Exploring the relationship between floor type and risk of injury in netball.

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So, why is this important?

- 5.2 million Australians suffer sports injuries each year.
- Injury is a major reason for people leaving a sport and becoming less active.
- Netball is the most popular team sport in Australia.
- But netball also ranks amongst the top sports for sporting injuries in Australia.
- Ankle and knee injuries make up more than two thirds of all netball injuries (Medibank Private Safe Sports Report, 2006).
- To date, only a limited range of surface types have been studied.
- Decision was therefore made to undertake an injury survey to quantify injury rates and describe injury mechanisms on the various court surface constructional styles used in netball.
Research suggests that the magnitude and repetitive nature of the high breaking forces experienced in netball, may contribute to the high incidence of lower limb injury.
Ground Reaction Forces on landing from a High Running Pass (R)

Horizontal Ground Reaction Force
   Medial Lateral Force
   Rx

Vertical Ground Reaction Force
   3.9 to 4.3 times body weight
   Rz

Horizontal Ground Reaction Force
   Anterior Posterior Force
   4.2 to 4.6 times body weight
   Ry
a) Establish the extent and characterisation of the injury occurrence.

b) Establish the aetiology, mechanisms and risk factors of sports injury.

c) Introduce preventative measures through the development of injury prevention programs.

d) Assess effectiveness of injury prevention programs by repeating step a).

(van Mechelen, Hlobil et al. 1992)
a) Establish the extent and characterisation of the injury occurrence (Literature/Injury Survey)

b) Establish the aetiology, mechanisms and risk factors of sports injury (Literature/Injury Survey)

c) Introduce preventative measures through the development of injury prevention programs. (Develop and install prototype indoor and outdoor surfaces)

d) Assess effectiveness of injury prevention programs by repeating step a). (Continue Injury Survey now including prototype surfaces)

(van Mechelen, Hlobil et al. 1992)
## Netball Injury Reporting Form

### General Information
- **Netball type being played:**
  - D Training
  - D Warm-up
  - D Contact
  - D Offense
- **Name of person injured:**
- **Date of injury:**
- **Time of injury:**

### Physical Characteristics
- **Age:**
- **Gender:**
- **Height:**
- **Weight:**

### Level of Activity at the Time of Injury
- **D Indoor**
- **D Outdoor**
- **D Recreational**
- **D Club**
- **D Secondary School**
- **D Primary School**

### How Would You Describe Your Level of Fitness?
- **D Poor**
- **D Average**
- **D Good**
- **D Very Good**

### Game Specifics
- **Sequence of injury:**
- **Physical position at time of injury:**
  - D On Knees
  - D On Feet
  - D On Hands

### Name of Netball Centre
- **D Indoor**
- **D Outdoor**

### Type of Outdoor Court Playing on:
- **D Grass**
- **D Astroturf**
- **D Synthetic**

### Surface Playing Comfort Experienced
- **D Comfortable**
- **D Uncomfortable**
- **D Very good**
- **D Quite comfortable**

### Level of grip provided by surface:
- **D Excellent**
- **D Poor grip**
- **D Very poor**
- **D Quite good**

### Weather Conditions at Time of Injury
- **D Cold**
- **D Cool**
- **D Warm**

### Additional Information
- **D Bloody**
- **D Bruised**
- **D Painful**
- **D Other**

### Additional Comments:

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**Unisa:**

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**Netball Australia:**

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**www.netballaustralia.com**
Each surface included in the survey will undergo testing and evaluation, and the following characteristics recorded:

- Surface category
- Surface condition
- Surface age
- Coefficient of friction
- Vertical force reduction
- Horizontal force reduction
- Vertical deformation
- Thermal performance
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Conclusion

- The health, safety and comfort of athletes must be a prime consideration when selecting a surface sport.
- The interaction between the athlete, shoe and surface all combine with the particular sport being played on that surface, to determine the type and seriousness of an injury.
- It is not however realistic to assume that the level of fitness of an athlete can be altered or that the type, age or condition of the footwear used can be controlled, however there does exist an opportunity to select an appropriate surface on which they will be training and competing.
- Selecting an appropriate surface will not eliminate sports injury, but it could reduce the incidence of injury by better managing extrinsic risk factors.
Thank You...
References


