

# European Conference on Polio, Copenhagen 110901

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# Stockholm





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Foto: Staffan Larsson

## Aim of the study

Effects of resistance training in combination with intravenous immunoglobulin (IVIG) treatment in patients with post-polio.

### **Research question:**

Does resistance training add a further positive effect on muscle strength, functional ability, muscle endurance, health-related quality of life and pain, to the effect of IVIG?

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# Method

- Clinical open prospective study
  - Randomisation of IVIG treated PPS patients to either muscular resistance training or to continue with “business as usual”.
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# Method

Resistance training with a physiotherapist

- 3 sessions/week, over 12 weeks
  - Start 50% of 1RM → 70-80% of 1RM
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# Method

- Measurements:
    - Knee muscle strength, with isokinetic dynamometer
    - Timed Up and Go test (TUG)
    - 6 minute walk test (6MWT)
    - Questionnaires: SF-36, EQ-5D, VAS (pain), PASE, MFI-20
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# Results

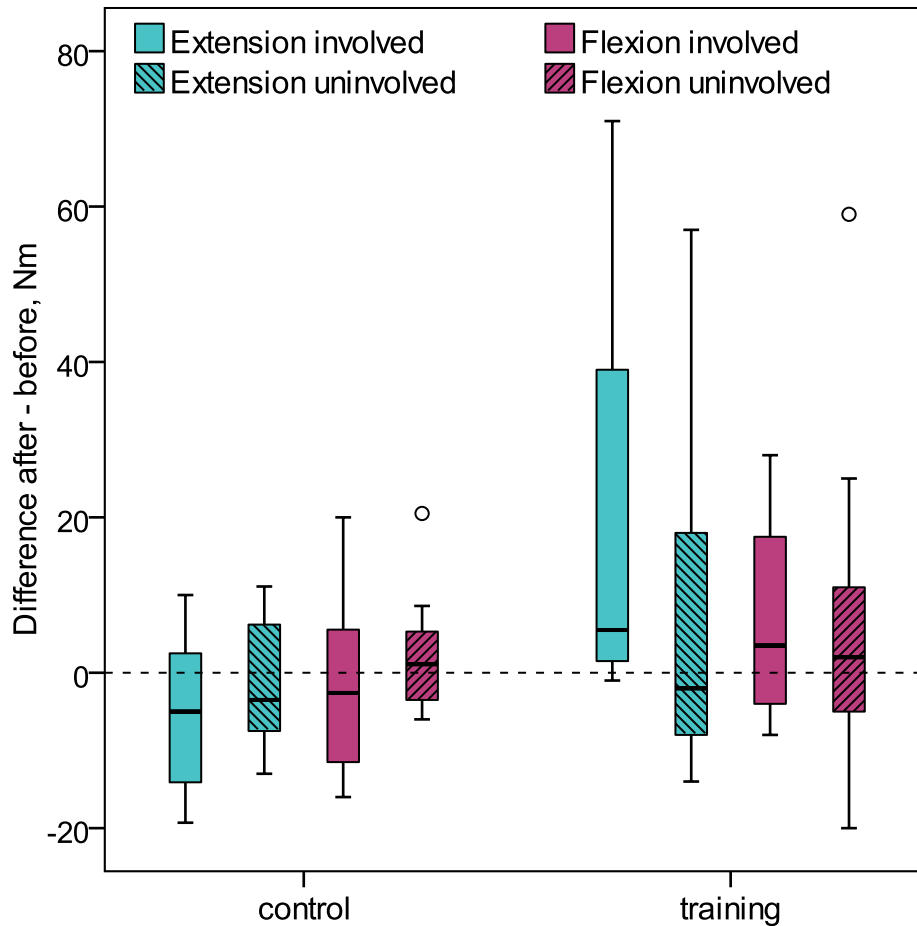
- 17 patients completed the study
  - 9 in the exercise group
  - 8 in the control group
  - Participation in the training sessions was good with a median of 85%
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## Results, isokinetic muscle strength before

