The role of an informed strength & conditioning programme on injury prevention and performance enhancement in tennis

Faculty of Wellbeing Education and Language Studies (WELS)

Call for PhD projects starting in October 2024

The Open University

Contents

Project description

School

Education, Childhood, Youth & Sport

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Aim

The aim of this research is to create a sport-specific testing and exercise (strength and conditioning; S&C) programme based on current research from our group investigating injuries associated with tennis. Designing and evaluating the reliability and validity of a tennis specific physical testing protocol and the effects of a sport-specific S&C programme will facilitate understanding of injury risk reduction protocols.

Methodology

These may include, but are not limited to:

- The use of motion capture, force platforms, electromyography, strength and conditioning equipment and testing protocols etc.

- Furthermore, interventions may be rolled out to coaches and would therefore require the development of instructional material for tennis coaches to deliver a sport-specific injury prevention programme. This would be based on current and published tennis research by the group.
- Interventions may also include applied delivery of this strength and conditioning programme through a longitudinal study during a sporting year to a group of athletes recruited from local clubs and NGB in the particular sport (tennis).
- Assess the injury history of players in the 12-months before the start of the intervention and follow the injury prevalence for the 12-month duration of the study and beyond where feasible.

Contribution

The project would develop the following:

- A tennis specific physical testing protocol designed to assess a player's strengths and weaknesses in line with known risk factors and performance needs analysis.
- A sport-specific S&C programme that coaches could apply with athletes to reduce injury and increase performance.
- Increased awareness of testing protocols and injury prevention programmes that physiotherapists could utilise with tennis players.

This may have further applied impact for NGB's use of testing protocols and interventions on performance pathways and coach education.

PhD project

This PhD will focus on developing and evaluating a testing protocol that increases awareness of a player's physical attributes associated with injury risk factors and a performance needs analysis. Furthermore, the PhD will focus on developing an S&C intervention that aims to protect tennis players against known risk factors. This could involve assessing and observing players' injury histories and evaluating the impact of a longitudinal S&C intervention of injury prevalence. Elements of athlete monitoring could also be embedded into each study. Various biomechanics and S&C tools would be available to assess each of these areas, including, but not limited to: 3D motion capture, force plates, electromyograph, isometric midthigh pull rack, Olympic lifting platform and weights, athlete assessment apps and tools etc.