

User Requirements

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SportSURF Launch Seminar
17th November, 2005



Sport Surfaces Research Forum Supported by:

EPSRC

Do existing surface meet the requirements of the user?



What do the users see as important?

Do existing surface meet the requirements of the user?

Current surfaces are designed and built with little to no input from the end user.

There is no systematic approach to evaluate feedback from users to ascertain the quality of existing surfaces.

Many surfaces are designed based on past experience/expertise and ‘what has worked well in the past!?’

What do the users see as important?

The performance requirement of the user are not fully understood.

Factors seen as important by one group of users may not be considered important by another!

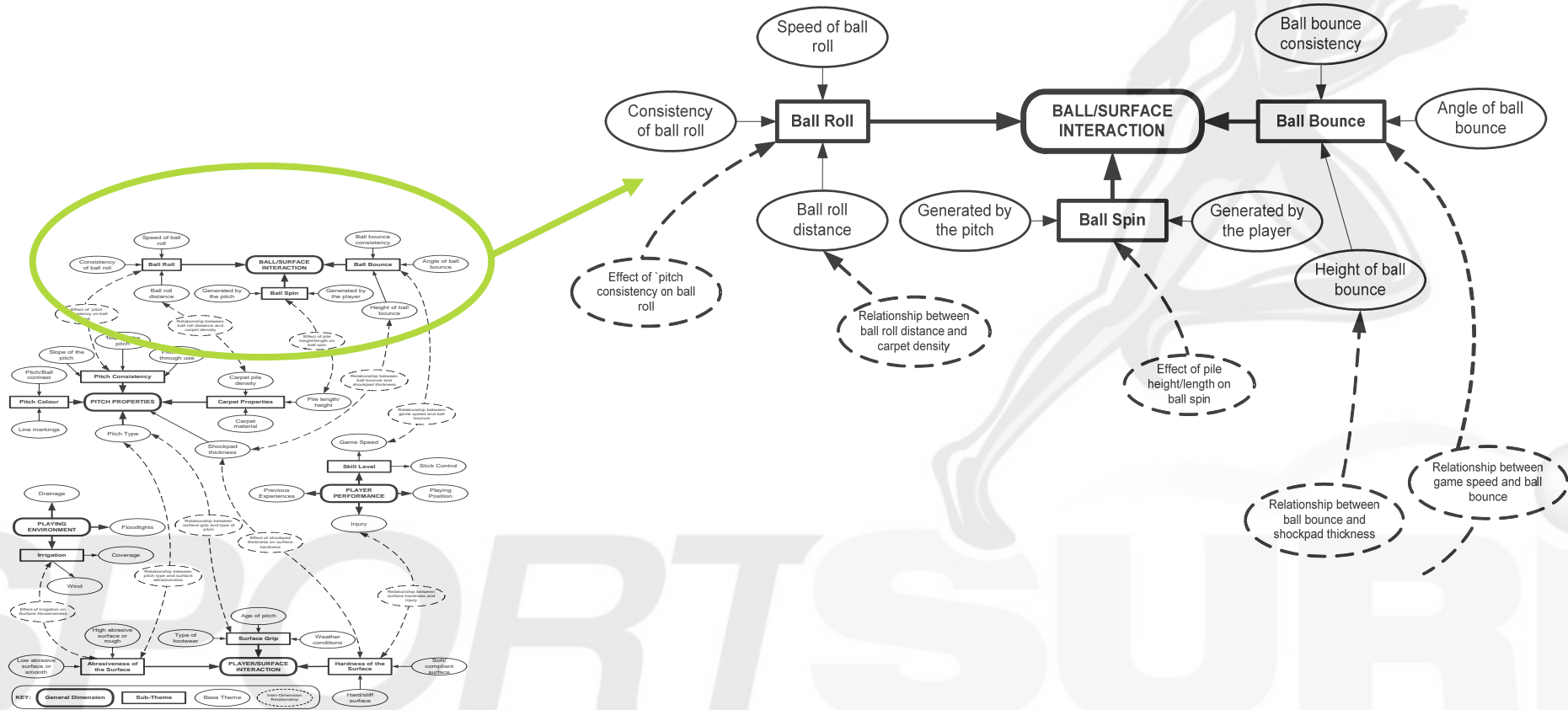
The preferences of users may be different between sports, skill level and even playing positions.

Case Study (Field Hockey)

Three Significant Sections of Data Collection:

1. In-depth Qualitative Subjective Interviews (N = 22)
2. Quantitative Preference Questionnaires (N = 204)
3. Pitch Specific Questionnaires (N = 87)

