A PLAYER-PERCEPTION STUDY OF THE COMFORT OF SOCCER BOOTS

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Aims

Investigate the factors influencing the comfort of soccer boots.

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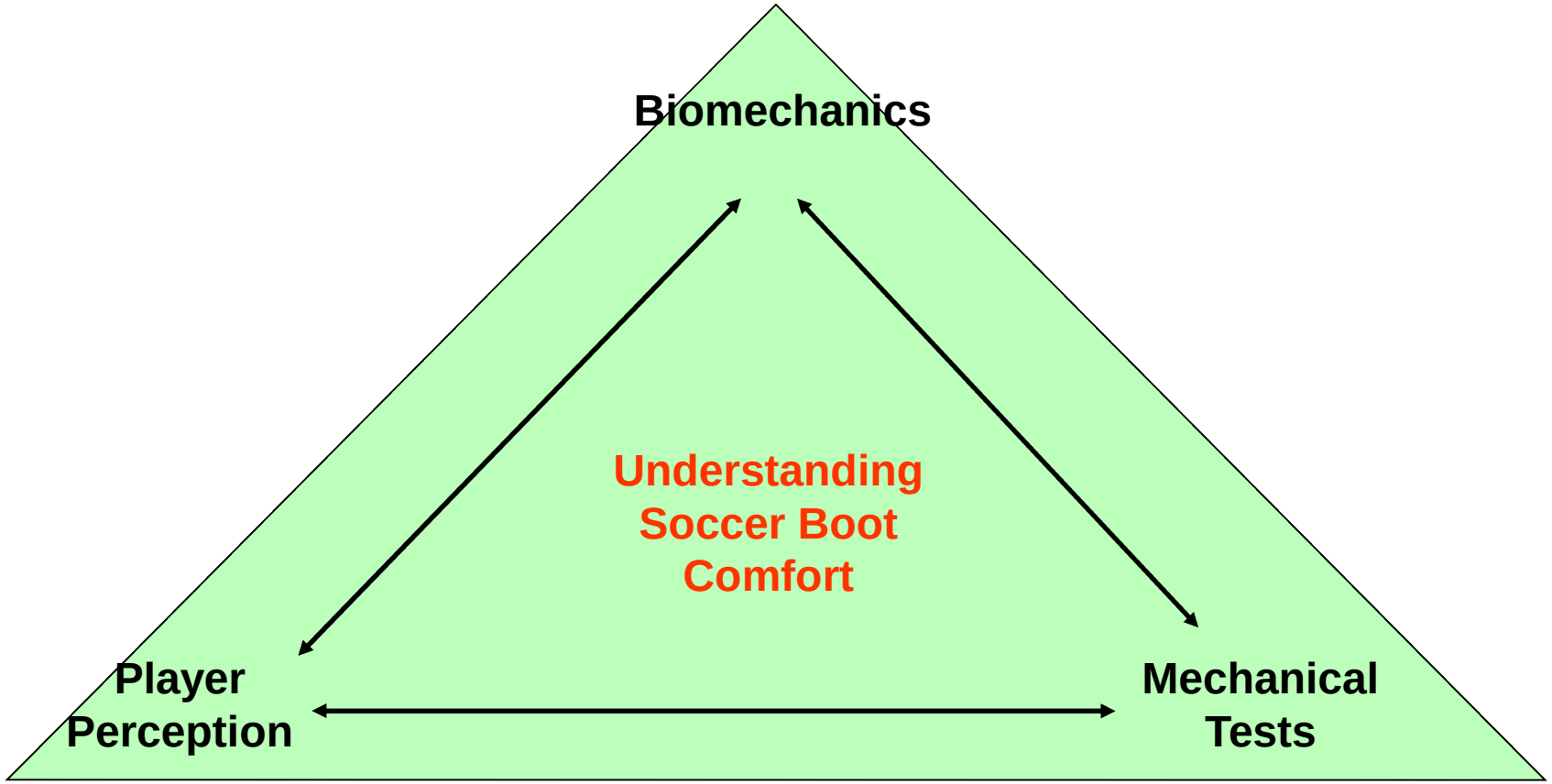
Motivation

On-Line Survey

- Surveyed 1343 active football players
- 100% claimed to have experienced discomforts from their soccer boots.

