

# No Correlation Between Pedi-FABS and Pedi-CHAMP<sup>®</sup> Agility Test in Healthy Individuals 5 to 24 Yrs of Age

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## INTRODUCTION

The HSS Pediatric Functional Activity Brief Scale (Pedi-FABS)<sup>1</sup> is a useful patient reported outcome tool that assesses the volume of exercise activity in adolescents and teens. The Pediatric Comprehensive Activity Mobility Predictor (Pedi-CHAMP<sup>®</sup>) is a novel, 4-part, functional assessment aimed to evaluate balance, lateral agility, directional changes, and acceleration/deceleration. The Pedi-CHAMP<sup>®</sup> is a modified version of the CHAMP which was originally designed to assess rehabilitation progress and performance in adult servicemembers with traumatic limb loss. The Pedi-CHAMP<sup>®</sup> can be assessed in approximately 10 to 15 minutes and requires only a stopwatch and adequate space to run the course.

## PURPOSE

To assess the relationship between performance on the part Pedi-CHAMP<sup>®</sup> agility course and self-reported activity level measured with the Pedi-FABS.

## METHODS

- Participants completed the Pedi-CHAMP<sup>®</sup> agility course and the Pedi-FABS survey during a single visit as part of an IRB-approved study.
- Pedi-CHAMP<sup>®</sup>:
  - 4 part assessment
    - 30sec single limb stance on each leg
    - 4m, 3 rep, modified Edgren side-step test
    - 10m L-Test
    - 10m triple shuttle run with directional weaving.
  - Given 2 attempts to complete each task
  - Time and technique/performance were assessed.
    - Failure to complete a task properly (i.e. loss of balance prior to 30secs or cross legs during the side shuffle), provided one additional attempt.
  - Age- and sex- matched scoring algorithms used to convert times for each task to point values.
  - Scores for all 4 parts of the course were summed for a composite score.
- Spearman's rho was used to determine correlation between the Pedi-FABS and Pedi-CHAMP<sup>®</sup>.

## RESULTS

- N=628 [49% female] participated, with an age range of 5.0 to 24.1 years
- Average Pedi-FABS score was 20.9 ± 6.6
- Average Pedi-CHAMP<sup>®</sup> score was 18.7 ± 11.5
- There was poor correlation seen between self reported activity (Pedi-FABS) and agility test performance (Pedi-CHAMP<sup>®</sup>) for the entire cohort (p=.306) or when separating the group by sex (Females: p=.269 Males: p=.283).

Table 1. Age, Functional Pedi-CHAMP<sup>®</sup> Score (max. 40) & Pedi-FABS Activity Level (max. 30)

Variable	Females N=316	Males N=312	ALL N=628
Age	12.6±4.0	13.1 ± 3.9	12.8 ± 4.0
Pedi-CHAMP	25.7 ± 8.5	28.7 ± 9.0	27.2 ± 8.9
Pedi-FABS	19.6 ± 6.7	22.3 ± 6.2	20.9 ± 6.6
Spearman Correlation	ρ=.269	ρ=.283	ρ=.306

