The use of intervention studies in planning evidence-based interventions for the individual child - from research to clinical practice

PROFESSIONSHØJSKOLEN METROPOL

Head and trunk postural control in moderate to severe cerebral palsy - A segmental approach to analysis and treatment

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Adjunkt PhD
Fysioterapeutuddannelsen

The segmental approach to analysis and treatment (Targeted Training)

1. Considers the trunk as multiple segments
2. Control can be different for different segments
3. Control is achieved cranially-caudally (head down)

4. Analysis and training are based on these principles

Aim

The aim of this study was to determine whether segmental training is more effective in improving gross motor function in children and young people with moderate-to severe CP compared to conventional physiotherapy

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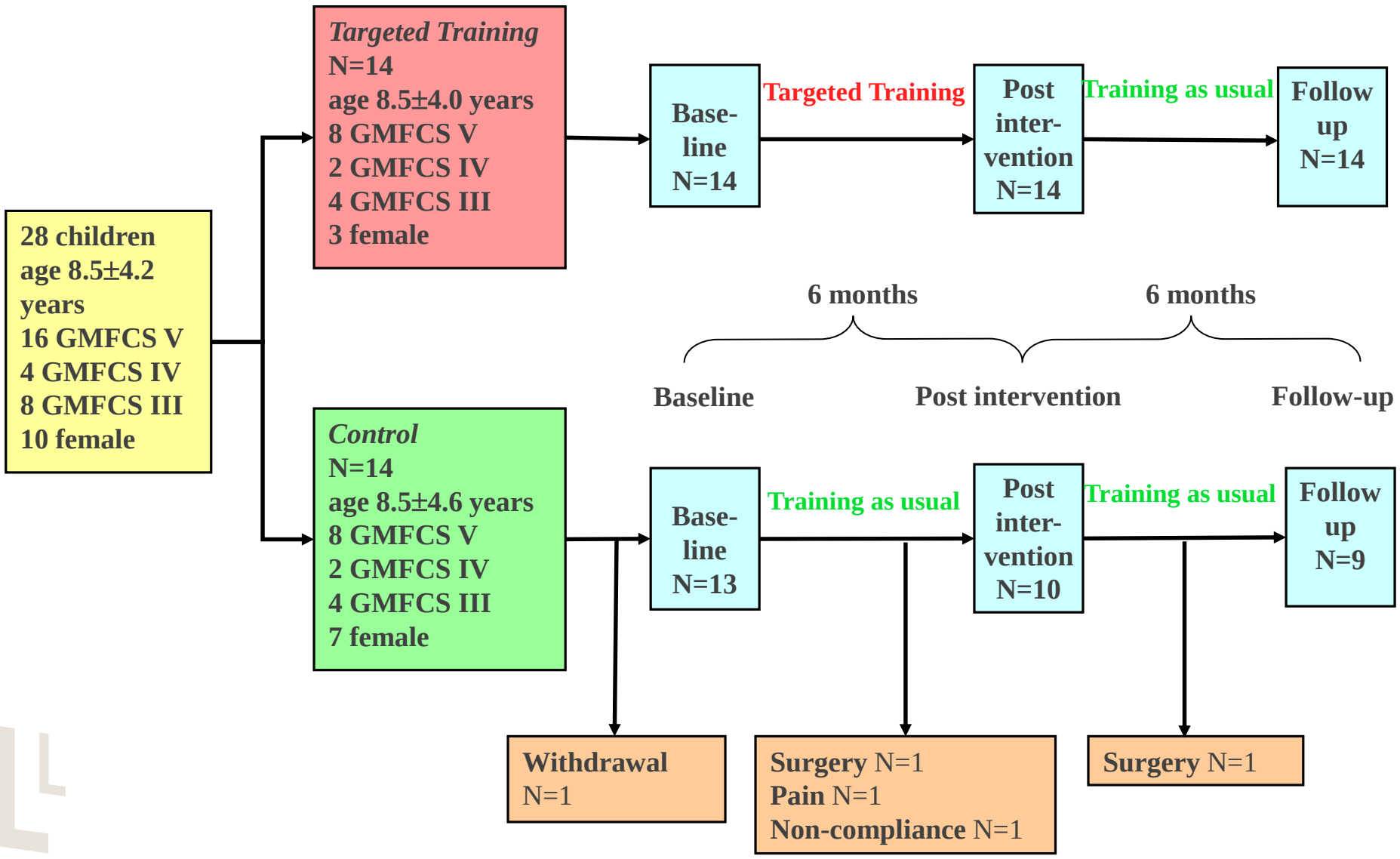
Research design