Methodology



Player Perception Study

1. Player Interviews – Understand important aspects of comfort.
2. Subjective Questionnaire Design – Measure a player's response to a boot-insole combination.
3. Player Testing and Surveying – Survey the players to find their perception of each boot-insole combination.

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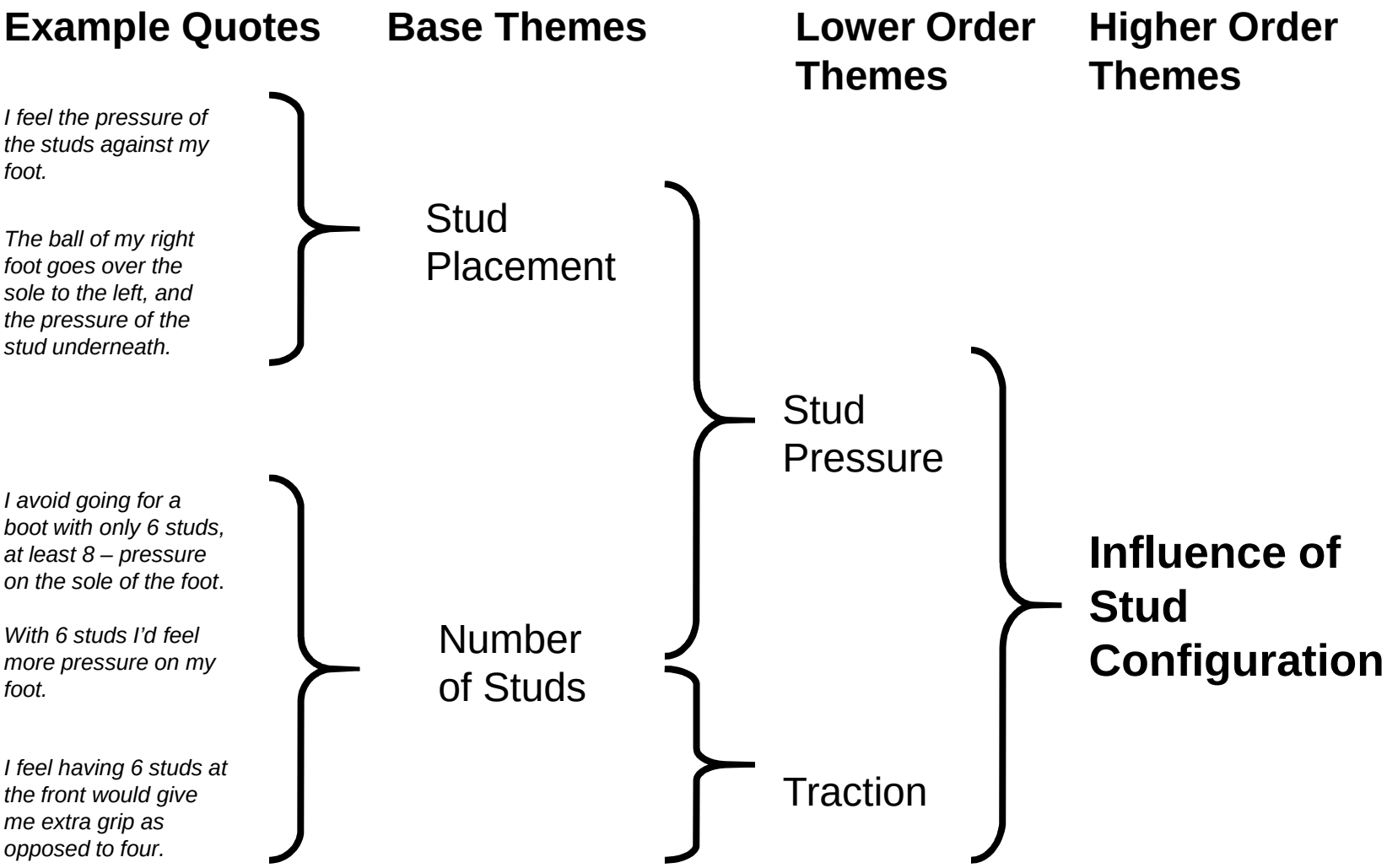
Player Interviews



