MOTOR IMAGERY TRAINING IMPROVES HAND MOVEMENT IN PERSONS WITH HEMIPLEGIA

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In healthy participants, beneficial effects of motor imagery training on the execution of movement have been shown in terms of precision, strength, and speed. Neuroimaging studies provide evidence that the mental rehearsal of a movement activates some of the brain areas used during motor execution. Hence, motor imagery can indirectly activate motor programs and has thus been successfully employed in motor rehabilitation. In the clinical context, it is still debated to what extent motor imagery can be used as an effective rehabilitation technique in patients with hemiparesis. The objective of this experiment was to evaluate and compare the effectiveness of two different types of hand movement training: motor imagery vs. motor execution. Twenty-five patients with hemiparesis were assigned to one of two training groups, i.e., the imagery or the execution-training group. Both groups completed a baseline test before they received six training sessions, each of which was followed by a test session. We assessed how accurately the patients performed a torsional wrist movement. Both training groups improved performance over the six test sessions but the improvement was significantly larger in the imagery group. That is, the imagery group was able to perform more precise hand movements after the sixth training session while there was no such difference after the baseline test or the first training session. To conclude, the results provide evidence for the benefit of motor imagery training in patients with hemiparesis and thus suggest the integration of cognitive training in conventional physiotherapy practice