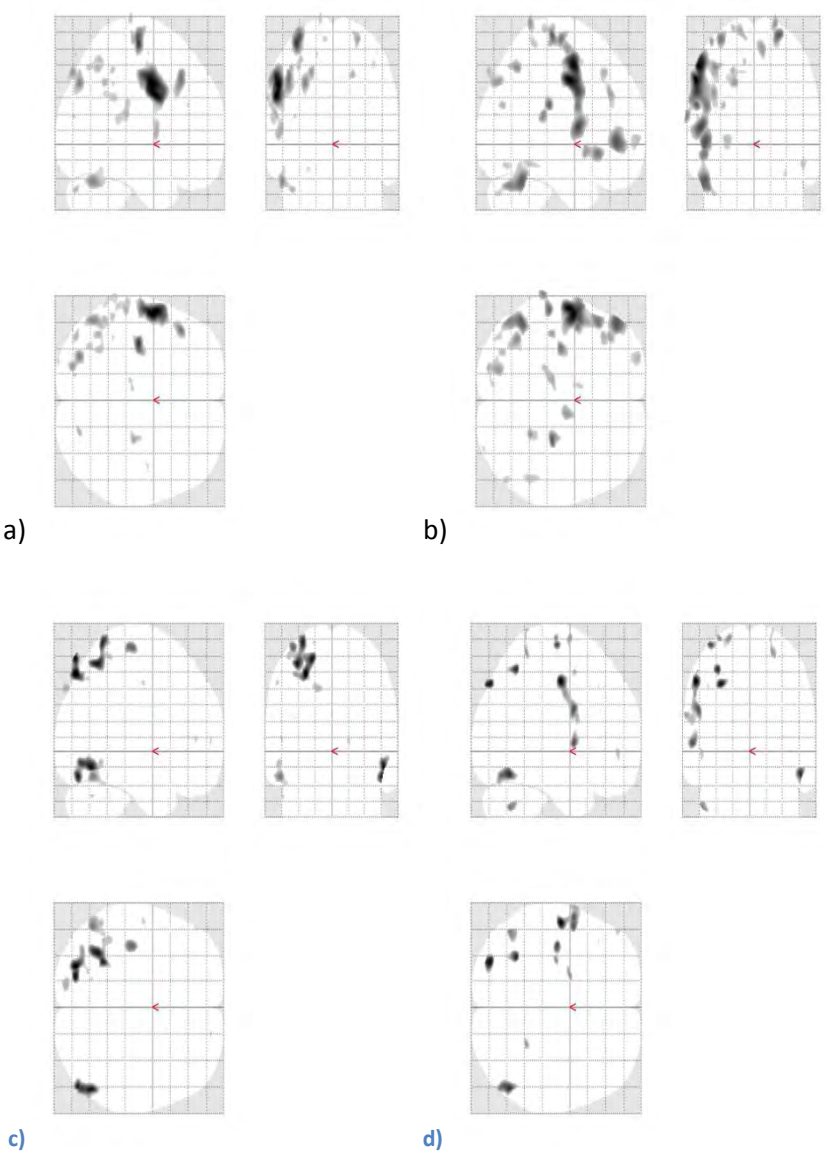


Figure 60 Activation maps for subject 2 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

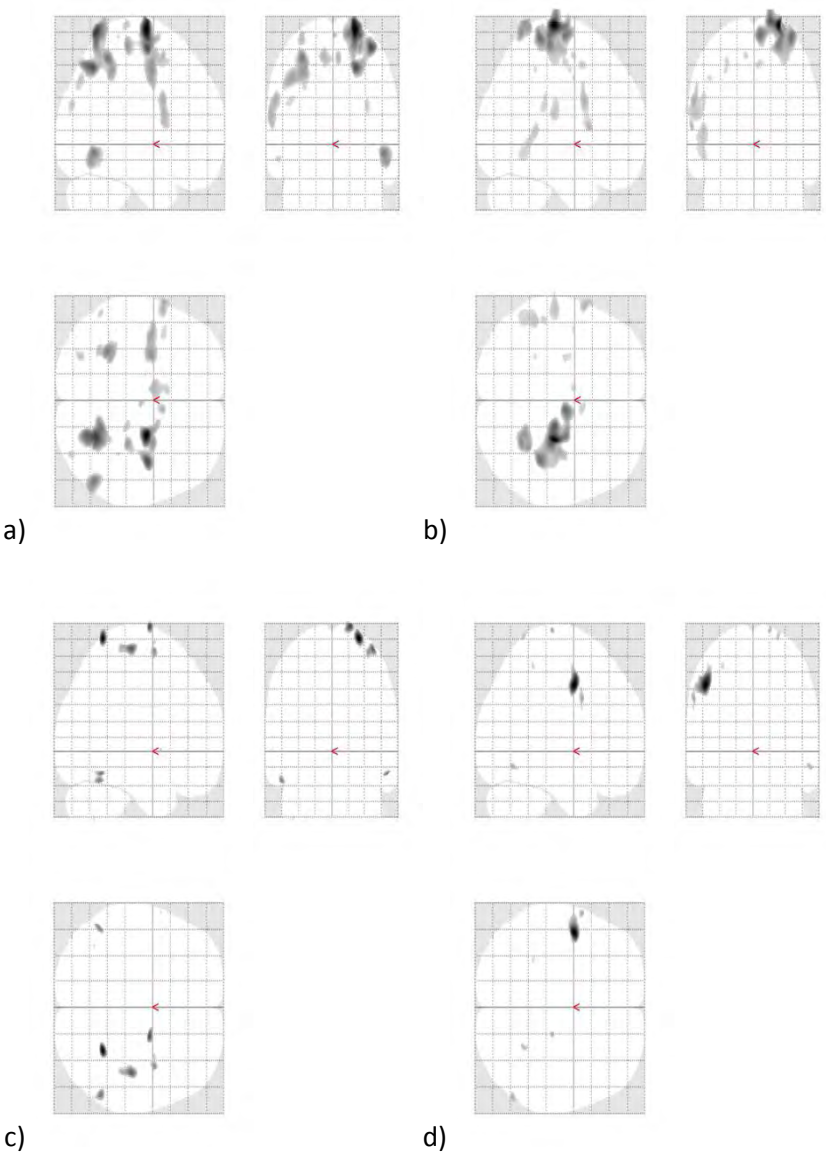


Figure 61 Activation maps for subject 3 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

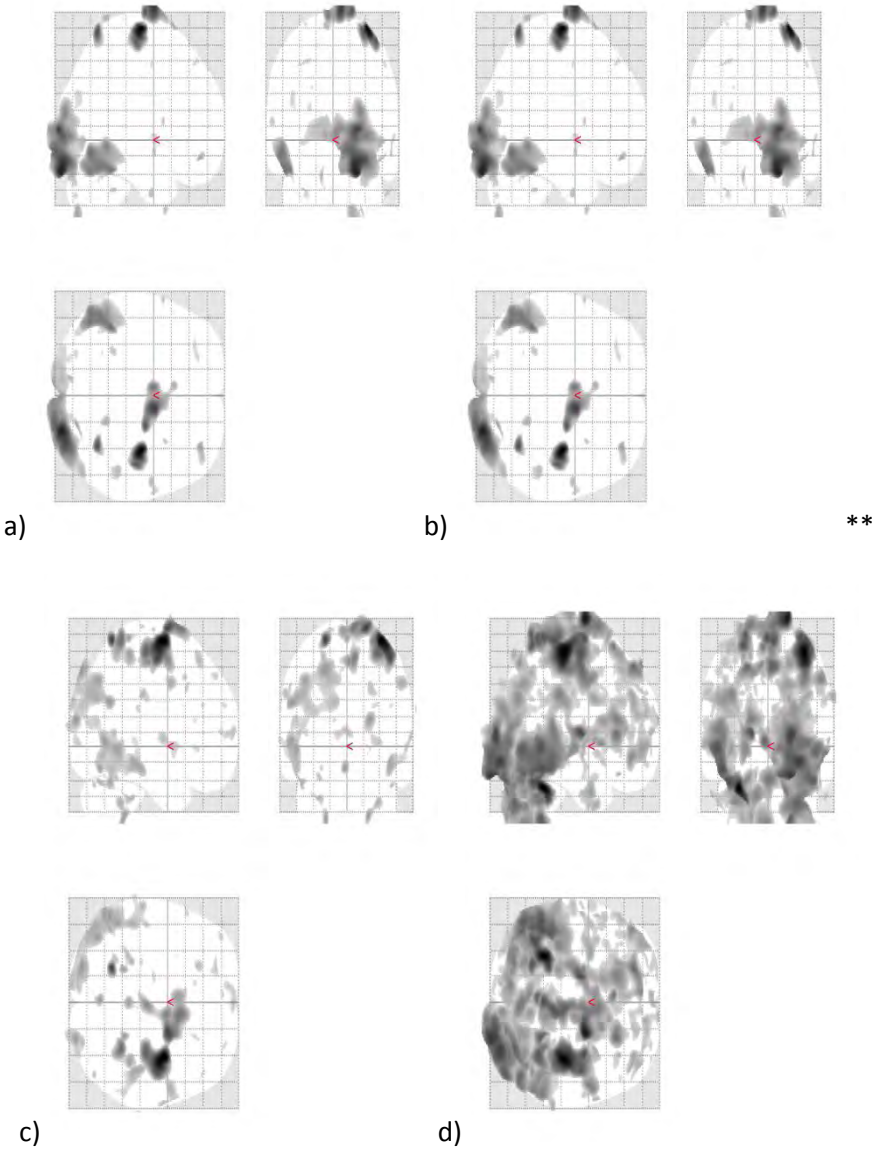


Figure 62 Activation maps for subject 4 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

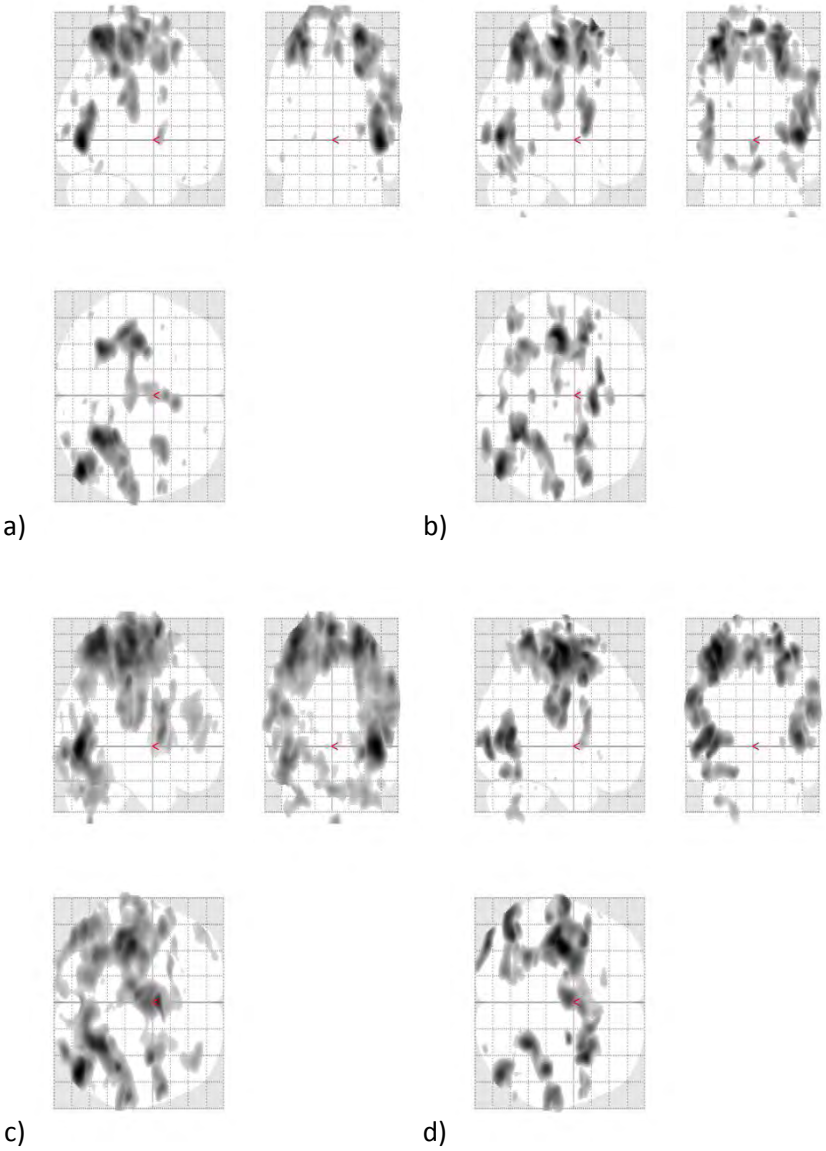


Figure 63 Activation maps for subject 5 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

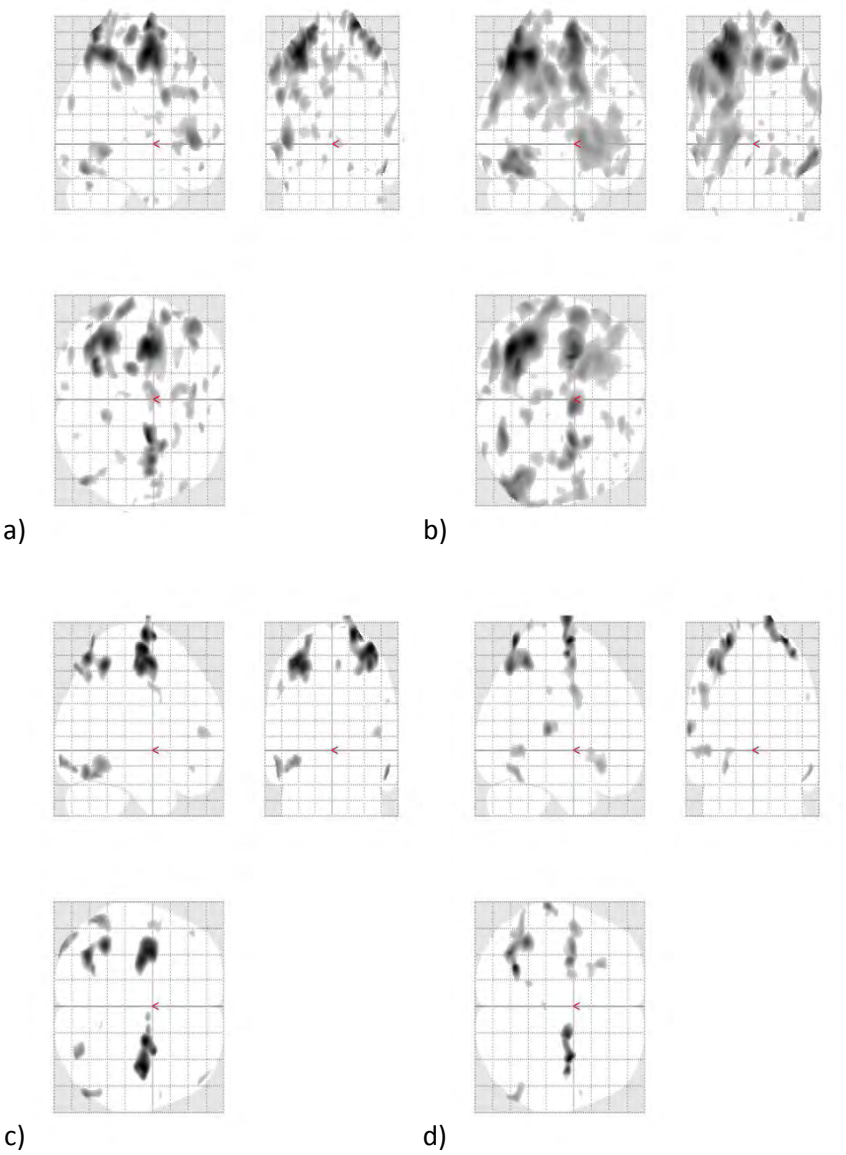


Figure 64 Activation maps for subject 6 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

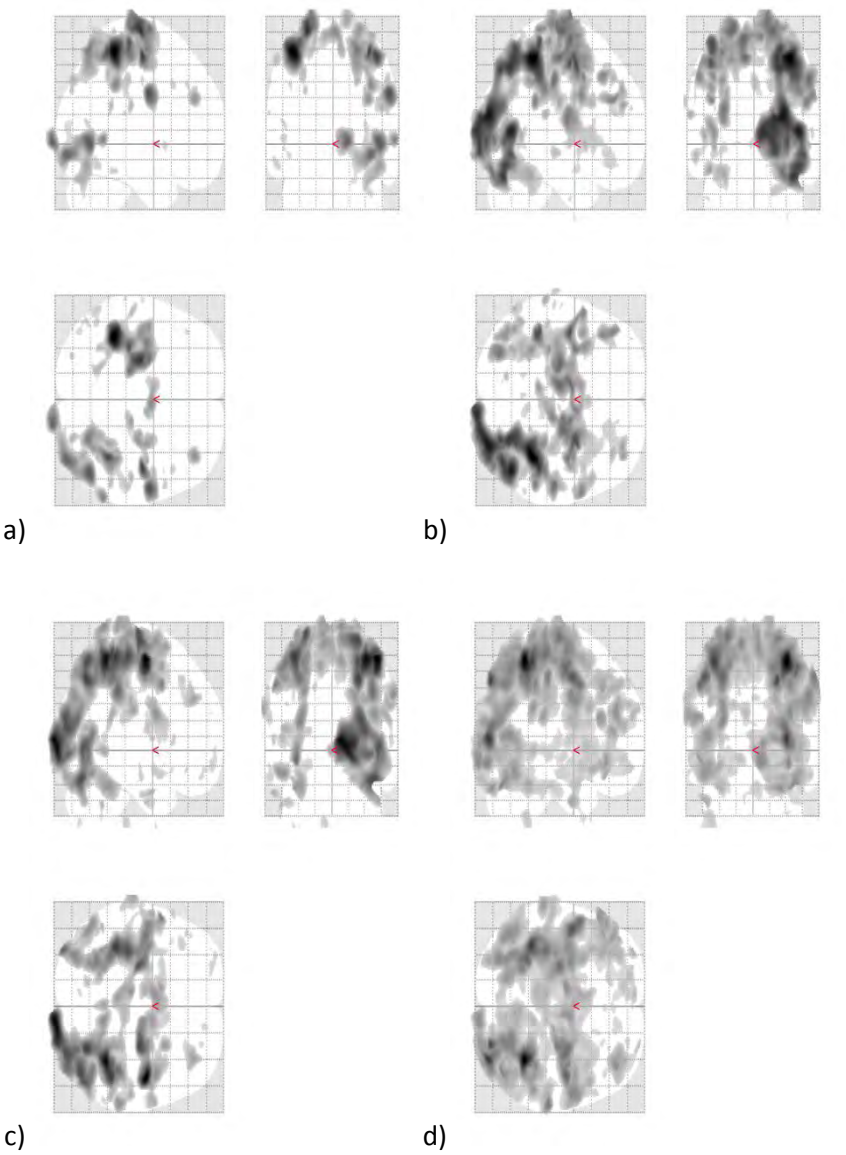


Figure 65 Activation maps for subject 7 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

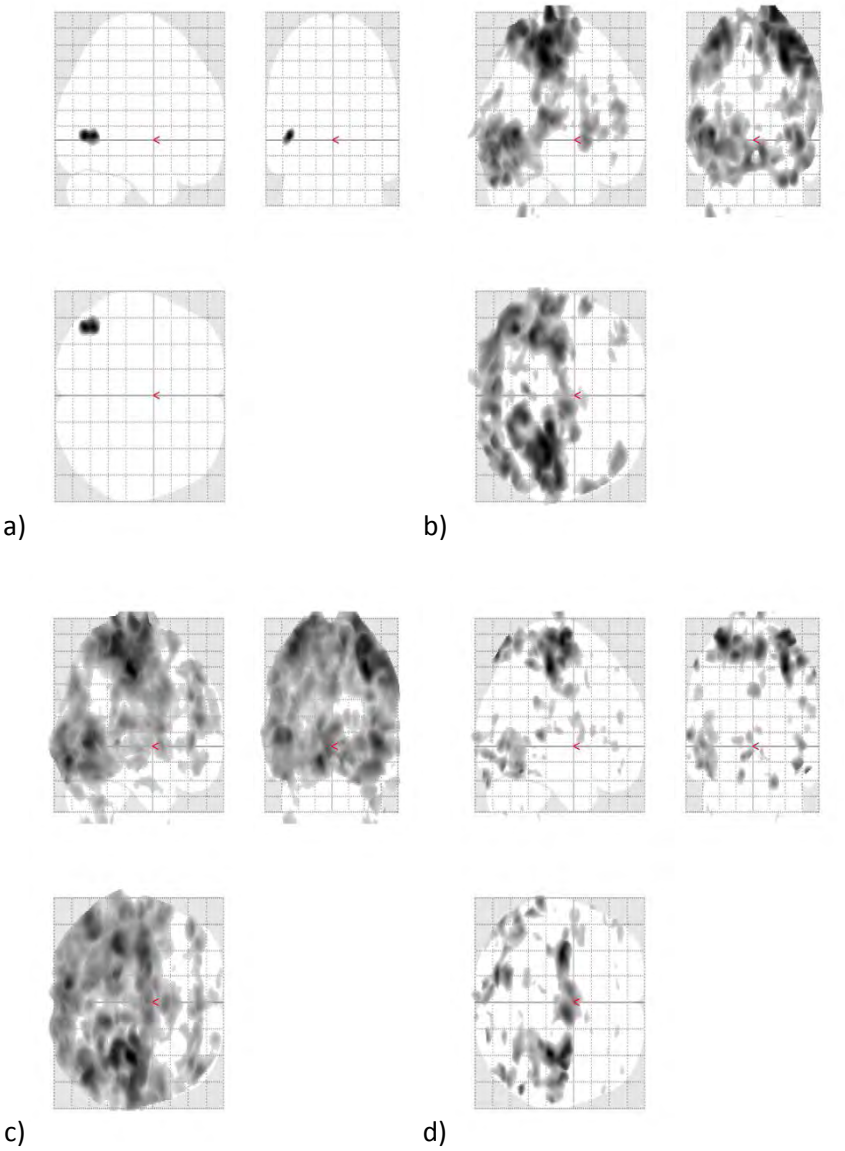


Figure 66 Activation maps for subject 8 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

Table 9 Anatomical labelling of the activated clusters for Subject 1; fMRI session 1 (before therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Cerebelum_Crus1_R	30	-84	-27	100.00	29	0.14	2648
Frontal_Inf_Tri_L	-54	28	29	100.00	2	0.01	2529
Frontal_Sup_L	-29	-6	71	87.18	39	0.12	3599
Frontal_Sup_R	37	-12	67	31.02	1025	0.98	4056
OUTSIDE	37	-12	67	23.32	1025	0.00	0
OUTSIDE	-4	-4	76	2.89	691	0.00	0
OUTSIDE	-64	-17	10	10.05	597	0.00	0
OUTSIDE	-29	-6	71	12.82	39	0.00	0
OUTSIDE	-62	1	18	5.06	79	0.00	0
OUTSIDE	-47	-10	61	100.00	1	0.00	0
Postcentral_L	-64	-17	10	1.84	597	0.04	3892
Postcentral_L	-62	1	18	93.67	79	0.24	3892
Precentral_L	-62	1	18	1.27	79	0.00	3526
Precentral_R	37	-12	67	45.66	1025	1.73	3381
Supp_Motor_Area_L	-4	-4	76	41.39	691	1.67	2147
Supp_Motor_Area_R	-4	-4	76	55.72	691	2.03	2371
SupraMarginal_L	-64	-17	10	19.60	597	1.16	1256
Temporal_Sup_L	-64	-17	10	68.51	597	2.23	2296
Vermis_6	4	-80	-18	66.67	15	0.34	371
Vermis_7	4	-80	-18	33.33	15	0.32	194

Table 10 Anatomical labelling of the activated clusters for Subject 1; fMRI session 2 (after 7th therapy session)

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Calcarine_L	19	-73	-19	0.37	23524	0.48	2258
Calcarine_R	23	-98	-10	8.92	2354	1.41	1861
Caudate_L	-20	28	2	6.46	263	0.22	962
Caudate_R	20	-1	20	36.49	2557	11.73	994
Cerebelum_4_5_R	19	-73	-19	1.62	23524	5.53	861
Cerebelum_6_L	19	-73	-19	3.11	23524	5.39	1694
Cerebelum_6_L	-20	-69	-20	100.00	63	0.46	1694
Cerebelum_6_R	19	-73	-19	28.61	23524	46.87	1795
Cerebelum_7b_L	19	-73	-19	0.12	23524	0.62	585
Cerebelum_7b_R	19	-73	-19	0.07	23524	0.40	534
Cerebelum_8_L	19	-73	-19	0.90	23524	1.40	1887
Cerebelum_8_R	19	-73	-19	7.20	23524	9.17	2308
Cerebelum_Crus1_L	19	-73	-19	5.02	23524	5.68	2603
Cerebelum_Crus1_L	-44	-75	-20	20.18	783	0.76	2603
Cerebelum_Crus1_R	19	-73	-19	8.67	23524	9.63	2648
Cerebelum_Crus1_R	23	-98	-10	9.69	2354	1.08	2648
Cerebelum_Crus2_L	19	-73	-19	1.89	23524	2.93	1894
Cerebelum_Crus2_R	19	-73	-19	1.50	23524	2.08	2117
Cingulum_Ant_R	20	-1	20	0.39	2557	0.10	1313
Cingulum_Mid_L	38	-7	65	0.01	41564	0.02	1941
Cingulum_Mid_R	38	-7	65	0.20	41564	0.47	2203
Cingulum_Mid_R	20	-1	20	0.90	2557	0.13	2203
Cuneus_R	38	-7	65	0.24	41564	0.89	1424
Frontal_Inf_Oper_R	57	9	-4	2.81	1139	0.29	1399
Frontal_Inf_Oper_R	50	3	12	10.05	955	0.86	1399
Frontal_Mid_R	38	-7	65	3.33	41564	3.38	5104
Frontal_Sup_L	38	-7	65	1.87	41564	2.70	3599
Frontal_Sup_R	38	-7	65	13.19	41564	16.89	4056
Fusiform_L	-53	-57	-16	9.74	1869	0.98	2310
Fusiform_L	-44	-75	-20	15.71	783	0.67	2310
Fusiform_R	19	-73	-19	6.93	23524	8.10	2518
Hippocampus_R	19	-11	-10	18.22	1619	3.90	946
Insula_R	57	9	-4	12.12	1139	0.97	1770
Insula_R	50	3	12	1.57	955	0.11	1770
Lingual_L	19	-73	-19	0.83	23524	1.16	2095
Lingual_R	19	-73	-19	2.74	23524	3.51	2300
Lingual_R	23	-98	-10	21.11	2354	2.70	2300

Occipital_Inf_L	-53	-57	-16	0.80	1869	0.20	941
Occipital_Inf_L	-44	-75	-20	56.19	783	5.84	941
Occipital_Inf_R	19	-73	-19	4.21	23524	12.53	989
Occipital_Inf_R	23	-98	-10	52.80	2354	15.71	989
Occipital_Mid_L	-54	-75	3	30.53	95	0.11	3270
Occipital_Mid_R	19	-73	-19	0.00	23524	0.01	2098
Occipital_Mid_R	23	-98	-10	2.00	2354	0.28	2098
Occipital_Sup_R	38	-7	65	0.05	41564	0.19	1413
OUTSIDE	38	-7	65	12.34	41564	0.00	0
OUTSIDE	19	-73	-19	4.03	23524	0.00	0
OUTSIDE	-6	-76	57	12.79	2346	0.00	0
OUTSIDE	20	-1	20	62.10	2557	0.00	0
OUTSIDE	57	9	-4	17.12	1139	0.00	0
OUTSIDE	19	-11	-10	68.00	1619	0.00	0
OUTSIDE	-53	-57	-16	2.03	1869	0.00	0
OUTSIDE	-1	-22	8	43.66	355	0.00	0
OUTSIDE	-44	-75	-20	6.39	783	0.00	0
OUTSIDE	59	-24	32	0.43	700	0.00	0
OUTSIDE	23	-98	-10	5.48	2354	0.00	0
OUTSIDE	-43	-8	62	42.98	342	0.00	0
OUTSIDE	-64	-26	14	30.66	747	0.00	0
OUTSIDE	20	-26	57	83.72	473	0.00	0
OUTSIDE	-54	-75	3	55.79	95	0.00	0
OUTSIDE	-20	28	2	93.54	263	0.00	0
OUTSIDE	19	30	5	100.00	159	0.00	0
OUTSIDE	26	-52	42	100.00	85	0.00	0
Paracentral_Lobule_L	38	-7	65	6.13	41564	23.59	1349
Paracentral_Lobule_R	38	-7	65	0.65	41564	4.07	836
Parietal_Inf_L	38	-7	65	0.13	41564	0.27	2447
Parietal_Sup_L	38	-7	65	0.52	41564	1.32	2065
Parietal_Sup_L	-6	-76	57	33.50	2346	4.76	2065
Parietal_Sup_L	-29	-57	66	100.00	52	0.31	2065
Parietal_Sup_R	38	-7	65	8.00	41564	18.70	2222
Postcentral_L	38	-7	65	7.17	41564	9.57	3892
Postcentral_L	-64	-26	14	4.69	747	0.11	3892
Postcentral_R	38	-7	65	0.90	41564	1.22	3823
Postcentral_R	59	-24	32	22.86	700	0.52	3823
Postcentral_R	20	-26	57	2.11	473	0.03	3823
Precentral_L	38	-7	65	5.41	41564	7.97	3526
Precentral_L	-43	-8	62	57.02	342	0.69	3526
Precentral_R	38	-7	65	5.97	41564	9.18	3381
Precentral_R	50	3	12	17.49	955	0.62	3381
Precentral_R	48	-3	38	100.00	501	1.85	3381

Precentral_R	20	-26	57	14.16	473	0.25	3381
Precuneus_L	-6	-76	57	53.71	2346	4.46	3528
Precuneus_R	38	-7	65	5.52	41564	8.79	3265
Putamen_R	20	-1	20	0.12	2557	0.04	1064
Rolandic_Oper_L	-64	-26	14	1.07	747	0.10	990
Rolandic_Oper_R	57	9	-4	8.34	1139	0.89	1331
Rolandic_Oper_R	50	3	12	70.89	955	6.36	1331
Supp_Motor_Area_L	38	-7	65	15.81	41564	38.26	2147
Supp_Motor_Area_R	38	-7	65	12.56	41564	27.53	2371
SupraMarginal_L	-64	-26	14	19.68	747	1.46	1256
SupraMarginal_R	59	-24	32	76.71	700	3.40	1974
SupraMarginal_R	58	-35	47	100.00	1	0.01	1974
Temporal_Inf_L	-53	-57	-16	86.73	1869	6.33	3200
Temporal_Inf_L	-44	-75	-20	1.53	783	0.05	3200
Temporal_Inf_R	19	-73	-19	9.50	23524	7.85	3557
Temporal_Mid_L	-53	-57	-16	0.70	1869	0.03	4942
Temporal_Mid_L	-54	-75	3	13.68	95	0.03	4942
Temporal_Mid_L	-57	-67	0	100.00	1	0.00	4942
Temporal_Mid_R	19	-73	-19	1.64	23524	1.09	4409
Temporal_Mid_R	52	1	-27	100.00	32	0.09	4409
Temporal_Mid_R	57	-3	-18	100.00	9	0.03	4409
Temporal_Pole_Sup_R	57	9	-4	59.61	1139	6.34	1338
Temporal_Sup_L	-64	-26	14	43.91	747	1.79	2296
Thalamus_L	-1	-22	8	55.21	355	2.23	1100
Thalamus_R	19	-11	-10	13.77	1619	2.64	1057
Thalamus_R	-1	-22	8	1.13	355	0.05	1057
Vermis_6	19	-73	-19	3.85	23524	30.49	371
Vermis_7	19	-73	-19	3.27	23524	49.55	194
Vermis_8	19	-73	-19	3.86	23524	46.71	243
Vermis_9	19	-73	-19	0.04	23524	0.72	174

Table 11 Anatomical labelling of the activated clusters for Subject 1; fMRI session 3 (after 14th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Cerebelum_3_L	-3	-26	-36	2.40	12496	27.57	136
Cerebelum_4_5_L	-3	-26	-36	10.49	12496	14.57	1125
Cerebelum_4_5_L	-25	-18	-32	0.36	837	0.03	1125
Cerebelum_6_L	-3	-26	-36	15.34	12496	14.15	1694
Cerebelum_6_R	36	-50	-38	5.75	87	0.03	1795
Cerebelum_6_R	41	-61	-27	20.00	10	0.01	1795
Cerebelum_7b_L	-3	-26	-36	0.06	12496	0.15	585
Cerebelum_8_L	-3	-26	-36	3.48	12496	2.88	1887
Cerebelum_9_L	-3	-26	-36	6.59	12496	11.85	869
Cerebelum_Crus1_L	-3	-26	-36	10.77	12496	6.46	2603
Cerebelum_Crus1_R	36	-50	-38	55.17	87	0.23	2648
Cerebelum_Crus1_R	41	-61	-27	80.00	10	0.04	2648
Cerebelum_Crus2_L	-3	-26	-36	0.62	12496	0.51	1894
Cuneus_R	28	-91	35	11.39	439	0.44	1424
Frontal_Inf_Oper_L	-44	-11	21	2.00	3799	0.92	1038
Frontal_Sup_L	-10	-11	78	6.85	4846	1.15	3599
Frontal_Sup_R	30	-22	76	8.91	3693	1.01	4056
Fusiform_L	-3	-26	-36	9.51	12496	6.43	2310
Fusiform_L	-25	-18	-32	8.12	837	0.37	2310
Hippocampus_L	-25	-18	-32	1.08	837	0.12	932
Hippocampus_L	-37	-7	-11	9.90	404	0.54	932
Insula_L	-44	-11	21	32.46	3799	8.30	1858
Insula_L	-37	-7	-11	11.88	404	0.32	1858
Occipital_Inf_L	-3	-26	-36	1.30	12496	2.17	941
Occipital_Mid_R	28	-91	35	14.58	439	0.38	2098
Occipital_Mid_R	33	-93	4	96.84	790	4.56	2098
Occipital_Sup_R	28	-91	35	58.09	439	2.26	1413
Occipital_Sup_R	33	-93	4	3.16	790	0.22	1413
Occipital_Sup_R	16	-105	5	71.43	14	0.09	1413
OUTSIDE	30	-22	76	12.81	3693	0.00	0
OUTSIDE	-10	-11	78	5.76	4846	0.00	0
OUTSIDE	-54	-43	52	0.34	1489	0.00	0
OUTSIDE	-49	-17	51	6.46	4919	0.00	0
OUTSIDE	-3	-26	-36	38.40	12496	0.00	0
OUTSIDE	26	-72	59	10.21	421	0.00	0
OUTSIDE	-18	-68	65	44.71	586	0.00	0
OUTSIDE	-25	-18	-32	42.29	837	0.00	0

OUTSIDE	28	-91	35	15.95	439	0.00	0
OUTSIDE	63	-13	45	28.96	442	0.00	0
OUTSIDE	69	-34	39	51.44	486	0.00	0
OUTSIDE	-44	-11	21	39.41	3799	0.00	0
OUTSIDE	-37	-7	-11	35.89	404	0.00	0
OUTSIDE	18	-63	73	4.00	50	0.00	0
OUTSIDE	36	-50	-38	39.08	87	0.00	0
OUTSIDE	67	1	30	54.05	37	0.00	0
OUTSIDE	-33	-37	75	83.33	12	0.00	0
OUTSIDE	-64	-20	30	1.85	54	0.00	0
OUTSIDE	16	-105	5	28.57	14	0.00	0
OUTSIDE	-47	-44	60	40.00	5	0.00	0
OUTSIDE	66	-24	49	100.00	6	0.00	0
Paracentral_Lobule_L	-10	-11	78	22.64	4846	10.16	1349
Paracentral_Lobule_R	5	-18	79	100.00	1	0.01	836
ParaHippocampal_L	-3	-26	-36	0.22	12496	0.36	978
ParaHippocampal_L	-25	-18	-32	48.15	837	5.15	978
Parietal_Inf_L	-54	-43	52	81.40	1489	6.19	2447
Parietal_Inf_L	-47	-44	60	60.00	5	0.02	2447
Parietal_Inf_L	-49	-31	34	19.05	21	0.02	2447
Parietal_Sup_L	-10	-11	78	13.10	4846	3.84	2065
Parietal_Sup_L	-18	-68	65	50.85	586	1.80	2065
Parietal_Sup_R	26	-72	59	89.79	421	2.13	2222
Parietal_Sup_R	18	-63	73	96.00	50	0.27	2222
Postcentral_L	-10	-11	78	24.91	4846	3.88	3892
Postcentral_L	-54	-43	52	18.27	1489	0.87	3892
Postcentral_L	-49	-17	51	78.31	4919	12.37	3892
Postcentral_L	-44	-11	21	0.53	3799	0.06	3892
Postcentral_L	-33	-37	75	16.67	12	0.01	3892
Postcentral_L	-64	-20	30	75.93	54	0.13	3892
Postcentral_L	-43	-40	65	100.00	1	0.00	3892
Postcentral_R	30	-22	76	16.60	3693	2.00	3823
Postcentral_R	63	-13	45	52.04	442	0.75	3823
Postcentral_R	67	1	30	32.43	37	0.04	3823
Precentral_L	-10	-11	78	7.04	4846	1.21	3526
Precentral_L	-49	-17	51	15.23	4919	2.66	3526
Precentral_L	-44	-11	21	0.42	3799	0.06	3526
Precentral_R	30	-22	76	61.68	3693	8.42	3381
Precentral_R	63	-13	45	18.55	442	0.30	3381
Precentral_R	67	1	30	13.51	37	0.02	3381
Precuneus_L	-10	-11	78	7.55	4846	1.30	3528
Precuneus_L	-18	-68	65	4.44	586	0.09	3528
Putamen_L	-44	-11	21	6.42	3799	3.02	1009

Putamen_L	-37	-7	-11	1.98	404	0.10	1009
Rolandic_Oper_L	-44	-11	21	18.77	3799	9.00	990
Rolandic_Oper_L	-40	-19	11	100.00	4	0.05	990
Supp_Motor_Area_L	-10	-11	78	12.15	4846	3.43	2147
SupraMarginal_L	-64	-20	30	22.22	54	0.12	1256
SupraMarginal_L	-49	-31	34	80.95	21	0.17	1256
SupraMarginal_R	63	-13	45	0.45	442	0.01	1974
SupraMarginal_R	69	-34	39	48.56	486	1.49	1974
Temporal_Inf_L	-39	14	-39	18.52	27	0.02	3200
Temporal_Pole_Mid_L	-39	14	-39	81.48	27	0.36	755
Temporal_Sup_L	-37	-7	-11	40.35	404	0.89	2296
Vermis_10	-3	-26	-36	0.81	12496	11.27	112

Table 12 Anatomical labelling of the activated clusters for Subject 1; fMRI session 4 (after therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Calcarine_R	21	-96	-10	28.14	821	1.55	1861
Cerebelum_6_L	-4	-79	-19	44.44	45	0.15	1694
Cerebelum_6_L	-23	-68	-22	100.00	18	0.13	1694
Cerebelum_6_R	5	-82	-20	12.79	813	0.72	1795
Cerebelum_6_R	18	-72	-20	100.00	82	0.57	1795
Cerebelum_Crus1_L	-9	-87	-27	32.41	108	0.17	2603
Cerebelum_Crus1_L	-4	-79	-19	53.33	45	0.12	2603
Cerebelum_Crus1_R	5	-82	-20	68.14	813	2.62	2648
Cerebelum_Crus2_L	-9	-87	-27	67.59	108	0.48	1894
Cerebelum_Crus2_R	5	-82	-20	0.98	813	0.05	2117
Frontal_Mid_L	-38	-10	66	0.29	7621	0.06	4863
Frontal_Mid_R	59	-6	45	3.36	2022	0.17	5104
Frontal_Mid_R	37	-11	69	0.24	11252	0.07	5104
Frontal_Sup_L	-38	-10	66	15.13	7621	4.00	3599
Frontal_Sup_L	37	-11	69	0.05	11252	0.02	3599
Frontal_Sup_R	37	-11	69	24.24	11252	8.41	4056
Frontal_Sup_R	19	-24	65	0.14	711	0.00	4056
Fusiform_R	21	-96	-10	0.97	821	0.04	2518
Lingual_R	21	-96	-10	28.75	821	1.28	2300
Occipital_Inf_R	52	-71	-6	7.23	955	0.87	989
Occipital_Inf_R	21	-96	-10	26.80	821	2.78	989
Occipital_Inf_R	43	-77	-14	100.00	2	0.03	989
Occipital_Mid_R	52	-71	-6	0.84	955	0.05	2098
Occipital_Mid_R	21	-96	-10	9.62	821	0.47	2098
Occipital_Sup_R	21	-96	-10	0.61	821	0.04	1413
OUTSIDE	-38	-10	66	11.46	7621	0.00	0
OUTSIDE	59	-6	45	6.08	2022	0.00	0
OUTSIDE	37	-11	69	10.91	11252	0.00	0
OUTSIDE	-54	-26	24	1.31	1835	0.00	0
OUTSIDE	52	-71	-6	0.31	955	0.00	0
OUTSIDE	59	-26	31	4.10	1489	0.00	0
OUTSIDE	19	-70	63	21.45	830	0.00	0
OUTSIDE	19	-24	65	11.11	711	0.00	0
OUTSIDE	5	-82	-20	1.11	813	0.00	0
OUTSIDE	-17	-64	73	16.76	185	0.00	0
OUTSIDE	-39	-33	71	18.90	291	0.00	0
OUTSIDE	-29	-55	68	9.00	100	0.00	0
OUTSIDE	21	-96	-10	5.12	821	0.00	0
OUTSIDE	19	-23	81	100.00	2	0.00	0

Paracentral_Lobule_L	-38	-10	66	3.62	7621	2.56	1349
Paracentral_Lobule_L	37	-11	69	5.31	11252	5.54	1349
Parietal_Inf_L	-54	-26	24	0.05	1835	0.01	2447
Parietal_Inf_R	31	-47	56	4.46	157	0.07	1345
Parietal_Sup_L	-17	-64	73	83.24	185	0.93	2065
Parietal_Sup_L	-29	-55	68	91.00	100	0.55	2065
Parietal_Sup_R	19	-70	63	54.46	830	2.54	2222
Parietal_Sup_R	31	-47	56	76.43	157	0.68	2222
Postcentral_L	-38	-10	66	5.73	7621	1.40	3892
Postcentral_L	-54	-26	24	10.63	1835	0.63	3892
Postcentral_L	-39	-33	71	79.73	291	0.75	3892
Postcentral_R	59	-6	45	10.88	2022	0.72	3823
Postcentral_R	59	-26	31	16.86	1489	0.82	3823
Postcentral_R	31	-47	56	19.11	157	0.10	3823
Precentral_L	-38	-10	66	63.72	7621	17.22	3526
Precentral_L	-39	-33	71	1.37	291	0.01	3526
Precentral_R	59	-6	45	79.67	2022	5.96	3381
Precentral_R	37	-11	69	14.52	11252	6.04	3381
Precentral_R	19	-24	65	88.75	711	2.33	3381
Precentral_R	64	4	26	100.00	198	0.73	3381
Precuneus_R	19	-70	63	24.10	830	0.77	3265
Supp_Motor_Area_L	-38	-10	66	0.05	7621	0.02	2147
Supp_Motor_Area_L	37	-11	69	23.90	11252	15.66	2147
Supp_Motor_Area_R	37	-11	69	20.81	11252	12.35	2371
SupraMarginal_L	-54	-26	24	83.38	1835	15.23	1256
SupraMarginal_R	59	-26	31	79.05	1489	7.45	1974
Temporal_Inf_R	52	-71	-6	73.40	955	2.46	3557
Temporal_Mid_R	52	-71	-6	18.22	955	0.49	4409
Temporal_Pole_Sup_R	57	10	-6	100.00	7	0.07	1338
Temporal_Sup_L	-54	-26	24	4.63	1835	0.46	2296
Vermis_6	5	-82	-20	10.82	813	2.97	371
Vermis_6	-4	-79	-19	2.22	45	0.03	371
Vermis_7	5	-82	-20	6.15	813	3.22	194

Table 13 Anatomical labelling of the activated clusters for Subject 2; fMRI session 1 (before therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	43	-58	48	36.61	489	1.28	1752
Angular_R	52	-51	39	1.63	184	0.02	1752
Angular_R	68	-41	29	11.74	230	0.19	1752
Cerebelum_Crus1_R	52	-63	-25	35.38	1040	1.74	2648
Cerebelum_Crus1_R	42	-80	-30	100.00	128	0.60	2648
Cuneus_R	29	-76	38	16.41	1091	1.57	1424
Frontal_Inf_Oper_R	57	-2	38	6.45	5920	3.41	1399
Frontal_Inf_Oper_R	46	27	41	4.10	1050	0.38	1399
Frontal_Inf_Tri_R	46	27	41	2.76	1050	0.17	2151
Frontal_Inf_Tri_R	53	34	25	100.00	8	0.05	2151
Frontal_Mid_R	57	-2	38	0.22	5920	0.03	5104
Frontal_Mid_R	46	27	41	86.76	1050	2.23	5104
Frontal_Sup_R	38	-16	64	5.26	1426	0.23	4056
Fusiform_R	52	-63	-25	0.10	1040	0.00	2518
Lingual_R	26	-98	-17	100.00	23	0.13	2300
Occipital_Mid_R	29	-76	38	15.49	1091	1.01	2098
Occipital_Mid_R	39	-82	17	100.00	25	0.15	2098
Occipital_Sup_L	-19	-76	44	26.32	114	0.27	1366
Occipital_Sup_R	29	-76	38	62.69	1091	6.05	1413
OUTSIDE	57	-2	38	1.17	5920	0.00	0
OUTSIDE	38	-16	64	12.48	1426	0.00	0
OUTSIDE	46	27	41	6.38	1050	0.00	0
OUTSIDE	29	-76	38	0.64	1091	0.00	0
OUTSIDE	52	-63	-25	2.88	1040	0.00	0
OUTSIDE	14	-25	79	30.99	71	0.00	0
OUTSIDE	17	-81	57	72.22	18	0.00	0
OUTSIDE	68	-41	29	12.17	230	0.00	0
OUTSIDE	42	-42	38	87.50	16	0.00	0
Paracentral_Lobule_L	-24	-21	66	0.31	327	0.01	1349
Paracentral_Lobule_R	14	-25	79	28.17	71	0.30	836
Paracentral_Lobule_R	9	-22	66	23.08	39	0.13	836
Parietal_Inf_R	43	-58	48	47.65	489	2.17	1345
Parietal_Inf_R	52	-51	39	97.83	184	1.67	1345
Parietal_Inf_R	55	-42	47	100.00	94	0.87	1345
Parietal_Sup_L	-19	-76	44	73.68	114	0.51	2065
Parietal_Sup_R	29	-76	38	4.77	1091	0.29	2222
Parietal_Sup_R	43	-58	48	15.75	489	0.43	2222
Parietal_Sup_R	17	-81	57	27.78	18	0.03	2222
Postcentral_R	57	-2	38	25.84	5920	5.00	3823

Precentral_L	-24	-21	66	99.69	327	1.16	3526
Precentral_L	-41	-7	51	100.00	28	0.10	3526
Precentral_L	-44	-7	58	100.00	5	0.02	3526
Precentral_R	57	-2	38	66.30	5920	14.51	3381
Precentral_R	38	-16	64	82.26	1426	4.34	3381
Precentral_R	14	-25	79	40.85	71	0.11	3381
Rolandic_Oper_R	55	2	6	98.60	430	3.98	1331
Rolandic_Oper_R	59	-29	18	0.74	672	0.05	1331
Supp_Motor_Area_R	9	-22	66	76.92	39	0.16	2371
SupraMarginal_R	57	-2	38	0.02	5920	0.01	1974
SupraMarginal_R	59	-29	18	41.07	672	1.75	1974
SupraMarginal_R	52	-51	39	0.54	184	0.01	1974
SupraMarginal_R	68	-41	29	76.09	230	1.11	1974
SupraMarginal_R	42	-42	38	12.50	16	0.01	1974
Temporal_Inf_R	52	-63	-25	61.63	1040	2.25	3557
Temporal_Sup_R	55	2	6	1.40	430	0.02	3141
Temporal_Sup_R	59	-29	18	58.18	672	1.56	3141

Table 14 Anatomical labelling of the activated clusters for Subject 2; fMRI session 2 (after 7th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	40	-59	48	80.27	659	3.77	1752
Cerebelum_Crus1_R	52	-56	-24	43.08	1945	3.96	2648
Cuneus_R	20	-79	39	37.36	1017	3.34	1424
Frontal_Inf_Oper_R	60	-7	41	9.04	9587	7.75	1399
Frontal_Inf_Oper_R	51	23	-7	4.38	1028	0.40	1399
Frontal_Inf_Orb_R	50	42	1	7.72	1994	1.13	1707
Frontal_Inf_Orb_R	51	23	-7	50.88	1028	3.83	1707
Frontal_Inf_Tri_R	50	42	1	56.77	1994	6.58	2151
Frontal_Inf_Tri_R	51	23	-7	2.92	1028	0.17	2151
Frontal_Inf_Tri_R	42	35	32	2.58	543	0.08	2151
Frontal_Mid_Orb_R	50	42	1	3.01	1994	0.74	1015
Frontal_Mid_R	60	-7	41	7.26	9587	1.70	5104
Frontal_Mid_R	50	42	1	32.50	1994	1.59	5104
Frontal_Mid_R	42	35	32	97.42	543	1.30	5104
Frontal_Mid_R	42	29	45	89.97	329	0.72	5104
Frontal_Mid_R	28	63	1	19.06	509	0.24	5104
Frontal_Sup_Orb_R	28	63	1	15.32	509	0.98	997
Frontal_Sup_R	34	-15	67	23.76	627	0.46	4056
Frontal_Sup_R	28	63	1	65.62	509	1.03	4056
Fusiform_R	52	-56	-24	1.95	1945	0.19	2518
Heschl_R	60	-7	41	0.51	9587	2.46	249
Insula_R	51	23	-7	9.63	1028	0.70	1770
Lingual_L	-31	-94	-20	37.93	29	0.07	2095
Occipital_Inf_L	-50	-71	-14	100.00	99	1.32	941
Occipital_Mid_R	32	-74	24	100.00	128	0.76	2098
Occipital_Mid_R	39	-81	19	100.00	3	0.02	2098
Occipital_Sup_R	20	-79	39	51.23	1017	4.61	1413
OUTSIDE	60	-7	41	3.65	9587	0.00	0
OUTSIDE	52	-56	-24	0.26	1945	0.00	0
OUTSIDE	51	23	-7	14.88	1028	0.00	0
OUTSIDE	34	-15	67	9.25	627	0.00	0
OUTSIDE	-21	-46	77	6.97	488	0.00	0
OUTSIDE	20	-79	39	7.57	1017	0.00	0
OUTSIDE	-7	-9	60	1.97	609	0.00	0
OUTSIDE	42	29	45	10.03	329	0.00	0
OUTSIDE	-49	-45	-14	3.16	190	0.00	0
OUTSIDE	-31	-94	-20	62.07	29	0.00	0
Paracentral_Lobule_L	-24	-24	69	1.20	669	0.07	1349
Paracentral_Lobule_L	-7	-9	60	0.16	609	0.01	1349

Paracentral_Lobule_R	15	-25	71	9.98	531	0.79	836
Parietal_Inf_R	40	-59	48	14.26	659	0.87	1345
Parietal_Sup_L	-21	-46	77	56.97	488	1.68	2065
Parietal_Sup_R	40	-59	48	5.46	659	0.20	2222
Postcentral_L	-24	-24	69	4.33	669	0.09	3892
Postcentral_L	-21	-46	77	36.07	488	0.57	3892
Postcentral_R	60	-7	41	11.20	9587	3.51	3823
Postcentral_R	44	-24	65	18.97	174	0.11	3823
Postcentral_R	15	-25	71	16.01	531	0.28	3823
Precentral_L	-24	-24	69	94.47	669	2.24	3526
Precentral_R	60	-7	41	50.25	9587	17.81	3381
Precentral_R	34	-15	67	66.99	627	1.55	3381
Precentral_R	44	-24	65	81.03	174	0.52	3381
Precentral_R	15	-25	71	65.35	531	1.28	3381
Precuneus_R	20	-79	39	3.83	1017	0.15	3265
Rolandic_Oper_R	60	-7	41	16.98	9587	15.29	1331
Rolandic_Oper_R	59	-27	24	1.86	858	0.15	1331
Rolandic_Oper_R	51	23	-7	0.68	1028	0.07	1331
Supp_Motor_Area_L	-7	-9	60	97.87	609	3.47	2147
Supp_Motor_Area_R	15	-25	71	8.66	531	0.24	2371
Supp_Motor_Area_R	11	2	51	100.00	135	0.71	2371
SupraMarginal_R	59	-27	24	61.42	858	3.34	1974
Temporal_Inf_L	-49	-45	-14	85.79	190	0.64	3200
Temporal_Inf_L	-50	-1	-41	100.00	5	0.02	3200
Temporal_Inf_R	52	-56	-24	54.70	1945	3.74	3557
Temporal_Mid_L	-49	-45	-14	11.05	190	0.05	4942
Temporal_Pole_Sup_R	60	-7	41	0.01	9587	0.01	1338
Temporal_Pole_Sup_R	51	23	-7	16.63	1028	1.60	1338
Temporal_Sup_R	60	-7	41	1.10	9587	0.42	3141
Temporal_Sup_R	59	-27	24	36.71	858	1.25	3141

Table 15 Anatomical labelling of the activated clusters for Subject 2; fMRI session 3 (after 14th therapy session)

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	28	-79	49	6.08	1447	0.63	1752
Angular_R	36	-57	55	0.90	1771	0.11	1752
Cerebelum_Crus1_R	51	-62	-30	100.00	18	0.08	2648
Cuneus_R	28	-79	49	0.28	1447	0.04	1424
Cuneus_R	15	-88	40	79.91	229	1.61	1424
Frontal_Inf_Tri_R	52	43	7	37.50	16	0.03	2151
Frontal_Mid_R	52	43	7	62.50	16	0.02	5104
Frontal_Mid_R	48	51	5	100.00	1	0.00	5104
Frontal_Sup_L	-16	58	6	94.44	18	0.06	3599
Frontal_Sup_Medial_L	-16	58	6	5.56	18	0.00	2992
Fusiform_R	53	-62	-17	1.15	869	0.05	2518
Occipital_Inf_L	-52	-64	-11	41.11	1282	7.00	941
Occipital_Inf_R	53	-62	-17	1.04	869	0.11	989
Occipital_Mid_R	39	-81	21	100.00	3	0.02	2098
Occipital_Sup_R	28	-79	49	13.75	1447	1.76	1413
OUTSIDE	28	-79	49	27.99	1447	0.00	0
OUTSIDE	-52	-64	-11	19.66	1282	0.00	0
OUTSIDE	36	-57	55	3.28	1771	0.00	0
OUTSIDE	40	-21	66	2.34	512	0.00	0
OUTSIDE	53	-62	-17	1.38	869	0.00	0
OUTSIDE	15	-88	40	20.09	229	0.00	0
OUTSIDE	66	-45	39	50.00	6	0.00	0
Parietal_Inf_R	36	-57	55	10.16	1771	1.67	1345
Parietal_Sup_R	28	-79	49	51.90	1447	4.22	2222
Parietal_Sup_R	36	-57	55	74.65	1771	7.44	2222
Parietal_Sup_R	19	-63	69	100.00	18	0.10	2222
Postcentral_R	36	-57	55	11.01	1771	0.64	3823
Postcentral_R	40	-21	66	4.69	512	0.08	3823
Precentral_R	40	-21	66	92.97	512	1.76	3381
Precentral_R	56	-10	43	100.00	28	0.10	3381
SupraMarginal_R	66	-45	39	50.00	6	0.02	1974
Temporal_Inf_L	-52	-64	-11	36.58	1282	1.83	3200
Temporal_Inf_R	53	-62	-17	96.09	869	2.93	3557
Temporal_Mid_L	-52	-64	-11	2.65	1282	0.09	4942
Temporal_Mid_R	53	-62	-17	0.35	869	0.01	4409

Table 16 Anatomical labelling of the activated clusters for Subject 2; fMRI session 4 (after therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	33	-56	52	28.11	338	0.68	1752
Cerebelum_Crus1_R	49	-61	-37	100.00	199	0.94	2648
Cuneus_R	30	-83	42	8.75	400	0.31	1424
Frontal_Inf_Oper_R	55	-10	44	4.94	1742	0.77	1399
Frontal_Inf_Oper_R	58	3	5	0.45	445	0.02	1399
Frontal_Inf_Orb_R	50	47	-2	25.37	67	0.12	1707
Frontal_Inf_Tri_R	50	47	-2	64.18	67	0.25	2151
Frontal_Mid_Orb_R	50	47	-2	2.99	67	0.02	1015
Frontal_Mid_R	55	4	50	9.09	33	0.01	5104
Frontal_Mid_R	50	47	-2	7.46	67	0.01	5104
Frontal_Mid_R	43	28	41	100.00	7	0.02	5104
Frontal_Sup_R	40	-14	67	1.38	290	0.01	4056
Frontal_Sup_R	22	-1	72	93.71	159	0.46	4056
Frontal_Sup_R	26	-2	64	100.00	1	0.00	4056
Occipital_Inf_L	-51	-62	-16	67.22	729	6.51	941
Occipital_Mid_R	30	-83	42	1.00	400	0.02	2098
Occipital_Sup_R	30	-83	42	90.00	400	3.18	1413
OUTSIDE	55	-10	44	0.40	1742	0.00	0
OUTSIDE	30	-83	42	0.25	400	0.00	0
OUTSIDE	-51	-62	-16	6.86	729	0.00	0
OUTSIDE	40	-14	67	10.34	290	0.00	0
OUTSIDE	22	-1	72	6.29	159	0.00	0
OUTSIDE	-23	-45	62	1.02	197	0.00	0
OUTSIDE	55	4	50	9.09	33	0.00	0
OUTSIDE	42	-26	72	100.00	1	0.00	0
Parietal_Inf_R	33	-56	52	44.67	338	1.40	1345
Parietal_Sup_L	-23	-45	62	72.08	197	0.86	2065
Parietal_Sup_R	33	-56	52	27.22	338	0.52	2222
Postcentral_L	-23	-45	62	26.90	197	0.17	3892
Postcentral_R	55	-10	44	14.06	1742	0.80	3823
Precentral_R	55	-10	44	80.48	1742	5.18	3381
Precentral_R	40	-14	67	88.28	290	0.95	3381
Precentral_R	55	4	50	81.82	33	0.10	3381
Rolandic_Oper_R	55	-10	44	0.11	1742	0.02	1331
Rolandic_Oper_R	58	3	5	89.44	445	3.74	1331
Temporal_Inf_L	-51	-62	-16	25.93	729	0.74	3200
Temporal_Pole_Sup_R	58	3	5	3.82	445	0.16	1338
Temporal_Sup_R	58	3	5	6.29	445	0.11	3141

Table 17 Anatomical labelling of the activated clusters for Subject 3; fMRI session 1 (before therapy)

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Frontal_Inf_Oper_R	64	9	19	40.13	1276	4.57	1399
Frontal_Inf_Oper_R	43	9	28	96.06	203	1.74	1399
Frontal_Inf_Tri_R	43	9	28	1.48	203	0.02	2151
Frontal_Mid_L	-21	-8	74	6.92	5533	0.98	4863
Frontal_Mid_R	30	-3	47	12.41	2982	0.91	5104
Frontal_Sup_L	-21	-8	74	33.51	5533	6.44	3599
Frontal_Sup_R	30	-3	47	5.03	2982	0.46	4056
Frontal_Sup_R	17	-10	69	66.67	3	0.01	4056
Occipital_Inf_L	-51	-62	-6	9.52	1680	2.13	941
Occipital_Mid_L	-34	-84	25	100.00	169	0.65	3270
Occipital_Mid_R	28	-75	41	14.69	286	0.25	2098
Occipital_Sup_R	28	-75	41	85.31	286	2.16	1413
OUTSIDE	-21	-8	74	5.82	5533	0.00	0
OUTSIDE	-22	-60	70	9.54	5921	0.00	0
OUTSIDE	32	-48	54	23.68	1748	0.00	0
OUTSIDE	-51	-62	-6	1.07	1680	0.00	0
OUTSIDE	30	-3	47	24.45	2982	0.00	0
OUTSIDE	64	9	19	0.55	1276	0.00	0
OUTSIDE	33	-56	67	14.12	255	0.00	0
Paracentral_Lobule_L	-21	-8	74	0.47	5533	0.24	1349
Paracentral_Lobule_L	-1	-14	69	74.63	67	0.46	1349
Paracentral_Lobule_L	-16	-29	76	61.78	157	0.90	1349
Parietal_Inf_L	-22	-60	70	1.98	5921	0.60	2447
Parietal_Inf_R	32	-48	54	37.99	1748	6.17	1345
Parietal_Sup_L	-22	-60	70	77.37	5921	27.73	2065
Parietal_Sup_R	32	-48	54	24.77	1748	2.44	2222
Parietal_Sup_R	33	-56	67	85.88	255	1.23	2222
Postcentral_L	-21	-8	74	1.50	5533	0.27	3892
Postcentral_L	-22	-60	70	0.66	5921	0.13	3892
Postcentral_L	-16	-29	76	38.22	157	0.19	3892
Postcentral_L	-34	-37	68	100.00	12	0.04	3892
Postcentral_R	32	-48	54	9.78	1748	0.56	3823
Postcentral_R	46	-39	63	100.00	1	0.00	3823
Postcentral_R	45	-28	37	100.00	2	0.01	3823
Precentral_L	-21	-8	74	48.02	5533	9.42	3526
Precentral_R	30	-3	47	58.12	2982	6.41	3381
Precentral_R	64	9	19	53.29	1276	2.51	3381
Precentral_R	43	9	28	2.46	203	0.02	3381
Precuneus_L	-22	-60	70	10.45	5921	2.19	3528

Rolandic_Oper_R	64	9	19	6.03	1276	0.72	1331
Supp_Motor_Area_L	-21	-8	74	3.76	5533	1.21	2147
Supp_Motor_Area_L	-1	-14	69	25.37	67	0.10	2147
Supp_Motor_Area_L	-5	7	54	100.00	277	1.61	2147
Supp_Motor_Area_L	9	-2	55	0.10	1011	0.01	2147
Supp_Motor_Area_R	9	-2	55	99.90	1011	5.32	2371
Supp_Motor_Area_R	17	-10	69	33.33	3	0.01	2371
SupraMarginal_R	32	-48	54	3.78	1748	0.42	1974
Temporal_Inf_L	-51	-62	-6	67.92	1680	4.46	3200
Temporal_Inf_R	57	-54	-11	100.00	52	0.18	3557
Temporal_Mid_L	-51	-62	-6	21.49	1680	0.91	4942
Temporal_Mid_R	43	-65	0	100.00	1	0.00	4409

Table 18 Anatomical labelling of the activated clusters for Subject 3; fMRI session 2 (after 7th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Frontal_Inf_Oper_R	62	9	26	31.23	775	2.16	1399
Frontal_Sup_L	-24	-22	76	5.84	11036	2.24	3599
Frontal_Sup_R	28	-11	52	2.80	143	0.01	4056
OUTSIDE	-24	-22	76	6.29	11036	0.00	0
OUTSIDE	-26	-55	71	23.71	1632	0.00	0
OUTSIDE	62	9	26	1.03	775	0.00	0
OUTSIDE	52	-41	7	1.68	1366	0.00	0
OUTSIDE	28	-11	52	35.66	143	0.00	0
OUTSIDE	53	-31	29	23.11	225	0.00	0
OUTSIDE	29	-41	47	25.00	28	0.00	0
Paracentral_Lobule_L	-24	-22	76	5.81	11036	5.94	1349
Parietal_Inf_R	29	-41	47	10.71	28	0.03	1345
Parietal_Sup_L	-26	-55	71	74.08	1632	7.32	2065
Postcentral_L	-24	-22	76	20.64	11036	7.32	3892
Postcentral_L	-26	-55	71	0.80	1632	0.04	3892
Postcentral_R	60	-20	19	0.83	1088	0.03	3823
Postcentral_R	29	-41	47	60.71	28	0.06	3823
Precentral_L	-24	-22	76	50.66	11036	19.82	3526
Precentral_R	62	9	26	65.29	775	1.87	3381
Precentral_R	28	-11	52	61.54	143	0.33	3381
Precentral_R	45	-2	41	100.00	28	0.10	3381
Precuneus_L	-26	-55	71	1.41	1632	0.08	3528
Rolandic_Oper_R	62	9	26	2.45	775	0.18	1331
Rolandic_Oper_R	60	-20	19	24.91	1088	2.55	1331
Rolandic_Oper_R	53	-31	29	3.56	225	0.08	1331
Supp_Motor_Area_L	-24	-22	76	10.76	11036	6.91	2147
Supp_Motor_Area_L	-3	7	50	100.00	146	0.85	2147
Supp_Motor_Area_R	9	-2	56	100.00	78	0.41	2371
SupraMarginal_R	60	-20	19	69.03	1088	4.76	1974
SupraMarginal_R	53	-31	29	58.22	225	0.83	1974
SupraMarginal_R	29	-41	47	3.57	28	0.01	1974
SupraMarginal_R	49	-29	35	100.00	1	0.01	1974
Temporal_Inf_R	52	-41	7	26.65	1366	1.28	3557
Temporal_Mid_R	52	-41	7	61.79	1366	2.39	4409
Temporal_Sup_R	60	-20	19	5.24	1088	0.23	3141
Temporal_Sup_R	52	-41	7	9.88	1366	0.54	3141
Temporal_Sup_R	53	-31	29	15.11	225	0.14	3141

Table 19 Anatomical labelling of the activated clusters for Subject 3; fMRI session 3 (after 14th therapy session)

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Cerebelum_Crus2_R	41	-60	-45	100.00	7	0.04	2117
Frontal_Mid_L	-37	1	63	7.79	154	0.03	4863
Frontal_Sup_L	-17	-4	79	49.06	212	0.36	3599
Frontal_Sup_L	-31	1	69	31.58	19	0.02	3599
OUTSIDE	-27	-52	71	29.63	432	0.00	0
OUTSIDE	-17	-4	79	50.00	212	0.00	0
OUTSIDE	-37	1	63	15.58	154	0.00	0
OUTSIDE	-31	1	69	68.42	19	0.00	0
Parietal_Sup_L	-27	-52	71	70.37	432	1.84	2065
Postcentral_L	-41	-22	65	34.42	462	0.51	3892
Precentral_L	-41	-22	65	65.58	462	1.07	3526
Precentral_L	-37	1	63	76.62	154	0.42	3526
Precentral_L	-33	-8	64	100.00	1	0.00	3526
Rolandic_Oper_R	62	8	0	20.00	5	0.01	1331
Supp_Motor_Area_L	-17	-4	79	0.94	212	0.01	2147
Temporal_Inf_L	-55	-53	-15	100.00	86	0.34	3200
Temporal_Inf_L	-56	-64	-13	100.00	1	0.00	3200
Temporal_Inf_L	-57	-62	-13	100.00	2	0.01	3200
Temporal_Inf_R	51	-54	-20	100.00	84	0.30	3557
Temporal_Pole_Sup_R	62	8	0	80.00	5	0.04	1338

Table 20 Anatomical labelling of the activated clusters for Subject 3; fMRI session 4 (after therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Frontal_Mid_R	48	0	42	4.25	1481	0.15	5104
OUTSIDE	-24	-53	72	13.73	51	0.00	0
Paracentral_Lobule_L	-16	-23	77	75.00	40	0.28	1349
Parietal_Inf_R	32	-42	54	13.33	30	0.04	1345
Parietal_Sup_L	-24	-53	72	86.27	51	0.27	2065
Postcentral_R	32	-42	54	86.67	30	0.09	3823
Precentral_L	-16	-23	77	25.00	40	0.04	3526
Precentral_R	48	0	42	95.75	1481	5.24	3381
Precentral_R	61	8	33	100.00	129	0.48	3381
Temporal_Inf_L	-56	-63	-10	100.00	79	0.31	3200

Table 21 Anatomical labelling of the activated clusters for Subject 4; fMRI session 1 (before therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Calcarine_L	-22	-95	-21	10.46	30146	17.45	2258
Calcarine_R	-22	-95	-21	4.24	30146	8.59	1861
Cerebelum_4_5_R	30	-42	-33	13.16	38	0.07	861
Cerebelum_6_R	45	-44	-20	0.10	7181	0.05	1795
Cerebelum_6_R	30	-42	-33	65.79	38	0.17	1795
Cerebelum_7b_L	-18	-79	-45	44.00	225	2.12	585
Cerebelum_Crus1_L	-22	-95	-21	2.62	30146	3.79	2603
Cerebelum_Crus1_R	45	-44	-20	2.55	7181	0.86	2648
Cerebelum_Crus1_R	12	-86	-24	94.74	114	0.51	2648
Cerebelum_Crus1_R	28	-80	-36	39.29	56	0.10	2648
Cerebelum_Crus2_L	-18	-79	-45	42.22	225	0.63	1894
Cerebelum_Crus2_R	12	-86	-24	5.26	114	0.04	2117
Cerebelum_Crus2_R	28	-80	-36	60.71	56	0.20	2117
Cuneus_L	-22	-95	-21	0.60	30146	1.47	1526
Cuneus_R	-22	-95	-21	2.45	30146	6.50	1424
Frontal_Inf_Oper_R	63	9	11	9.59	73	0.06	1399
Frontal_Inf_Orb_L	-32	47	-13	22.81	263	0.44	1690
Frontal_Mid_Orb_L	-32	47	-13	77.19	263	2.86	888
Frontal_Mid_R	25	44	50	9.09	99	0.02	5104
Frontal_Sup_L	-34	-13	71	0.97	2263	0.08	3599
Frontal_Sup_L	-7	0	83	6.87	4296	1.02	3599
Frontal_Sup_R	25	44	50	17.17	99	0.05	4056
Fusiform_L	-22	-95	-21	2.24	30146	3.65	2310
Fusiform_L	-28	11	-46	13.64	44	0.03	2310
Fusiform_R	45	-44	-20	9.04	7181	3.22	2518
Lingual_L	-22	-95	-21	7.74	30146	13.92	2095
Occipital_Inf_L	-22	-95	-21	11.87	30146	47.54	941
Occipital_Inf_R	-22	-95	-21	0.43	30146	1.64	989
Occipital_Inf_R	45	-44	-20	6.31	7181	5.73	989
Occipital_Mid_L	-22	-95	-21	34.46	30146	39.71	3270
Occipital_Mid_R	-22	-95	-21	1.02	30146	1.84	2098
Occipital_Mid_R	41	-78	29	99.63	269	1.60	2098
Occipital_Mid_R	25	-87	20	14.12	85	0.07	2098
Occipital_Mid_R	37	-82	18	100.00	1	0.01	2098
Occipital_Sup_L	-22	-95	-21	5.38	30146	14.84	1366
Occipital_Sup_R	-22	-95	-21	0.83	30146	2.20	1413
Occipital_Sup_R	25	-87	20	85.88	85	0.65	1413
Occipital_Sup_R	21	-97	33	16.67	12	0.02	1413
OUTSIDE	-34	-13	71	9.41	2263	0.00	0