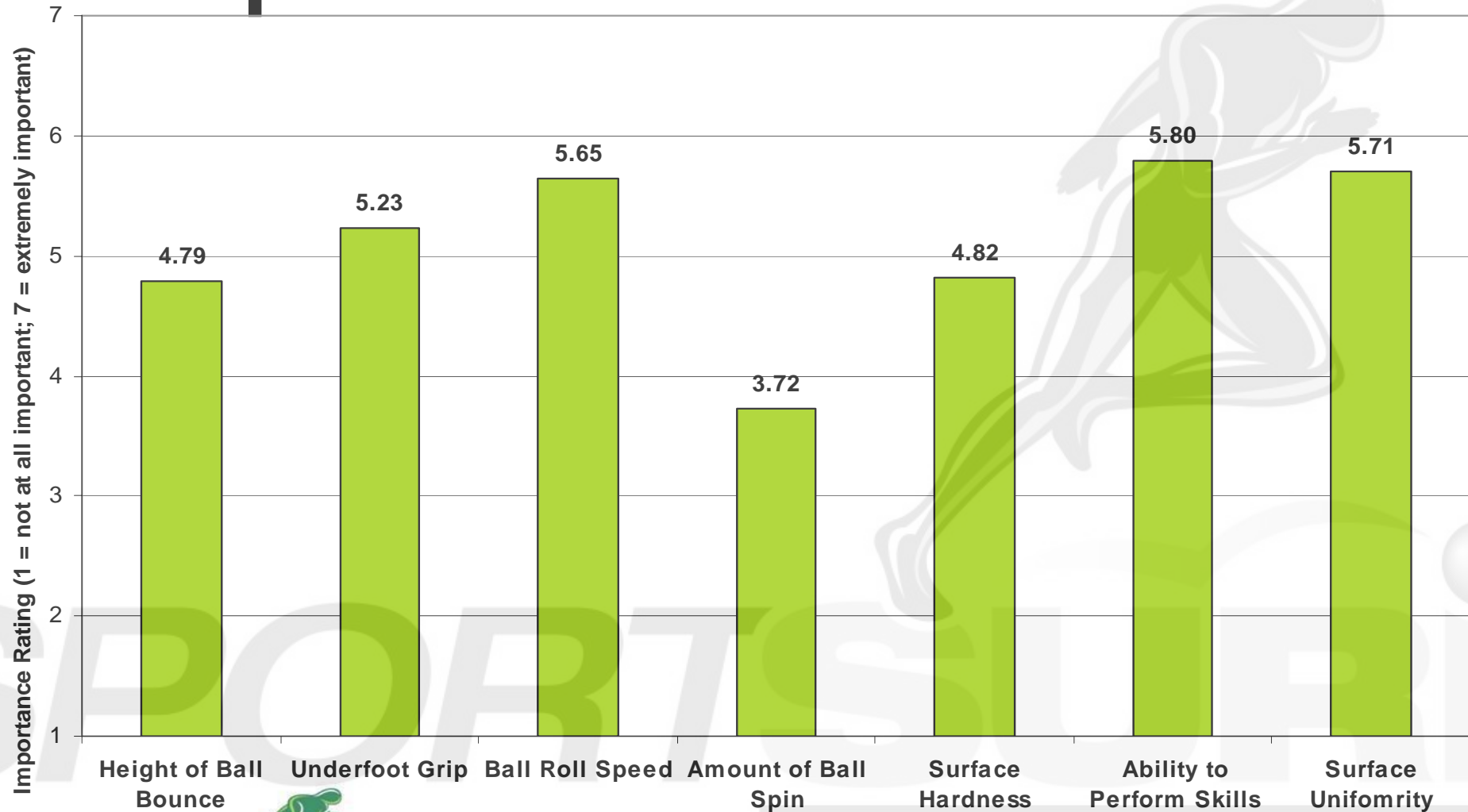
Structured Relationship Model



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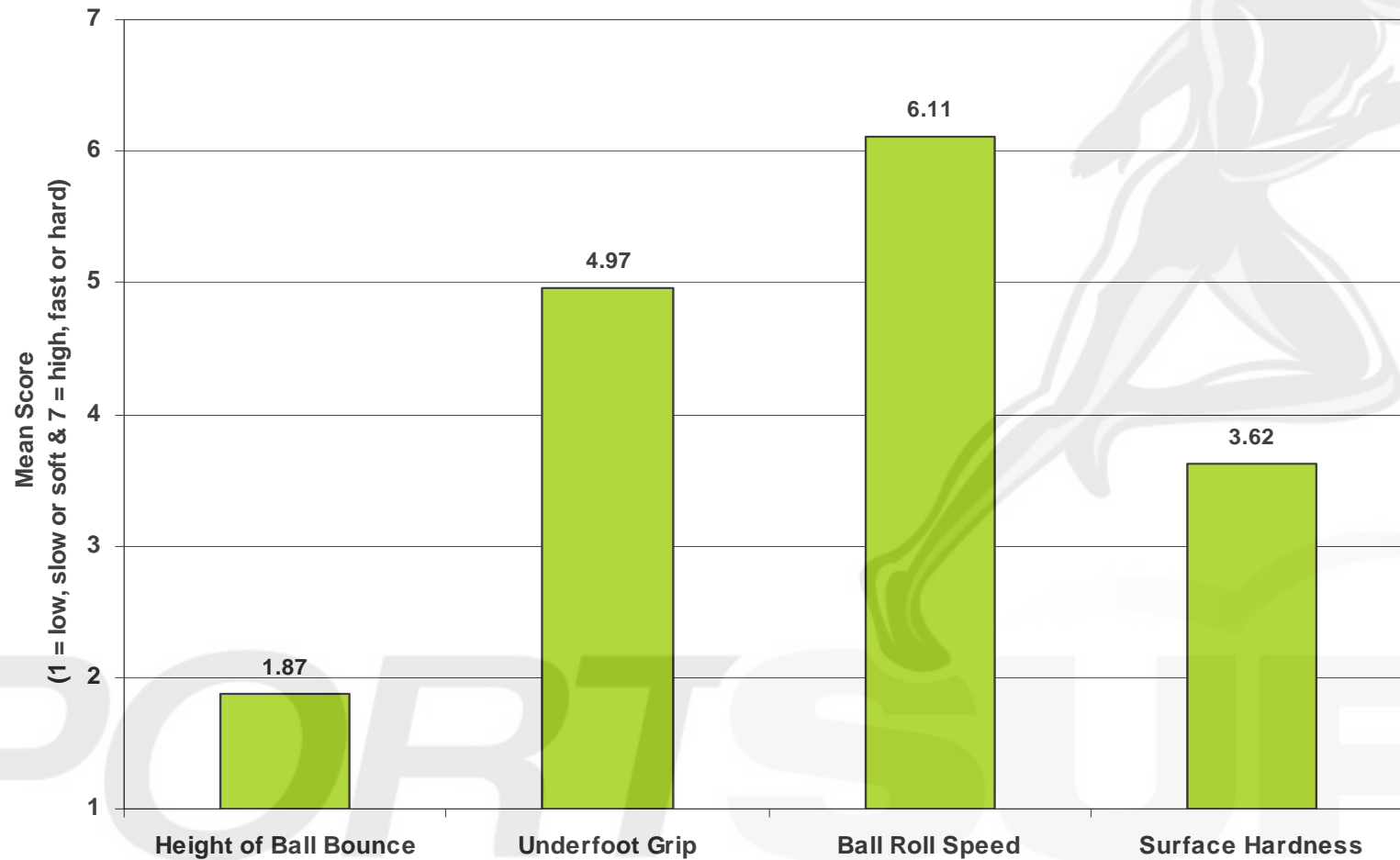
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Importance Characteristics



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Players' Preferences



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Surface Measurements

- 6 pitches measured for:

Ball Rebound Resilience/Height

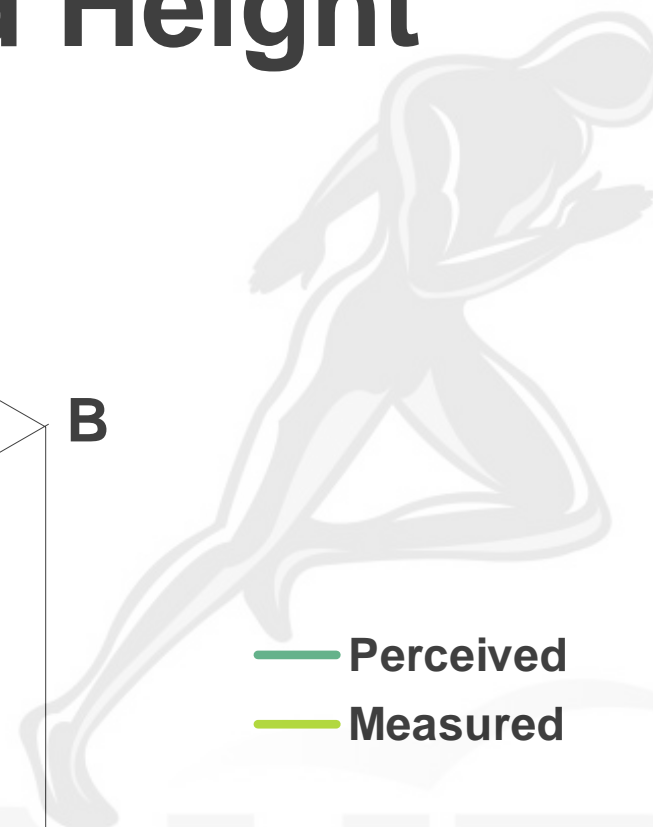
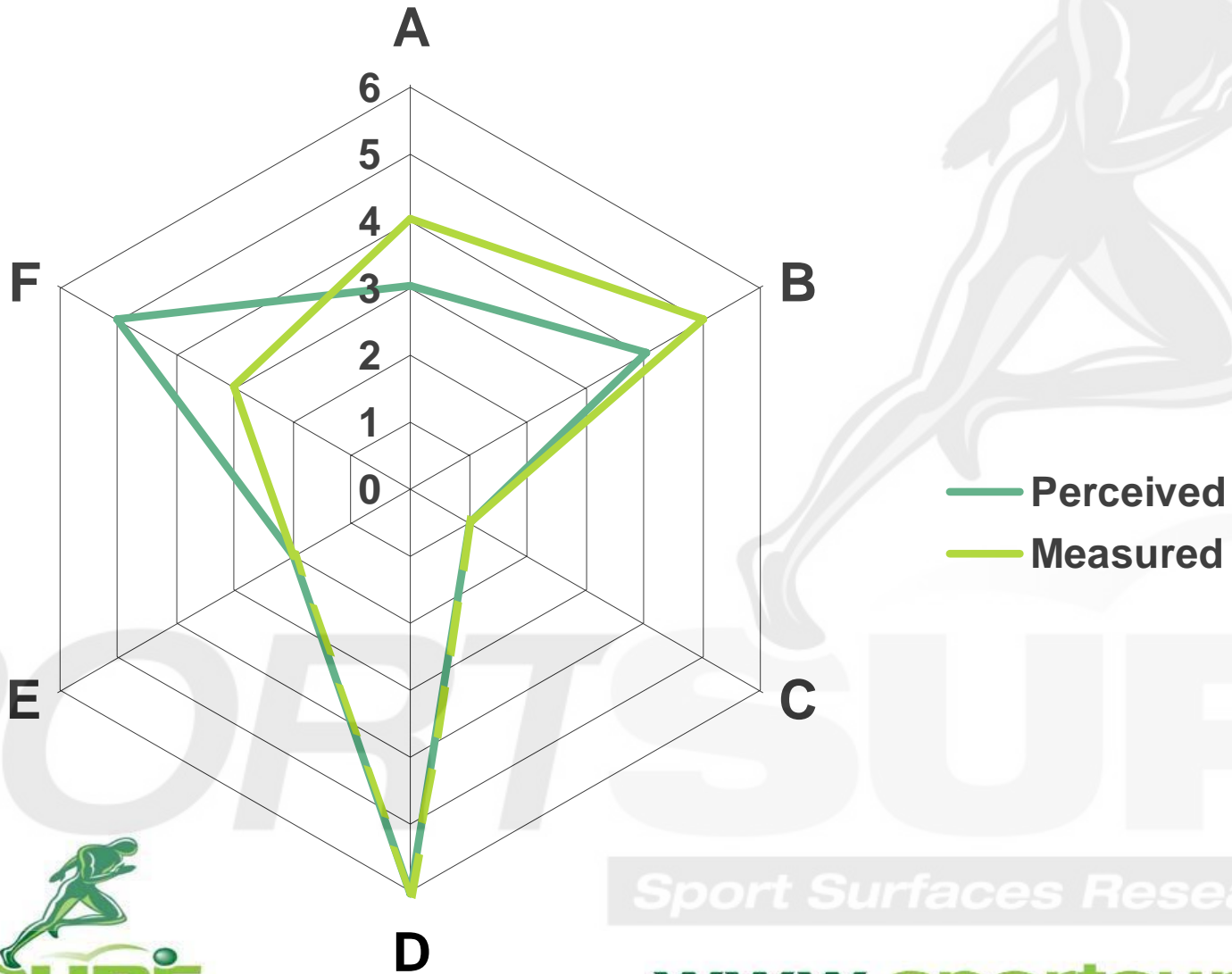
Underfoot Grip (both Translational and Rotational)

Ball Roll Distance/Surface Pace

Surface Hardness/Stiffness (Berlin and Clegg Hammer)