Player Interviews

Higher Order Themes	**General Dimension**
Influence of……	
Stud Configuration	**STUD DESIGN**
Stud Material	
Stud-Surface Interface	
Stud Shape	

Player Interviews

Four General Dimensions were found relating to comfort

1. Stud Design
2. Boot Fit
3. Outsole Material
4. Playing Surface

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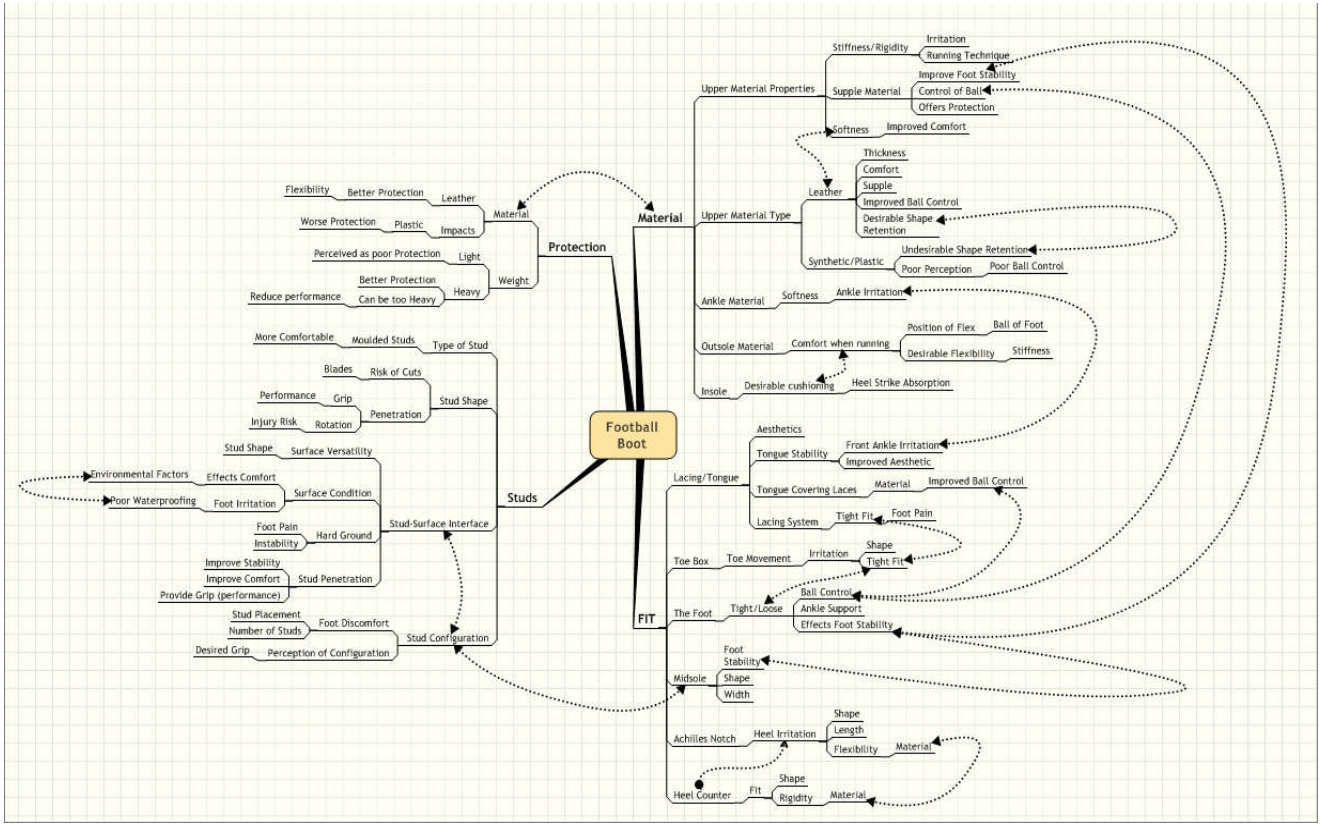
Questionnaire Design

