Results of a 3 year prospective cohort study investigating the influence of home-based therapy on cerebral palsy patients GMFCS types 4 and 5

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Disclosure Information
AACPDM 68th Annual Meeting September 10-13, 2014

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Disclosure of Relevant Financial Relationships

I have the following financial relationships to disclose:

Employee of: Advanced Biomechanical Rehabilitation

Grants from: NSERC, NRC

Stockholder in: Biomedical Research Group NPO, Spinologics Inc.

Co-author Name: Leonid Blyum

I have the following financial relationships to disclose:

Stockholder in: Advanced Biomechanical Rehabilitation

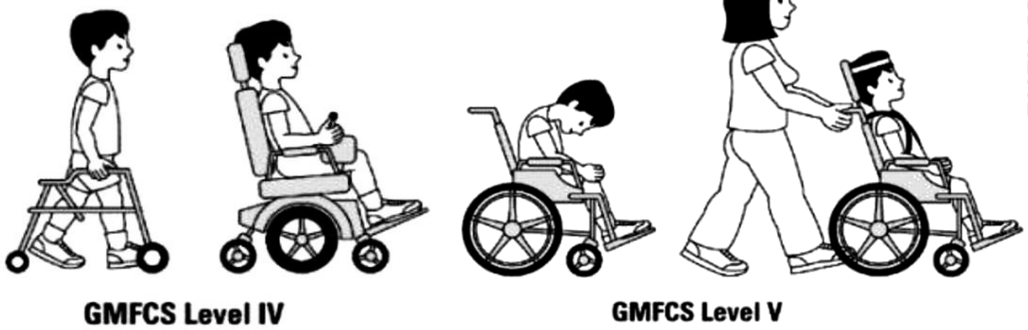
Disclosure of Off-Label and/or investigative uses:

I will not discuss off label use and/or investigational use in my presentation

Background

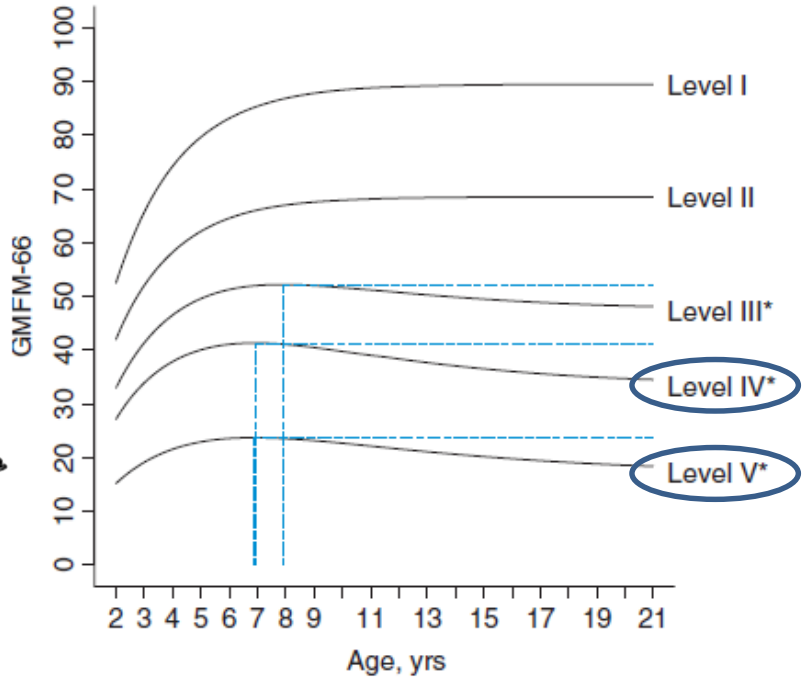
Cerebral palsy (GMFCS types IV and V) are difficult to manage.

GMFM curves paint a grim prognosis for these patients.