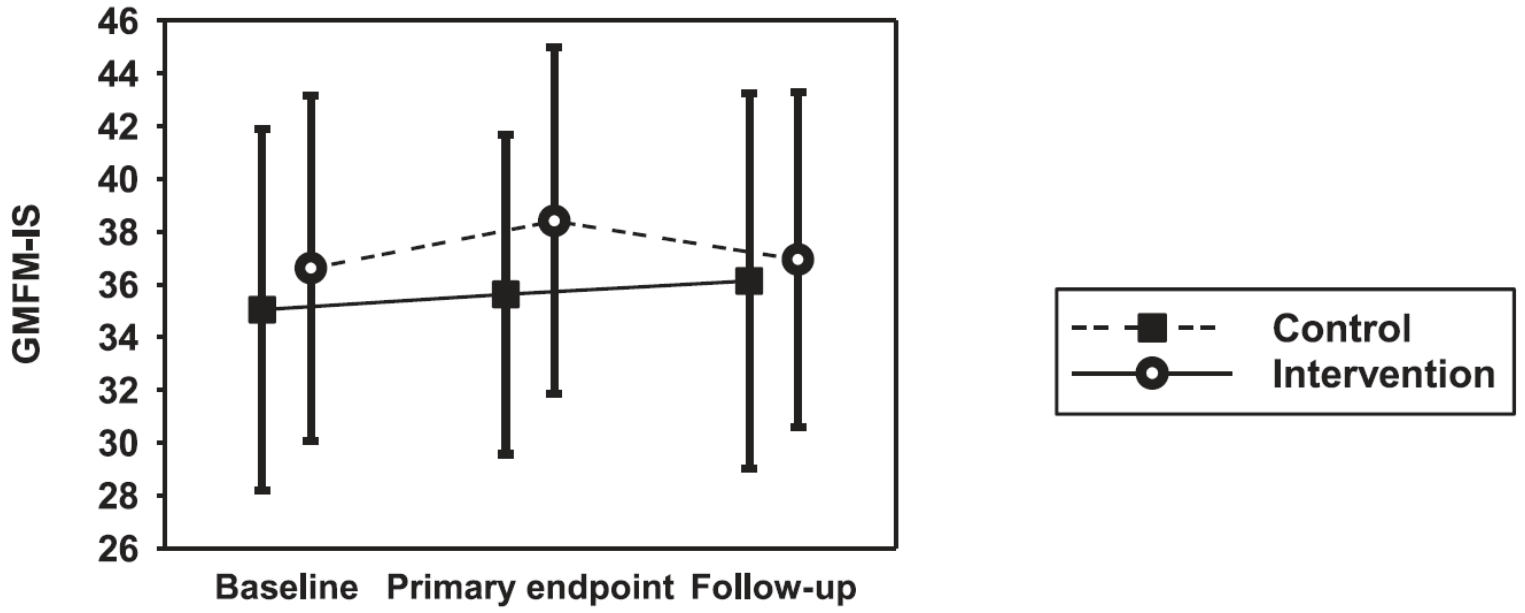
Primary outcome

GMFM-66

Results

Baseline to primary endpoint: Mean difference 1.2 points; (95% CI -2.3 to 4.8)

Baseline to follow-up: Mean difference 0.1 points; (95% CI -2.8 to 3.0)



Conclusion

Segmental training was not superior to usual care in improving gross motor function in children and young people with moderate to severe CP

BUT

for some of the children and young people the therapy was quite effective……..

DEVELOPMENTAL MEDICINE & CHILD NEUROLOGY INVITED REVIEW

Meaningfulness of mean group results for determining the optimal motor rehabilitation program for an individual child with cerebral palsy