OUTSIDE	-22	-95	-21	15.61	30146	0.00	0
OUTSIDE	-7	0	83	73.98	4296	0.00	0
OUTSIDE	-31	-58	69	15.16	930	0.00	0
OUTSIDE	45	-44	-20	11.15	7181	0.00	0
OUTSIDE	-18	-79	-45	13.78	225	0.00	0
OUTSIDE	-16	-50	78	2.99	201	0.00	0
OUTSIDE	30	-42	-33	21.05	38	0.00	0
OUTSIDE	-47	-37	-14	54.32	162	0.00	0
OUTSIDE	-28	11	-46	79.55	44	0.00	0
OUTSIDE	25	44	50	73.74	99	0.00	0
OUTSIDE	21	-97	33	83.33	12	0.00	0
Paracentral_Lobule_L	-7	0	83	0.30	4296	0.12	1349
Parietal_Sup_L	-31	-58	69	84.84	930	4.78	2065
Parietal_Sup_L	-16	-50	78	82.59	201	1.00	2065
Parietal_Sup_R	28	-54	74	100.00	9	0.05	2222
Postcentral_L	-34	-13	71	7.16	2263	0.52	3892
Postcentral_L	-16	-50	78	3.98	201	0.03	3892
Precentral_L	-34	-13	71	82.46	2263	6.62	3526
Precentral_L	-7	0	83	2.49	4296	0.38	3526
Precentral_L	-52	-3	48	100.00	24	0.09	3526
Precuneus_L	-16	-50	78	10.45	201	0.07	3528
Rolandic_Oper_L	-58	0	-10	13.89	108	0.19	990
Rolandic_Oper_R	63	9	11	90.41	73	0.62	1331
Supp_Motor_Area_L	-7	0	83	12.78	4296	3.20	2147
Supp_Motor_Area_R	-7	0	83	3.58	4296	0.81	2371
Temporal_Inf_L	-54	-4	-36	88.16	76	0.26	3200
Temporal_Inf_L	-47	-37	-14	19.14	162	0.12	3200
Temporal_Inf_R	45	-44	-20	51.66	7181	13.04	3557
Temporal_Mid_L	-22	-95	-21	0.05	30146	0.04	4942
Temporal_Mid_L	-54	-4	-36	11.84	76	0.02	4942
Temporal_Mid_L	-47	-37	-14	26.54	162	0.11	4942
Temporal_Mid_R	45	-44	-20	19.19	7181	3.91	4409
Temporal_Mid_R	41	-78	29	0.37	269	0.00	4409
Temporal_Pole_Mid_L	-28	11	-46	6.82	44	0.05	755
Temporal_Pole_Sup_L	-58	0	-10	2.78	108	0.03	1285
Temporal_Sup_L	-58	0	-10	83.33	108	0.49	2296

Table 22 Anatomical labelling of the activated clusters for Subject 4; fMRI session 2 (after 7th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Calcarine_L	-22	-95	-21	10.46	30146	17.45	2258
Calcarine_R	-22	-95	-21	4.24	30146	8.59	1861
Cerebelum_4_5_R	30	-42	-33	13.16	38	0.07	861
Cerebelum_6_R	45	-44	-20	0.10	7181	0.05	1795
Cerebelum_6_R	30	-42	-33	65.79	38	0.17	1795
Cerebelum_7b_L	-18	-79	-45	44.00	225	2.12	585
Cerebelum_Crus1_L	-22	-95	-21	2.62	30146	3.79	2603
Cerebelum_Crus1_R	45	-44	-20	2.55	7181	0.86	2648
Cerebelum_Crus1_R	12	-86	-24	94.74	114	0.51	2648
Cerebelum_Crus1_R	28	-80	-36	39.29	56	0.10	2648
Cerebelum_Crus2_L	-18	-79	-45	42.22	225	0.63	1894
Cerebelum_Crus2_R	12	-86	-24	5.26	114	0.04	2117
Cerebelum_Crus2_R	28	-80	-36	60.71	56	0.20	2117
Cuneus_L	-22	-95	-21	0.60	30146	1.47	1526
Cuneus_R	-22	-95	-21	2.45	30146	6.50	1424
Frontal_Inf_Oper_R	63	9	11	9.59	73	0.06	1399
Frontal_Inf_Orb_L	-32	47	-13	22.81	263	0.44	1690
Frontal_Mid_Orb_L	-32	47	-13	77.19	263	2.86	888
Frontal_Mid_R	25	44	50	9.09	99	0.02	5104
Frontal_Sup_L	-34	-13	71	0.97	2263	0.08	3599
Frontal_Sup_L	-7	0	83	6.87	4296	1.02	3599
Frontal_Sup_R	25	44	50	17.17	99	0.05	4056
Fusiform_L	-22	-95	-21	2.24	30146	3.65	2310
Fusiform_L	-28	11	-46	13.64	44	0.03	2310
Fusiform_R	45	-44	-20	9.04	7181	3.22	2518
Lingual_L	-22	-95	-21	7.74	30146	13.92	2095
Occipital_Inf_L	-22	-95	-21	11.87	30146	47.54	941
Occipital_Inf_R	-22	-95	-21	0.43	30146	1.64	989
Occipital_Inf_R	45	-44	-20	6.31	7181	5.73	989
Occipital_Mid_L	-22	-95	-21	34.46	30146	39.71	3270
Occipital_Mid_R	-22	-95	-21	1.02	30146	1.84	2098
Occipital_Mid_R	41	-78	29	99.63	269	1.60	2098
Occipital_Mid_R	25	-87	20	14.12	85	0.07	2098
Occipital_Mid_R	37	-82	18	100.00	1	0.01	2098
Occipital_Sup_L	-22	-95	-21	5.38	30146	14.84	1366
Occipital_Sup_R	-22	-95	-21	0.83	30146	2.20	1413
Occipital_Sup_R	25	-87	20	85.88	85	0.65	1413
Occipital_Sup_R	21	-97	33	16.67	12	0.02	1413
OUTSIDE	-34	-13	71	9.41	2263	0.00	0

OUTSIDE	-22	-95	-21	15.61	30146	0.00	0
OUTSIDE	-7	0	83	73.98	4296	0.00	0
OUTSIDE	-31	-58	69	15.16	930	0.00	0
OUTSIDE	45	-44	-20	11.15	7181	0.00	0
OUTSIDE	-18	-79	-45	13.78	225	0.00	0
OUTSIDE	-16	-50	78	2.99	201	0.00	0
OUTSIDE	30	-42	-33	21.05	38	0.00	0
OUTSIDE	-47	-37	-14	54.32	162	0.00	0
OUTSIDE	-28	11	-46	79.55	44	0.00	0
OUTSIDE	25	44	50	73.74	99	0.00	0
OUTSIDE	21	-97	33	83.33	12	0.00	0
Paracentral_Lobule_L	-7	0	83	0.30	4296	0.12	1349
Parietal_Sup_L	-31	-58	69	84.84	930	4.78	2065
Parietal_Sup_L	-16	-50	78	82.59	201	1.00	2065
Parietal_Sup_R	28	-54	74	100.00	9	0.05	2222
Postcentral_L	-34	-13	71	7.16	2263	0.52	3892
Postcentral_L	-16	-50	78	3.98	201	0.03	3892
Precentral_L	-34	-13	71	82.46	2263	6.62	3526
Precentral_L	-7	0	83	2.49	4296	0.38	3526
Precentral_L	-52	-3	48	100.00	24	0.09	3526
Precuneus_L	-16	-50	78	10.45	201	0.07	3528
Rolandic_Oper_L	-58	0	-10	13.89	108	0.19	990
Rolandic_Oper_R	63	9	11	90.41	73	0.62	1331
Supp_Motor_Area_L	-7	0	83	12.78	4296	3.20	2147
Supp_Motor_Area_R	-7	0	83	3.58	4296	0.81	2371
Temporal_Inf_L	-54	-4	-36	88.16	76	0.26	3200
Temporal_Inf_L	-47	-37	-14	19.14	162	0.12	3200
Temporal_Inf_R	45	-44	-20	51.66	7181	13.04	3557
Temporal_Mid_L	-22	-95	-21	0.05	30146	0.04	4942
Temporal_Mid_L	-54	-4	-36	11.84	76	0.02	4942
Temporal_Mid_L	-47	-37	-14	26.54	162	0.11	4942
Temporal_Mid_R	45	-44	-20	19.19	7181	3.91	4409
Temporal_Mid_R	41	-78	29	0.37	269	0.00	4409
Temporal_Pole_Mid_L	-28	11	-46	6.82	44	0.05	755
Temporal_Pole_Sup_L	-58	0	-10	2.78	108	0.03	1285
Temporal_Sup_L	-58	0	-10	83.33	108	0.49	2296

Table 23 Anatomical labelling of the activated clusters for Subject 4; fMRI session 3 (after 14th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	23	-89	48	18.11	16457	21.26	1752
Cerebelum_10_L	-21	-45	-45	6.52	445	2.52	144
Cerebelum_10_R	22	-46	-47	4.94	445	1.73	159
Cerebelum_4_5_R	22	-46	-47	6.29	445	0.41	861
Cerebelum_6_L	-21	-45	-45	29.44	445	0.97	1694
Cerebelum_6_R	22	-46	-47	18.65	445	0.58	1795
Cerebelum_6_R	29	-54	-21	71.54	123	0.61	1795
Cerebelum_8_L	-21	-45	-45	3.60	445	0.11	1887
Cerebelum_8_R	22	-46	-47	13.03	445	0.31	2308
Cerebelum_9_L	-21	-45	-45	28.31	445	1.81	869
Cerebelum_9_R	22	-46	-47	26.74	445	1.84	809
Cerebelum_Crus1_L	-21	-45	-45	0.90	445	0.02	2603
Cerebelum_Crus1_L	-46	-75	-26	86.36	44	0.18	2603
Cerebelum_Crus1_L	-21	-87	-28	100.00	1	0.00	2603
Cerebelum_Crus1_R	23	-89	48	1.15	16457	0.89	2648
Cingulum_Ant_R	13	26	16	15.63	32	0.05	1313
Cingulum_Mid_L	-34	-5	67	0.09	15061	0.09	1941
Cingulum_Mid_R	-34	-5	67	0.16	15061	0.14	2203
Cingulum_Mid_R	9	17	43	72.73	55	0.23	2203
Cingulum_Mid_R	8	5	44	85.71	7	0.03	2203
Cuneus_R	23	-89	48	1.97	16457	2.85	1424
Frontal_Inf_Oper_R	59	19	37	75.51	49	0.33	1399
Frontal_Inf_Tri_L	-44	35	26	74.29	35	0.13	2529
Frontal_Mid_L	-34	-5	67	0.40	15061	0.15	4863
Frontal_Mid_L	-28	56	25	22.73	44	0.03	4863
Frontal_Mid_L	-44	35	26	25.71	35	0.02	4863
Frontal_Mid_R	43	54	8	100.00	86	0.21	5104
Frontal_Sup_L	-34	-5	67	8.06	15061	4.22	3599
Frontal_Sup_L	-28	56	25	77.27	44	0.12	3599
Frontal_Sup_Medial_L	1	66	9	23.18	466	0.45	2992
Frontal_Sup_Medial_R	1	66	9	76.82	466	2.10	2134
Frontal_Sup_Medial_R	9	17	43	3.64	55	0.01	2134
Frontal_Sup_R	25	31	55	85.82	409	1.08	4056
Frontal_Sup_R	25	48	44	96.35	192	0.57	4056
Frontal_Sup_R	18	-15	74	91.38	58	0.16	4056
Fusiform_L	-43	-35	-11	0.06	1578	0.01	2310
Fusiform_R	23	-89	48	0.05	16457	0.04	2518
Fusiform_R	29	-54	-21	28.46	123	0.17	2518
Heschl_L	-64	-6	5	0.35	289	0.06	225

Hippocampus_R	27	-27	-15	7.14	42	0.04	946
Occipital_Inf_L	-20	-99	-5	50.00	2	0.01	941
Occipital_Inf_R	23	-89	48	0.08	16457	0.16	989
Occipital_Mid_L	-22	-94	16	83.02	1596	5.07	3270
Occipital_Mid_L	-24	-89	36	19.09	440	0.32	3270
Occipital_Mid_L	-20	-99	-5	50.00	2	0.00	3270
Occipital_Mid_R	23	-89	48	15.31	16457	15.01	2098
Occipital_Sup_L	-22	-94	16	10.40	1596	1.52	1366
Occipital_Sup_L	-24	-89	36	42.95	440	1.73	1366
Occipital_Sup_R	23	-89	48	7.09	16457	10.31	1413
OUTSIDE	-34	-5	67	17.65	15061	0.00	0
OUTSIDE	-29	-48	68	6.60	3411	0.00	0
OUTSIDE	23	-89	48	14.61	16457	0.00	0
OUTSIDE	-21	-45	-45	31.24	445	0.00	0
OUTSIDE	-22	-94	16	6.58	1596	0.00	0
OUTSIDE	1	-41	69	16.72	317	0.00	0
OUTSIDE	22	-46	-47	30.34	445	0.00	0
OUTSIDE	-43	-35	-11	60.96	1578	0.00	0
OUTSIDE	-55	2	39	2.36	678	0.00	0
OUTSIDE	25	31	55	14.18	409	0.00	0
OUTSIDE	63	-26	33	3.13	479	0.00	0
OUTSIDE	-64	-6	5	11.42	289	0.00	0
OUTSIDE	-46	-75	-26	13.64	44	0.00	0
OUTSIDE	-24	-89	36	37.95	440	0.00	0
OUTSIDE	59	19	37	24.49	49	0.00	0
OUTSIDE	25	48	44	3.65	192	0.00	0
OUTSIDE	-69	-31	23	100.00	20	0.00	0
OUTSIDE	27	-27	-15	2.38	42	0.00	0
OUTSIDE	-21	27	-2	100.00	47	0.00	0
OUTSIDE	6	55	48	100.00	24	0.00	0
OUTSIDE	13	26	16	84.38	32	0.00	0
OUTSIDE	-35	33	49	100.00	1	0.00	0
OUTSIDE	32	11	-22	100.00	1	0.00	0
Paracentral_Lobule_L	-34	-5	67	2.54	15061	3.55	1349
Paracentral_Lobule_L	1	-41	69	12.30	317	0.36	1349
Paracentral_Lobule_R	-34	-5	67	0.15	15061	0.33	836
Paracentral_Lobule_R	1	-41	69	53.00	317	2.51	836
Paracentral_Lobule_R	5	-26	76	100.00	39	0.58	836
ParaHippocampal_R	27	-27	-15	90.48	42	0.42	1132
Parietal_Inf_L	-29	-48	68	5.72	3411	1.00	2447
Parietal_Sup_L	-29	-48	68	62.21	3411	12.85	2065
Parietal_Sup_R	23	-58	67	100.00	846	4.76	2222
Parietal_Sup_R	23	-89	48	1.42	16457	1.31	2222

Postcentral_L	-34	-5	67	4.62	15061	2.24	3892
Postcentral_L	-29	-48	68	25.48	3411	2.79	3892
Postcentral_L	-55	2	39	1.18	678	0.03	3892
Postcentral_R	63	-26	33	18.37	479	0.29	3823
Precentral_L	-34	-5	67	41.19	15061	21.99	3526
Precentral_L	-55	2	39	96.46	678	2.32	3526
Precentral_R	18	-15	74	8.62	58	0.02	3381
Precuneus_L	1	-41	69	17.98	317	0.20	3528
Rolandic_Oper_L	-64	-6	5	28.03	289	1.02	990
Supp_Motor_Area_L	-34	-5	67	21.99	15061	19.28	2147
Supp_Motor_Area_R	-34	-5	67	3.15	15061	2.50	2371
Supp_Motor_Area_R	9	17	43	23.64	55	0.07	2371
Supp_Motor_Area_R	8	5	44	14.29	7	0.01	2371
SupraMarginal_R	63	-26	33	78.50	479	2.38	1974
Temporal_Inf_L	-43	-35	-11	20.03	1578	1.23	3200
Temporal_Inf_L	-51	-3	-39	100.00	5	0.02	3200
Temporal_Inf_R	23	-89	48	14.03	16457	8.11	3557
Temporal_Mid_L	-43	-35	-11	18.95	1578	0.76	4942
Temporal_Mid_R	23	-89	48	25.95	16457	12.11	4409
Temporal_Pole_Sup_L	-64	-6	5	26.64	289	0.75	1285
Temporal_Pole_Sup_R	30	8	-22	100.00	2	0.02	1338
Temporal_Sup_L	-64	-6	5	33.56	289	0.53	2296
Temporal_Sup_R	23	-89	48	0.24	16457	0.16	3141
Vermis_6	3	-69	-15	100.00	350	11.79	371

Table 24 Anatomical labelling of the activated clusters for Subject 4; fMRI session 4 (after therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-21	27	7	1.16	5965	3.92	220
Amygdala_L	-33	4	-21	5.09	216	0.63	220
Amygdala_R	33	1	-31	15.84	2001	15.98	248
Angular_L	30	-46	-28	0.41	226416	9.87	1173
Angular_R	30	-46	-28	0.50	226416	8.01	1752
Angular_R	34	-70	55	14.20	176	0.18	1752
Angular_R	59	-59	29	100.00	91	0.65	1752
Calcarine_L	30	-46	-28	1.38	226416	17.29	2258
Calcarine_R	4	-53	2	1.07	2616	0.19	1861
Calcarine_R	15	-60	7	45.45	22	0.07	1861
Caudate_L	-21	27	7	12.52	5965	9.71	962
Caudate_R	30	-46	-28	0.76	226416	21.71	994
Cerebelum_4_5_L	30	-46	-28	0.04	226416	1.07	1125
Cerebelum_4_5_L	4	-53	2	16.48	2616	4.79	1125
Cerebelum_4_5_R	30	-46	-28	0.29	226416	9.51	861
Cerebelum_4_5_R	4	-53	2	0.46	2616	0.17	861
Cerebelum_6_L	30	-46	-28	1.88	226416	31.45	1694
Cerebelum_6_L	4	-53	2	2.79	2616	0.54	1694
Cerebelum_6_R	30	-46	-28	2.89	226416	45.54	1795
Cerebelum_7b_L	30	-46	-28	0.24	226416	11.75	585
Cerebelum_7b_R	30	-46	-28	0.06	226416	3.25	534
Cerebelum_8_L	30	-46	-28	0.30	226416	4.43	1887
Cerebelum_8_R	30	-46	-28	0.72	226416	8.77	2308
Cerebelum_9_L	30	-46	-28	0.11	226416	3.67	869
Cerebelum_9_R	30	-46	-28	0.43	226416	15.00	809
Cerebelum_Crus1_L	30	-46	-28	2.59	226416	28.14	2603
Cerebelum_Crus1_R	30	-46	-28	2.69	226416	28.80	2648
Cerebelum_Crus2_L	30	-46	-28	1.53	226416	22.80	1894
Cerebelum_Crus2_R	30	-46	-28	1.72	226416	23.03	2117
Cingulum_Ant_R	30	-46	-28	0.57	226416	12.31	1313
Cingulum_Mid_L	30	-46	-28	0.63	226416	9.18	1941
Cingulum_Mid_L	-9	0	40	90.48	105	0.61	1941
Cingulum_Mid_R	30	-46	-28	0.14	226416	1.80	2203
Cingulum_Mid_R	14	12	37	98.95	95	0.53	2203
Cuneus_L	30	-46	-28	0.70	226416	13.00	1526
Cuneus_L	-3	-88	40	71.43	7	0.04	1526
Cuneus_R	22	-87	40	28.38	303	0.75	1424
Cuneus_R	14	-96	16	44.13	179	0.69	1424
Frontal_Inf_Oper_L	-61	7	2	16.33	98	0.19	1038

Frontal_Inf_Oper_R	30	-46	-28	0.05	226416	1.05	1399
Frontal_Inf_Oper_R	56	15	11	100.00	374	3.34	1399
Frontal_Inf_Orb_L	-33	30	-19	100.00	45	0.33	1690
Frontal_Inf_Orb_L	-48	31	-7	100.00	26	0.19	1690
Frontal_Inf_Orb_R	48	42	-8	23.21	4779	8.12	1707
Frontal_Inf_Orb_R	57	30	-3	12.44	225	0.21	1707
Frontal_Inf_Orb_R	57	7	-5	2.33	257	0.04	1707
Frontal_Inf_Tri_L	-40	43	33	0.49	3659	0.09	2529
Frontal_Inf_Tri_R	30	-46	-28	0.02	226416	0.29	2151
Frontal_Inf_Tri_R	48	42	-8	10.19	4779	2.83	2151
Frontal_Inf_Tri_R	55	32	28	77.87	497	2.25	2151
Frontal_Inf_Tri_R	57	30	-3	87.56	225	1.14	2151
Frontal_Med_Orb_L	-11	57	-10	26.00	50	0.23	719
Frontal_Mid_L	30	-46	-28	0.09	226416	0.55	4863
Frontal_Mid_L	-40	43	33	55.56	3659	5.23	4863
Frontal_Mid_L	-35	27	51	92.23	283	0.67	4863
Frontal_Mid_Orb_L	-26	58	-13	100.00	70	0.99	888
Frontal_Mid_Orb_R	48	42	-8	21.80	4779	12.83	1015
Frontal_Mid_R	30	-46	-28	0.48	226416	2.65	5104
Frontal_Mid_R	48	42	-8	43.57	4779	5.10	5104
Frontal_Mid_R	41	7	61	69.44	337	0.57	5104
Frontal_Mid_R	55	32	28	17.10	497	0.21	5104
Frontal_Mid_R	24	69	13	0.59	511	0.01	5104
Frontal_Mid_R	50	11	47	82.61	230	0.47	5104
Frontal_Mid_R	39	32	51	40.35	57	0.06	5104
Frontal_Mid_R	35	-7	54	20.99	81	0.04	5104
Frontal_Mid_R	35	2	39	68.57	70	0.12	5104
Frontal_Sup_L	30	-46	-28	0.73	226416	5.72	3599
Frontal_Sup_L	-40	43	33	22.16	3659	2.82	3599
Frontal_Sup_Medial_L	30	-46	-28	0.55	226416	5.23	2992
Frontal_Sup_Medial_L	-40	43	33	15.50	3659	2.37	2992
Frontal_Sup_Medial_R	30	-46	-28	0.70	226416	9.27	2134
Frontal_Sup_Medial_R	-40	43	33	4.10	3659	0.88	2134
Frontal_Sup_Medial_R	24	69	13	8.41	511	0.25	2134
Frontal_Sup_Medial_R	13	57	3	100.00	3	0.02	2134
Frontal_Sup_Medial_R	8	61	21	100.00	20	0.12	2134
Frontal_Sup_Orb_L	-11	57	-10	74.00	50	0.48	963
Frontal_Sup_Orb_R	48	42	-8	0.02	4779	0.01	997
Frontal_Sup_R	30	-46	-28	1.59	226416	11.11	4056
Frontal_Sup_R	48	42	-8	0.08	4779	0.01	4056
Frontal_Sup_R	19	59	0	100.00	12	0.04	4056
Frontal_Sup_R	24	69	13	69.47	511	1.09	4056
Frontal_Sup_R	16	58	2	100.00	2	0.01	4056

Frontal_Sup_R	27	-1	60	100.00	76	0.23	4056
Fusiform_L	30	-46	-28	1.78	226416	21.81	2310
Fusiform_L	-28	6	-38	6.16	698	0.23	2310
Fusiform_R	30	-46	-28	0.92	226416	10.33	2518
Fusiform_R	33	1	-31	8.40	2001	0.83	2518
Hippocampus_L	-21	27	7	0.32	5965	0.25	932
Hippocampus_L	-22	-21	-11	59.02	61	0.48	932
Hippocampus_R	30	-46	-28	0.10	226416	2.93	946
Insula_L	-21	27	7	5.87	5965	2.35	1858
Insula_L	-33	4	-21	0.46	216	0.01	1858
Insula_R	30	-46	-28	0.27	226416	4.24	1770
Insula_R	57	7	-5	0.39	257	0.01	1770
Lingual_L	30	-46	-28	1.57	226416	21.24	2095
Lingual_L	4	-53	2	22.67	2616	3.54	2095
Lingual_R	30	-46	-28	0.07	226416	0.84	2300
Lingual_R	4	-53	2	6.38	2616	0.91	2300
Lingual_R	15	-60	7	54.55	22	0.07	2300
Occipital_Inf_L	30	-46	-28	2.93	226416	87.98	941
Occipital_Inf_R	30	-46	-28	1.06	226416	30.26	989
Occipital_Mid_L	30	-46	-28	7.74	226416	67.01	3270
Occipital_Mid_R	30	-46	-28	2.53	226416	34.07	2098
Occipital_Sup_L	30	-46	-28	2.08	226416	43.06	1366
Occipital_Sup_L	-3	-88	40	28.57	7	0.02	1366
Occipital_Sup_R	30	-46	-28	0.02	226416	0.46	1413
Occipital_Sup_R	22	-87	40	63.37	303	1.70	1413
Occipital_Sup_R	14	-96	16	29.05	179	0.46	1413
OUTSIDE	30	-46	-28	19.86	226416	0.00	0
OUTSIDE	26	-58	64	5.21	10787	0.00	0
OUTSIDE	4	-53	2	4.43	2616	0.00	0
OUTSIDE	-21	27	7	55.61	5965	0.00	0
OUTSIDE	48	42	-8	1.13	4779	0.00	0
OUTSIDE	33	1	-31	21.99	2001	0.00	0
OUTSIDE	-40	43	33	2.19	3659	0.00	0
OUTSIDE	-28	6	-38	2.58	698	0.00	0
OUTSIDE	19	-77	58	30.81	396	0.00	0
OUTSIDE	-65	-37	31	28.33	593	0.00	0
OUTSIDE	-61	7	2	6.12	98	0.00	0
OUTSIDE	41	7	61	30.56	337	0.00	0
OUTSIDE	55	32	28	5.03	497	0.00	0
OUTSIDE	57	7	-5	22.96	257	0.00	0
OUTSIDE	-58	-5	-34	7.92	101	0.00	0
OUTSIDE	-9	0	40	9.52	105	0.00	0
OUTSIDE	24	69	13	21.53	511	0.00	0

OUTSIDE	-35	63	-4	100.00	50	0.00	0
OUTSIDE	-35	27	51	7.77	283	0.00	0
OUTSIDE	50	11	47	4.78	230	0.00	0
OUTSIDE	-33	4	-21	31.48	216	0.00	0
OUTSIDE	22	-87	40	8.25	303	0.00	0
OUTSIDE	5	-90	40	100.00	27	0.00	0
OUTSIDE	34	-70	55	6.82	176	0.00	0
OUTSIDE	14	12	37	1.05	95	0.00	0
OUTSIDE	63	1	36	21.95	442	0.00	0
OUTSIDE	14	-96	16	26.82	179	0.00	0
OUTSIDE	39	32	51	59.65	57	0.00	0
OUTSIDE	35	2	39	31.43	70	0.00	0
OUTSIDE	-22	-21	-11	40.98	61	0.00	0
OUTSIDE	7	-97	29	100.00	13	0.00	0
OUTSIDE	-14	26	24	100.00	1	0.00	0
Pallidum_L	-21	27	7	9.32	5965	23.72	293
Pallidum_R	30	-46	-28	0.07	226416	7.10	280
Paracentral_Lobule_L	30	-46	-28	2.90	226416	60.80	1349
Paracentral_Lobule_R	30	-46	-28	0.52	226416	17.54	836
ParaHippocampal_R	30	-46	-28	0.00	226416	0.04	1132
ParaHippocampal_R	33	1	-31	1.50	2001	0.33	1132
Parietal_Inf_L	30	-46	-28	0.70	226416	8.09	2447
Parietal_Inf_R	30	-46	-28	0.04	226416	0.90	1345
Parietal_Inf_R	26	-58	64	5.55	10787	5.57	1345
Parietal_Sup_L	30	-46	-28	1.87	226416	25.69	2065
Parietal_Sup_R	26	-58	64	30.91	10787	18.76	2222
Parietal_Sup_R	19	-77	58	69.19	396	1.54	2222
Parietal_Sup_R	34	-70	55	78.98	176	0.78	2222
Postcentral_L	30	-46	-28	3.26	226416	23.70	3892
Postcentral_R	30	-46	-28	0.47	226416	3.51	3823
Postcentral_R	26	-58	64	47.08	10787	16.60	3823
Postcentral_R	63	1	36	21.95	442	0.32	3823
Precentral_L	30	-46	-28	5.68	226416	45.60	3526
Precentral_R	30	-46	-28	0.00	226416	0.02	3381
Precentral_R	26	-58	64	11.25	10787	4.49	3381
Precentral_R	50	11	47	12.61	230	0.11	3381
Precentral_R	63	1	36	56.11	442	0.92	3381
Precentral_R	35	-7	54	79.01	81	0.24	3381
Precuneus_L	30	-46	-28	0.96	226416	7.72	3528
Precuneus_R	30	-46	-28	0.22	226416	1.91	3265
Precuneus_R	4	-53	2	8.56	2616	0.86	3265
Precuneus_R	6	-60	58	100.00	17	0.07	3265
Putamen_L	-21	27	7	12.61	5965	9.32	1009

Putamen_R	30	-46	-28	0.30	226416	8.04	1064
Rolandic_Oper_L	-61	7	2	74.49	98	0.92	990
Rolandic_Oper_R	30	-46	-28	0.07	226416	1.44	1331
Supp_Motor_Area_L	30	-46	-28	3.09	226416	40.71	2147
Supp_Motor_Area_R	30	-46	-28	0.97	226416	11.58	2371
SupraMarginal_L	-65	-37	31	71.67	593	4.23	1256
SupraMarginal_R	30	-46	-28	0.84	226416	12.03	1974
Temporal_Inf_L	30	-46	-28	1.08	226416	9.54	3200
Temporal_Inf_L	-28	6	-38	63.47	698	1.73	3200
Temporal_Inf_L	-58	-5	-34	65.35	101	0.26	3200
Temporal_Inf_R	30	-46	-28	1.49	226416	11.89	3557
Temporal_Inf_R	33	1	-31	42.23	2001	2.97	3557
Temporal_Mid_L	30	-46	-28	1.15	226416	6.56	4942
Temporal_Mid_L	-58	-5	-34	26.73	101	0.07	4942
Temporal_Mid_R	30	-46	-28	4.36	226416	28.01	4409
Temporal_Mid_R	33	1	-31	3.60	2001	0.20	4409
Temporal_Pole_Mid_L	-28	6	-38	27.36	698	3.16	755
Temporal_Pole_Mid_R	33	1	-31	5.05	2001	1.06	1187
Temporal_Pole_Mid_R	44	18	-39	100.00	1	0.01	1187
Temporal_Pole_Sup_L	-28	6	-38	0.43	698	0.03	1285
Temporal_Pole_Sup_L	-61	7	2	3.06	98	0.03	1285
Temporal_Pole_Sup_L	-33	4	-21	62.96	216	1.32	1285
Temporal_Pole_Sup_R	33	1	-31	1.40	2001	0.26	1338
Temporal_Pole_Sup_R	57	7	-5	74.32	257	1.78	1338
Temporal_Sup_L	-47	-43	19	100.00	9	0.05	2296
Temporal_Sup_R	30	-46	-28	2.57	226416	23.20	3141
Temporal_Sup_R	63	-8	-3	100.00	36	0.14	3141
Temporal_Sup_R	60	-4	-6	100.00	1	0.00	3141
Thalamus_L	-21	27	7	2.60	5965	1.76	1100
Thalamus_R	30	-46	-28	0.33	226416	8.80	1057
Vermis_4_5	4	-53	2	36.32	2616	17.86	665
Vermis_6	30	-46	-28	0.48	226416	36.32	371
Vermis_6	4	-53	2	0.84	2616	0.74	371
Vermis_7	30	-46	-28	0.46	226416	67.01	194
Vermis_8	30	-46	-28	0.29	226416	33.64	243
Vermis_9	30	-46	-28	0.11	226416	17.96	174

Table 25 Anatomical labelling of the activated clusters for Subject 5; fMRI session 1 (before therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-47	-74	-3	1.65	9314	1.64	1173
Angular_R	31	-53	61	0.00	20319	0.01	1752
Angular_R	25	-60	43	11.86	59	0.05	1752
Calcarine_R	20	-100	1	90.32	62	0.38	1861
Cerebelum_Crus1_L	-47	-56	-18	1.52	263	0.02	2603
Frontal_Inf_Oper_L	-57	6	4	38.42	721	3.34	1038
Frontal_Inf_Oper_L	-59	10	27	20.72	526	1.31	1038
Frontal_Inf_Oper_L	-41	4	25	97.10	69	0.81	1038
Frontal_Inf_Oper_R	45	8	25	100.00	48	0.43	1399
Frontal_Inf_Tri_L	-59	10	27	3.61	526	0.09	2529
Frontal_Mid_L	-32	8	50	73.10	4981	9.36	4863
Frontal_Mid_Orb_L	-22	51	-19	100.00	21	0.30	888
Frontal_Mid_Orb_L	-18	53	-17	100.00	1	0.01	888
Frontal_Mid_R	45	8	48	40.00	5	0.00	5104
Frontal_Mid_R	52	21	40	100.00	6	0.01	5104
Frontal_Sup_L	-32	8	50	0.70	4981	0.12	3599
Frontal_Sup_L	-4	21	59	0.44	5923	0.09	3599
Frontal_Sup_Medial_L	-4	21	59	4.12	5923	1.02	2992
Frontal_Sup_Medial_R	-4	21	59	0.03	5923	0.01	2134
Frontal_Sup_R	31	-53	61	5.49	20319	3.44	4056
Fusiform_L	-47	-56	-18	39.16	263	0.56	2310
Occipital_Inf_L	-47	-74	-3	10.31	9314	12.75	941
Occipital_Inf_L	-47	-56	-18	0.38	263	0.01	941
Occipital_Inf_R	53	-65	-12	11.96	92	0.14	989
Occipital_Mid_L	-47	-74	-3	32.52	9314	11.58	3270
Occipital_Mid_L	-29	-89	6	99.68	626	2.39	3270
Occipital_Mid_L	-38	-82	25	99.52	623	2.37	3270
Occipital_Mid_L	-29	-68	39	63.22	87	0.21	3270
Occipital_Mid_R	39	-87	1	100.00	21	0.13	2098
Occipital_Sup_L	-9	-92	6	100.00	11	0.10	1366
Occipital_Sup_R	20	-100	1	9.68	62	0.05	1413
OUTSIDE	-47	-74	-3	10.76	9314	0.00	0
OUTSIDE	-25	-58	66	8.89	24065	0.00	0
OUTSIDE	31	-53	61	14.16	20319	0.00	0
OUTSIDE	-32	8	50	2.77	4981	0.00	0
OUTSIDE	-4	21	59	10.43	5923	0.00	0
OUTSIDE	-29	-89	6	0.32	626	0.00	0
OUTSIDE	-57	6	4	3.19	721	0.00	0
OUTSIDE	-59	10	27	8.17	526	0.00	0

OUTSIDE	-12	-44	83	48.62	362	0.00	0
OUTSIDE	-38	-82	25	0.48	623	0.00	0
OUTSIDE	-43	30	-26	100.00	29	0.00	0
OUTSIDE	-3	-71	63	24.39	41	0.00	0
OUTSIDE	25	-60	43	83.05	59	0.00	0
OUTSIDE	25	21	68	100.00	12	0.00	0
OUTSIDE	9	26	70	100.00	3	0.00	0
OUTSIDE	-3	-3	5	100.00	3	0.00	0
Paracentral_Lobule_L	31	-53	61	2.81	20319	5.28	1349
Paracentral_Lobule_L	-12	-44	83	0.55	362	0.02	1349
Paracentral_Lobule_R	31	-53	61	2.64	20319	8.03	836
Parietal_Inf_L	-25	-58	66	7.79	24065	9.57	2447
Parietal_Inf_L	-29	-68	39	36.78	87	0.16	2447
Parietal_Inf_R	31	-53	61	2.51	20319	4.75	1345
Parietal_Sup_L	-25	-58	66	26.12	24065	38.04	2065
Parietal_Sup_L	-12	-44	83	3.87	362	0.08	2065
Parietal_Sup_R	31	-53	61	12.68	20319	14.50	2222
Parietal_Sup_R	25	-60	43	5.08	59	0.02	2222
Postcentral_L	-25	-58	66	38.26	24065	29.57	3892
Postcentral_L	-12	-44	83	22.38	362	0.26	3892
Postcentral_R	31	-53	61	29.11	20319	19.34	3823
Precentral_L	-25	-58	66	0.29	24065	0.24	3526
Precentral_L	-32	8	50	23.43	4981	4.14	3526
Precentral_L	-59	10	27	67.49	526	1.26	3526
Precentral_L	-41	4	25	2.90	69	0.01	3526
Precentral_R	31	-53	61	30.19	20319	22.68	3381
Precentral_R	45	8	48	60.00	5	0.01	3381
Precuneus_L	-25	-58	66	1.37	24065	1.17	3528
Precuneus_L	-12	-44	83	24.59	362	0.32	3528
Precuneus_L	-3	-71	63	75.61	41	0.11	3528
Rolandic_Oper_L	-25	-58	66	0.07	24065	0.21	990
Rolandic_Oper_L	-57	6	4	38.70	721	3.52	990
Supp_Motor_Area_L	-4	21	59	47.26	5923	16.30	2147
Supp_Motor_Area_R	31	-53	61	0.35	20319	0.38	2371
Supp_Motor_Area_R	-4	21	59	37.72	5923	11.78	2371
SupraMarginal_L	-25	-58	66	15.35	24065	36.76	1256
SupraMarginal_R	31	-53	61	0.04	20319	0.05	1974
Temporal_Inf_L	-47	-74	-3	1.22	9314	0.45	3200
Temporal_Inf_L	-47	-56	-18	58.94	263	0.61	3200
Temporal_Inf_R	53	-65	-12	88.04	92	0.28	3557
Temporal_Mid_L	-47	-74	-3	43.54	9314	10.26	4942
Temporal_Mid_L	-64	-47	-6	100.00	2	0.01	4942
Temporal_Mid_L	-51	-55	5	100.00	1	0.00	4942

Temporal_Pole_Sup_L	-57	6	4	15.67	721	1.10	1285
Temporal_Sup_L	-25	-58	66	1.87	24065	2.46	2296
Temporal_Sup_L	-57	6	4	4.02	721	0.16	2296

Table 26 Anatomical labelling of the activated clusters for Subject 5; fMRI session 2 (after 7th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	33	-52	56	6.99	7745	3.86	1752
Cerebelum_4_5_L	3	-44	-6	10.99	446	0.54	1125
Cerebelum_6_L	-4	-76	-17	17.79	2029	2.66	1694
Cerebelum_6_L	-37	-68	-20	17.75	1707	2.24	1694
Cerebelum_6_R	-4	-76	-17	27.45	2029	3.88	1795
Cerebelum_7b_L	-38	-53	-50	12.96	108	0.30	585
Cerebelum_8_L	-38	-53	-50	87.04	108	0.62	1887
Cerebelum_Crus1_L	-4	-76	-17	0.64	2029	0.06	2603
Cerebelum_Crus1_L	-37	-68	-20	12.36	1707	1.01	2603
Cerebelum_Crus1_L	-47	-62	-34	100.00	120	0.58	2603
Cingulum_Mid_R	8	-19	53	9.80	949	0.53	2203
Frontal_Inf_Oper_L	-50	12	14	73.65	4524	40.13	1038
Frontal_Inf_Oper_R	45	14	18	64.57	2193	12.65	1399
Frontal_Inf_Oper_R	53	23	36	37.58	149	0.50	1399
Frontal_Inf_Orb_R	52	24	-15	77.78	9	0.05	1707
Frontal_Inf_Tri_L	-50	12	14	5.79	4524	1.30	2529
Frontal_Inf_Tri_R	45	14	18	15.23	2193	1.94	2151
Frontal_Inf_Tri_R	60	28	18	100.00	3	0.02	2151
Frontal_Mid_L	-28	4	64	37.32	5005	4.80	4863
Frontal_Mid_L	-39	9	54	100.00	33	0.08	4863
Frontal_Mid_R	41	-19	61	16.47	17089	6.89	5104
Frontal_Mid_R	53	23	36	53.69	149	0.20	5104
Frontal_Mid_R	39	25	51	94.55	55	0.13	5104
Frontal_Mid_R	41	58	14	100.00	3	0.01	5104
Frontal_Sup_L	-28	4	64	24.38	5005	4.24	3599
Frontal_Sup_L	-4	16	54	7.75	1857	0.50	3599
Frontal_Sup_Medial_L	-4	16	54	6.14	1857	0.48	2992
Frontal_Sup_Medial_L	-2	36	56	38.14	590	0.94	2992
Frontal_Sup_Medial_R	-5	18	70	6.06	3117	1.11	2134
Frontal_Sup_Medial_R	-2	36	56	30.17	590	1.04	2134
Frontal_Sup_R	41	-19	61	20.59	17089	10.84	4056
Frontal_Sup_R	-5	18	70	13.03	3117	1.25	4056
Fusiform_L	-37	-68	-20	61.92	1707	5.72	2310
Fusiform_R	46	-65	4	0.18	3248	0.03	2518
Fusiform_R	-4	-76	-17	21.83	2029	2.20	2518
Lingual_L	-4	-76	-17	1.33	2029	0.16	2095
Lingual_L	-37	-68	-20	2.46	1707	0.25	2095
Lingual_R	-4	-76	-17	3.75	2029	0.41	2300
Occipital_Inf_L	-46	-77	2	6.17	7699	6.31	941

Occipital_Inf_L	-37	-68	-20	5.51	1707	1.25	941
Occipital_Inf_R	46	-65	4	0.46	3248	0.19	989
Occipital_Inf_R	42	-84	-4	100.00	19	0.24	989
Occipital_Mid_L	-46	-77	2	68.39	7699	20.13	3270
Occipital_Mid_L	-25	-60	56	1.31	20217	1.01	3270
Occipital_Mid_L	-34	-81	25	100.00	35	0.13	3270
Occipital_Mid_R	33	-52	56	0.01	7745	0.01	2098
Occipital_Mid_R	46	-65	4	1.29	3248	0.25	2098
Occipital_Sup_L	-25	-60	56	0.00	20217	0.01	1366
Occipital_Sup_R	33	-52	56	0.88	7745	0.60	1413
OUTSIDE	41	-19	61	11.56	17089	0.00	0
OUTSIDE	-46	-77	2	6.95	7699	0.00	0
OUTSIDE	-25	-60	56	5.46	20217	0.00	0
OUTSIDE	-5	18	70	48.12	3117	0.00	0
OUTSIDE	-28	4	64	19.94	5005	0.00	0
OUTSIDE	33	-52	56	12.38	7745	0.00	0
OUTSIDE	45	14	18	19.29	2193	0.00	0
OUTSIDE	46	-65	4	1.05	3248	0.00	0
OUTSIDE	8	-19	53	3.79	949	0.00	0
OUTSIDE	-4	16	54	1.24	1857	0.00	0
OUTSIDE	-2	36	56	31.69	590	0.00	0
OUTSIDE	53	23	36	8.72	149	0.00	0
OUTSIDE	55	-25	27	6.35	661	0.00	0
OUTSIDE	-5	-20	85	96.10	77	0.00	0
OUTSIDE	39	25	51	5.45	55	0.00	0
OUTSIDE	26	-18	21	100.00	85	0.00	0
OUTSIDE	-13	-42	83	100.00	4	0.00	0
OUTSIDE	-19	-1	15	100.00	3	0.00	0
Paracentral_Lobule_L	-5	-20	85	3.90	77	0.03	1349
Paracentral_Lobule_R	41	-19	61	0.23	17089	0.60	836
Parietal_Inf_L	-25	-60	56	9.31	20217	9.61	2447
Parietal_Inf_R	33	-52	56	10.38	7745	7.47	1345
Parietal_Sup_L	-25	-60	56	30.46	20217	37.28	2065
Parietal_Sup_R	33	-52	56	46.25	7745	20.15	2222
Postcentral_L	-25	-60	56	35.08	20217	22.78	3892
Postcentral_R	41	-19	61	5.18	17089	2.89	3823
Postcentral_R	33	-52	56	21.06	7745	5.33	3823
Postcentral_R	55	-25	27	4.84	661	0.10	3823
Precentral_L	-25	-60	56	0.01	20217	0.01	3526
Precentral_L	-28	4	64	4.76	5005	0.84	3526
Precentral_L	-50	12	14	18.61	4524	2.99	3526
Precentral_R	41	-19	61	45.85	17089	28.97	3381
Precentral_R	33	4	29	100.00	1	0.00	3381

Precuneus_L	-25	-60	56	5.48	20217	3.92	3528
Precuneus_R	33	-52	56	1.32	7745	0.39	3265
Rolandic_Oper_L	-25	-60	56	0.57	20217	1.46	990
Rolandic_Oper_L	-50	12	14	1.95	4524	1.11	990
Rolandic_Oper_R	45	14	18	0.91	2193	0.19	1331
Rolandic_Oper_R	55	-25	27	0.76	661	0.05	1331
Supp_Motor_Area_L	-5	18	70	17.13	3117	3.11	2147
Supp_Motor_Area_L	-28	4	64	10.33	5005	3.01	2147
Supp_Motor_Area_L	8	-19	53	4.43	949	0.24	2147
Supp_Motor_Area_L	-4	16	54	84.55	1857	9.14	2147
Supp_Motor_Area_R	41	-19	61	0.12	17089	0.11	2371
Supp_Motor_Area_R	-5	18	70	15.66	3117	2.57	2371
Supp_Motor_Area_R	-28	4	64	3.28	5005	0.86	2371
Supp_Motor_Area_R	8	-19	53	81.98	949	4.10	2371
Supp_Motor_Area_R	-4	16	54	0.32	1857	0.03	2371
Supp_Motor_Area_R	9	13	53	100.00	3	0.02	2371
SupraMarginal_L	-25	-60	56	10.31	20217	20.75	1256
SupraMarginal_R	33	-52	56	0.74	7745	0.36	1974
SupraMarginal_R	55	-25	27	87.75	661	3.67	1974
Temporal_Inf_L	-46	-77	2	0.03	7699	0.01	3200
Temporal_Inf_R	46	-65	4	50.18	3248	5.73	3557
Temporal_Mid_L	-46	-77	2	18.47	7699	3.60	4942
Temporal_Mid_R	46	-65	4	46.83	3248	4.31	4409
Temporal_Pole_Sup_R	52	24	-15	22.22	9	0.02	1338
Temporal_Sup_L	-25	-60	56	1.99	20217	2.19	2296
Temporal_Sup_R	55	-25	27	0.30	661	0.01	3141
Vermis_3	3	-44	-6	30.72	446	7.51	228
Vermis_4_5	3	-44	-6	58.30	446	4.89	665
Vermis_6	-4	-76	-17	20.90	2029	14.29	371
Vermis_7	-4	-76	-17	6.31	2029	8.25	194

Table 27 Anatomical labelling of the activated clusters for Subject 5; fMRI session 3 (after 14th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	38	-22	66	0.84	137448	8.25	1752
Calcarine_R	47	-70	-10	0.86	20882	1.20	1861
Calcarine_R	19	-71	10	100.00	36	0.24	1861
Caudate_R	23	1	21	85.71	7	0.08	994
Cerebelum_3_L	-2	-44	-17	16.15	192	2.85	136
Cerebelum_4_5_L	-34	-63	-32	7.17	5382	4.29	1125
Cerebelum_4_5_L	-2	-44	-17	25.00	192	0.53	1125
Cerebelum_6_L	47	-70	-10	0.21	20882	0.32	1694
Cerebelum_6_L	-34	-63	-32	37.63	5382	14.94	1694
Cerebelum_6_R	47	-70	-10	6.47	20882	9.42	1795
Cerebelum_8_L	47	-70	-10	0.06	20882	0.09	1887
Cerebelum_8_L	-3	-65	-50	19.66	356	0.46	1887
Cerebelum_9_L	-3	-65	-50	12.08	356	0.62	869
Cerebelum_Crus1_L	-45	-75	0	1.89	14832	1.35	2603
Cerebelum_Crus1_L	47	-70	-10	3.30	20882	3.31	2603
Cerebelum_Crus1_L	-34	-63	-32	38.31	5382	9.90	2603
Cerebelum_Crus1_R	47	-70	-10	8.63	20882	8.51	2648
Cerebelum_Crus2_L	47	-70	-10	1.66	20882	2.28	1894
Cerebelum_Crus2_L	-34	-63	-32	5.13	5382	1.82	1894
Cerebelum_Crus2_R	47	-70	-10	1.80	20882	2.21	2117
Cingulum_Mid_R	38	-22	66	0.33	137448	2.58	2203
Cuneus_R	38	-22	66	0.00	137448	0.03	1424
Cuneus_R	22	-94	19	18.58	113	0.18	1424
Frontal_Inf_Oper_L	-54	8	8	44.73	8000	43.09	1038
Frontal_Inf_Oper_R	48	9	22	69.81	4693	29.27	1399
Frontal_Inf_Orb_R	47	51	6	5.57	2280	0.93	1707
Frontal_Inf_Tri_L	-54	8	8	0.16	8000	0.06	2529
Frontal_Inf_Tri_L	-37	41	17	30.53	5264	7.94	2529
Frontal_Inf_Tri_R	48	9	22	10.46	4693	2.85	2151
Frontal_Inf_Tri_R	47	51	6	11.84	2280	1.57	2151
Frontal_Mid_L	38	-22	66	2.11	137448	7.45	4863
Frontal_Mid_L	-37	41	17	67.93	5264	9.19	4863
Frontal_Mid_Orb_R	47	51	6	4.65	2280	1.31	1015
Frontal_Mid_R	38	-22	66	1.97	137448	6.63	5104
Frontal_Mid_R	48	9	22	2.58	4693	0.30	5104
Frontal_Mid_R	47	51	6	66.01	2280	3.69	5104
Frontal_Mid_R	38	21	55	89.57	460	1.01	5104
Frontal_Sup_L	38	-22	66	0.93	137448	4.44	3599
Frontal_Sup_L	-37	41	17	0.53	5264	0.10	3599

Frontal_Sup_L	-17	21	52	100.00	8	0.03	3599
Frontal_Sup_Medial_R	9	31	60	100.00	15	0.09	2134
Frontal_Sup_R	38	-22	66	2.92	137448	12.37	4056
Frontal_Sup_R	47	51	6	9.56	2280	0.67	4056
Frontal_Sup_R	38	21	55	1.74	460	0.02	4056
Fusiform_L	-45	-75	0	3.68	14832	2.95	2310
Fusiform_L	-34	-63	-32	0.07	5382	0.02	2310
Fusiform_R	47	-70	-10	5.19	20882	5.38	2518
Fusiform_R	26	-61	-12	90.00	10	0.04	2518
Insula_L	-54	8	8	14.54	8000	7.82	1858
Insula_L	-21	9	2	25.79	1272	2.21	1858
Insula_R	48	9	22	0.09	4693	0.03	1770
Insula_R	38	23	2	100.00	66	0.47	1770
Insula_R	31	-22	21	42.50	40	0.12	1770
Lingual_L	-45	-75	0	0.12	14832	0.11	2095
Lingual_R	47	-70	-10	2.52	20882	2.86	2300
Lingual_R	26	-61	-12	10.00	10	0.01	2300
Occipital_Inf_L	-45	-75	0	29.56	14832	58.25	941
Occipital_Inf_R	47	-70	-10	19.71	20882	52.02	989
Occipital_Mid_L	-45	-75	0	38.24	14832	21.68	3270
Occipital_Mid_L	38	-22	66	0.84	137448	4.40	3270
Occipital_Mid_R	38	-22	66	0.55	137448	4.53	2098
Occipital_Mid_R	47	-70	-10	4.27	20882	5.31	2098
Occipital_Mid_R	22	-94	19	0.88	113	0.01	2098
Occipital_Sup_L	38	-22	66	0.14	137448	1.72	1366
Occipital_Sup_R	38	-22	66	0.75	137448	9.15	1413
Occipital_Sup_R	22	-94	19	80.53	113	0.81	1413
OUTSIDE	-45	-75	0	8.82	14832	0.00	0
OUTSIDE	38	-22	66	11.74	137448	0.00	0
OUTSIDE	47	-70	-10	7.28	20882	0.00	0
OUTSIDE	-54	8	8	1.06	8000	0.00	0
OUTSIDE	48	9	22	11.61	4693	0.00	0
OUTSIDE	-3	-65	-50	65.73	356	0.00	0
OUTSIDE	-34	-63	-32	11.69	5382	0.00	0
OUTSIDE	-37	41	17	1.01	5264	0.00	0
OUTSIDE	47	51	6	2.37	2280	0.00	0
OUTSIDE	38	21	55	8.70	460	0.00	0
OUTSIDE	-21	9	2	13.44	1272	0.00	0
OUTSIDE	-7	-2	6	96.60	147	0.00	0
OUTSIDE	6	4	-1	100.00	42	0.00	0
OUTSIDE	-4	-47	81	17.39	23	0.00	0
OUTSIDE	31	-22	21	57.50	40	0.00	0
OUTSIDE	21	29	-2	100.00	11	0.00	0

OUTSIDE	23	1	21	14.29	7	0.00	0
Pallidum_L	-21	9	2	0.08	1272	0.04	293
Paracentral_Lobule_L	38	-22	66	0.29	137448	3.69	1349
Paracentral_Lobule_R	38	-22	66	0.78	137448	16.12	836
Parietal_Inf_L	38	-22	66	5.75	137448	40.36	2447
Parietal_Inf_R	38	-22	66	1.93	137448	24.60	1345
Parietal_Sup_L	38	-22	66	7.43	137448	61.85	2065
Parietal_Sup_R	38	-22	66	6.26	137448	48.39	2222
Parietal_Sup_R	15	-51	73	8.99	89	0.05	2222
Postcentral_L	38	-22	66	5.54	137448	24.47	3892
Postcentral_R	38	-22	66	12.23	137448	54.94	3823
Postcentral_R	15	-51	73	87.64	89	0.26	3823
Precentral_L	38	-22	66	1.35	137448	6.60	3526
Precentral_L	-54	8	8	23.35	8000	6.62	3526
Precentral_R	38	-22	66	10.86	137448	55.21	3381
Precentral_R	48	9	22	2.66	4693	0.46	3381
Precuneus_L	38	-22	66	2.46	137448	11.97	3528
Precuneus_L	-4	-47	81	82.61	23	0.07	3528
Precuneus_R	38	-22	66	1.37	137448	7.22	3265
Precuneus_R	15	-51	73	3.37	89	0.01	3265
Putamen_L	-21	9	2	60.69	1272	9.56	1009
Rolandic_Oper_L	38	-22	66	0.07	137448	1.15	990
Rolandic_Oper_L	-54	8	8	14.86	8000	15.01	990
Rolandic_Oper_R	38	-22	66	0.43	137448	5.60	1331
Rolandic_Oper_R	48	9	22	2.02	4693	0.89	1331
Supp_Motor_Area_L	38	-22	66	4.79	137448	38.33	2147
Supp_Motor_Area_R	38	-22	66	7.58	137448	54.93	2371
SupraMarginal_L	38	-22	66	3.76	137448	51.41	1256
SupraMarginal_R	38	-22	66	2.16	137448	18.76	1974
Temporal_Inf_L	-45	-75	0	2.20	14832	1.28	3200
Temporal_Inf_L	-49	-47	-26	100.00	203	0.79	3200
Temporal_Inf_R	47	-70	-10	22.46	20882	16.48	3557
Temporal_Mid_L	-45	-75	0	15.47	14832	5.80	4942
Temporal_Mid_L	-56	-60	-1	100.00	7	0.02	4942
Temporal_Mid_R	47	-70	-10	12.03	20882	7.12	4409
Temporal_Pole_Sup_L	-54	8	8	1.30	8000	1.01	1285
Temporal_Pole_Sup_R	48	9	22	0.77	4693	0.34	1338
Temporal_Pole_Sup_R	66	-1	-1	25.34	146	0.35	1338
Temporal_Sup_L	38	-22	66	0.83	137448	6.18	2296
Temporal_Sup_R	38	-22	66	1.01	137448	5.52	3141
Temporal_Sup_R	47	-70	-10	0.02	20882	0.02	3141
Temporal_Sup_R	66	-1	-1	74.66	146	0.43	3141
Thalamus_L	-7	-2	6	3.40	147	0.06	1100

Vermis_1_2	-2	-44	-17	0.52	192	0.24	53
Vermis_3	-2	-44	-17	58.33	192	6.14	228
Vermis_6	47	-70	-10	0.31	20882	2.16	371
Vermis_7	47	-70	-10	2.90	20882	38.98	194
Vermis_8	47	-70	-10	0.33	20882	3.50	243
Vermis_8	-3	-65	-50	1.97	356	0.36	243
Vermis_9	-3	-65	-50	0.56	356	0.14	174

Table 28 Anatomical labelling of the activated clusters for Subject 5; fMRI session 4 (after therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-45	-76	4	0.52	5729	0.32	1173
Calcarine_R	39	-88	1	5.44	3035	1.11	1861
Cerebelum_4_5_R	34	-40	-28	22.22	9	0.03	861
Cerebelum_6_L	-40	-63	-23	59.13	115	0.50	1694
Cerebelum_6_R	45	-64	7	11.88	8850	7.32	1795
Cerebelum_6_R	37	-60	-35	10.84	1605	1.21	1795
Cerebelum_6_R	34	-40	-28	66.67	9	0.04	1795
Cerebelum_6_R	29	-56	-26	100.00	7	0.05	1795
Cerebelum_8_L	-22	-64	-43	100.00	1	0.01	1887
Cerebelum_8_R	37	-60	-35	45.05	1605	3.92	2308
Cerebelum_9_R	37	-60	-35	5.05	1605	1.25	809
Cerebelum_Crus1_L	-40	-63	-23	15.65	115	0.09	2603
Cerebelum_Crus1_L	-45	-59	-33	100.00	65	0.31	2603
Cerebelum_Crus1_R	45	-64	7	0.05	8850	0.02	2648
Cerebelum_Crus1_R	37	-60	-35	28.47	1605	2.16	2648
Cingulum_Mid_R	35	-12	61	0.13	60604	0.43	2203
Frontal_Inf_Oper_L	-52	12	10	73.81	2417	21.48	1038
Frontal_Inf_Oper_R	35	-12	61	0.05	60604	0.26	1399
Frontal_Inf_Oper_R	51	13	18	71.67	1345	8.61	1399
Frontal_Inf_Orb_R	57	26	-6	100.00	25	0.18	1707
Frontal_Inf_Tri_L	-52	12	10	3.43	2417	0.41	2529
Frontal_Inf_Tri_R	51	13	18	17.17	1345	1.34	2151
Frontal_Mid_L	35	-12	61	8.64	60604	13.46	4863
Frontal_Mid_R	35	-12	61	7.67	60604	11.39	5104
Frontal_Sup_L	35	-12	61	2.68	60604	5.64	3599
Frontal_Sup_L	-22	-6	77	91.63	454	1.44	3599
Frontal_Sup_Medial_L	35	-12	61	0.37	60604	0.94	2992
Frontal_Sup_Medial_R	14	30	63	32.31	390	0.74	2134
Frontal_Sup_R	35	-12	61	9.03	60604	16.87	4056
Frontal_Sup_R	20	-8	82	6.83	366	0.08	4056
Frontal_Sup_R	14	30	63	19.74	390	0.24	4056
Fusiform_L	-40	-63	-23	25.22	115	0.16	2310
Fusiform_R	45	-64	7	17.77	8850	7.81	2518
Fusiform_R	34	-40	-28	11.11	9	0.00	2518
Hippocampus_R	30	-20	-22	11.11	9	0.01	946
Insula_R	51	13	18	1.49	1345	0.14	1770
Lingual_R	45	-64	7	0.87	8850	0.42	2300
Occipital_Inf_L	-45	-76	4	3.86	5729	2.94	941
Occipital_Inf_R	45	-64	7	2.63	8850	2.94	989

Occipital_Inf_R	39	-88	1	22.01	3035	8.44	989
Occipital_Mid_L	-45	-76	4	52.82	5729	11.57	3270
Occipital_Mid_L	-29	-91	2	100.00	185	0.71	3270
Occipital_Mid_R	45	-64	7	2.01	8850	1.06	2098
Occipital_Mid_R	39	-88	1	67.78	3035	12.26	2098
Occipital_Sup_R	39	-88	1	3.26	3035	0.88	1413
OUTSIDE	35	-12	61	6.71	60604	0.00	0
OUTSIDE	45	-64	7	4.59	8850	0.00	0
OUTSIDE	-26	-47	68	2.79	9901	0.00	0
OUTSIDE	-45	-76	4	6.42	5729	0.00	0
OUTSIDE	39	-88	1	1.52	3035	0.00	0
OUTSIDE	-22	-6	77	8.37	454	0.00	0
OUTSIDE	-58	-22	22	11.95	6759	0.00	0
OUTSIDE	20	-8	82	92.62	366	0.00	0
OUTSIDE	51	13	18	9.67	1345	0.00	0
OUTSIDE	-52	12	10	0.99	2417	0.00	0
OUTSIDE	37	-60	-35	10.59	1605	0.00	0
OUTSIDE	16	-65	62	0.10	997	0.00	0
OUTSIDE	14	30	63	46.67	390	0.00	0
OUTSIDE	-59	-61	3	16.19	210	0.00	0
OUTSIDE	-18	-55	77	8.11	37	0.00	0
OUTSIDE	30	-20	-22	33.33	9	0.00	0
OUTSIDE	25	7	-11	25.00	4	0.00	0
ParaHippocampal_R	30	-20	-22	55.56	9	0.06	1132
Parietal_Inf_L	-26	-47	68	2.74	9901	1.38	2447
Parietal_Inf_L	-58	-22	22	0.90	6759	0.31	2447
Parietal_Inf_L	-28	-69	43	100.00	1	0.01	2447
Parietal_Inf_R	35	-12	61	0.70	60604	3.97	1345
Parietal_Sup_L	-26	-47	68	30.19	9901	18.09	2065
Parietal_Sup_L	-18	-55	77	91.89	37	0.21	2065
Parietal_Sup_R	35	-12	61	2.55	60604	8.70	2222
Parietal_Sup_R	16	-65	62	77.63	997	4.35	2222
Postcentral_L	-26	-47	68	60.67	9901	19.29	3892
Postcentral_L	-58	-22	22	48.23	6759	10.47	3892
Postcentral_R	35	-12	61	17.54	60604	34.76	3823
Precentral_L	35	-12	61	0.61	60604	1.30	3526
Precentral_L	-26	-47	68	3.58	9901	1.26	3526
Precentral_L	-52	12	10	9.14	2417	0.78	3526
Precentral_R	35	-12	61	21.83	60604	48.92	3381
Precuneus_L	-26	-47	68	0.04	9901	0.01	3528
Precuneus_R	16	-65	62	22.27	997	0.85	3265
Putamen_R	25	7	-11	75.00	4	0.04	1064
Rolandic_Oper_L	-58	-22	22	0.28	6759	0.24	990

Rolandic_Oper_L	-52	12	10	9.10	2417	2.78	990
Rolandic_Oper_R	35	-12	61	2.55	60604	14.54	1331
Supp_Motor_Area_L	35	-12	61	6.75	60604	23.83	2147
Supp_Motor_Area_R	35	-12	61	9.18	60604	29.33	2371
Supp_Motor_Area_R	20	-8	82	0.55	366	0.01	2371
Supp_Motor_Area_R	14	30	63	1.28	390	0.03	2371
SupraMarginal_L	-58	-22	22	36.06	6759	24.25	1256
SupraMarginal_R	35	-12	61	2.73	60604	10.49	1974
Temporal_Inf_R	45	-64	7	18.64	8850	5.80	3557
Temporal_Mid_L	-45	-76	4	36.38	5729	5.27	4942
Temporal_Mid_L	-59	-61	3	83.81	210	0.45	4942
Temporal_Mid_R	45	-64	7	41.56	8850	10.43	4409
Temporal_Pole_Sup_L	-52	12	10	3.52	2417	0.83	1285
Temporal_Sup_L	-58	-22	22	2.57	6759	0.95	2296
Temporal_Sup_R	35	-12	61	0.27	60604	0.64	3141

Table 29 Anatomical labelling of the activated clusters for Subject 6; fMRI session 1 (before therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	38	-48	56	2.87	13906	2.85	1752
Calcarine_L	1	-101	-4	100.00	9	0.05	2258
Caudate_R	16	4	18	100.00	150	1.89	994
Caudate_R	31	25	7	0.87	460	0.05	994
Cerebelum_Crus1_L	-52	-71	-18	1.19	587	0.03	2603
Cerebelum_Crus1_R	49	-65	-28	100.00	92	0.43	2648
Cerebelum_Crus1_R	45	-71	-28	100.00	1	0.00	2648
Cingulum_Ant_L	-6	56	0	21.51	93	0.18	1400
Cingulum_Ant_R	4	19	33	0.86	1043	0.09	1313
Cingulum_Mid_L	4	-1	51	0.48	1471	0.05	1941
Cingulum_Mid_L	4	19	33	10.16	1043	0.68	1941
Cingulum_Mid_R	4	19	33	88.88	1043	5.26	2203
Frontal_Inf_Oper_L	-60	4	15	29.65	226	0.81	1038
Frontal_Inf_Oper_R	36	-7	58	4.30	15079	5.79	1399
Frontal_Inf_Oper_R	57	21	-2	10.28	253	0.23	1399
Frontal_Inf_Orb_L	-42	49	-13	100.00	3	0.02	1690
Frontal_Inf_Orb_R	49	39	1	4.08	3161	0.94	1707
Frontal_Inf_Orb_R	57	21	-2	24.90	253	0.46	1707
Frontal_Inf_Orb_R	45	31	-17	100.00	40	0.29	1707
Frontal_Inf_Tri_L	-56	29	7	97.24	399	1.92	2529
Frontal_Inf_Tri_R	36	-7	58	0.05	15079	0.04	2151
Frontal_Inf_Tri_R	49	39	1	71.37	3161	13.11	2151
Frontal_Inf_Tri_R	39	38	32	0.24	825	0.01	2151
Frontal_Inf_Tri_R	57	21	-2	64.43	253	0.95	2151
Frontal_Inf_Tri_R	31	25	7	1.09	460	0.03	2151
Frontal_Med_Orb_L	-6	56	0	19.35	93	0.31	719
Frontal_Mid_L	-24	-6	76	3.30	4764	0.40	4863
Frontal_Mid_L	-17	22	49	74.41	512	0.98	4863
Frontal_Mid_L	-35	35	28	100.00	1	0.00	4863
Frontal_Mid_Orb_L	-17	48	-17	10.92	119	0.18	888
Frontal_Mid_Orb_R	49	39	1	0.25	3161	0.10	1015
Frontal_Mid_R	36	-7	58	29.91	15079	11.05	5104
Frontal_Mid_R	49	39	1	24.26	3161	1.88	5104
Frontal_Mid_R	39	38	32	99.76	825	2.02	5104
Frontal_Sup_L	-24	-6	76	26.13	4764	4.32	3599
Frontal_Sup_L	7	40	53	0.08	1256	0.00	3599
Frontal_Sup_L	-17	22	49	25.59	512	0.45	3599
Frontal_Sup_Medial_L	7	40	53	53.90	1256	2.83	2992
Frontal_Sup_Medial_L	-6	56	0	59.14	93	0.23	2992

Frontal_Sup_Medial_R	7	40	53	34.16	1256	2.51	2134
Frontal_Sup_Medial_R	4	19	33	0.10	1043	0.01	2134
Frontal_Sup_Medial_R	11	52	38	94.87	409	2.27	2134
Frontal_Sup_Medial_R	19	63	6	7.53	292	0.13	2134
Frontal_Sup_Orb_L	-17	48	-17	85.71	119	1.32	963
Frontal_Sup_R	36	-7	58	27.36	15079	12.72	4056
Frontal_Sup_R	21	-25	67	3.67	1253	0.14	4056
Frontal_Sup_R	11	52	38	5.13	409	0.06	4056
Frontal_Sup_R	19	63	6	92.47	292	0.83	4056
Frontal_Sup_R	24	23	59	100.00	111	0.34	4056
Fusiform_L	-52	-71	-18	10.56	587	0.34	2310
Insula_R	49	39	1	0.03	3161	0.01	1770
Insula_R	31	25	7	45.43	460	1.48	1770
Lingual_R	9	-91	-11	80.00	165	0.72	2300
Occipital_Inf_L	-52	-71	-18	54.51	587	4.25	941
Occipital_Inf_R	35	-91	-13	97.73	132	1.63	989
Occipital_Inf_R	52	-75	-12	42.86	7	0.04	989
Occipital_Mid_R	31	-85	25	50.61	652	1.97	2098
Occipital_Sup_R	38	-48	56	0.37	13906	0.46	1413
Occipital_Sup_R	31	-85	25	49.39	652	2.85	1413
OUTSIDE	36	-7	58	9.91	15079	0.00	0
OUTSIDE	-24	-6	76	26.53	4764	0.00	0
OUTSIDE	38	-48	56	4.91	13906	0.00	0
OUTSIDE	21	-25	67	0.56	1253	0.00	0
OUTSIDE	-52	-71	-18	13.80	587	0.00	0
OUTSIDE	7	40	53	11.86	1256	0.00	0
OUTSIDE	-10	-51	80	18.51	470	0.00	0
OUTSIDE	-17	48	-17	3.36	119	0.00	0
OUTSIDE	-54	0	50	9.20	413	0.00	0
OUTSIDE	57	21	-2	0.40	253	0.00	0
OUTSIDE	-56	29	7	2.76	399	0.00	0
OUTSIDE	3	-5	5	84.31	102	0.00	0
OUTSIDE	9	-91	-11	20.00	165	0.00	0
OUTSIDE	4	-30	80	25.81	93	0.00	0
OUTSIDE	-37	-32	73	24.54	273	0.00	0
OUTSIDE	-60	4	15	10.18	226	0.00	0
OUTSIDE	35	-91	-13	2.27	132	0.00	0
OUTSIDE	-71	-31	2	88.89	9	0.00	0
OUTSIDE	-35	7	-18	100.00	12	0.00	0
OUTSIDE	31	25	7	52.61	460	0.00	0
OUTSIDE	-22	-82	55	84.91	53	0.00	0
OUTSIDE	52	-75	-12	42.86	7	0.00	0
OUTSIDE	-19	-7	3	66.67	3	0.00	0

