

## A PREDICTION MODEL FOR THE PREVENTION OF FOOTBALL INJURIES AMONGST YOUTH PLAYERS

Serfontein JH <sup>1</sup>, Spamer EJ <sup>2</sup>

1. *Platinum Stars FC, Rustenburg;* 2. *School for Continuing Education, North West University, Potchefstroom*

Injuries are a common occurrence amongst youth football players. Studies on youth players indicate that between 70.7% and 90% of all injuries are of the lower limb. With the majority of injuries being to this area, preventative interventions should be focused here.

A pre-season injury history questionnaire, biomechanical-, proprioceptive- and plyometric evaluation was done on 110 youth football players from the U/16 and U/18 teams at 2 schools and the U/17, U/18 and U/19 teams at a South African football club. All injuries at the schools and club were recorded during the following seasons. Logistical regression analysis was used to establish the possibility of creating prediction models for non contact injuries based on the pre-season evaluation and recorded non-contact injuries.

A prediction model was created for non-contact injuries containing variables of toe positional dysfunction, previous ankle injury, ankle dysfunction, SIJ dysfunction, Lumbar extension, straight leg raise, psoas length, Patella squint, Gluteal muscle length and Lumbar dysfunction. This model correctly classified 86.91% of players correctly as either 'injured' or 'not injured'. A further prediction model was created for non contact groin injuries specifically. This model contained variables of SIJ dysfunction, previous knee injury, previous hip injury, Lumbar extension, straight leg raise, limb dominance and the plyometric ratio of non dominant limb : dominant limb jump height. This model correctly classified 96.26% of players as 'injured' or 'not injured' for non-contact groin injuries.

It was possible to predict the risk of non contact injuries as well as non contact groin injuries in youth football players using a pre-season test battery containing previous injury history, a biomechanical assessment and proprioceptive and plyometric testing. These injuries could be prevented by a specific pre-season training programme addressing the shortcomings identified in the prediction model.