GMFCS Level IV

GMFCS Level V



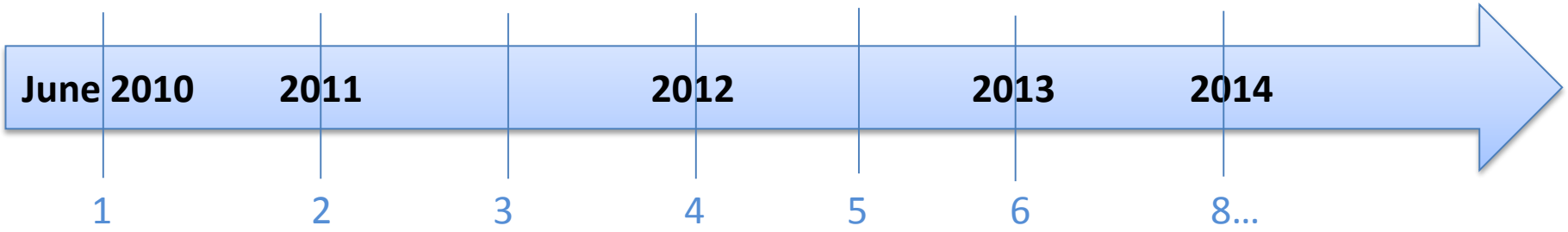
Hanna et al. 2009

Research Question

Premise: these severely affected patients may benefit from a more frequent home based or family center treatment approach.

Purpose: to evaluate the feasibility of a high frequency home-based therapy that utilizes parents as the primary caregiver

Therapy outline



Therapy outline

Therapy: a manual therapy that induces the core of the child with CP to a repetitive motion strain which is passive and relaxing. Such stimulation is known to promote beneficial tissue remodeling and strengthening.

Frequency: at least 30 minutes 5 times a weeks

Selection criteria

Inclusion criteria GMFCS type 4 and 5 and between 5 and 18 yrs.

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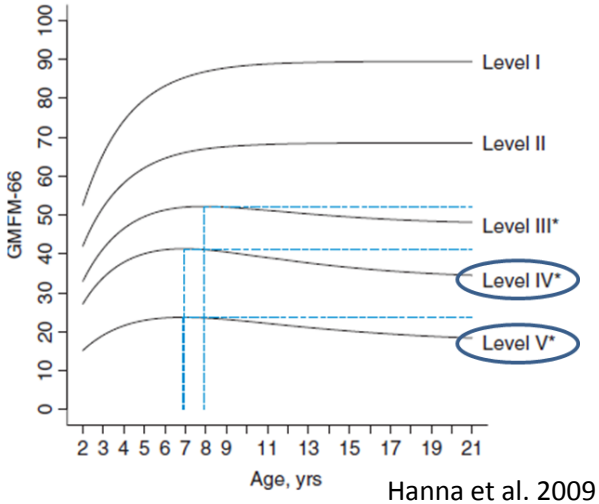

Hanna et al. 2009

Exclusion criteria restricted use of patients having surgical interventions and candidates followed for less than 1 years

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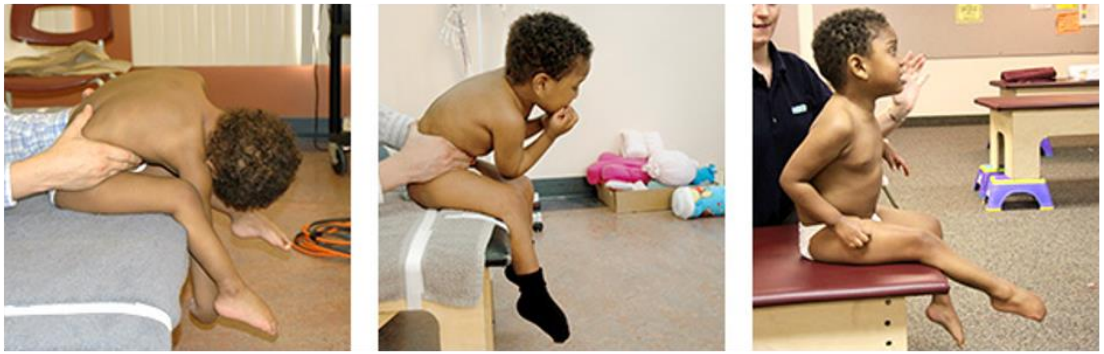
Data acquisition