OUTSIDE	-23	-84	53	100.00	1	0.00	0
Pallidum_L	-19	-7	3	33.33	3	0.04	293
Paracentral_Lobule_L	-24	-6	76	0.06	4764	0.03	1349
Paracentral_Lobule_R	4	-30	80	74.19	93	1.03	836
Parietal_Inf_R	38	-48	56	20.59	13906	26.61	1345
Parietal_Sup_L	-10	-51	80	3.83	470	0.11	2065
Parietal_Sup_L	-22	-82	55	15.09	53	0.05	2065
Parietal_Sup_R	38	-48	56	45.20	13906	35.36	2222
Postcentral_L	-10	-51	80	0.43	470	0.01	3892
Postcentral_L	-37	-32	73	75.46	273	0.66	3892
Postcentral_L	-60	4	15	59.29	226	0.43	3892
Postcentral_L	-64	-20	21	100.00	26	0.08	3892
Postcentral_R	38	-48	56	15.51	13906	7.05	3823
Precentral_L	-24	-6	76	42.86	4764	7.24	3526
Precentral_L	-54	0	50	90.80	413	1.33	3526
Precentral_L	-60	4	15	0.88	226	0.01	3526
Precentral_L	-48	7	32	100.00	75	0.27	3526
Precentral_R	36	-7	58	27.79	15079	15.49	3381
Precentral_R	21	-25	67	95.77	1253	4.44	3381
Precentral_R	57	-2	38	100.00	75	0.28	3381
Precuneus_L	-10	-51	80	77.23	470	1.29	3528
Supp_Motor_Area_L	-24	-6	76	1.11	4764	0.31	2147
Supp_Motor_Area_L	4	-1	51	25.49	1471	2.18	2147
Supp_Motor_Area_R	36	-7	58	0.69	15079	0.55	2371
Supp_Motor_Area_R	4	-1	51	74.03	1471	5.74	2371
SupraMarginal_R	38	-48	56	10.54	13906	9.28	1974
Temporal_Inf_L	-52	-71	-18	19.93	587	0.46	3200
Temporal_Inf_L	-47	-9	-37	100.00	116	0.45	3200
Temporal_Inf_L	-52	2	-37	96.30	54	0.20	3200
Temporal_Inf_R	59	-51	-7	49.14	1561	2.70	3557
Temporal_Inf_R	52	-75	-12	14.29	7	0.00	3557
Temporal_Mid_L	-52	2	-37	3.70	54	0.01	4942
Temporal_Mid_L	-71	-31	2	11.11	9	0.00	4942
Temporal_Mid_L	-70	-32	1	100.00	4	0.01	4942
Temporal_Mid_R	59	-51	-7	50.86	1561	2.25	4409
Thalamus_R	3	-5	5	15.69	102	0.19	1057

Table 30 Anatomical labelling of the activated clusters for Subject 6; fMRI session 2 (after 7th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	33	-66	52	4.25	68331	20.73	1752
Calcarine_L	7	-91	-12	11.96	184	0.12	2258
Calcarine_L	3	-100	-8	50.00	2	0.01	2258
Calcarine_L	1	-99	-5	100.00	1	0.01	2258
Calcarine_R	33	-66	52	0.00	68331	0.01	1861
Caudate_R	18	7	2	9.62	21664	26.21	994
Cerebelum_6_R	7	-91	-12	0.54	184	0.01	1795
Cerebelum_6_R	49	-66	-25	10.06	477	0.33	1795
Cerebelum_Crus1_L	-62	-63	-7	0.05	4141	0.01	2603
Cerebelum_Crus1_L	-45	-75	-23	100.00	2	0.01	2603
Cerebelum_Crus1_R	49	-66	-25	72.75	477	1.64	2648
Cerebelum_Crus1_R	39	-81	-21	28.57	14	0.02	2648
Cingulum_Ant_R	18	7	2	0.56	21664	1.16	1313
Cingulum_Mid_L	-3	-2	55	6.14	4677	1.85	1941
Cingulum_Mid_R	-3	-2	55	0.21	4677	0.06	2203
Cingulum_Mid_R	13	27	45	24.66	1038	1.45	2203
Cuneus_R	33	-66	52	1.08	68331	6.45	1424
Frontal_Inf_Oper_L	-51	2	42	0.12	3306	0.05	1038
Frontal_Inf_Oper_R	33	-66	52	1.20	68331	7.34	1399
Frontal_Inf_Oper_R	18	7	2	0.57	21664	1.10	1399
Frontal_Inf_Orb_L	-59	26	1	3.52	284	0.07	1690
Frontal_Inf_Orb_L	-41	51	-13	100.00	10	0.07	1690
Frontal_Inf_Orb_R	18	7	2	8.90	21664	14.12	1707
Frontal_Inf_Tri_L	-59	26	1	53.87	284	0.76	2529
Frontal_Inf_Tri_L	-53	39	12	88.57	35	0.15	2529
Frontal_Inf_Tri_L	-34	41	6	76.27	59	0.22	2529
Frontal_Inf_Tri_R	33	-66	52	0.04	68331	0.16	2151
Frontal_Inf_Tri_R	18	7	2	10.28	21664	12.94	2151
Frontal_Mid_L	-25	-4	73	3.30	6181	0.52	4863
Frontal_Mid_L	-20	56	32	1.27	79	0.00	4863
Frontal_Mid_L	-45	53	2	100.00	31	0.08	4863
Frontal_Mid_L	-34	41	6	23.73	59	0.04	4863
Frontal_Mid_L	-36	22	50	100.00	10	0.03	4863
Frontal_Mid_L	-30	37	47	33.33	3	0.00	4863
Frontal_Mid_Orb_L	-13	47	-20	5.54	812	0.63	888
Frontal_Mid_Orb_R	18	7	2	1.14	21664	3.05	1015
Frontal_Mid_Orb_R	23	46	-18	100.00	4	0.05	1015
Frontal_Mid_R	33	-66	52	6.52	68331	10.91	5104
Frontal_Mid_R	18	7	2	11.90	21664	6.31	5104

Frontal_Mid_R	27	20	61	4.95	303	0.04	5104
Frontal_Mid_R	38	37	34	100.00	120	0.29	5104
Frontal_Mid_R	23	54	2	3.70	27	0.00	5104
Frontal_Sup_L	-25	-4	73	21.65	6181	4.65	3599
Frontal_Sup_L	-13	47	-20	0.49	812	0.01	3599
Frontal_Sup_L	-10	30	58	32.30	387	0.43	3599
Frontal_Sup_L	-20	56	32	92.41	79	0.25	3599
Frontal_Sup_L	-7	64	12	2.17	46	0.00	3599
Frontal_Sup_Medial_L	-13	47	-20	0.12	812	0.00	2992
Frontal_Sup_Medial_L	-10	30	58	52.97	387	0.86	2992
Frontal_Sup_Medial_L	-7	64	12	97.83	46	0.19	2992
Frontal_Sup_Medial_R	18	7	2	0.02	21664	0.02	2134
Frontal_Sup_Medial_R	13	27	45	23.89	1038	1.45	2134
Frontal_Sup_Medial_R	8	29	61	96.49	57	0.32	2134
Frontal_Sup_Orb_L	-13	47	-20	72.17	812	7.61	963
Frontal_Sup_Orb_R	18	7	2	0.00	21664	0.01	997
Frontal_Sup_R	33	-66	52	6.57	68331	13.83	4056
Frontal_Sup_R	13	27	45	35.65	1038	1.14	4056
Frontal_Sup_R	27	20	61	93.40	303	0.87	4056
Frontal_Sup_R	23	54	2	96.30	27	0.08	4056
Fusiform_L	-62	-63	-7	10.24	4141	2.29	2310
Fusiform_L	-32	-94	-13	0.32	313	0.01	2310
Fusiform_R	49	-66	-25	14.68	477	0.35	2518
Heschl_L	-51	2	42	0.03	3306	0.06	225
Insula_R	18	7	2	8.02	21664	12.27	1770
Lingual_L	-32	-94	-13	59.42	313	1.11	2095
Lingual_R	7	-91	-12	35.33	184	0.35	2300
Lingual_R	39	-81	-21	35.71	14	0.03	2300
Occipital_Inf_L	-62	-63	-7	12.48	4141	6.87	941
Occipital_Inf_L	-32	-94	-13	28.43	313	1.18	941
Occipital_Mid_R	33	-66	52	3.99	68331	16.25	2098
Occipital_Sup_R	33	-66	52	6.69	68331	40.41	1413
OUTSIDE	33	-66	52	10.01	68331	0.00	0
OUTSIDE	-25	-4	73	16.41	6181	0.00	0
OUTSIDE	-3	-2	55	0.53	4677	0.00	0
OUTSIDE	-62	-63	-7	12.82	4141	0.00	0
OUTSIDE	-21	-74	50	16.53	2256	0.00	0
OUTSIDE	18	7	2	35.98	21664	0.00	0
OUTSIDE	-67	-45	19	63.97	766	0.00	0
OUTSIDE	-51	2	42	4.39	3306	0.00	0
OUTSIDE	-10	-48	80	20.71	652	0.00	0
OUTSIDE	7	-91	-12	52.17	184	0.00	0
OUTSIDE	-32	-94	-13	11.82	313	0.00	0

OUTSIDE	3	-39	73	24.15	1586	0.00	0
OUTSIDE	-13	47	-20	17.98	812	0.00	0
OUTSIDE	-46	8	-50	91.92	198	0.00	0
OUTSIDE	-59	26	1	42.61	284	0.00	0
OUTSIDE	-10	30	58	14.73	387	0.00	0
OUTSIDE	-17	-5	4	49.03	155	0.00	0
OUTSIDE	13	27	45	15.22	1038	0.00	0
OUTSIDE	-20	56	32	6.33	79	0.00	0
OUTSIDE	27	20	61	1.65	303	0.00	0
OUTSIDE	-35	5	-20	28.00	25	0.00	0
OUTSIDE	-25	-13	-7	100.00	23	0.00	0
OUTSIDE	-37	-3	-50	100.00	15	0.00	0
OUTSIDE	16	-42	80	6.02	83	0.00	0
OUTSIDE	-9	-29	56	47.06	34	0.00	0
OUTSIDE	39	-81	-21	35.71	14	0.00	0
OUTSIDE	-53	39	12	11.43	35	0.00	0
OUTSIDE	7	-8	76	30.77	26	0.00	0
OUTSIDE	-1	8	5	100.00	5	0.00	0
OUTSIDE	-2	6	4	100.00	3	0.00	0
OUTSIDE	3	-100	-8	50.00	2	0.00	0
OUTSIDE	8	29	61	3.51	57	0.00	0
OUTSIDE	-30	37	47	66.67	3	0.00	0
Pallidum_L	-17	-5	4	43.23	155	2.86	293
Pallidum_R	18	7	2	1.98	21664	19.15	280
Paracentral_Lobule_L	3	-39	73	2.71	1586	0.40	1349
Paracentral_Lobule_L	-9	-29	56	52.94	34	0.17	1349
Paracentral_Lobule_R	3	-39	73	64.94	1586	15.40	836
Parietal_Inf_L	-21	-74	50	5.85	2256	0.67	2447
Parietal_Inf_R	33	-66	52	9.40	68331	59.67	1345
Parietal_Sup_L	-25	-4	73	0.29	6181	0.11	2065
Parietal_Sup_L	-21	-74	50	75.31	2256	10.28	2065
Parietal_Sup_L	-10	-48	80	8.28	652	0.33	2065
Parietal_Sup_R	33	-66	52	17.37	68331	66.76	2222
Postcentral_L	-25	-4	73	9.50	6181	1.89	3892
Postcentral_L	-51	2	42	22.60	3306	2.40	3892
Postcentral_L	-10	-48	80	0.77	652	0.02	3892
Postcentral_R	33	-66	52	8.89	68331	19.87	3823
Postcentral_R	16	-42	80	93.98	83	0.26	3823
Precentral_L	-25	-4	73	48.86	6181	10.71	3526
Precentral_L	-51	2	42	71.08	3306	8.33	3526
Precentral_R	33	-66	52	11.57	68331	29.24	3381
Precuneus_L	-21	-74	50	2.31	2256	0.18	3528
Precuneus_L	-10	-48	80	70.25	652	1.62	3528

Precuneus_L	3	-39	73	7.38	1586	0.41	3528
Precuneus_R	33	-66	52	2.86	68331	7.49	3265
Precuneus_R	3	-39	73	0.82	1586	0.05	3265
Putamen_R	18	7	2	10.26	21664	26.12	1064
Rectus_L	-13	47	-20	3.69	812	0.44	852
Rolandic_Oper_L	-51	2	42	0.21	3306	0.09	990
Rolandic_Oper_R	33	-66	52	0.74	68331	4.77	1331
Supp_Motor_Area_L	-3	-2	55	60.04	4677	16.35	2147
Supp_Motor_Area_L	-3	-4	72	100.00	162	0.94	2147
Supp_Motor_Area_R	33	-66	52	0.08	68331	0.30	2371
Supp_Motor_Area_R	-3	-2	55	33.08	4677	8.16	2371
Supp_Motor_Area_R	13	27	45	0.58	1038	0.03	2371
Supp_Motor_Area_R	7	-8	76	69.23	26	0.09	2371
SupraMarginal_L	-67	-45	19	23.89	766	1.82	1256
SupraMarginal_L	-51	2	42	0.09	3306	0.03	1256
SupraMarginal_R	33	-66	52	7.84	68331	33.92	1974
Temporal_Inf_L	-62	-63	-7	51.58	4141	8.34	3200
Temporal_Inf_L	-46	8	-50	8.08	198	0.06	3200
Temporal_Inf_R	61	-49	-8	41.87	1648	2.42	3557
Temporal_Inf_R	49	-66	-25	2.52	477	0.04	3557
Temporal_Inf_R	40	0	-45	100.00	54	0.19	3557
Temporal_Mid_L	-62	-63	-7	12.82	4141	1.34	4942
Temporal_Mid_R	61	-49	-8	58.13	1648	2.72	4409
Temporal_Pole_Sup_L	-35	5	-20	72.00	25	0.18	1285
Temporal_Sup_L	-67	-45	19	12.14	766	0.51	2296
Temporal_Sup_L	-51	2	42	1.48	3306	0.27	2296
Temporal_Sup_R	33	-66	52	0.90	68331	2.44	3141
Thalamus_L	-17	-5	4	7.74	155	0.14	1100
Thalamus_R	18	7	2	0.77	21664	1.97	1057

Table 31 Anatomical labelling of the activated clusters for Subject 6; fMRI session 3 (after 14th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	34	-67	58	6.24	3753	1.67	1752
Frontal_Inf_Orb_R	48	40	-13	100.00	64	0.47	1707
Frontal_Inf_Tri_L	-46	50	11	29.02	193	0.28	2529
Frontal_Mid_L	-39	-9	64	0.38	5479	0.05	4863
Frontal_Mid_L	-46	50	11	61.66	193	0.31	4863
Frontal_Mid_R	37	-2	55	28.79	4800	3.38	5104
Frontal_Sup_L	-39	-9	64	29.49	5479	5.61	3599
Frontal_Sup_R	37	-2	55	13.35	4800	1.98	4056
Occipital_Inf_L	-55	-69	-16	30.59	389	1.58	941
Occipital_Inf_R	56	-59	-17	0.11	889	0.01	989
Occipital_Inf_R	37	-95	-8	100.00	577	7.29	989
Occipital_Sup_R	34	-67	58	3.44	3753	1.14	1413
OUTSIDE	-39	-9	64	8.34	5479	0.00	0
OUTSIDE	37	-2	55	13.42	4800	0.00	0
OUTSIDE	34	-67	58	0.56	3753	0.00	0
OUTSIDE	-55	-69	-16	24.68	389	0.00	0
OUTSIDE	56	-59	-17	1.69	889	0.00	0
OUTSIDE	-30	-79	53	36.55	476	0.00	0
OUTSIDE	-46	50	11	9.33	193	0.00	0
OUTSIDE	-11	-54	78	7.69	13	0.00	0
Parietal_Inf_L	-30	-79	53	11.76	476	0.29	2447
Parietal_Inf_R	34	-67	58	24.43	3753	8.52	1345
Parietal_Sup_L	-30	-79	53	51.68	476	1.49	2065
Parietal_Sup_L	-11	-54	78	38.46	13	0.03	2065
Parietal_Sup_R	34	-67	58	65.23	3753	13.77	2222
Postcentral_L	-39	-9	64	1.88	5479	0.33	3892
Postcentral_R	34	-67	58	0.11	3753	0.01	3823
Precentral_L	-39	-9	64	59.54	5479	11.56	3526
Precentral_L	-56	7	31	100.00	25	0.09	3526
Precentral_R	37	-2	55	44.44	4800	7.89	3381
Precentral_R	54	-1	40	100.00	306	1.13	3381
Precuneus_L	-11	-54	78	53.85	13	0.02	3528
Supp_Motor_Area_L	-39	-9	64	0.37	5479	0.12	2147
Supp_Motor_Area_L	-6	-6	55	100.00	181	1.05	2147
Temporal_Inf_L	-55	-69	-16	44.73	389	0.68	3200
Temporal_Inf_R	56	-59	-17	85.49	889	2.67	3557
Temporal_Mid_R	56	-59	-17	12.71	889	0.32	4409

Table 32 Anatomical labelling of the activated clusters for Subject 6; fMRI session 4 (after therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	26	-60	69	8.77	4456	2.79	1752
Frontal_Inf_Oper_R	52	0	38	1.62	1171	0.17	1399
Frontal_Inf_Orb_R	27	27	-11	28.93	885	1.87	1707
Frontal_Mid_R	30	-5	68	45.79	2387	2.68	5104
Frontal_Mid_R	52	0	38	0.09	1171	0.00	5104
Frontal_Sup_L	-33	-5	69	42.78	2277	3.38	3599
Frontal_Sup_R	30	-5	68	33.14	2387	2.44	4056
Frontal_Sup_R	24	-5	80	49.16	297	0.45	4056
Fusiform_L	-57	-60	-15	0.32	316	0.01	2310
Insula_R	27	27	-11	3.50	885	0.22	1770
Occipital_Inf_L	-57	-60	-15	3.16	316	0.13	941
OUTSIDE	-33	-5	69	28.33	2277	0.00	0
OUTSIDE	26	-60	69	0.49	4456	0.00	0
OUTSIDE	30	-5	68	2.14	2387	0.00	0
OUTSIDE	-57	-60	-15	7.28	316	0.00	0
OUTSIDE	47	-54	-1	19.90	1000	0.00	0
OUTSIDE	27	27	-11	29.60	885	0.00	0
OUTSIDE	24	-5	80	50.84	297	0.00	0
OUTSIDE	16	-47	80	1.72	116	0.00	0
OUTSIDE	1	-31	79	38.71	31	0.00	0
Paracentral_Lobule_L	1	-31	79	9.68	31	0.03	1349
Paracentral_Lobule_R	1	-31	79	51.61	31	0.24	836
Parietal_Inf_R	26	-60	69	16.90	4456	7.00	1345
Parietal_Sup_R	26	-60	69	73.65	4456	18.46	2222
Postcentral_R	26	-60	69	0.18	4456	0.03	3823
Postcentral_R	65	-27	12	0.14	730	0.00	3823
Postcentral_R	52	0	38	0.09	1171	0.00	3823
Postcentral_R	16	-47	80	98.28	116	0.37	3823
Precentral_L	-33	-5	69	28.68	2277	2.31	3526
Precentral_L	-55	6	33	100.00	49	0.17	3526
Precentral_R	30	-5	68	18.94	2387	1.67	3381
Precentral_R	52	0	38	98.21	1171	4.25	3381
Putamen_R	27	27	-11	37.97	885	3.95	1064
Rolandic_Oper_R	65	-27	12	15.62	730	1.07	1331
Supp_Motor_Area_L	-33	-5	69	0.22	2277	0.03	2147
SupraMarginal_R	65	-27	12	8.77	730	0.41	1974
SupraMarginal_R	61	-26	37	100.00	105	0.66	1974
Temporal_Inf_L	-57	-60	-15	89.24	316	1.10	3200
Temporal_Inf_R	47	-54	-1	4.60	1000	0.16	3557

Temporal_Mid_R	47	-54	-1	75.50	1000	2.14	4409
Temporal_Sup_R	65	-27	12	75.48	730	2.19	3141

Table 33 Anatomical labelling of the activated clusters for Subject 7; fMRI session 1 (before therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	42	-41	59	0.05	25586	0.10	1752
Calcarine_L	-47	-66	-1	4.85	15806	4.24	2258
Cerebelum_6_L	-47	-66	-1	1.80	15806	2.10	1694
Cerebelum_Crus1_L	-47	-66	-1	6.52	15806	4.95	2603
Cerebelum_Crus1_L	-16	-87	-28	100.00	1	0.00	2603
Cuneus_L	-47	-66	-1	0.06	15806	0.08	1526
Frontal_Inf_Oper_L	-56	-6	31	0.15	3227	0.06	1038
Frontal_Inf_Oper_L	-54	11	-2	23.42	111	0.31	1038
Frontal_Inf_Oper_L	-43	19	37	2.03	148	0.04	1038
Frontal_Inf_Oper_L	-45	9	0	81.82	11	0.11	1038
Frontal_Inf_Tri_L	-35	40	28	0.60	1174	0.03	2529
Frontal_Mid_L	-35	40	28	99.40	1174	3.00	4863
Frontal_Mid_L	-28	-8	50	40.50	1252	1.30	4863
Frontal_Mid_L	-43	19	37	97.97	148	0.37	4863
Frontal_Mid_R	42	-41	59	4.89	25586	3.07	5104
Frontal_Mid_R	44	33	37	100.00	62	0.15	5104
Frontal_Sup_L	-44	-12	55	1.40	5000	0.24	3599
Frontal_Sup_L	-28	-8	50	28.75	1252	1.25	3599
Frontal_Sup_R	42	-41	59	11.41	25586	9.00	4056
Frontal_Sup_R	-1	-3	72	0.03	3096	0.00	4056
Fusiform_L	-47	-66	-1	3.44	15806	2.94	2310
Fusiform_L	-45	-41	-18	5.68	88	0.03	2310
Insula_L	-45	9	0	18.18	11	0.01	1858
Lingual_L	-47	-66	-1	2.82	15806	2.66	2095
Occipital_Inf_L	-47	-66	-1	25.10	15806	52.71	941
Occipital_Inf_R	45	-77	-9	47.71	109	0.66	989
Occipital_Mid_L	-36	-47	59	0.73	14629	0.41	3270
Occipital_Mid_L	-47	-66	-1	29.55	15806	17.85	3270
Occipital_Mid_R	29	-84	34	39.81	108	0.26	2098
Occipital_Sup_L	-36	-47	59	1.57	14629	2.10	1366
Occipital_Sup_L	-47	-66	-1	1.70	15806	2.46	1366
Occipital_Sup_R	29	-84	34	60.19	108	0.58	1413
OUTSIDE	42	-41	59	8.13	25586	0.00	0
OUTSIDE	-44	-12	55	16.24	5000	0.00	0
OUTSIDE	-36	-47	59	5.74	14629	0.00	0
OUTSIDE	-56	-6	31	2.36	3227	0.00	0
OUTSIDE	-47	-66	-1	7.12	15806	0.00	0
OUTSIDE	-1	-3	72	3.36	3096	0.00	0
OUTSIDE	-28	-8	50	1.52	1252	0.00	0

OUTSIDE	-54	11	-2	7.21	111	0.00	0
OUTSIDE	16	-24	60	95.83	48	0.00	0
OUTSIDE	65	-13	40	19.23	52	0.00	0
Paracentral_Lobule_L	-44	-12	55	13.56	5000	6.28	1349
Parietal_Inf_L	-36	-47	59	25.67	14629	19.18	2447
Parietal_Inf_R	42	-41	59	7.57	25586	18.01	1345
Parietal_Sup_L	-36	-47	59	50.79	14629	44.98	2065
Parietal_Sup_R	42	-41	59	9.26	25586	13.33	2222
Postcentral_L	-44	-12	55	11.20	5000	1.80	3892
Postcentral_L	-36	-47	59	10.43	14629	4.90	3892
Postcentral_L	-56	-6	31	33.00	3227	3.42	3892
Postcentral_R	42	-41	59	24.08	25586	20.15	3823
Postcentral_R	65	-13	40	80.77	52	0.14	3823
Precentral_L	-44	-12	55	57.60	5000	10.21	3526
Precentral_L	-56	-6	31	64.49	3227	7.38	3526
Precentral_L	-28	-8	50	29.23	1252	1.30	3526
Precentral_R	42	-41	59	33.93	25586	32.10	3381
Precentral_R	16	-24	60	4.17	48	0.01	3381
Precuneus_L	-36	-47	59	0.59	14629	0.31	3528
Rolandic_Oper_L	-36	-47	59	0.48	14629	0.88	990
Rolandic_Oper_L	-54	11	-2	10.81	111	0.15	990
Supp_Motor_Area_L	-1	-3	72	50.55	3096	9.11	2147
Supp_Motor_Area_R	-1	-3	72	46.06	3096	7.52	2371
SupraMarginal_L	-36	-47	59	4.01	14629	5.83	1256
SupraMarginal_L	-52	-44	24	62.45	261	1.62	1256
SupraMarginal_R	42	-41	59	0.66	25586	1.06	1974
Temporal_Inf_L	-47	-66	-1	2.35	15806	1.45	3200
Temporal_Inf_L	-45	-41	-18	94.32	88	0.32	3200
Temporal_Inf_R	60	-60	-12	100.00	211	0.74	3557
Temporal_Inf_R	45	-77	-9	42.20	109	0.16	3557
Temporal_Mid_L	-47	-66	-1	14.70	15806	5.88	4942
Temporal_Mid_R	51	-59	3	100.00	151	0.43	4409
Temporal_Mid_R	51	-69	13	100.00	105	0.30	4409
Temporal_Mid_R	45	-77	-9	10.09	109	0.03	4409
Temporal_Pole_Sup_L	-54	11	-2	58.56	111	0.63	1285
Temporal_Sup_L	-52	-44	24	37.55	261	0.53	2296
Temporal_Sup_R	65	-31	19	100.00	18	0.07	3141

Table 34 Anatomical labelling of the activated clusters for Subject 7; fMRI session 2 (after 7th therapy session)

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	-36	-44	54	0.42	153117	4.60	1752
Calcarine_L	-36	-44	54	1.11	153117	9.44	2258
Caudate_L	-19	-8	17	7.18	13204	12.32	962
Cerebelum_4_5_L	-36	-44	54	0.26	153117	4.40	1125
Cerebelum_4_5_R	46	-63	-17	7.58	4391	4.83	861
Cerebelum_6_L	-36	-44	54	1.31	153117	14.81	1694
Cerebelum_6_R	46	-63	-17	20.54	4391	6.28	1795
Cerebelum_Crus1_L	-36	-44	54	1.37	153117	10.06	2603
Cerebelum_Crus1_R	46	-63	-17	0.14	4391	0.03	2648
Cingulum_Mid_L	-36	-44	54	0.01	153117	0.06	1941
Cingulum_Mid_L	-1	12	38	66.88	640	2.76	1941
Cingulum_Mid_L	-3	-17	33	98.11	53	0.33	1941
Cingulum_Mid_R	-36	-44	54	0.23	153117	2.04	2203
Cingulum_Mid_R	-1	12	38	18.13	640	0.66	2203
Cuneus_L	-36	-44	54	0.20	153117	2.47	1526
Frontal_Inf_Oper_L	-36	-44	54	0.07	153117	1.35	1038
Frontal_Inf_Oper_L	-19	-8	17	1.76	13204	2.81	1038
Frontal_Inf_Oper_L	-57	6	30	15.05	2671	4.84	1038
Frontal_Inf_Oper_R	-36	-44	54	0.27	153117	3.72	1399
Frontal_Inf_Oper_R	44	38	27	0.35	1136	0.04	1399
Frontal_Inf_Oper_R	40	19	13	35.90	78	0.25	1399
Frontal_Inf_Orb_L	-19	-8	17	1.18	13204	1.15	1690
Frontal_Inf_Orb_R	41	31	-8	100.00	267	1.96	1707
Frontal_Inf_Orb_R	33	23	-23	100.00	1	0.01	1707
Frontal_Inf_Tri_L	-19	-8	17	0.03	13204	0.02	2529
Frontal_Inf_Tri_L	-57	6	30	21.98	2671	2.90	2529
Frontal_Inf_Tri_R	44	38	27	36.88	1136	2.43	2151
Frontal_Inf_Tri_R	40	19	13	43.59	78	0.20	2151
Frontal_Inf_Tri_R	61	31	18	100.00	8	0.05	2151
Frontal_Mid_L	-36	-44	54	1.43	153117	5.64	4863
Frontal_Mid_L	-35	48	25	88.50	2565	5.83	4863
Frontal_Mid_L	-18	29	48	3.44	465	0.04	4863
Frontal_Mid_L	-20	46	15	100.00	1	0.00	4863
Frontal_Mid_Orb_L	-19	-8	17	0.94	13204	1.75	888
Frontal_Mid_R	-36	-44	54	2.81	153117	10.54	5104
Frontal_Mid_R	44	38	27	61.53	1136	1.71	5104
Frontal_Mid_R	42	28	43	75.51	1286	2.38	5104

Frontal_Mid_R	40	57	22	66.67	15	0.02	5104
Frontal_Sup_L	-36	-44	54	3.56	153117	18.94	3599
Frontal_Sup_L	-35	48	25	4.02	2565	0.36	3599
Frontal_Sup_L	-18	29	48	96.56	465	1.56	3599
Frontal_Sup_Medial_L	-1	12	38	4.38	640	0.12	2992
Frontal_Sup_Orb_L	-19	-8	17	1.26	13204	2.15	963
Frontal_Sup_R	-36	-44	54	2.37	153117	11.21	4056
Fusiform_L	-36	-44	54	3.83	153117	31.73	2310
Fusiform_L	-31	-37	-27	100.00	1	0.01	2310
Fusiform_R	46	-63	-17	57.50	4391	12.53	2518
Hippocampus_L	-27	-21	-6	3.15	604	0.25	932
Insula_L	-19	-8	17	20.38	13204	18.10	1858
Insula_R	40	19	13	2.56	78	0.01	1770
Lingual_L	-36	-44	54	0.88	153117	8.04	2095
Occipital_Inf_L	-36	-44	54	3.38	153117	68.76	941
Occipital_Inf_R	42	-72	7	5.26	3842	2.55	989
Occipital_Inf_R	46	-63	-17	3.80	4391	2.11	989
Occipital_Mid_L	-36	-44	54	12.02	153117	70.34	3270
Occipital_Mid_R	-36	-44	54	1.96	153117	17.92	2098
Occipital_Mid_R	42	-72	7	22.05	3842	5.05	2098
Occipital_Sup_L	-36	-44	54	2.91	153117	40.73	1366
Occipital_Sup_R	-36	-44	54	0.72	153117	9.82	1413
OUTSIDE	-36	-44	54	11.26	153117	0.00	0
OUTSIDE	-19	-8	17	37.48	13204	0.00	0
OUTSIDE	44	38	27	1.23	1136	0.00	0
OUTSIDE	-57	6	30	0.64	2671	0.00	0
OUTSIDE	42	28	43	24.49	1286	0.00	0
OUTSIDE	42	-72	7	5.93	3842	0.00	0
OUTSIDE	-35	48	25	7.49	2565	0.00	0
OUTSIDE	-27	-21	-6	90.89	604	0.00	0
OUTSIDE	72	-18	25	30.81	198	0.00	0
OUTSIDE	34	3	-5	34.78	391	0.00	0
OUTSIDE	40	57	22	33.33	15	0.00	0
OUTSIDE	40	19	13	17.95	78	0.00	0
OUTSIDE	17	-9	0	13.89	72	0.00	0
OUTSIDE	-3	-17	33	1.89	53	0.00	0
OUTSIDE	-33	-1	-49	80.00	20	0.00	0
OUTSIDE	61	-15	53	100.00	17	0.00	0
OUTSIDE	-8	-51	79	22.22	9	0.00	0
OUTSIDE	42	13	-50	100.00	1	0.00	0
Pallidum_L	-19	-8	17	3.36	13204	18.90	293
Paracentral_Lobule_L	-36	-44	54	2.25	153117	31.88	1349
Paracentral_Lobule_R	-36	-44	54	0.66	153117	15.03	836

Parietal_Inf_L	-36	-44	54	5.09	153117	39.83	2447
Parietal_Inf_R	-36	-44	54	1.09	153117	15.48	1345
Parietal_Sup_L	-36	-44	54	5.49	153117	50.85	2065
Parietal_Sup_R	-36	-44	54	0.68	153117	5.86	2222
Parietal_Sup_R	16	-71	59	76.60	188	0.81	2222
Parietal_Sup_R	31	-68	57	100.00	258	1.45	2222
Parietal_Sup_R	17	-54	70	93.18	88	0.46	2222
Parietal_Sup_R	13	-75	49	9.09	11	0.01	2222
Parietal_Sup_R	30	-73	47	100.00	3	0.02	2222
Postcentral_L	-36	-44	54	6.11	153117	30.06	3892
Postcentral_L	-57	6	30	0.60	2671	0.05	3892
Postcentral_R	-36	-44	54	3.38	153117	16.94	3823
Postcentral_R	72	-18	25	1.01	198	0.01	3823
Postcentral_R	62	-22	44	65.15	66	0.14	3823
Postcentral_R	17	-54	70	6.82	88	0.02	3823
Precentral_L	-36	-44	54	4.07	153117	22.11	3526
Precentral_L	-57	6	30	61.74	2671	5.85	3526
Precentral_R	-36	-44	54	6.78	153117	38.39	3381
Precuneus_L	-36	-44	54	0.10	153117	0.55	3528
Precuneus_L	-5	-50	64	100.00	275	0.97	3528
Precuneus_L	-8	-51	79	77.78	9	0.02	3528
Precuneus_R	16	-71	59	23.40	188	0.17	3265
Precuneus_R	13	-75	49	90.91	11	0.04	3265
Putamen_L	-19	-8	17	21.93	13204	35.88	1009
Putamen_L	-27	-21	-6	5.96	604	0.45	1009
Putamen_R	34	3	-5	65.22	391	3.00	1064
Rectus_L	-19	-8	17	0.01	13204	0.01	852
Rolandic_Oper_L	-36	-44	54	0.02	153117	0.34	990
Rolandic_Oper_L	-19	-8	17	0.70	13204	1.17	990
Supp_Motor_Area_L	-36	-44	54	2.28	153117	20.31	2147
Supp_Motor_Area_L	-1	12	38	10.31	640	0.38	2147
Supp_Motor_Area_R	-36	-44	54	4.46	153117	36.03	2371
Supp_Motor_Area_R	-1	12	38	0.31	640	0.01	2371
SupraMarginal_L	-36	-44	54	1.69	153117	25.74	1256
SupraMarginal_R	-36	-44	54	0.28	153117	2.75	1974
SupraMarginal_R	65	-31	18	14.34	286	0.26	1974
SupraMarginal_R	72	-18	25	68.18	198	0.85	1974
SupraMarginal_R	62	-22	44	34.85	66	0.15	1974
Temporal_Inf_L	-36	-44	54	1.14	153117	6.83	3200
Temporal_Inf_L	-33	-1	-49	10.00	20	0.01	3200
Temporal_Inf_R	42	-72	7	12.18	3842	1.64	3557
Temporal_Inf_R	46	-63	-17	10.43	4391	1.61	3557
Temporal_Inf_R	50	-6	-36	100.00	37	0.13	3557

Temporal_Mid_L	-36	-44	54	1.96	153117	7.60	4942
Temporal_Mid_L	-57	-52	8	100.00	91	0.23	4942
Temporal_Mid_R	42	-72	7	54.58	3842	5.95	4409
Temporal_Pole_Mid_L	-33	-1	-49	10.00	20	0.03	755
Temporal_Pole_Mid_L	-49	9	-30	100.00	1	0.02	755
Temporal_Pole_Sup_L	-19	-8	17	1.90	13204	2.44	1285
Temporal_Sup_L	-36	-44	54	0.06	153117	0.46	2296
Temporal_Sup_R	65	-31	18	85.66	286	0.98	3141
Thalamus_L	-19	-8	17	1.89	13204	2.83	1100
Thalamus_R	17	-9	0	86.11	72	0.73	1057
Vermis_4_5	4	-54	0	100.00	81	1.52	665

Table 35 Anatomical labelling of the activated clusters for Subject 7; fMRI session 3 (after 14th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	-45	-8	58	0.57	158109	6.39	1752
Calcarine_L	-45	-8	58	1.11	158109	9.68	2258
Calcarine_L	2	-50	-1	0.13	766	0.01	2258
Calcarine_L	-23	-67	6	100.00	11	0.06	2258
Caudate_L	-12	-6	15	59.56	868	6.72	962
Cerebelum_4_5_L	2	-50	-1	5.35	766	0.46	1125
Cerebelum_4_5_L	-27	-56	-22	4.93	223	0.12	1125
Cerebelum_4_5_R	39	-48	-26	10.47	3839	5.84	861
Cerebelum_4_5_R	29	-28	-27	27.27	11	0.04	861
Cerebelum_6_L	-45	-8	58	0.60	158109	6.99	1694
Cerebelum_6_L	-27	-56	-22	66.82	223	1.10	1694
Cerebelum_6_R	39	-48	-26	33.29	3839	8.90	1795
Cerebelum_7b_R	10	-75	-46	78.87	71	1.31	534
Cerebelum_8_R	10	-75	-46	9.86	71	0.04	2308
Cerebelum_Crus1_L	-45	-8	58	1.47	158109	11.17	2603
Cerebelum_Crus1_R	51	-65	-16	2.58	1742	0.21	2648
Cerebelum_Crus1_R	53	-52	-36	83.33	120	0.47	2648
Cerebelum_Crus2_R	53	-52	-36	16.67	120	0.12	2117
Cingulum_Mid_L	-45	-8	58	0.04	158109	0.43	1941
Cuneus_L	-45	-8	58	0.33	158109	4.24	1526
Frontal_Inf_Oper_L	-42	2	23	29.74	5165	18.50	1038
Frontal_Inf_Oper_R	60	20	5	8.11	111	0.08	1399
Frontal_Inf_Orb_R	49	33	-14	100.00	33	0.24	1707
Frontal_Inf_Orb_R	43	19	-13	72.50	40	0.21	1707
Frontal_Inf_Tri_L	-42	2	23	0.43	5165	0.11	2529
Frontal_Inf_Tri_R	60	20	5	91.89	111	0.59	2151
Frontal_Med_Orb_L	-12	51	-14	6.02	83	0.09	719
Frontal_Mid_L	-45	-8	58	0.82	158109	3.34	4863
Frontal_Mid_L	-32	40	32	82.27	1844	3.90	4863
Frontal_Mid_Orb_L	-24	48	-19	95.83	48	0.65	888
Frontal_Mid_Orb_R	33	63	-1	37.39	452	2.08	1015
Frontal_Mid_R	-45	-8	58	0.85	158109	3.28	5104
Frontal_Mid_R	40	29	45	95.52	513	1.20	5104
Frontal_Mid_R	33	63	-1	5.97	452	0.07	5104
Frontal_Mid_R	47	38	29	100.00	26	0.06	5104
Frontal_Sup_L	-45	-8	58	1.75	158109	9.63	3599
Frontal_Sup_L	-32	40	32	17.35	1844	1.11	3599
Frontal_Sup_Medial_L	-45	-8	58	0.00	158109	0.01	2992
Frontal_Sup_Orb_L	-12	51	-14	59.04	83	0.64	963

Frontal_Sup_Orb_R	33	63	-1	46.90	452	2.66	997
Frontal_Sup_R	-45	-8	58	2.37	158109	11.54	4056
Frontal_Sup_R	33	63	-1	5.09	452	0.07	4056
Fusiform_L	-45	-8	58	1.78	158109	15.27	2310
Fusiform_L	-27	-56	-22	28.25	223	0.34	2310
Fusiform_L	-42	-51	-20	79.41	68	0.29	2310
Fusiform_R	51	-65	-16	5.57	1742	0.48	2518
Fusiform_R	39	-48	-26	56.21	3839	10.71	2518
Fusiform_R	60	-1	-28	1.50	800	0.06	2518
Fusiform_R	29	-28	-27	54.55	11	0.03	2518
Heschl_R	61	-2	7	19.40	67	0.65	249
Hippocampus_R	22	-13	-12	88.89	9	0.11	946
Hippocampus_R	37	-16	-21	100.00	2	0.03	946
Hippocampus_R	35	-15	-20	100.00	1	0.01	946
Insula_L	-42	2	23	11.06	5165	3.84	1858
Insula_R	36	3	-15	10.23	391	0.28	1770
Insula_R	43	19	-13	27.50	40	0.08	1770
Lingual_L	-45	-8	58	0.76	158109	7.15	2095
Lingual_R	51	-65	-16	2.41	1742	0.23	2300
Occipital_Inf_L	-45	-8	58	3.24	158109	68.11	941
Occipital_Inf_R	-45	-8	58	0.49	158109	9.85	989
Occipital_Inf_R	51	-65	-16	23.19	1742	5.11	989
Occipital_Mid_L	-45	-8	58	10.35	158109	62.54	3270
Occipital_Mid_R	-45	-8	58	3.23	158109	30.40	2098
Occipital_Sup_L	-45	-8	58	3.19	158109	46.22	1366
Occipital_Sup_R	-45	-8	58	1.22	158109	17.04	1413
OUTSIDE	-45	-8	58	10.33	158109	0.00	0
OUTSIDE	51	-65	-16	1.26	1742	0.00	0
OUTSIDE	-42	2	23	12.16	5165	0.00	0
OUTSIDE	-32	40	32	0.38	1844	0.00	0
OUTSIDE	71	-20	25	12.31	1446	0.00	0
OUTSIDE	-12	-6	15	39.17	868	0.00	0
OUTSIDE	36	3	-15	89.26	391	0.00	0
OUTSIDE	25	-7	12	34.13	334	0.00	0
OUTSIDE	40	29	45	4.48	513	0.00	0
OUTSIDE	9	-29	-47	100.00	245	0.00	0
OUTSIDE	40	2	-50	100.00	13	0.00	0
OUTSIDE	33	63	-1	4.65	452	0.00	0
OUTSIDE	10	-75	-46	11.27	71	0.00	0
OUTSIDE	-24	48	-19	4.17	48	0.00	0
OUTSIDE	-12	51	-14	34.94	83	0.00	0
OUTSIDE	22	-13	-12	11.11	9	0.00	0
OUTSIDE	38	58	23	100.00	4	0.00	0

Paracentral_Lobule_L	-45	-8	58	0.87	158109	12.71	1349
Paracentral_Lobule_R	-45	-8	58	0.89	158109	21.11	836
ParaHippocampal_R	29	-28	-27	18.18	11	0.02	1132
Parietal_Inf_L	-45	-8	58	4.93	158109	39.84	2447
Parietal_Inf_R	-45	-8	58	1.64	158109	24.06	1345
Parietal_Sup_L	-45	-8	58	7.04	158109	67.39	2065
Parietal_Sup_R	-45	-8	58	4.17	158109	37.06	2222
Postcentral_L	-45	-8	58	4.37	158109	22.17	3892
Postcentral_L	-42	2	23	6.33	5165	1.05	3892
Postcentral_R	-45	-8	58	5.37	158109	27.77	3823
Postcentral_R	71	-20	25	9.06	1446	0.43	3823
Precentral_L	-45	-8	58	4.89	158109	27.39	3526
Precentral_L	-42	2	23	31.23	5165	5.72	3526
Precentral_R	-45	-8	58	7.35	158109	42.96	3381
Precuneus_L	-45	-8	58	0.71	158109	3.99	3528
Precuneus_R	-45	-8	58	0.03	158109	0.18	3265
Putamen_R	36	3	-15	0.51	391	0.02	1064
Putamen_R	25	-7	12	65.87	334	2.58	1064
Rolandic_Oper_L	-45	-8	58	0.06	158109	1.16	990
Rolandic_Oper_L	-42	2	23	9.06	5165	5.91	990
Rolandic_Oper_R	61	-2	7	80.60	67	0.51	1331
Supp_Motor_Area_L	-45	-8	58	3.37	158109	31.00	2147
Supp_Motor_Area_R	-45	-8	58	4.08	158109	34.00	2371
SupraMarginal_L	-45	-8	58	1.75	158109	27.50	1256
SupraMarginal_R	-45	-8	58	0.39	158109	3.95	1974
SupraMarginal_R	71	-20	25	64.11	1446	5.87	1974
Temporal_Inf_L	-45	-8	58	0.69	158109	4.25	3200
Temporal_Inf_L	-42	-51	-20	20.59	68	0.05	3200
Temporal_Inf_R	51	-65	-16	64.98	1742	3.98	3557
Temporal_Inf_R	39	-48	-26	0.03	3839	0.00	3557
Temporal_Inf_R	60	-1	-28	74.25	800	2.09	3557
Temporal_Mid_L	-45	-8	58	1.61	158109	6.43	4942
Temporal_Mid_R	-45	-8	58	0.98	158109	4.41	4409
Temporal_Mid_R	60	-1	-28	24.25	800	0.55	4409
Temporal_Mid_R	64	-13	-18	99.02	205	0.58	4409
Temporal_Pole_Sup_R	57	12	-10	100.00	5	0.05	1338
Temporal_Sup_L	-45	-8	58	0.32	158109	2.72	2296
Temporal_Sup_R	71	-20	25	14.52	1446	0.84	3141
Temporal_Sup_R	64	-13	-18	0.98	205	0.01	3141
Thalamus_L	-12	-6	15	1.27	868	0.13	1100
Vermis_4_5	2	-50	-1	94.52	766	13.61	665

Table 36 Anatomical labelling of the activated clusters for Subject 7; fMRI session 4 (after therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-34	-51	57	0.11	297103	19.15	220
Angular_L	-34	-51	57	0.00	297103	0.06	1173
Angular_R	-34	-51	57	0.69	297103	14.53	1752
Calcarine_L	-34	-51	57	1.09	297103	17.91	2258
Caudate_L	-34	-51	57	0.42	297103	16.37	962
Caudate_R	58	25	20	0.06	12466	0.10	994
Cerebelum_4_5_L	-34	-51	57	0.27	297103	8.96	1125
Cerebelum_4_5_L	-32	-28	-24	8.50	588	0.56	1125
Cerebelum_4_5_R	-34	-51	57	0.11	297103	4.92	861
Cerebelum_6_L	-34	-51	57	1.13	297103	24.69	1694
Cerebelum_6_R	-34	-51	57	0.71	297103	14.67	1795
Cerebelum_7b_R	44	-49	-44	21.93	862	4.42	534
Cerebelum_8_R	44	-49	-44	8.24	862	0.38	2308
Cerebelum_Crus1_L	-34	-51	57	0.90	297103	12.89	2603
Cerebelum_Crus1_R	-34	-51	57	0.05	297103	0.76	2648
Cerebelum_Crus1_R	44	-49	-44	1.62	862	0.07	2648
Cerebelum_Crus2_L	-34	-51	57	0.00	297103	0.05	1894
Cerebelum_Crus2_R	44	-49	-44	67.98	862	3.46	2117
Cingulum_Ant_L	-2	12	32	0.47	212	0.01	1400
Cingulum_Ant_L	-10	44	-4	70.72	543	3.43	1400
Cingulum_Ant_L	9	42	17	30.99	171	0.47	1400
Cingulum_Ant_R	9	42	17	69.01	171	1.12	1313
Cingulum_Mid_L	-34	-51	57	0.04	297103	0.77	1941
Cingulum_Mid_L	-2	12	32	92.92	212	1.27	1941
Cingulum_Mid_R	-34	-51	57	0.25	297103	4.19	2203
Cingulum_Mid_R	-2	12	32	6.60	212	0.08	2203
Cuneus_L	-34	-51	57	0.12	297103	2.82	1526
Cuneus_R	-34	-51	57	0.00	297103	0.01	1424
Frontal_Inf_Oper_L	-34	-51	57	0.84	297103	29.88	1038
Frontal_Inf_Oper_R	-34	-51	57	0.02	297103	0.49	1399
Frontal_Inf_Oper_R	50	5	4	7.78	167	0.12	1399
Frontal_Inf_Orb_L	-34	-51	57	0.13	297103	2.97	1690
Frontal_Inf_Orb_L	-26	35	-14	28.57	14	0.03	1690
Frontal_Inf_Orb_R	58	25	20	25.88	12466	23.62	1707
Frontal_Inf_Tri_L	-34	-51	57	0.33	297103	4.82	2529
Frontal_Inf_Tri_L	-38	42	24	7.74	6089	2.33	2529
Frontal_Inf_Tri_L	-41	31	11	100.00	57	0.28	2529
Frontal_Inf_Tri_R	-34	-51	57	0.02	297103	0.40	2151
Frontal_Inf_Tri_R	58	25	20	27.92	12466	20.23	2151

Frontal_Inf_Tri_R	51	21	6	100.00	5	0.03	2151
Frontal_Med_Orb_L	-10	44	-4	16.76	543	1.58	719
Frontal_Med_Orb_R	58	25	20	4.60	12466	8.38	856
Frontal_Mid_L	-34	-51	57	0.40	297103	3.02	4863
Frontal_Mid_L	-38	42	24	85.61	6089	13.40	4863
Frontal_Mid_L	-42	31	43	80.00	90	0.19	4863
Frontal_Mid_L	-24	28	41	89.13	46	0.11	4863
Frontal_Mid_Orb_L	-26	35	-14	71.43	14	0.14	888
Frontal_Mid_Orb_R	58	25	20	3.75	12466	5.76	1015
Frontal_Mid_R	-34	-51	57	2.98	297103	21.66	5104
Frontal_Mid_R	58	25	20	8.38	12466	2.56	5104
Frontal_Mid_R	37	60	23	51.52	297	0.37	5104
Frontal_Mid_R	9	60	23	15.19	1343	0.50	5104
Frontal_Sup_L	-34	-51	57	1.14	297103	11.80	3599
Frontal_Sup_L	-38	42	24	1.10	6089	0.23	3599
Frontal_Sup_L	-24	28	41	10.87	46	0.02	3599
Frontal_Sup_L	-15	42	58	3.51	57	0.01	3599
Frontal_Sup_Medial_L	9	60	23	0.37	1343	0.02	2992
Frontal_Sup_Medial_L	1	59	9	50.00	10	0.02	2992
Frontal_Sup_Medial_L	0	40	50	96.15	26	0.10	2992
Frontal_Sup_Medial_L	0	31	39	100.00	70	0.29	2992
Frontal_Sup_Medial_L	-9	58	3	100.00	2	0.01	2992
Frontal_Sup_Medial_R	58	25	20	0.02	12466	0.02	2134
Frontal_Sup_Medial_R	9	60	23	53.02	1343	4.17	2134
Frontal_Sup_Medial_R	9	56	44	69.69	287	1.17	2134
Frontal_Sup_Medial_R	1	59	9	30.00	10	0.02	2134
Frontal_Sup_Orb_R	58	25	20	4.73	12466	7.40	997
Frontal_Sup_R	-34	-51	57	2.44	297103	22.35	4056
Frontal_Sup_R	58	25	20	0.02	12466	0.01	4056
Frontal_Sup_R	37	60	23	0.67	297	0.01	4056
Frontal_Sup_R	9	60	23	31.42	1343	1.30	4056
Fusiform_L	-34	-51	57	1.57	297103	25.32	2310
Fusiform_L	-32	-28	-24	77.38	588	2.46	2310
Fusiform_L	-34	-1	-41	17.86	28	0.03	2310
Fusiform_R	-34	-51	57	1.23	297103	18.08	2518
Hippocampus_L	-34	-51	57	0.20	297103	7.93	932
Hippocampus_R	-34	-51	57	0.03	297103	1.03	946
Insula_L	-34	-51	57	1.90	297103	38.00	1858
Insula_R	58	25	20	6.69	12466	5.89	1770
Insula_R	50	5	4	30.54	167	0.36	1770
Insula_R	32	5	9	21.34	328	0.49	1770
Lingual_L	-34	-51	57	2.41	297103	42.75	2095
Lingual_R	-34	-51	57	0.00	297103	0.02	2300

Occipital_Inf_L	-34	-51	57	1.60	297103	63.22	941
Occipital_Inf_R	-34	-51	57	0.23	297103	8.49	989
Occipital_Inf_R	37	-91	-12	100.00	4	0.05	989
Occipital_Mid_L	-34	-51	57	5.48	297103	62.21	3270
Occipital_Mid_R	-34	-51	57	2.01	297103	35.59	2098
Occipital_Sup_L	-34	-51	57	1.78	297103	48.47	1366
Occipital_Sup_R	-34	-51	57	1.25	297103	32.91	1413
Olfactory_L	-34	-51	57	0.00	297103	0.09	280
OUTSIDE	-34	-51	57	13.74	297103	0.00	0
OUTSIDE	-38	42	24	5.55	6089	0.00	0
OUTSIDE	58	25	20	16.76	12466	0.00	0
OUTSIDE	50	-3	-34	3.53	680	0.00	0
OUTSIDE	37	60	23	47.81	297	0.00	0
OUTSIDE	9	56	44	30.31	287	0.00	0
OUTSIDE	44	-49	-44	0.23	862	0.00	0
OUTSIDE	-3	-20	-25	100.00	1098	0.00	0
OUTSIDE	21	-11	-5	76.40	394	0.00	0
OUTSIDE	-42	31	43	20.00	90	0.00	0
OUTSIDE	32	5	9	10.06	328	0.00	0
OUTSIDE	-10	44	-4	12.52	543	0.00	0
OUTSIDE	-4	-16	-5	74.74	665	0.00	0
OUTSIDE	-21	53	44	100.00	95	0.00	0
OUTSIDE	43	17	-45	23.53	17	0.00	0
OUTSIDE	-15	42	58	96.49	57	0.00	0
OUTSIDE	1	59	9	20.00	10	0.00	0
OUTSIDE	0	40	50	3.85	26	0.00	0
OUTSIDE	-15	21	27	100.00	98	0.00	0
OUTSIDE	-21	29	2	100.00	36	0.00	0
OUTSIDE	23	5	23	100.00	6	0.00	0
OUTSIDE	-21	28	7	100.00	1	0.00	0
OUTSIDE	41	17	62	100.00	1	0.00	0
Pallidum_L	-34	-51	57	0.01	297103	1.28	293
Pallidum_L	-4	-16	-5	2.71	665	0.77	293
Pallidum_R	21	-11	-5	15.48	394	2.72	280
Paracentral_Lobule_L	-34	-51	57	1.24	297103	34.22	1349
Paracentral_Lobule_R	-34	-51	57	0.94	297103	41.60	836
ParaHippocampal_L	-32	-28	-24	14.12	588	1.06	978
ParaHippocampal_R	-34	-51	57	0.08	297103	2.65	1132
Parietal_Inf_L	-34	-51	57	3.74	297103	56.82	2447
Parietal_Inf_R	-34	-51	57	1.32	297103	36.55	1345
Parietal_Sup_L	-34	-51	57	4.23	297103	76.05	2065
Parietal_Sup_R	-34	-51	57	3.64	297103	60.79	2222
Postcentral_L	-34	-51	57	2.90	297103	27.64	3892

Postcentral_R	-34	-51	57	4.84	297103	47.01	3823
Precentral_L	-34	-51	57	5.91	297103	62.24	3526
Precentral_R	-34	-51	57	5.56	297103	61.10	3381
Precuneus_L	-34	-51	57	1.98	297103	20.89	3528
Precuneus_R	-34	-51	57	0.53	297103	6.06	3265
Putamen_L	-34	-51	57	0.44	297103	16.17	1009
Putamen_R	58	25	20	1.07	12466	1.56	1064
Putamen_R	32	5	9	68.60	328	2.64	1064
Putamen_R	33	-7	-2	100.00	13	0.15	1064
Putamen_R	33	-3	2	100.00	23	0.27	1064
Rolandic_Oper_L	-34	-51	57	0.19	297103	7.26	990
Rolandic_Oper_R	50	5	4	61.68	167	0.97	1331
Rolandic_Oper_R	62	-16	12	63.64	33	0.20	1331
Rolandic_Oper_R	55	-6	10	100.00	21	0.20	1331
Supp_Motor_Area_L	-34	-51	57	2.50	297103	43.19	2147
Supp_Motor_Area_R	-34	-51	57	3.30	297103	51.71	2371
SupraMarginal_L	-34	-51	57	1.53	297103	45.16	1256
SupraMarginal_R	-34	-51	57	1.16	297103	21.84	1974
Temporal_Inf_L	-34	-51	57	0.64	297103	7.42	3200
Temporal_Inf_L	-34	-1	-41	78.57	28	0.09	3200
Temporal_Inf_R	-34	-51	57	1.53	297103	15.98	3557
Temporal_Inf_R	50	-3	-34	57.65	680	1.38	3557
Temporal_Mid_L	-34	-51	57	1.04	297103	7.84	4942
Temporal_Mid_R	-34	-51	57	2.06	297103	17.35	4409
Temporal_Mid_R	50	-3	-34	31.03	680	0.60	4409
Temporal_Mid_R	58	-3	-8	2.68	485	0.04	4409
Temporal_Mid_R	67	-18	-15	100.00	87	0.25	4409
Temporal_Pole_Mid_L	-34	-1	-41	3.57	28	0.02	755
Temporal_Pole_Mid_R	50	-3	-34	7.79	680	0.56	1187
Temporal_Pole_Mid_R	43	17	-45	76.47	17	0.14	1187
Temporal_Pole_Sup_L	-34	-51	57	0.19	297103	5.35	1285
Temporal_Pole_Sup_R	58	25	20	0.10	12466	0.12	1338
Temporal_Pole_Sup_R	58	-3	-8	7.63	485	0.35	1338
Temporal_Sup_L	-34	-51	57	0.20	297103	3.22	2296
Temporal_Sup_R	-34	-51	57	0.27	297103	3.22	3141
Temporal_Sup_R	58	-3	-8	89.69	485	1.73	3141
Temporal_Sup_R	62	-16	12	36.36	33	0.05	3141
Thalamus_L	-34	-51	57	0.12	297103	4.19	1100
Thalamus_L	-4	-16	-5	22.56	665	1.70	1100
Thalamus_R	-34	-51	57	0.00	297103	0.08	1057
Thalamus_R	21	-11	-5	8.12	394	0.38	1057
Vermis_4_5	-34	-51	57	0.23	297103	13.12	665
Vermis_6	-34	-51	57	0.03	297103	3.34	371

Table 37 Anatomical labelling of the activated clusters for Subject 8; fMRI session 1 (before therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Temporal_Mid_R	45	-70	2	66.3705	1463	2.7529	4409
Occipital_Mid_R	45	-70	2	20.9159	1463	1.8232	2098
OUTSIDE	45	-70	2	11.3465	1463	0	0
Temporal_Inf_R	45	-70	2	1.3671	1463	0.0703	3557

Table 38 Anatomical labelling of the activated clusters for Subject 8; fMRI session 2 (after 7th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	-31	-30	51	0.12	162089	1.43	1752
Calcarine_L	-31	-30	51	0.99	162089	8.90	2258
Calcarine_R	-31	-30	51	2.06	162089	22.40	1861
Cerebelum_10_R	27	-43	-46	13.04	46	0.47	159
Cerebelum_4_5_L	-31	-30	51	0.00	162089	0.02	1125
Cerebelum_4_5_L	0	-42	-5	0.58	172	0.01	1125
Cerebelum_6_L	-31	-30	51	0.54	162089	6.46	1694
Cerebelum_6_R	-31	-30	51	1.29	162089	14.53	1795
Cerebelum_7b_R	46	-54	-49	26.87	629	3.96	534
Cerebelum_8_L	-24	-38	-50	100.00	13	0.09	1887
Cerebelum_8_R	46	-54	-49	7.15	629	0.24	2308
Cerebelum_8_R	27	-43	-46	86.96	46	0.22	2308
Cerebelum_Crus1_L	-31	-30	51	1.68	162089	13.08	2603
Cerebelum_Crus1_R	-31	-30	51	1.81	162089	13.81	2648
Cerebelum_Crus2_R	-31	-30	51	0.00	162089	0.01	2117
Cerebelum_Crus2_R	46	-54	-49	65.98	629	2.45	2117
Cingulum_Ant_L	-31	-30	51	0.00	162089	0.01	1400
Cingulum_Mid_L	-31	-30	51	1.52	162089	15.86	1941
Cingulum_Mid_R	-31	-30	51	0.31	162089	2.82	2203
Cingulum_Mid_R	11	-11	47	45.30	117	0.30	2203
Cuneus_L	-31	-79	28	1.80	1503	0.22	1526
Cuneus_R	-31	-30	51	0.18	162089	2.58	1424
Frontal_Inf_Oper_L	-59	13	7	43.96	3139	16.62	1038
Frontal_Inf_Oper_R	60	9	0	43.39	1982	7.68	1399
Frontal_Inf_Oper_R	63	20	25	69.70	99	0.62	1399
Frontal_Inf_Orb_L	-47	39	-11	100.00	189	1.40	1690
Frontal_Inf_Tri_L	-59	13	7	26.73	3139	4.15	2529
Frontal_Inf_Tri_L	-36	45	19	7.03	3001	1.04	2529
Frontal_Inf_Tri_R	42	48	6	4.51	2329	0.61	2151
Frontal_Inf_Tri_R	63	20	25	29.29	99	0.17	2151
Frontal_Mid_L	-36	45	19	91.57	3001	7.06	4863
Frontal_Mid_R	-31	-30	51	0.02	162089	0.07	5104
Frontal_Mid_R	42	48	6	91.16	2329	5.20	5104
Frontal_Mid_R	27	37	20	17.23	325	0.14	5104
Frontal_Mid_R	37	39	32	100.00	352	0.86	5104
Frontal_Sup_L	-31	-30	51	0.94	162089	5.28	3599
Frontal_Sup_R	-31	-30	51	0.94	162089	4.68	4056
Frontal_Sup_R	27	37	20	3.69	325	0.04	4056
Fusiform_L	-31	-30	51	0.50	162089	4.39	2310

Fusiform_R	-31	-30	51	2.00	162089	16.05	2518
Heschl_L	-31	-30	51	0.00	162089	0.17	225
Heschl_R	-31	-30	51	0.04	162089	3.61	249
Lingual_L	-31	-30	51	1.24	162089	11.97	2095
Lingual_R	-31	-30	51	2.24	162089	19.76	2300
Occipital_Inf_L	-31	-30	51	1.66	162089	35.71	941
Occipital_Inf_R	-31	-30	51	2.68	162089	54.93	989
Occipital_Mid_L	-31	-30	51	2.59	162089	16.07	3270
Occipital_Mid_L	-31	-79	28	75.45	1503	4.33	3270
Occipital_Mid_R	-31	-30	51	1.26	162089	12.19	2098
Occipital_Mid_R	32	-76	35	100.00	99	0.59	2098
Occipital_Sup_L	-31	-79	28	19.43	1503	2.67	1366
Occipital_Sup_R	-31	-30	51	0.04	162089	0.64	1413
OUTSIDE	-31	-30	51	9.48	162089	0.00	0
OUTSIDE	5	-50	61	1.94	566	0.00	0
OUTSIDE	60	9	0	2.32	1982	0.00	0
OUTSIDE	-59	13	7	2.64	3139	0.00	0
OUTSIDE	-36	45	19	1.40	3001	0.00	0
OUTSIDE	-31	-79	28	3.33	1503	0.00	0
OUTSIDE	42	48	6	4.34	2329	0.00	0
OUTSIDE	0	-42	-5	1.74	172	0.00	0
OUTSIDE	63	20	25	1.01	99	0.00	0
OUTSIDE	-3	-11	7	8.81	159	0.00	0
OUTSIDE	27	37	20	79.08	325	0.00	0
OUTSIDE	-19	14	73	100.00	4	0.00	0
OUTSIDE	1	-49	74	50.00	2	0.00	0
OUTSIDE	53	-37	-11	100.00	1	0.00	0
Paracentral_Lobule_L	-31	-30	51	1.39	162089	20.91	1349
Paracentral_Lobule_R	5	-50	61	2.12	566	0.18	836
Paracentral_Lobule_R	13	-40	80	0.97	103	0.01	836
Parietal_Inf_L	-31	-30	51	2.81	162089	23.26	2447
Parietal_Inf_R	-31	-30	51	2.14	162089	32.17	1345
Parietal_Sup_L	-31	-30	51	3.85	162089	37.79	2065
Parietal_Sup_R	-31	-30	51	2.08	162089	18.94	2222
Postcentral_L	-31	-30	51	10.01	162089	52.12	3892
Postcentral_L	-59	13	7	0.03	3139	0.00	3892
Postcentral_R	-31	-30	51	7.89	162089	41.84	3823
Postcentral_R	13	-40	80	99.03	103	0.33	3823
Precentral_L	-31	-30	51	4.52	162089	25.95	3526
Precentral_L	-59	13	7	22.30	3139	2.48	3526
Precentral_R	-31	-30	51	5.95	162089	35.64	3381
Precentral_R	60	9	0	2.17	1982	0.16	3381
Precentral_R	55	5	36	100.00	137	0.51	3381

Precuneus_L	-31	-30	51	1.49	162089	8.57	3528
Precuneus_L	-4	-69	54	100.00	47	0.17	3528
Precuneus_R	-31	-30	51	0.01	162089	0.03	3265
Precuneus_R	5	-50	61	95.94	566	2.08	3265
Precuneus_R	1	-49	74	50.00	2	0.00	3265
Rolandic_Oper_L	-31	-30	51	0.01	162089	0.21	990
Rolandic_Oper_L	-59	13	7	4.30	3139	1.70	990
Rolandic_Oper_L	-44	-29	18	88.89	54	0.61	990
Rolandic_Oper_R	-31	-30	51	0.78	162089	11.92	1331
Rolandic_Oper_R	60	9	0	31.84	1982	5.93	1331
Rolandic_Oper_R	51	-3	9	100.00	29	0.27	1331
Supp_Motor_Area_L	-31	-30	51	3.00	162089	28.30	2147
Supp_Motor_Area_R	-31	-30	51	0.33	162089	2.81	2371
Supp_Motor_Area_R	11	-11	47	54.70	117	0.34	2371
Supp_Motor_Area_R	5	4	56	100.00	23	0.12	2371
SupraMarginal_L	-31	-30	51	2.02	162089	32.51	1256
SupraMarginal_R	-31	-30	51	1.64	162089	16.84	1974
Temporal_Inf_L	-31	-30	51	1.22	162089	7.73	3200
Temporal_Inf_R	-31	-30	51	2.86	162089	16.28	3557
Temporal_Mid_L	-31	-30	51	1.03	162089	4.24	4942
Temporal_Mid_R	-31	-30	51	5.26	162089	24.17	4409
Temporal_Pole_Sup_L	-59	13	7	0.03	3139	0.01	1285
Temporal_Pole_Sup_R	60	9	0	20.03	1982	3.71	1338
Temporal_Sup_L	-31	-30	51	0.32	162089	2.83	2296
Temporal_Sup_L	-44	-29	18	11.11	54	0.03	2296
Temporal_Sup_R	-31	-30	51	2.76	162089	17.83	3141
Temporal_Sup_R	60	9	0	0.25	1982	0.02	3141
Thalamus_L	-3	-11	7	91.20	159	1.65	1100
Vermis_3	0	-42	-5	51.16	172	4.82	228
Vermis_4_5	-31	-30	51	0.00	162089	0.08	665
Vermis_4_5	0	-42	-5	46.51	172	1.50	665
Vermis_6	-31	-30	51	0.42	162089	23.01	371
Vermis_7	-31	-30	51	0.08	162089	8.38	194

Table 39 Anatomical labelling of the activated clusters for Subject 8; fMRI session 3 (after 14th therapy session)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-34	-24	49	0.01	376807	1.53	220
Amygdala_R	18	-14	-15	0.52	1144	0.30	248
Angular_L	-34	-24	49	0.07	376807	2.65	1173
Angular_R	-34	-24	49	0.15	376807	4.08	1752
Calcarine_L	-34	-24	49	1.58	376807	33.05	2258
Calcarine_L	-14	-69	17	65.28	985	3.56	2258
Calcarine_R	-34	-24	49	2.20	376807	55.62	1861
Caudate_L	-13	-1	13	33.33	99	0.43	962
Caudate_L	-20	6	18	12.50	24	0.04	962
Caudate_R	-34	-24	49	0.07	376807	3.37	994
Cerebelum_4_5_L	-10	-37	2	6.11	851	0.58	1125
Cerebelum_6_L	-34	-24	49	0.40	376807	11.09	1694
Cerebelum_6_R	-34	-24	49	0.41	376807	10.82	1795
Cerebelum_7b_L	-34	-67	-49	61.43	210	2.76	585
Cerebelum_7b_L	-30	-37	-42	100.00	3	0.06	585
Cerebelum_7b_R	47	-51	-50	28.84	742	5.01	534
Cerebelum_8_L	-34	-24	49	0.02	376807	0.48	1887
Cerebelum_8_L	-34	-67	-49	6.19	210	0.09	1887
Cerebelum_8_L	-32	-38	-42	100.00	1	0.01	1887
Cerebelum_8_R	47	-51	-50	11.59	742	0.47	2308
Cerebelum_Crus1_L	-34	-24	49	0.96	376807	17.36	2603
Cerebelum_Crus1_L	-53	-51	-42	76.92	26	0.10	2603
Cerebelum_Crus1_R	-34	-24	49	0.46	376807	8.10	2648
Cerebelum_Crus1_R	47	-51	-50	0.40	742	0.01	2648
Cerebelum_Crus2_L	-34	-24	49	0.06	376807	1.57	1894
Cerebelum_Crus2_L	-53	-51	-42	23.08	26	0.04	1894
Cerebelum_Crus2_L	-34	-67	-49	32.38	210	0.45	1894
Cerebelum_Crus2_R	47	-51	-50	59.16	742	2.59	2117
Cerebelum_Crus2_R	41	-72	-48	100.00	26	0.15	2117
Cingulum_Ant_L	-34	-24	49	0.13	376807	4.22	1400
Cingulum_Ant_R	-34	-24	49	0.13	376807	4.83	1313
Cingulum_Mid_L	-34	-24	49	1.30	376807	31.51	1941
Cingulum_Mid_R	-34	-24	49	1.59	376807	33.91	2203
Cingulum_Post_L	-10	-37	2	0.12	851	0.03	463
Cuneus_L	-34	-24	49	0.74	376807	22.72	1526
Cuneus_L	-14	-69	17	21.93	985	1.77	1526
Cuneus_R	-34	-24	49	1.25	376807	41.31	1424
Frontal_Inf_Oper_L	-34	-24	49	0.85	376807	38.78	1038
Frontal_Inf_Oper_L	-54	14	-3	12.44	209	0.31	1038