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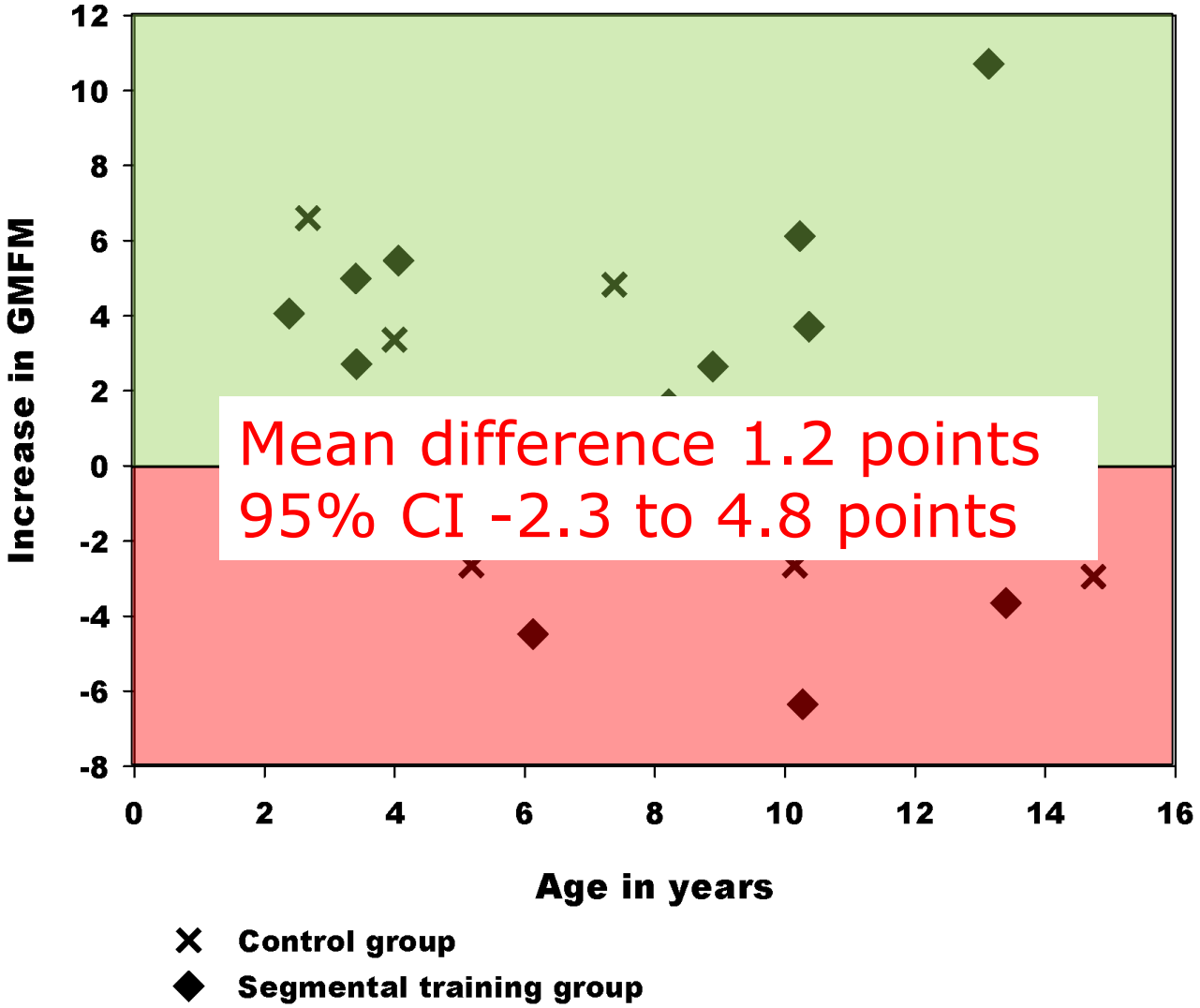
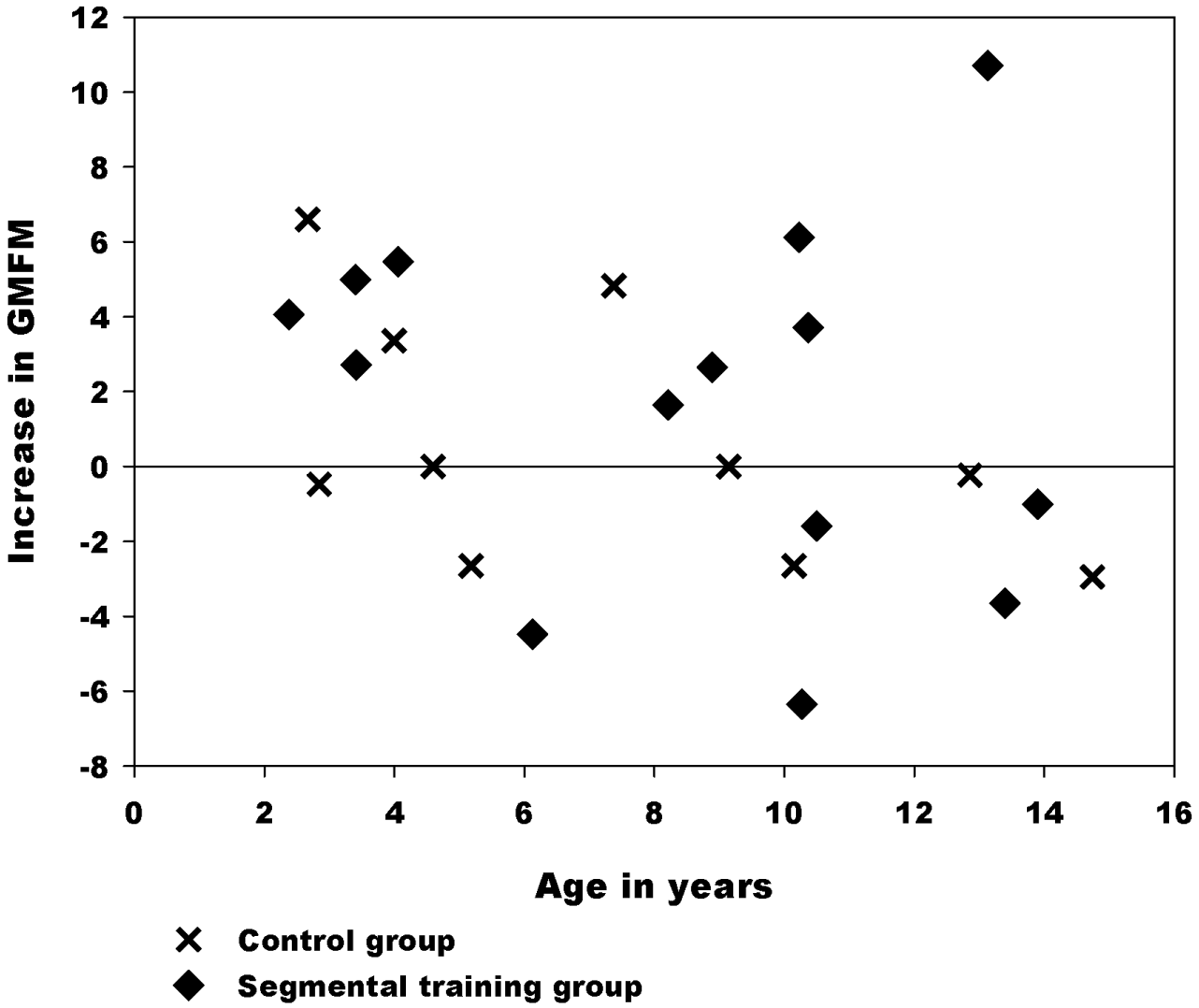
As research on the efficacy or effectiveness of interventions to improve motor functioning in cerebral palsy (CP) has accumulated and been incorporated into systematic reviews, the foundation for evidence-based practice in CP is growing. To determine whether an intervention is effective, clinical trials report mean group differences. However, even if a statistically significant mean group effect is found, this does not imply that this intervention was effective for each study participant or ensure positive outcomes for all with CP. A personalized approach to medical care is currently being advocated based primarily on increasingly recognized genetic variations in individual responses to medications and other therapies. A similar approach is also warranted, and perhaps more justifiable, in CP which includes a heterogeneous group of disorders. Even interventions deemed highly effective in CP demonstrate a range of individual responses along a continuum from a negative or negligible response to a strong positive effect, the bases for which remain incompletely understood. This narrative review recommends that the next critical step in advancing evidence-based practice is to implement research strategies to identify patient factors that predict treatment responses so we can not only answer the question 'what works', but also 'what works best, for whom'.

