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## **Infographic. Recommendations for hamstring injury prevention in elite football: Translating research into practice**

Buckthorpe M,<sup>1,2</sup> Wright S,<sup>3</sup> Virgile A,<sup>4</sup> Gimpel M<sup>3</sup>

1. Faculty of Sport, Health and Applied Science, St Mary's University, London, UK
2. Isokinetic Medical Group, Education and Research Department, FIFA Medical Centre of Excellence, Bologna, Italy
3. Southampton Football Club, Southampton, UK
4. College of Nursing and Health Sciences, University of Vermont, Vermont, USA

### **Corresponding author:**

Dr Matthew Buckthorpe

Faculty of Sport, Health and Applied Science, St Marys University Twickenham,

London,

UK,

TW1 4SX

Email: [matthew.buckthorpe@stmarys.ac.uk](mailto:matthew.buckthorpe@stmarys.ac.uk)

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Hamstring strain injuries (HSI) are consistently the most prevalent time-loss injury in football [1] and as such are an important issue in football medicine. Despite an ever-increasing wealth of information emerging on the aetiology of HSIs, their incidence in football are increasing.[1] This could be explained by the increased intensity and physical demands of football match play over the last decade;[2] but practitioners should also question their approach to injury prevention and physical preparation of players.

Within elite football, there is a large disconnect between evidence based practice and the actual interventions utilised by science and medical teams to prevent injuries. In line with an emerging body of evidence based research, we believe that preventing HSIs in elite football requires a holistic approach, which considers multiple risk factors and their inter-relations, implemented effectively.[3] In designing our injury prevention programme, we combine both the theory and the available evidence on HSI risk factors and intervention studies, as well as considering the context surrounding the player when designing our overall injury prevention approach.

Based on a 5-point strategy we use a judicious approach to interpreting the available evidence, blended with our experience which we believe represents current best practice. Our 5-point strategy detailed in our paper [4] includes: 1) hamstring strengthening, but we, like many teams in elite football, value the role of eccentric strength training, but do not adopt the full Nordic hamstring exercise programme.[5] Instead, we utilise a more holistic approach to hamstring muscle strengthening, one which recognises the need for optimal hamstring function (maximal and explosive strength across the force-velocity profile, balancing the focus on isometrics and eccentric and concentric actions). We focus primarily on the use of running (HSR, high speed acceleration and attaining peak running speed), given its high specificity and likely performance benefits. We aim to expose all players to within 95% of maximum speed 1-2 times per week; 2) optimising the training balance - managing the player load, limiting player exposure to high acute:chronic workload ratios and optimising between match recovery; 3) implementing a comprehensive lumbopelvic hip stability programme; 4) optimising players physical conditioning (strength and cardiovascular fitness) and 5) incorporating a focus on movement quality. This programme is informed by strategies to enhance adoption and implementation which considers key stakeholder buy in, an

individualised approach based on the player profile and developed as part of the wider injury risk reduction programme.

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