Frontal_Inf_Oper_R	-34	-24	49	1.20	376807	40.49	1399
Frontal_Inf_Orb_L	-42	43	-15	69.69	2019	10.41	1690
Frontal_Inf_Orb_L	-55	28	0	4.25	588	0.18	1690
Frontal_Inf_Orb_R	-34	-24	49	0.01	376807	0.18	1707
Frontal_Inf_Orb_R	-42	46	16	0.74	25109	1.35	1707
Frontal_Inf_Orb_R	41	46	-13	44.06	143	0.46	1707
Frontal_Inf_Orb_R	34	38	-22	8.33	12	0.01	1707
Frontal_Inf_Tri_L	-34	-24	49	0.17	376807	3.12	2529
Frontal_Inf_Tri_L	-42	46	16	2.62	25109	3.26	2529
Frontal_Inf_Tri_L	-42	43	-15	1.04	2019	0.10	2529
Frontal_Inf_Tri_L	-55	28	0	95.75	588	2.78	2529
Frontal_Inf_Tri_L	-54	14	-3	20.57	209	0.21	2529
Frontal_Inf_Tri_L	-39	15	23	100.00	1	0.00	2529
Frontal_Inf_Tri_R	-34	-24	49	0.07	376807	1.60	2151
Frontal_Inf_Tri_R	-42	46	16	5.91	25109	8.63	2151
Frontal_Mid_L	-34	-24	49	0.06	376807	0.61	4863
Frontal_Mid_L	-42	46	16	27.40	25109	17.68	4863
Frontal_Mid_L	-20	15	54	1.98	101	0.01	4863
Frontal_Mid_Orb_L	-42	43	-15	25.31	2019	7.19	888
Frontal_Mid_Orb_R	41	46	-13	55.94	143	0.99	1015
Frontal_Mid_R	-34	-24	49	0.78	376807	7.19	5104
Frontal_Mid_R	-42	46	16	19.98	25109	12.29	5104
Frontal_Sup_L	-34	-24	49	0.69	376807	8.97	3599
Frontal_Sup_L	-42	46	16	13.63	25109	11.89	3599
Frontal_Sup_L	-20	15	54	98.02	101	0.34	3599
Frontal_Sup_Medial_L	-34	-24	49	0.04	376807	0.60	2992
Frontal_Sup_Medial_L	-42	46	16	12.47	25109	13.08	2992
Frontal_Sup_Medial_L	-5	47	30	100.00	2	0.01	2992
Frontal_Sup_Medial_R	-34	-24	49	0.01	376807	0.28	2134
Frontal_Sup_Medial_R	-42	46	16	7.49	25109	11.01	2134
Frontal_Sup_Medial_R	14	66	9	54.05	259	0.82	2134
Frontal_Sup_R	-34	-24	49	1.82	376807	21.11	4056
Frontal_Sup_R	-42	46	16	2.53	25109	1.96	4056
Frontal_Sup_R	14	66	9	42.86	259	0.34	4056
Frontal_Sup_R	23	22	57	100.00	22	0.07	4056
Fusiform_L	-34	-24	49	1.28	376807	26.13	2310
Fusiform_R	-34	-24	49	1.15	376807	21.59	2518
Heschl_L	-34	-24	49	0.00	376807	0.83	225
Heschl_R	-34	-24	49	0.03	376807	4.82	249
Hippocampus_L	-34	-24	49	0.15	376807	7.39	932
Hippocampus_L	-10	-37	2	16.69	851	1.90	932
Hippocampus_R	18	-14	-15	38.46	1144	5.81	946
Insula_L	-34	-24	49	0.14	376807	3.53	1858

Insula_R	-34	-24	49	0.26	376807	6.92	1770
Lingual_L	-34	-24	49	0.93	376807	20.94	2095
Lingual_L	-10	-37	2	28.55	851	1.45	2095
Lingual_R	-34	-24	49	2.23	376807	45.66	2300
Lingual_R	-10	-37	2	0.47	851	0.02	2300
Lingual_R	12	-37	-2	50.70	570	1.57	2300
Occipital_Inf_L	-34	-24	49	1.28	376807	64.27	941
Occipital_Inf_R	-34	-24	49	1.54	376807	73.33	989
Occipital_Mid_L	-34	-24	49	2.83	376807	40.74	3270
Occipital_Mid_R	-34	-24	49	2.81	376807	63.13	2098
Occipital_Sup_L	-34	-24	49	0.19	376807	6.67	1366
Occipital_Sup_L	-14	-69	17	1.93	985	0.17	1366
Occipital_Sup_L	-20	-98	33	11.54	104	0.11	1366
Occipital_Sup_R	-34	-24	49	1.10	376807	36.82	1413
OUTSIDE	-34	-24	49	10.16	376807	0.00	0
OUTSIDE	-42	46	16	7.22	25109	0.00	0
OUTSIDE	-10	-37	2	32.55	851	0.00	0
OUTSIDE	-14	-69	17	9.04	985	0.00	0
OUTSIDE	-42	43	-15	3.96	2019	0.00	0
OUTSIDE	18	-14	-15	61.01	1144	0.00	0
OUTSIDE	12	-37	-2	33.51	570	0.00	0
OUTSIDE	-67	-11	-24	16.34	918	0.00	0
OUTSIDE	-54	14	-3	37.32	209	0.00	0
OUTSIDE	14	66	9	3.09	259	0.00	0
OUTSIDE	-22	-24	8	82.98	47	0.00	0
OUTSIDE	-43	16	-50	100.00	22	0.00	0
OUTSIDE	65	-45	37	13.48	89	0.00	0
OUTSIDE	-13	-1	13	66.67	99	0.00	0
OUTSIDE	-20	-98	33	88.46	104	0.00	0
OUTSIDE	49	-17	-25	33.33	15	0.00	0
OUTSIDE	34	38	-22	91.67	12	0.00	0
OUTSIDE	-20	6	18	87.50	24	0.00	0
OUTSIDE	0	-18	9	20.00	15	0.00	0
Pallidum_L	-34	-24	49	0.09	376807	14.85	293
Pallidum_R	-34	-24	49	0.19	376807	32.01	280
Paracentral_Lobule_L	-34	-24	49	0.81	376807	28.31	1349
Paracentral_Lobule_R	-34	-24	49	1.15	376807	64.79	836
ParaHippocampal_L	-34	-24	49	0.00	376807	0.01	978
ParaHippocampal_R	-34	-24	49	0.00	376807	0.13	1132
ParaHippocampal_R	12	-37	-2	1.75	570	0.11	1132
Parietal_Inf_L	-34	-24	49	1.99	376807	38.36	2447
Parietal_Inf_R	-34	-24	49	1.25	376807	43.82	1345
Parietal_Sup_L	-34	-24	49	2.35	376807	53.66	2065

Parietal_Sup_R	-34	-24	49	3.17	376807	67.13	2222
Postcentral_L	-34	-24	49	5.89	376807	71.25	3892
Postcentral_R	-34	-24	49	5.73	376807	70.57	3823
Precentral_L	-34	-24	49	3.77	376807	50.32	3526
Precentral_R	-34	-24	49	5.61	376807	78.12	3381
Precuneus_L	-34	-24	49	2.19	376807	29.28	3528
Precuneus_L	-10	-37	2	12.22	851	0.37	3528
Precuneus_L	-14	-69	17	1.83	985	0.06	3528
Precuneus_R	-34	-24	49	1.75	376807	25.29	3265
Precuneus_R	12	-37	-2	4.74	570	0.10	3265
Putamen_L	-34	-24	49	0.13	376807	6.01	1009
Putamen_R	-34	-24	49	0.45	376807	19.71	1064
Rolandic_Oper_L	-34	-24	49	0.60	376807	28.59	990
Rolandic_Oper_R	-34	-24	49	1.46	376807	51.74	1331
Supp_Motor_Area_L	-34	-24	49	2.60	376807	56.95	2147
Supp_Motor_Area_R	-34	-24	49	2.87	376807	56.94	2371
SupraMarginal_L	-34	-24	49	0.95	376807	35.58	1256
SupraMarginal_R	-34	-24	49	0.70	376807	16.70	1974
SupraMarginal_R	65	-45	37	86.52	89	0.49	1974
SupraMarginal_R	57	-30	30	100.00	1	0.01	1974
Temporal_Inf_L	-34	-24	49	0.93	376807	13.66	3200
Temporal_Inf_L	-67	-11	-24	8.17	918	0.29	3200
Temporal_Inf_R	-34	-24	49	1.75	376807	23.19	3557
Temporal_Inf_R	49	-17	-25	66.67	15	0.04	3557
Temporal_Mid_L	-34	-24	49	2.36	376807	22.52	4942
Temporal_Mid_L	-67	-11	-24	75.16	918	1.75	4942
Temporal_Mid_L	-61	-25	-13	100.00	20	0.05	4942
Temporal_Mid_R	-34	-24	49	3.44	376807	36.74	4409
Temporal_Mid_R	61	-13	-23	100.00	84	0.24	4409
Temporal_Pole_Mid_L	-67	-11	-24	0.33	918	0.05	755
Temporal_Pole_Sup_L	-54	14	-3	29.67	209	0.60	1285
Temporal_Pole_Sup_R	-34	-24	49	0.15	376807	5.43	1338
Temporal_Sup_L	-34	-24	49	0.82	376807	16.91	2296
Temporal_Sup_R	-34	-24	49	1.21	376807	18.16	3141
Thalamus_L	-34	-24	49	0.00	376807	0.03	1100
Thalamus_L	-10	-37	2	3.29	851	0.32	1100
Thalamus_L	-22	-24	8	17.02	47	0.09	1100
Thalamus_L	0	-18	9	26.67	15	0.05	1100
Thalamus_R	-34	-24	49	0.19	376807	8.37	1057
Thalamus_R	12	-37	-2	9.30	570	0.63	1057
Thalamus_R	0	-18	9	53.33	15	0.09	1057
Vermis_6	-34	-24	49	0.14	376807	17.22	371

Table 40 Anatomical labelling of the activated clusters for Subject 8; fMRI session 4 (after therapy)

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	18	-79	58	0.77	2457	0.14	1752
Calcarine_L	11	-84	-8	48.00	1202	3.19	2258
Calcarine_L	-8	-100	-4	97.10	69	0.37	2258
Calcarine_L	-7	-86	-9	11.32	53	0.03	2258
Calcarine_R	11	-84	-8	1.16	1202	0.09	1861
Calcarine_R	15	-49	3	18.62	435	0.54	1861
Calcarine_R	17	-85	3	100.00	38	0.26	1861
Cerebelum_10_L	-24	-36	-46	81.48	27	1.91	144
Cerebelum_6_L	-21	-89	-24	1.68	416	0.05	1694
Cerebelum_6_R	54	-58	-13	0.12	6464	0.06	1795
Cerebelum_6_R	12	-92	-19	3.02	497	0.10	1795
Cerebelum_8_L	-24	-36	-46	18.52	27	0.03	1887
Cerebelum_Crus1_L	-21	-89	-24	90.38	416	1.81	2603
Cerebelum_Crus1_R	12	-92	-19	52.52	497	1.23	2648
Cerebelum_Crus1_R	47	-53	-40	8.70	23	0.01	2648
Cerebelum_Crus1_R	38	-79	-22	100.00	11	0.05	2648
Cerebelum_Crus2_L	-21	-89	-24	0.96	416	0.03	1894
Cerebelum_Crus2_R	43	-71	-44	100.00	22	0.13	2117
Cerebelum_Crus2_R	47	-53	-40	91.30	23	0.12	2117
Cingulum_Ant_L	-2	-6	35	0.26	1929	0.04	1400
Cingulum_Mid_L	-2	-6	35	57.54	1929	7.15	1941
Cingulum_Mid_L	-9	12	42	48.61	216	0.68	1941
Cingulum_Mid_L	-14	-28	51	50.00	2	0.01	1941
Cingulum_Mid_R	-32	-25	50	0.02	30954	0.04	2203
Cingulum_Mid_R	-2	-6	35	40.95	1929	4.48	2203
Frontal_Inf_Oper_R	46	1	18	24.41	1151	2.51	1399
Frontal_Inf_Oper_R	62	19	8	65.82	79	0.46	1399
Frontal_Inf_Orb_L	-42	49	-12	50.00	50	0.18	1690
Frontal_Inf_Orb_R	53	41	-1	3.50	286	0.07	1707
Frontal_Inf_Orb_R	45	46	-17	17.81	73	0.10	1707
Frontal_Inf_Tri_L	-55	29	10	95.59	68	0.32	2529
Frontal_Inf_Tri_R	53	41	-1	96.15	286	1.60	2151
Frontal_Inf_Tri_R	62	19	8	34.18	79	0.16	2151
Frontal_Mid_L	-32	-25	50	0.04	30954	0.03	4863
Frontal_Mid_L	-31	34	48	100.00	10	0.03	4863
Frontal_Mid_Orb_L	-42	49	-12	50.00	50	0.35	888
Frontal_Mid_Orb_R	45	46	-17	79.45	73	0.71	1015
Frontal_Mid_Orb_R	46	56	-2	100.00	3	0.04	1015
Frontal_Mid_Orb_R	45	57	-3	100.00	1	0.01	1015

Frontal_Mid_R	-32	-25	50	0.16	30954	0.12	5104
Frontal_Mid_R	53	41	-1	0.35	286	0.00	5104
Frontal_Mid_R	47	46	17	100.00	424	1.04	5104
Frontal_Sup_L	-32	-25	50	3.48	30954	3.74	3599
Frontal_Sup_L	-5	-15	85	4.55	462	0.07	3599
Frontal_Sup_L	-9	12	42	2.78	216	0.02	3599
Frontal_Sup_L	-18	43	49	72.73	55	0.14	3599
Frontal_Sup_L	-18	17	58	100.00	19	0.07	3599
Frontal_Sup_Medial_R	12	44	48	80.77	26	0.12	2134
Frontal_Sup_R	-32	-25	50	9.11	30954	8.69	4056
Frontal_Sup_R	12	44	48	19.23	26	0.02	4056
Frontal_Sup_R	25	42	50	100.00	8	0.02	4056
Fusiform_L	-43	-73	-14	1.11	1710	0.10	2310
Fusiform_L	-21	-89	-24	6.25	416	0.14	2310
Fusiform_R	54	-58	-13	9.79	6464	3.14	2518
Fusiform_R	42	-37	-19	93.55	62	0.29	2518
Insula_L	-36	-4	16	91.94	62	0.38	1858
Insula_R	46	1	18	26.06	1151	2.12	1770
Lingual_L	-21	-89	-24	0.72	416	0.02	2095
Lingual_L	-7	-86	-9	88.68	53	0.28	2095
Lingual_R	11	-84	-8	33.53	1202	2.19	2300
Lingual_R	12	-92	-19	2.82	497	0.08	2300
Lingual_R	15	-49	3	68.97	435	1.63	2300
Occipital_Inf_L	-43	-73	-14	38.30	1710	8.70	941
Occipital_Inf_L	-8	-100	-4	2.90	69	0.03	941
Occipital_Inf_R	54	-58	-13	5.11	6464	4.17	989
Occipital_Inf_R	44	-84	-10	100.00	32	0.40	989
Occipital_Mid_L	-43	-73	-14	14.27	1710	0.93	3270
Occipital_Mid_L	-39	-86	24	100.00	1	0.00	3270
Occipital_Mid_R	54	-58	-13	2.43	6464	0.94	2098
Occipital_Mid_R	46	-81	16	100.00	476	2.84	2098
OUTSIDE	-32	-25	50	9.59	30954	0.00	0
OUTSIDE	18	-79	58	12.86	2457	0.00	0
OUTSIDE	-43	-73	-14	1.11	1710	0.00	0
OUTSIDE	59	-44	52	23.25	499	0.00	0
OUTSIDE	54	-58	-13	11.97	6464	0.00	0
OUTSIDE	-62	-23	46	25.27	934	0.00	0
OUTSIDE	11	-84	-8	17.30	1202	0.00	0
OUTSIDE	12	-92	-19	41.65	497	0.00	0
OUTSIDE	-5	-15	85	82.47	462	0.00	0
OUTSIDE	-2	-6	35	1.24	1929	0.00	0
OUTSIDE	-50	-38	28	1.10	1094	0.00	0
OUTSIDE	-20	-71	57	5.08	177	0.00	0

OUTSIDE	46	1	18	19.46	1151	0.00	0
OUTSIDE	-6	-16	9	2.73	220	0.00	0
OUTSIDE	45	46	-17	2.74	73	0.00	0
OUTSIDE	-9	12	42	17.13	216	0.00	0
OUTSIDE	42	-37	-19	3.23	62	0.00	0
OUTSIDE	-18	43	49	27.27	55	0.00	0
OUTSIDE	-47	-41	-7	98.21	56	0.00	0
OUTSIDE	-55	29	10	4.41	68	0.00	0
OUTSIDE	-36	-4	16	3.23	62	0.00	0
OUTSIDE	-20	-23	85	100.00	7	0.00	0
OUTSIDE	-14	-28	51	50.00	2	0.00	0
Paracentral_Lobule_L	-32	-25	50	0.15	30954	0.44	1349
Paracentral_Lobule_L	-5	-15	85	12.77	462	0.55	1349
Paracentral_Lobule_R	8	-31	72	96.73	153	2.21	836
Parietal_Inf_L	-32	-25	50	0.35	30954	0.55	2447
Parietal_Inf_L	-62	-23	46	17.56	934	0.84	2447
Parietal_Inf_R	18	-79	58	0.85	2457	0.20	1345
Parietal_Inf_R	59	-44	52	73.15	499	3.39	1345
Parietal_Sup_L	-32	-25	50	6.77	30954	12.69	2065
Parietal_Sup_L	-20	-71	57	94.92	177	1.02	2065
Parietal_Sup_R	18	-79	58	77.62	2457	10.73	2222
Postcentral_L	-32	-25	50	22.79	30954	22.66	3892
Postcentral_L	-62	-23	46	37.15	934	1.11	3892
Postcentral_L	-50	-38	28	13.71	1094	0.48	3892
Postcentral_R	-32	-25	50	0.11	30954	0.11	3823
Postcentral_R	55	2	35	40.52	464	0.61	3823
Postcentral_R	8	-31	72	2.61	153	0.01	3823
Precentral_L	-32	-25	50	16.32	30954	17.91	3526
Precentral_R	-32	-25	50	8.02	30954	9.17	3381
Precentral_R	46	1	18	0.09	1151	0.00	3381
Precentral_R	55	2	35	59.48	464	1.02	3381
Precentral_R	8	-31	72	0.65	153	0.00	3381
Precuneus_L	-32	-25	50	0.23	30954	0.25	3528
Precuneus_L	-7	-54	71	100.00	56	0.20	3528
Precuneus_R	18	-79	58	7.90	2457	0.74	3265
Precuneus_R	15	-49	3	12.41	435	0.21	3265
Rolandic_Oper_L	-36	-4	16	4.84	62	0.04	990
Rolandic_Oper_L	-38	-32	17	100.00	4	0.05	990
Rolandic_Oper_R	46	1	18	29.97	1151	3.24	1331
Rolandic_Oper_R	61	-19	14	100.00	13	0.12	1331
Supp_Motor_Area_L	-32	-25	50	12.66	30954	22.81	2147
Supp_Motor_Area_L	-5	-15	85	0.22	462	0.01	2147
Supp_Motor_Area_L	-9	12	42	31.48	216	0.40	2147

Supp_Motor_Area_R	-32	-25	50	10.22	30954	16.68	2371
SupraMarginal_L	-62	-23	46	20.02	934	1.86	1256
SupraMarginal_L	-50	-38	28	84.83	1094	9.24	1256
SupraMarginal_L	-53	-26	10	6.06	99	0.06	1256
SupraMarginal_R	59	-44	52	3.61	499	0.11	1974
Temporal_Inf_L	-54	-54	-17	100.00	146	0.57	3200
Temporal_Inf_L	-43	-73	-14	1.75	1710	0.12	3200
Temporal_Inf_L	-46	-46	-17	100.00	62	0.24	3200
Temporal_Inf_R	54	-58	-13	38.32	6464	8.70	3557
Temporal_Inf_R	42	-37	-19	3.23	62	0.01	3557
Temporal_Mid_L	-43	-73	-14	43.45	1710	1.88	4942
Temporal_Mid_L	-47	-41	-7	1.79	56	0.00	4942
Temporal_Mid_R	66	-34	6	20.67	803	0.47	4409
Temporal_Mid_R	54	-58	-13	32.26	6464	5.91	4409
Temporal_Mid_R	67	-31	-8	100.00	40	0.11	4409
Temporal_Sup_L	-50	-38	28	0.37	1094	0.02	2296
Temporal_Sup_L	-53	-26	10	93.94	99	0.51	2296
Temporal_Sup_R	66	-34	6	79.33	803	2.54	3141
Thalamus_L	-6	-16	9	97.27	220	2.43	1100

Appendix C: Deactivation maps and anatomical labelling

Deactivation

The functional deactivation maps for all subjects and sessions are presented. The figures presented correspond to the statistical parametric mappings at $p<0.001$ significance level. The darker, the more significant. Glass brain views in the three planes; saggital, coronal and axial are presented. Finally, the anatomical labelling of the active regions are summarized in tables. The region labels can be found in [39].

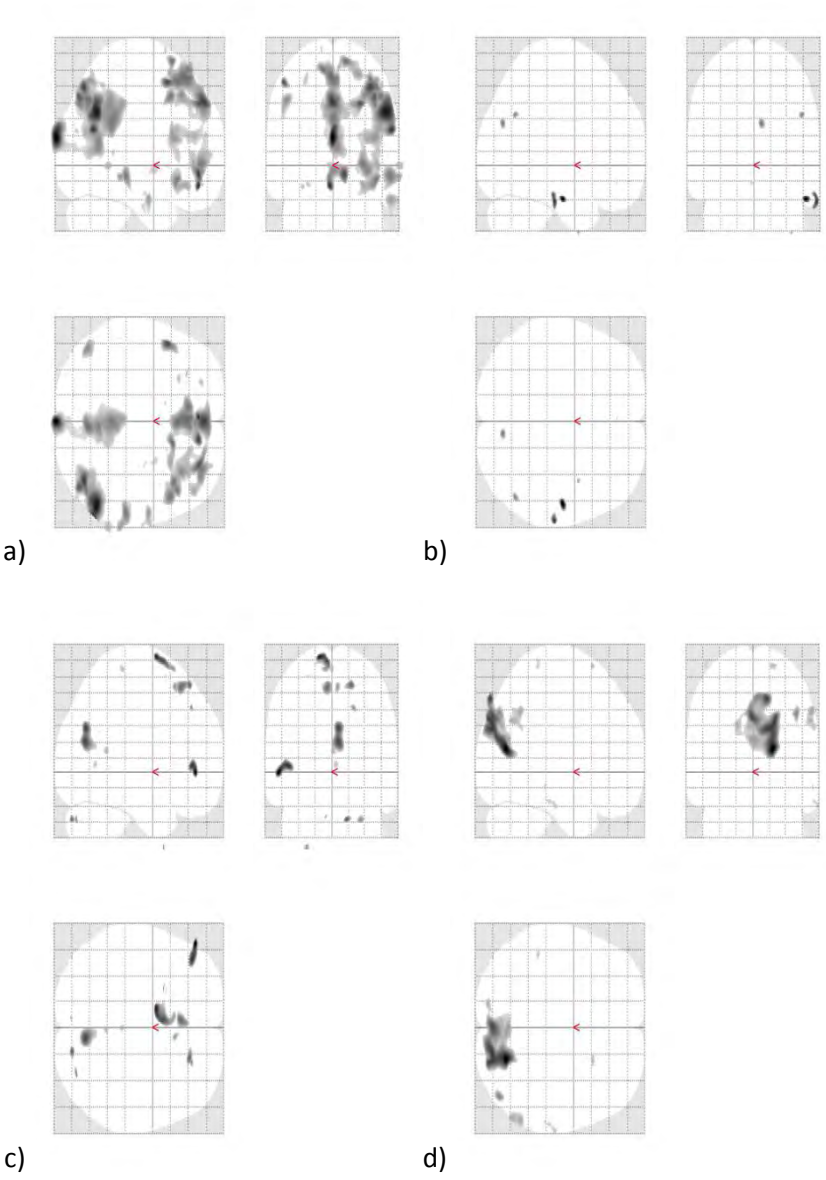


Figure 67 Deactivation maps for subject 1 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

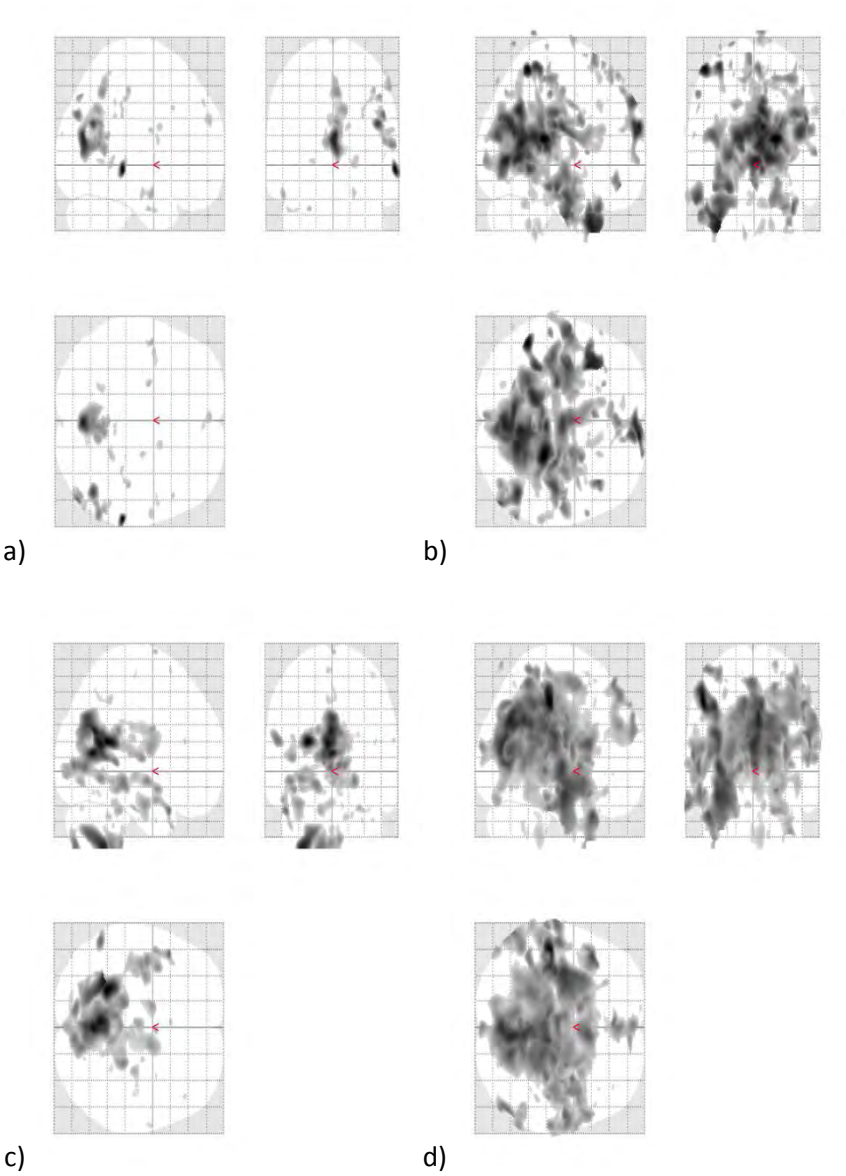


Figure 68 Deactivation maps for subject 2 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

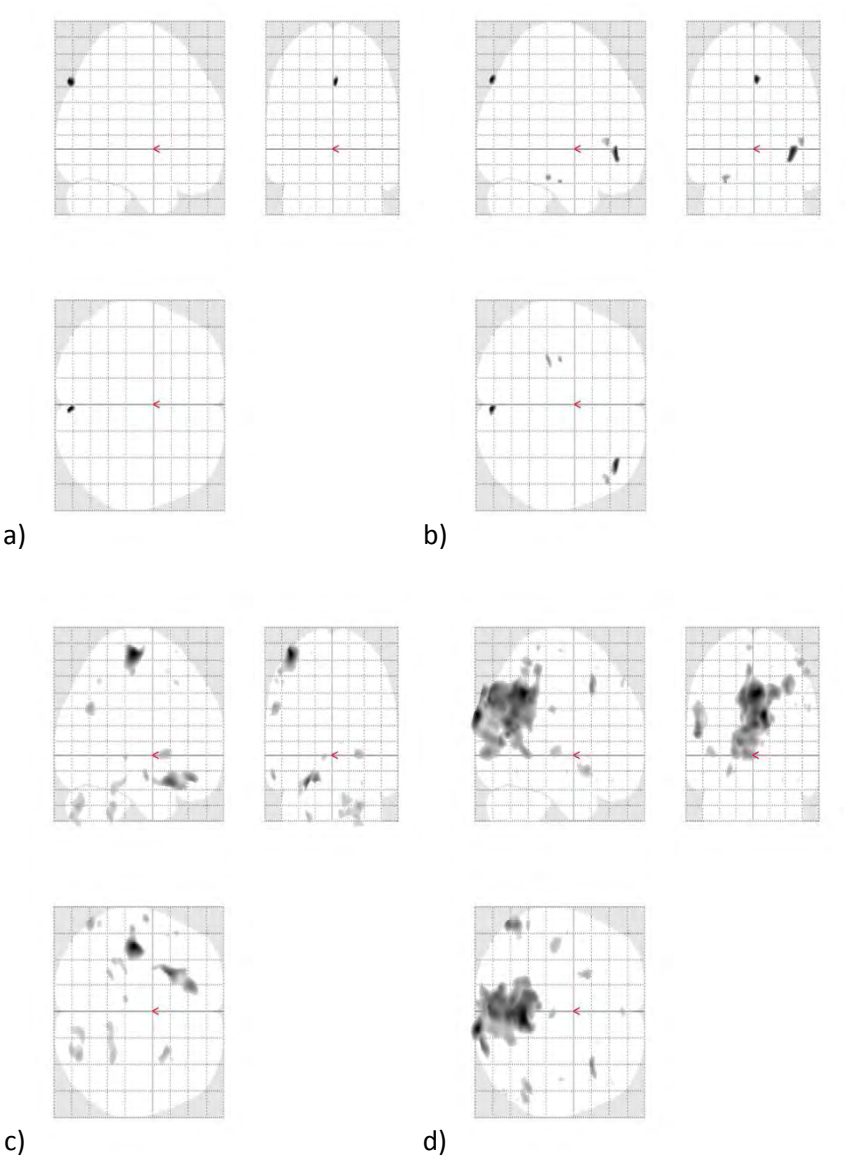


Figure 69 Deactivation maps for subject 3 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

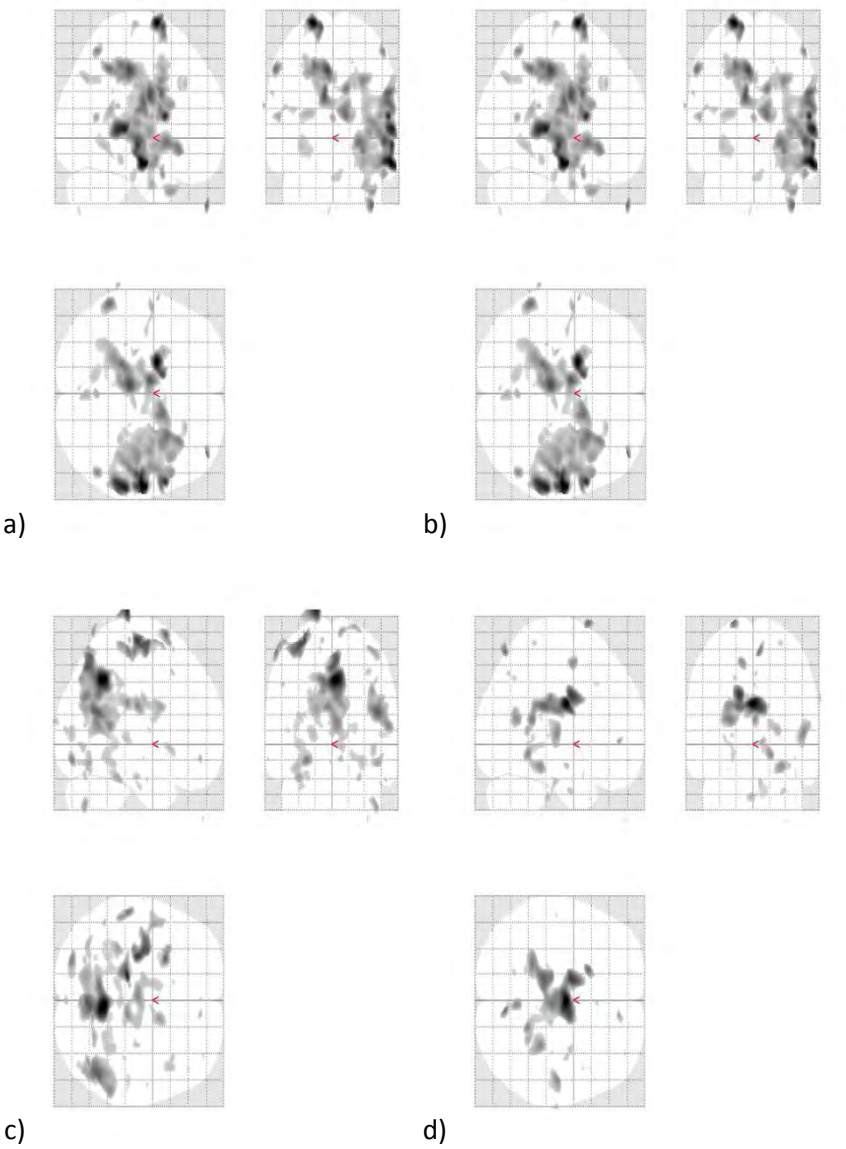


Figure 70 Deactivation maps for subject 4 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

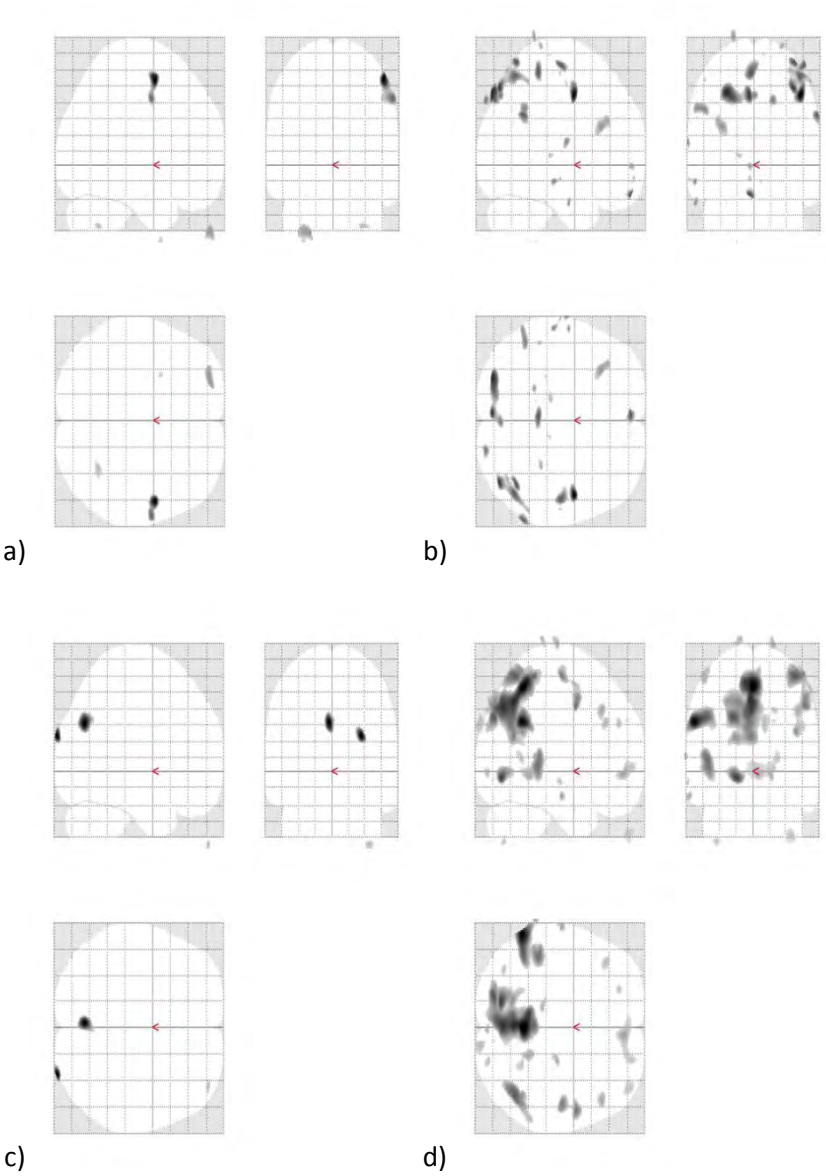


Figure 71 Deactivation maps for subject 5 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

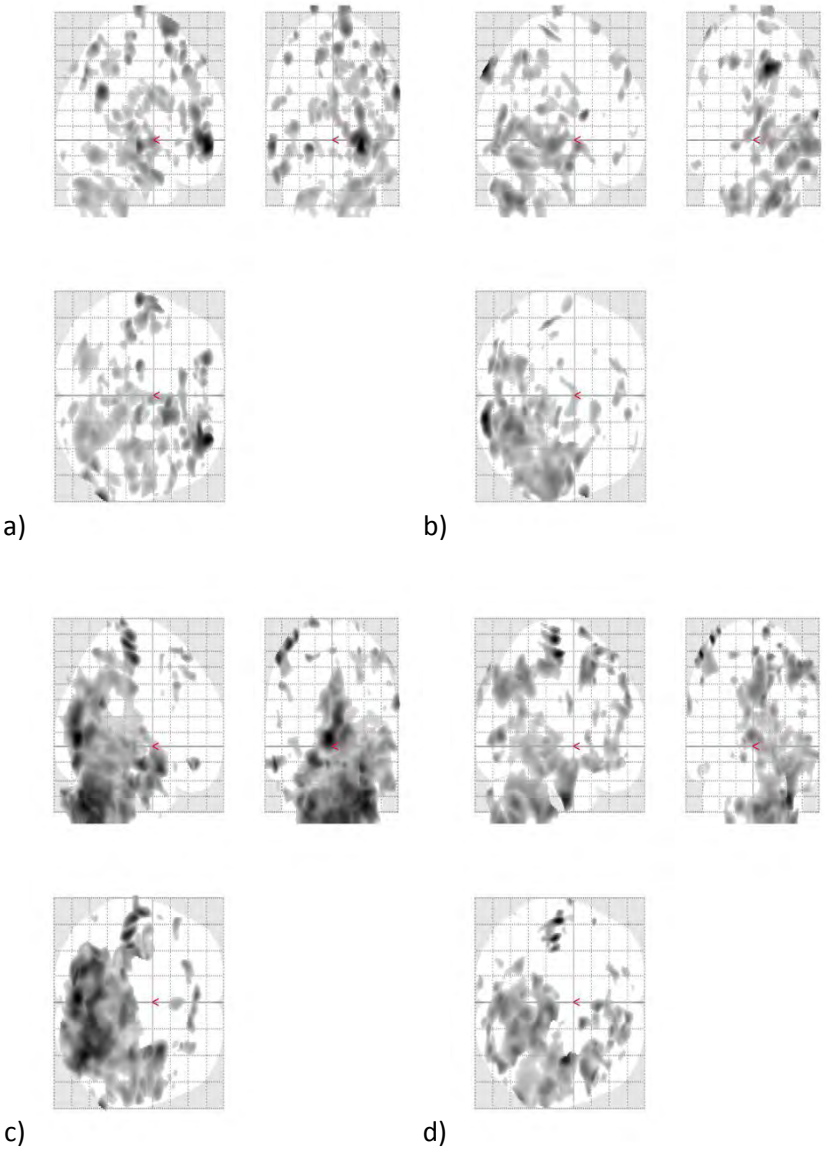


Figure 72 Deactivation maps for subject 6 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

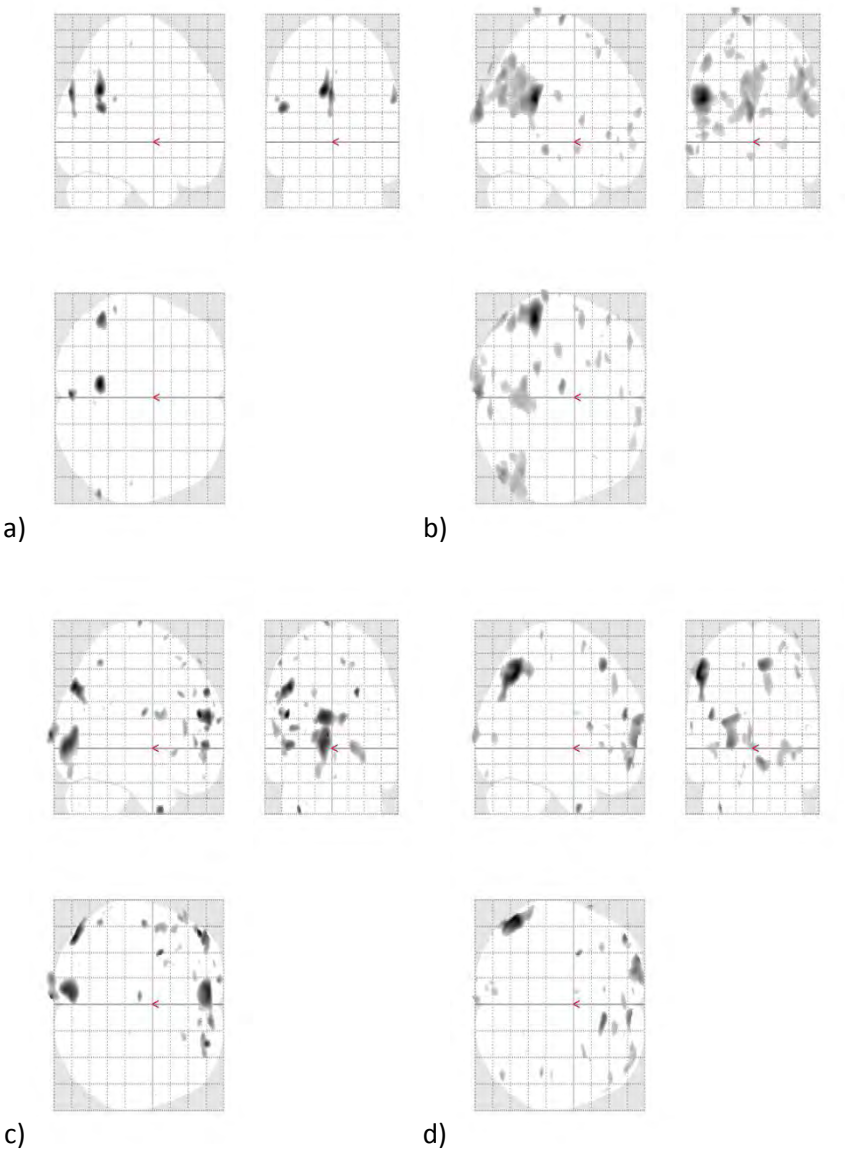
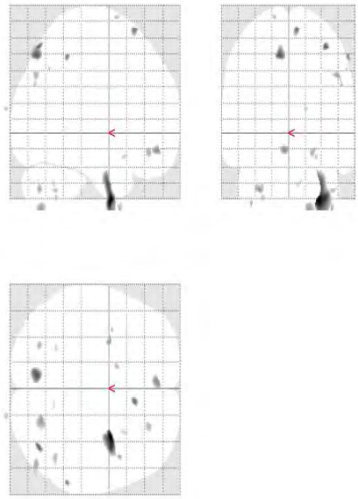
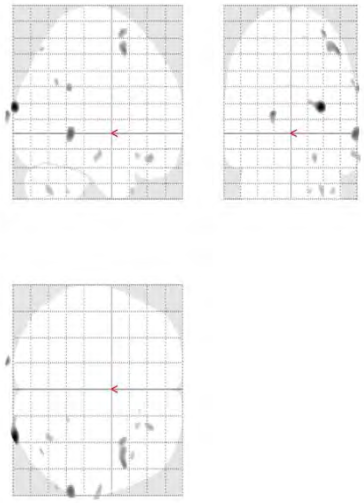


Figure 73 Deactivation maps for subject 7 across the fMRI sessions a) 1 (before therapy starts); b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).



a) NO VOXEL SURVIVED MASKING AT p<0.001 b)



c) d) NO VOXEL SURVIVED MASKING AT p<0.001

Figure 74 Deactivation maps for subject 8 across the fMRI sessions a) 1 (before therapy starts) b) 2 (after 7th therapy session); c) 3 (after 14th therapy session) and d) 4 (at the end of the therapy).

Table 41 Anatomical labelling of the deactivated clusters for Subject 1; fMRI session 1 (before therapy).

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Angular_L	-53	-59	34	51.6988	12391	68.2651	1173
Angular_R	48	-68	41	99.8862	879	6.2643	1752
Calcarine_L	1	-100	17	11.2051	19741	12.2453	2258
Calcarine_R	1	-100	17	0.90168	19741	1.1956	1861
Cingulum_Ant_L	4	45	-14	44.2849	1811	7.1607	1400
Cingulum_Ant_L	1	50	40	9.0236	16335	13.1607	1400
Cingulum_Ant_R	4	45	-14	6.6814	1811	1.1519	1313
Cingulum_Ant_R	1	50	40	2.1488	16335	3.3416	1313
Cingulum_Ant_R	6	43	12	100	1	0.0095202	1313
Cingulum_Mid_L	1	-100	17	10.2072	19741	12.9766	1941
Cingulum_Mid_R	1	-100	17	6.7474	19741	7.5579	2203
Cingulum_Post_L	1	-100	17	9.7766	19741	52.1058	463
Cingulum_Post_L	-5	-42	8	91.3043	23	0.56695	463
Cingulum_Post_R	1	-100	17	3.0647	19741	22.5746	335
Cuneus_L	1	-100	17	10.1261	19741	16.3745	1526
Cuneus_R	1	-100	17	0.12664	19741	0.21945	1424
Frontal_Inf_Oper_L	-42	19	18	13.8668	2387	3.986	1038
Frontal_Inf_Orb_L	-29	47	0	1.9648	2901	0.4216	1690
Frontal_Inf_Orb_L	-43	23	-10	89.2034	1908	12.5888	1690
Frontal_Inf_Orb_R	31	32	-15	100	24	0.17575	1707
Frontal_Inf_Tri_L	-29	47	0	17.8559	2901	2.5603	2529
Frontal_Inf_Tri_L	-43	23	-10	0.9434	1908	0.088968	2529
Frontal_Inf_Tri_L	-42	19	18	67.6163	2387	7.9775	2529
Frontal_Med_Orb_L	4	45	-14	19.4368	1811	6.1196	719
Frontal_Med_Orb_R	4	45	-14	21.3142	1811	5.6367	856
Frontal_Mid_L	1	50	40	21.1448	16335	8.8783	4863
Frontal_Mid_L	-29	47	0	43.1231	2901	3.2156	4863
Frontal_Mid_L	-39	5	59	50	2	0.0025704	4863
Frontal_Mid_Orb_L	-29	47	0	23.9573	2901	9.7832	888
Frontal_Mid_Orb_L	-43	23	-10	2.044	1908	0.54899	888
Frontal_Mid_Orb_R	27	47	-13	86.0465	43	0.45567	1015
Frontal_Mid_R	51	13	52	52.9915	468	0.60737	5104
Frontal_Mid_R	29	24	54	8.2569	109	0.022042	5104
Frontal_Sup_L	1	50	40	8.4298	16335	4.7826	3599
Frontal_Sup_L	-29	47	0	4.757	2901	0.4793	3599
Frontal_Sup_Medial_L	1	50	40	27.7808	16335	18.9589	2992
Frontal_Sup_Medial_R	1	50	40	16.2351	16335	15.5342	2134

Frontal_Sup_Orb_L	-29	47	0	0.96518	2901	0.36345	963
Frontal_Sup_Orb_R	27	47	-13	13.9535	43	0.075226	997
Frontal_Sup_R	1	50	40	0.036731	16335	0.018491	4056
Frontal_Sup_R	29	24	54	91.7431	109	0.30819	4056
Hippocampus_L	-26	-10	-19	100	17	0.228	932
Insula_L	-43	23	-10	7.2327	1908	0.92842	1858
Insula_L	-42	19	18	0.6703	2387	0.10764	1858
Lingual_L	1	-100	17	1.4285	19741	1.6826	2095
Occipital_Mid_L	-53	-59	34	2.3001	12391	1.0894	3270
Occipital_Mid_L	-47	-79	21	24.3902	41	0.038226	3270
Occipital_Sup_L	1	-100	17	0.67372	19741	1.2171	1366
OUTSIDE	1	-100	17	5.5164	19741	0	0
OUTSIDE	-53	-59	34	11.694	12391	0	0
OUTSIDE	4	45	-14	6.5157	1811	0	0
OUTSIDE	1	50	40	7.0034	16335	0	0
OUTSIDE	51	13	52	45.9402	468	0	0
OUTSIDE	-29	47	0	7.3768	2901	0	0
OUTSIDE	-57	-29	-7	0.625	1280	0	0
OUTSIDE	48	-68	41	0.11377	879	0	0
OUTSIDE	-42	19	18	17.8467	2387	0	0
OUTSIDE	-58	-6	-23	10.678	590	0	0
OUTSIDE	-68	-47	-1	24.6231	199	0	0
OUTSIDE	12	11	72	47.619	21	0	0
OUTSIDE	-47	-79	21	73.1707	41	0	0
OUTSIDE	54	-36	63	100	2	0	0
OUTSIDE	-62	-9	-31	100	3	0	0
OUTSIDE	55	-34	62	100	1	0	0
Pallidum_L	-24	0	-4	10.5263	76	0.3413	293
Parietal_Inf_L	-53	-59	34	19.498	12391	12.3416	2447
Parietal_Sup_L	-53	-59	34	4.1966	12391	3.1477	2065
Precentral_L	1	50	40	0.28773	16335	0.16662	3526
Precentral_L	-39	5	59	50	2	0.0035451	3526
Precentral_R	51	13	52	1.0684	468	0.018486	3381
Precuneus_L	1	-100	17	30.9913	19741	21.6766	3528
Precuneus_L	-5	-42	8	8.6957	23	0.0070862	3528
Precuneus_R	1	-100	17	9.2042	19741	6.9564	3265
Putamen_L	-24	0	-4	89.4737	76	0.84242	1009
Putamen_L	-17	13	-2	100	4	0.049554	1009
Rectus_L	4	45	-14	0.33131	1811	0.088028	852
Rectus_R	4	45	-14	1.4357	1811	0.43624	745
Supp_Motor_Area_L	1	50	40	6.2749	16335	5.9676	2147
Supp_Motor_Area_R	1	50	40	1.6345	16335	1.4076	2371
Supp_Motor_Area_R	12	11	72	52.381	21	0.057992	2371

SupraMarginal_L	-53	-59	34	2.5825	12391	3.1847	1256
Temporal_Inf_L	-58	-6	-23	14.5763	590	0.33594	3200
Temporal_Inf_L	-38	-5	-37	100	1	0.0039063	3200
Temporal_Mid_L	-53	-59	34	8.03	12391	2.5167	4942
Temporal_Mid_L	-57	-29	-7	99.375	1280	3.2173	4942
Temporal_Mid_L	-58	-6	-23	74.7458	590	1.1154	4942
Temporal_Mid_L	-68	-47	-1	75.3769	199	0.3794	4942
Temporal_Mid_L	-47	-79	21	2.439	41	0.0025293	4942
Temporal_Pole_Sup_L	-43	23	-10	0.57652	1908	0.107	1285
Vermis_4_5	1	-100	17	0.030394	19741	0.11278	665

Table 42 Anatomical labelling of the deactivated clusters for Subject 1; fMRI session 2 (after 7th therapy session).

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Angular_L	-47	-62	31	100	82	0.87383	1173
Cuneus_L	-7	-74	26	100	134	1.0976	1526
Frontal_Med_Orb_R	3	42	-12	100	5	0.073014	856
OUTSIDE	-63	-21	-24	0.51813	193	0	0
Temporal_Inf_L	-63	-21	-24	67.8756	193	0.51172	3200
Temporal_Inf_L	-37	3	-44	28.5714	14	0.015625	3200
Temporal_Mid_L	-52	-13	-22	100	142	0.35917	4942
Temporal_Mid_L	-63	-21	-24	31.6062	193	0.15429	4942
Temporal_Pole_Mid_L	-37	3	-44	71.4286	14	0.16556	755

Table 43 Anatomical labelling of the deactivated clusters for Subject 1; fMRI session 3 (after 14th therapy session).

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Calcarine_L	-6	-68	27	49.635	1781	4.8937	2258
Calcarine_L	-3	-59	4	62.2951	61	0.21036	2258
Cerebelum_Crus1_L	-14	-83	-31	37.8049	82	0.14887	2603
Cerebelum_Crus1_L	-28	-79	-32	100	59	0.28333	2603
Cerebelum_Crus2_L	-14	-83	-31	62.1951	82	0.33659	1894
Cerebelum_Crus2_R	7	-84	-29	100	6	0.035427	2117
Cingulum_Post_L	-1	-48	12	6.0606	66	0.10799	463
Cuneus_L	-6	-68	27	30.4885	1781	4.4479	1526
Frontal_Inf_Orb_R	55	42	-1	1.1058	633	0.05126	1707
Frontal_Inf_Tri_R	55	42	-1	73.9336	633	2.7197	2151
Frontal_Mid_R	55	42	-1	24.9605	633	0.38695	5104
Frontal_Sup_L	-19	36	55	75.5319	188	0.49319	3599
Frontal_Sup_L	-21	39	40	100	48	0.16671	3599
Frontal_Sup_Medial_L	5	28	53	11.8397	549	0.27156	2992
Frontal_Sup_Medial_L	-5	21	54	7.6923	104	0.033422	2992
Frontal_Sup_Medial_R	5	28	53	78.6885	549	2.5305	2134
Frontal_Sup_R	13	3	73	11.4352	857	0.30202	4056
Frontal_Sup_R	24	13	61	100	6	0.018491	4056
Lingual_L	-3	-59	4	22.9508	61	0.083532	2095
OUTSIDE	13	3	73	9.2182	857	0	0
OUTSIDE	-19	36	55	24.4681	188	0	0
OUTSIDE	5	28	53	3.0965	549	0	0
OUTSIDE	27	10	-50	100	19	0	0
OUTSIDE	-1	-48	12	75.7576	66	0	0
OUTSIDE	1	-32	65	57.4468	47	0	0
Paracentral_Lobule_L	1	-32	65	8.5106	47	0.037064	1349
Paracentral_Lobule_R	1	-32	65	34.0426	47	0.23923	836
Precuneus_L	-6	-68	27	19.8765	1781	1.2543	3528
Precuneus_L	-1	-48	12	18.1818	66	0.042517	3528
Precuneus_L	-13	-55	25	100	4	0.014172	3528
Supp_Motor_Area_L	-5	21	54	92.3077	104	0.55892	2147
Supp_Motor_Area_R	13	3	73	79.3466	857	3.585	2371
Supp_Motor_Area_R	5	28	53	6.3752	549	0.18452	2371
Vermis_4_5	-3	-59	4	14.7541	61	0.16917	665

Table 44 Anatomical labelling of the deactivated clusters for Subject 1; fMRI session 4 (after therapy).

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Angular_L	-43	-77	37	20.5674	282	0.61807	1173
Angular_L	-59	-55	38	25.9166	791	2.1846	1173
Calcarine_L	-19	-69	13	16.4284	11194	10.1805	2258
Calcarine_R	-19	-69	13	0.27693	11194	0.20822	1861
Cuneus_L	-19	-69	13	35.0366	11194	32.1265	1526
Cuneus_R	-19	-69	13	6.3606	11194	6.25	1424
Frontal_Sup_L	-18	19	67	27.2727	55	0.052098	3599
Occipital_Mid_L	-19	-69	13	2.0547	11194	0.8792	3270
Occipital_Mid_L	-43	-77	37	48.5816	282	0.5237	3270
Occipital_Sup_L	-19	-69	13	24.0486	11194	24.634	1366
Occipital_Sup_R	-19	-69	13	0.86654	11194	0.8581	1413
OUTSIDE	-19	-69	13	10.8987	11194	0	0
OUTSIDE	-43	-77	37	30.8511	282	0	0
OUTSIDE	-59	-55	38	51.8331	791	0	0
OUTSIDE	-18	19	67	72.7273	55	0	0
OUTSIDE	47	-37	71	83.3333	42	0	0
OUTSIDE	-65	-19	-23	6.0606	66	0	0
OUTSIDE	-49	-68	45	100	1	0	0
Parietal_Inf_L	-59	-55	38	15.1707	791	0.613	2447
Parietal_Sup_L	-19	-69	13	0.4824	11194	0.32688	2065
Postcentral_R	47	-37	71	16.6667	42	0.022888	3823
Precuneus_L	-19	-69	13	2.0547	11194	0.81491	3528
Precuneus_R	-19	-69	13	1.4919	11194	0.63936	3265
SupraMarginal_L	-59	-55	38	7.0796	791	0.55732	1256
Temporal_Inf_L	-65	-19	-23	48.4848	66	0.125	3200
Temporal_Mid_L	-65	-19	-23	45.4545	66	0.07588	4942
Temporal_Mid_L	-59	-30	-10	100	13	0.032881	4942

Table 45 Anatomical labelling of the deactivated clusters for Subject 2; fMRI session 1 (before therapy).

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Amygdala_R	25	-6	-29	2.5	80	0.10081	248
Angular_L	-45	-62	26	42.6444	1679	7.63	1173
Angular_L	-50	-79	31	10.0737	407	0.43691	1173
Calcarine_L	-1	-73	18	23.9813	7264	9.6435	2258
Calcarine_R	-1	-73	18	14.3722	7264	7.0124	1861
Calcarine_R	21	-55	2	14.1593	113	0.10747	1861
Caudate_L	-15	5	24	49.1667	120	0.76663	962
Cingulum_Mid_L	-1	-73	18	0.11013	7264	0.05152	1941
Cingulum_Mid_L	-3	-53	46	0.32967	910	0.01932	1941
Cingulum_Mid_L	-6	-40	39	100	48	0.30912	1941
Cingulum_Mid_L	-2	-41	31	7.1429	42	0.01932	1941
Cingulum_Post_L	-1	-73	18	3.304	7264	6.4795	463
Cingulum_Post_L	-2	-41	31	92.8571	42	1.0529	463
Cingulum_Post_R	-1	-73	18	0.027533	7264	0.074627	335
Cuneus_L	-1	-73	18	10.5727	7264	6.291	1526
Cuneus_L	-1	-94	19	100	15	0.12287	1526
Cuneus_R	-1	-73	18	0.70209	7264	0.44768	1424
Frontal_Inf_Oper_L	-47	19	36	8.3333	36	0.036127	1038
Frontal_Mid_L	-47	19	36	91.6667	36	0.084824	4863
Frontal_Sup_Medial_L	3	56	28	57.4913	287	0.68934	2992
Frontal_Sup_Medial_L	-2	49	40	100	55	0.22978	2992
Frontal_Sup_Medial_R	3	56	28	42.5087	287	0.71462	2134
Fusiform_R	33	-12	-32	100	3	0.014893	2518
Hippocampus_L	-21	-44	0	9.633	218	0.28165	932
Hippocampus_L	-20	-11	-18	100	116	1.5558	932
Hippocampus_R	25	-6	-29	8.75	80	0.092495	946
Lingual_L	-1	-73	18	5.7269	7264	2.4821	2095
Lingual_L	-21	-44	0	11.4679	218	0.14916	2095
Lingual_R	-1	-73	18	0.068833	7264	0.027174	2300
Lingual_R	21	-55	2	84.9558	113	0.52174	2300
Occipital_Mid_L	-45	-62	26	0.059559	1679	0.0038226	3270
Occipital_Mid_L	-50	-79	31	0.9828	407	0.015291	3270
OUTSIDE	-1	-73	18	1.6933	7264	0	0
OUTSIDE	-45	-62	26	6.9089	1679	0	0
OUTSIDE	-50	-79	31	88.9435	407	0	0
OUTSIDE	-47	-75	43	100	96	0	0
OUTSIDE	-57	-52	49	65.3005	366	0	0
OUTSIDE	52	-3	-20	4.4944	178	0	0
OUTSIDE	-41	-27	47	25.1678	298	0	0

OUTSIDE	25	-6	-29	8.75	80	0	0
OUTSIDE	-21	-44	0	61.0092	218	0	0
OUTSIDE	46	0	-30	77.0492	122	0	0
OUTSIDE	-15	5	24	50.8333	120	0	0
OUTSIDE	-22	-30	4	80	10	0	0
OUTSIDE	4	-36	5	100	1	0	0
ParaHippocampal_R	25	-6	-29	80	80	0.70671	1132
Parietal_Inf_L	-57	-52	49	34.6995	366	0.64875	2447
Parietal_Inf_L	-41	-27	47	9.396	298	0.14303	2447
Postcentral_L	-41	-27	47	65.4362	298	0.62628	3892
Postcentral_L	-58	-4	22	93.9394	99	0.29869	3892
Precentral_L	-58	-4	22	6.0606	99	0.021271	3526
Precentral_L	-52	4	14	76.8421	95	0.25879	3526
Precuneus_L	-1	-73	18	37.3486	7264	9.6124	3528
Precuneus_L	-3	-53	46	89.4505	910	2.8841	3528
Precuneus_L	-21	-44	0	17.8899	218	0.13818	3528
Precuneus_R	-1	-73	18	2.0925	7264	0.58193	3265
Precuneus_R	-3	-53	46	10.2198	910	0.35605	3265
Precuneus_R	21	-55	2	0.88496	113	0.0038285	3265
Rolandic_Oper_L	-52	4	14	23.1579	95	0.27778	990
Rolandic_Oper_L	-51	-1	5	100	12	0.15152	990
Temporal_Mid_L	-62	-32	-4	99.3902	492	1.2368	4942
Temporal_Mid_L	-45	-62	26	50.268	1679	2.1348	4942
Temporal_Mid_R	52	-3	-20	94.382	178	0.4763	4409
Temporal_Mid_R	46	0	-30	22.9508	122	0.079383	4409
Temporal_Pole_Sup_L	-37	23	-29	100	1	0.0097276	1285
Temporal_Sup_L	-62	-32	-4	0.60976	492	0.016333	2296
Temporal_Sup_L	-45	-62	26	0.11912	1679	0.010889	2296
Temporal_Sup_R	52	-3	-20	1.1236	178	0.0079592	3141
Thalamus_L	-22	-30	4	20	10	0.022727	1100

Table 46 Anatomical labelling of the deactivated clusters for Subject 2; fMRI session 2 (after 7th therapy session).