- Pitches assessed adhering to FIH protocol

Ball Rebound Height



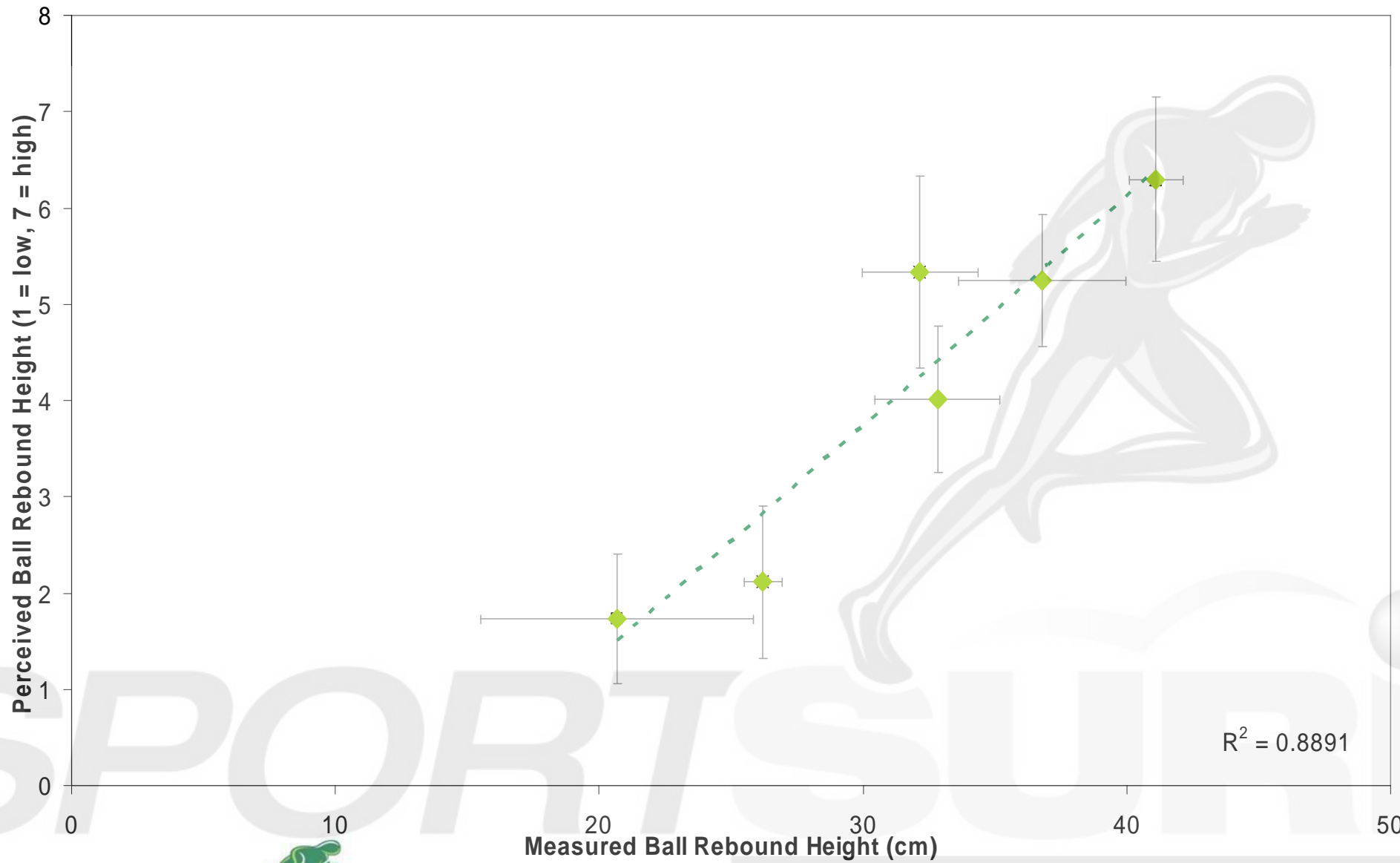
— Perceived
— Measured

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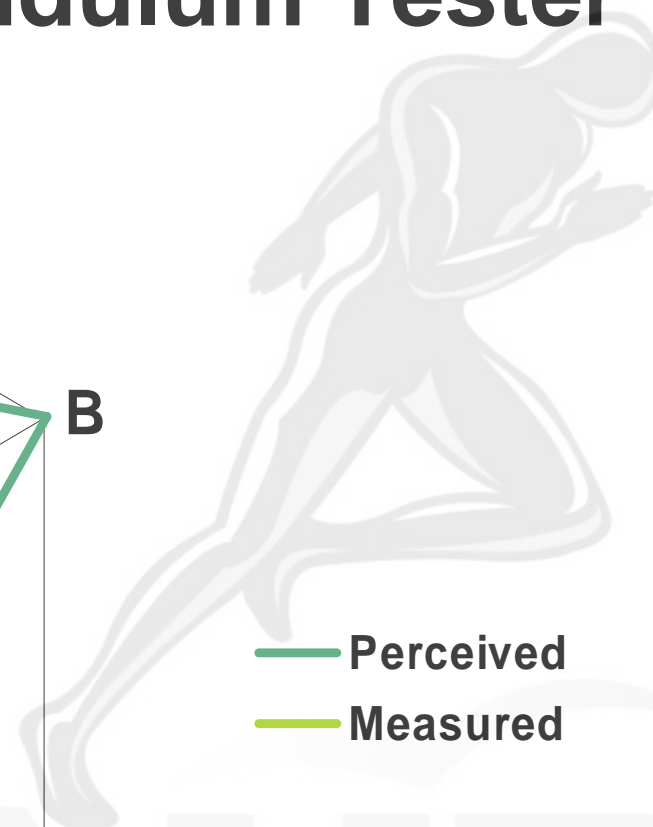
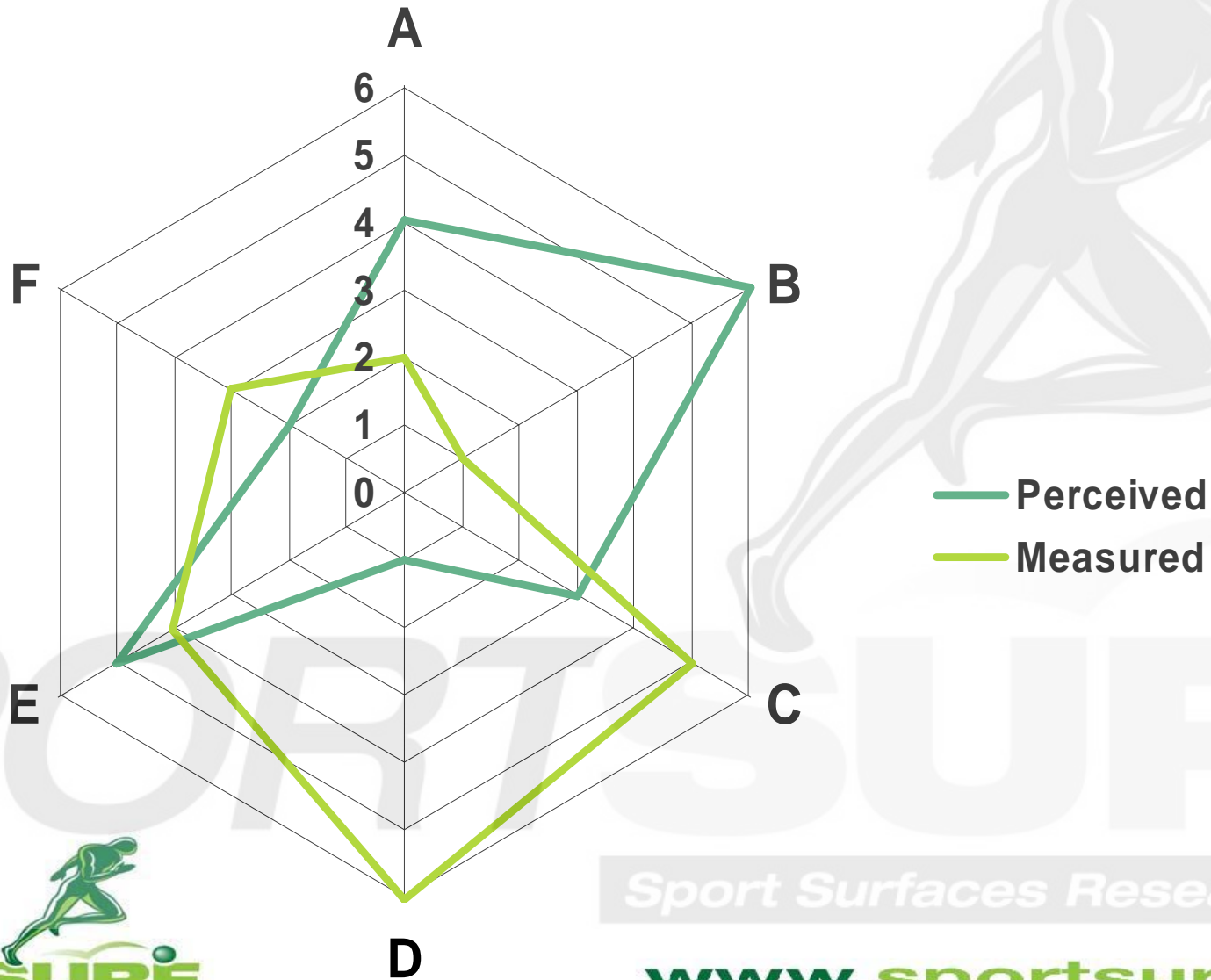