Four General Dimensions



Relationship Model

Questionnaire Design

- **Subjective Questionnaire Design**

General: Comfortable	Uncomfortable	☐☐☐☐☐☐☐	
Boot Weight:	Heavy	☐☐☐☐☐☐☐	Light
Stud Grip: Grip	High Grip	☐☐☐☐☐☐☐	Low
Outsole:	Flexible	☐☐☐☐☐☐☐	Stiff
Stud Pressure:	Low	☐☐☐☐☐☐☐	High
Foot: Unstable	Supported	☐☐☐☐☐☐☐	
Achilles Fit Comfortable	Uncomfortable	☐☐☐☐☐☐☐	

Player Perception Study

1. Player Interviews – Understand important design aspects.
2. Subjective Questionnaire Design – Measure a player's response to a design.
3. **Player Testing – Survey the players to find their perception of each design.**

Player Testing

Investigate the factors influencing the comfort of soccer boots.

Boots

A. 6-2 stud configuration

B. 4-2 stud configuration

Prototype Insoles

1. Poron material (higher mechanical cushioning)
2. Gel/Poron combination (lower mechanical cushioning)

Four Combinations A1, A2, B1,B2

Surfaces

1. Natural Surface
2. Third generation artificial surface

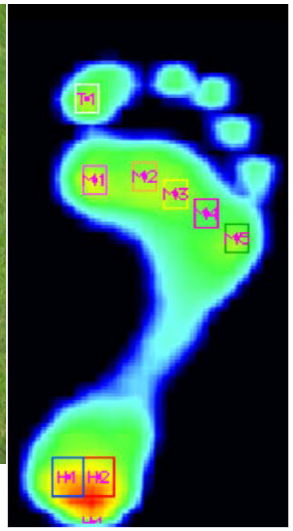
Player Testing

Each player was asked to repeat three trials for the four combinations of boots / insoles.

- Steady State Running
- 180º Turning

High Speed Video – Recorded the Player Movements.

Pressure Insoles – Record Foot Pressure.