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Amygdala_L	-19	-4	-22	22.1421	6517	81.9886	220
Amygdala_R	-21	-32	16	0.71861	126495	45.8165	248
Angular_L	-21	-32	16	1.6902	126495	22.7835	1173
Angular_L	-43	-70	46	80.8581	303	2.6108	1173
Angular_R	55	-70	36	100	1	0.0071347	1752
Calcarine_L	-21	-32	16	6.4026	126495	44.835	2258
Calcarine_R	-21	-32	16	3.1084	126495	26.4105	1861
Calcarine_R	24	-75	11	83.4951	103	0.57765	1861
Caudate_L	-21	-32	16	0.38579	126495	6.341	962
Caudate_L	-11	23	11	53.6127	692	4.8207	962
Caudate_R	-21	-32	16	0.10514	126495	1.6725	994
Cerebelum_10_L	-18	-48	-40	0.37594	266	0.086806	144
Cerebelum_3_L	-21	-32	16	0.0063244	126495	0.73529	136
Cerebelum_3_R	6	-46	-19	1.8868	53	0.060386	207
Cerebelum_4_5_L	-21	-32	16	0.64429	126495	9.0556	1125
Cerebelum_4_5_L	-9	-52	-26	13.0337	445	0.64444	1125
Cerebelum_4_5_R	-21	-32	16	0.11937	126495	2.1922	861
Cerebelum_4_5_R	20	-42	-24	100	37	0.53717	861
Cerebelum_6_L	-21	-32	16	0.05771	126495	0.53867	1694
Cerebelum_8_L	-29	-57	-48	100	2	0.013249	1887
Cerebelum_9_L	-18	-48	-40	20.3008	266	0.77675	869
Cerebelum_9_R	10	-42	-45	20.9581	167	0.54079	809
Cingulum_Ant_L	-1	45	-15	13.3721	688	0.82143	1400
Cingulum_Ant_L	-11	23	11	0.86705	692	0.053571	1400
Cingulum_Ant_R	-21	-32	16	0.26483	126495	3.1893	1313
Cingulum_Ant_R	-1	45	-15	0.5814	688	0.038081	1313
Cingulum_Mid_L	-21	-32	16	0.89094	126495	7.2579	1941
Cingulum_Mid_R	-21	-32	16	1.0585	126495	7.5976	2203
Cingulum_Mid_R	20	-5	38	7.7922	539	0.23831	2203
Cingulum_Mid_R	9	9	34	100	33	0.18724	2203
Cingulum_Post_L	-21	-32	16	2.0602	126495	70.3564	463
Cingulum_Post_R	-21	-32	16	0.9866	126495	46.5672	335
Cuneus_L	-21	-32	16	3.8405	126495	39.7936	1526
Cuneus_R	-21	-32	16	0.48619	126495	5.3985	1424
Frontal_Inf_Oper_L	-21	-32	16	0.099609	126495	1.5173	1038
Frontal_Inf_Oper_L	-58	12	7	100	73	0.87909	1038
Frontal_Inf_Orb_L	-39	23	-28	0.49505	808	0.029586	1690
Frontal_Med_Orb_L	-1	45	-15	54.9419	688	6.5716	719
Frontal_Med_Orb_R	-1	45	-15	27.3256	688	2.7453	856

Frontal_Mid_L	-20	25	55	37.7246	167	0.16194	4863
Frontal_Mid_R	21	22	37	18.9474	95	0.044083	5104
Frontal_Mid_R	38	17	59	76.9231	13	0.024491	5104
Frontal_Sup_L	-8	64	24	13.0338	5409	2.4486	3599
Frontal_Sup_L	-6	44	56	1.0601	283	0.01042	3599
Frontal_Sup_L	-5	-3	81	4.2895	373	0.055571	3599
Frontal_Sup_L	-20	25	55	62.2754	167	0.36121	3599
Frontal_Sup_Medial_L	-8	64	24	66.3524	5409	14.9942	2992
Frontal_Sup_Medial_L	-6	44	56	28.2686	283	0.33422	2992
Frontal_Sup_Medial_L	-3	32	40	100	15	0.062667	2992
Frontal_Sup_Medial_R	-8	64	24	5.3245	5409	1.687	2134
Frontal_Sup_Medial_R	5	19	67	0.52448	572	0.017573	2134
Frontal_Sup_Medial_R	5	36	58	77.666	497	2.261	2134
Frontal_Sup_Medial_R	14	49	54	21.9697	132	0.16987	2134
Frontal_Sup_R	5	36	58	0.80483	497	0.012327	4056
Frontal_Sup_R	24	29	65	9.8901	91	0.027737	4056
Frontal_Sup_R	21	22	37	81.0526	95	0.2373	4056
Frontal_Sup_R	22	22	57	100	27	0.08321	4056
Frontal_Sup_R	26	14	58	100	1	0.0030819	4056
Fusiform_L	-21	-32	16	0.056919	126495	0.38961	2310
Fusiform_L	-19	-4	-22	9.4829	6517	3.3442	2310
Fusiform_R	-21	-32	16	0.89094	126495	5.5947	2518
Heschl_L	-21	-32	16	0.0094865	126495	0.66667	225
Heschl_L	-32	-2	8	14.5519	1127	9.1111	225
Heschl_R	-21	-32	16	0.3676	126495	23.3434	249
Hippocampus_L	-21	-32	16	0.16839	126495	2.8568	932
Hippocampus_L	-19	-4	-22	27.2365	6517	23.8063	932
Hippocampus_R	-21	-32	16	3.4484	126495	57.6374	946
Insula_L	-21	-32	16	0.034784	126495	0.29602	1858
Insula_L	-19	-4	-22	0.076722	6517	0.033638	1858
Insula_L	-32	-2	8	42.9459	1127	3.2562	1858
Insula_L	-41	3	7	100	3	0.020183	1858
Insula_L	-31	-22	9	75	4	0.020183	1858
Insula_R	-21	-32	16	0.87513	126495	7.8178	1770
Lingual_L	-21	-32	16	4.1021	126495	30.9606	2095
Lingual_R	-21	-32	16	3.0531	126495	20.9891	2300
Occipital_Mid_L	-21	-32	16	0.70042	126495	3.3869	3270
Occipital_Sup_L	-21	-32	16	0.15732	126495	1.821	1366
Olfactory_L	-19	-4	-22	0.59843	6517	1.7411	280
Olfactory_R	-21	-32	16	0.045061	126495	2.4654	289
OUTSIDE	-21	-32	16	34.9516	126495	0	0
OUTSIDE	51	-49	61	15.6371	2072	0	0
OUTSIDE	-8	64	24	15.2893	5409	0	0

OUTSIDE	-39	23	-28	11.0149	808	0	0
OUTSIDE	-19	-4	-22	17.1705	6517	0	0
OUTSIDE	-56	-11	22	3.2839	944	0	0
OUTSIDE	5	19	67	33.042	572	0	0
OUTSIDE	-6	-44	85	90.5405	148	0	0
OUTSIDE	24	-63	77	89.1566	83	0	0
OUTSIDE	20	-5	38	92.2078	539	0	0
OUTSIDE	5	36	58	21.5292	497	0	0
OUTSIDE	-32	-2	8	12.4224	1127	0	0
OUTSIDE	-6	44	56	70.6714	283	0	0
OUTSIDE	24	29	65	90.1099	91	0	0
OUTSIDE	-5	-3	81	65.6836	373	0	0
OUTSIDE	-43	-70	46	10.5611	303	0	0
OUTSIDE	37	9	70	100	36	0	0
OUTSIDE	3	-79	53	95.2381	84	0	0
OUTSIDE	34	30	58	100	40	0	0
OUTSIDE	10	-42	-45	79.0419	167	0	0
OUTSIDE	36	-29	76	100	42	0	0
OUTSIDE	14	49	54	78.0303	132	0	0
OUTSIDE	-9	-52	-26	85.3933	445	0	0
OUTSIDE	-7	-37	-41	100	225	0	0
OUTSIDE	57	25	38	100	49	0	0
OUTSIDE	-11	23	11	45.5202	692	0	0
OUTSIDE	-18	-48	-40	79.3233	266	0	0
OUTSIDE	-46	-39	62	9.3023	43	0	0
OUTSIDE	-8	-25	-25	100	52	0	0
OUTSIDE	62	-63	18	12.1951	41	0	0
OUTSIDE	3	-31	-22	100	280	0	0
OUTSIDE	-1	5	1	100	30	0	0
OUTSIDE	24	-75	11	16.5049	103	0	0
OUTSIDE	38	17	59	23.0769	13	0	0
OUTSIDE	-31	-22	9	25	4	0	0
OUTSIDE	-19	-12	2	13.6364	22	0	0
OUTSIDE	-22	2	44	100	7	0	0
OUTSIDE	24	15	29	100	12	0	0
OUTSIDE	25	-72	67	100	2	0	0
OUTSIDE	-20	-10	4	100	1	0	0
OUTSIDE	64	-60	14	100	1	0	0
Pallidum_R	-21	-32	16	0.036365	126495	2.0536	280
Paracentral_Lobule_L	-21	-32	16	0.0015811	126495	0.018532	1349
Paracentral_Lobule_L	-6	-44	85	4.0541	148	0.055597	1349
Paracentral_Lobule_R	-21	-32	16	0.0031622	126495	0.059809	836
ParaHippocampal_L	-21	-32	16	0.23479	126495	3.796	978

ParaHippocampal_L	-19	-4	-22	12.4444	6517	10.3655	978
ParaHippocampal_R	-21	-32	16	1.9787	126495	27.6391	1132
Parietal_Inf_L	-21	-32	16	0.20712	126495	1.3384	2447
Parietal_Inf_L	-43	-70	46	8.5809	303	0.13282	2447
Parietal_Inf_R	51	-49	61	6.2741	2072	1.2082	1345
Parietal_Sup_R	51	-49	61	23.89	2072	2.7847	2222
Parietal_Sup_R	24	-63	77	10.8434	83	0.05063	2222
Postcentral_L	-21	-32	16	2.8507	126495	11.5814	3892
Postcentral_L	-56	-11	22	94.7034	944	2.8713	3892
Postcentral_L	-46	-39	62	90.6977	43	0.12526	3892
Postcentral_R	51	-49	61	54.1988	2072	3.6719	3823
Postcentral_R	58	-26	45	49.2537	201	0.3237	3823
Postcentral_R	71	-18	22	10	10	0.0032697	3823
Precentral_L	-21	-32	16	0.5352	126495	2.4	3526
Precuneus_L	-21	-32	16	6.1844	126495	27.7175	3528
Precuneus_L	-6	-44	85	5.4054	148	0.028345	3528
Precuneus_R	-21	-32	16	4.1733	126495	20.2106	3265
Precuneus_R	3	-79	53	4.7619	84	0.015314	3265
Putamen_L	-19	-4	-22	2.0255	6517	1.6353	1009
Putamen_L	-32	-2	8	17.0364	1127	2.3786	1009
Putamen_R	-21	-32	16	0.73046	126495	10.8553	1064
Rectus_L	-1	45	-15	3.7791	688	0.38146	852
Rolandic_Oper_L	-21	-32	16	0.04348	126495	0.69444	990
Rolandic_Oper_L	-56	-11	22	2.0127	944	0.2399	990
Rolandic_Oper_L	-32	-2	8	2.4845	1127	0.35354	990
Rolandic_Oper_R	-21	-32	16	1.117	126495	13.2701	1331
Supp_Motor_Area_L	-21	-32	16	0.083007	126495	0.61132	2147
Supp_Motor_Area_L	-5	-3	81	30.0268	373	0.65207	2147
Supp_Motor_Area_L	-8	14	62	100	34	0.19795	2147
Supp_Motor_Area_R	5	19	67	66.4336	572	2.0034	2371
SupraMarginal_L	-21	-32	16	0.4261	126495	5.3643	1256
SupraMarginal_R	58	-26	45	50.7463	201	0.6459	1974
SupraMarginal_R	71	-18	22	90	10	0.056991	1974
Temporal_Inf_L	-21	-32	16	0.0055338	126495	0.027344	3200
Temporal_Inf_L	-19	-4	-22	6.368	6517	1.6211	3200
Temporal_Inf_R	-21	-32	16	1.4767	126495	6.5645	3557
Temporal_Mid_L	-21	-32	16	1.8301	126495	5.8554	4942
Temporal_Mid_L	-66	-35	-12	100	4	0.010117	4942
Temporal_Mid_R	-21	-32	16	1.653	126495	5.9282	4409
Temporal_Mid_R	62	-63	18	87.8049	41	0.10206	4409
Temporal_Mid_R	49	-53	18	100	8	0.022681	4409
Temporal_Pole_Mid_L	-39	23	-28	11.6337	808	1.5563	755
Temporal_Pole_Mid_L	-19	-4	-22	0.49102	6517	0.5298	755

Temporal_Pole_Mid_R	-21	-32	16	2.0206	126495	26.9166	1187
Temporal_Pole_Sup_L	-39	23	-28	76.8564	808	6.0409	1285
Temporal_Pole_Sup_L	-19	-4	-22	1.9641	6517	1.2451	1285
Temporal_Pole_Sup_R	-21	-32	16	0.5186	126495	6.1286	1338
Temporal_Sup_L	-21	-32	16	0.2087	126495	1.4373	2296
Temporal_Sup_L	-32	-2	8	10.559	1127	0.64787	2296
Temporal_Sup_R	-21	-32	16	0.14625	126495	0.73623	3141
Thalamus_L	-21	-32	16	1.1131	126495	16	1100
Thalamus_L	-9	-14	6	100	41	0.46591	1100
Thalamus_L	-19	-12	2	86.3636	22	0.21591	1100
Thalamus_L	-18	-14	1	100	1	0.011364	1100
Thalamus_R	-21	-32	16	0.28539	126495	4.2692	1057
Vermis_10	-9	-52	-26	0.44944	445	0.22321	112
Vermis_3	-21	-32	16	0.035575	126495	2.4671	228
Vermis_3	6	-46	-19	86.7925	53	2.5219	228
Vermis_4_5	-21	-32	16	0.11779	126495	2.8008	665
Vermis_4_5	-9	-52	-26	1.1236	445	0.093985	665
Vermis_4_5	6	-46	-19	11.3208	53	0.11278	665
Vermis_6	-21	-32	16	0.19606	126495	8.3558	371

Table 47 Anatomical labelling of the deactivated clusters for Subject 2; fMRI session 3 (after 14th therapy session).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_R	34	-9	-22	2.943	1597	2.369	248
Angular_R	56	-54	19	15.8358	682	0.77055	1752
Calcarine_L	25	-47	18	9.995	39700	21.9663	2258
Calcarine_L	-20	-70	14	93.75	16	0.083038	2258
Calcarine_R	25	-47	18	5.8111	39700	15.4957	1861
Calcarine_R	32	-53	-6	0.57571	1737	0.067168	1861
Caudate_L	25	-47	18	2.7078	39700	13.9683	962
Caudate_R	15	-1	26	9.2869	603	0.70423	994
Cerebelum_10_R	9	-43	-50	0.39287	3309	1.022	159
Cerebelum_3_L	25	-47	18	0.13854	39700	5.0551	136
Cerebelum_3_L	12	-35	-26	0.10684	936	0.091912	136
Cerebelum_3_L	-10	-32	-24	40.4762	42	1.5625	136
Cerebelum_3_R	17	-29	-10	5.4632	2105	6.9444	207
Cerebelum_3_R	12	-35	-26	24.6795	936	13.9493	207
Cerebelum_4_5_L	25	-47	18	2.0126	39700	8.8778	1125
Cerebelum_4_5_L	-7	-56	-15	100	78	0.86667	1125
Cerebelum_4_5_R	25	-47	18	0.050378	39700	0.29036	861
Cerebelum_4_5_R	17	-29	-10	9.8337	2105	3.0052	861
Cerebelum_4_5_R	12	-35	-26	0.21368	936	0.029036	861
Cerebelum_4_5_R	8	-61	-14	83.3333	36	0.43554	861
Cerebelum_6_L	25	-47	18	0.06801	39700	0.19923	1694
Cerebelum_6_R	31	-51	-49	0.91286	4820	0.30641	1795
Cerebelum_6_R	7	-73	-25	37.7049	61	0.16017	1795
Cerebelum_6_R	8	-61	-14	5.5556	36	0.013928	1795
Cerebelum_7b_R	31	-51	-49	5.4979	4820	6.2032	534
Cerebelum_8_R	31	-51	-49	53.444	4820	13.9515	2308
Cerebelum_9_L	9	-43	-50	7.676	3309	3.6536	869
Cerebelum_9_R	31	-51	-49	0.3112	4820	0.23177	809
Cerebelum_9_R	9	-43	-50	26.4128	3309	13.5043	809
Cerebelum_Crus1_R	31	-51	-49	8.8382	4820	2.011	2648
Cerebelum_Crus1_R	7	-73	-25	6.5574	61	0.018882	2648
Cerebelum_Crus2_R	31	-51	-49	13.2365	4820	3.7671	2117
Cingulum_Mid_L	25	-47	18	0.088161	39700	0.2254	1941
Cingulum_Mid_L	4	-44	44	1.3423	298	0.02576	1941
Cingulum_Mid_R	25	-47	18	0.16373	39700	0.36882	2203
Cingulum_Mid_R	4	-44	44	3.6913	298	0.062415	2203
Cingulum_Post_L	25	-47	18	3.8917	39700	41.7117	463
Cingulum_Post_R	25	-47	18	2.9295	39700	43.3955	335
Cuneus_L	25	-47	18	4.3577	39700	14.171	1526

Cuneus_R	25	-47	18	0.57179	39700	1.9926	1424
Frontal_Inf_Tri_L	-43	32	17	100	23	0.11368	2529
Fusiform_L	25	-47	18	0.0075567	39700	0.016234	2310
Fusiform_L	-27	-21	-24	32.8283	198	0.35173	2310
Fusiform_R	17	-29	-10	7.3159	2105	0.7645	2518
Fusiform_R	32	-53	-6	18.4226	1737	1.5886	2518
Fusiform_R	34	-9	-22	8.6412	1597	0.68507	2518
Heschl_R	25	-47	18	1.4433	39700	28.7651	249
Hippocampus_L	25	-47	18	1.2191	39700	6.4914	932
Hippocampus_R	25	-47	18	0.0050378	39700	0.026427	946
Hippocampus_R	48	16	-26	3.6227	2926	1.4006	946
Hippocampus_R	17	-29	-10	12.304	2105	3.4223	946
Hippocampus_R	34	-9	-22	56.6061	1597	11.945	946
Insula_R	25	-47	18	1.4635	39700	4.1031	1770
Insula_R	48	16	-26	34.4156	2926	7.1116	1770
Lingual_L	25	-47	18	7.073	39700	16.7542	2095
Lingual_R	25	-47	18	3.4332	39700	7.4076	2300
Lingual_R	17	-29	-10	18.0523	2105	2.0652	2300
Lingual_R	32	-53	-6	58.9522	1737	5.5652	2300
Occipital_Sup_R	25	-47	18	0.062972	39700	0.22116	1413
OUTSIDE	25	-47	18	27.272	39700	0	0
OUTSIDE	31	-51	-49	17.7593	4820	0	0
OUTSIDE	48	16	-26	21.2919	2926	0	0
OUTSIDE	17	-29	-10	13.6817	2105	0	0
OUTSIDE	9	-43	-50	65.4578	3309	0	0
OUTSIDE	32	-53	-6	22.0495	1737	0	0
OUTSIDE	34	-9	-22	24.6086	1597	0	0
OUTSIDE	15	-1	26	90.7131	603	0	0
OUTSIDE	12	-35	-26	46.3675	936	0	0
OUTSIDE	-1	2	76	34.6939	49	0	0
OUTSIDE	-13	-46	-30	100	148	0	0
OUTSIDE	4	17	64	9.6774	62	0	0
OUTSIDE	26	-41	-36	100	21	0	0
OUTSIDE	-19	-11	-29	4.5455	44	0	0
OUTSIDE	-30	3	-32	100	21	0	0
OUTSIDE	-26	-43	22	100	47	0	0
OUTSIDE	-10	-32	-24	59.5238	42	0	0
OUTSIDE	-20	-70	14	6.25	16	0	0
ParaHippocampal_L	25	-47	18	0.85894	39700	4.3584	978
ParaHippocampal_L	-27	-21	-24	67.1717	198	1.6999	978
ParaHippocampal_L	-19	-11	-29	95.4545	44	0.53681	978
ParaHippocampal_R	17	-29	-10	33.2542	2105	7.7297	1132
ParaHippocampal_R	34	-9	-22	7.201	1597	1.2699	1132

Postcentral_L	-62	-3	19	100	42	0.13489	3892
Postcentral_L	-42	-19	60	7.1429	42	0.0096351	3892
Precentral_L	-42	-19	60	92.8571	42	0.13826	3526
Precuneus_L	25	-47	18	8.8186	39700	12.4043	3528
Precuneus_L	4	-44	44	46.3087	298	0.48895	3528
Precuneus_L	-9	-55	34	100	5	0.017715	3528
Precuneus_R	25	-47	18	10.8514	39700	16.4931	3265
Precuneus_R	4	-44	44	48.6577	298	0.55513	3265
Putamen_R	48	16	-26	2.4607	2926	0.84586	1064
Rolandic_Oper_R	25	-47	18	0.61209	39700	2.2821	1331
Supp_Motor_Area_L	-1	2	76	65.3061	49	0.18631	2147
Supp_Motor_Area_R	4	17	64	90.3226	62	0.29523	2371
SupraMarginal_R	56	-54	19	4.9853	682	0.2153	1974
Temporal_Inf_L	-40	-16	-32	100	9	0.035156	3200
Temporal_Mid_R	48	16	-26	3.486	2926	0.28918	4409
Temporal_Mid_R	56	-54	19	51.0264	682	0.98662	4409
Temporal_Pole_Mid_R	48	16	-26	7.3821	2926	2.2746	1187
Temporal_Pole_Sup_R	48	16	-26	18.6945	2926	5.1102	1338
Temporal_Sup_R	25	-47	18	0.095718	39700	0.15123	3141
Temporal_Sup_R	48	16	-26	8.6466	2926	1.0068	3141
Temporal_Sup_R	56	-54	19	28.1525	682	0.76409	3141
Thalamus_L	25	-47	18	1.3375	39700	6.0341	1100
Thalamus_R	25	-47	18	0.53904	39700	2.5307	1057
Thalamus_R	17	-29	-10	0.095012	2105	0.023652	1057
Vermis_1_2	12	-35	-26	21.4744	936	47.4057	53
Vermis_10	9	-43	-50	0.060441	3309	0.22321	112
Vermis_10	2	-48	-33	100	10	1.1161	112
Vermis_3	12	-35	-26	7.1581	936	3.6732	228
Vermis_4_5	25	-47	18	1.7909	39700	13.3647	665
Vermis_4_5	8	-61	-14	11.1111	36	0.075188	665
Vermis_6	25	-47	18	0.32997	39700	4.4137	371
Vermis_6	7	-73	-25	9.8361	61	0.20216	371
Vermis_7	7	-73	-25	45.9016	61	1.8041	194

Table 48 Anatomical labelling of the deactivated clusters for Subject 2; fMRI session 4 (after therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-23	-9	-13	8.4224	7575	36.25	220
Amygdala_R	52	-26	44	0.6319	246083	78.377	248
Angular_L	-51	-69	43	12.6697	2210	2.9838	1173
Angular_R	52	-26	44	0.078835	246083	1.3841	1752
Calcarine_L	52	-26	44	3.6792	246083	50.1218	2258
Calcarine_R	52	-26	44	2.4585	246083	40.6368	1861
Caudate_L	52	-26	44	1.174	246083	37.539	962
Caudate_R	52	-26	44	1.3402	246083	41.4738	994
Cerebelum_3_L	52	-26	44	0.10159	246083	22.9779	136
Cerebelum_3_L	-7	-36	-41	0.40527	987	0.36765	136
Cerebelum_3_R	52	-26	44	0.00040637	246083	0.060386	207
Cerebelum_4_5_L	52	-26	44	0.49292	246083	13.4778	1125
Cerebelum_4_5_R	52	-26	44	0.20481	246083	7.3171	861
Cerebelum_6_L	52	-26	44	0.069082	246083	1.2544	1694
Cerebelum_6_R	28	-52	-37	54.8387	62	0.23677	1795
Cerebelum_9_L	-14	-48	-40	71.2329	73	0.74799	869
Cerebelum_Crus1_R	51	-78	-20	0.87527	457	0.018882	2648
Cingulum_Ant_L	52	-26	44	0.25886	246083	5.6875	1400
Cingulum_Ant_L	4	40	55	5.2799	8163	3.8482	1400
Cingulum_Ant_R	52	-26	44	0.204	246083	4.7791	1313
Cingulum_Ant_R	4	40	55	2.5481	8163	1.9802	1313
Cingulum_Mid_L	52	-26	44	2.6036	246083	41.2609	1941
Cingulum_Mid_R	52	-26	44	2.3614	246083	32.9721	2203
Cingulum_Mid_R	4	40	55	0.94328	8163	0.4369	2203
Cingulum_Post_L	52	-26	44	1.3219	246083	87.824	463
Cingulum_Post_R	52	-26	44	0.76113	246083	69.8881	335
Cuneus_L	52	-26	44	2.0391	246083	41.1042	1526
Cuneus_R	52	-26	44	0.63028	246083	13.6148	1424
Frontal_Inf_Oper_L	52	-26	44	0.64369	246083	19.0751	1038
Frontal_Inf_Oper_L	-55	14	36	25.3333	75	0.22881	1038
Frontal_Inf_Orb_L	-23	-9	-13	0.066007	7575	0.036982	1690
Frontal_Inf_Orb_R	52	-26	44	0.19424	246083	3.5003	1707
Frontal_Inf_Tri_L	52	-26	44	0.082492	246083	1.0034	2529
Frontal_Inf_Tri_L	-37	39	-2	100	19	0.093911	2529
Frontal_Mid_L	52	-26	44	0.24829	246083	1.5705	4863
Frontal_Mid_L	-55	14	36	20	75	0.038556	4863
Frontal_Mid_L	-29	12	62	100	83	0.21335	4863
Frontal_Mid_L	-49	21	43	95.122	41	0.10025	4863
Frontal_Mid_Orb_R	52	-26	44	0.00081273	246083	0.024631	1015

Frontal_Mid_R	28	21	57	33.3333	30	0.024491	5104
Frontal_Sup_L	4	40	55	0.46552	8163	0.13198	3599
Frontal_Sup_Medial_L	4	40	55	65.9439	8163	22.4891	2992
Frontal_Sup_Medial_R	4	40	55	15.9623	8163	7.6324	2134
Frontal_Sup_Medial_R	14	67	25	5	20	0.0058575	2134
Frontal_Sup_Orb_L	-23	-9	-13	0.21122	7575	0.20768	963
Frontal_Sup_Orb_R	52	-26	44	0.0032509	246083	0.1003	997
Frontal_Sup_R	28	21	57	66.6667	30	0.061637	4056
Frontal_Sup_R	14	67	25	30	20	0.018491	4056
Fusiform_L	52	-26	44	0.18327	246083	2.4405	2310
Fusiform_L	-23	-9	-13	12.132	7575	4.9729	2310
Fusiform_L	-33	-33	-24	100	97	0.52489	2310
Fusiform_R	52	-26	44	1.6003	246083	19.5492	2518
Fusiform_R	51	-78	-20	2.8446	457	0.064535	2518
Fusiform_R	26	-51	-14	100	1	0.0049643	2518
Heschl_L	-37	-18	4	22.0044	459	5.6111	225
Heschl_R	52	-26	44	0.36045	246083	44.5281	249
Hippocampus_L	52	-26	44	0.27308	246083	9.0129	932
Hippocampus_L	-23	-9	-13	21.3201	7575	21.6604	932
Hippocampus_R	52	-26	44	1.9514	246083	63.4514	946
Insula_L	52	-26	44	0.40149	246083	6.6469	1858
Insula_L	-23	-9	-13	8.9505	7575	4.5614	1858
Insula_L	-37	-18	4	60.1307	459	1.8568	1858
Insula_L	-33	-19	13	100	6	0.040366	1858
Insula_R	52	-26	44	1.3792	246083	23.9689	1770
Lingual_L	52	-26	44	1.7982	246083	26.4021	2095
Lingual_R	52	-26	44	0.60508	246083	8.0924	2300
Lingual_R	51	-78	-20	1.3129	457	0.032609	2300
Occipital_Inf_R	52	-26	44	0.00040637	246083	0.012639	989
Occipital_Inf_R	51	-78	-20	31.9475	457	1.8453	989
Occipital_Mid_L	52	-26	44	0.0024382	246083	0.022936	3270
Occipital_Mid_L	-51	-69	43	1.5837	2210	0.13379	3270
Occipital_Mid_R	52	-26	44	0.0093464	246083	0.13704	2098
Occipital_Mid_R	52	-80	11	27.4336	113	0.1847	2098
Occipital_Mid_R	28	-98	-1	100	1	0.0059581	2098
Occipital_Sup_L	52	-26	44	0.12557	246083	2.8276	1366
Occipital_Sup_R	52	-26	44	0.065019	246083	1.4154	1413
Olfactory_L	-23	-9	-13	0.39604	7575	1.3393	280
Olfactory_R	52	-26	44	0.12801	246083	13.6246	289
OUTSIDE	52	-26	44	36.2211	246083	0	0
OUTSIDE	-51	-69	43	51.3575	2210	0	0
OUTSIDE	4	40	55	8.857	8163	0	0
OUTSIDE	-23	-9	-13	13.7426	7575	0	0

OUTSIDE	46	-47	64	16.3622	1259	0	0
OUTSIDE	-62	-57	8	12.0125	641	0	0
OUTSIDE	-37	-18	4	9.8039	459	0	0
OUTSIDE	-22	-75	68	100	184	0	0
OUTSIDE	51	-78	-20	63.0197	457	0	0
OUTSIDE	52	-80	11	63.7168	113	0	0
OUTSIDE	30	-37	49	11.8343	169	0	0
OUTSIDE	-10	-21	-23	100	199	0	0
OUTSIDE	-7	-36	-41	99.5947	987	0	0
OUTSIDE	28	-52	-37	45.1613	62	0	0
OUTSIDE	61	-64	-11	3.5088	57	0	0
OUTSIDE	6	-22	-22	100	88	0	0
OUTSIDE	-49	21	43	4.878	41	0	0
OUTSIDE	14	67	25	65	20	0	0
OUTSIDE	-38	-45	33	100	21	0	0
OUTSIDE	-14	-48	-40	28.7671	73	0	0
OUTSIDE	29	-64	69	100	1	0	0
OUTSIDE	10	31	-3	100	3	0	0
OUTSIDE	11	-39	-42	100	1	0	0
OUTSIDE	-3	-33	-31	100	1	0	0
Pallidum_L	-23	-9	-13	0.77888	7575	2.5171	293
Pallidum_L	-21	-5	7	9.6774	31	0.12799	293
Pallidum_R	52	-26	44	0.58232	246083	63.9732	280
Paracentral_Lobule_L	52	-26	44	0.084931	246083	1.9366	1349
Paracentral_Lobule_R	52	-26	44	0.017474	246083	0.64294	836
ParaHippocampal_L	52	-26	44	0.056891	246083	1.7894	978
ParaHippocampal_L	-23	-9	-13	12.1056	7575	11.7203	978
ParaHippocampal_R	52	-26	44	1.224	246083	33.2597	1132
Parietal_Inf_L	52	-26	44	0.11825	246083	1.4865	2447
Parietal_Inf_L	-51	-69	43	34.3891	2210	3.8823	2447
Parietal_Inf_L	-44	-39	45	98.9474	95	0.48018	2447
Parietal_Inf_R	52	-26	44	0.097934	246083	2.2398	1345
Parietal_Inf_R	46	-47	64	0.15886	1259	0.018587	1345
Parietal_Inf_R	30	-37	49	5.9172	169	0.092937	1345
Parietal_Sup_L	52	-26	44	0.0024382	246083	0.03632	2065
Parietal_Sup_R	52	-26	44	0.0020318	246083	0.028128	2222
Parietal_Sup_R	46	-47	64	13.2645	1259	0.93947	2222
Postcentral_L	52	-26	44	3.7479	246083	29.6217	3892
Postcentral_L	-44	-39	45	1.0526	95	0.0032117	3892
Postcentral_R	52	-26	44	1.4605	246083	11.7512	3823
Postcentral_R	46	-47	64	70.2145	1259	2.8904	3823
Postcentral_R	30	-37	49	79.2899	169	0.43814	3823
Postcentral_R	69	-10	17	100	14	0.045776	3823

Precentral_L	52	-26	44	2.7523	246083	24.0109	3526
Precentral_L	-55	14	36	54.6667	75	0.14535	3526
Precentral_L	-55	6	33	100	2	0.0070902	3526
Precentral_R	52	-26	44	0.032509	246083	0.29577	3381
Precuneus_L	52	-26	44	4.5891	246083	40.012	3528
Precuneus_R	52	-26	44	3.6541	246083	34.4257	3265
Precuneus_R	12	-57	62	100	5	0.019142	3265
Precuneus_R	15	-63	61	100	2	0.007657	3265
Putamen_L	52	-26	44	0.058517	246083	1.7839	1009
Putamen_L	-23	-9	-13	9.3069	7575	8.7339	1009
Putamen_L	-37	-18	4	0.21786	459	0.012389	1009
Putamen_L	-21	-5	7	90.3226	31	0.34688	1009
Putamen_R	52	-26	44	2.0794	246083	60.1151	1064
Rectus_R	52	-26	44	0.0097528	246083	0.40268	745
Rolandic_Oper_L	52	-26	44	0.30315	246083	9.4192	990
Rolandic_Oper_R	52	-26	44	0.69042	246083	15.956	1331
Supp_Motor_Area_L	52	-26	44	0.015848	246083	0.22706	2147
Supp_Motor_Area_R	52	-26	44	0.015848	246083	0.20561	2371
SupraMarginal_L	52	-26	44	0.16905	246083	4.1401	1256
SupraMarginal_R	52	-26	44	0.50918	246083	7.9344	1974
SupraMarginal_R	30	-37	49	2.9586	169	0.031662	1974
Temporal_Inf_L	-23	-9	-13	7.3927	7575	2.1875	3200
Temporal_Inf_R	52	-26	44	0.33403	246083	2.8887	3557
Temporal_Inf_R	61	-64	-11	96.4912	57	0.19328	3557
Temporal_Mid_L	-23	-9	-13	0.10561	7575	0.020235	4942
Temporal_Mid_L	-62	-57	8	86.2715	641	1.3987	4942
Temporal_Mid_R	52	-26	44	3.6658	246083	25.5755	4409
Temporal_Mid_R	52	-80	11	8.8496	113	0.028351	4409
Temporal_Pole_Mid_L	-23	-9	-13	1.4521	7575	1.8212	755
Temporal_Pole_Mid_R	52	-26	44	0.90539	246083	23.4625	1187
Temporal_Pole_Sup_L	-23	-9	-13	1.8878	7575	1.3911	1285
Temporal_Pole_Sup_L	-38	25	-26	100	16	0.15564	1285
Temporal_Pole_Sup_R	52	-26	44	0.59451	246083	13.6678	1338
Temporal_Sup_L	-23	-9	-13	1.7294	7575	0.7132	2296
Temporal_Sup_L	-62	-57	8	1.7161	641	0.059887	2296
Temporal_Sup_L	-37	-18	4	7.8431	459	0.19599	2296
Temporal_Sup_R	52	-26	44	1.6173	246083	15.8389	3141
Thalamus_L	52	-26	44	2.0115	246083	56.25	1100
Thalamus_R	52	-26	44	1.4966	246083	43.5549	1057
Vermis_3	52	-26	44	0.10037	246083	13.5417	228
Vermis_4_5	52	-26	44	0.13979	246083	6.4662	665
Vermis_6	52	-26	44	0.17189	246083	14.252	371

Table 49 Anatomical labelling of the deactivated clusters for Subject 3; fMRI session 1 (before therapy).

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Cuneus_L	-2	-87	42	15.4412	136	0.17202	1526
Occipital_Sup_L	-2	-87	42	23.5294	136	0.29283	1366
OUTSIDE	-2	-87	42	42.6471	136	0	0
Precuneus_L	-2	-87	42	18.3824	136	0.088577	3528

Table 50 Anatomical labelling of the deactivated clusters for Subject 3; fMRI session 2 (after 7th therapy session).

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Frontal_Inf_Orb_L	-38	41	-3	28.2178	404	0.8432	1690
Frontal_Inf_Tri_L	-38	41	-3	44.3069	404	0.88474	2529
Frontal_Inf_Tri_L	-48	32	4	100	147	0.72657	2529
Frontal_Mid_L	-38	41	-3	4.2079	404	0.043697	4863
Frontal_Mid_Orb_L	-38	41	-3	22.7723	404	1.295	888
Fusiform_R	31	-29	-19	20.4545	88	0.089357	2518
Hippocampus_R	29	-15	-22	96.1538	26	0.33034	946
Occipital_Sup_L	-2	-85	44	32.716	162	0.48499	1366
OUTSIDE	-2	-85	44	46.2963	162	0	0
OUTSIDE	-38	41	-3	0.49505	404	0	0
OUTSIDE	29	-15	-22	3.8462	26	0	0
ParaHippocampal_R	31	-29	-19	79.5455	88	0.77297	1132
Precuneus_L	-2	-85	44	20.9877	162	0.12046	3528

Table 51 Anatomical labelling of the deactivated clusters for Subject 3; fMRI session 3 (after 14th therapy session).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_R	26	15	-18	2.5773	1358	1.7641	248
Angular_R	59	-65	30	87.5622	402	2.5114	1752
Caudate_L	-9	0	7	28.5714	7	0.025988	962
Cerebelum_10_R	25	-44	-40	16.6667	144	1.8868	159
Cerebelum_4_5_L	-30	-42	-32	12.1795	780	1.0556	1125
Cerebelum_4_5_R	33	-41	-23	2.6946	334	0.13066	861
Cerebelum_6_L	-27	-75	-33	1.3601	1397	0.1402	1694
Cerebelum_6_L	-30	-42	-32	17.9487	780	1.0331	1694
Cerebelum_6_R	33	-41	-23	7.485	334	0.17409	1795
Cerebelum_7b_L	-27	-75	-33	0.50107	1397	0.14957	585
Cerebelum_9_L	-30	-42	-32	12.5641	780	1.4097	869
Cerebelum_Crus1_L	-27	-75	-33	48.1031	1397	3.227	2603
Cerebelum_Crus2_L	-27	-75	-33	50.0358	1397	4.6133	1894
Frontal_Inf_Orb_R	26	15	-18	13.5493	1358	1.3474	1707
Frontal_Inf_Tri_L	-34	32	3	100	2	0.0098853	2529
Frontal_Med_Orb_R	26	15	-18	1.9882	1358	0.39428	856
Frontal_Mid_Orb_R	26	15	-18	1.3991	1358	0.23399	1015
Frontal_Mid_R	51	24	46	4.3478	23	0.0024491	5104
Frontal_Mid_R	50	13	53	22.2222	9	0.0048981	5104
Frontal_Sup_Orb_R	26	15	-18	17.0839	1358	2.9087	997
Frontal_Sup_R	43	-20	65	0.29038	2755	0.024655	4056
Frontal_Sup_R	22	23	65	80	5	0.012327	4056
Fusiform_R	33	-41	-23	70.6587	334	1.1716	2518
Insula_L	-29	18	-19	100	10	0.067277	1858
Insula_R	26	15	-18	16.4948	1358	1.5819	1770
Olfactory_R	26	15	-18	1.6937	1358	0.99481	289
OUTSIDE	43	-20	65	1.4156	2755	0	0
OUTSIDE	26	15	-18	40.5007	1358	0	0
OUTSIDE	59	-65	30	12.4378	402	0	0
OUTSIDE	-25	11	0	40.7407	378	0	0
OUTSIDE	25	-44	-40	83.3333	144	0	0
OUTSIDE	-30	-42	-32	57.3077	780	0	0
OUTSIDE	9	-28	-2	65.3333	75	0	0
OUTSIDE	51	24	46	95.6522	23	0	0
OUTSIDE	50	13	53	77.7778	9	0	0
OUTSIDE	57	-56	47	11.5385	52	0	0
OUTSIDE	22	23	65	20	5	0	0
OUTSIDE	-9	0	7	71.4286	7	0	0
ParaHippocampal_R	33	-41	-23	19.1617	334	0.70671	1132

Parietal_Inf_R	57	-56	47	88.4615	52	0.42751	1345
Postcentral_R	43	-20	65	27.0054	2755	2.4326	3823
Precentral_R	43	-20	65	71.2886	2755	7.2612	3381
Putamen_L	-25	11	0	59.2593	378	2.775	1009
Putamen_R	26	15	-18	0.51546	1358	0.082237	1064
Rectus_R	26	15	-18	3.8292	1358	0.87248	745
Temporal_Mid_R	60	-7	-15	72.1088	147	0.30052	4409
Temporal_Pole_Sup_R	26	15	-18	0.36819	1358	0.046712	1338
Temporal_Sup_R	60	-7	-15	27.8912	147	0.16316	3141
Thalamus_R	9	-28	-2	34.6667	75	0.30747	1057

Table 52 Anatomical labelling of the deactivated clusters for Subject 3; fMRI session 4 (after therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-52	-69	31	63.6364	11	0.074595	1173
Angular_L	-50	-72	35	90.9091	11	0.10656	1173
Angular_R	58	-67	13	34.832	1935	4.8088	1752
Angular_R	56	-47	30	21.4876	121	0.1855	1752
Calcarine_L	-4	-52	39	8.0398	38782	17.2609	2258
Calcarine_L	-8	-73	6	86.2069	87	0.41519	2258
Calcarine_R	-4	-52	39	10.9252	38782	28.4592	1861
Cingulum_Mid_L	-4	-52	39	1.3305	38782	3.323	1941
Cingulum_Mid_L	-1	-22	28	4.7619	147	0.04508	1941
Cingulum_Mid_R	-4	-52	39	4.2546	38782	9.3622	2203
Cingulum_Mid_R	-1	-22	28	18.3673	147	0.1532	2203
Cingulum_Post_L	-4	-52	39	3.3959	38782	35.5562	463
Cingulum_Post_R	-4	-52	39	2.019	38782	29.2164	335
Cuneus_L	-4	-52	39	17.1549	38782	54.4971	1526
Cuneus_R	-4	-52	39	8.1301	38782	27.6773	1424
Frontal_Inf_Oper_L	-43	15	31	100	6	0.072254	1038
Frontal_Inf_Orb_L	-45	39	-18	100	6	0.044379	1690
Frontal_Inf_Orb_L	-29	23	-17	100	3	0.022189	1690
Frontal_Mid_L	-34	17	44	100	671	1.7248	4863
Frontal_Sup_L	-18	23	56	100	5	0.017366	3599
Frontal_Sup_Medial_L	0	48	45	93.9759	83	0.32587	2992
Frontal_Sup_Medial_R	0	48	45	3.6145	83	0.017573	2134
Fusiform_R	19	-58	-11	23.5294	17	0.019857	2518
Fusiform_R	29	-59	-15	100	1	0.0049643	2518
Heschl_R	42	-21	1	17.2811	434	3.7651	249
Insula_R	25	12	-11	1.1976	334	0.028249	1770
Insula_R	42	-21	1	19.5853	434	0.60028	1770
Lingual_L	-4	-52	39	0.17018	38782	0.39379	2095
Lingual_L	-8	-73	6	13.7931	87	0.071599	2095
Lingual_R	-4	-52	39	3.0762	38782	6.4837	2300
Lingual_R	19	-58	-11	76.4706	17	0.070652	2300
Occipital_Mid_L	-4	-52	39	0.012893	38782	0.019113	3270
Occipital_Mid_R	58	-67	13	0.20672	1935	0.023832	2098
Occipital_Sup_L	-4	-52	39	4.368	38782	15.5015	1366
Occipital_Sup_R	-4	-52	39	0.22175	38782	0.76079	1413
Olfactory_R	25	12	-11	3.5928	334	0.51903	289
OUTSIDE	-4	-52	39	5.2034	38782	0	0
OUTSIDE	58	-67	13	0.46512	1935	0	0
OUTSIDE	-48	-46	58	48.5294	340	0	0

OUTSIDE	25	12	-11	43.1138	334	0	0
OUTSIDE	-55	-50	53	49.3197	294	0	0
OUTSIDE	-1	-22	28	76.8707	147	0	0
OUTSIDE	42	-21	1	12.6728	434	0	0
OUTSIDE	0	48	45	2.4096	83	0	0
OUTSIDE	-43	-14	66	66.6667	12	0	0
OUTSIDE	-52	-69	31	36.3636	11	0	0
OUTSIDE	-50	-72	35	9.0909	11	0	0
OUTSIDE	-55	-57	43	100	2	0	0
Paracentral_Lobule_R	-4	-52	39	0.42803	38782	2.4821	836
Paracentral_Lobule_R	5	-37	68	100	60	0.89713	836
Parietal_Inf_L	-48	-46	58	51.4706	340	0.89395	2447
Parietal_Inf_L	-55	-50	53	50.6803	294	0.76114	2447
Precentral_L	-43	-14	66	33.3333	12	0.01418	3526
Precuneus_L	-4	-52	39	17.8872	38782	24.5784	3528
Precuneus_R	-4	-52	39	13.3825	38782	19.8698	3265
Putamen_R	25	12	-11	52.0958	334	2.0442	1064
SupraMarginal_L	-55	-52	29	100	26	0.25876	1256
SupraMarginal_R	56	-47	30	78.5124	121	0.60157	1974
Temporal_Mid_R	58	-67	13	57.1576	1935	3.1356	4409
Temporal_Sup_R	58	-67	13	7.3385	1935	0.56511	3141
Temporal_Sup_R	42	-21	1	50.4608	434	0.87154	3141
Temporal_Sup_R	52	-7	-12	100	12	0.047755	3141

Table 53 Anatomical labelling of the deactivated clusters for Subject 4; fMRI session 1 (before therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-58	-12	-17	1.2267	33424	23.2955	220
Calcarine_L	1	-59	12	29.9435	177	0.2934	2258
Calcarine_R	1	-59	12	29.3785	177	0.34927	1861
Calcarine_R	24	-45	15	2.4941	842	0.14105	1861
Caudate_L	7	-26	43	9.7774	16170	20.5431	962
Caudate_R	7	-26	43	0.54422	16170	1.1066	994
Cingulum_Ant_L	7	-26	43	0.18553	16170	0.26786	1400
Cingulum_Ant_R	7	-26	43	0.061843	16170	0.095202	1313
Cingulum_Mid_L	7	-26	43	1.7563	16170	1.829	1941
Cingulum_Mid_R	7	-26	43	29.4682	16170	27.037	2203
Cingulum_Mid_R	6	-43	29	23.5294	17	0.022696	2203
Cingulum_Post_R	6	-43	29	76.4706	17	0.48507	335
Cuneus_R	13	-60	37	5.1896	501	0.22823	1424
Frontal_Inf_Oper_L	-56	11	13	55.0684	3216	21.3271	1038
Frontal_Inf_Oper_L	7	-26	43	0.012369	16170	0.024085	1038
Frontal_Inf_Orb_L	-58	-12	-17	1.2356	33424	3.0547	1690
Frontal_Inf_Tri_L	-58	-12	-17	0.011967	33424	0.019771	2529
Frontal_Inf_Tri_L	-56	11	13	8.209	3216	1.3049	2529
Frontal_Mid_L	7	-26	43	2.7829	16170	1.1567	4863
Frontal_Mid_L	-19	31	34	58.8803	518	0.78398	4863
Frontal_Mid_R	27	9	41	47.0289	1178	1.3568	5104
Frontal_Sup_L	-19	31	34	39.7683	518	0.71548	3599
Frontal_Sup_R	21	2	73	43.1355	2258	3.0017	4056
Frontal_Sup_R	27	9	41	9.8472	1178	0.3575	4056
Fusiform_L	-58	-12	-17	0.29919	33424	0.54113	2310
Fusiform_L	-28	-34	-15	25.7813	256	0.35714	2310
Fusiform_R	33	-51	-6	36.828	1116	2.0403	2518
Heschl_L	-58	-12	-17	3.7757	33424	70.1111	225
Hippocampus_L	-58	-12	-17	1.4451	33424	6.478	932
Hippocampus_L	-28	-34	-15	2.7344	256	0.093884	932
Insula_L	-58	-12	-17	13.9481	33424	31.3644	1858
Insula_L	-56	11	13	0.37313	3216	0.080732	1858
Insula_R	56	-3	13	6.1381	391	0.16949	1770
Lingual_L	-19	-48	-5	100	7	0.041766	2095
Lingual_R	33	-51	-6	30.5556	1116	1.8533	2300
OUTSIDE	-58	-12	-17	22.1577	33424	0	0
OUTSIDE	21	2	73	34.9867	2258	0	0
OUTSIDE	-56	11	13	0.96393	3216	0	0
OUTSIDE	7	-26	43	49.9443	16170	0	0

OUTSIDE	-39	53	-44	100	217	0	0
OUTSIDE	58	-47	44	0.10893	918	0	0
OUTSIDE	-50	-58	55	60.5178	309	0	0
OUTSIDE	27	9	41	43.1239	1178	0	0
OUTSIDE	1	-59	12	16.3842	177	0	0
OUTSIDE	56	-3	13	7.6726	391	0	0
OUTSIDE	24	-45	15	91.3302	842	0	0
OUTSIDE	72	-37	20	21.7391	46	0	0
OUTSIDE	-19	31	34	1.3514	518	0	0
OUTSIDE	33	-51	-6	31.362	1116	0	0
OUTSIDE	-28	-34	-15	8.2031	256	0	0
OUTSIDE	13	-60	37	2.5948	501	0	0
OUTSIDE	-3	-21	-27	100	289	0	0
OUTSIDE	33	-29	46	8.3333	24	0	0
OUTSIDE	5	-77	-47	100	41	0	0
OUTSIDE	-19	-25	48	100	22	0	0
OUTSIDE	-30	2	28	100	1	0	0
Pallidum_L	-58	-12	-17	1.0681	33424	15.2304	293
Paracentral_Lobule_R	7	-26	43	0.8658	16170	2.0933	836
ParaHippocampal_L	-58	-12	-17	0.10771	33424	0.46012	978
ParaHippocampal_L	-28	-34	-15	63.2813	256	2.0706	978
ParaHippocampal_R	33	-51	-6	1.2545	1116	0.15459	1132
Parietal_Inf_L	-50	-58	55	39.4822	309	0.62321	2447
Parietal_Inf_R	58	-47	44	60.3486	918	5.1487	1345
Postcentral_L	-58	-12	-17	9.2239	33424	9.9017	3892
Postcentral_R	7	-26	43	0.48237	16170	0.25504	3823
Postcentral_R	33	-29	46	91.6667	24	0.071933	3823
Precentral_L	-58	-12	-17	0.13763	33424	0.16307	3526
Precentral_L	-56	11	13	24.4714	3216	2.79	3526
Precentral_L	7	-26	43	1.7254	16170	0.98908	3526
Precentral_R	28	-20	73	100	129	0.47693	3381
Precentral_R	63	4	28	100	41	0.15158	3381
Precuneus_L	1	-59	12	24.2938	177	0.15235	3528
Precuneus_L	0	-70	38	92.4581	358	1.1728	3528
Precuneus_R	7	-26	43	0.71738	16170	0.4441	3265
Precuneus_R	24	-45	15	6.1758	842	0.19908	3265
Precuneus_R	0	-70	38	7.5419	358	0.10337	3265
Precuneus_R	13	-60	37	92.2156	501	1.7688	3265
Putamen_L	-58	-12	-17	7.4557	33424	30.8722	1009
Putamen_L	7	-26	43	0.14842	16170	0.29732	1009
Rolandic_Oper_L	-58	-12	-17	1.9716	33424	8.3207	990
Rolandic_Oper_L	-56	11	13	10.9142	3216	4.4318	990
Rolandic_Oper_R	56	-3	13	86.1893	391	3.1649	1331

Supp_Motor_Area_R	21	2	73	21.8778	2258	2.6044	2371
Supp_Motor_Area_R	7	-26	43	1.4162	16170	1.2073	2371
SupraMarginal_L	-58	-12	-17	0.96637	33424	3.2146	1256
SupraMarginal_R	7	-26	43	0.11132	16170	0.11398	1974
SupraMarginal_R	58	-47	44	39.5425	918	2.2986	1974
Temporal_Inf_L	-58	-12	-17	0.04787	33424	0.0625	3200
Temporal_Inf_L	-40	16	-35	2.2222	810	0.070313	3200
Temporal_Inf_L	-36	-8	-37	100	5	0.019531	3200
Temporal_Mid_L	-58	-12	-17	16.9998	33424	14.3717	4942
Temporal_Pole_Mid_L	-58	-12	-17	0.10172	33424	0.56291	755
Temporal_Pole_Mid_L	-40	16	-35	84.4444	810	11.3245	755
Temporal_Pole_Sup_L	-58	-12	-17	1.2925	33424	4.2023	1285
Temporal_Pole_Sup_L	-40	16	-35	13.3333	810	1.0506	1285
Temporal_Sup_L	-58	-12	-17	16.527	33424	30.074	2296
Temporal_Sup_R	72	-37	20	78.2609	46	0.14327	3141

Table 54 Anatomical labelling of the deactivated clusters for Subject 4; fMRI session 2 (after 7th therapy session).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-58	-12	-17	1.2267	33424	23.2955	220
Calcarine_L	1	-59	12	29.9435	177	0.2934	2258
Calcarine_R	1	-59	12	29.3785	177	0.34927	1861
Calcarine_R	24	-45	15	2.4941	842	0.14105	1861
Caudate_L	7	-26	43	9.7774	16170	20.5431	962
Caudate_R	7	-26	43	0.54422	16170	1.1066	994
Cingulum_Ant_L	7	-26	43	0.18553	16170	0.26786	1400
Cingulum_Ant_R	7	-26	43	0.061843	16170	0.095202	1313
Cingulum_Mid_L	7	-26	43	1.7563	16170	1.829	1941
Cingulum_Mid_R	7	-26	43	29.4682	16170	27.037	2203
Cingulum_Mid_R	6	-43	29	23.5294	17	0.022696	2203
Cingulum_Post_R	6	-43	29	76.4706	17	0.48507	335
Cuneus_R	13	-60	37	5.1896	501	0.22823	1424
Frontal_Inf_Oper_L	-56	11	13	55.0684	3216	21.3271	1038
Frontal_Inf_Oper_L	7	-26	43	0.012369	16170	0.024085	1038
Frontal_Inf_Orb_L	-58	-12	-17	1.2356	33424	3.0547	1690
Frontal_Inf_Tri_L	-58	-12	-17	0.011967	33424	0.019771	2529
Frontal_Inf_Tri_L	-56	11	13	8.209	3216	1.3049	2529
Frontal_Mid_L	7	-26	43	2.7829	16170	1.1567	4863
Frontal_Mid_L	-19	31	34	58.8803	518	0.78398	4863
Frontal_Mid_R	27	9	41	47.0289	1178	1.3568	5104
Frontal_Sup_L	-19	31	34	39.7683	518	0.71548	3599
Frontal_Sup_R	21	2	73	43.1355	2258	3.0017	4056
Frontal_Sup_R	27	9	41	9.8472	1178	0.3575	4056
Fusiform_L	-58	-12	-17	0.29919	33424	0.54113	2310
Fusiform_L	-28	-34	-15	25.7813	256	0.35714	2310
Fusiform_R	33	-51	-6	36.828	1116	2.0403	2518
Heschl_L	-58	-12	-17	3.7757	33424	70.1111	225
Hippocampus_L	-58	-12	-17	1.4451	33424	6.478	932
Hippocampus_L	-28	-34	-15	2.7344	256	0.093884	932
Insula_L	-58	-12	-17	13.9481	33424	31.3644	1858
Insula_L	-56	11	13	0.37313	3216	0.080732	1858
Insula_R	56	-3	13	6.1381	391	0.16949	1770
Lingual_L	-19	-48	-5	100	7	0.041766	2095
Lingual_R	33	-51	-6	30.5556	1116	1.8533	2300
OUTSIDE	-58	-12	-17	22.1577	33424	0	0
OUTSIDE	21	2	73	34.9867	2258	0	0
OUTSIDE	-56	11	13	0.96393	3216	0	0
OUTSIDE	7	-26	43	49.9443	16170	0	0

OUTSIDE	-39	53	-44	100	217	0	0
OUTSIDE	58	-47	44	0.10893	918	0	0
OUTSIDE	-50	-58	55	60.5178	309	0	0
OUTSIDE	27	9	41	43.1239	1178	0	0
OUTSIDE	1	-59	12	16.3842	177	0	0
OUTSIDE	56	-3	13	7.6726	391	0	0
OUTSIDE	24	-45	15	91.3302	842	0	0
OUTSIDE	72	-37	20	21.7391	46	0	0
OUTSIDE	-19	31	34	1.3514	518	0	0
OUTSIDE	33	-51	-6	31.362	1116	0	0
OUTSIDE	-28	-34	-15	8.2031	256	0	0
OUTSIDE	13	-60	37	2.5948	501	0	0
OUTSIDE	-3	-21	-27	100	289	0	0
OUTSIDE	33	-29	46	8.3333	24	0	0
OUTSIDE	5	-77	-47	100	41	0	0
OUTSIDE	-19	-25	48	100	22	0	0
OUTSIDE	-30	2	28	100	1	0	0
Pallidum_L	-58	-12	-17	1.0681	33424	15.2304	293
Paracentral_Lobule_R	7	-26	43	0.8658	16170	2.0933	836
ParaHippocampal_L	-58	-12	-17	0.10771	33424	0.46012	978
ParaHippocampal_L	-28	-34	-15	63.2813	256	2.0706	978
ParaHippocampal_R	33	-51	-6	1.2545	1116	0.15459	1132
Parietal_Inf_L	-50	-58	55	39.4822	309	0.62321	2447
Parietal_Inf_R	58	-47	44	60.3486	918	5.1487	1345
Postcentral_L	-58	-12	-17	9.2239	33424	9.9017	3892
Postcentral_R	7	-26	43	0.48237	16170	0.25504	3823
Postcentral_R	33	-29	46	91.6667	24	0.071933	3823
Precentral_L	-58	-12	-17	0.13763	33424	0.16307	3526
Precentral_L	-56	11	13	24.4714	3216	2.79	3526
Precentral_L	7	-26	43	1.7254	16170	0.98908	3526
Precentral_R	28	-20	73	100	129	0.47693	3381
Precentral_R	63	4	28	100	41	0.15158	3381
Precuneus_L	1	-59	12	24.2938	177	0.15235	3528
Precuneus_L	0	-70	38	92.4581	358	1.1728	3528
Precuneus_R	7	-26	43	0.71738	16170	0.4441	3265
Precuneus_R	24	-45	15	6.1758	842	0.19908	3265
Precuneus_R	0	-70	38	7.5419	358	0.10337	3265
Precuneus_R	13	-60	37	92.2156	501	1.7688	3265
Putamen_L	-58	-12	-17	7.4557	33424	30.8722	1009
Putamen_L	7	-26	43	0.14842	16170	0.29732	1009
Rolandic_Oper_L	-58	-12	-17	1.9716	33424	8.3207	990
Rolandic_Oper_L	-56	11	13	10.9142	3216	4.4318	990
Rolandic_Oper_R	56	-3	13	86.1893	391	3.1649	1331

Supp_Motor_Area_R	21	2	73	21.8778	2258	2.6044	2371
Supp_Motor_Area_R	7	-26	43	1.4162	16170	1.2073	2371
SupraMarginal_L	-58	-12	-17	0.96637	33424	3.2146	1256
SupraMarginal_R	7	-26	43	0.11132	16170	0.11398	1974
SupraMarginal_R	58	-47	44	39.5425	918	2.2986	1974
Temporal_Inf_L	-58	-12	-17	0.04787	33424	0.0625	3200
Temporal_Inf_L	-40	16	-35	2.2222	810	0.070313	3200
Temporal_Inf_L	-36	-8	-37	100	5	0.019531	3200
Temporal_Mid_L	-58	-12	-17	16.9998	33424	14.3717	4942
Temporal_Pole_Mid_L	-58	-12	-17	0.10172	33424	0.56291	755
Temporal_Pole_Mid_L	-40	16	-35	84.4444	810	11.3245	755
Temporal_Pole_Sup_L	-58	-12	-17	1.2925	33424	4.2023	1285
Temporal_Pole_Sup_L	-40	16	-35	13.3333	810	1.0506	1285
Temporal_Sup_L	-58	-12	-17	16.527	33424	30.074	2296
Temporal_Sup_R	72	-37	20	78.2609	46	0.14327	3141

Table 55 Anatomical labelling of the deactivated clusters for Subject 4; fMRI session 3 (after 14th therapy session).

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-46	-57	20	29.829	6725	21.3768	1173
Angular_R	51	-50	38	6.383	47	0.021404	1752
Calcarine_L	-3	-50	41	2.5348	20159	2.8288	2258
Calcarine_L	2	-100	14	18.9873	79	0.083038	2258
Calcarine_L	1	-89	8	100	78	0.4318	2258
Calcarine_R	-3	-50	41	1.7114	20159	2.3173	1861
Calcarine_R	20	-83	5	64.2468	551	2.3778	1861
Caudate_L	5	-16	23	1.1096	3785	0.54574	962
Caudate_L	-11	7	23	34.7191	890	4.0151	962
Caudate_R	-3	-50	41	0.029763	20159	0.075453	994
Caudate_R	5	-16	23	0.84544	3785	0.40241	994
Cerebelum_4_5_R	35	-37	-22	0.18868	530	0.014518	861
Cerebelum_6_R	27	-70	-21	98.5714	140	0.961	1795
Cerebelum_Crus1_L	-44	-69	-39	27.4576	295	0.38897	2603
Cerebelum_Crus2_L	-44	-69	-39	72.5424	295	1.4124	1894
Cingulum_Ant_R	5	-16	23	0.29062	3785	0.10472	1313
Cingulum_Mid_L	-3	-50	41	3.269	20159	4.2439	1941
Cingulum_Mid_R	-3	-50	41	3.0408	20159	3.4782	2203
Cingulum_Mid_R	5	-16	23	1.3474	3785	0.28938	2203
Cingulum_Post_L	-3	-50	41	1.8949	20159	10.3132	463
Cingulum_Post_R	-3	-50	41	0.29267	20159	2.2015	335
Cuneus_L	-3	-50	41	2.7978	20159	4.6199	1526
Cuneus_L	2	-100	14	67.0886	79	0.43414	1526
Cuneus_R	-3	-50	41	4.3802	20159	7.7511	1424
Cuneus_R	20	-83	5	7.2595	551	0.35112	1424
Frontal_Inf_Orb_L	-42	17	-4	36.0606	330	0.88018	1690
Frontal_Inf_Tri_L	-42	17	-4	3.0303	330	0.049427	2529
Frontal_Inf_Tri_L	-43	35	-1	100	16	0.079083	2529
Frontal_Med_Orb_L	-8	47	-10	100	67	1.1648	719
Frontal_Med_Orb_L	2	48	-12	21.4286	14	0.052156	719
Frontal_Med_Orb_R	2	48	-12	78.5714	14	0.16063	856
Frontal_Mid_L	-37	19	45	100	93	0.23905	4863
Frontal_Mid_R	29	-16	66	8.0771	2179	0.43103	5104
Frontal_Sup_R	29	-16	66	25.6999	2179	1.7258	4056
Frontal_Sup_R	28	12	70	40.3427	642	0.7982	4056
Fusiform_L	-46	-66	-13	7.8995	557	0.2381	2310
Fusiform_L	-29	-44	-12	59.1581	879	2.8139	2310
Fusiform_R	27	-83	-11	45.8333	576	1.3106	2518
Fusiform_R	35	-37	-22	99.8113	530	2.6261	2518

Fusiform_R	36	-67	-15	72.1893	507	1.8169	2518
Fusiform_R	34	-37	18	7.7244	1437	0.55103	2518
Fusiform_R	27	-70	-21	1.4286	140	0.0099285	2518
Hippocampus_L	-3	-50	41	0.0099211	20159	0.026824	932
Hippocampus_L	-27	-17	-22	64.8148	108	0.93884	932
Hippocampus_R	34	-37	18	12.8045	1437	2.4313	946
Hippocampus_R	32	-15	-28	5.6818	88	0.066068	946
Insula_L	-42	17	-4	60.6061	330	1.3455	1858
Insula_L	-36	-30	19	27.2727	22	0.040366	1858
Lingual_L	-3	-50	41	0.53078	20159	0.63842	2095
Lingual_L	-8	-71	-2	100	248	1.4797	2095
Lingual_L	-29	-44	-12	28.6689	879	1.5036	2095
Lingual_R	-3	-50	41	0.019842	20159	0.021739	2300
Lingual_R	27	-83	-11	45.1389	576	1.413	2300
Lingual_R	34	-37	18	8.3507	1437	0.65217	2300
Occipital_Inf_L	-46	-66	-13	66.0682	557	4.8884	941
Occipital_Inf_R	27	-83	-11	8.6806	576	0.63195	989
Occipital_Inf_R	36	-67	-15	15.1874	507	0.97321	989
Occipital_Mid_L	-46	-57	20	0.2974	6725	0.076453	3270
Occipital_Sup_R	-3	-50	41	0.054566	20159	0.097311	1413
Occipital_Sup_R	20	-83	5	3.9927	551	0.19462	1413
OUTSIDE	-3	-50	41	11.8111	20159	0	0
OUTSIDE	17	-27	85	70.0094	1067	0	0
OUTSIDE	29	-16	66	16.5213	2179	0	0
OUTSIDE	28	12	70	59.6573	642	0	0
OUTSIDE	-46	-57	20	11.3903	6725	0	0
OUTSIDE	58	-25	59	77.9886	527	0	0
OUTSIDE	27	-83	-11	0.34722	576	0	0
OUTSIDE	5	-16	23	95.6671	3785	0	0
OUTSIDE	-40	-66	60	80.4665	343	0	0
OUTSIDE	-9	-61	72	27.3469	245	0	0
OUTSIDE	-11	7	23	65.2809	890	0	0
OUTSIDE	36	-67	-15	12.6233	507	0	0
OUTSIDE	20	-83	5	24.5009	551	0	0
OUTSIDE	-27	-17	-22	9.2593	108	0	0
OUTSIDE	-42	17	-4	0.30303	330	0	0
OUTSIDE	2	-100	14	13.9241	79	0	0
OUTSIDE	-8	-26	2	0.32258	310	0	0
OUTSIDE	34	-37	18	63.8831	1437	0	0
OUTSIDE	-29	-44	-12	0.68259	879	0	0
OUTSIDE	29	-59	18	96	50	0	0
OUTSIDE	-35	50	-49	100	14	0	0
Paracentral_Lobule_R	17	-27	85	0.93721	1067	0.14952	836

Paracentral_Lobule_R	11	-24	66	70.9091	55	0.58313	836
ParaHippocampal_L	-27	-17	-22	25.9259	108	0.35787	978
ParaHippocampal_L	-29	-44	-12	11.4903	879	1.2909	978
ParaHippocampal_R	34	-37	18	7.2373	1437	1.1484	1132
ParaHippocampal_R	32	-15	-28	94.3182	88	0.91652	1132
Parietal_Inf_L	-46	-57	20	1.8141	6725	0.62321	2447
Parietal_Inf_L	-40	-66	60	14.2857	343	0.25031	2447
Parietal_Inf_R	58	-25	59	1.3283	527	0.065056	1345
Parietal_Inf_R	51	-50	38	93.617	47	0.40892	1345
Parietal_Sup_L	-40	-66	60	5.2478	343	0.10896	2065
Parietal_Sup_L	-9	-61	72	31.0204	245	0.46005	2065
Parietal_Sup_R	58	-25	59	1.3283	527	0.039379	2222
Postcentral_R	17	-27	85	13.4021	1067	0.46756	3823
Postcentral_R	58	-25	59	19.3548	527	0.33351	3823
Precentral_R	17	-27	85	15.6514	1067	0.61742	3381
Precentral_R	29	-16	66	49.7017	2179	4.004	3381
Precuneus_L	-3	-50	41	45.8257	20159	32.731	3528
Precuneus_L	-9	-61	72	41.6327	245	0.36139	3528
Precuneus_R	-3	-50	41	21.767	20159	16.7994	3265
Precuneus_R	29	-59	18	4	50	0.007657	3265
Rolandic_Oper_L	-36	-30	19	72.7273	22	0.20202	990
Rolandic_Oper_R	46	-4	8	100	38	0.35687	1331
Rolandic_Oper_R	44	-10	14	100	1	0.0093914	1331
Supp_Motor_Area_R	11	-24	66	29.0909	55	0.084353	2371
Supp_Motor_Area_R	13	20	60	100	25	0.1318	2371
SupraMarginal_L	-46	-57	20	5.7546	6725	3.8515	1256
Temporal_Inf_L	-46	-66	-13	26.0323	557	0.56641	3200
Temporal_Mid_L	-46	-57	20	30.974	6725	5.2686	4942
Temporal_Mid_L	-54	-6	-24	100	16	0.040469	4942
Temporal_Sup_L	-46	-57	20	19.9405	6725	7.3007	2296
Temporal_Sup_L	-49	-26	5	100	99	0.53898	2296
Temporal_Sup_R	66	-10	-10	100	5	0.019898	3141
Thalamus_L	5	-16	23	0.73976	3785	0.31818	1100
Thalamus_L	-8	-26	2	99.6774	310	3.5114	1100
Vermis_4_5	-3	-50	41	0.029763	20159	0.11278	665

Table 56 Anatomical labelling of the deactivated clusters for Subject 4; fMRI session 4 (after therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Calcarine_L	-1	-58	15	17.6387	703	0.68645	2258
Calcarine_R	-1	-58	15	0.56899	703	0.026867	1861
Caudate_L	1	-9	25	1.7619	11919	2.7287	962
Caudate_R	1	-9	25	1.0655	11919	1.5971	994
Cerebelum_4_5_L	-17	-47	-7	2.0619	776	0.17778	1125
Cingulum_Ant_L	1	-9	25	0.00839	11919	0.0089286	1400
Cingulum_Ant_L	-8	45	1	81.982	111	0.8125	1400
Cingulum_Mid_L	1	-9	25	0.11746	11919	0.09016	1941
Cingulum_Mid_L	-1	22	38	18.5185	27	0.0322	1941
Cingulum_Mid_L	-4	-39	35	100	2	0.01288	1941
Cingulum_Mid_R	1	-9	25	2.2569	11919	1.5263	2203
Cingulum_Post_L	-24	-47	9	0.57582	521	0.080994	463
Frontal_Mid_L	-42	13	49	100	1	0.0025704	4863
Frontal_Sup_Medial_L	-8	45	1	14.4144	111	0.066845	2992
Frontal_Sup_Medial_L	-1	22	38	81.4815	27	0.091912	2992
Frontal_Sup_R	11	-2	51	2.3404	470	0.0339	4056
Fusiform_L	-28	-34	-15	57.6568	1084	3.382	2310
Fusiform_L	-29	-5	-31	51.1364	88	0.24351	2310
Fusiform_R	21	-49	-8	1.5686	255	0.019857	2518
Fusiform_R	26	-38	-18	100	9	0.044678	2518
Heschl_L	-50	-18	6	9.1123	1273	6.4444	225
Hippocampus_L	-17	-47	-7	1.1598	776	0.12071	932
Hippocampus_L	-28	-34	-15	1.476	1084	0.21459	932
Hippocampus_L	-29	-5	-31	14.7727	88	0.17436	932
Hippocampus_R	21	-49	-8	6.2745	255	0.21142	946
Insula_L	-35	-8	-15	2.6667	75	0.013455	1858
Insula_L	-41	8	-11	100	6	0.040366	1858
Lingual_L	-17	-47	-7	86.7268	776	4.0155	2095
Lingual_R	21	-49	-8	55.2941	255	0.7663	2300
OUTSIDE	1	-9	25	93.9424	11919	0	0
OUTSIDE	21	15	78	100	280	0	0
OUTSIDE	-5	-71	58	7.8704	216	0	0
OUTSIDE	-17	-47	-7	6.0567	776	0	0
OUTSIDE	-28	-34	-15	5.4428	1084	0	0
OUTSIDE	11	-2	51	2.3404	470	0	0
OUTSIDE	-1	-58	15	2.9872	703	0	0
OUTSIDE	-8	45	1	3.6036	111	0	0
OUTSIDE	-24	-47	9	92.5144	521	0	0
OUTSIDE	4	-27	-35	100	467	0	0

OUTSIDE	-29	-5	-31	7.9545	88	0	0
OUTSIDE	-68	-19	29	74.4681	47	0	0
OUTSIDE	-35	-8	-15	94.6667	75	0	0
OUTSIDE	21	-49	-8	27.8431	255	0	0
OUTSIDE	22	-27	5	10.7143	28	0	0
OUTSIDE	19	-62	42	45.098	51	0	0
OUTSIDE	-33	51	-50	100	9	0	0
OUTSIDE	-43	9	-21	6.6667	15	0	0
OUTSIDE	-32	-24	-21	66.6667	3	0	0
ParaHippocampal_L	-28	-34	-15	34.8708	1084	4.8313	978
ParaHippocampal_L	-29	-5	-31	26.1364	88	0.29397	978
ParaHippocampal_L	-32	-24	-21	33.3333	3	0.012781	978
Parietal_Sup_L	-28	-41	64	7.0175	57	0.024213	2065
Postcentral_L	-50	-18	6	5.4988	1273	0.22482	3892
Postcentral_L	-68	-19	29	21.2766	47	0.032117	3892
Postcentral_L	-28	-41	64	92.9825	57	0.17022	3892
Precuneus_L	-5	-71	58	92.1296	216	0.70507	3528
Precuneus_L	-17	-47	-7	1.0309	776	0.028345	3528
Precuneus_L	-1	-58	15	78.5206	703	1.9558	3528
Precuneus_L	-24	-47	9	6.9098	521	0.12755	3528
Precuneus_L	-2	-67	44	100	44	0.1559	3528
Precuneus_R	1	-9	25	0.22653	11919	0.10337	3265
Precuneus_R	-1	-58	15	0.2845	703	0.007657	3265
Precuneus_R	21	-49	-8	9.0196	255	0.088055	3265
Precuneus_R	19	-62	42	54.902	51	0.1072	3265
Rolandic_Oper_L	-50	-18	6	3.4564	1273	0.55556	990
Supp_Motor_Area_R	11	-2	51	95.3191	470	2.3619	2371
SupraMarginal_L	-50	-18	6	4.2419	1273	0.53742	1256
SupraMarginal_L	-68	-19	29	4.2553	47	0.019904	1256
Temporal_Inf_L	-28	-34	-15	0.55351	1084	0.023438	3200
Temporal_Inf_R	57	-19	-24	100	14	0.049199	3557
Temporal_Mid_L	-50	-18	6	3.0636	1273	0.098644	4942
Temporal_Pole_Mid_L	-42	16	-36	100	5	0.082781	755
Temporal_Pole_Sup_L	-43	9	-21	93.3333	15	0.13619	1285
Temporal_Sup_L	-50	-18	6	74.6269	1273	5.172	2296
Temporal_Sup_L	-35	-8	-15	2.6667	75	0.010889	2296
Thalamus_L	-17	-47	-7	2.9639	776	0.26136	1100
Thalamus_R	1	-9	25	0.62086	11919	0.87512	1057
Thalamus_R	22	-27	5	89.2857	28	0.29565	1057

Table 57 Anatomical labelling of the deactivated clusters for Subject 5; fMRI session 1 (before therapy).

	Cluster center						
Region Label	**x [mm]**	**y [mm]**	**z [mm]**	**%Cluster**	**Nb Vx Cluster**	**%Label**	**Nb Vx Label**
Cerebelum_8_L	-29	-57	-40	2.7972	143	0.026497	1887
Cerebelum_Crus1_L	-29	-57	-40	8.3916	143	0.057626	2603
Cerebelum_Crus2_L	-29	-57	-40	7.6923	143	0.072598	1894
Frontal_Sup_Medial_R	9	54	38	100	1	0.0058575	2134
Hippocampus_R	29	-9	-21	100	1	0.013214	946
Hippocampus_R	27	-7	-20	100	1	0.013214	946
OUTSIDE	-51	0	55	52.627	1142	0	0
OUTSIDE	28	56	-44	100	571	0	0
OUTSIDE	-29	-57	-40	81.1189	143	0	0
OUTSIDE	30	6	-50	96.875	32	0	0
Postcentral_L	-51	0	55	11.5587	1142	0.42395	3892
Precentral_L	-51	0	55	35.8144	1142	1.4499	3526
Temporal_Inf_R	30	6	-50	3.125	32	0.0035142	3557

Table 58 Anatomical labelling of the deactivated clusters for Subject 5; fMRI session 2 (after 7th therapy session).