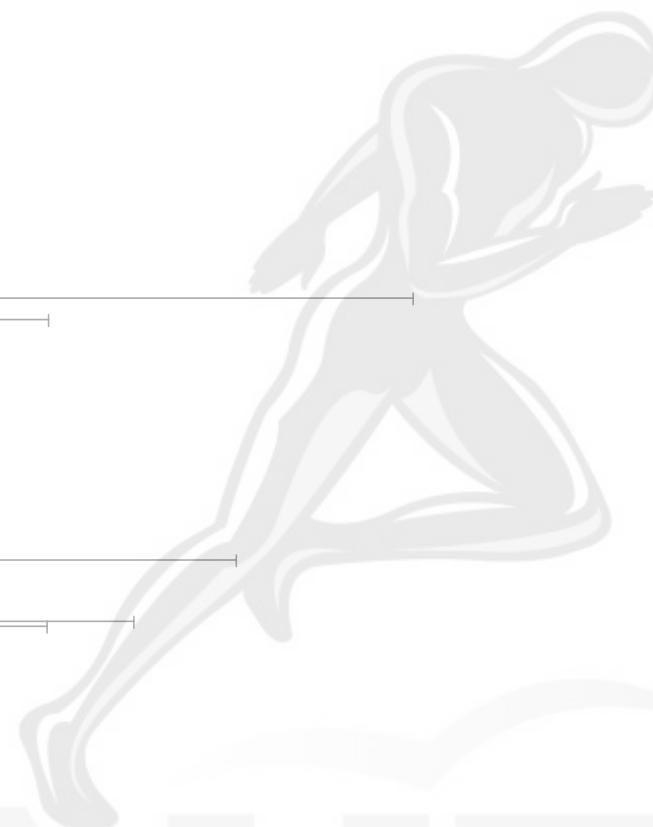
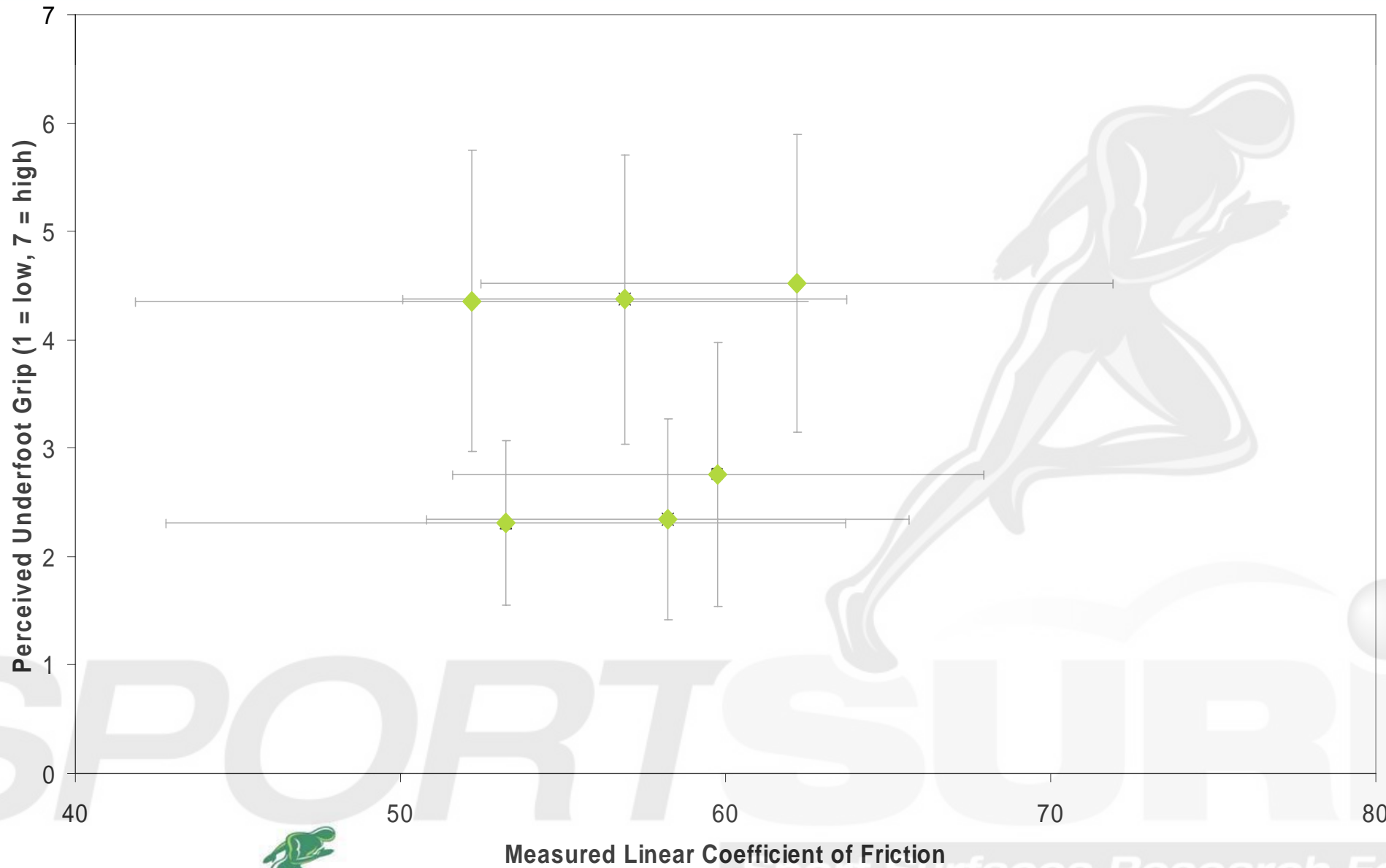
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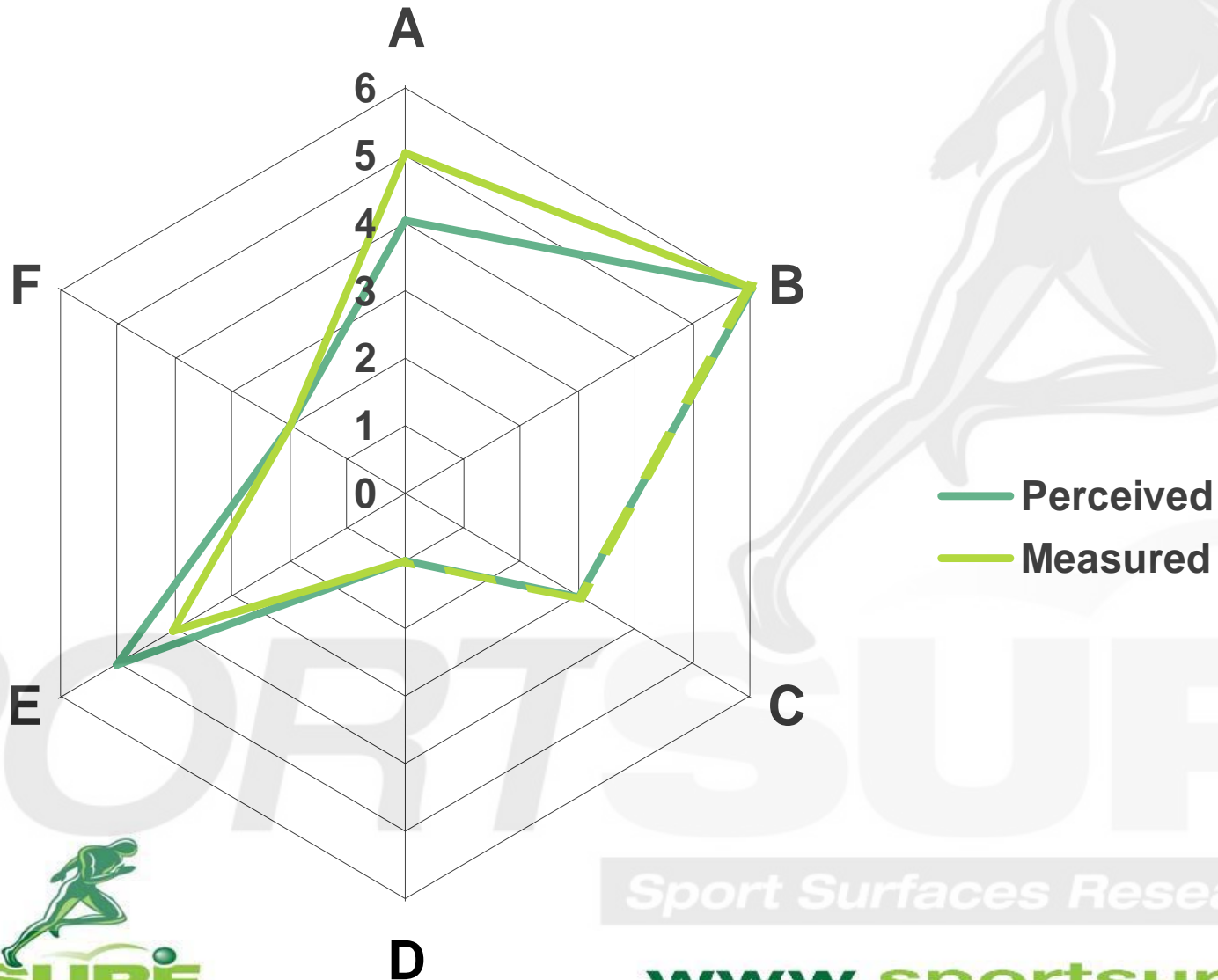
Underfoot grip – Pendulum Tester