How can we determine what works best for whom?

GMFM data from the study



Age


Increase in GMFM
12
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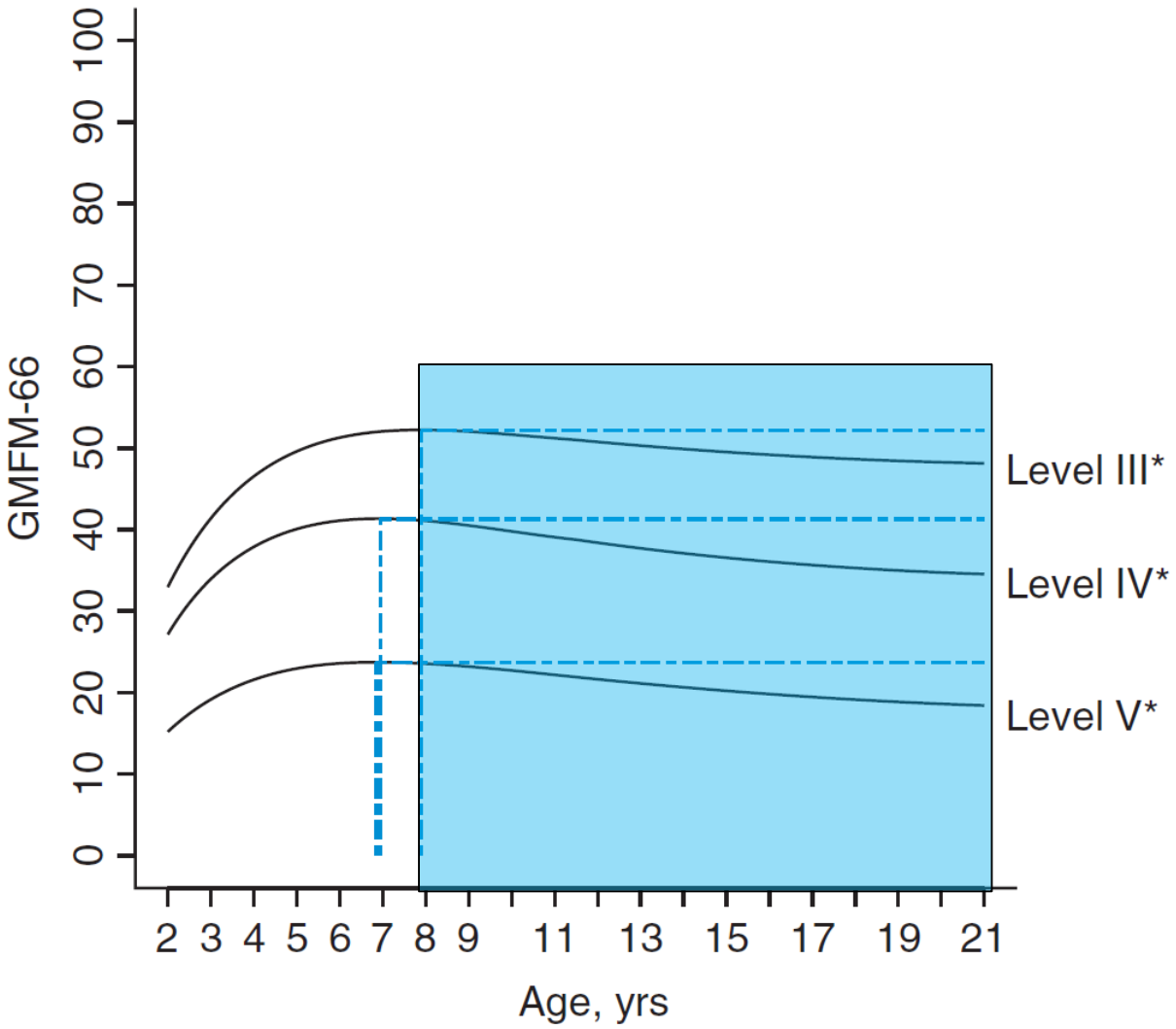
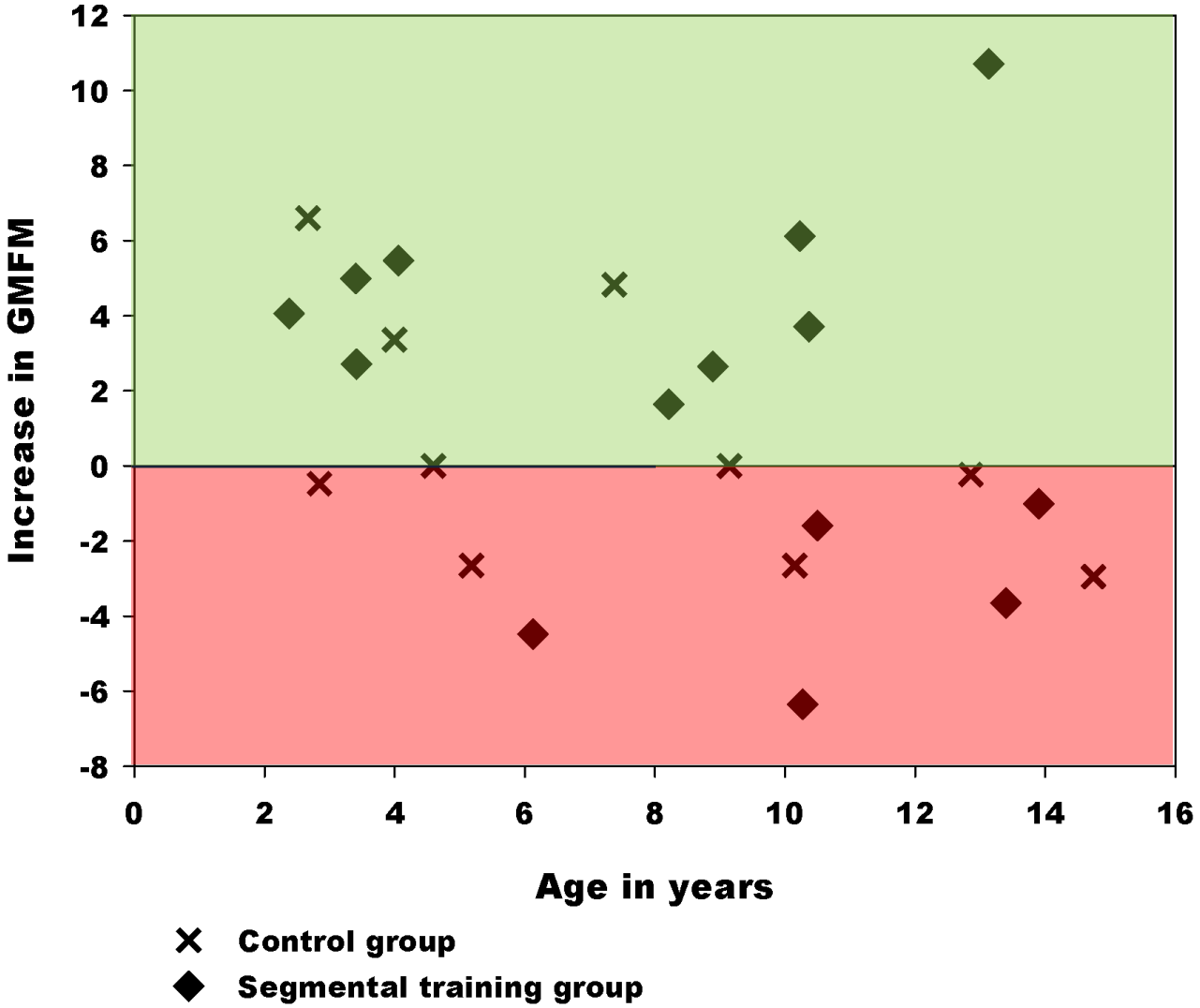
12
14
16
Age in years
Control group
Segmental training group