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-38	-77	50	3.4722	1152	0.42626	1173
Angular_R	52	-52	35	70.2648	491	2.4615	1752
Cerebelum_9_R	14	-40	-50	100	3	0.046354	809
Cerebelum_9_R	19	-49	-50	100	3	0.046354	809
Cuneus_R	28	-84	47	31.7822	2020	5.6355	1424
Frontal_Inf_Tri_R	33	26	23	47.178	691	1.8945	2151
Frontal_Med_Orb_L	5	60	-9	3.3333	30	0.017385	719
Frontal_Med_Orb_L	-7	57	-12	100	4	0.069541	719
Frontal_Med_Orb_R	5	58	-1	57.6087	92	0.77395	856
Frontal_Med_Orb_R	5	60	-9	96.6667	30	0.42348	856
Frontal_Mid_R	33	26	23	26.1939	691	0.44328	5104
Frontal_Sup_Medial_R	5	58	-1	34.7826	92	0.18744	2134
Fusiform_R	29	-31	-25	100	4	0.019857	2518
Occipital_Sup_L	-19	-91	41	45.6853	197	0.82357	1366
Occipital_Sup_R	28	-84	47	24.9505	2020	4.4586	1413
OUTSIDE	-46	-2	44	0.28944	691	0	0
OUTSIDE	28	-84	47	16.7822	2020	0	0
OUTSIDE	-38	-77	50	85.8507	1152	0	0
OUTSIDE	-49	-14	63	81.6667	360	0	0
OUTSIDE	4	-38	58	12.5198	631	0	0
OUTSIDE	-63	-54	32	69.7674	258	0	0
OUTSIDE	-19	-91	41	54.3147	197	0	0
OUTSIDE	22	-42	82	60.4167	96	0	0
OUTSIDE	33	26	23	26.6281	691	0	0
OUTSIDE	5	58	-1	7.6087	92	0	0
OUTSIDE	-28	-35	75	11.4286	70	0	0
OUTSIDE	-55	-16	59	100	9	0	0
Paracentral_Lobule_L	4	-38	58	11.252	631	0.65789	1349
Paracentral_Lobule_L	-9	-27	70	100	14	0.12973	1349
Paracentral_Lobule_R	4	-38	58	54.8336	631	5.1734	836
Parietal_Inf_L	-38	-77	50	10.5035	1152	0.6181	2447
Parietal_Inf_R	52	-52	35	28.9206	491	1.3197	1345
Parietal_Inf_R	51	-36	54	100	26	0.24164	1345
Parietal_Inf_R	59	-52	46	100	1	0.0092937	1345
Parietal_Sup_L	-38	-77	50	0.17361	1152	0.012107	2065
Parietal_Sup_R	28	-84	47	12.8713	2020	1.4626	2222
Postcentral_L	-46	-2	44	0.14472	691	0.0032117	3892
Postcentral_L	-28	-35	75	88.5714	70	0.19913	3892
Postcentral_L	-44	-10	53	54.1667	24	0.041752	3892

Postcentral_R	68	-9	14	74.5763	59	0.14387	3823
Postcentral_R	22	-42	82	39.5833	96	0.12425	3823
Precentral_L	-46	-2	44	99.5658	691	2.439	3526
Precentral_L	-49	-14	63	18.3333	360	0.23398	3526
Precentral_L	-44	-10	53	45.8333	24	0.038996	3526
Precuneus_L	28	-84	47	8.9604	2020	0.6413	3528
Precuneus_L	4	-38	58	7.1315	631	0.15944	3528
Precuneus_R	28	-84	47	4.6535	2020	0.35988	3265
Precuneus_R	4	-38	58	14.2631	631	0.34456	3265
Rectus_L	5	56	-20	14.8649	148	0.32277	852
Rectus_R	5	56	-20	85.1351	148	2.1141	745
Rolandic_Oper_R	68	-9	14	20.339	59	0.1127	1331
SupraMarginal_L	-63	-54	32	30.2326	258	0.77627	1256
SupraMarginal_R	52	-52	35	0.81466	491	0.025329	1974
SupraMarginal_R	65	-49	27	100	4	0.025329	1974
Temporal_Mid_R	61	-21	-11	98.7952	83	0.23248	4409
Temporal_Mid_R	60	-7	-25	100	55	0.15593	4409
Temporal_Sup_R	68	-9	14	5.0847	59	0.011939	3141
Temporal_Sup_R	61	-21	-11	1.2048	83	0.0039796	3141
Thalamus_R	16	-25	5	100	62	0.73321	1057

Table 59 Anatomical labelling of the deactivated clusters for Subject 5; fMRI session 3 (after 14th therapy session).

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Cuneus_L	4	-70	30	21.3193	1046	1.8267	1526
Cuneus_R	4	-70	30	9.0822	1046	0.83392	1424
Occipital_Mid_L	-29	-98	23	6.3158	285	0.068807	3270
Occipital_Sup_L	-29	-98	23	2.4561	285	0.064056	1366
OUTSIDE	-29	-98	23	91.2281	285	0	0
OUTSIDE	-37	55	-48	100	105	0	0
Precuneus_L	4	-70	30	29.4455	1046	1.0913	3528
Precuneus_R	4	-70	30	40.153	1046	1.608	3265

Table 60 Anatomical labelling of the deactivated clusters for Subject 5; fMRI session 4 (after therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-42	-60	60	0.053022	1886	0.010656	1173
Angular_L	-43	-53	25	76.7442	602	4.9233	1173
Angular_L	-39	-62	35	100	5	0.053282	1173
Angular_R	61	-53	31	56.2933	3464	13.9127	1752
Calcarine_L	0	-89	-1	100	124	0.68645	2258
Calcarine_L	-23	-53	7	63.2743	226	0.79163	2258
Calcarine_R	1	-51	53	1.2708	23056	1.968	1861
Caudate_R	10	4	11	100	2	0.025151	994
Cerebelum_Crus2_R	37	-72	-45	100	91	0.53732	2117
Cingulum_Ant_L	-4	50	-2	30.9199	1685	4.6518	1400
Cingulum_Mid_L	1	-51	53	0.40337	23056	0.59892	1941
Cingulum_Mid_R	1	-51	53	0.99757	23056	1.305	2203
Cingulum_Post_L	1	-51	53	1.3142	23056	8.1803	463
Cingulum_Post_R	1	-51	53	1.7913	23056	15.4104	335
Cuneus_L	1	-51	53	1.5484	23056	2.9243	1526
Cuneus_L	-10	-95	32	37.3832	428	1.3106	1526
Cuneus_R	1	-51	53	13.9009	23056	28.1338	1424
Frontal_Inf_Tri_R	43	32	31	20.8791	273	0.33124	2151
Frontal_Med_Orb_L	-4	50	-2	11.632	1685	3.4075	719
Frontal_Med_Orb_R	-4	50	-2	2.6113	1685	0.64252	856
Frontal_Mid_L	-45	28	39	95.0324	463	1.131	4863
Frontal_Mid_L	-20	53	32	37.5	24	0.023134	4863
Frontal_Mid_R	43	32	31	79.1209	273	0.529	5104
Frontal_Mid_R	25	45	29	95.6522	138	0.32328	5104
Frontal_Sup_L	-4	50	-2	14.4807	1685	0.84746	3599
Frontal_Sup_L	-20	53	32	62.5	24	0.052098	3599
Frontal_Sup_Medial_L	-4	50	-2	24.1543	1685	1.7004	2992
Frontal_Sup_Medial_R	-4	50	-2	11.7507	1685	1.1598	2134
Frontal_Sup_Orb_L	-4	50	-2	1.543	1685	0.33749	963
Frontal_Sup_R	25	45	29	4.3478	138	0.018491	4056
Fusiform_R	18	-74	-5	1.4558	1786	0.12907	2518
Fusiform_R	28	-2	-46	100	2	0.0099285	2518
Lingual_L	-17	-47	-4	74.1117	394	1.7422	2095
Lingual_L	-8	-81	-4	100	5	0.029833	2095
Lingual_L	-8	-84	-7	100	3	0.0179	2095
Lingual_R	18	-74	-5	97.6484	1786	9.4783	2300
Occipital_Inf_L	-20	-101	-6	100	1	0.013284	941
Occipital_Sup_L	-10	-95	32	34.3458	428	1.3452	1366
Occipital_Sup_L	-20	-88	38	86.4865	111	0.87848	1366

Occipital_Sup_R	1	-51	53	5.4563	23056	11.1288	1413
OUTSIDE	1	-51	53	2.8583	23056	0	0
OUTSIDE	61	-53	31	4.6767	3464	0	0
OUTSIDE	18	-74	-5	0.89586	1786	0	0
OUTSIDE	-42	-60	60	64.5811	1886	0	0
OUTSIDE	46	-36	4	31.7743	2074	0	0
OUTSIDE	-52	2	41	38.322	1764	0	0
OUTSIDE	-43	-53	25	2.1595	602	0	0
OUTSIDE	-4	50	-2	2.908	1685	0	0
OUTSIDE	-45	28	39	4.9676	463	0	0
OUTSIDE	-20	-18	80	63.0435	184	0	0
OUTSIDE	-17	-47	-4	1.5228	394	0	0
OUTSIDE	13	-33	85	58.4337	166	0	0
OUTSIDE	51	-40	58	32.6379	671	0	0
OUTSIDE	-10	-95	32	28.271	428	0	0
OUTSIDE	-23	-53	7	9.292	226	0	0
OUTSIDE	-40	54	-40	100	436	0	0
OUTSIDE	-20	-88	38	13.5135	111	0	0
Paracentral_Lobule_L	1	-51	53	0.13879	23056	0.29652	1349
Paracentral_Lobule_L	-20	-18	80	0.54348	184	0.0092661	1349
Paracentral_Lobule_R	1	-51	53	1.7739	23056	6.1154	836
ParaHippocampal_L	-17	-47	-4	0.76142	394	0.038344	978
Parietal_Inf_L	-42	-60	60	19.5122	1886	1.8799	2447
Parietal_Inf_R	61	-53	31	12.9619	3464	4.1729	1345
Parietal_Inf_R	51	-40	58	4.62	671	0.2881	1345
Parietal_Sup_L	1	-51	53	0.0043373	23056	0.0060533	2065
Parietal_Sup_L	-42	-60	60	15.8537	1886	1.8099	2065
Parietal_Sup_R	1	-51	53	1.9691	23056	2.554	2222
Parietal_Sup_R	51	-40	58	46.4978	671	1.7552	2222
Postcentral_L	-52	2	41	0.85034	1764	0.048176	3892
Postcentral_R	1	-51	53	0.021686	23056	0.016348	3823
Postcentral_R	13	-33	85	41.5663	166	0.22561	3823
Postcentral_R	51	-40	58	16.2444	671	0.3564	3823
Precentral_L	-52	2	41	60.8277	1764	3.8039	3526
Precentral_L	-20	-18	80	36.413	184	0.23752	3526
Precentral_L	-40	-5	36	100	1	0.0035451	3526
Precuneus_L	1	-51	53	28.3917	23056	23.193	3528
Precuneus_L	-17	-47	-4	23.6041	394	0.32951	3528
Precuneus_L	-23	-53	7	27.4336	226	0.21967	3528
Precuneus_R	1	-51	53	38.1593	23056	33.683	3265
Rectus_L	2	52	-17	50	2	0.014671	852
Rectus_R	2	52	-17	50	2	0.016779	745
SupraMarginal_L	-43	-53	25	17.9402	602	1.0748	1256

SupraMarginal_R	61	-53	31	26.0681	3464	5.7181	1974
Temporal_Mid_L	-43	-53	25	3.1561	602	0.048057	4942
Temporal_Mid_R	46	-36	4	23.1919	2074	1.3637	4409
Temporal_Mid_R	70	-40	9	48.5714	70	0.096394	4409
Temporal_Mid_R	65	-13	-16	100	123	0.34872	4409
Temporal_Mid_R	67	-15	-7	20	45	0.025516	4409
Temporal_Mid_R	61	0	-26	100	8	0.022681	4409
Temporal_Pole_Sup_R	62	4	-1	100	2	0.018685	1338
Temporal_Sup_R	46	-36	4	45.0338	2074	3.717	3141
Temporal_Sup_R	70	-40	9	51.4286	70	0.14327	3141
Temporal_Sup_R	67	-15	-7	80	45	0.14327	3141

Table 61 Anatomical labelling of the deactivated clusters for Subject 6; fMRI session 1 (before therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-35	-18	-26	0.10778	4639	0.28409	220
Angular_L	-65	-53	31	2.1259	1223	0.27707	1173
Angular_L	-45	-60	59	18.6167	1735	3.442	1173
Calcarine_L	-16	-93	-11	0.7874	127	0.0055359	2258
Caudate_L	-11	-9	18	47.9495	317	1.9751	962
Caudate_R	13	-14	18	9.0909	253	0.28924	994
Cerebelum_10_L	-21	-72	-30	1.4542	16435	20.7465	144
Cerebelum_10_R	22	-38	-47	60.452	177	8.4119	159
Cerebelum_4_5_L	-21	-72	-30	3.2857	16435	6	1125
Cerebelum_4_5_R	24	-26	-25	16.6667	12	0.029036	861
Cerebelum_6_L	-24	-61	-11	2.3911	2802	0.49439	1694
Cerebelum_6_L	-21	-72	-30	10.0213	16435	12.1532	1694
Cerebelum_6_R	34	-72	-38	6.3378	3771	1.6643	1795
Cerebelum_6_R	30	-51	-31	100	4	0.027855	1795
Cerebelum_6_R	32	-53	-33	100	1	0.0069638	1795
Cerebelum_7b_L	-21	-72	-30	3.2857	16435	11.5385	585
Cerebelum_7b_R	34	-72	-38	0.55688	3771	0.49157	534
Cerebelum_8_L	-21	-72	-30	9.7901	16435	10.6585	1887
Cerebelum_8_R	34	-72	-38	17.7407	3771	3.6233	2308
Cerebelum_8_R	22	-38	-47	9.6045	177	0.092071	2308
Cerebelum_9_L	-21	-72	-30	3.2674	16435	7.7244	869
Cerebelum_9_R	-21	-72	-30	0.99179	16435	2.5185	809
Cerebelum_9_R	22	-38	-47	15.8192	177	0.43263	809
Cerebelum_9_R	12	-52	-29	2.0408	98	0.030902	809
Cerebelum_Crus1_L	-21	-72	-30	16.8482	16435	13.2972	2603
Cerebelum_Crus1_L	-35	-88	-32	42.8571	14	0.028813	2603
Cerebelum_Crus1_R	34	-72	-38	35.004	3771	6.2311	2648
Cerebelum_Crus2_L	-21	-72	-30	12.8141	16435	13.8992	1894
Cerebelum_Crus2_R	34	-72	-38	25.4309	3771	5.6625	2117
Cingulum_Ant_L	-28	54	-5	0.97543	11072	0.96429	1400
Cingulum_Ant_L	-2	-3	28	5.4573	4013	1.9554	1400
Cingulum_Ant_L	-1	29	15	46.1028	1206	4.9643	1400
Cingulum_Ant_L	-15	36	-9	1.3889	144	0.017857	1400
Cingulum_Ant_R	-2	-3	28	0.024919	4013	0.0095202	1313
Cingulum_Ant_R	9	50	22	16.2986	951	1.4756	1313
Cingulum_Ant_R	-1	29	15	14.4279	1206	1.6565	1313
Cingulum_Mid_L	-2	-3	28	6.2298	4013	1.61	1941
Cingulum_Mid_L	-3	-40	44	50.7463	1206	3.9413	1941
Cingulum_Mid_R	-2	-3	28	9.7184	4013	2.2129	2203

Cingulum_Mid_R	5	-54	35	17.6471	17	0.017022	2203
Cingulum_Post_R	-2	-3	28	0.99676	4013	1.4925	335
Frontal_Inf_Oper_L	-32	8	30	16.2738	1315	2.5771	1038
Frontal_Inf_Oper_L	-56	17	21	44.8529	680	3.6729	1038
Frontal_Inf_Oper_L	-60	14	6	80	25	0.24085	1038
Frontal_Inf_Oper_L	-40	15	13	97.619	84	0.98748	1038
Frontal_Inf_Orb_L	-28	54	-5	6.4577	11072	5.2885	1690
Frontal_Inf_Orb_L	-44	24	-2	19.2488	213	0.30325	1690
Frontal_Inf_Orb_L	-30	22	-16	88.3721	258	1.6864	1690
Frontal_Inf_Tri_L	-28	54	-5	3.3056	11072	1.809	2529
Frontal_Inf_Tri_L	-32	8	30	0.38023	1315	0.024713	2529
Frontal_Inf_Tri_L	-56	17	21	45.7353	680	1.5372	2529
Frontal_Inf_Tri_L	-44	24	-2	80.7512	213	0.85014	2529
Frontal_Inf_Tri_L	-60	14	6	12	25	0.014828	2529
Frontal_Inf_Tri_L	-40	15	13	2.381	84	0.0098853	2529
Frontal_Med_Orb_L	-6	46	-11	100	97	1.6864	719
Frontal_Med_Orb_L	-15	36	-9	4.1667	144	0.10431	719
Frontal_Med_Orb_L	2	42	-10	35	20	0.1217	719
Frontal_Med_Orb_R	2	42	-10	65	20	0.18984	856
Frontal_Mid_L	-28	54	-5	32.3067	11072	9.1944	4863
Frontal_Mid_L	-46	19	40	92.4731	558	1.3263	4863
Frontal_Mid_L	-22	29	61	10.8949	257	0.071972	4863
Frontal_Mid_L	-32	8	30	4.4867	1315	0.15166	4863
Frontal_Mid_L	-44	50	16	100	28	0.071972	4863
Frontal_Mid_L	-35	6	48	56.8421	95	0.1388	4863
Frontal_Mid_Orb_L	-28	54	-5	12.3736	11072	19.2849	888
Frontal_Mid_Orb_R	24	53	-6	33.1142	1217	4.9631	1015
Frontal_Mid_R	24	53	-6	0.57518	1217	0.017143	5104
Frontal_Mid_R	9	50	22	3.47	951	0.080819	5104
Frontal_Sup_L	-28	54	-5	18.479	11072	7.1061	3599
Frontal_Sup_L	-12	13	70	7.1321	3996	0.98986	3599
Frontal_Sup_L	-22	29	61	33.0739	257	0.29522	3599
Frontal_Sup_L	-7	56	42	12	25	0.01042	3599
Frontal_Sup_Medial_L	-28	54	-5	5.121	11072	2.3688	2992
Frontal_Sup_Medial_L	-7	56	42	40	25	0.041778	2992
Frontal_Sup_Medial_L	-8	58	27	100	13	0.054311	2992
Frontal_Sup_Medial_R	14	29	55	58.0645	837	2.8468	2134
Frontal_Sup_Medial_R	17	51	50	17.4041	339	0.3456	2134
Frontal_Sup_Medial_R	9	50	22	14.7213	951	0.82006	2134
Frontal_Sup_Orb_L	-28	54	-5	4.2178	11072	6.0618	963
Frontal_Sup_Orb_R	24	53	-6	38.6196	1217	5.8927	997
Frontal_Sup_R	24	53	-6	0.65735	1217	0.024655	4056
Frontal_Sup_R	14	29	55	40.7407	837	1.0509	4056

Frontal_Sup_R	17	51	50	25.6637	339	0.26812	4056
Frontal_Sup_R	9	50	22	20.2944	951	0.5948	4056
Fusiform_L	-24	-61	-11	53.8544	2802	8.1656	2310
Fusiform_L	-30	-21	-12	2.9806	5972	0.9632	2310
Fusiform_L	-35	-18	-26	18.9049	4639	4.7457	2310
Heschl_L	-30	-21	-12	2.4447	5972	8.1111	225
Heschl_R	40	-24	8	23.7041	1717	20.4317	249
Hippocampus_L	-30	-21	-12	23.5599	5972	18.8707	932
Hippocampus_L	-35	-18	-26	2.091	4639	1.301	932
Hippocampus_R	40	-24	8	9.9592	1717	2.2595	946
Hippocampus_R	18	-28	-3	5.3571	504	0.35677	946
Insula_L	-30	-21	-12	3.8346	5972	1.5406	1858
Insula_L	-31	-5	4	3.3846	325	0.074004	1858
Insula_L	-30	22	-16	11.6279	258	0.20183	1858
Insula_R	58	1	-23	19.8034	2848	3.9831	1770
Insula_R	40	-24	8	11.2988	1717	1.3701	1770
Insula_R	35	-13	5	52.2727	44	0.16243	1770
Lingual_L	-24	-61	-11	26.267	2802	4.3914	2095
Lingual_L	-16	-93	-11	29.9213	127	0.22673	2095
Lingual_R	18	-28	-3	18.0556	504	0.49457	2300
Lingual_R	22	-44	-4	27.9412	68	0.10326	2300
Occipital_Inf_L	-24	-61	-11	9.065	2802	3.3741	941
Occipital_Inf_L	-16	-93	-11	61.4173	127	1.0361	941
Occipital_Mid_L	-45	-60	59	0.80692	1735	0.053517	3270
Occipital_Mid_L	-24	-61	-11	0.92791	2802	0.099388	3270
Occipital_Mid_L	-16	-93	-11	7.0866	127	0.034404	3270
Occipital_Sup_L	-7	-82	45	47.012	502	2.1596	1366
OUTSIDE	-28	54	-5	16.763	11072	0	0
OUTSIDE	-65	-53	31	59.0352	1223	0	0
OUTSIDE	24	53	-6	27.0337	1217	0	0
OUTSIDE	-12	13	70	47.7477	3996	0	0
OUTSIDE	21	-16	85	96.6408	387	0	0
OUTSIDE	-45	-60	59	51.4121	1735	0	0
OUTSIDE	58	1	-23	21.1025	2848	0	0
OUTSIDE	-10	-16	84	62.0582	962	0	0
OUTSIDE	17	51	50	56.9322	339	0	0
OUTSIDE	40	-24	8	28.7129	1717	0	0
OUTSIDE	-24	-61	-11	6.3526	2802	0	0
OUTSIDE	-30	-21	-12	25.72	5972	0	0
OUTSIDE	-21	-72	-30	37.0125	16435	0	0
OUTSIDE	-2	-3	28	77.1742	4013	0	0
OUTSIDE	-46	19	40	7.5269	558	0	0
OUTSIDE	-50	-24	59	5.457	733	0	0

OUTSIDE	-22	29	61	56.0311	257	0	0
OUTSIDE	-35	-18	-26	13.6021	4639	0	0
OUTSIDE	9	50	22	45.2156	951	0	0
OUTSIDE	-32	8	30	68.4411	1315	0	0
OUTSIDE	34	-72	-38	14.9297	3771	0	0
OUTSIDE	-1	29	15	39.4693	1206	0	0
OUTSIDE	7	-26	66	0.54348	368	0	0
OUTSIDE	-56	17	21	9.1176	680	0	0
OUTSIDE	58	-8	21	11.4474	760	0	0
OUTSIDE	-31	-5	4	25.2308	325	0	0
OUTSIDE	-20	-21	-2	32.1656	314	0	0
OUTSIDE	13	-14	18	35.9684	253	0	0
OUTSIDE	1	-35	-9	55.3977	352	0	0
OUTSIDE	-16	-93	-11	0.7874	127	0	0
OUTSIDE	-15	36	-9	94.4444	144	0	0
OUTSIDE	18	-28	-3	46.0317	504	0	0
OUTSIDE	-61	-43	50	100	146	0	0
OUTSIDE	46	-15	30	69.4981	259	0	0
OUTSIDE	-11	-9	18	43.2177	317	0	0
OUTSIDE	-63	1	26	52	25	0	0
OUTSIDE	-66	-42	41	100	34	0	0
OUTSIDE	-7	56	42	48	25	0	0
OUTSIDE	22	-38	-47	14.1243	177	0	0
OUTSIDE	-60	14	6	8	25	0	0
OUTSIDE	22	-44	-4	4.4118	68	0	0
OUTSIDE	-37	-13	37	39.6104	154	0	0
OUTSIDE	-28	-91	40	100	66	0	0
OUTSIDE	35	-13	5	43.1818	44	0	0
OUTSIDE	-35	-88	-32	57.1429	14	0	0
OUTSIDE	12	-52	-29	91.8367	98	0	0
OUTSIDE	45	6	-22	33.3333	6	0	0
OUTSIDE	-7	-32	-8	100	3	0	0
OUTSIDE	-37	-89	34	100	3	0	0
Paracentral_Lobule_L	-10	-16	84	20.1663	962	1.7976	1349
Paracentral_Lobule_L	-3	-40	44	2.7363	1206	0.30578	1349
Paracentral_Lobule_R	7	-26	66	78.2609	368	4.3062	836
ParaHippocampal_L	-30	-21	-12	2.4615	5972	1.8788	978
ParaHippocampal_L	-35	-18	-26	1.3581	4639	0.80521	978
ParaHippocampal_R	40	-24	8	3.2615	1717	0.61837	1132
ParaHippocampal_R	24	-26	-25	83.3333	12	0.11042	1132
ParaHippocampal_R	22	-44	-4	67.6471	68	0.50795	1132
Parietal_Inf_L	-45	-60	59	25.4179	1735	2.2528	2447
Parietal_Sup_L	-45	-60	59	3.7464	1735	0.39346	2065

Parietal_Sup_L	-7	-82	45	5.7769	502	0.17554	2065
Parietal_Sup_L	-25	-46	59	45.4545	77	0.21186	2065
Parietal_Sup_R	12	-55	65	6.6421	271	0.10126	2222
Postcentral_L	-50	-24	59	94.543	733	2.2257	3892
Postcentral_L	-63	1	26	8	25	0.0064234	3892
Postcentral_L	-37	-13	37	31.1688	154	0.15416	3892
Postcentral_L	-25	-46	59	54.5455	77	0.13489	3892
Postcentral_R	47	-27	51	100	473	1.5466	3823
Postcentral_R	39	-20	66	15.5172	348	0.17656	3823
Postcentral_R	58	-8	21	67.6316	760	1.6806	3823
Postcentral_R	46	-15	30	28.9575	259	0.24523	3823
Precentral_L	-10	-16	84	0.8316	962	0.028361	3526
Precentral_L	-32	8	30	10.4183	1315	0.48568	3526
Precentral_L	-56	17	21	0.29412	680	0.0070902	3526
Precentral_L	-35	6	48	43.1579	95	0.14535	3526
Precentral_L	-63	1	26	40	25	0.035451	3526
Precentral_L	-37	-13	37	29.2208	154	0.15953	3526
Precentral_R	21	-16	85	3.3592	387	0.048063	3381
Precentral_R	39	-20	66	84.4828	348	1.087	3381
Precentral_R	58	-8	21	19.2105	760	0.53978	3381
Precuneus_L	-3	-40	44	46.5174	1206	1.9877	3528
Precuneus_L	-7	-82	45	47.2112	502	0.83971	3528
Precuneus_L	-5	-66	41	100	198	0.70153	3528
Precuneus_R	12	-55	65	93.3579	271	0.96861	3265
Precuneus_R	5	-54	35	82.3529	17	0.053599	3265
Putamen_L	-30	-21	-12	0.28466	5972	0.2106	1009
Putamen_L	-31	-5	4	71.3846	325	2.8741	1009
Putamen_R	35	-13	5	4.5455	44	0.023496	1064
Rolandic_Oper_L	-30	-21	-12	7.9873	5972	6.0227	990
Rolandic_Oper_R	58	-8	21	1.7105	760	0.12209	1331
Supp_Motor_Area_L	-12	13	70	44.1942	3996	10.2818	2147
Supp_Motor_Area_L	-10	-16	84	16.4241	962	0.91989	2147
Supp_Motor_Area_R	-12	13	70	0.92593	3996	0.19507	2371
Supp_Motor_Area_R	-10	-16	84	0.51975	962	0.02636	2371
Supp_Motor_Area_R	14	29	55	1.1947	837	0.05272	2371
Supp_Motor_Area_R	7	-26	66	21.1957	368	0.41122	2371
SupraMarginal_L	-65	-53	31	34.26	1223	4.17	1256
SupraMarginal_R	46	-15	30	1.5444	259	0.025329	1974
Temporal_Inf_L	-24	-61	-11	0.35689	2802	0.039063	3200
Temporal_Inf_L	-30	-21	-12	0.85399	5972	0.19922	3200
Temporal_Inf_L	-35	-18	-26	13.7314	4639	2.4883	3200
Temporal_Inf_R	58	1	-23	0.77247	2848	0.077312	3557
Temporal_Mid_L	-65	-53	31	2.3712	1223	0.073351	4942

Temporal_Mid_L	-24	-61	-11	0.78515	2802	0.055645	4942
Temporal_Mid_L	-30	-21	-12	9.6952	5972	1.4645	4942
Temporal_Mid_L	-35	-18	-26	38.3272	4639	4.4972	4942
Temporal_Mid_L	-53	-42	7	94.625	800	1.9147	4942
Temporal_Mid_R	62	-15	-5	11.336	1729	0.55568	4409
Temporal_Mid_R	58	1	-23	47.7528	2848	3.8557	4409
Temporal_Pole_Mid_R	58	1	-23	2.9143	2848	0.87405	1187
Temporal_Pole_Sup_L	-35	-18	-26	0.021556	4639	0.0097276	1285
Temporal_Pole_Sup_R	62	-15	-5	2.6605	1729	0.42975	1338
Temporal_Pole_Sup_R	58	1	-23	1.4396	2848	0.38303	1338
Temporal_Pole_Sup_R	45	6	-22	66.6667	6	0.037369	1338
Temporal_Sup_L	-65	-53	31	2.2077	1223	0.14699	2296
Temporal_Sup_L	-30	-21	-12	20.1775	5972	6.5603	2296
Temporal_Sup_L	-35	-18	-26	11.856	4639	2.9943	2296
Temporal_Sup_L	-53	-42	7	5.375	800	0.2341	2296
Temporal_Sup_R	62	-15	-5	86.0035	1729	5.9177	3141
Temporal_Sup_R	58	1	-23	6.2149	2848	0.70439	3141
Temporal_Sup_R	40	-24	8	23.0635	1717	1.5759	3141
Thalamus_L	-20	-21	-2	67.8344	314	2.4205	1100
Thalamus_L	-11	-9	18	8.8328	317	0.31818	1100
Thalamus_R	-2	-3	28	0.3987	4013	0.18921	1057
Thalamus_R	13	-14	18	54.9407	253	1.6438	1057
Thalamus_R	18	-28	-3	30.5556	504	1.8212	1057
Vermis_10	12	-52	-29	4.0816	98	0.44643	112
Vermis_3	1	-35	-9	44.6023	352	8.6075	228
Vermis_4_5	3	-54	-24	100	28	0.52632	665
Vermis_8	-21	-72	-30	0.41375	16435	3.4979	243
Vermis_9	-21	-72	-30	0.81533	16435	9.6264	174
Vermis_9	12	-52	-29	2.0408	98	0.14368	174

Table 62 Anatomical labelling of the deactivated clusters for Subject 6; fMRI session 2 (after 7th therapy session).

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-19	-68	-38	0.037267	42933	0.90909	220
Angular_L	-51	-59	51	1.6949	1298	0.23444	1173
Angular_R	20	-86	49	0.1642	609	0.0071347	1752
Angular_R	55	-63	44	92.1136	317	2.0833	1752
Angular_R	55	-61	21	24.6914	81	0.14269	1752
Calcarine_L	-19	-68	-38	0.0046584	42933	0.011072	2258
Calcarine_L	-4	-74	15	38.3672	2364	5.021	2258
Calcarine_L	-11	-65	8	40.5097	3414	7.6561	2258
Calcarine_R	-4	-74	15	16.7513	2364	2.6599	1861
Caudate_L	-5	-35	19	0.05123	1952	0.012994	962
Caudate_L	-2	-1	22	12.6814	1309	2.157	962
Cerebelum_10_L	-19	-68	-38	0.29348	42933	10.9375	144
Cerebelum_3_L	-19	-68	-38	0.0046584	42933	0.18382	136
Cerebelum_4_5_L	-19	-68	-38	1.8494	42933	8.8222	1125
Cerebelum_4_5_L	-8	-56	-4	45.583	283	1.4333	1125
Cerebelum_6_L	-19	-68	-38	2.639	42933	8.3604	1694
Cerebelum_6_R	-19	-68	-38	0.32143	42933	0.961	1795
Cerebelum_6_R	18	-56	-23	100	50	0.34819	1795
Cerebelum_7b_L	-19	-68	-38	0.61724	42933	5.6624	585
Cerebelum_7b_L	-34	-70	-46	12.741	1452	3.953	585
Cerebelum_7b_R	-19	-68	-38	0.10249	42933	1.03	534
Cerebelum_8_L	-19	-68	-38	3.927	42933	11.1685	1887
Cerebelum_8_L	-34	-70	-46	0.48209	1452	0.04637	1887
Cerebelum_8_R	-19	-68	-38	3.7733	42933	8.7738	2308
Cerebelum_9_L	-19	-68	-38	0.62889	42933	3.8838	869
Cerebelum_9_R	-19	-68	-38	2.1755	42933	14.4314	809
Cerebelum_Crus1_L	-19	-68	-38	5.8766	42933	12.1158	2603
Cerebelum_Crus1_L	-34	-70	-46	1.584	1452	0.11045	2603
Cerebelum_Crus1_R	-19	-68	-38	2.8067	42933	5.6883	2648
Cerebelum_Crus2_L	-19	-68	-38	0.9969	42933	2.8247	1894
Cerebelum_Crus2_L	-34	-70	-46	85.1928	1452	8.1639	1894
Cerebelum_Crus2_R	-19	-68	-38	1.5885	42933	4.0269	2117
Cingulum_Ant_L	-2	42	-12	0.33557	596	0.017857	1400
Cingulum_Ant_R	7	47	28	33.2335	334	1.0567	1313
Cingulum_Mid_L	-9	-52	53	34.4205	1441	3.1942	1941
Cingulum_Mid_R	7	47	28	2.0958	334	0.039719	2203
Cingulum_Mid_R	12	-50	31	60	35	0.11916	2203
Cingulum_Post_L	-5	-35	19	0.76844	1952	0.40497	463
Cingulum_Post_R	12	-50	31	28.5714	35	0.37313	335

Cuneus_L	-13	-92	45	15.0402	1988	2.4492	1526
Cuneus_L	-4	-74	15	8.7563	2364	1.6956	1526
Cuneus_R	20	-86	49	17.2414	609	0.9217	1424
Frontal_Inf_Oper_L	-64	10	16	76.824	466	4.3112	1038
Frontal_Inf_Orb_L	-19	-68	-38	0.0023292	42933	0.0073964	1690
Frontal_Med_Orb_L	-2	42	-12	65.1007	596	6.7455	719
Frontal_Med_Orb_R	-2	42	-12	25.1678	596	2.1904	856
Frontal_Mid_L	-26	62	5	72.9508	122	0.22877	4863
Frontal_Mid_R	53	22	43	100	2	0.0048981	5104
Frontal_Sup_L	-11	53	42	57.596	599	1.1982	3599
Frontal_Sup_L	-9	20	69	0.47939	1043	0.017366	3599
Frontal_Sup_L	-26	62	5	25.4098	122	0.10767	3599
Frontal_Sup_Medial_L	-11	53	42	22.3706	599	0.55983	2992
Frontal_Sup_Medial_L	7	44	47	4.1935	310	0.054311	2992
Frontal_Sup_Medial_L	-7	63	26	100	32	0.13369	2992
Frontal_Sup_Medial_R	7	47	28	64.6707	334	1.2652	2134
Frontal_Sup_Medial_R	7	44	47	62.5806	310	1.1364	2134
Frontal_Sup_R	19	43	49	77.8711	714	1.7135	4056
Fusiform_L	-19	-68	-38	8.7858	42933	20.4113	2310
Fusiform_L	-11	-65	8	0.70299	3414	0.12987	2310
Fusiform_L	-34	-83	-8	0.88652	564	0.027056	2310
Fusiform_R	-4	-74	15	0.33841	2364	0.039714	2518
Heschl_L	-19	-68	-38	0.74768	42933	17.8333	225
Heschl_R	38	-25	7	61.5385	13	0.40161	249
Hippocampus_L	-19	-68	-38	2.4317	42933	14.0021	932
Insula_L	-19	-68	-38	4.5653	42933	13.1862	1858
Insula_R	38	-25	7	7.6923	13	0.0070621	1770
Lingual_L	-19	-68	-38	0.62656	42933	1.605	2095
Lingual_L	-4	-74	15	4.7377	2364	0.66826	2095
Lingual_L	-11	-65	8	42.9701	3414	8.753	2095
Lingual_L	-8	-56	-4	54.417	283	0.91885	2095
Lingual_R	-4	-74	15	31.0491	2364	3.9891	2300
Lingual_R	6	-38	1	62.9213	89	0.30435	2300
Lingual_R	20	-44	-2	88.4615	26	0.125	2300
Occipital_Inf_L	-19	-68	-38	0.87578	42933	4.9947	941
Occipital_Inf_L	-11	-65	8	1.4646	3414	0.66419	941
Occipital_Inf_L	-34	-83	-8	94.8582	564	7.1068	941
Occipital_Mid_L	-19	-68	-38	0.018634	42933	0.030581	3270
Occipital_Mid_L	-11	-65	8	3.2513	3414	0.42431	3270
Occipital_Mid_L	-34	-83	-8	3.3688	564	0.07263	3270
Occipital_Mid_L	-22	-64	31	66.6667	30	0.076453	3270
Occipital_Sup_L	-13	-92	45	38.9336	1988	7.0827	1366
Occipital_Sup_L	-22	-64	31	30	30	0.082357	1366

Occipital_Sup_R	20	-86	49	10.8374	609	0.58386	1413
OUTSIDE	-13	-92	45	44.3159	1988	0	0
OUTSIDE	-64	10	16	18.6695	466	0	0
OUTSIDE	-19	-68	-38	21.6337	42933	0	0
OUTSIDE	-9	-52	53	0.69396	1441	0	0
OUTSIDE	48	-27	69	72.2397	317	0	0
OUTSIDE	20	-86	49	30.2135	609	0	0
OUTSIDE	-11	-65	8	9.4318	3414	0	0
OUTSIDE	-5	-35	19	98.873	1952	0	0
OUTSIDE	-34	-83	-8	0.88652	564	0	0
OUTSIDE	-11	53	42	20.0334	599	0	0
OUTSIDE	-10	-18	81	69.6921	617	0	0
OUTSIDE	-51	-59	51	51.849	1298	0	0
OUTSIDE	-9	20	69	87.2483	1043	0	0
OUTSIDE	-57	-35	55	24.314	1312	0	0
OUTSIDE	23	-16	85	98.8827	179	0	0
OUTSIDE	19	43	49	22.1289	714	0	0
OUTSIDE	-2	-1	22	83.1933	1309	0	0
OUTSIDE	40	-22	71	57.5221	113	0	0
OUTSIDE	6	-38	1	37.0787	89	0	0
OUTSIDE	-42	-17	29	48.6076	395	0	0
OUTSIDE	55	-63	44	2.8391	317	0	0
OUTSIDE	-20	-10	38	100	844	0	0
OUTSIDE	-39	-32	30	100	276	0	0
OUTSIDE	34	-48	79	100	12	0	0
OUTSIDE	7	44	47	33.2258	310	0	0
OUTSIDE	-1	-31	-7	100	177	0	0
OUTSIDE	30	20	71	100	32	0	0
OUTSIDE	-26	62	5	1.6393	122	0	0
OUTSIDE	17	-25	-2	16.9231	65	0	0
OUTSIDE	-29	-64	4	100	48	0	0
OUTSIDE	-26	29	15	100	15	0	0
OUTSIDE	-22	-64	31	3.3333	30	0	0
OUTSIDE	12	-50	31	2.8571	35	0	0
OUTSIDE	38	-25	7	30.7692	13	0	0
OUTSIDE	31	-45	81	100	7	0	0
OUTSIDE	13	-96	37	100	3	0	0
OUTSIDE	-27	-28	46	100	17	0	0
OUTSIDE	48	-80	33	100	1	0	0
OUTSIDE	-19	-27	16	100	6	0	0
OUTSIDE	16	61	37	100	1	0	0
OUTSIDE	0	-21	-39	100	1	0	0
Paracentral_Lobule_L	-10	-18	81	20.5835	617	1.1768	1349

ParaHippocampal_L	-19	-68	-38	0.34239	42933	1.8788	978
ParaHippocampal_R	32	-33	-12	100	11	0.12147	1132
Parietal_Inf_L	-51	-59	51	46.4561	1298	3.0803	2447
Parietal_Inf_L	-57	-35	55	35.747	1312	2.3958	2447
Parietal_Inf_L	-33	-48	52	90.2778	216	0.99612	2447
Parietal_Inf_R	55	-63	44	5.0473	317	0.1487	1345
Parietal_Sup_L	-13	-92	45	1.2072	1988	0.14528	2065
Parietal_Sup_L	-33	-48	52	8.3333	216	0.10896	2065
Parietal_Sup_R	20	-86	49	41.5435	609	1.4233	2222
Postcentral_L	-64	10	16	4.5064	466	0.067446	3892
Postcentral_L	-57	-35	55	39.939	1312	1.6829	3892
Postcentral_L	-42	-17	29	51.3924	395	0.65198	3892
Postcentral_L	-33	-48	52	1.3889	216	0.0096351	3892
Postcentral_R	48	-27	69	21.7666	317	0.22561	3823
Precentral_L	-10	-18	81	9.7245	617	0.21271	3526
Precentral_R	48	-27	69	5.9937	317	0.070245	3381
Precentral_R	23	-16	85	1.1173	179	0.0073943	3381
Precentral_R	40	-22	71	42.4779	113	0.17746	3381
Precuneus_L	-13	-92	45	0.50302	1988	0.035431	3528
Precuneus_L	-19	-68	-38	0.34006	42933	0.51729	3528
Precuneus_L	-9	-52	53	64.8855	1441	3.3128	3528
Precuneus_L	-11	-65	8	1.6696	3414	0.20196	3528
Precuneus_L	-1	-63	34	100	61	0.21613	3528
Precuneus_R	20	-44	-2	11.5385	26	0.011485	3265
Precuneus_R	12	-50	31	8.5714	35	0.011485	3265
Putamen_L	-19	-68	-38	0.21895	42933	1.1645	1009
Rectus_L	-2	42	-12	8.8926	596	0.77758	852
Rectus_R	-2	42	-12	0.50336	596	0.050336	745
Rolandic_Oper_L	-19	-68	-38	1.1879	42933	6.4394	990
Supp_Motor_Area_L	-9	20	69	12.2723	1043	0.74523	2147
Temporal_Inf_L	-19	-68	-38	1.7888	42933	3	3200
Temporal_Mid_L	-19	-68	-38	22.4256	42933	24.3525	4942
Temporal_Mid_R	58	-8	-16	96.1749	366	0.99796	4409
Temporal_Mid_R	55	-61	21	55.5556	81	0.12758	4409
Temporal_Sup_L	-19	-68	-38	5.2244	42933	12.2115	2296
Temporal_Sup_R	58	-8	-16	3.8251	366	0.055715	3141
Temporal_Sup_R	55	-61	21	19.7531	81	0.063674	3141
Thalamus_L	-5	-35	19	0.30738	1952	0.068182	1100
Thalamus_L	-2	-1	22	0.99312	1309	0.14773	1100
Thalamus_R	-2	-1	22	3.1322	1309	0.48486	1057
Thalamus_R	17	-25	-2	83.0769	65	0.6386	1057
Vermis_10	-19	-68	-38	0.43323	42933	20.7589	112
Vermis_4_5	-19	-68	-38	0.086181	42933	0.69549	665

Vermis_9	-19	-68	-38	0.6219	42933	19.181	174

Table 63 Anatomical labelling of the deactivated clusters for Subject 6; fMRI session 3 (after 14th therapy session).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	4	-77	5	0.11913	208173	14.0909	220
Amygdala_R	4	-77	5	0.061487	208173	6.4516	248
Angular_L	-58	-62	40	6.7568	74	0.053282	1173
Calcarine_L	4	-77	5	4.4487	208173	51.2677	2258
Calcarine_R	4	-77	5	1.4464	208173	20.2243	1861
Caudate_L	4	-77	5	0.095113	208173	2.5728	962
Cerebelum_10_L	4	-77	5	0.26468	208173	47.8299	144
Cerebelum_10_R	4	-77	5	0.017774	208173	2.9088	159
Cerebelum_3_L	4	-77	5	0.1321	208173	25.2757	136
Cerebelum_3_R	4	-77	5	0.15948	208173	20.0483	207
Cerebelum_4_5_L	4	-77	5	2.7444	208173	63.4778	1125
Cerebelum_4_5_R	4	-77	5	1.2432	208173	37.5726	861
Cerebelum_6_L	4	-77	5	4.9089	208173	75.4058	1694
Cerebelum_6_R	4	-77	5	2.0752	208173	30.0836	1795
Cerebelum_7b_L	4	-77	5	0.62928	208173	27.9915	585
Cerebelum_7b_R	4	-77	5	0.34346	208173	16.7369	534
Cerebelum_8_L	4	-77	5	2.8587	208173	39.421	1887
Cerebelum_8_R	4	-77	5	2.4091	208173	27.161	2308
Cerebelum_9_L	4	-77	5	1.2312	208173	36.8671	869
Cerebelum_9_R	4	-77	5	1.775	208173	57.0921	809
Cerebelum_Crus1_L	4	-77	5	3.6244	208173	36.2322	2603
Cerebelum_Crus1_R	4	-77	5	1.3441	208173	13.2081	2648
Cerebelum_Crus1_R	31	-81	-24	100	3	0.014162	2648
Cerebelum_Crus2_L	4	-77	5	3.6129	208173	49.637	1894
Cerebelum_Crus2_R	4	-77	5	1.2514	208173	15.3814	2117
Cingulum_Ant_L	5	43	-12	1.3567	1253	0.15179	1400
Cingulum_Ant_L	-4	32	-6	100	4	0.035714	1400
Cingulum_Mid_L	4	-77	5	1.5843	208173	21.2391	1941
Cingulum_Mid_R	4	-77	5	0.45203	208173	5.3393	2203
Cingulum_Post_L	4	-77	5	0.22193	208173	12.473	463
Cingulum_Post_R	4	-77	5	0.18158	208173	14.1045	335
Cuneus_L	4	-77	5	2.373	208173	40.4653	1526
Cuneus_R	4	-77	5	0.22866	208173	4.1784	1424
Frontal_Inf_Oper_L	-37	9	33	3.3333	30	0.012042	1038
Frontal_Inf_Oper_R	52	23	38	9.7744	532	0.46462	1399
Frontal_Inf_Orb_L	-44	22	-14	59.375	64	0.28107	1690
Frontal_Inf_Tri_L	-53	20	24	100	31	0.15322	2529
Frontal_Inf_Tri_R	52	23	38	7.7068	532	0.23826	2151
Frontal_Med_Orb_L	5	43	-12	41.66	1253	9.0751	719

Frontal_Med_Orb_R	5	43	-12	36.7119	1253	6.7173	856
Frontal_Mid_L	-27	28	60	19.5876	97	0.048838	4863
Frontal_Mid_L	-28	39	44	75.7042	568	1.1053	4863
Frontal_Mid_L	-41	8	57	70.9677	186	0.3393	4863
Frontal_Mid_L	-47	16	51	54.2373	59	0.082254	4863
Frontal_Mid_L	-26	22	44	100	121	0.31102	4863
Frontal_Mid_L	-37	9	33	76.6667	30	0.05912	4863
Frontal_Mid_L	-32	21	57	100	8	0.020563	4863
Frontal_Mid_R	52	23	38	76.6917	532	0.99922	5104
Frontal_Sup_L	-28	39	44	17.7817	568	0.35079	3599
Frontal_Sup_Medial_L	0	24	60	20.4663	386	0.33005	2992
Frontal_Sup_Medial_R	25	34	56	9.6386	498	0.28116	2134
Frontal_Sup_Medial_R	0	24	60	11.9171	386	0.26945	2134
Frontal_Sup_Orb_L	4	-77	5	0.00096074	208173	0.025961	963
Frontal_Sup_Orb_L	5	43	-12	6.0654	1253	0.9865	963
Frontal_Sup_R	25	34	56	48.996	498	0.75197	4056
Fusiform_L	4	-77	5	4.0831	208173	45.9957	2310
Fusiform_R	4	-77	5	1.8485	208173	19.1025	2518
Heschl_L	4	-77	5	0.24163	208173	27.9444	225
Heschl_R	39	-15	2	1.7149	933	0.80321	249
Hippocampus_L	4	-77	5	1.3777	208173	38.4657	932
Hippocampus_R	4	-77	5	0.44002	208173	12.1036	946
Insula_L	4	-77	5	0.79213	208173	11.0939	1858
Insula_R	39	-15	2	43.7299	933	2.8814	1770
Lingual_L	4	-77	5	4.0193	208173	49.9224	2095
Lingual_R	4	-77	5	3.2161	208173	36.3859	2300
Occipital_Inf_L	4	-77	5	0.78108	208173	21.5994	941
Occipital_Mid_L	4	-77	5	0.91366	208173	7.2706	3270
Occipital_Mid_L	-29	-86	42	17.6	125	0.084098	3270
Occipital_Sup_L	4	-77	5	0.31368	208173	5.9755	1366
Occipital_Sup_L	-29	-86	42	3.2	125	0.036603	1366
OUTSIDE	4	-77	5	22.4251	208173	0	0
OUTSIDE	44	-26	64	13.5393	3560	0	0
OUTSIDE	58	-12	-13	1.8069	1771	0	0
OUTSIDE	-66	-53	26	53.7133	579	0	0
OUTSIDE	5	43	-12	12.4501	1253	0	0
OUTSIDE	20	-32	79	8.8015	534	0	0
OUTSIDE	25	34	56	41.3655	498	0	0
OUTSIDE	-44	-58	59	25.5772	3855	0	0
OUTSIDE	-60	-15	-27	2.4804	766	0	0
OUTSIDE	52	23	38	5.8271	532	0	0
OUTSIDE	-27	28	60	80.4124	97	0	0
OUTSIDE	0	24	60	9.8446	386	0	0

OUTSIDE	-28	39	44	6.5141	568	0	0
OUTSIDE	-25	-36	76	1.6	125	0	0
OUTSIDE	-41	8	57	1.6129	186	0	0
OUTSIDE	39	-15	2	23.5798	933	0	0
OUTSIDE	27	-46	77	70	60	0	0
OUTSIDE	-29	-86	42	63.2	125	0	0
OUTSIDE	-47	16	51	45.7627	59	0	0
OUTSIDE	-58	-62	40	93.2432	74	0	0
OUTSIDE	-52	-26	61	60.5263	38	0	0
OUTSIDE	44	-32	-6	100	21	0	0
OUTSIDE	-46	7	-46	100	20	0	0
OUTSIDE	36	-25	-6	100	32	0	0
OUTSIDE	-16	-16	-12	100	1	0	0
Pallidum_L	4	-77	5	0.00048037	208173	0.042662	293
Pallidum_R	39	-15	2	0.96463	933	0.40179	280
Paracentral_Lobule_R	20	-32	79	1.3109	534	0.10467	836
ParaHippocampal_L	4	-77	5	0.8075	208173	21.4852	978
ParaHippocampal_R	4	-77	5	0.78829	208173	18.1206	1132
Parietal_Inf_L	-44	-58	59	42.6719	3855	8.4031	2447
Parietal_Inf_L	-29	-86	42	16	125	0.10217	2447
Parietal_Sup_L	-44	-58	59	12.607	3855	2.9419	2065
Parietal_Sup_R	27	-46	77	26.6667	60	0.090009	2222
Postcentral_L	4	-77	5	0.0052841	208173	0.035329	3892
Postcentral_L	-44	-58	59	19.0661	3855	2.3606	3892
Postcentral_L	-25	-36	76	98.4	125	0.39504	3892
Postcentral_L	-52	-26	61	39.4737	38	0.048176	3892
Postcentral_R	44	-26	64	61.5449	3560	7.1639	3823
Postcentral_R	20	-32	79	61.236	534	1.0692	3823
Postcentral_R	27	-46	77	3.3333	60	0.0065394	3823
Precentral_L	-44	-58	59	0.077821	3855	0.010635	3526
Precentral_L	-41	8	57	27.4194	186	0.1808	3526
Precentral_L	-37	9	33	20	30	0.021271	3526
Precentral_R	44	-26	64	24.9157	3560	3.2794	3381
Precentral_R	20	-32	79	28.6517	534	0.56566	3381
Precuneus_L	4	-77	5	2.8856	208173	21.2833	3528
Precuneus_L	-1	-47	65	100	6	0.021259	3528
Precuneus_R	4	-77	5	1.6294	208173	12.9862	3265
Putamen_L	4	-77	5	0.68068	208173	17.5545	1009
Putamen_R	39	-15	2	23.7942	933	2.6081	1064
Rectus_L	5	43	-12	0.71828	1253	0.13204	852
Rectus_R	5	43	-12	1.0375	1253	0.21812	745
Rolandic_Oper_L	4	-77	5	0.2887	208173	7.5884	990
Supp_Motor_Area_L	0	24	60	50	386	1.1237	2147

Supp_Motor_Area_R	0	24	60	7.772	386	0.15816	2371
SupraMarginal_L	-66	-53	26	41.1054	579	2.3686	1256
Temporal_Inf_L	4	-77	5	0.63649	208173	5.1758	3200
Temporal_Inf_L	-60	-15	-27	58.8773	766	1.7617	3200
Temporal_Inf_R	4	-77	5	0.20272	208173	1.483	3557
Temporal_Mid_L	4	-77	5	2.6262	208173	13.8279	4942
Temporal_Mid_L	-60	-15	-27	38.6423	766	0.74868	4942
Temporal_Mid_R	4	-77	5	0.055243	208173	0.32604	4409
Temporal_Mid_R	58	-12	-13	73.4049	1771	3.6856	4409
Temporal_Mid_R	54	-59	14	99.3631	157	0.44228	4409
Temporal_Mid_R	56	6	-25	48.6486	74	0.10206	4409
Temporal_Pole_Mid_L	4	-77	5	0.10136	208173	3.4934	755
Temporal_Pole_Mid_R	56	6	-25	51.3514	74	0.40017	1187
Temporal_Pole_Sup_L	4	-77	5	0.38237	208173	7.7432	1285
Temporal_Pole_Sup_L	-44	22	-14	40.625	64	0.25292	1285
Temporal_Sup_L	4	-77	5	1.8201	208173	20.6283	2296
Temporal_Sup_L	-66	-53	26	5.1813	579	0.16333	2296
Temporal_Sup_R	58	-12	-13	24.7883	1771	1.7471	3141
Temporal_Sup_R	39	-15	2	6.2165	933	0.23082	3141
Temporal_Sup_R	54	-59	14	0.63694	157	0.0039796	3141
Thalamus_L	4	-77	5	1.0179	208173	24.0795	1100
Thalamus_R	4	-77	5	0.028342	208173	0.69773	1057
Vermis_1_2	4	-77	5	0.022097	208173	10.8491	53
Vermis_10	4	-77	5	0.068212	208173	15.8482	112
Vermis_3	4	-77	5	0.19119	208173	21.8202	228
Vermis_4_5	4	-77	5	1.2057	208173	47.1805	665
Vermis_6	4	-77	5	0.48469	208173	33.996	371
Vermis_7	4	-77	5	0.45875	208173	61.5335	194
Vermis_8	4	-77	5	0.84641	208173	90.6379	243
Vermis_9	4	-77	5	0.47605	208173	71.1925	174

Table 64 Anatomical labelling of the deactivated clusters for Subject 6; fMRI session 4 (after therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-50	-71	38	62.8205	78	0.52217	1173
Angular_R	58	-61	27	100	14	0.099886	1752
Calcarine_L	-36	-9	-35	3.5401	77568	15.2015	2258
Calcarine_R	-36	-9	-35	1.2763	77568	6.6497	1861
Cerebelum_10_L	-36	-9	-35	0.46282	77568	31.1632	144
Cerebelum_10_R	-36	-9	-35	0.019338	77568	1.1792	159
Cerebelum_3_L	-36	-9	-35	0.2501	77568	17.8309	136
Cerebelum_4_5_L	-36	-9	-35	3.1289	77568	26.9667	1125
Cerebelum_6_L	-36	-9	-35	4.1705	77568	23.871	1694
Cerebelum_7b_L	-36	-9	-35	0.2862	77568	4.7436	585
Cerebelum_8_L	-36	-9	-35	3.7967	77568	19.5085	1887
Cerebelum_8_R	25	-56	-50	94.5235	913	4.674	2308
Cerebelum_9_L	-36	-9	-35	1.1654	77568	13.0035	869
Cerebelum_9_R	-36	-9	-35	0.62526	77568	7.4938	809
Cerebelum_9_R	25	-56	-50	0.32859	913	0.046354	809
Cerebelum_Crus1_L	-36	-9	-35	2.501	77568	9.3162	2603
Cerebelum_Crus1_R	26	-75	-35	64.881	168	0.51454	2648
Cerebelum_Crus2_L	-36	-9	-35	2.4856	77568	12.7244	1894
Cerebelum_Crus2_R	26	-75	-35	35.119	168	0.34837	2117
Cingulum_Ant_L	-10	54	31	16.9799	6225	9.4375	1400
Cingulum_Ant_L	-9	21	19	2.5559	626	0.14286	1400
Cingulum_Ant_R	-10	54	31	2.1044	6225	1.2471	1313
Cingulum_Mid_L	-36	-9	-35	1.3356	77568	6.6718	1941
Cingulum_Mid_R	-36	-9	-35	0.10829	77568	0.47662	2203
Cingulum_Post_L	-36	-9	-35	0.20756	77568	4.3467	463
Cingulum_Post_R	-36	-9	-35	0.24237	77568	7.0149	335
Cuneus_L	-36	-9	-35	2.278	77568	14.4741	1526
Cuneus_R	-36	-9	-35	0.33003	77568	2.2472	1424
Cuneus_R	13	-96	36	6.9418	533	0.32479	1424
Frontal_Inf_Oper_L	-36	-9	-35	0.48345	77568	4.5159	1038
Frontal_Inf_Oper_R	53	20	42	6.0606	99	0.05361	1399
Frontal_Inf_Orb_L	-36	-9	-35	1.9325	77568	11.0873	1690
Frontal_Inf_Orb_L	-32	49	-11	5.1095	137	0.051775	1690
Frontal_Inf_Orb_L	-32	40	-16	100	1	0.0073964	1690
Frontal_Inf_Tri_L	-36	-9	-35	0.35195	77568	1.3493	2529
Frontal_Inf_Tri_L	-47	30	20	100	119	0.58818	2529
Frontal_Inf_Tri_L	-51	20	20	100	106	0.52392	2529
Frontal_Med_Orb_L	-10	54	31	14.3133	6225	15.4903	719
Frontal_Mid_L	-47	19	51	68.5947	4789	8.4439	4863

Frontal_Mid_L	-10	54	31	13.4779	6225	2.1566	4863
Frontal_Mid_Orb_L	-32	49	-11	94.8905	137	1.83	888
Frontal_Mid_R	53	20	42	86.8687	99	0.21062	5104
Frontal_Sup_L	-12	8	73	15.8497	612	0.3369	3599
Frontal_Sup_L	-47	19	51	1.942	4789	0.32301	3599
Frontal_Sup_L	-10	54	31	20.8514	6225	4.5082	3599
Frontal_Sup_L	-17	38	56	51.3889	288	0.51403	3599
Frontal_Sup_L	-10	47	50	61.1111	18	0.038205	3599
Frontal_Sup_Medial_L	-2	23	59	29.6689	755	0.93583	2992
Frontal_Sup_Medial_L	-10	54	31	6.9076	6225	1.7965	2992
Frontal_Sup_Medial_L	-10	47	50	38.8889	18	0.029245	2992
Frontal_Sup_Medial_R	-2	23	59	3.4437	755	0.1523	2134
Frontal_Sup_Orb_R	22	53	-7	30.7692	39	0.15045	997
Frontal_Sup_R	19	40	58	9.3333	300	0.086292	4056
Frontal_Sup_R	21	51	42	85.4545	220	0.57939	4056
Fusiform_L	-36	-9	-35	2.8685	77568	12.04	2310
Heschl_L	-36	-9	-35	0.46024	77568	19.8333	225
Hippocampus_L	-36	-9	-35	1.4052	77568	14.6191	932
Insula_L	-36	-9	-35	1.9467	77568	10.1588	1858
Lingual_L	-36	-9	-35	3.1585	77568	14.6181	2095
Lingual_R	-36	-9	-35	0.28878	77568	1.2174	2300
Lingual_R	11	-80	-9	100	395	2.1467	2300
Lingual_R	9	-29	2	9.1352	821	0.40761	2300
Lingual_R	13	-57	0	100	30	0.16304	2300
Lingual_R	16	-72	0	100	11	0.059783	2300
Occipital_Mid_L	-50	-71	38	1.2821	78	0.0038226	3270
Occipital_Mid_L	-36	-74	0	95.3642	151	0.55046	3270
Occipital_Sup_L	-36	-9	-35	0.59947	77568	4.2551	1366
Occipital_Sup_R	13	-96	36	13.8837	533	0.65464	1413
Olfactory_L	-10	54	31	0.12851	6225	0.35714	280
OUTSIDE	53	-17	58	19.627	3378	0	0
OUTSIDE	-36	-9	-35	27.8053	77568	0	0
OUTSIDE	-12	8	73	54.7386	612	0	0
OUTSIDE	-47	19	51	13.6981	4789	0	0
OUTSIDE	-2	23	59	16.0265	755	0	0
OUTSIDE	-10	54	31	24.5622	6225	0	0
OUTSIDE	-60	-56	43	28.2955	5280	0	0
OUTSIDE	-17	38	56	48.6111	288	0	0
OUTSIDE	53	20	42	7.0707	99	0	0
OUTSIDE	66	-4	26	0.65789	304	0	0
OUTSIDE	25	-56	-50	5.1479	913	0	0
OUTSIDE	19	40	58	90.6667	300	0	0
OUTSIDE	9	-29	2	26.4312	821	0	0

OUTSIDE	-9	21	19	97.4441	626	0	0
OUTSIDE	13	-96	36	79.1745	533	0	0
OUTSIDE	21	51	42	14.5455	220	0	0
OUTSIDE	-21	-18	49	100	243	0	0
OUTSIDE	22	53	-7	69.2308	39	0	0
OUTSIDE	56	-3	-17	4.9231	325	0	0
OUTSIDE	-50	-71	38	35.8974	78	0	0
OUTSIDE	-12	-14	-6	70.7317	41	0	0
OUTSIDE	11	59	43	100	12	0	0
OUTSIDE	-36	-74	0	4.6358	151	0	0
OUTSIDE	1	-30	-19	100	7	0	0
Paracentral_Lobule_L	-15	-31	77	22.5166	151	0.31505	1349
ParaHippocampal_L	-36	-9	-35	1.4478	77568	14.3533	978
Parietal_Inf_L	-60	-56	43	43.5227	5280	11.7389	2447
Parietal_Sup_L	-36	-9	-35	0.10571	77568	0.49637	2065
Postcentral_L	-60	-56	43	28.1818	5280	4.779	3892
Postcentral_L	-15	-31	77	77.4834	151	0.37577	3892
Postcentral_L	-52	-14	29	100	114	0.36614	3892
Postcentral_R	53	-17	58	58.1409	3378	6.4217	3823
Postcentral_R	66	-4	26	99.3421	304	0.98744	3823
Precentral_L	-47	19	51	15.7653	4789	2.6765	3526
Precentral_R	53	-17	58	22.2321	3378	2.7765	3381
Precuneus_L	-36	-9	-35	11.3423	77568	31.1721	3528
Precuneus_R	-36	-9	-35	4.1022	77568	12.1822	3265
Putamen_L	-36	-9	-35	0.48216	77568	4.6333	1009
Rectus_L	-10	54	31	0.6747	6225	0.6162	852
Rolandic_Oper_L	-36	-9	-35	0.0090243	77568	0.088384	990
Supp_Motor_Area_L	-12	8	73	29.4118	612	1.048	2147
Supp_Motor_Area_L	-2	23	59	49.404	755	2.1716	2147
Supp_Motor_Area_R	-2	23	59	1.457	755	0.057992	2371
Temporal_Inf_L	-36	-9	-35	2.3309	77568	7.0625	3200
Temporal_Mid_L	-36	-9	-35	8.831	77568	17.326	4942
Temporal_Mid_R	56	-3	-17	57.8462	325	0.533	4409
Temporal_Pole_Sup_L	-36	-9	-35	0.1315	77568	0.99222	1285
Temporal_Sup_L	-36	-9	-35	1.6566	77568	6.9959	2296
Temporal_Sup_R	56	-3	-17	37.2308	325	0.48153	3141
Thalamus_L	-12	-14	-6	29.2683	41	0.13636	1100
Thalamus_R	9	-29	2	64.4336	821	6.2559	1057
Vermis_4_5	-36	-9	-35	0.014181	77568	0.20677	665
Vermis_4_5	2	-59	-2	100	16	0.30075	665
Vermis_9	-36	-9	-35	0.036097	77568	2.0115	174
Vermis_9	0	-54	-33	100	39	2.8017	174

Table 65 Anatomical labelling of the deactivated clusters for Subject 7; fMRI session 1 (before therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-61	-56	26	6.2963	270	0.18116	1173
Angular_R	51	-54	21	38.2622	656	1.7908	1752
Calcarine_R	3	-85	31	0.47619	630	0.02015	1861
Cingulum_Mid_R	10	-56	32	11.1111	1161	0.73196	2203
Cingulum_Post_R	10	-56	32	5.5986	1161	2.4254	335
Cuneus_L	3	-85	31	66.8254	630	3.4486	1526
Cuneus_R	3	-85	31	27.4603	630	1.5186	1424
OUTSIDE	10	-56	32	2.2394	1161	0	0
OUTSIDE	3	-85	31	5.2381	630	0	0
OUTSIDE	-61	-56	26	68.1481	270	0	0
OUTSIDE	-54	-24	62	100	19	0	0
OUTSIDE	56	-60	49	100	1	0	0
Precuneus_L	-3	-61	44	100	10	0.035431	3528
Precuneus_R	10	-56	32	81.0508	1161	3.6026	3265
SupraMarginal_L	-61	-56	26	25.5556	270	0.6867	1256
SupraMarginal_R	57	-40	27	100	58	0.36727	1974
Temporal_Mid_R	51	-54	21	32.4695	656	0.60388	4409
Temporal_Sup_R	51	-54	21	29.2683	656	0.76409	3141

Table 66 Anatomical labelling of the deactivated clusters for Subject 7; fMRI session 2 (after 7th therapy session).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-48	-73	43	43.7567	5574	25.991	1173
Angular_R	51	-41	27	17.5326	5909	7.3916	1752
Angular_R	54	-72	33	46.9244	569	1.905	1752
Angular_R	50	-64	52	89.838	679	4.3522	1752
Calcarine_L	4	-99	18	0.36969	2164	0.044287	2258
Cingulum_Mid_L	10	-53	39	7.5944	4793	2.3442	1941
Cingulum_Mid_R	10	-53	39	4.1936	4793	1.1405	2203
Cingulum_Post_L	10	-53	39	1.1266	4793	1.4579	463
Cingulum_Post_R	10	-53	39	2.2116	4793	3.9552	335
Cuneus_L	4	-99	18	9.8891	2164	1.7529	1526
Cuneus_L	10	-53	39	0.33382	4793	0.13106	1526
Cuneus_R	4	-99	18	6.9316	2164	1.3167	1424
Cuneus_R	10	-53	39	3.7763	4793	1.5888	1424
Frontal_Inf_Oper_R	50	6	13	48.913	368	1.6083	1399
Frontal_Inf_Orb_R	41	27	-22	100	4	0.029291	1707
Frontal_Inf_Tri_L	-53	37	8	100	9	0.044484	2529
Frontal_Inf_Tri_R	52	34	4	100	170	0.98791	2151
Frontal_Inf_Tri_R	53	44	1	95.6522	46	0.2557	2151
Frontal_Med_Orb_L	5	46	-10	12.766	94	0.20862	719
Frontal_Med_Orb_R	5	46	-10	87.234	94	1.1974	856
Frontal_Mid_L	-30	57	-2	7	300	0.053979	4863
Frontal_Mid_Orb_L	-30	57	-2	4.6667	300	0.19707	888
Frontal_Mid_R	39	55	9	78.1818	330	0.63186	5104
Frontal_Mid_R	24	23	57	1.1719	256	0.0073472	5104
Frontal_Mid_R	53	44	1	4.3478	46	0.0048981	5104
Frontal_Sup_L	-9	64	19	40.0568	352	0.48972	3599
Frontal_Sup_L	-30	57	-2	26	300	0.27091	3599
Frontal_Sup_Medial_L	-9	64	19	57.9545	352	0.85227	2992
Frontal_Sup_Medial_L	1	34	50	100	6	0.025067	2992
Frontal_Sup_Medial_R	10	70	17	100	6	0.035145	2134
Frontal_Sup_Medial_R	8	69	18	100	2	0.011715	2134
Frontal_Sup_Orb_L	-30	57	-2	62	300	2.4143	963
Frontal_Sup_R	39	55	9	21.8182	330	0.22189	4056
Frontal_Sup_R	24	23	57	97.6563	256	0.77046	4056
Frontal_Sup_R	23	13	68	48.2143	56	0.08321	4056
Occipital_Mid_L	-48	-73	43	0.37675	5574	0.080275	3270
Occipital_Mid_R	54	-72	33	27.9438	569	0.94733	2098
Occipital_Sup_L	-9	-87	48	69.9552	223	1.4275	1366
Occipital_Sup_R	4	-99	18	13.1238	2164	2.5124	1413

Occipital_Sup_R	26	-95	23	95.4887	133	1.1235	1413
OUTSIDE	51	-41	27	7.6155	5909	0	0
OUTSIDE	4	-99	18	69.6858	2164	0	0
OUTSIDE	9	-14	79	28.5714	238	0	0
OUTSIDE	-48	-73	43	26.7851	5574	0	0
OUTSIDE	54	-72	33	25.1318	569	0	0
OUTSIDE	50	-64	52	7.0692	679	0	0
OUTSIDE	20	-40	85	73.9464	261	0	0
OUTSIDE	10	-53	39	0.18777	4793	0	0
OUTSIDE	-9	-87	48	20.1794	223	0	0
OUTSIDE	32	-17	29	100	326	0	0
OUTSIDE	-9	64	19	1.9886	352	0	0
OUTSIDE	24	23	57	1.1719	256	0	0
OUTSIDE	18	-84	54	73.0769	52	0	0
OUTSIDE	23	13	68	51.7857	56	0	0
OUTSIDE	26	32	64	100	65	0	0
OUTSIDE	-11	-101	30	100	8	0	0
OUTSIDE	-50	-62	53	100	35	0	0
OUTSIDE	-30	57	-2	0.33333	300	0	0
OUTSIDE	26	-95	23	4.5113	133	0	0
OUTSIDE	-66	-44	35	100	11	0	0
OUTSIDE	-37	19	59	100	11	0	0
OUTSIDE	4	56	44	100	8	0	0
OUTSIDE	-67	-42	33	100	1	0	0
OUTSIDE	36	-93	24	100	1	0	0
Parietal_Inf_L	-48	-73	43	12.1816	5574	3.4685	2447
Parietal_Inf_R	50	-64	52	3.0928	679	0.19517	1345
Parietal_Sup_L	-9	-87	48	9.8655	223	0.13317	2065
Parietal_Sup_R	18	-84	54	26.9231	52	0.078758	2222
Postcentral_R	20	-40	85	26.0536	261	0.22234	3823
Precuneus_L	10	-53	39	45.2744	4793	7.6885	3528
Precuneus_R	10	-53	39	35.3015	4793	6.4778	3265
Rolandic_Oper_R	50	6	13	51.087	368	1.7656	1331
Supp_Motor_Area_R	9	-14	79	71.4286	238	0.89625	2371
SupraMarginal_L	-48	-73	43	5.5795	5574	3.0951	1256
SupraMarginal_R	51	-41	27	49.89	5909	18.6677	1974
Temporal_Mid_L	-48	-73	43	10.9975	5574	1.5505	4942
Temporal_Mid_L	-65	-43	-8	100	1	0.0025293	4942
Temporal_Mid_R	51	-41	27	5.297	5909	0.88739	4409
Temporal_Mid_R	66	-30	-6	100	343	0.97244	4409
Temporal_Mid_R	68	-16	-11	100	20	0.056702	4409
Temporal_Mid_R	58	-39	3	100	28	0.079383	4409
Temporal_Pole_Sup_R	58	1	-6	43.6364	55	0.22422	1338

Temporal_Sup_L	-48	-73	43	0.32293	5574	0.097997	2296
Temporal_Sup_R	51	-41	27	19.6649	5909	4.6243	3141
Temporal_Sup_R	58	1	-6	56.3636	55	0.12337	3141

Table 67 Anatomical labelling of the deactivated clusters for Subject 7; fMRI session 3 (after 14th therapy session).