1. **CPCHILD questionnaire (Health and well-being)**
2. **GMFCS classification (qualitative function)**
3. **Spinal stability and intra-abdominal pressure (postural control)**

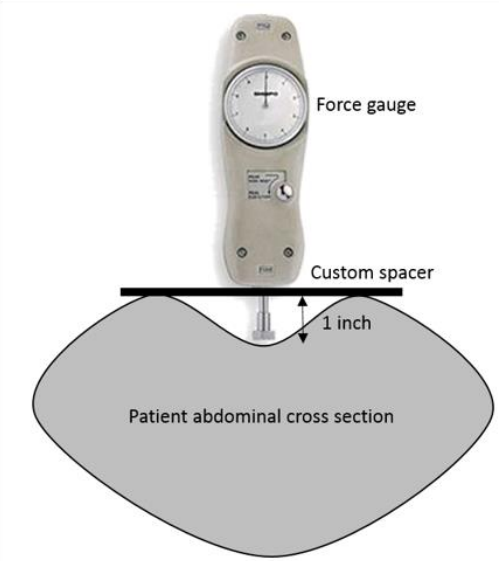
Spinal stability



0 3 5

Stability

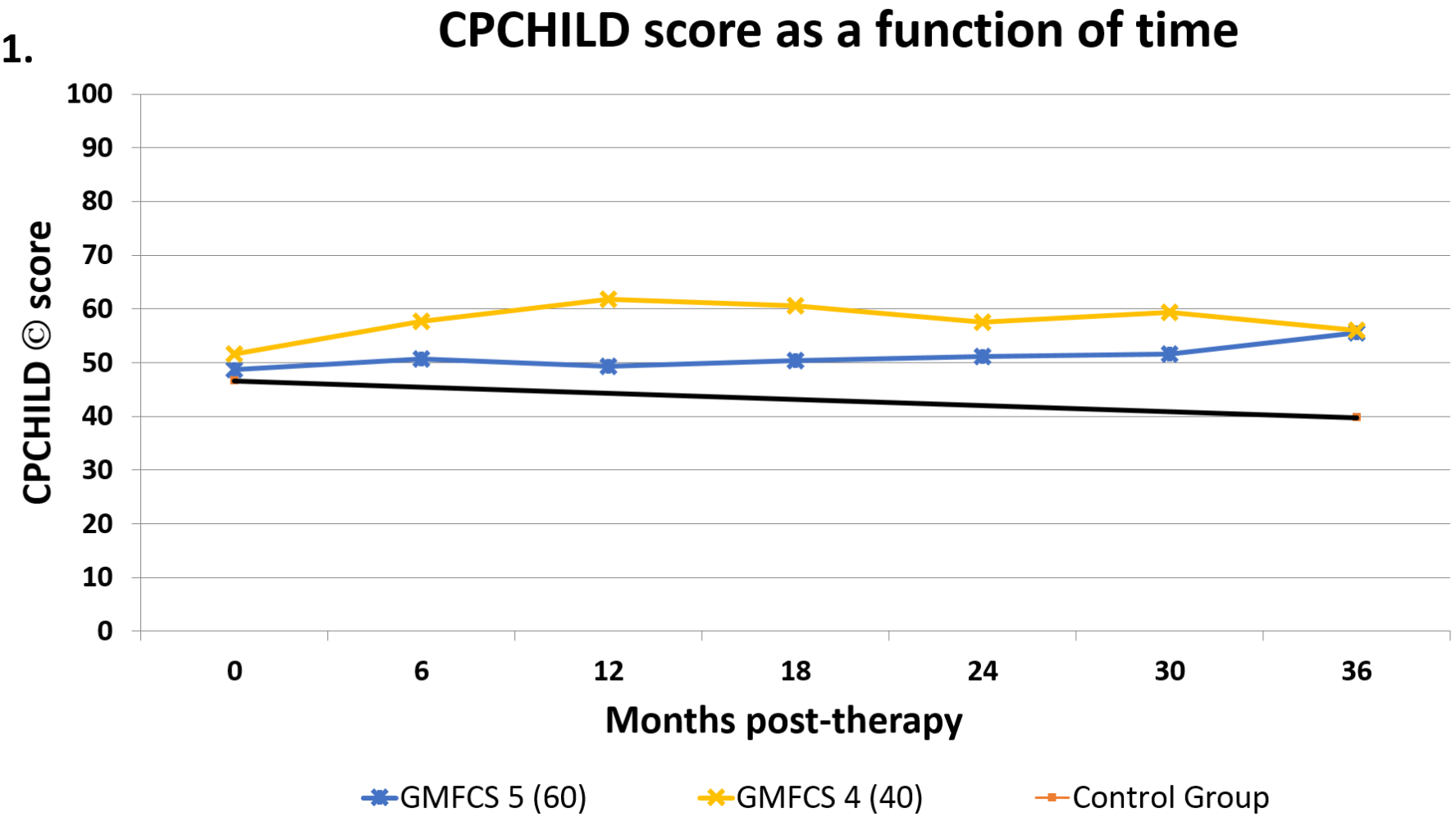
intra-abdominal pressure



Data collected every 6 months

Study Data CPCHILD (health and well-being)

1.

