



The effect of Armeo©Power training on upper limb use in people after stroke when performing daily activities

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- Stroke is the second leading cause of death globally and in Slovenia.
- Common consequence of a stroke is impaired upper limb function that limits independence in daily activities.
- The rehabilitation of people after stroke affects motor learning, which can nevertheless be achieved with high intensity and repeatability of training on robotic devices.

Objectives & Methods

- The study investigates the effects of Armeo©Power robotic training on upper limb rehabilitation in stroke patients, emphasising changes in their perception of impaired limb use in daily occupations.
- Retrospective analysis of data from medical documentation of 10 patients after stroke (January-December 2024).
- Assessment of quantity and quality of use of the impaired limbs with the Motor Activity Log (at the beginning and at the end).
- Patients performed 10 treatments on the Armeo©Power exoskeleton, each session lasting 45 minutes.

Results

- Summary of patients' progress

Outcome	No. of patients			Median improvement
	improved	unchanged	worsened	
MAL Quantity (0..5)	9	1	0	0.6 (70 %)
MAL Quality (0..5)	8	2	0	0.6 (36 %)

- Correlations of absolute and relative progress with age at stroke and time since stroke

Outcome	Correlation with	Age at stroke (years)		Time since stroke (months)	
		Spearman ρ	p	Spearman ρ	p
MAL Quantity – absolute progress (0..5)		0.04	0.920	-0.72	0.019
MAL Quantity – relative progress		0.28	0.434	-0.52	0.121
MAL Quality – absolute progress (0..5)		0.31	0.382	-0.26	0.464
MAL Quality – relative progress		0.32	0.362	-0.41	0.241

MAL = Motor Activity Log

Take home message 😊

Armeo©Power robotic training contributes to improved upper limb function and greater engagement in daily activities.

The effect is larger if the time since stroke is shorter.