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_R	44	-80	39	74.2925	848	4.4949	1752
Calcarine_L	5	-104	7	1.5986	1126	0.099646	2258
Calcarine_L	10	-90	0	6.4025	3811	1.3508	2258
Calcarine_R	5	-104	7	3.4636	1126	0.26196	1861
Calcarine_R	10	-90	0	60.2729	3811	15.4285	1861
Cerebelum_6_R	10	-90	0	1.9417	3811	0.51532	1795
Cerebelum_Crus1_R	10	-90	0	1.5482	3811	0.27851	2648
Cerebelum_Crus1_R	26	-76	-36	100	3	0.014162	2648
Cingulum_Ant_L	10	56	20	0.20756	2409	0.044643	1400
Cingulum_Ant_L	-2	47	-5	38.4615	39	0.13393	1400
Cingulum_Ant_R	10	56	20	14.9024	2409	3.4177	1313
Cuneus_L	5	-104	7	0.62167	1126	0.057339	1526
Cuneus_R	5	-104	7	19.8046	1126	1.9575	1424
Cuneus_R	10	-90	0	0.05248	3811	0.017556	1424
Frontal_Inf_Oper_R	50	4	21	82.8283	396	2.9307	1399
Frontal_Inf_Oper_R	49	21	-4	8.6957	138	0.10722	1399
Frontal_Inf_Orb_R	49	21	-4	36.9565	138	0.37346	1707
Frontal_Inf_Tri_R	49	43	3	53.5032	157	0.48815	2151
Frontal_Inf_Tri_R	50	4	21	5.0505	396	0.11623	2151
Frontal_Inf_Tri_R	58	32	10	100	248	1.4412	2151
Frontal_Inf_Tri_R	49	21	-4	36.2319	138	0.29056	2151
Frontal_Med_Orb_L	-2	47	-5	61.5385	39	0.41725	719
Frontal_Mid_L	-24	53	35	35.3659	164	0.14908	4863
Frontal_Mid_L	-20	50	0	2.8239	602	0.043697	4863
Frontal_Mid_L	-21	32	53	28	75	0.053979	4863
Frontal_Mid_Orb_L	-20	50	0	31.5615	602	2.6745	888
Frontal_Mid_Orb_R	45	52	1	6.4677	402	0.3202	1015
Frontal_Mid_R	47	47	20	100	101	0.24736	5104
Frontal_Mid_R	45	52	1	93.5323	402	0.92085	5104
Frontal_Mid_R	42	55	12	98.9011	182	0.44083	5104
Frontal_Mid_R	49	43	3	46.4968	157	0.17878	5104
Frontal_Mid_R	57	27	34	28.3019	53	0.036736	5104
Frontal_Mid_R	28	61	28	75	12	0.022042	5104
Frontal_Mid_R	37	25	57	2.381	42	0.0024491	5104
Frontal_Mid_R	28	46	10	22.2222	9	0.0048981	5104
Frontal_Sup_L	10	56	20	3.736	2409	0.31259	3599
Frontal_Sup_L	-24	53	35	15.2439	164	0.08683	3599
Frontal_Sup_L	-20	50	0	29.5681	602	0.61823	3599
Frontal_Sup_L	-10	48	54	5	40	0.0069464	3599

Frontal_Sup_L	-21	32	53	72	75	0.18755	3599
Frontal_Sup_Medial_L	10	56	20	30.4276	2409	3.0623	2992
Frontal_Sup_Medial_L	-10	48	54	2.5	40	0.0041778	2992
Frontal_Sup_Medial_R	10	56	20	43.9601	2409	6.2031	2134
Frontal_Sup_Medial_R	17	67	17	29.5918	98	0.16987	2134
Frontal_Sup_Orb_L	-20	50	0	23.0897	602	1.8043	963
Frontal_Sup_R	10	56	20	6.6002	2409	0.49001	4056
Frontal_Sup_R	42	55	12	1.0989	182	0.0061637	4056
Frontal_Sup_R	17	67	17	57.1429	98	0.17258	4056
Frontal_Sup_R	28	12	70	2.0408	49	0.0030819	4056
Frontal_Sup_R	19	42	35	100	112	0.34517	4056
Frontal_Sup_R	28	46	10	66.6667	9	0.018491	4056
Insula_R	49	21	-4	10.8696	138	0.10593	1770
Lingual_L	10	-90	0	1.3907	3811	0.31623	2095
Lingual_R	10	-90	0	26.8696	3811	5.5652	2300
Occipital_Mid_R	44	-80	39	14.2689	848	0.72092	2098
Occipital_Sup_R	44	-80	39	0.11792	848	0.0088464	1413
Occipital_Sup_R	5	-104	7	7.6377	1126	0.76079	1413
OUTSIDE	44	-80	39	11.3208	848	0	0
OUTSIDE	10	56	20	0.16604	2409	0	0
OUTSIDE	5	-104	7	66.8739	1126	0	0
OUTSIDE	10	-90	0	1.5219	3811	0	0
OUTSIDE	-24	53	35	49.3902	164	0	0
OUTSIDE	53	-10	22	70.5426	129	0	0
OUTSIDE	7	-14	80	74.6032	63	0	0
OUTSIDE	17	67	17	13.2653	98	0	0
OUTSIDE	54	-55	54	24.7059	85	0	0
OUTSIDE	-20	50	0	12.9568	602	0	0
OUTSIDE	57	27	34	71.6981	53	0	0
OUTSIDE	50	4	21	5.0505	396	0	0
OUTSIDE	-10	48	54	92.5	40	0	0
OUTSIDE	28	61	28	25	12	0	0
OUTSIDE	49	21	-4	7.2464	138	0	0
OUTSIDE	28	12	70	97.9592	49	0	0
OUTSIDE	37	25	57	97.619	42	0	0
OUTSIDE	-57	-70	24	100	6	0	0
OUTSIDE	26	20	70	100	3	0	0
OUTSIDE	28	46	10	11.1111	9	0	0
Paracentral_Lobule_L	-17	-25	70	100	14	0.12973	1349
Parietal_Inf_R	54	-55	54	75.2941	85	0.5948	1345
Postcentral_R	53	-10	22	17.8295	129	0.075203	3823
Precentral_R	50	4	21	7.0707	396	0.10352	3381
Rectus_L	-2	51	-20	100	19	0.27876	852

Rolandic_Oper_R	53	-10	22	10.8527	129	0.13148	1331
Supp_Motor_Area_R	7	-14	80	25.3968	63	0.084353	2371
SupraMarginal_R	53	-10	22	0.77519	129	0.0063323	1974
SupraMarginal_R	63	-44	28	100	6	0.037994	1974
SupraMarginal_R	55	-41	32	100	2	0.012665	1974
SupraMarginal_R	59	-51	24	100	6	0.037994	1974
Temporal_Inf_R	34	7	-40	35.3535	99	0.123	3557
Temporal_Pole_Mid_R	34	7	-40	64.6465	99	0.67397	1187
Temporal_Sup_L	-57	2	-12	100	1	0.0054443	2296

Table 68 Anatomical labelling of the deactivated clusters for Subject 7; fMRI session 4 (after therapy).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-46	-74	46	6.8376	117	0.085251	1173
Angular_R	57	-60	46	44.146	2494	7.8553	1752
Calcarine_L	5	-103	5	44.9782	229	0.57019	2258
Calcarine_R	9	-81	5	100	170	1.1419	1861
Cerebelum_6_R	11	-89	-17	3.5714	28	0.0069638	1795
Cerebelum_Crus1_R	15	-84	-24	100	42	0.19826	2648
Cerebelum_Crus1_R	11	-89	-17	21.4286	28	0.028323	2648
Cingulum_Ant_L	3	50	1	42.1429	140	0.52679	1400
Cuneus_L	5	-103	5	2.1834	229	0.040957	1526
Frontal_Inf_Oper_R	64	15	14	95.6522	69	0.58971	1399
Frontal_Inf_Orb_L	-46	36	-2	12.605	119	0.11095	1690
Frontal_Inf_Orb_R	42	49	-1	1.7442	172	0.021968	1707
Frontal_Inf_Tri_L	-46	36	-2	87.395	119	0.51404	2529
Frontal_Inf_Tri_L	-53	35	12	100	22	0.10874	2529
Frontal_Inf_Tri_R	38	28	2	46.6667	105	0.28475	2151
Frontal_Inf_Tri_R	42	49	-1	1.7442	172	0.017434	2151
Frontal_Med_Orb_L	-8	55	-10	76.4317	454	6.0327	719
Frontal_Med_Orb_R	3	50	1	0.71429	140	0.014603	856
Frontal_Med_Orb_R	11	59	-12	100	13	0.18984	856
Frontal_Mid_L	-8	30	52	0.16155	619	0.0025704	4863
Frontal_Mid_L	-41	53	-5	29.8246	741	0.56806	4863
Frontal_Mid_L	-31	10	66	49.6183	131	0.16708	4863
Frontal_Mid_Orb_L	-41	53	-5	38.0567	741	3.9696	888
Frontal_Mid_Orb_R	42	49	-1	64.5349	172	1.367	1015
Frontal_Mid_R	44	52	20	100	191	0.46777	5104
Frontal_Mid_R	23	62	2	0.24027	2081	0.012245	5104
Frontal_Mid_R	42	49	-1	31.9767	172	0.1347	5104
Frontal_Sup_L	-8	30	52	55.2504	619	1.1878	3599
Frontal_Sup_L	-41	53	-5	11.2011	741	0.28827	3599
Frontal_Sup_L	-14	41	40	95.625	480	1.5942	3599
Frontal_Sup_L	-31	10	66	1.5267	131	0.0069464	3599
Frontal_Sup_L	-19	50	8	100	6	0.020839	3599
Frontal_Sup_Medial_L	-8	30	52	44.588	619	1.1531	2992
Frontal_Sup_Medial_L	-14	41	40	4.375	480	0.087734	2992
Frontal_Sup_Medial_R	23	62	2	2.691	2081	0.32802	2134
Frontal_Sup_Medial_R	3	50	1	57.1429	140	0.4686	2134
Frontal_Sup_Medial_R	11	30	52	100	28	0.16401	2134
Frontal_Sup_Orb_L	-8	55	-10	19.8238	454	1.1682	963
Frontal_Sup_Orb_L	-41	53	-5	19.4332	741	1.8692	963

Frontal_Sup_Orb_R	23	62	2	0.14416	2081	0.037613	997
Frontal_Sup_R	23	62	2	90.9659	2081	5.8339	4056
Fusiform_R	33	4	-39	5.5556	90	0.024821	2518
Insula_R	38	28	2	53.3333	105	0.39548	1770
Lingual_R	11	-89	-17	10.7143	28	0.016304	2300
Occipital_Inf_R	31	-101	-3	100	1	0.012639	989
Occipital_Mid_R	57	-60	46	0.32077	2494	0.047664	2098
OUTSIDE	57	-60	46	16.7201	2494	0	0
OUTSIDE	23	62	2	5.9587	2081	0	0
OUTSIDE	-8	55	-10	3.0837	454	0	0
OUTSIDE	-46	-74	46	93.1624	117	0	0
OUTSIDE	5	-103	5	52.8384	229	0	0
OUTSIDE	-43	-34	72	100	48	0	0
OUTSIDE	-41	53	-5	1.4845	741	0	0
OUTSIDE	-31	10	66	48.855	131	0	0
OUTSIDE	-35	16	64	100	7	0	0
OUTSIDE	18	-100	24	100	17	0	0
OUTSIDE	36	16	-46	75	4	0	0
OUTSIDE	9	3	21	100	25	0	0
OUTSIDE	11	-89	-17	64.2857	28	0	0
OUTSIDE	-17	-52	83	100	3	0	0
OUTSIDE	-29	-49	79	100	1	0	0
OUTSIDE	19	-107	6	100	4	0	0
OUTSIDE	-18	-51	81	100	2	0	0
OUTSIDE	-30	-50	78	100	1	0	0
Parietal_Inf_R	57	-60	46	38.4122	2494	8.9033	1345
Postcentral_L	-45	-23	58	94.5946	37	0.11241	3892
Precentral_L	-45	-23	58	5.4054	37	0.0070902	3526
Precentral_L	-33	-30	63	100	5	0.017725	3526
Precentral_R	64	15	14	4.3478	69	0.011091	3381
Rectus_L	-8	55	-10	0.66079	454	0.044014	852
SupraMarginal_R	57	-60	46	0.40096	2494	0.063323	1974
Temporal_Inf_R	33	4	-39	47.7778	90	0.15111	3557
Temporal_Pole_Mid_R	33	4	-39	46.6667	90	0.44229	1187
Temporal_Pole_Mid_R	36	16	-46	25	4	0.010531	1187

Table 69 Anatomical labelling of the deactivated clusters for Subject 8; fMRI session 1 (before therapy).

NO VOXELS SURVIVED MASKING AT p<0.001

Table 70 Anatomical labelling of the deactivated clusters for Subject 8; fMRI session 2 (after 7th therapy session).

	Cluster center						
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Amygdala_L	-30	1	-43	1.233	1622	1.1364	220
Angular_L	-47	-74	36	7.0423	142	0.10656	1173
Cerebelum_7b_L	-20	-70	-50	13.3333	270	0.76923	585
Cerebelum_8_L	-20	-70	-50	86.6667	270	1.5501	1887
Cerebelum_8_R	27	-55	-42	66.6667	33	0.11915	2308
Cerebelum_9_L	-8	-56	-34	32	25	0.11507	869
Cerebelum_Crus1_L	-43	-55	-38	100	70	0.33615	2603
Cerebelum_Crus1_R	29	-71	-37	100	87	0.41069	2648
Cerebelum_Crus1_R	14	-72	-31	100	4	0.018882	2648
Frontal_Med_Orb_L	5	48	-12	2.6042	192	0.086926	719
Frontal_Med_Orb_R	5	48	-12	97.3958	192	2.7307	856
Frontal_Mid_Orb_L	-22	39	-14	68.3673	98	0.94313	888
Frontal_Sup_L	-7	24	66	1.6807	119	0.0069464	3599
Frontal_Sup_Medial_L	-7	24	66	10.084	119	0.050134	2992
Frontal_Sup_Orb_L	-22	39	-14	31.6327	98	0.40239	963
Frontal_Sup_Orb_L	-27	14	-16	3.125	32	0.01298	963
Frontal_Sup_R	16	7	74	70.5882	34	0.073964	4056
Fusiform_L	-30	1	-43	14.6116	1622	1.2825	2310
Fusiform_R	31	0	-37	93.4066	91	0.42196	2518
Hippocampus_L	-30	1	-43	3.0826	1622	0.6706	932
Insula_L	-27	14	-16	96.875	32	0.20856	1858
Occipital_Mid_L	-47	-74	36	19.7183	142	0.10703	3270
Occipital_Sup_L	-16	-106	15	8.8235	34	0.027452	1366
OUTSIDE	-30	1	-43	43.1566	1622	0	0
OUTSIDE	-36	-72	55	92.9825	57	0	0
OUTSIDE	-7	24	66	16.8067	119	0	0
OUTSIDE	-59	-43	49	78.125	32	0	0
OUTSIDE	39	2	-46	11.7647	17	0	0
OUTSIDE	-42	9	-50	100	55	0	0
OUTSIDE	-47	-74	36	73.2394	142	0	0
OUTSIDE	16	7	74	29.4118	34	0	0
OUTSIDE	-58	-61	40	100	6	0	0
OUTSIDE	27	-55	-42	33.3333	33	0	0
OUTSIDE	-16	-106	15	91.1765	34	0	0
OUTSIDE	-8	-56	-34	68	25	0	0
ParaHippocampal_L	-30	1	-43	0.30826	1622	0.063906	978
ParaHippocampal_R	31	0	-37	6.5934	91	0.066254	1132
Parietal_Inf_L	-59	-43	49	21.875	32	0.035758	2447
Parietal_Sup_L	-36	-72	55	7.0175	57	0.024213	2065

Parietal_Sup_R	10	-75	49	11.3594	537	0.34316	2222
Precuneus_R	10	-75	49	88.6406	537	1.8224	3265
Supp_Motor_Area_L	-7	24	66	71.4286	119	0.49488	2147
Temporal_Inf_L	-30	1	-43	31.6893	1622	2.0078	3200
Temporal_Inf_R	39	2	-46	88.2353	17	0.052713	3557
Temporal_Pole_Mid_L	-30	1	-43	5.9186	1622	1.5894	755

Table 71 Anatomical labelling of the deactivated clusters for Subject 8; fMRI session 3 (after 14th therapy session).

Cluster center							
Region Label	x [mm]	y [mm]	z [mm]	%Cluster	Nb Vx Cluster	%Label	Nb Vx Label
Angular_L	-38	-73	53	6.6667	15	0.010656	1173
Cerebelum_Crus1_L	-30	-65	-37	96	125	0.57626	2603
Cerebelum_Crus2_L	-30	-65	-37	4	125	0.032999	1894
Frontal_Inf_Orb_L	-23	24	-14	90.566	53	0.35503	1690
Frontal_Mid_L	-47	12	53	77.9859	427	0.85595	4863
Frontal_Mid_L	-33	9	64	72.5664	113	0.21078	4863
Frontal_Mid_Orb_L	-23	38	-17	79.2308	130	1.4499	888
Frontal_Mid_Orb_L	-23	24	-14	7.5472	53	0.056306	888
Frontal_Sup_L	-13	27	61	85.7143	7	0.020839	3599
Frontal_Sup_L	-19	-8	80	100	1	0.0034732	3599
Frontal_Sup_Medial_L	-13	27	61	14.2857	7	0.0041778	2992
Frontal_Sup_Orb_L	-23	38	-17	20.7692	130	0.35047	963
Frontal_Sup_Orb_L	-23	24	-14	1.8868	53	0.01298	963
Occipital_Mid_L	-30	-100	16	17.5476	473	0.31728	3270
Occipital_Sup_L	-30	-100	16	6.9767	473	0.30198	1366
OUTSIDE	-30	-100	16	75.4757	473	0	0
OUTSIDE	-64	-43	-2	0.7109	422	0	0
OUTSIDE	19	-107	12	100	126	0	0
OUTSIDE	-47	12	53	21.0773	427	0	0
OUTSIDE	-67	-45	28	95.3488	86	0	0
OUTSIDE	-33	9	64	27.4336	113	0	0
OUTSIDE	-38	-73	53	93.3333	15	0	0
OUTSIDE	-62	-13	-15	12.2905	179	0	0
OUTSIDE	-62	-57	33	100	31	0	0
OUTSIDE	-42	20	-38	4.7619	63	0	0
OUTSIDE	-18	-45	-38	100	29	0	0
Precentral_L	-47	12	53	0.93677	427	0.01418	3526
SupraMarginal_L	-67	-45	28	4.6512	86	0.039809	1256
Temporal_Mid_L	-64	-43	-2	99.2891	422	1.0598	4942
Temporal_Mid_L	-62	-13	-15	87.7095	179	0.39711	4942
Temporal_Pole_Mid_L	-42	20	-38	95.2381	63	0.99338	755

Table 72 Anatomical labelling of the deactivated clusters for Subject 8; fMRI session 4 (after therapy).

NO VOXELS SURVIVED MASKING AT p<0.001

Appendix D: Activity maps differences

Differences among statistically significant activation maps are shown. For the original intra-session activation maps, please refer to Appendix B. Elements above the diagonal represent voxels for which the row session is active but the column session is not. Elements below the diagonal represent voxels for which the row session is not active but the column session is active.

Table 73 Spatial differences in pairwise session activation for Subject 1.

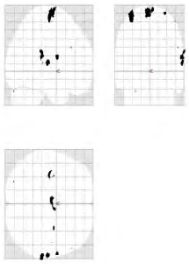
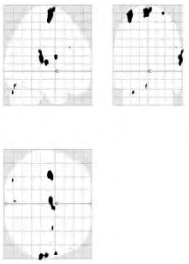
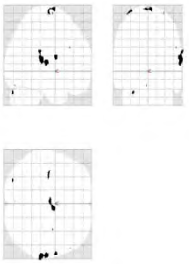
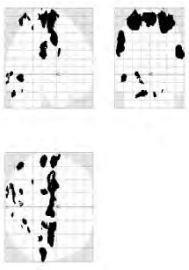
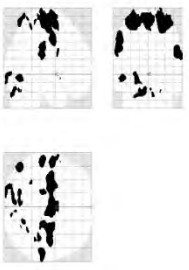
Session	1 (Before therapy)	2 (after 7th therapy session)	3 (after 14th therapy session)	4 (after therapy)
1				
2				
3				
4				

Table 74 Spatial differences in pairwise session activation for Subject 2.

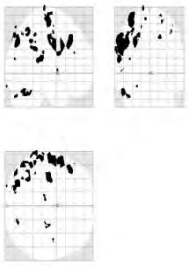
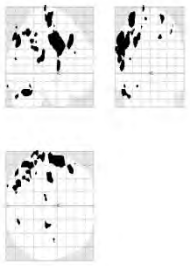
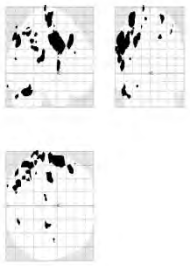
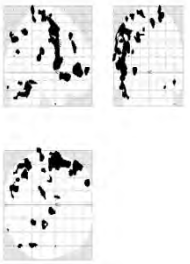
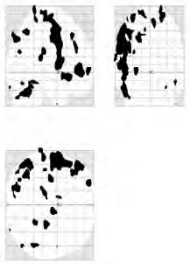
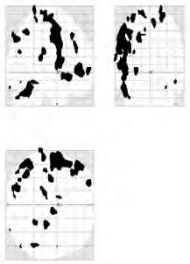
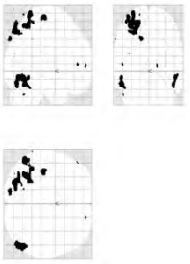
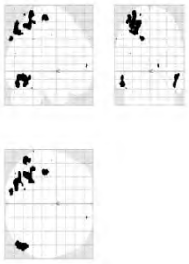
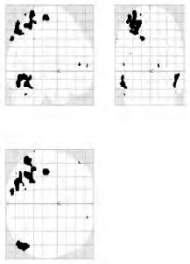
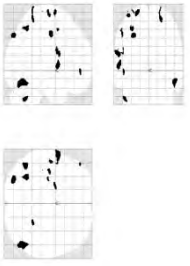
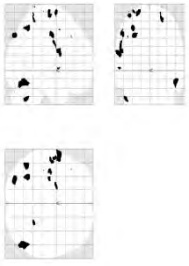
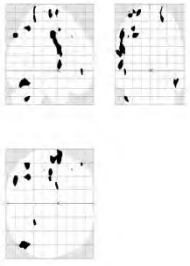
Session	1 (Before therapy)	2 (after 7th therapy session)	3 (after 14th therapy session)	4 (after therapy)
1				
2				
3				
4				

Table 75 Spatial differences in pairwise session activation for Subject 3.

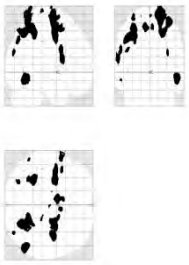
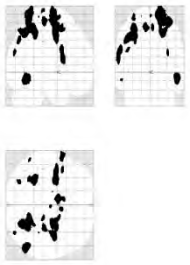
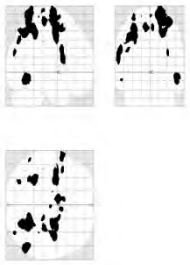
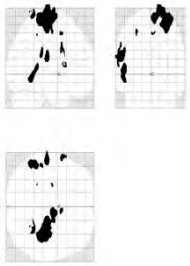
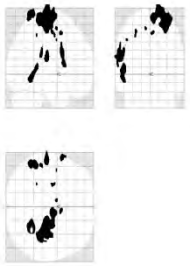
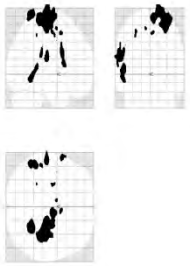
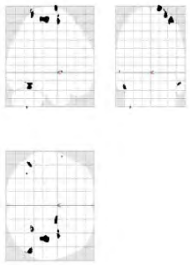
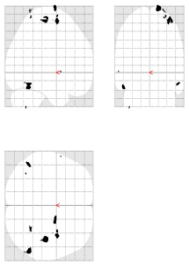
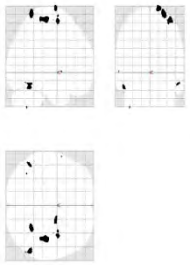
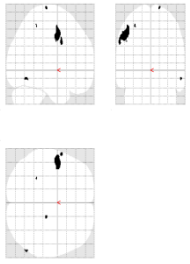
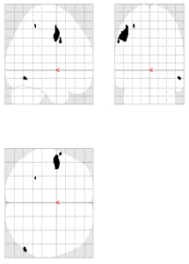
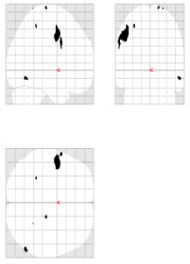
Session	1 (Before therapy)	2 (after 7th therapy session)	3 (after 14th therapy session)	4 (after therapy)
1				
2				
3				
4				

Table 76 Spatial differences in pairwise session activation for Subject 4.

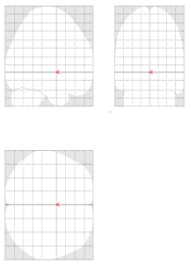
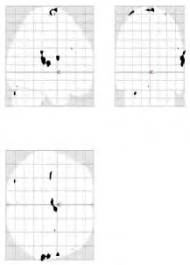
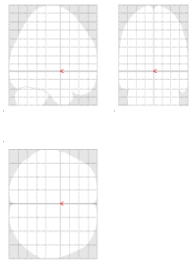
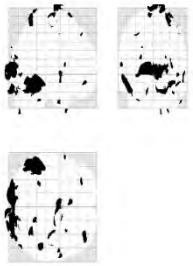
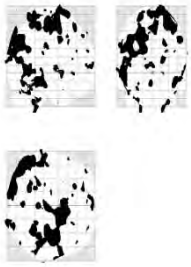
Session	1 (Before therapy)	2 (after 7th therapy session)	3 (after 14th therapy session)	4 (after therapy)
1				
2				
3				
4				

Table 77 Spatial differences in pairwise session activation for Subject 5.

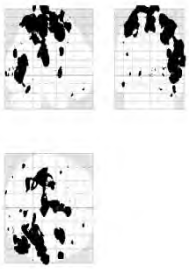
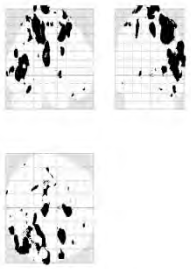
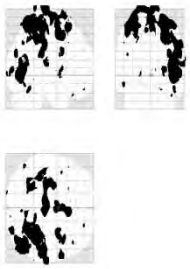
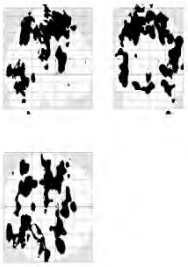
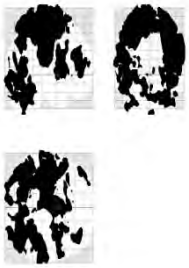
Session	1 (Before therapy)	2 (after 7th therapy session)	3 (after 14th therapy session)	4 (after therapy)
1				
2				
3				
4				

Table 78 Spatial differences in pairwise session activation for Subject 6.

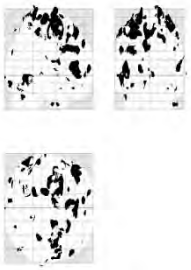
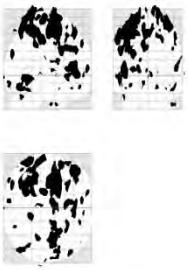
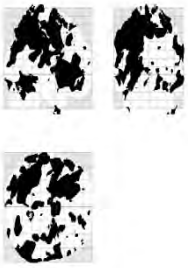
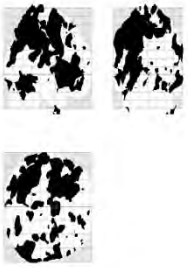
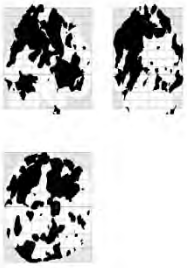
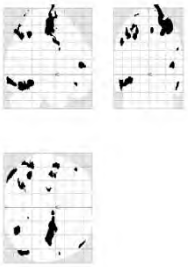
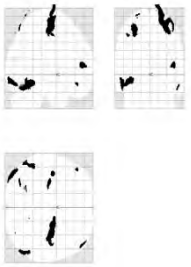
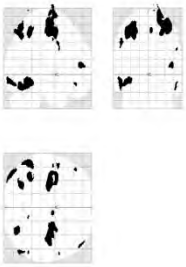
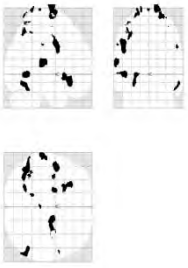
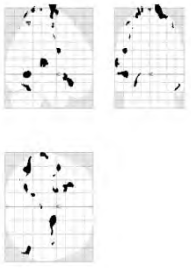
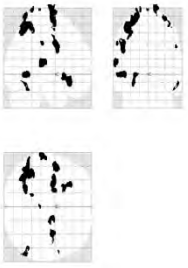
Session	1 (Before therapy)	2 (after 7th therapy session)	3 (after 14th therapy session)	4 (after therapy)
1				
2				
3				
4				

Table 79 Spatial differences in pairwise session activation for Subject 7.

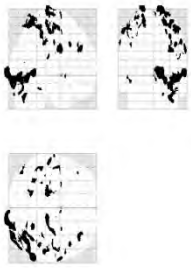
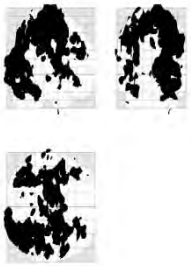
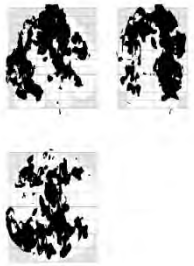
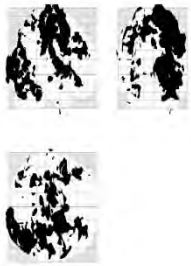
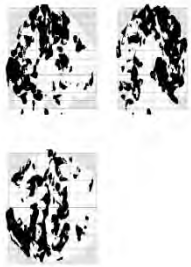
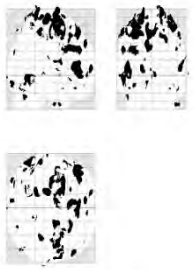
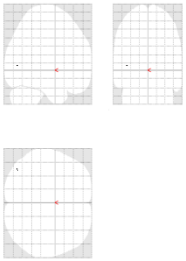
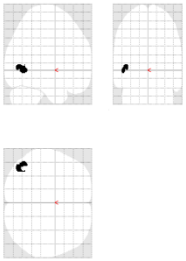
Session	1 (Before therapy)	2 (after 7th therapy session)	3 (after 14th therapy session)	4 (after therapy)
1				
2				
3				
4				

Table 80 Spatial differences in pairwise session activation for Subject 8.

Session	1 (Before therapy)	2 (after 7th therapy session)	3 (after 14th therapy session)	4 (after therapy)
1				
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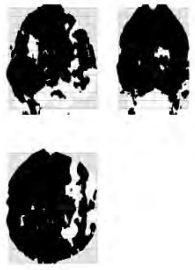
3				
4				

Appendix E: Association between cohort characteristics and behavioural outcomes versus reorganization strategies

Following linear regressions among cohort characteristics and behavioural outcomes versus reorganization strategies are presented. The limitations of this analysis have already been discussed in the main text. The appendix is presented in two sections:

3. Cohort characteristics vs reorganization strategies
4. Reorganization strategies vs clinical performance metrics

We cannot emphasize enough to be cautious in accepting/interpreting the regressions that follows.

Cohort characteristics vs reorganization strategies

Age

Age of the patient is expressed in years. An age 0 only corresponds to a missing data.

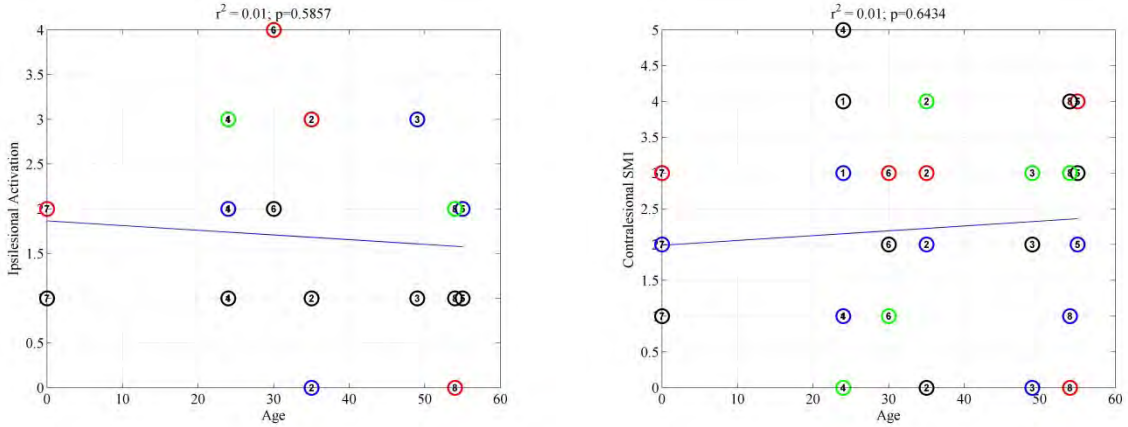


Figure 75 Age as explanatory variable of ipsilesional activation and contralesional activation of the SM1. Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

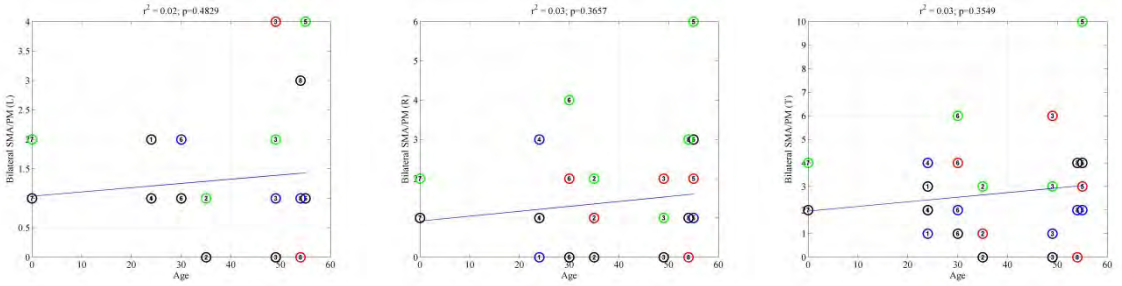


Figure 76 Age as explanatory variable of bilateral secondary motor areas recruitment SMA and PM. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

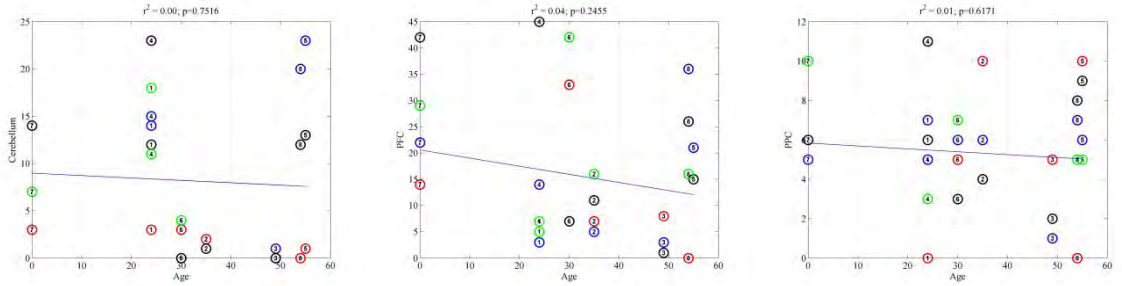


Figure 77 Age as explanatory variable of recruitment three distinct brain regions. The plots correspond to Cerebellum (leftmost), Prefrontal cortex (center) and posterior parietal cortex (rightmost). Each circle correspond to a MR scan

labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

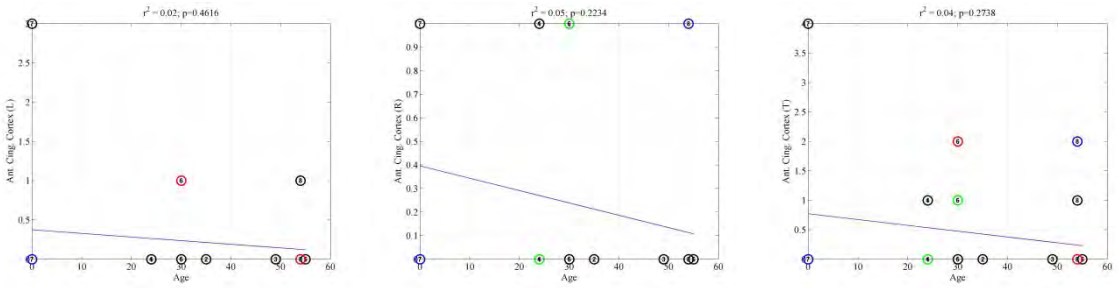


Figure 78 Age as explanatory variable of the recruitment of the Anterior Cingulate Cortex. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

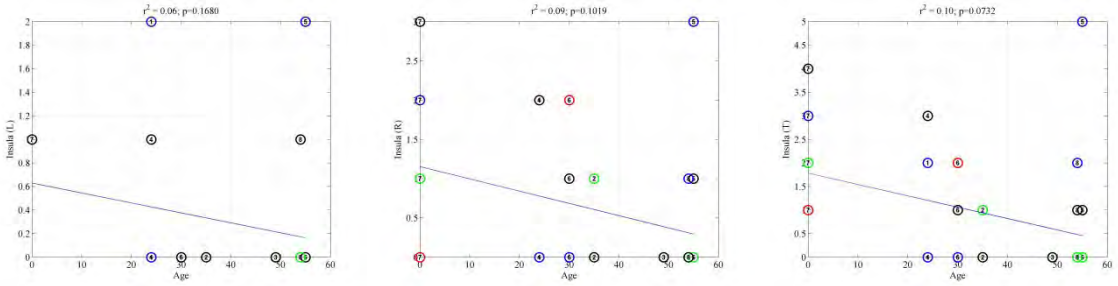


Figure 79 Age as explanatory variable of the recruitment of the Insula. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

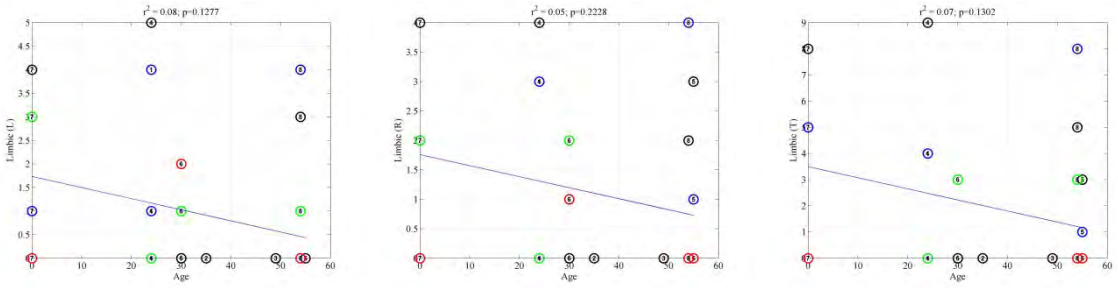


Figure 80 Age as explanatory variable of the recruitment of the Limbic regions (exc. ACC). The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

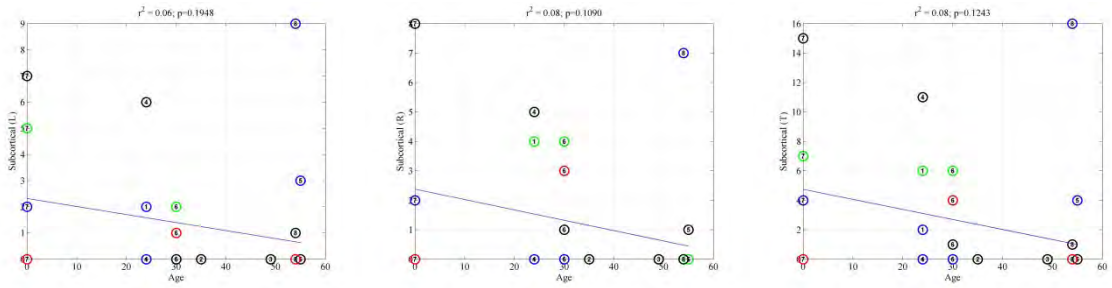


Figure 81 Age as explanatory variable of the recruitment of Subcortical regions. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Affected Limb

Affected limb is arbitrarily assigned a value 1 for right and 2 for left (abscissa axis is then inverted for presentation). Note that all patients are self declared right handed.

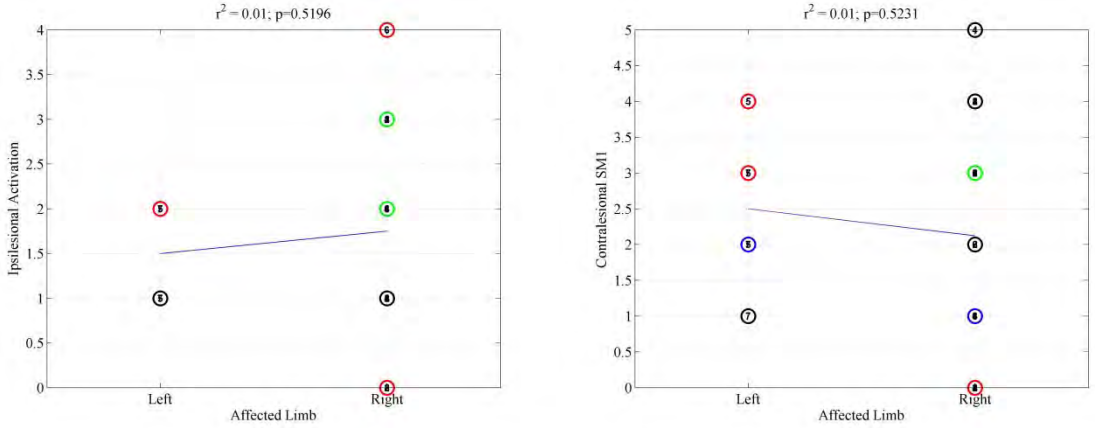


Figure 82 Affected limb as explanatory variable of ipsilesional activation and contralesional activation of the SM1. Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

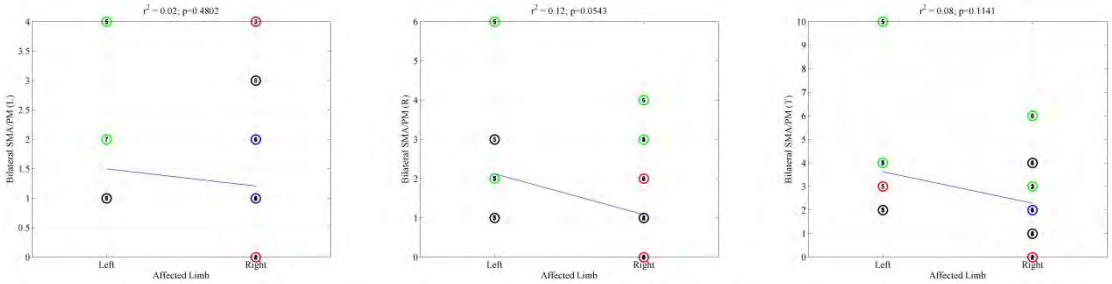


Figure 83 Affected limb as explanatory variable of bilateral secondary motor areas recruitment SMA and PM. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

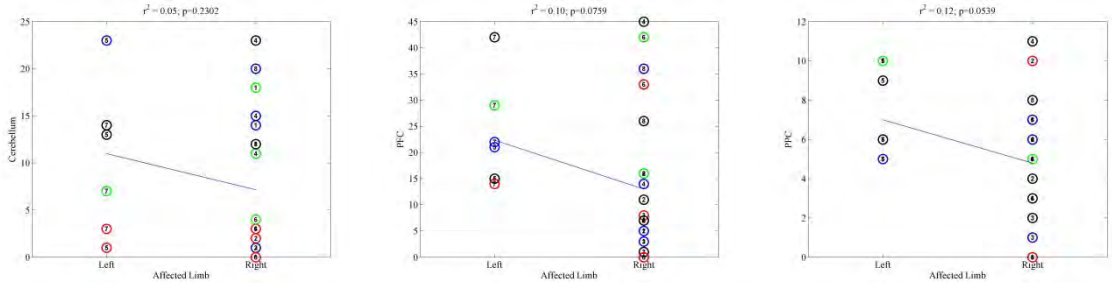


Figure 84 Affected limb as explanatory variable of recruitment three distinct brain regions. The plots correspond to Cerebellum (leftmost), Prefrontal cortex (center) and posterior parietal cortex (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

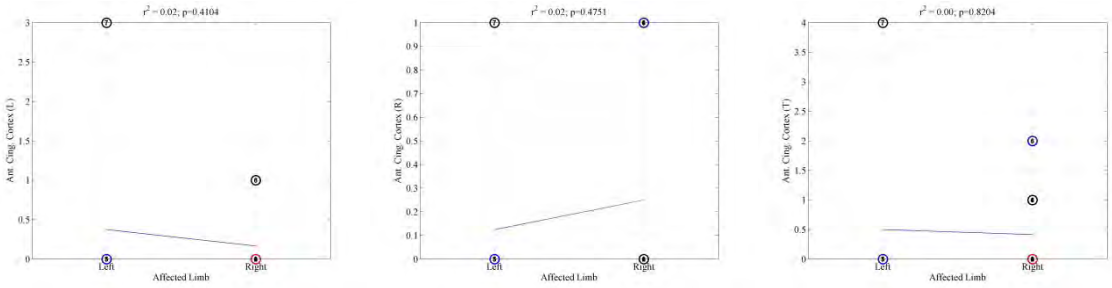


Figure 85 Affected limb as explanatory variable of the recruitment of the Anterior Cingulate Cortex. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

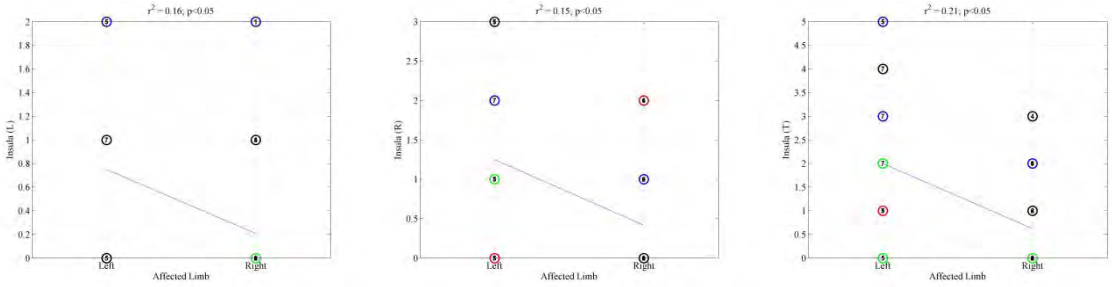


Figure 86 Affected limb as explanatory variable of the recruitment of the Insula. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost) Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

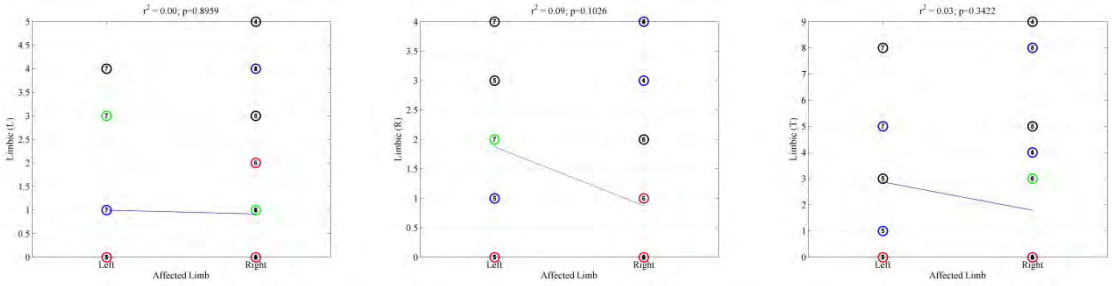


Figure 87 Affected limb as explanatory variable of the recruitment of the Limbic regions (exc. ACC). The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

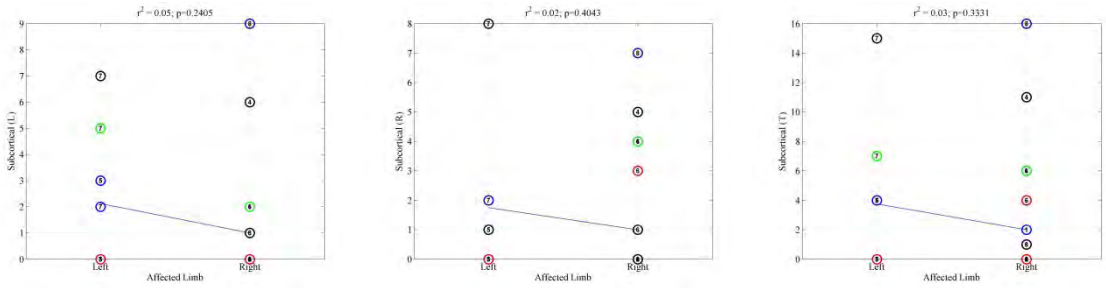


Figure 88 Affected limb as explanatory variable of the recruitment of Subcortical regions. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Gender

Gender is arbitrarily assigned a value 1 for males and 2 for females.

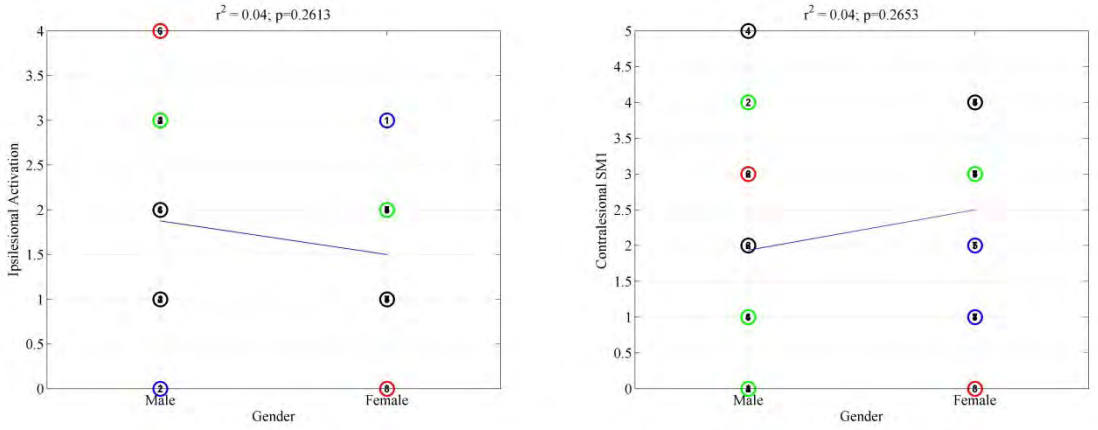


Figure 89 Gender as explanatory variable of ipsilesional activation and contralesional activation of the SM1. Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

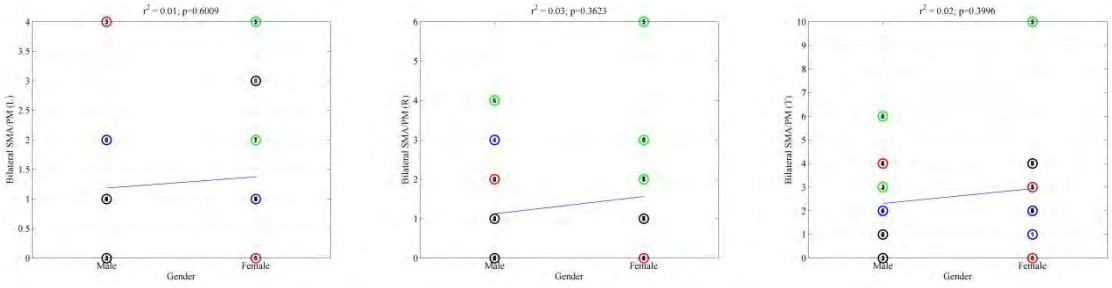


Figure 90 Gender as explanatory variable of bilateral secondary motor areas recruitment SMA and PM. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

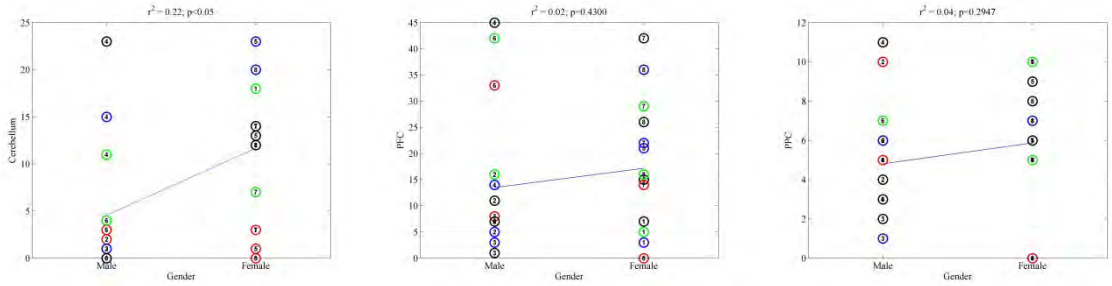


Figure 91 Gender as explanatory variable of recruitment three distinct brain regions. The plots correspond to Cerebellum (leftmost), Prefrontal cortex (center) and posterior parietal cortex (rightmost). Each circle correspond to a MR scan

labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

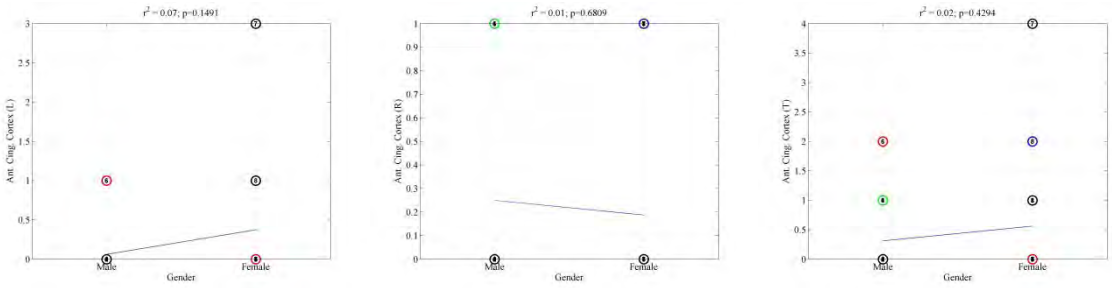


Figure 92 Gender as explanatory variable of the recruitment of the Anterior Cingulate Cortex. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

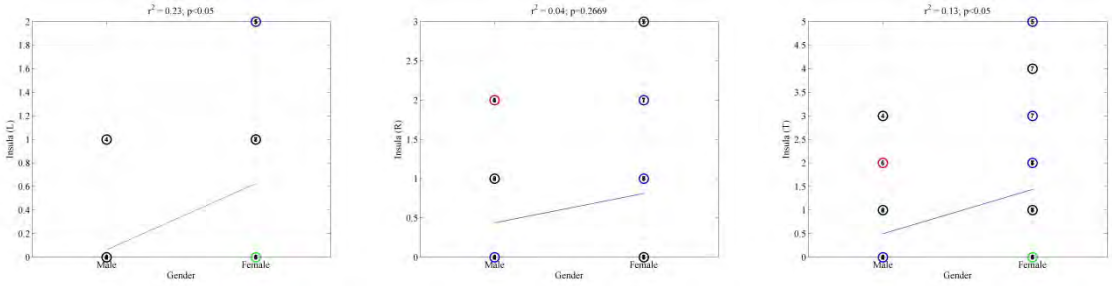


Figure 93 Gender as explanatory variable of the recruitment of the Insula. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost) Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

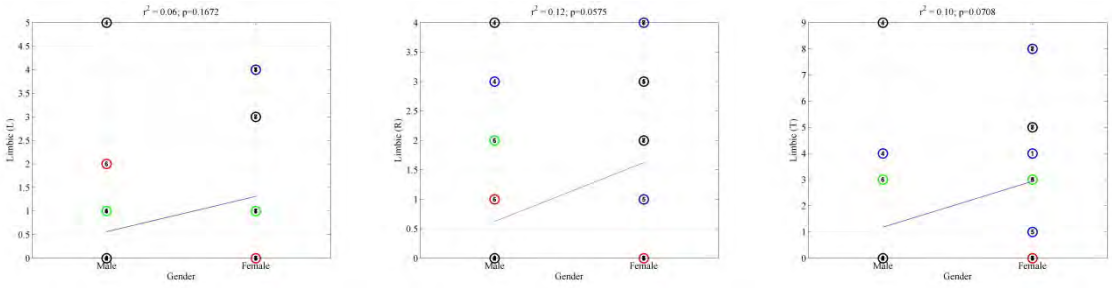


Figure 94 Gender as explanatory variable of the recruitment of the Limbic regions (exc. ACC). The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

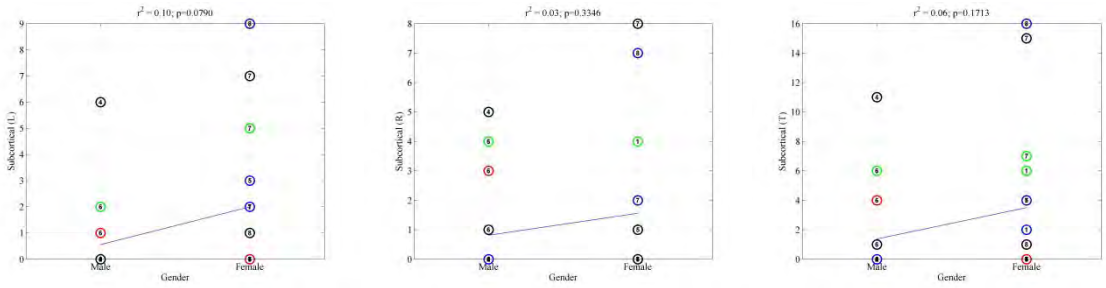


Figure 95 Gender as explanatory variable of the recruitment of Subcortical regions. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Time from last stroke.

Time from last stroke is measure in months, from the date of last stroke to the date the first MR scan is performed.