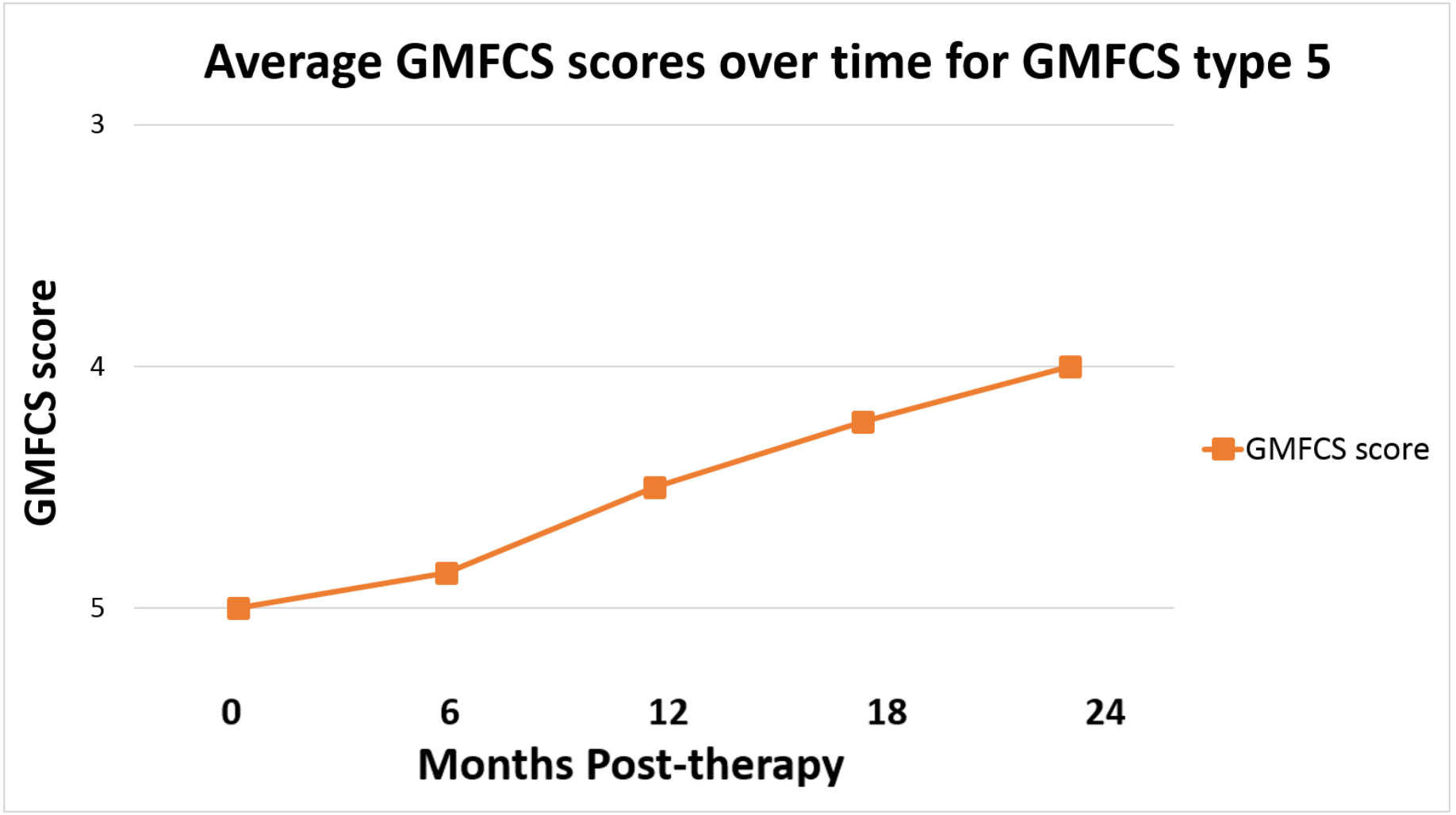


Type IV: improved 17 points ($p<0.5$)

Type V: improved 18 points ($p<0.5$)