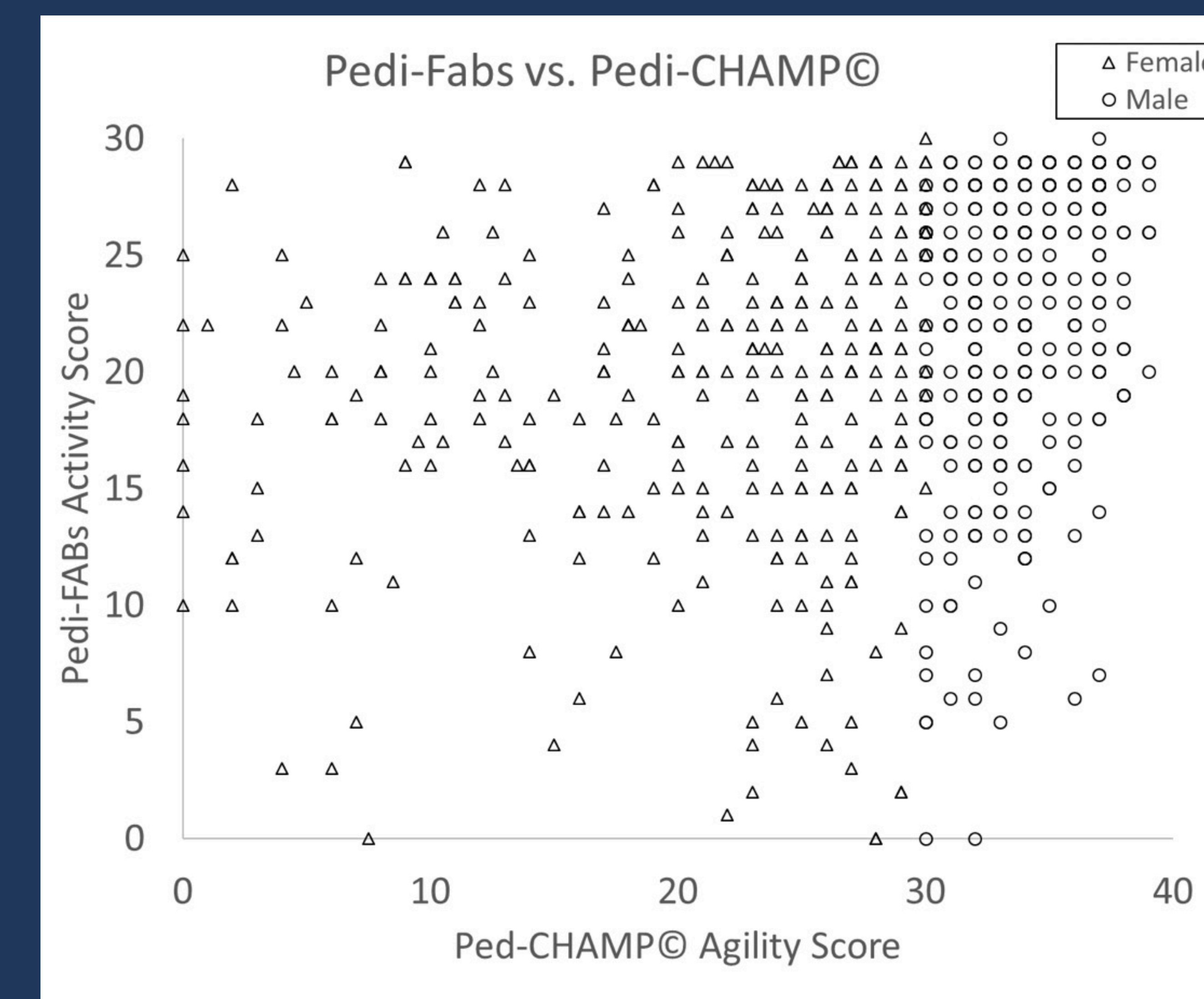


Figure 1. There were no correlations found between the Pedi-FABS and the Pedi-CHAMP<sup>®</sup>

## CONCLUSIONS

- The Pedi-FABS survey is a well-utilized and validated tool for assessing overall functional and sports-related activity in youth.
- It does not, however, assess the quality of movement.
- Therefore, functional outcomes measures should also include performance-based evaluations that also account for movement patterns, neuromuscular control and gross motor function.

## REFERENCES

1. Coyle C, Jagernauth S, Ramachandran M. Tibial eminence fractures in the paediatric population: a systematic review. *J Child Orthop.* 2014;8(2):149-159.
2. Adams AJ, Talathi NS, Gandhi JS, Patel NM, Ganley TJ. Tibial Spine Fractures in Children: Evaluation, Management, and Future Directions. *J Knee Surg.* 2018;31(5):374-381.
3. Luhmann SJ. Acute traumatic knee effusions in children and adolescents. *J Pediatr Orthop.* 2003;23(2):199-202.

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