



## Is Treatment in EksoNR More Beneficial Than Conventional Therapy Alone in Improving Functional Outcomes in the Subacute Stroke Population During Their Inpatient Rehab Stay?

### Background

HCA Florida West Hospital Rehabilitation Center is CARF accredited in adult and brain injury specialties, as well as stroke certified through The Joint Commission. The rehab center is certified in brain injury and spinal cord injury by the state of Florida. The therapy teams and physiatrists focus on returning individuals to their maximum independence by combining conventional treatments and advanced rehab technology.

### Study Details

A retrospective analysis was completed on patients with subacute stroke who received treatment with EksoNR (n=22) or conventional therapy (n=49). Subjects were included in the EksoNR group if they stood or walked in the device for 10 minutes or longer. The case mix index (CMI) range of the entire population was 1.21-2.30. Data was gathered from UDS and Ekso Pulse. Results were analyzed between groups, as well as subgroups of persons with CMI of 2.17-2.2 (Ekso: n=9, conventional: n=11) and CMI of 2.29-2.3 (Ekso: n=9, conventional: n=15).

“Learning about the EksoNR exoskeleton was amazing! My favorite part was seeing the reaction that people had in their faces after walking for the first time after their stroke. They looked relieved that walking was a goal that could actually be attainable for them.”

Sarah Mumme PT, DPT, CSRS

### Results

In the entire population, all patients improved in self-care scores, mobility scores, and 10-meter walk test (10MWT). The EksoNR group demonstrated greater improvements in self-care and mobility scores, while the conventional therapy group showed greater improvement on the 10MWT. When examining discharge location, 76.9% of patients treated with EksoNR were discharged to the community, compared to 59% of the patients treated with conventional therapy.

When examining subgroups of subjects with CMIs of 2.17-2.2 and 2.29-2.3, all patients again showed improvements on all outcomes. For the group with a lower CMI range, all patients regardless of treatment methods improved similarly on the 10MWT and self-care scores, while the EksoNR group demonstrated greater improvement on mobility score. However, in the subgroup with a higher CMI range, the Ekso group demonstrated significantly greater improvements compared to the conventional therapy group on all outcomes.

When looking at mobility tasks, patients demonstrating a 2-5 point improvement in GG scores from admit to discharge indicates less need for assistance. A greater number of patients in the EksoNR group demonstrates meaningful improvement when negotiating 4 and 12 steps, walking 50' and 150', as well as completing transfers and sit to stand.

### Conclusion

Patients with subacute stroke in inpatient rehabilitation demonstrated functional improvements regardless of treatment modality. Those treated with EksoNR tended to improve more than those treated with conventional physical therapy. This was especially true for those with higher CMIs, indicating that this population may benefit more from treatment with EksoNR.

	CMI	Group	Percent Change: admission to discharge		
			10MWT	Self Care Score	Mobility Score
Total population	1.21-2.3	EksoNR (n=22)	72.2%	95.6%	90.9%
		Conventional (n=49)	83%	79.6%	71.4%
Subgroup: Low CMI	2.17-2.2	EksoNR (n=9)	56%	88.9%	98.9%
		Conventional (n=11)	54.5%	87.5%	72.7%
Subgroup: High CMI	2.29-2.3	EksoNR (n=9)	89%	100%	100%
		Conventional (n=15)	26.7%	53.3%	40%