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## Physiological and Biomechanical Loads in Small Sided Field Hockey Games

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### INTRODUCTION:

When assessing training load, a distinction can be made between physiological and biomechanical load [1]. The physiological load of field hockey is known to vary with different formats of small sided games (SSGs) [2]. However, little is known about the biomechanical loads of field hockey SSGs. Therefore, the aim of present study was to gain a more thorough understanding of biomechanical loads in field hockey SSGs in comparison to physiological loads.

### METHODS:

Two different SSGs (small: 5 versus 5, ~100 m<sup>2</sup> per player; large: 9 versus 9, ~200 m<sup>2</sup> per player) were performed by sixteen female elite field hockey athletes of the Dutch U-21 team during two experimental training sessions. Players were equipped with a global navigation satellite system worn between the scapulae, which measured player position, and three inertial measurement units on the pelvis and thighs, which measured lower body kinematics. The effects of SSG format on a variety of physiological (i.e., distances covered in various speed ranges) and biomechanical (i.e., mean absolute acceleration/deceleration, and time spent in several demanding body postures) load metrics were assessed using linear mixed models (significance level of  $p < 0.05$ ).

### RESULTS:

The physiological loads were higher for the large SSG. In contrast, most biomechanical load metrics were higher for the small SSG.

### CONCLUSION:

This study has shown that changing SSG format affects physiological and biomechanical load differently. Physiological loads appear to be higher for large SSGs, whilst biomechanical loads seem to be higher for small SSGs.

[1] Vanrenterghem et al. (2017)

[2] Gabbet (2010)

Topic: Training and Testing

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