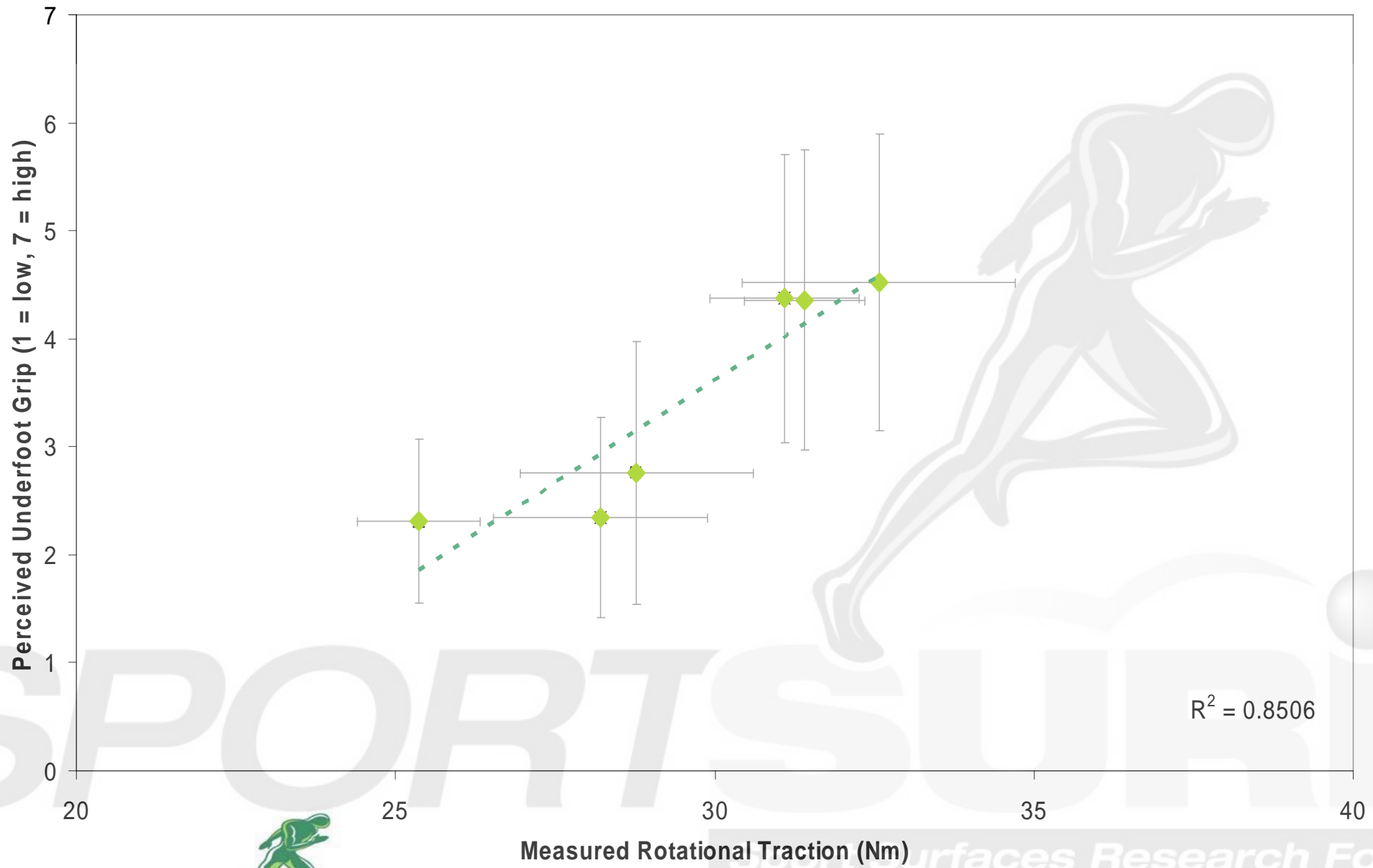




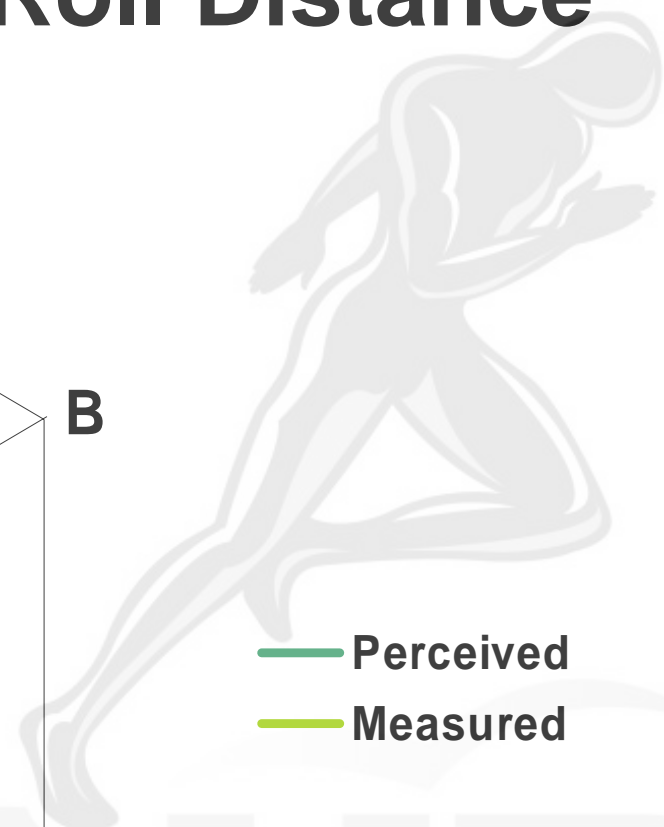
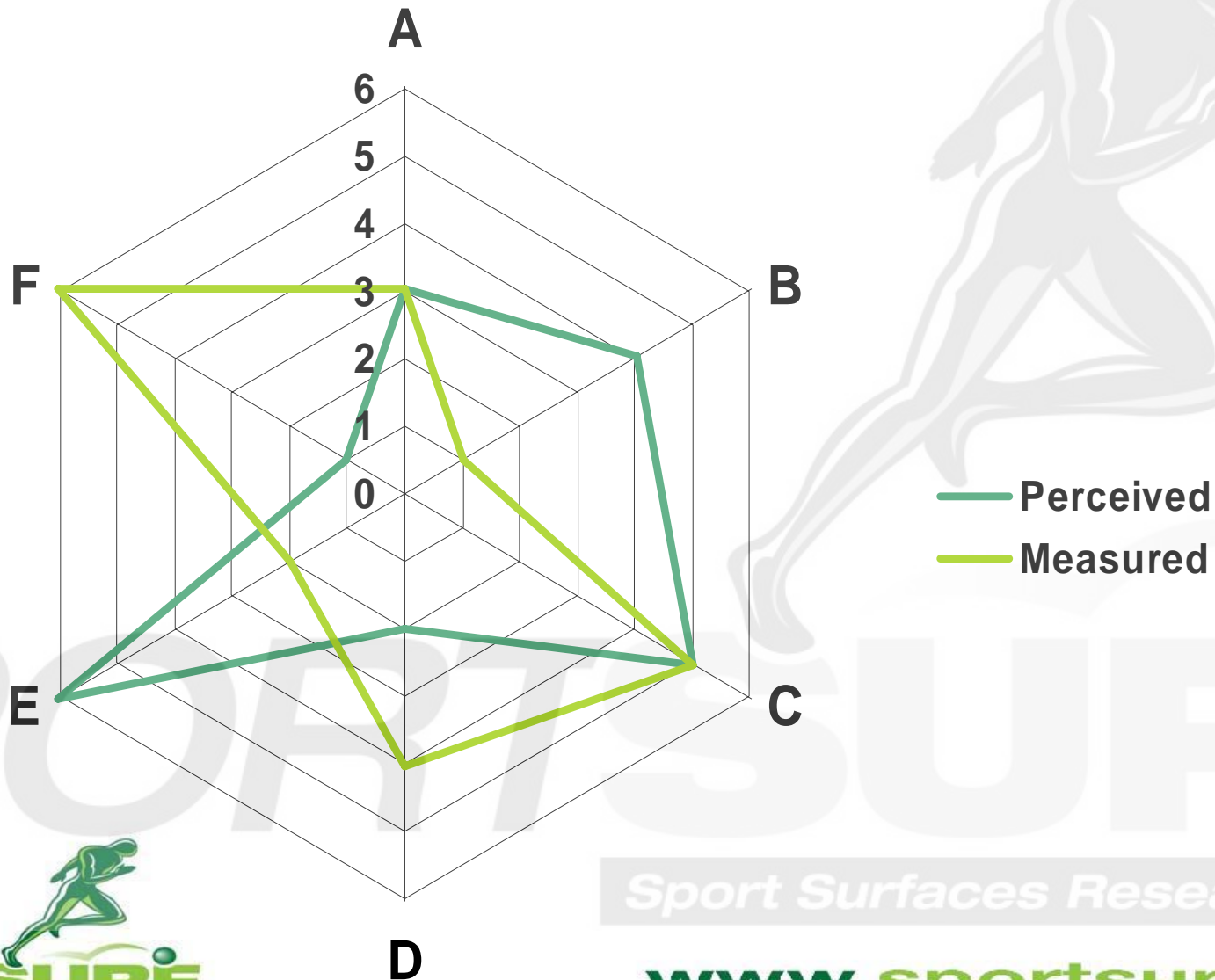
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Underfoot grip – Rotational Tester