Player Testing

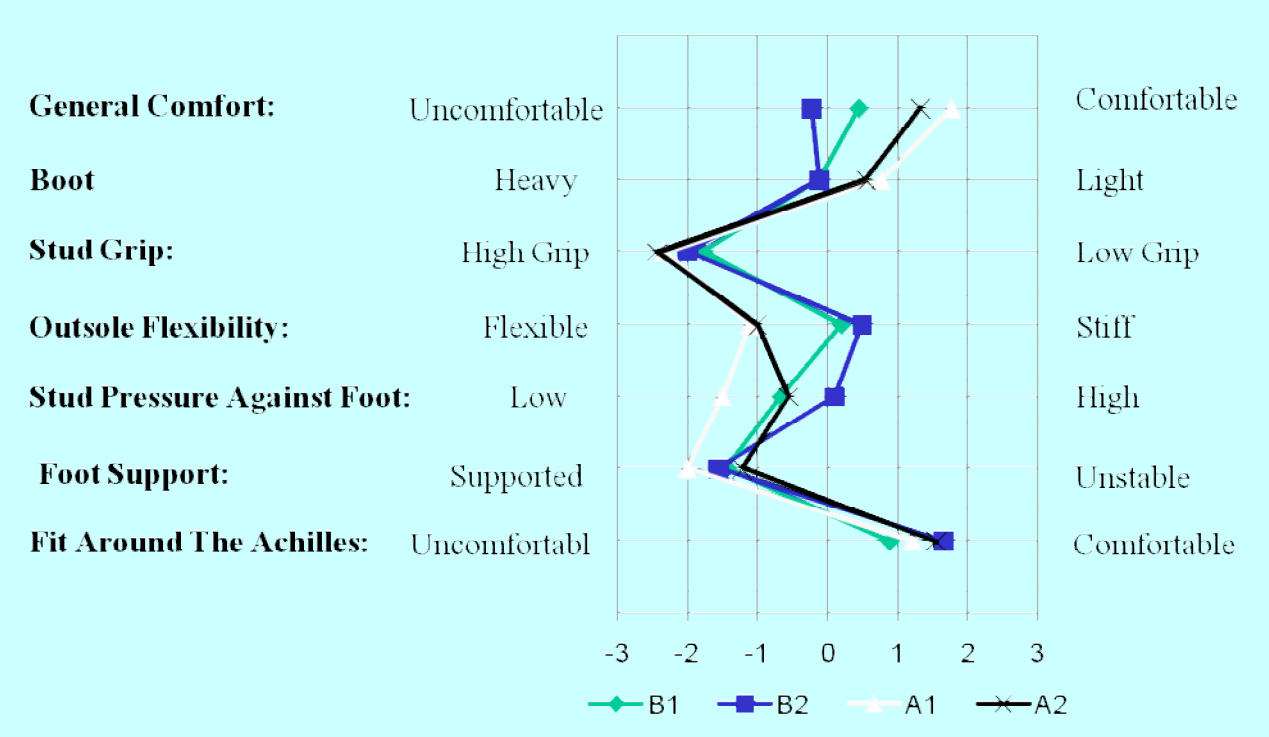
- After repeating the trials the players were asked to complete the subjective questionnaire.

Perceived differences between the boots/insoles:

•General Comfort

•Stud Pressure

•Outsole Flexibility



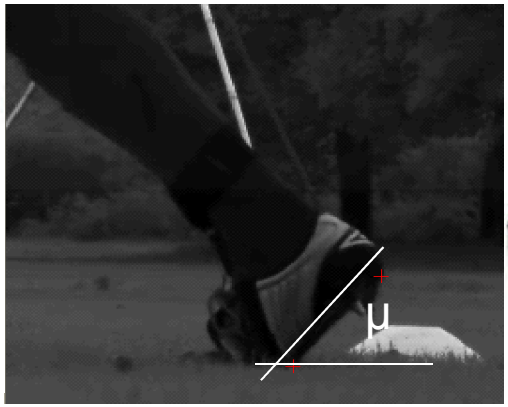
Outsole

Players associated boot outsole flexibility with comfort.

A

- Higher Comfort
- Flexible Outsole

Boot A
40.7 ± 4.4º



B

- Lower Comfort
- Stiffer Outsole

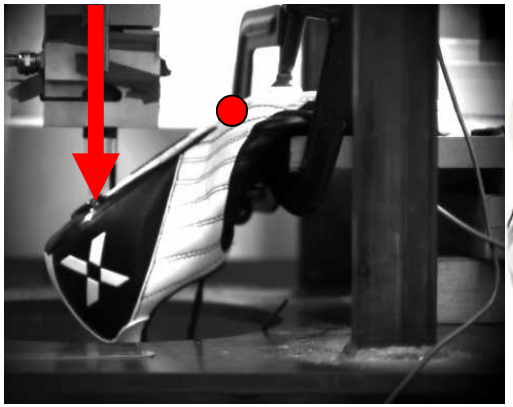
Boot B
35.9 ± 4.8º

Outsole

Players associated boot outsole flexibility with comfort.