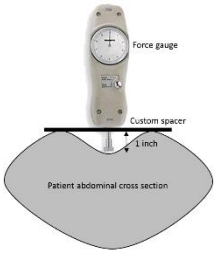
Study Data

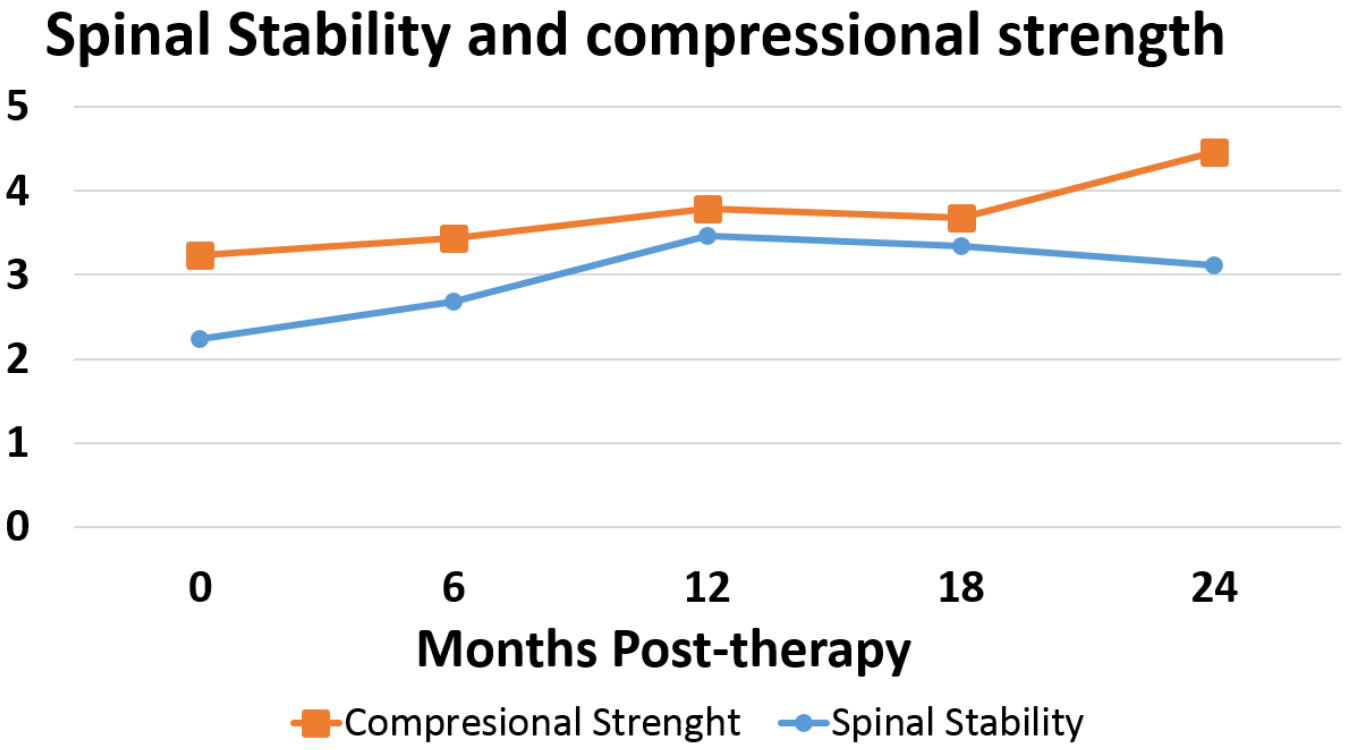
2.