Hanna SE, Rosenbaum PL, Bartlett DJ, Palisano RJ, Walter SD, Avery L, Russell DJ. Stability and decline in gross motor function among children and youth with cerebral palsy aged 2 to 21 years. Dev Med Child Neurol. 2009 Apr;51(4):295-302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12
14
16
Age in years
Control group
Segmental training group

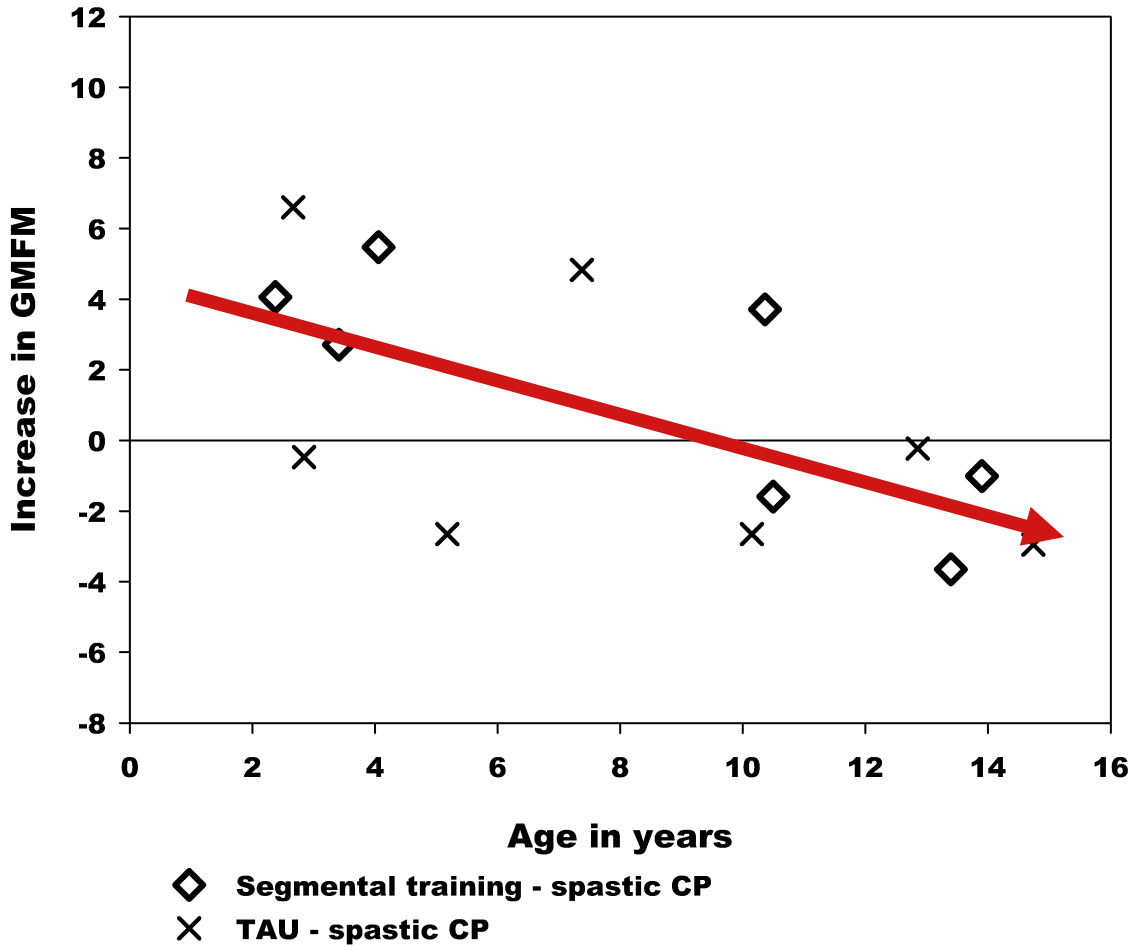
The way forward – what works best for whom?