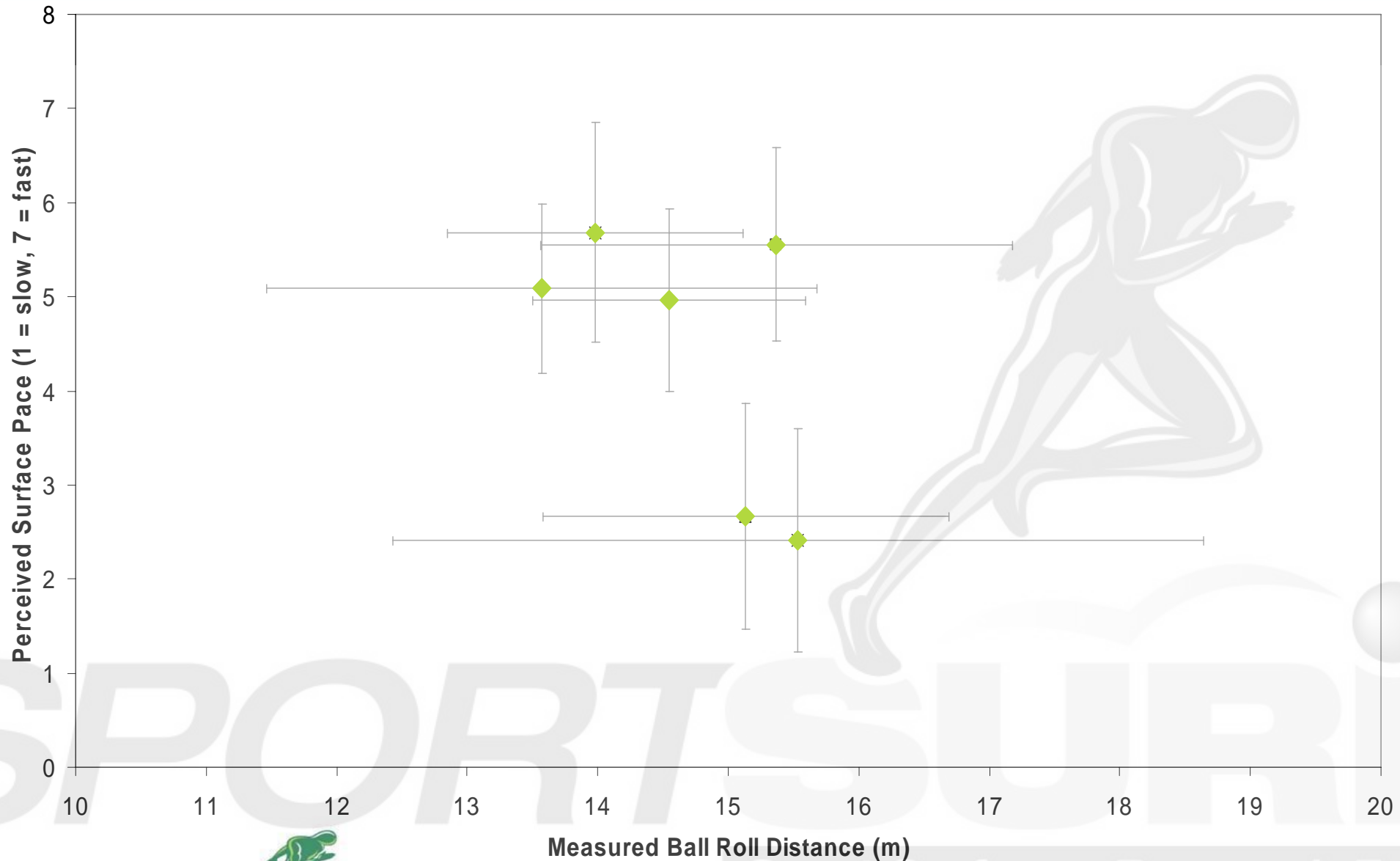




Surface Pace - Ball Roll Distance



— Perceived
— Measured

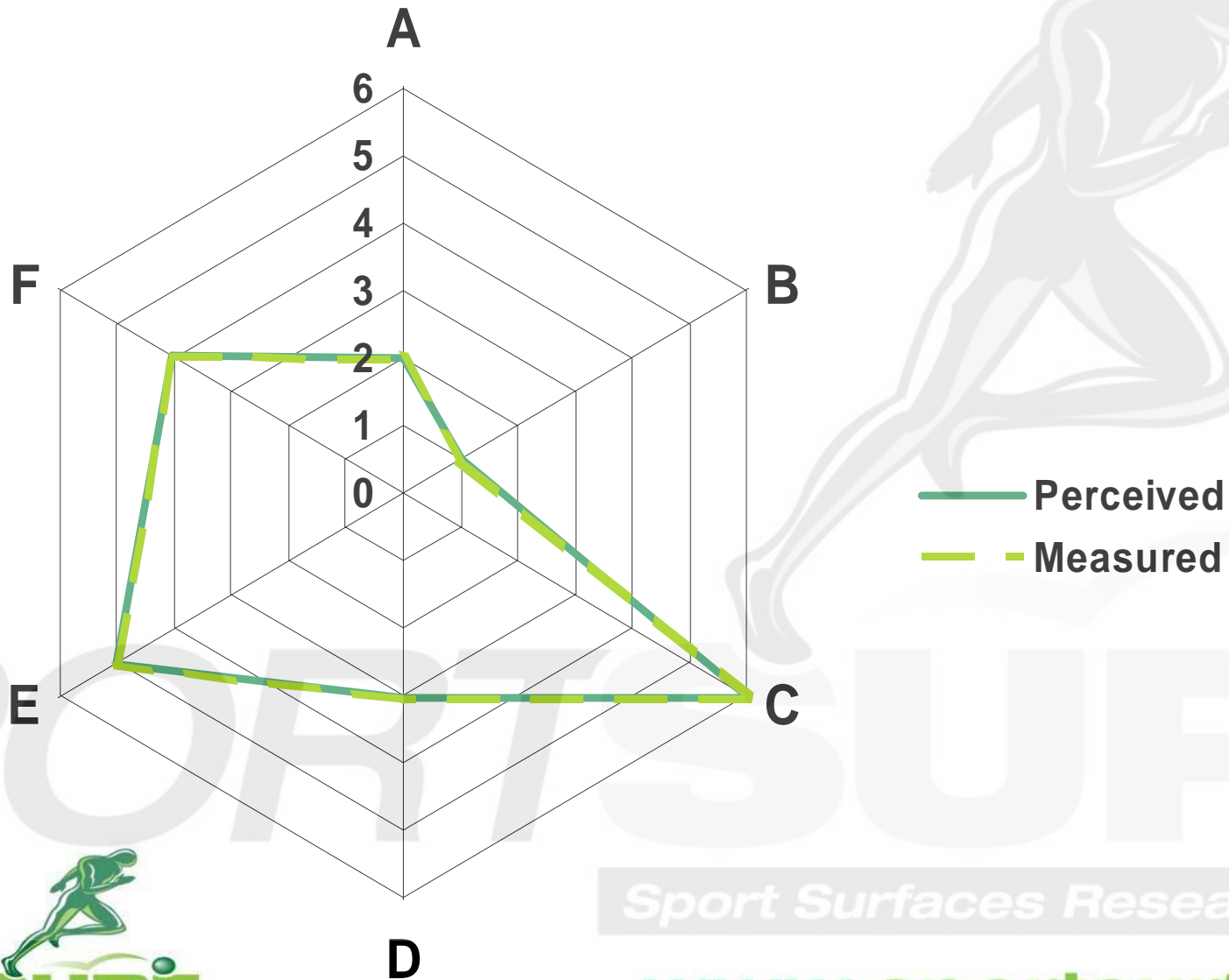


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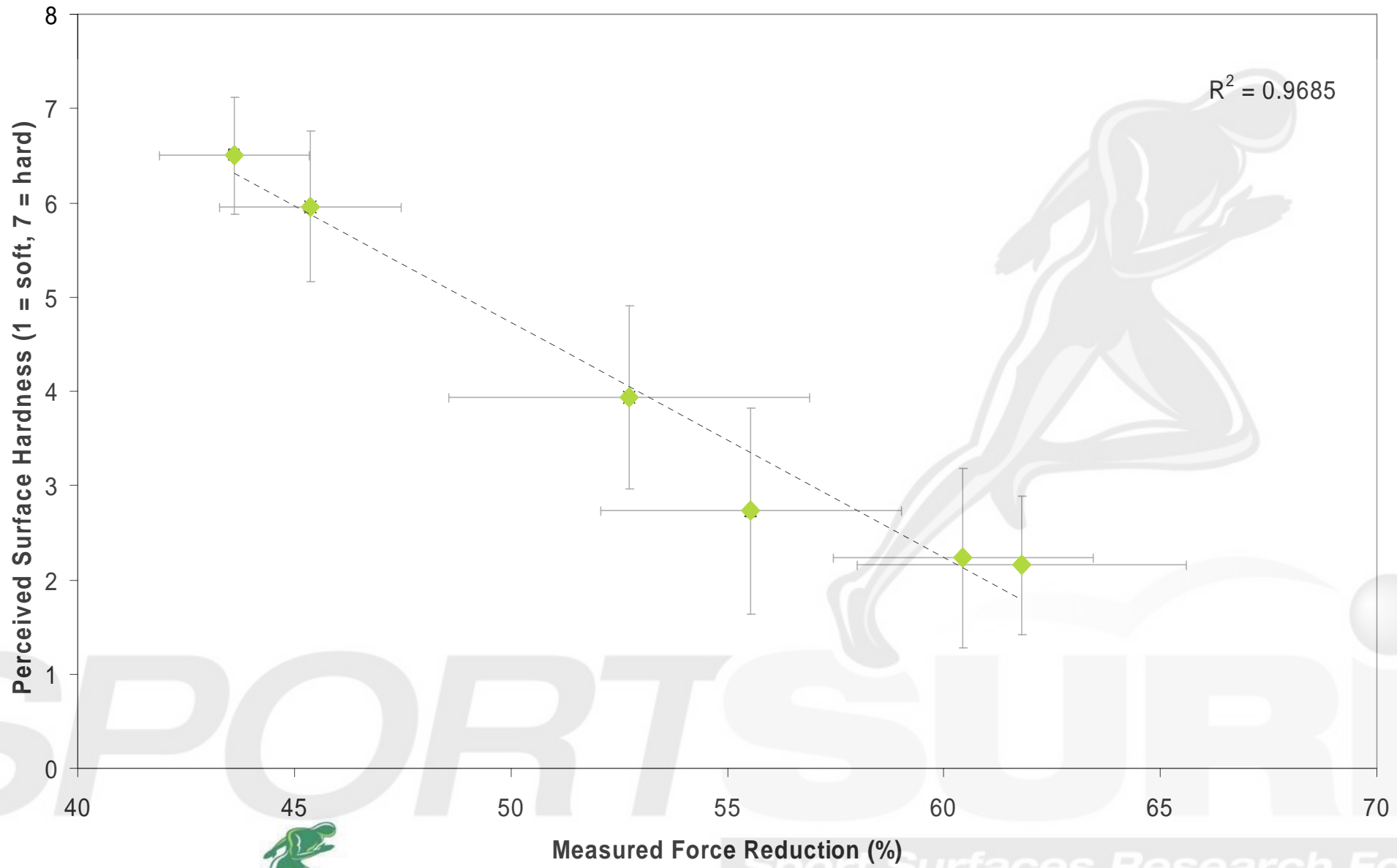
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Surface Hardness - Berlin



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Conclusion

- Players perceived performance characteristics were identified and the 'ideal' surface features were obtained.
- Players are sensitive to pitch differences and the questionnaire was a suitable method to elicit perceptions for each surface.
- The usefulness of Berlin artificial athlete, ball rebound resilience and rotational traction test equipment/methods to index/classify sports surface have been reinforced by strong correlations with players perceptions.
- The appropriateness of 'ball roll' and 'pendulum friction' tests have been brought into question.

3rd Generation Pitches for Rugby

- A questionnaire survey of elite Rugby (league and union) players was conducted to elicit opinions on the suitability of artificial surfaces.
- Natural grass in ideal conditions was preferred by the majority of players'. However, in 'bad' weather conditions artificial alternatives were considered a better option.



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3rd Generation Pitches for Rugby

Once familiarised with artificial turf it was considered to provide an excellent facility to train and develop skills.

A high proportion of players suggested their game had changed through training regularly on artificial turf.



Summary

- Before we can become confident in producing improved sports surfaces we need to understand the requirements of the user.
- A more systematic approach to elicit user requirements is necessary and should become more widely used.
- The influence of the surface on a sport and sports technique is not always clear and needs to be investigated.



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