<b>Isokinetic</b>				
Muscle strength, Nm	Group	<i>n</i>	Median	Q25-Q75
Involved flexion	T	4	35	22 - 38
	C	9	12	11 - 28
Uninvolved flexion	T	9	44	12 - 57
	C	9	27	20 - 37
Involved extension	T	4	59	39 - 66
	C	9	29	24 - 57
Uninvolved extension	T	9	65	58 - 76
	C	9	59	52 - 84

Q25-Q75: quartiles 25% and 75%

# Results, isokinetic muscle strength



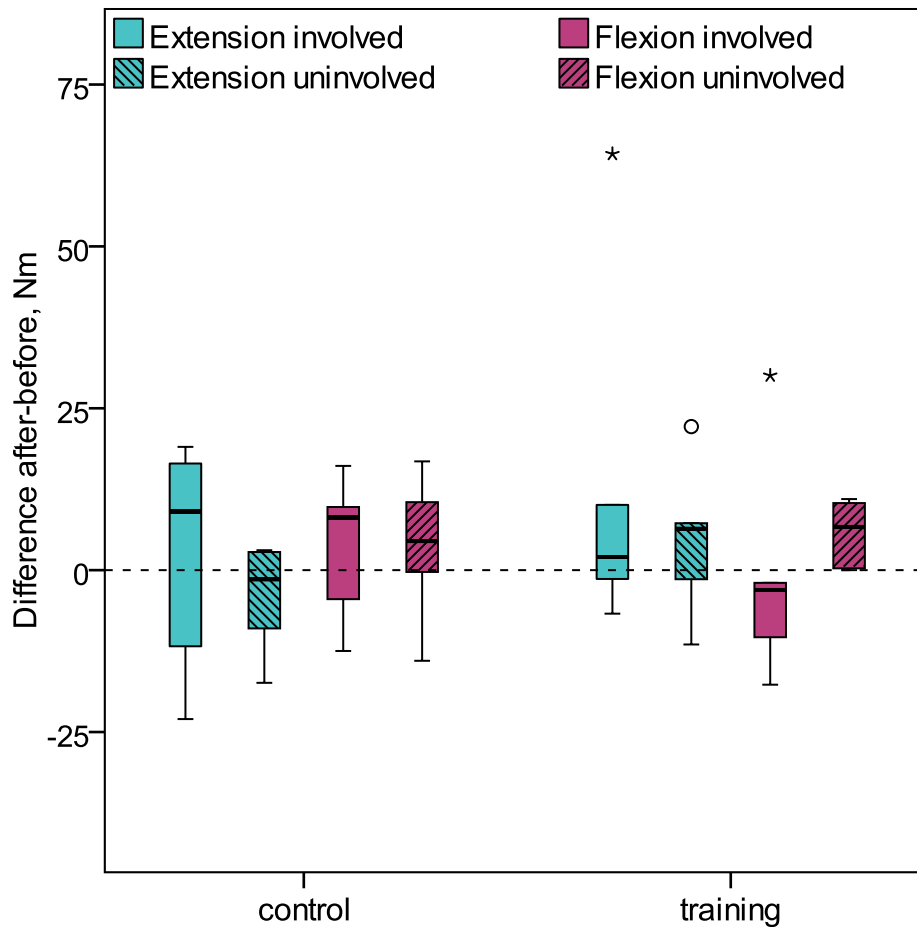
Extensors in the involved leg showed a better result ( $p=0.07$ ) for the training group than for the control group.

## Results, isometric muscle strength before

<b>Isometric</b>				
Muscle strength, Nm	Group	<i>n</i>	Median	Q25-Q75
Involved flexion	T	6	39	16 - 59
	C	8	25	17 - 28
Uninvolved flexion	T	9	56	26 - 65
	C	9	42	34 - 46
Involved extension	T	5	76	47 - 100
	C	8	48	37 - 73
Uninvolved extension	T	9	89	85 - 100
	C	9	74	66 - 87

