



University Rehabilitation Institute Republic of Slovenia

The first experiences with bionic prosthetic hand

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Introduction



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Activity limitations



Participation limitations

Burger H. In Murray C. Springer 2010: 101 – 14.
Fernandez: Arch Phys Med Rehabil 2000



Ideal prosthesis



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Motor function

Lozac' H 1986



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August 2007



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Mai 2010



Aim

- * to find the advantages and disadvantages of bionic hand
- * to compare it's function with a function of the classic electric prosthetic hand



Subjects

- * 2 subjects fitted with bionic hand:
 - congenital TR deficiency left
 - Right wrist disarticulation + amputation of II. –V. fingers on left
- * 2 teenagers who just tested it for one month – both congenital TR deficiency



Methods

- * Structured interview
- * SHAP test
- * UNB test



Usefulness of prosthetic hands

Subjects	“Classic” electric hand	“Bionic” electric hand
1	8	9
2	9	8
3	9	5
4	7	9
Together	8,25	7,75



Results

- * Classic hand better for:
 - strong grips – 2
 - Using scissors – 1
- * Bionic hand better for:
 - In general – 3
 - Nicer – 3
 - Precision grip – 2

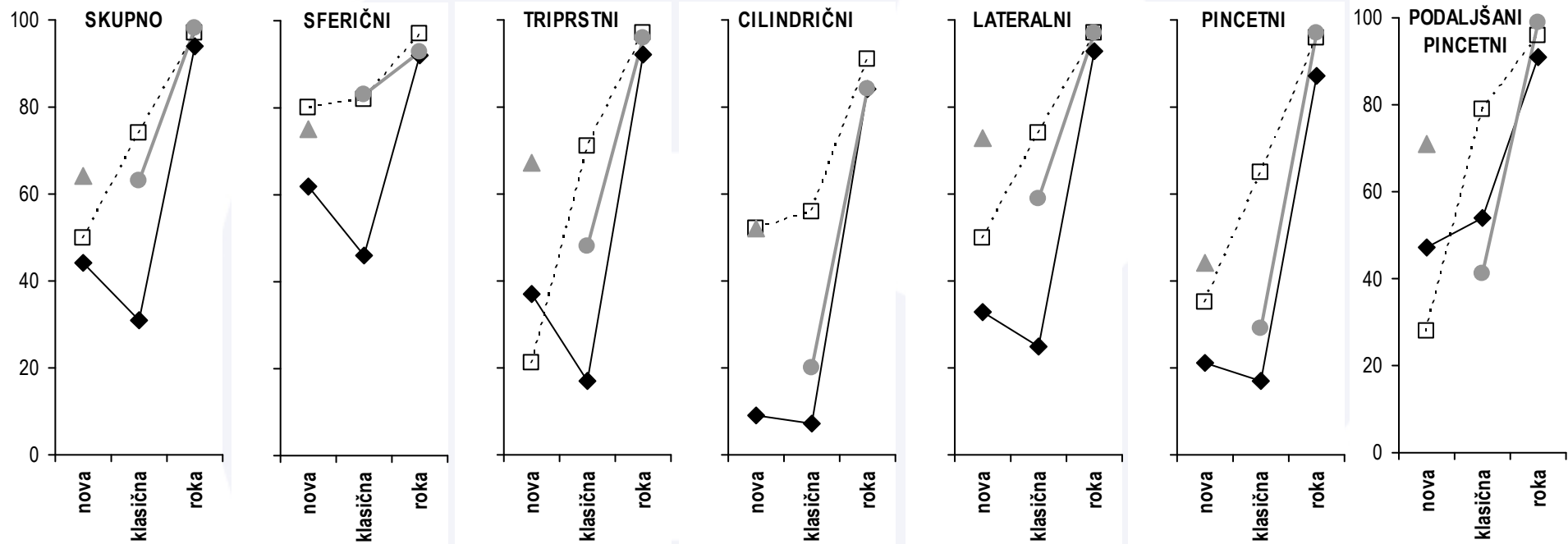


UNB test results

Subjects	“Classic” electric hand		“Bionic” electric hand	
	Spontaneity	Skill	Spontaneity	Skill
1	40	38	40	38
2	40	40	40	40
3	38	39		
4	35	33	36	33



SHAP test results





Discussion

“Bionic”

“Classic”



Discussion

- * Very small sample
- * Appearance very important
- * New training needed



Conclusion

- * Great technological achievement
- * Independent multi centric studies are needed to prove its advantages and disadvantages



Thank you!