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The Mentamove Rehabilitation After Right Total Carotid Artery Occlusion: fMRI Findings After Treatment (Case Report)

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Background: The Brain Efficiency Training (Mentamove) is a neuro-rehabilitation method used for rehabilitation after various brain lesions. If the motoric activities are mentally practised by the case with Mentamove, the real movement gives a reorganisation to the brain, due to neuroplasticity.

Methods: Our subject (a 50 year old, male) had total right carotid artery occlusion. He had left hemiplegia with mild central type fascial paralysis. After hospitalisation, the Mentamove Method was used on the left shoulder, elbow, wrist, hip, and knee and peroneal muscles 1 time /daily device during a 7 month period. The results were measured with the Medical Research Council Scale (MRC) of 0-5, and the brain activity was investigated with fMRI after 7 months, and again 13 months after the inception of the treatment.

Results: Using the MRC Scale, the motor power of the shoulder abduction, hip flexion, knee extension, dorsiflexion increased from 0 to 5, and the elbow extension from 0 to 4, The wrist extension improved from 0 to 2. The fMRI showed BOLD (Blood Oxygen Level Dependence) activity after 7 months, diffuse cortical activity during right and left foot dorsiflexion and left hip flexion movements. After 13 months, the left foot dorsiflexion and triceps activity showed new organised areas on the right cortex, these areas were showed on border of the ischemic zone.

Conclusion: These results demonstrate increased activity of the whole hemisphere during training with the Mentamove Method, and newly reorganised areas after the therapy. The fMRI supports the reorganisation theory of the brain after ideomotoric training.