
Reference

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Satisfaction and Problems Experienced with Wrist Movements

American Journal of Physical Medicine & Rehabilitation 2014;93:437Y444

Products

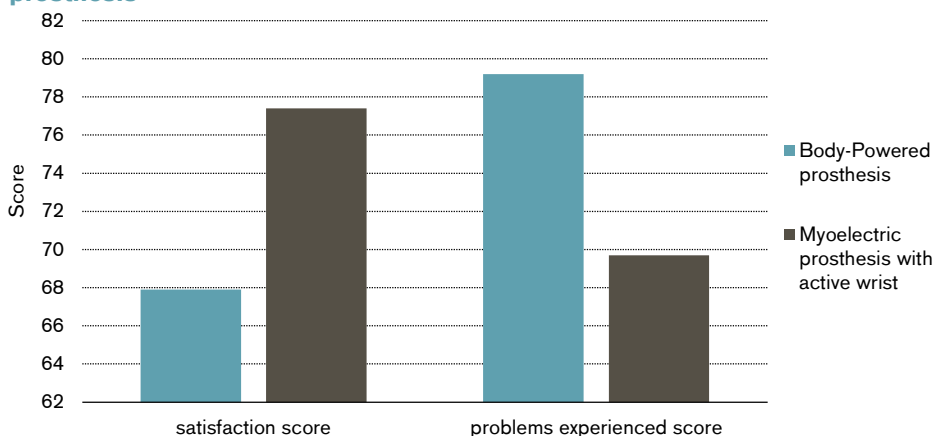
Myoelectric prosthesis with active wrist vs Body-powered prosthesis

Major Findings

With myoelectric prosthesis with active wrist compared to body-powered prosthesis:

- **Users were satisfied with the active wrist**
- **The overall satisfaction score was 12% higher for the myoelectric prosthesis with active wrist than for body-powered prosthesis system.**
- **The overall scores for problems experienced with the myoelectric prosthesis with active wrist were 13% lower than for body-powered prosthesis system.**

Satisfaction and problems experienced scores with myoelectric prosthesis with active wrist and body powered prosthesis



Population

Subjects: 15 persons with transradial amputation
Previous: body-powered prostheses
Amputation causes: trauma
Mean age: 45.38 ± 11.25
Mean time since amputation: n.a.

Study Design

Retrospective study

Participants were already fitted with myoelectric prosthesis with active wrist and the subjects were asked to recall their experiences with body-powered prosthesis.

Results

Body Function		Activity			Participation	Others	
Mechanics	Pain	Grip patterns / force	Manual dexterity	Activities of daily living (ADL)	Satisfaction and Quality of life (QoL)	Training	Technical aspect

Category	Outcomes	Results for myoelectric prosthesis with active wrist vs body-powered prosthesis	Sig.*
Satisfaction	Questionnaire (self-designed)	The overall satisfaction score was 12% higher for the myoelectric prosthesis with active wrist than for body-powered prosthesis system.	+
		The level of the subjects' satisfaction was higher for the myoelectric prosthesis with active wrist in terms of:	++
		<ul style="list-style-type: none"> - pronation and supination, - flexion and extension - in ability to open a door. 	
		Abilities to pick up, place and hold the cup were lower with myoelectric prosthesis with active wrist.	--
		No differences were observed in terms of sweating, wounds, irritation, socket, smell, sound, and durability.	0
		Fewer difficulties were observed with the myoelectric socket system in terms of pain.	+
		The overall scores for problems experienced with the myoelectric prosthesis with active wrist were 13% lower than for body-powered prosthesis system.	+

* no difference (0), positive trend (+), negative trend (-), significant (++/--), not applicable (n.a.)

Author's Conclusion

“Overall, this study revealed that most of the participants with transradial amputation were more satisfied with the biomechatronics wrist prosthesis than the common body-powered prosthesis. Some users prefer the body-powered prosthesis depending on the task they are doing. Further study should focus on comparing both prostheses while doing other daily life activities such as fishing, driving, and many more. The study of kinematics approach also needs to be considered for all parts of the upper limb while doing the task.” (Razak et al. 2014)

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