A

- Higher Comfort
- Flexible Outsole



B

- Lower Comfort
- Stiffer Outsole

Boot A
40.7 ± 4.4º

42.4 ± 2.7 (N)

Boot B
35.9 ± 4.8º

59.6 ± 4.5 (N)

Difference in outsole stiffness can have a significant influence on the overall perception of soccer boot comfort

Stud Pressure

Players associated stud pressure with comfort.

A1

- Highest Comfort
- Lowest Stud Pressure

B2

- Lowest Comfort
- Highest Stud Pressure

Combination A1

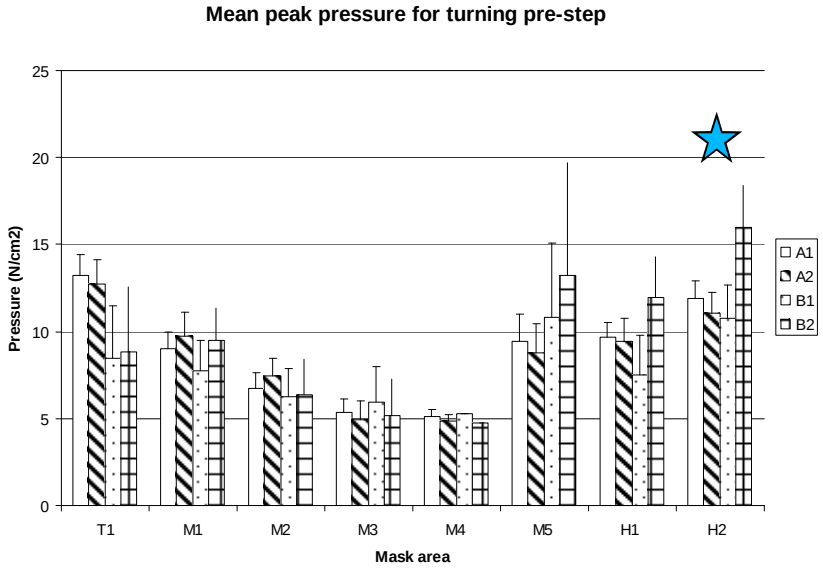
- More studs to distribute the force
- Insole 1 provided the best force attenuation

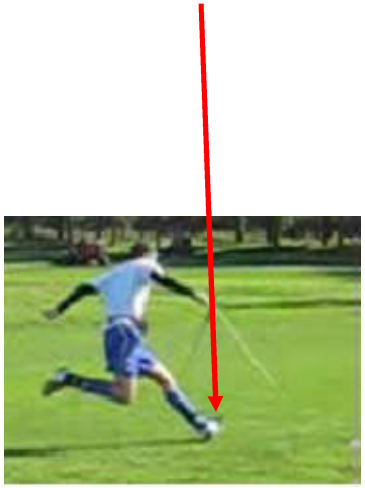
Stud configuration and insole has a large influence on the overall perception of soccer boot comfort

Stud Pressure

Players associated stud pressure with comfort.

Only statically significant (B2>A1) at the lateral heel location during the pre turn (breaking) step of the turning movement





During this movement the initial contact is at the lateral aspect of the heel*
Pressure was high enough for cushioning effects of insoles to be revealed

*__Smith *et al*. 2004__. Ground reaction force measures when running in soccer boots and soccer training shoes on a natural turf surface

Summary

Conclusions

•Players can perceive differences in stud pressure between insole designs.

•Outsole flexibility effects players perceived comfort levels.

•Important to use sport-specific movements when testing footwear conditions.

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Acknowledgements

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?QUESTION?

Summary

Conclusions

- Players can perceive differences in stud pressure between insole designs.
- Outsole flexibility effects players perceived comfort levels.
- Important to test specific insole/boot combinations when choosing an insole.

Considerations for Future Work

- Testing on a harder surface may reveal differences.
- Standardising the turning movements may reveal trends.
- Increasing the sample size will improve the statistical significance.
- Analysing the body kinematics may reveal points of interest

Thankyou

Acknowledgements

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?QUESTION?