Is there a pattern in sub-groups in the data?

1. Possibly children over 8 years of age have a greater effect of Targeted Training than TAU

Type of cerebral palsy

Spastic CP


Increase in GMFM
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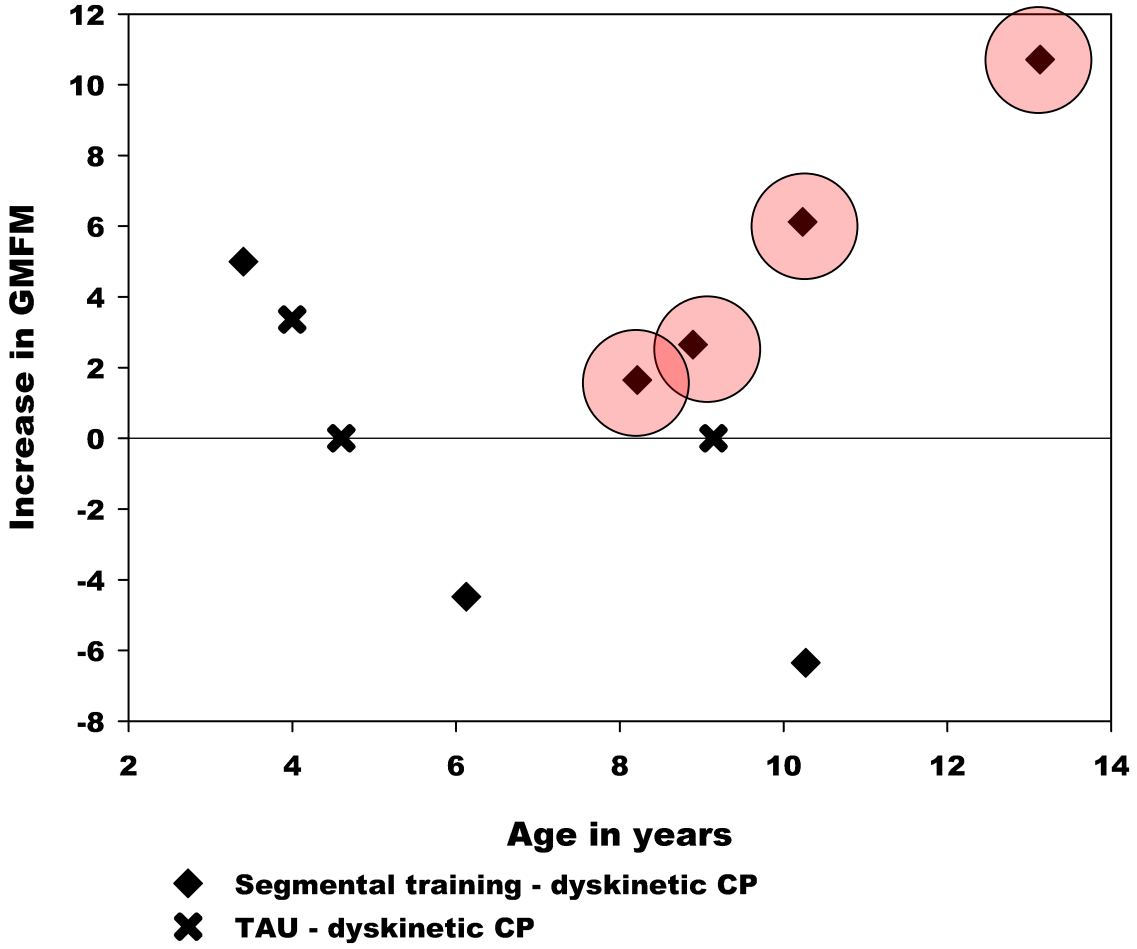
16
Age in years
Segmental training - spastic CP
TAU - spastic CP

