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DNA reveals risk factors associated with sports injuries

Understanding biological mechanisms of sports medicine

The University of Cape Town's Professor Malcolm Collins will unpack ways in which gene screening can reduce risks associated with tendon and ligament injuries in sport. Professor Collins is from the Medical Research Council/UCT Research Unit for Exercise Science and Sports Medicine at the Department of Human Biology. He will present his inaugural lecture on Wednesday, 7 August 2013, at 17h30 at the Student Learning Centre Lecture Theatre, Anatomy Building, Faculty of Health Sciences, UCT.

Using a non-diagnostic DNA test, together with one's physical activity history and a medical examination by a healthcare professional, the Sports Injury Gene Screen can help practitioners identify an increased risk for Achilles tendon injuries in the heel or anterior cruciate ligament tears in the knee.

Says Collins: "There is no single cause for these tendon and ligament injuries. Instead, combinations of environmental and inherent factors, including genetic sequences, work together in a poorly understood manner to cause an injury."

DNA sequences, says Professor Collins, have the potential to increase the risk imposed by environmental parameters. "Such environmental parameters, as the type and level of physical activity one is exposed to and other inherent factors such as body size and sex, may lead to an injury."

The Sports Injury Gene Screen therefore identifies genetic – and other risk factors – which increase the possibility of sustaining an injury. It would "allow practitioners to interpret an individual's relative risk of sustaining tendon or ligament injuries, which could be beneficial especially within the sporting arena. This would allow preventative programmes to be instituted for those at particular risk, thereby optimising sporting achievement while minimising injury risk," says Collins.

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