Average GMFCS scores over time for GMFCS type 5
GMFCS score
3
4
5
0
6
12
18
24
Months Post-therapy
GMFCS score

Study Data

3.



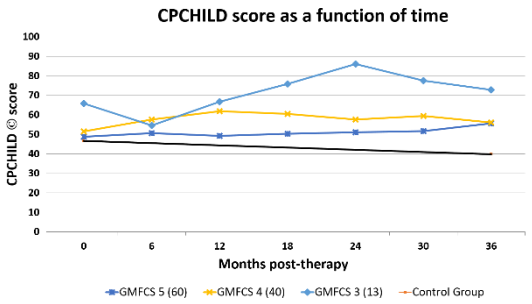


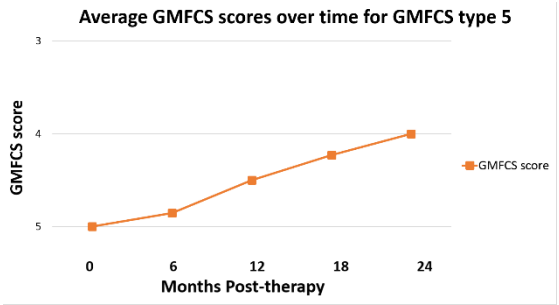
intra-abdominal pressure: 3.23 to 4.46 lbs/inch ($p<0.05$)
spinal stability: 2.3 to 3.1 ($p<0.05$)

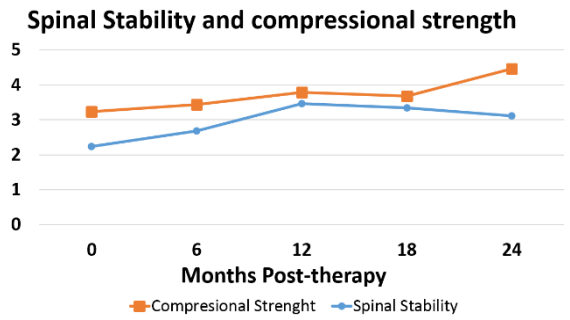
Conclusions

1. The positive participation of parents administering the therapy suggest it to be a viable and practical treatment platform cerebral palsy patients.

2. Beneficial outcomes on health and well-being, GMFCS scores, and spinal stability and intra-abdominal pressure advocate that ABR, a high frequency home based therapy, be an effective treatment platform.







Thank you

Special thanks to:

All participating families