Dyskinetic CP

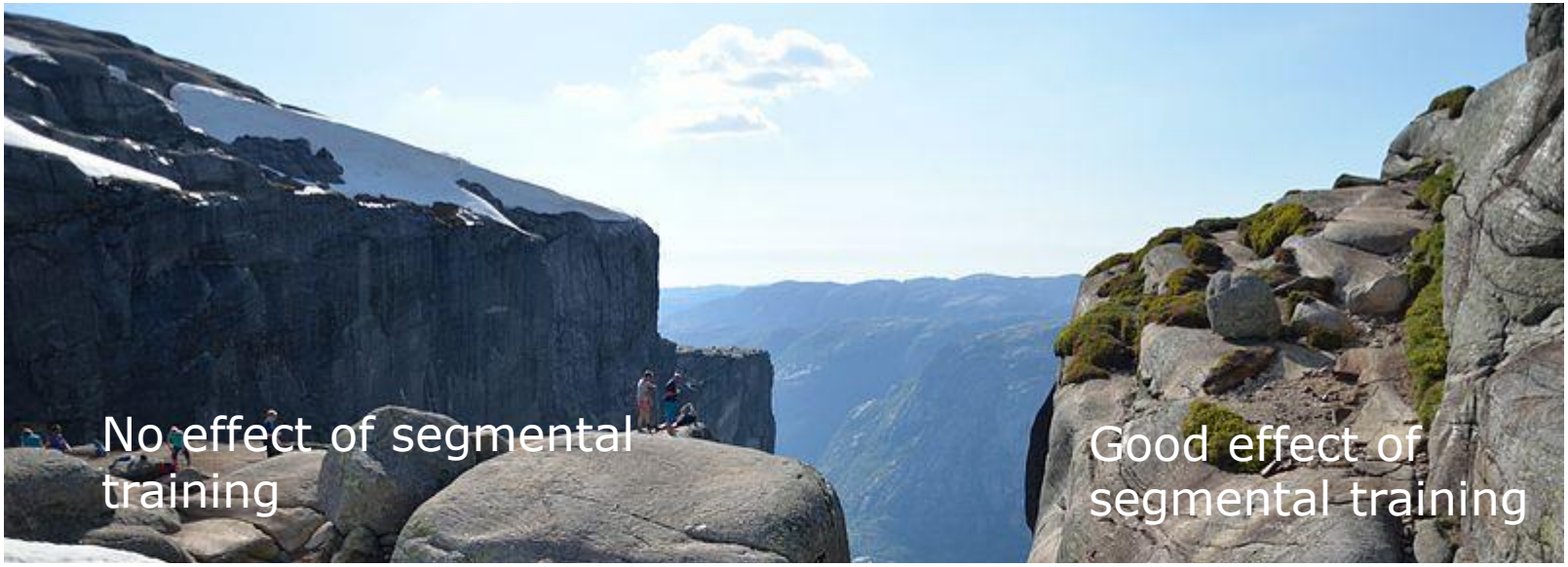


The way forward – what works best for whom?

Is there a pattern in sub-groups in the data?

1. Possibly children over 7 years of age have a greater effect of Targeted Training than TAU
2. Targeted Training appears to benefit children with dyskinetic CP more than children with spastic cerebral palsy

Conundrum


No effect of segmental training
Good effect of segmental training

Kjeragbolten in Norway


thank you
tusind tak
谢谢
dakujem vám
ありがとう
ngiyabonga
dziękuję
merci
baie dankie
धन्यवाद
molte grazie
suksema
danke
gracias
obrigada
obrigado
takk
teşekkür ederim
شكرا
tack så mycket
gràcies
tänan
dank u
teşekkür edira
mahalo

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