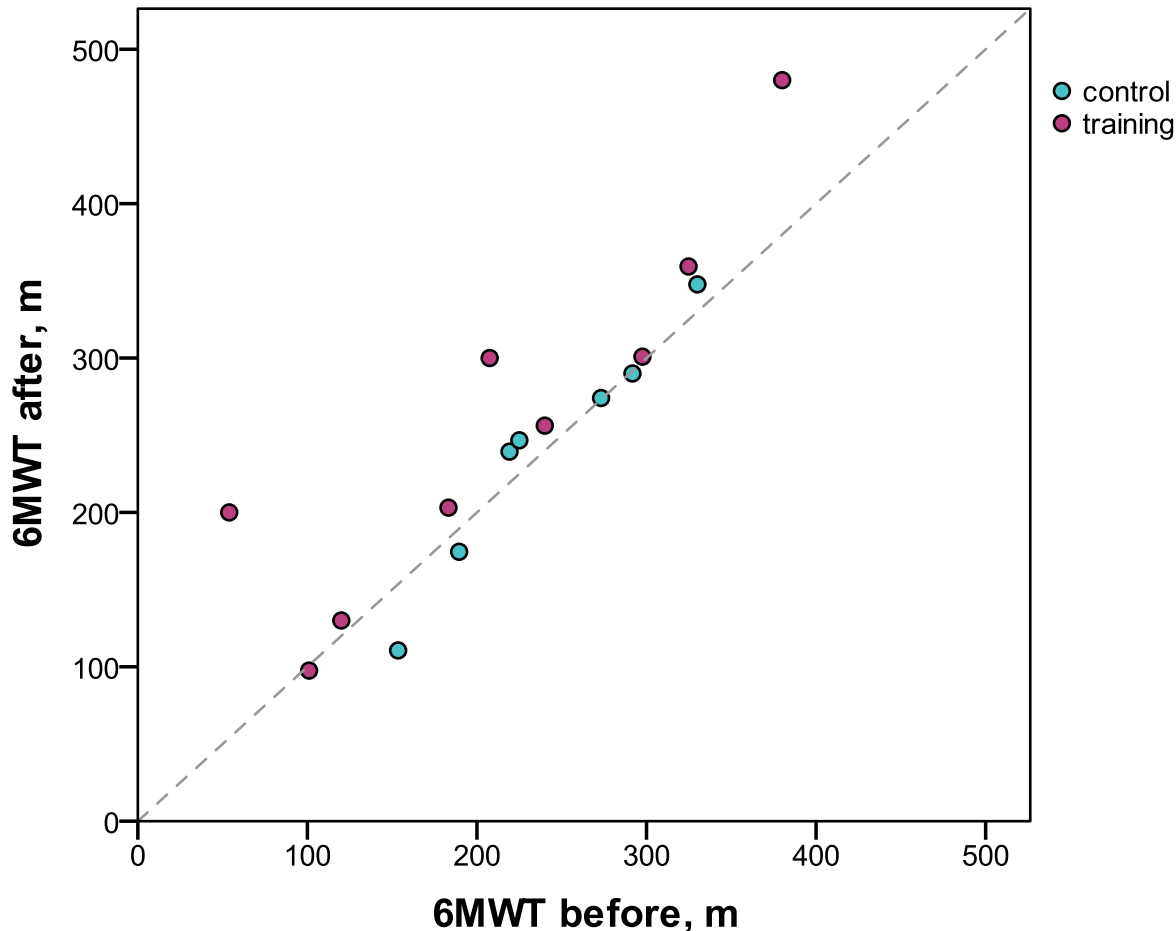
Q25-Q75: quartiles 25% and 75%

# Results, isometric muscle strength



No statistical significant in difference between the two groups.