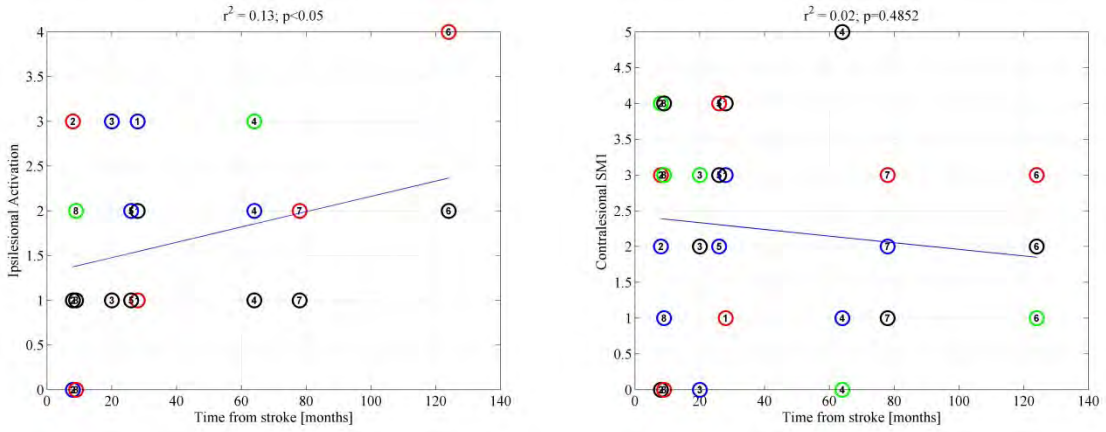


Figure 96 Time from last stroke as explanatory variable of ipsilesional activation and contralesional activation of the SM1. Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

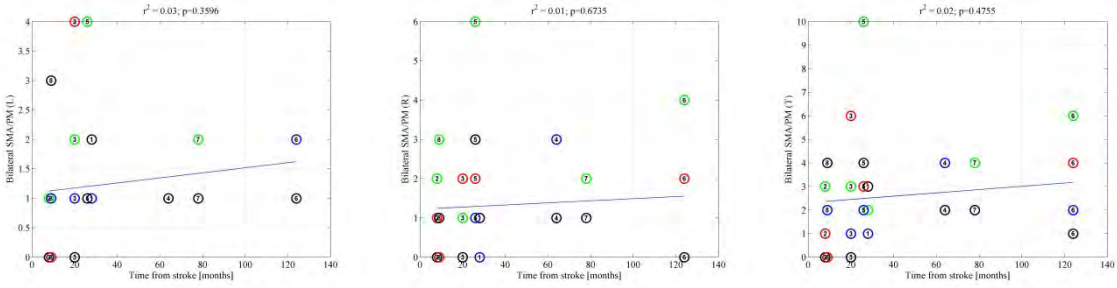


Figure 97 Time from last stroke as explanatory variable of bilateral secondary motor areas recruitment SMA and PM. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

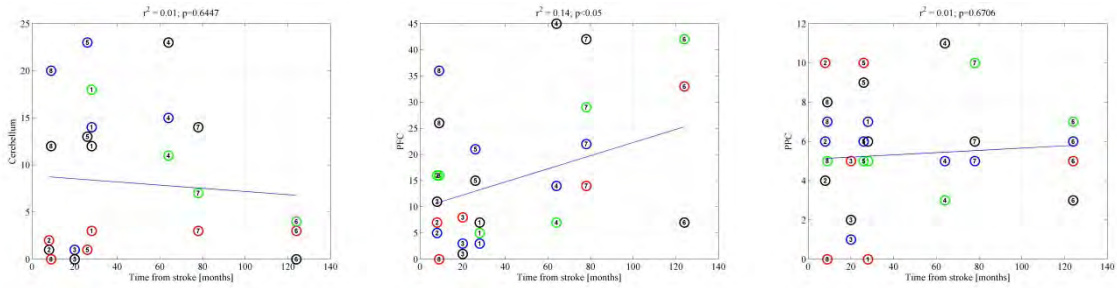


Figure 98 Time from last stroke as explanatory variable of recruitment three distinct brain regions. The plots correspond to Cerebellum (leftmost), Prefrontal cortex (center) and posterior parietal cortex (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

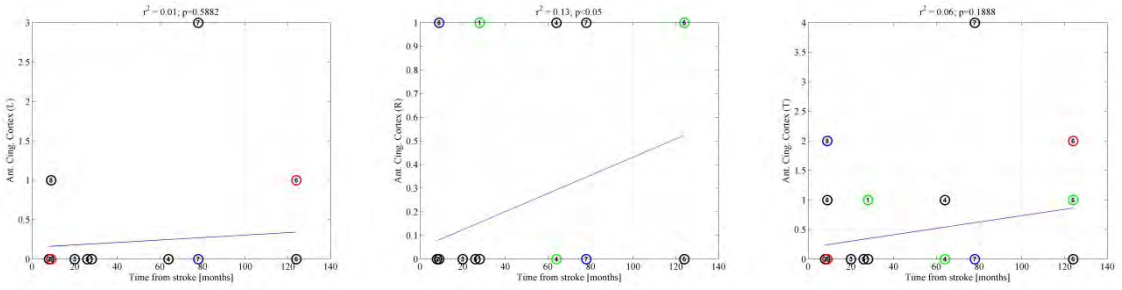


Figure 99 Time from last stroke as explanatory variable of the recruitment of the Anterior Cingulate Cortex. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

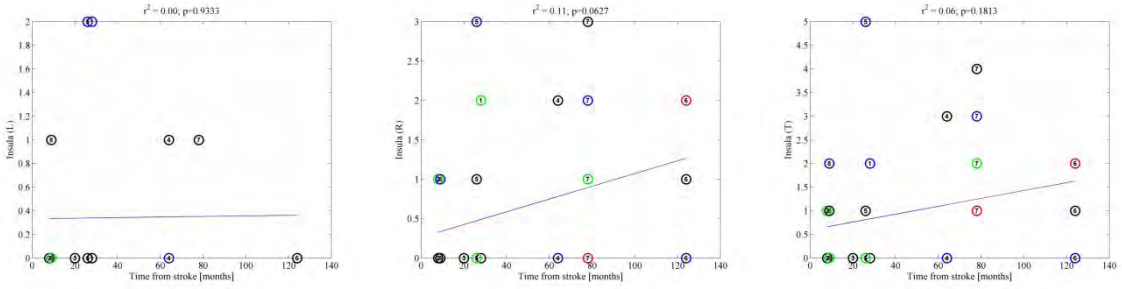


Figure 100 Time from last stroke as explanatory variable of the recruitment of the Insula. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost) Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

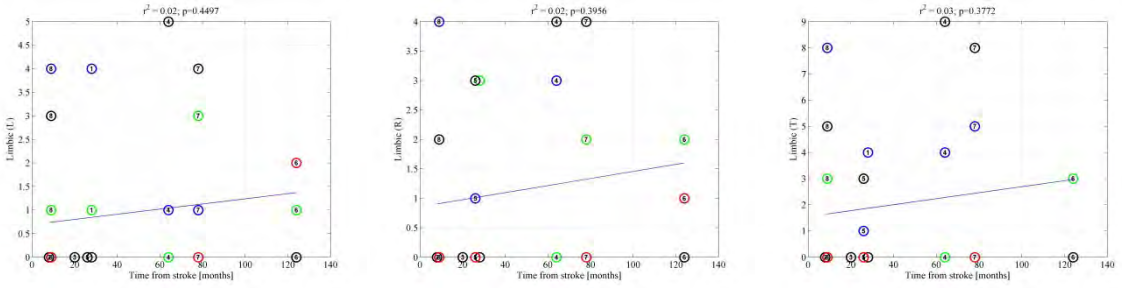


Figure 101 Time from last stroke as explanatory variable of the recruitment of the Limbic regions (exc. ACC). The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

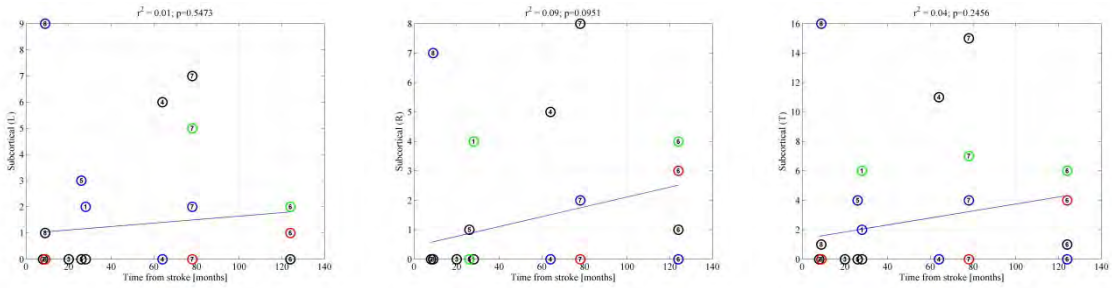


Figure 102 Time from last stroke as explanatory variable of the recruitment of Subcortical regions. The plots correspond to left only (leftmost), right only (center) and total/bilateral (rightmost). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Reorganization strategies vs clinical performance metrics

Ipsilesional Activation

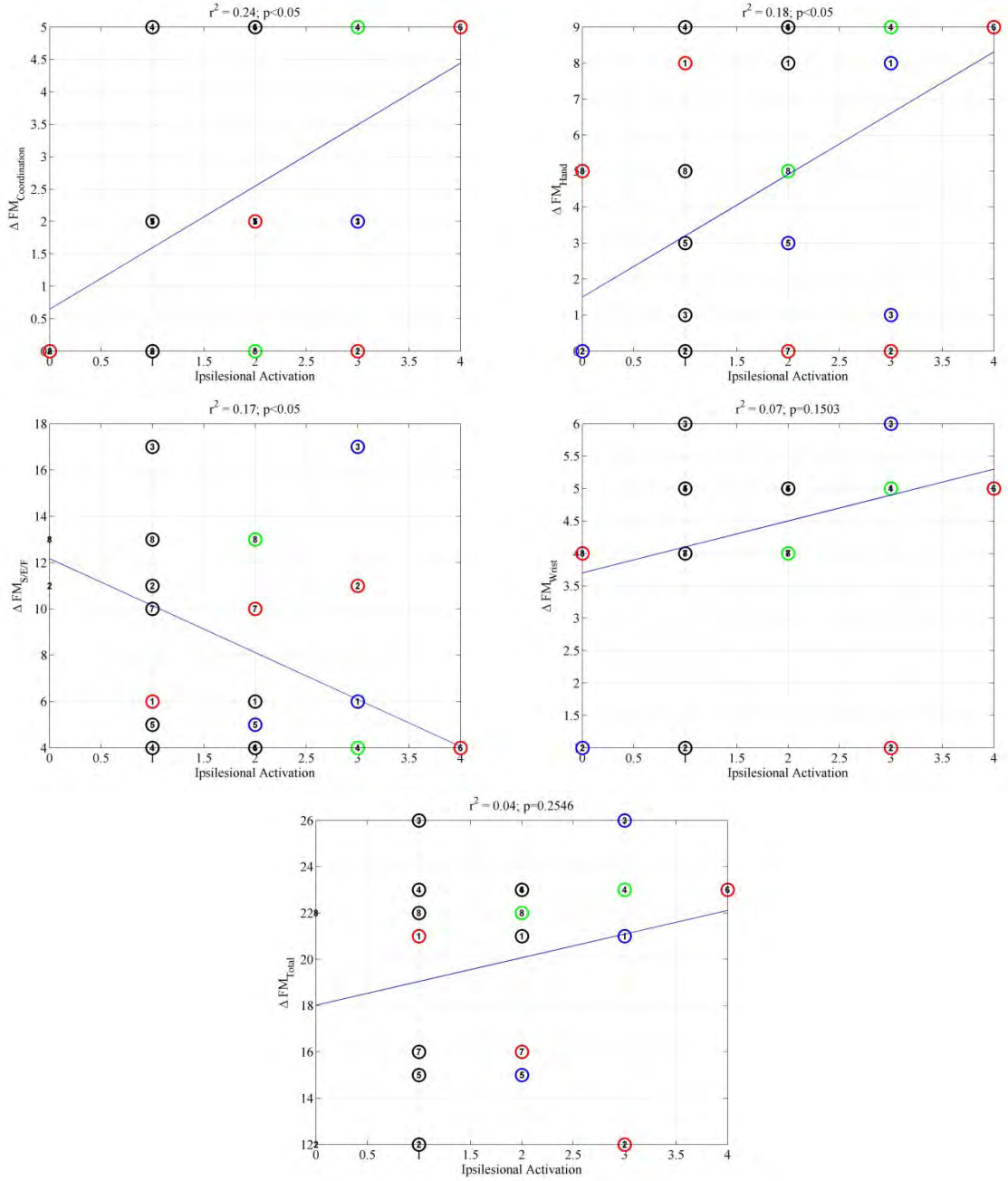


Figure 103 Ipsilesional activation reorganization strategy as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

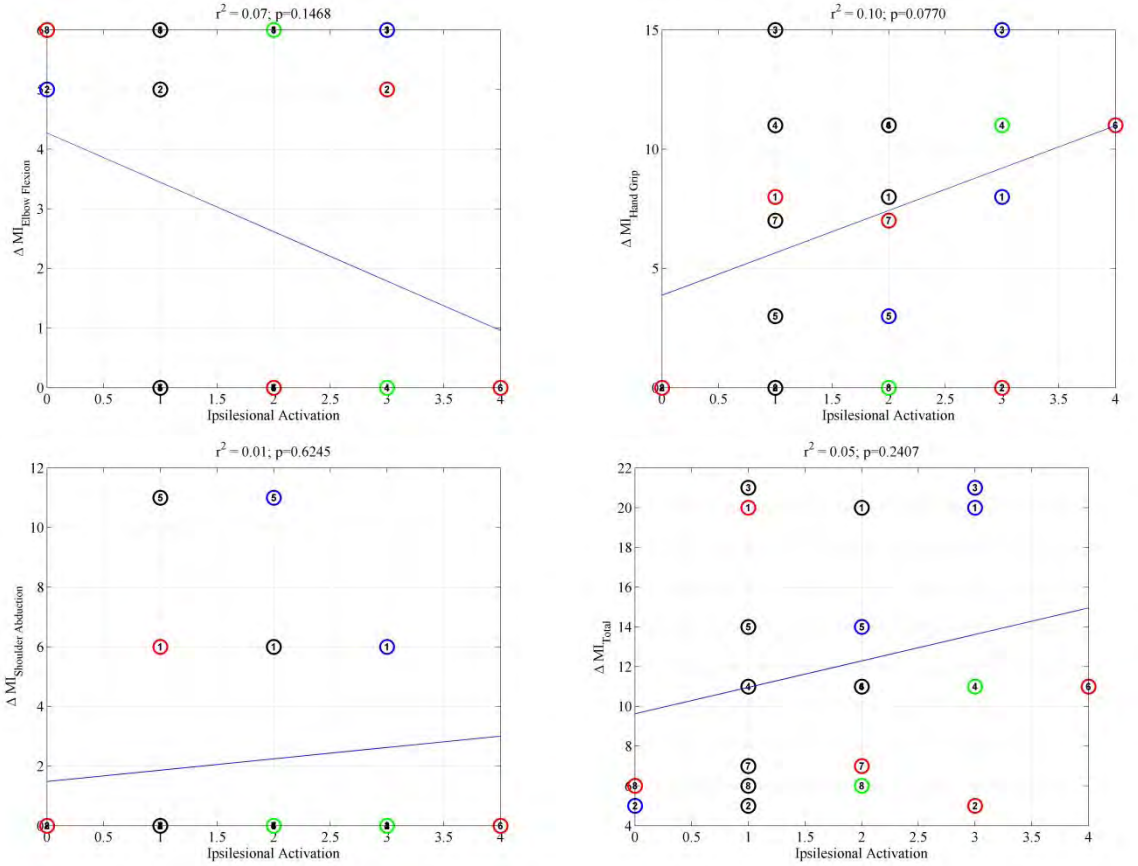


Figure 104 Ipsilesional activation reorganization strategy as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Contralesional Activation SM1

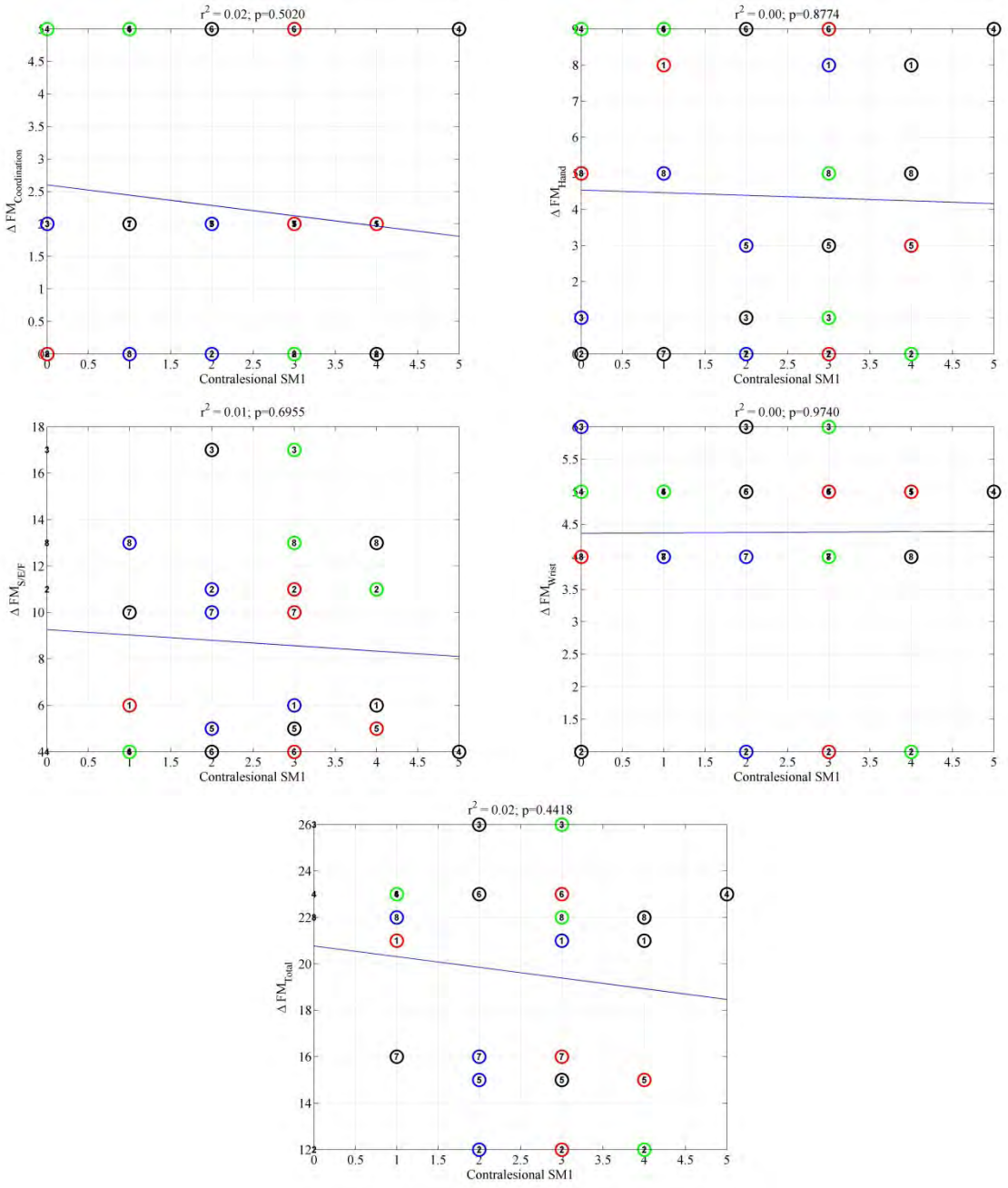


Figure 105 Contralesional activation of the SM1 reorganization strategy as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

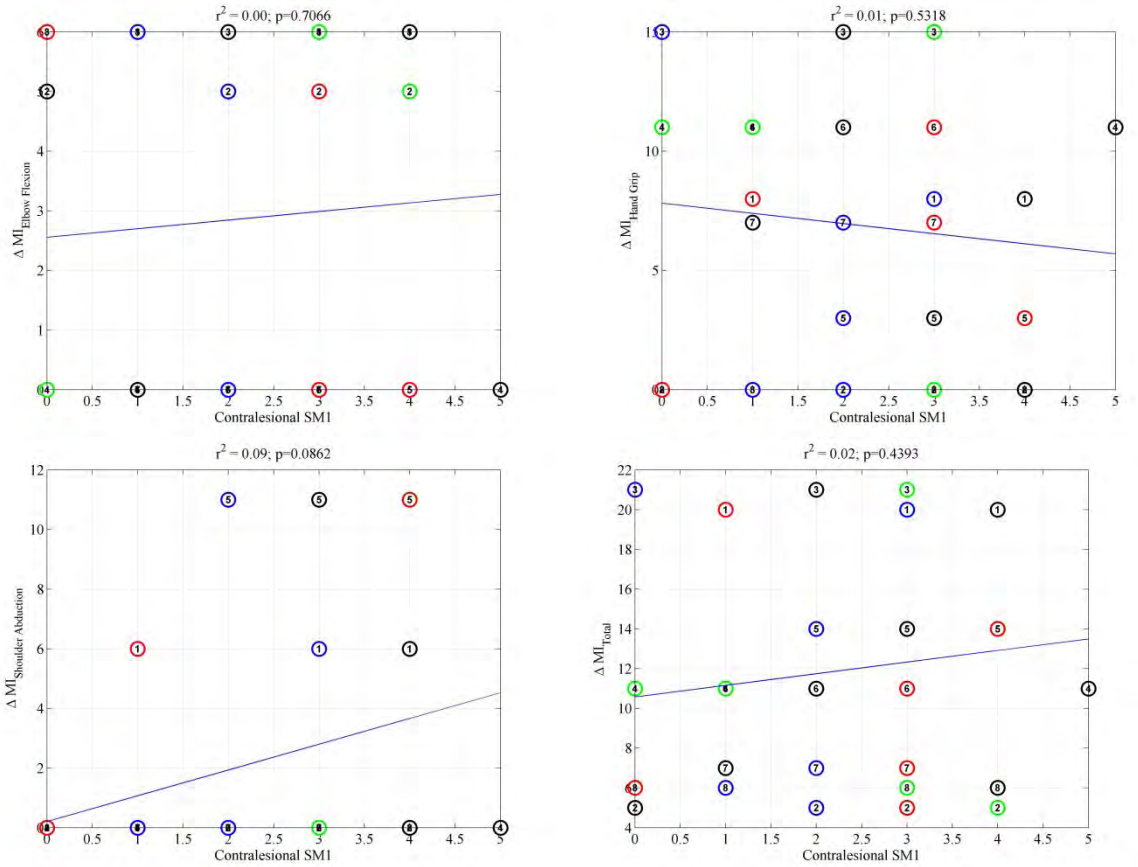


Figure 106 Contralesional activation of the SM1 reorganization strategy as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Bilateral recruiting of premotor areas SMA/PM

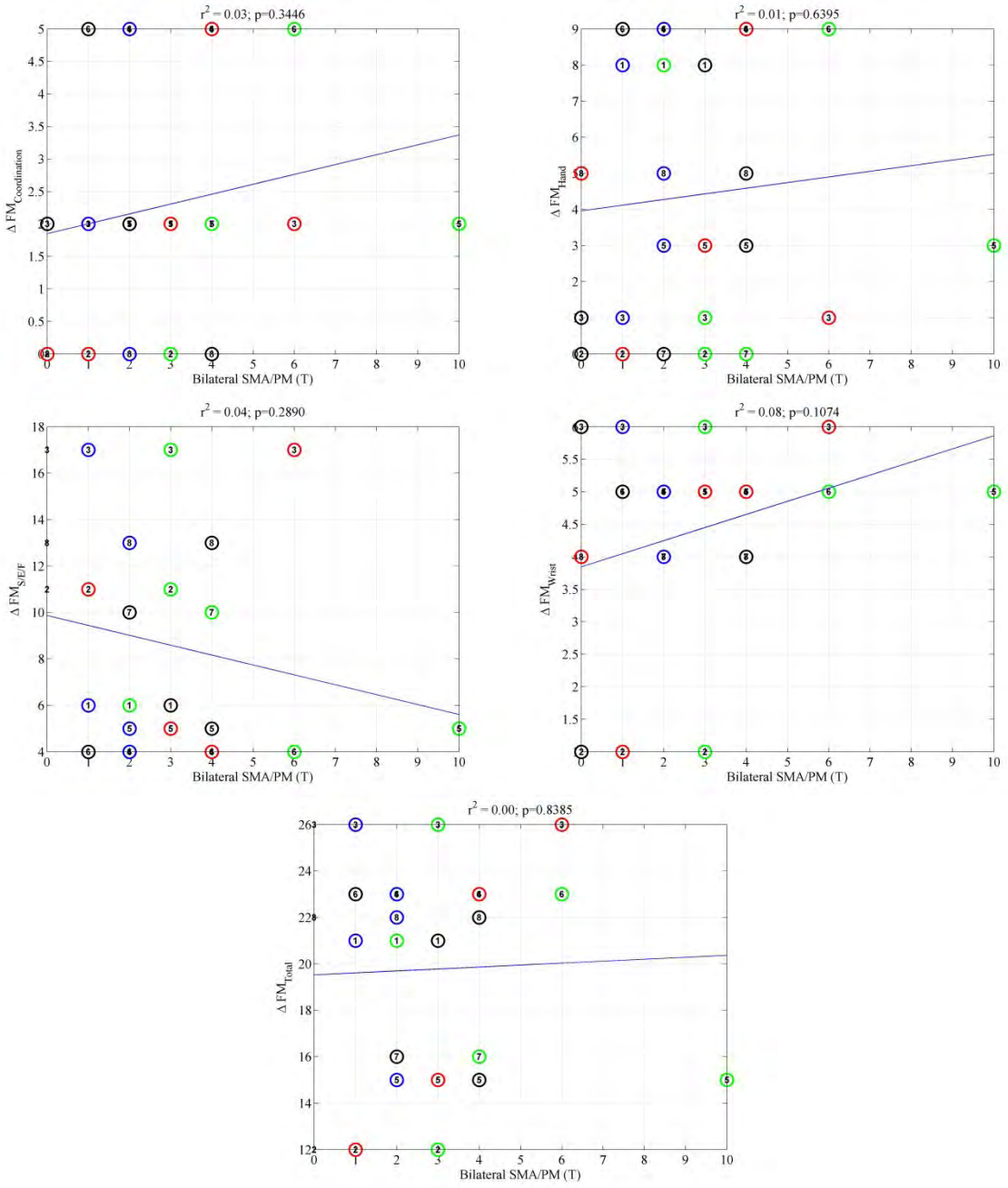


Figure 107 Bilateral recruiting of the pre-motor areas SMA/PM reorganization strategy as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

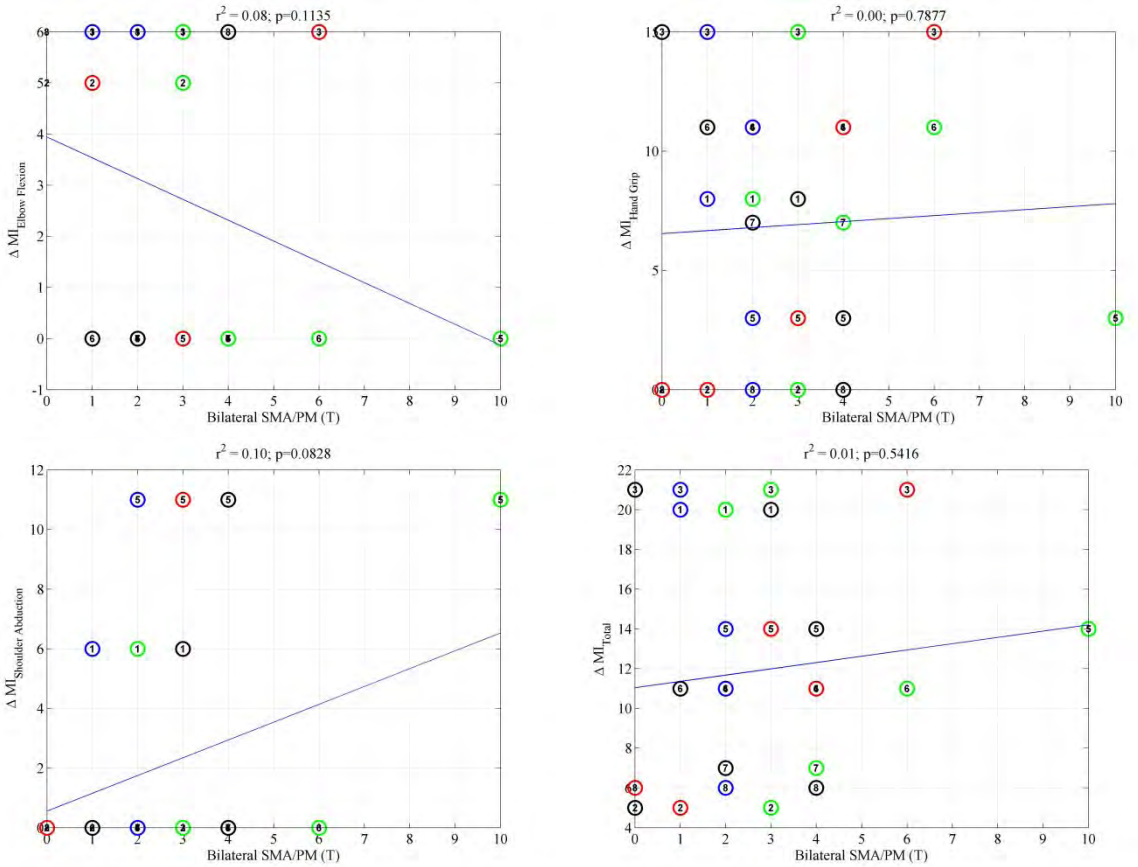


Figure 108 Bilateral recruiting of the pre-motor areas SMA/PM reorganization strategy as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Cerebellum

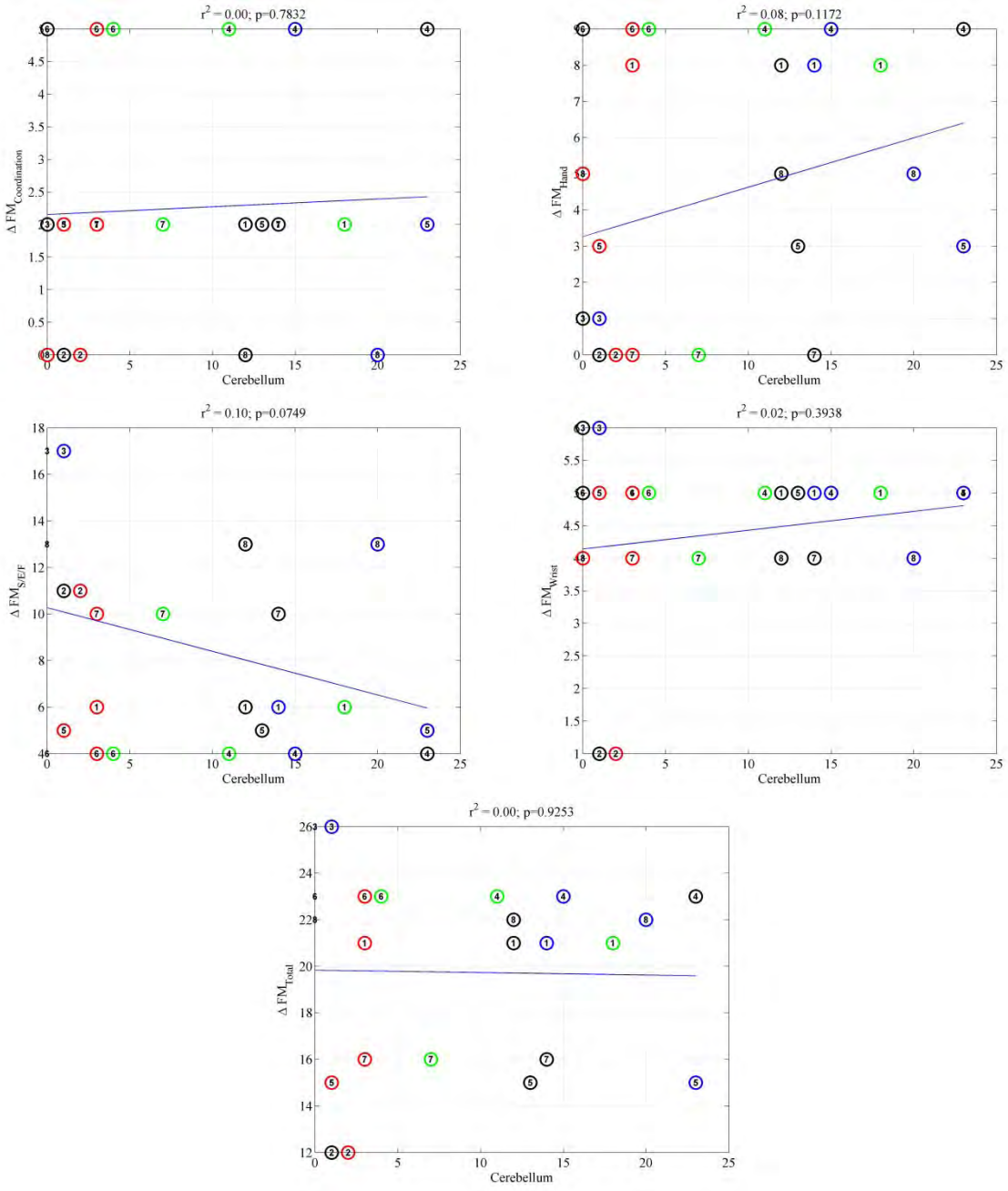


Figure 109 Cerebellum recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

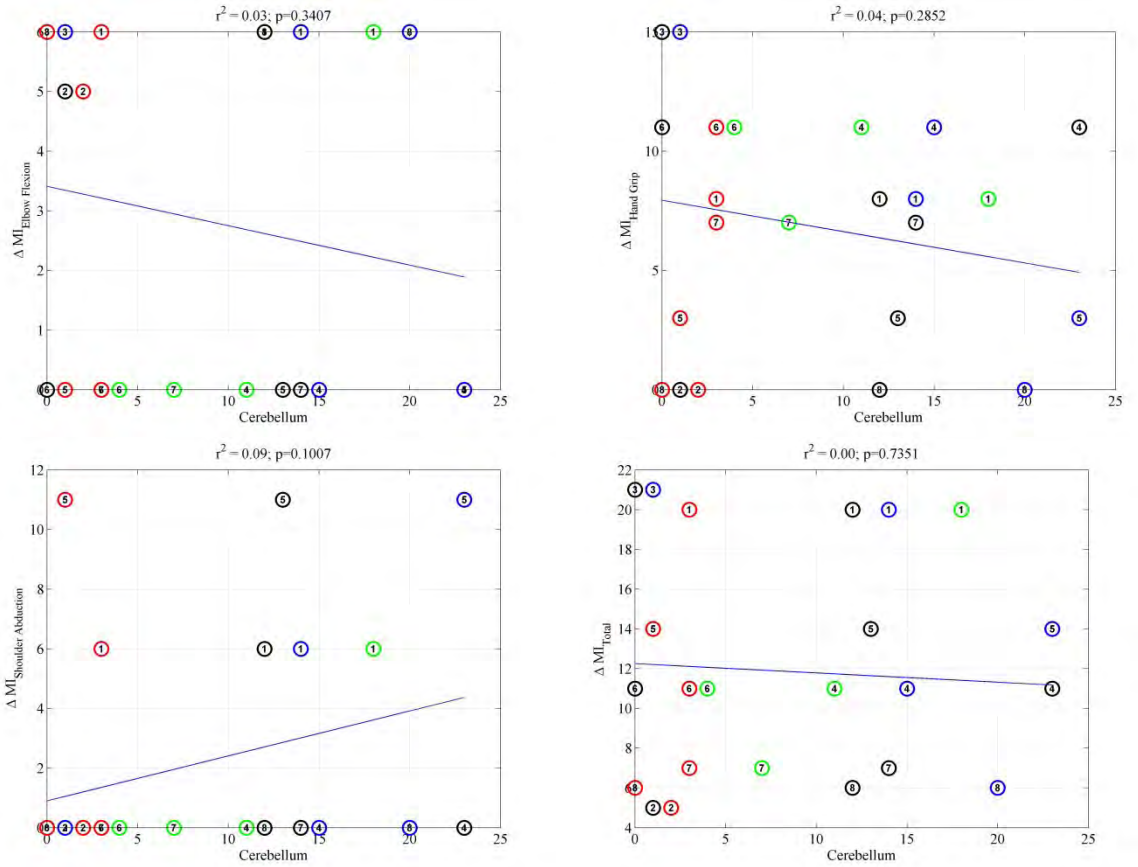


Figure 110 Cerebellum recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Prefrontal Cortex

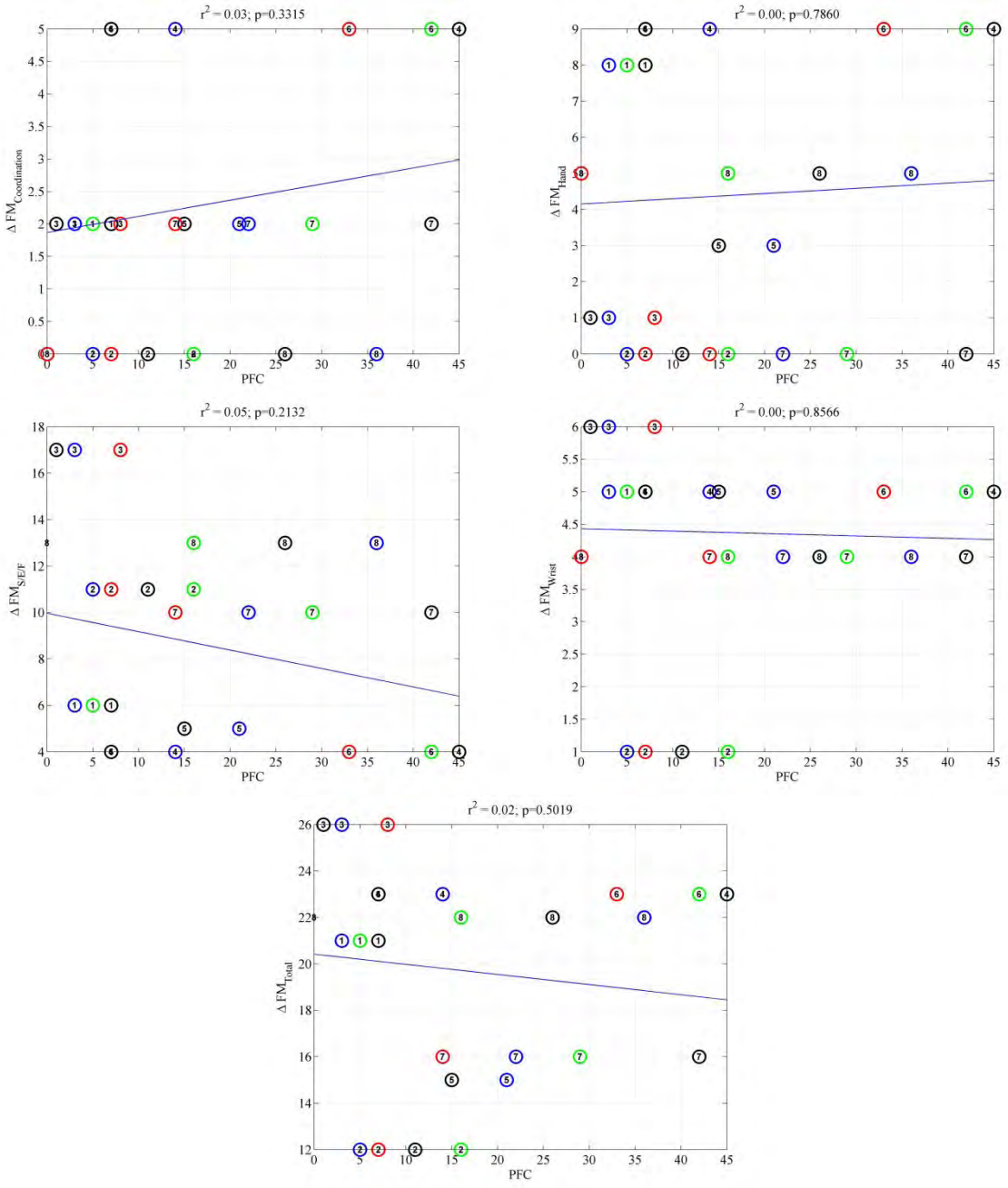


Figure 111 Prefrontal cortex (PFC) recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

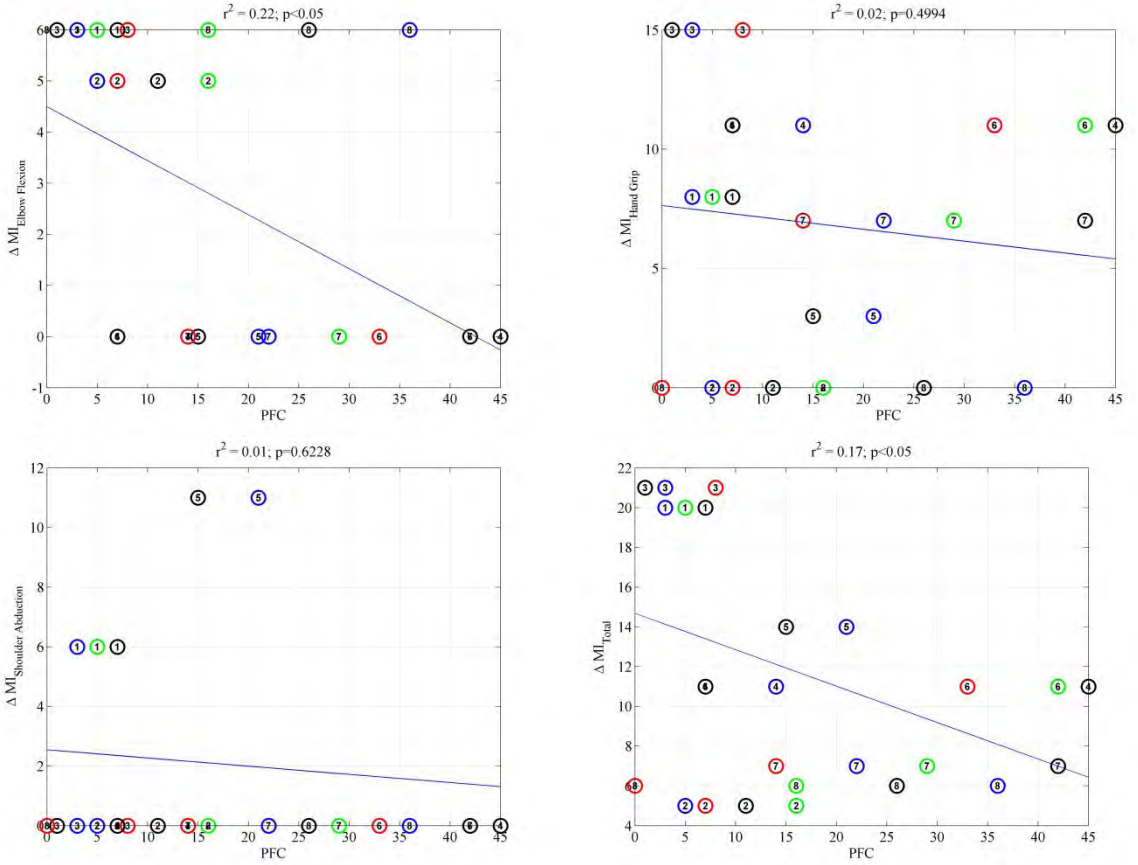


Figure 112 Prefrontal cortex (PFC) recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Posterior Parietal Cortex

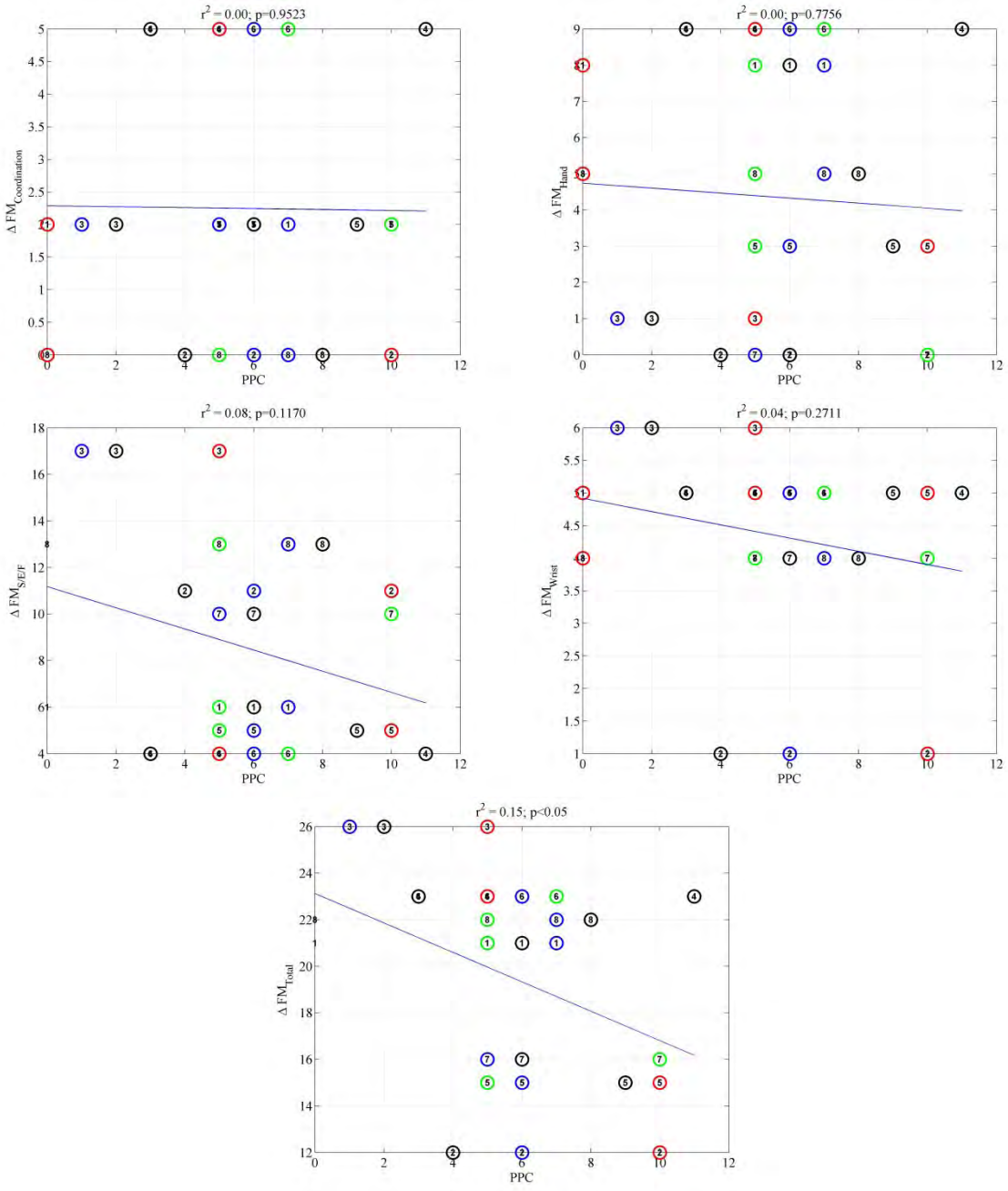


Figure 113 Posterior parietal cortex (PPC) recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

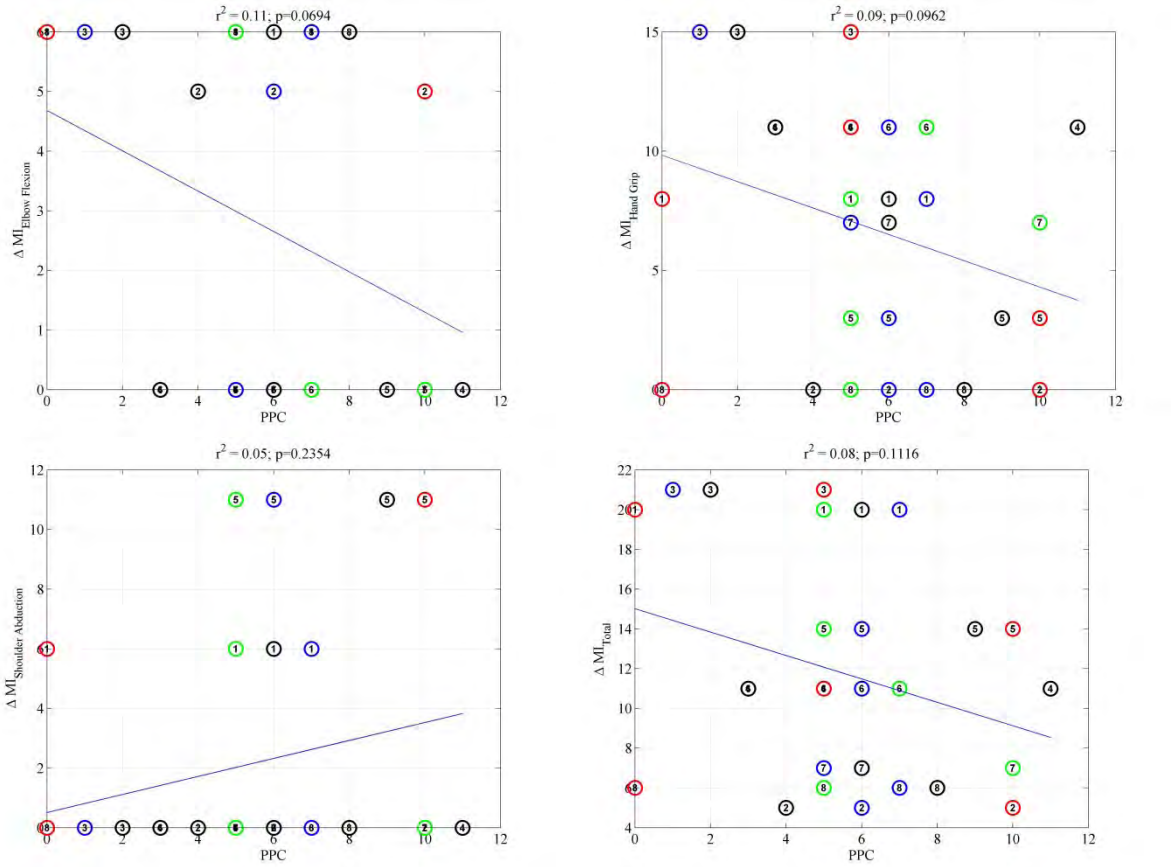


Figure 114 Posterior parietal cortex (PPC) recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Anterior Cingulate Cortex

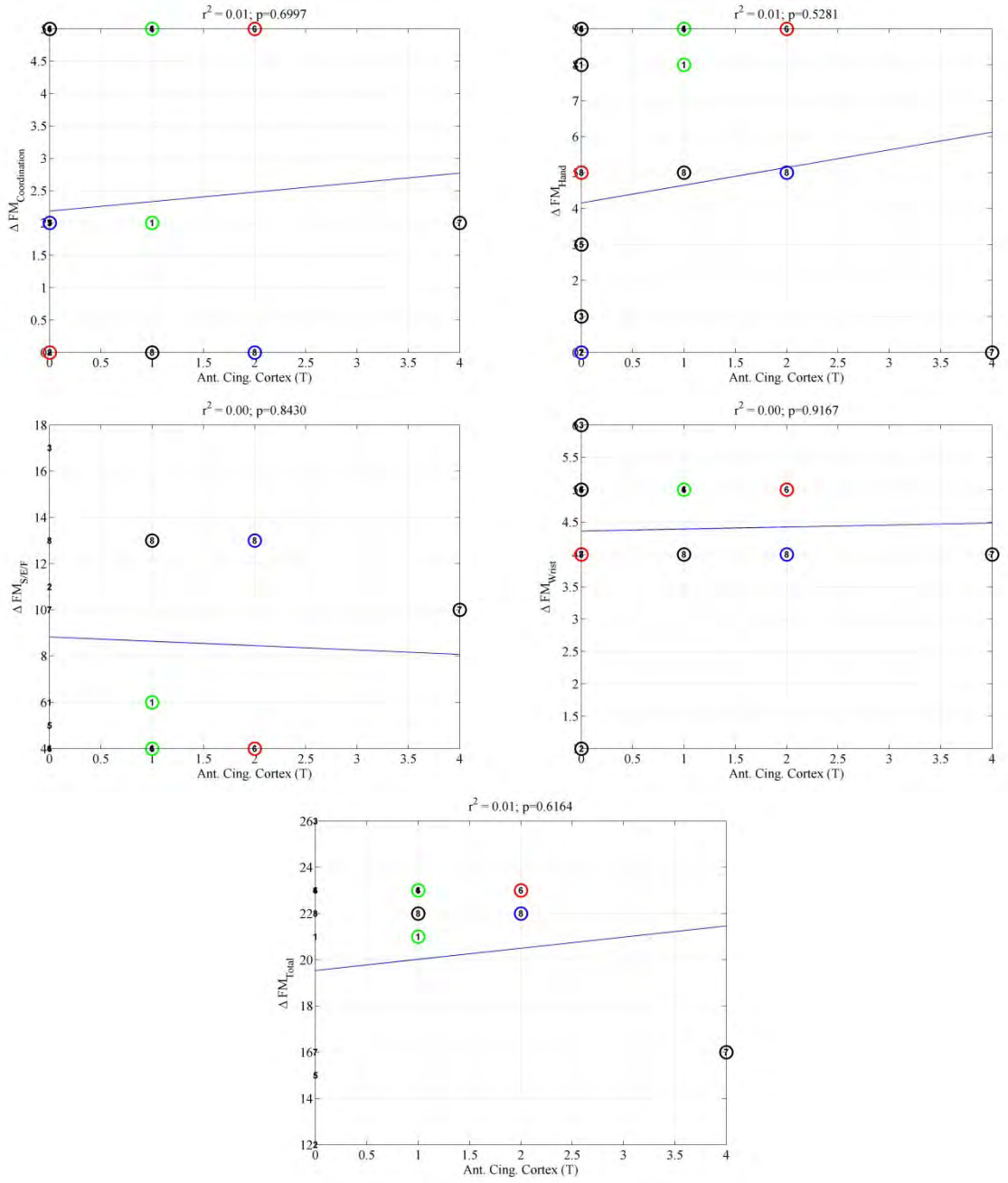


Figure 115 Anterior Cingulate Cortex (ACC) recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

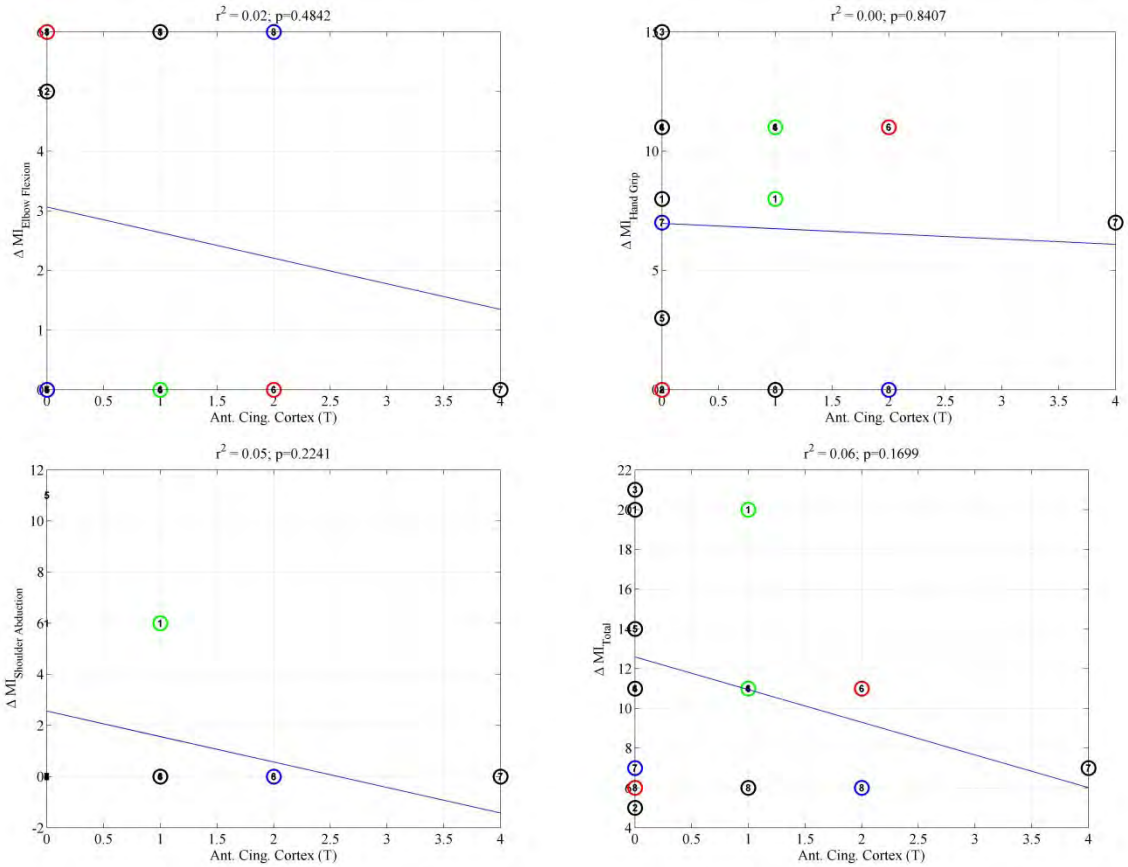


Figure 116 Anterior Cingulate Cortex (ACC) recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Insula

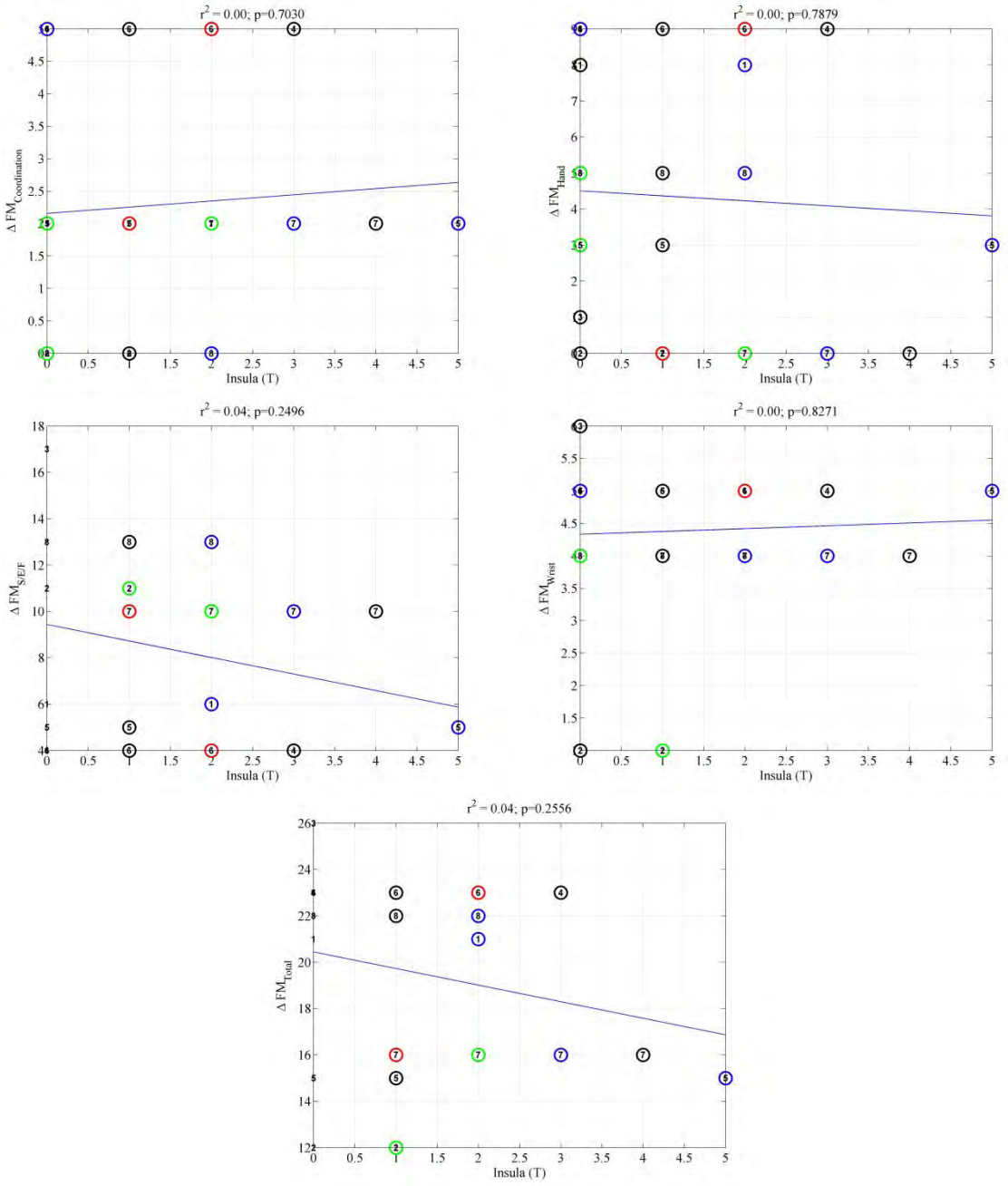


Figure 117 Insula recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

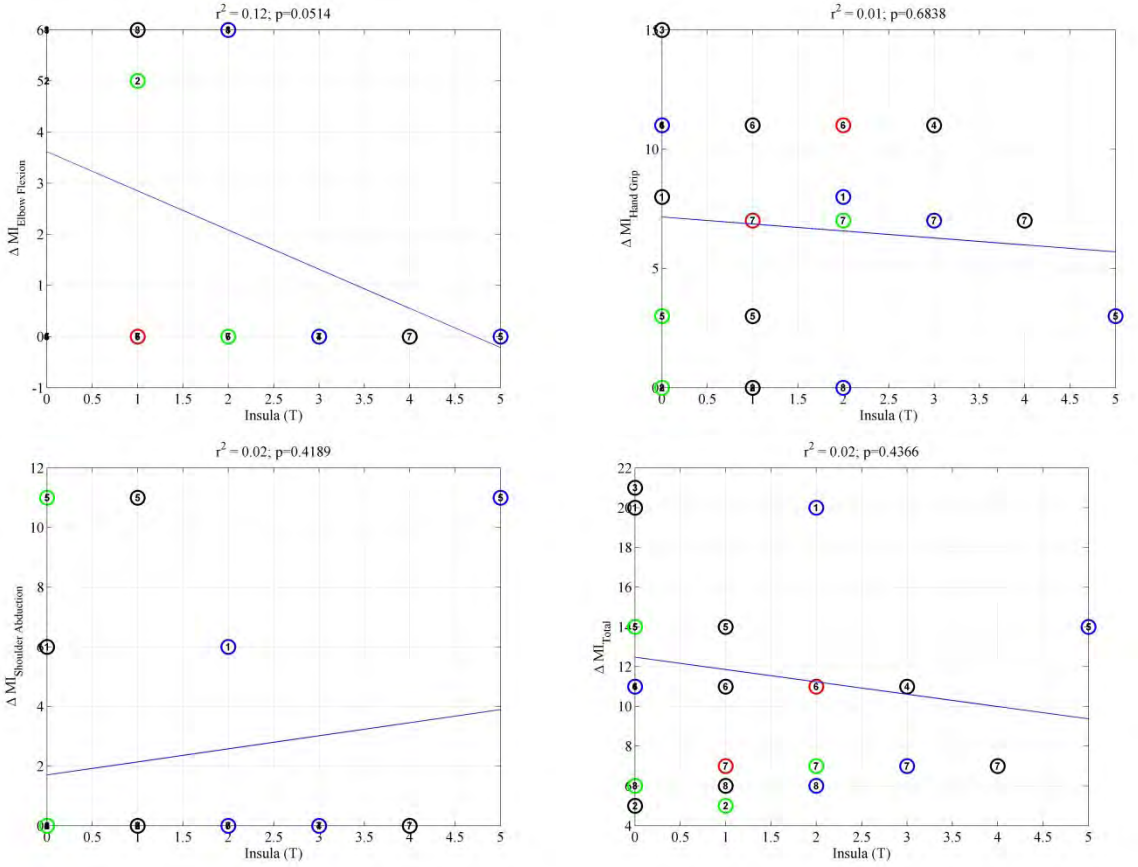


Figure 118 Insula recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Limbic regions

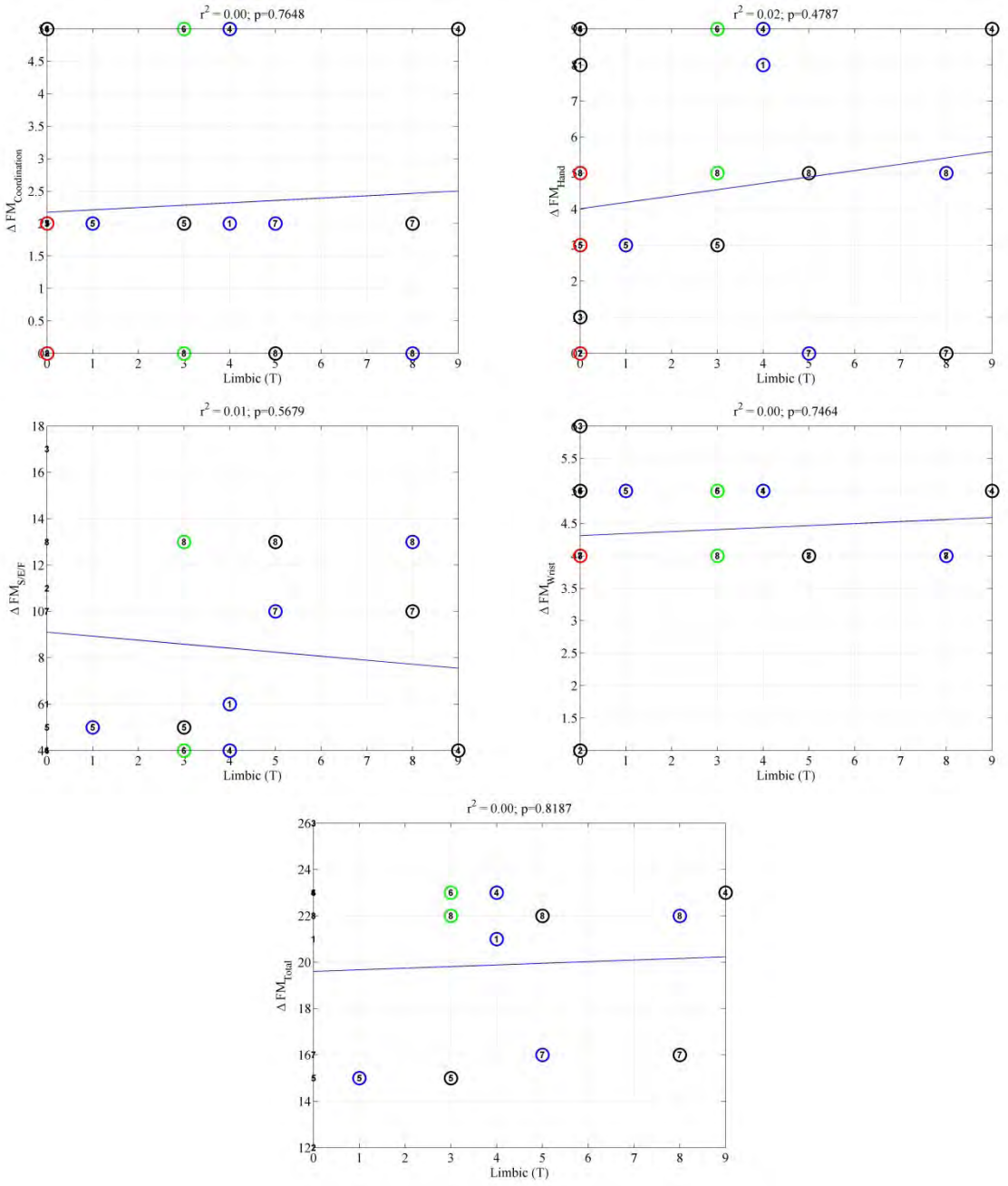


Figure 119 Limbic regions recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

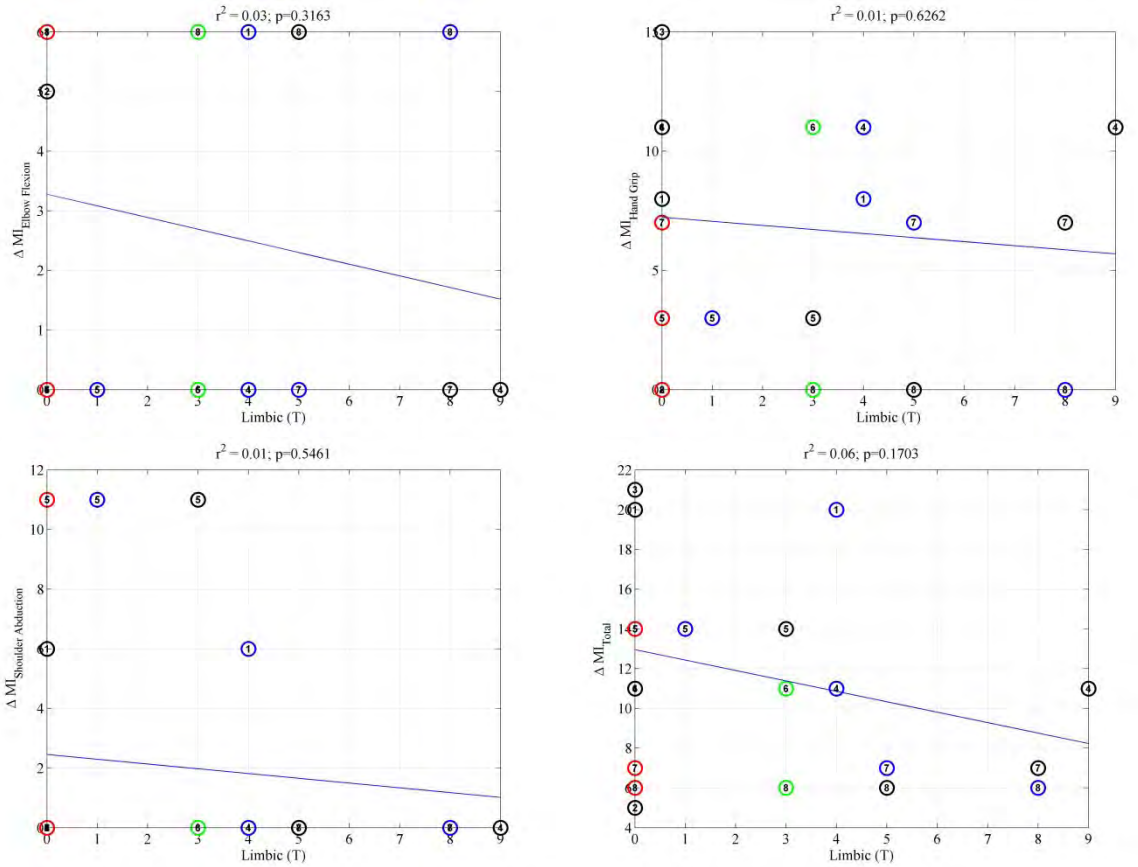


Figure 120 Limbic regions recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

Subcortical regions

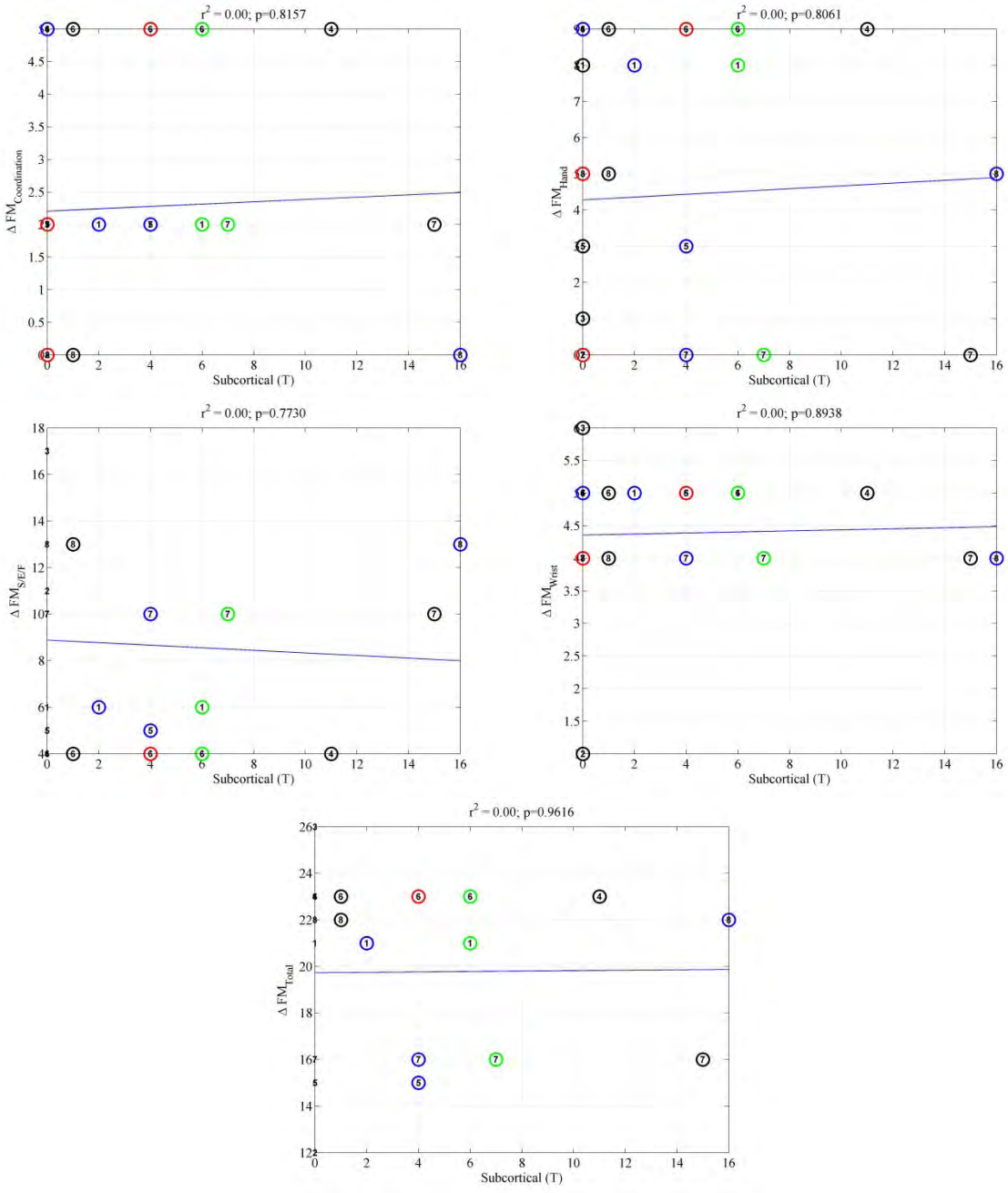


Figure 121 Subcortical regions recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Fugl-Meyer score. The plots correspond to partial Fugl-Meyer scores of coordination (top left), hand (top right), shoulder/elbow/forearm (middle left), wrist (middle right) and the overall Fugl-Meyer score (bottom). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.

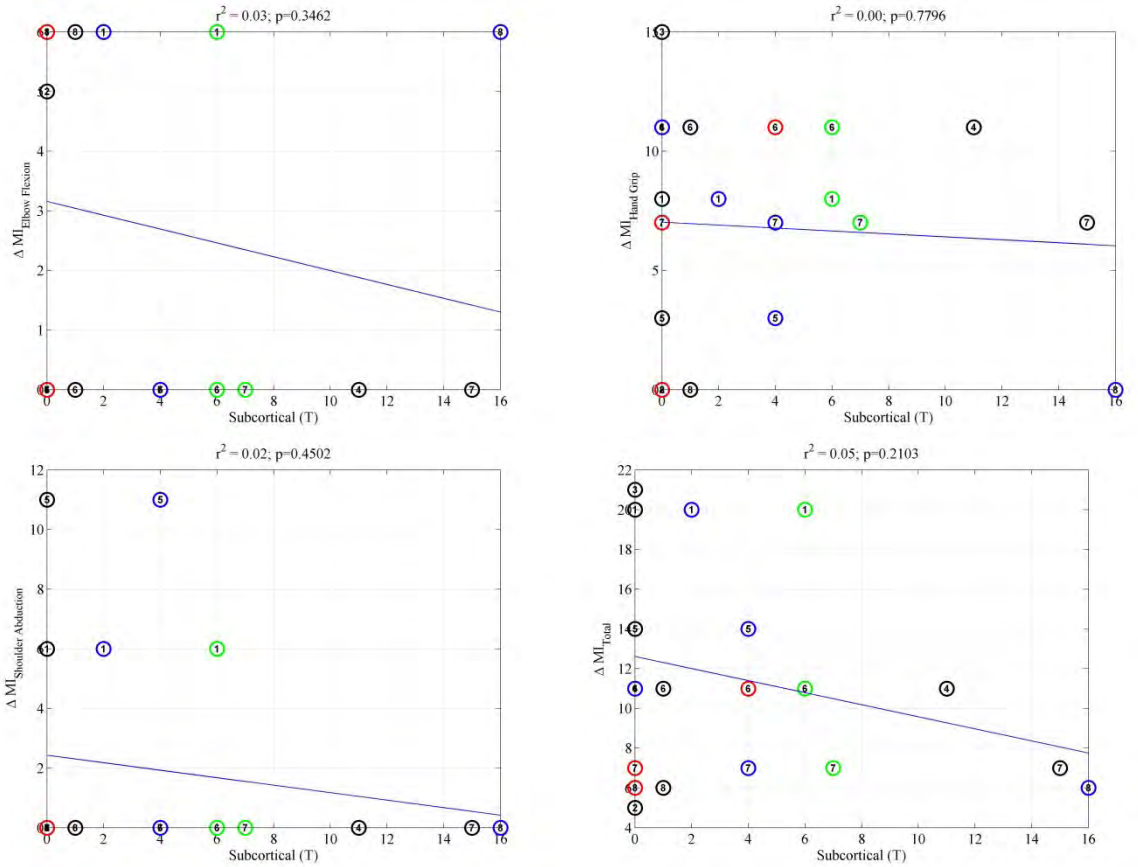


Figure 122 Subcortical regions recruitment as explanatory variable of the differential improvements (Post-Pre) in motor skills according to the Motricity Index score. The plots correspond to partial MI scores of elbow flexion (top left), hand grip (top right), shoulder abduction (bottom left) and the overall MI score (bottom right). Each circle correspond to a MR scan labelled by subject and color coded by scan order (red: 1st scan, green: 2nd scan, blue: 3rd scan and black: 4th scan). The linear fitting to which the r^2 and p values on top correspond is illustrated with a blue line.