## Results, 6-minute walk test

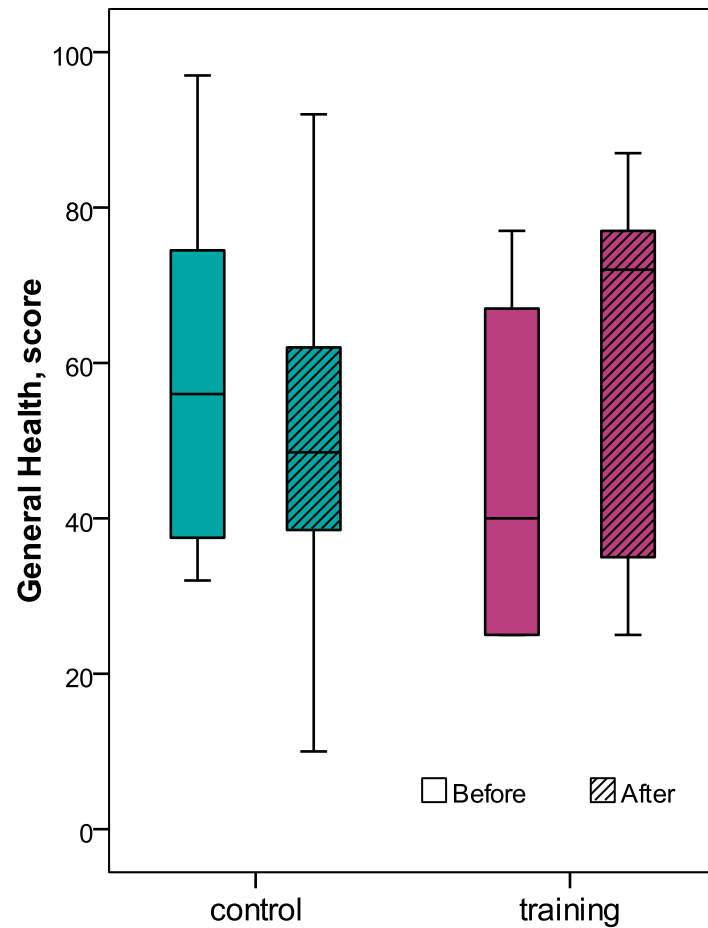


Mean for the training group  
before: 212 m  
after: 258 m

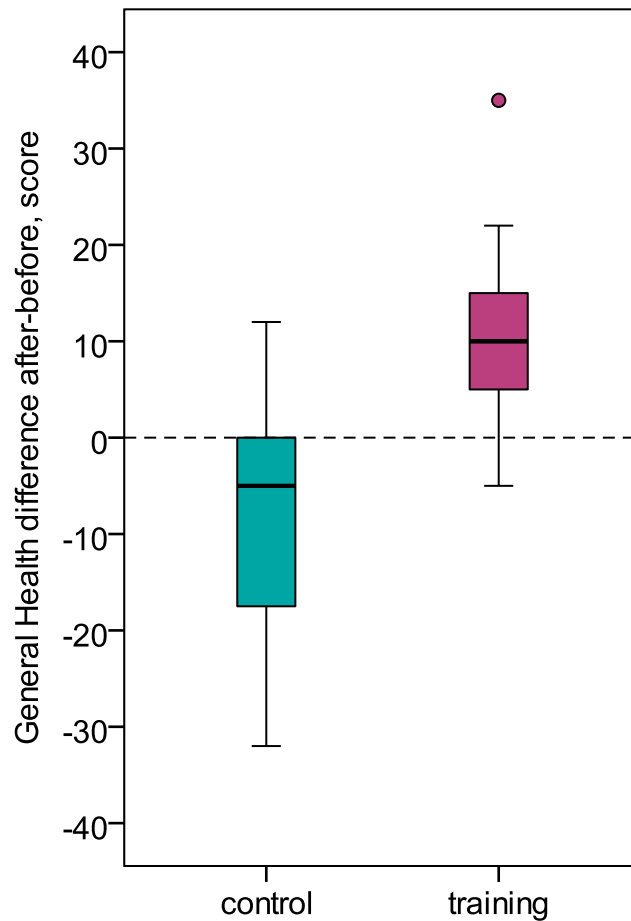
Mean for the control group  
before: 242 m  
after: 240 m

The 6MWT showed a statistically significant difference between the two groups ( $p=0.049$ ).

# Results, SF-36, General Health

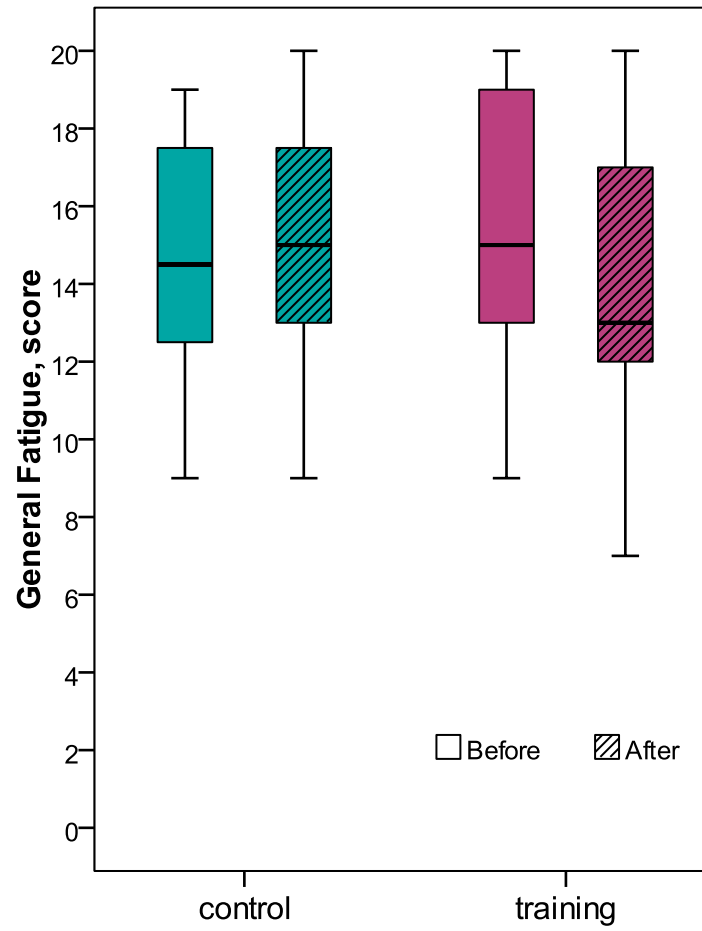


## Results, SF-36, General Health

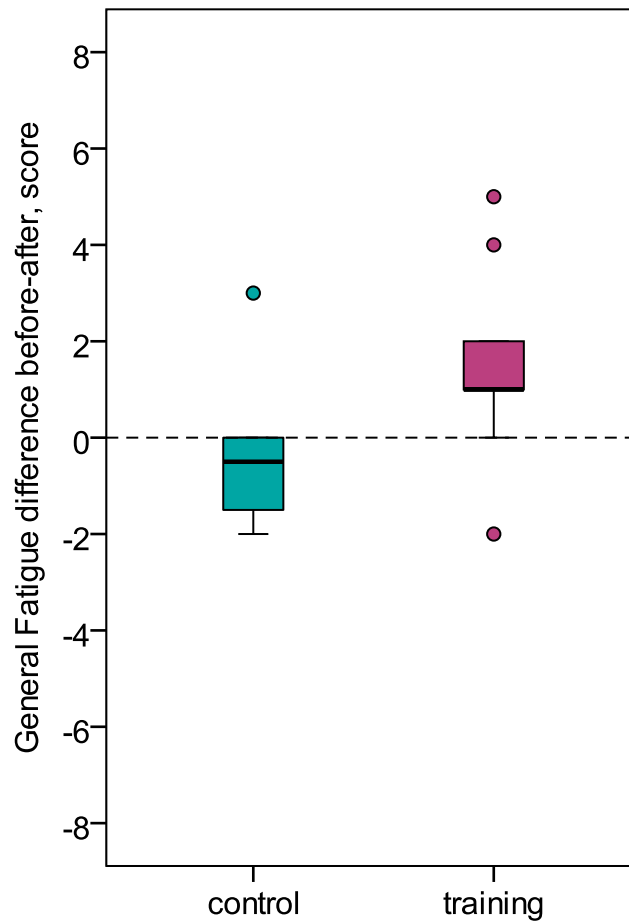


General Health improved statistically significant for the training group compared to the control group  
 $p=0.013$

# Results, MFI-20, General Fatigue



## Results, MFI-20, General Fatigue



General Fatigue improved statistically significant for the training group compared to the control group  
 $p=0.036$

# Results

- TUG, EQ-5D, VAS (pain) and PASE did not show any statistically significant differences between the groups.
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## Conclusion

- The results of this study show an increase of muscle endurance and a tendency to an increase of muscle strength and no increase of muscle performance.
  - Quality of life regarding general health and general fatigue was increased.
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**Thank you!**

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