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Citation:

Tee, JC and Collins, R and van Wyk, D and Klingbeil, J and van Rooyen, I and Jones, B (2017) A MULTIDISCIPLINARY APPROACH TO INJURY RISK MANAGEMENT IN PROFESSIONAL RUGBY UNION. In: National Strength and Conditioning Association Annual Conference 2017, 12 July 2017 - 15 July 2017, Las Vegas.

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Dr. Jason Tee

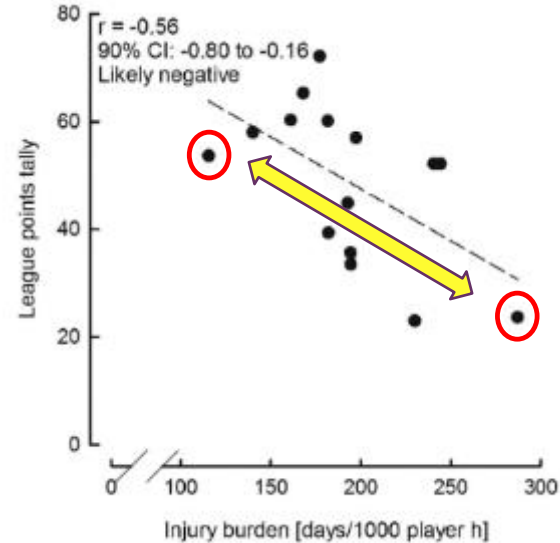
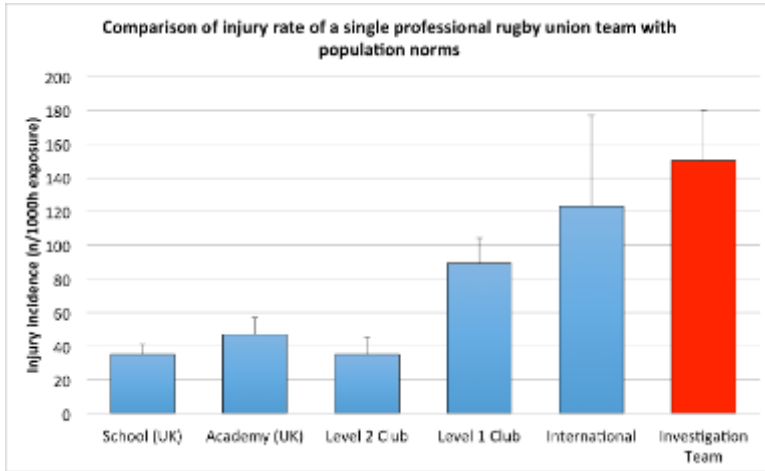
A multidisciplinary approach in injury risk management in professional rugby union

What is rugby?



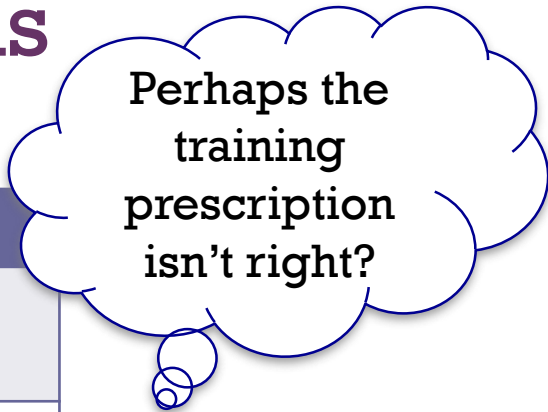
+ Injury vs. performance relationship

Injury Audit

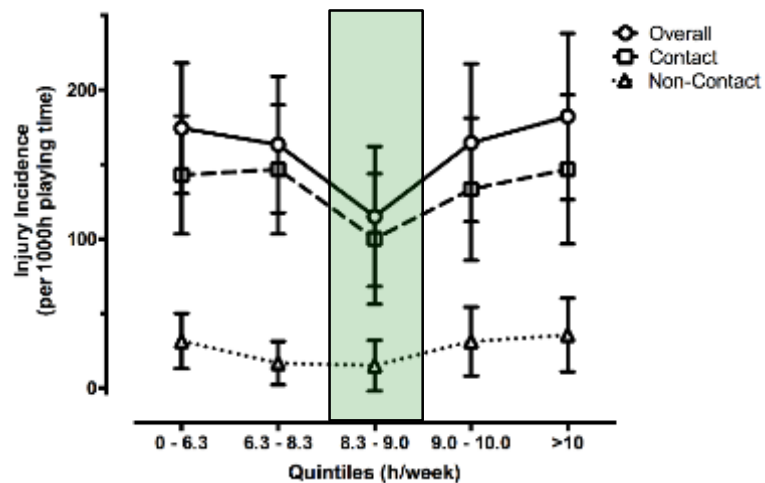


+ Targeting interventions

	2012
Injury burden (total days lost)	2165 days
Injury circumstance	
• Match	60 %
• Training	40 %
Injury mechanism	
• Contact	55 %
• Non-contact	45 %






+ Optimizing training



Tee, unpublished observations

+ So how did we do?

	2012	2013	
Injury burden (total days lost)	2165 days	2334 days	
Injury circumstance			
• Match	60 %	80 %	
• Training	40 %	20 %	
Injury mechanism			
• Contact	55 %	76 %	
• Non-contact	45 %	24 %	

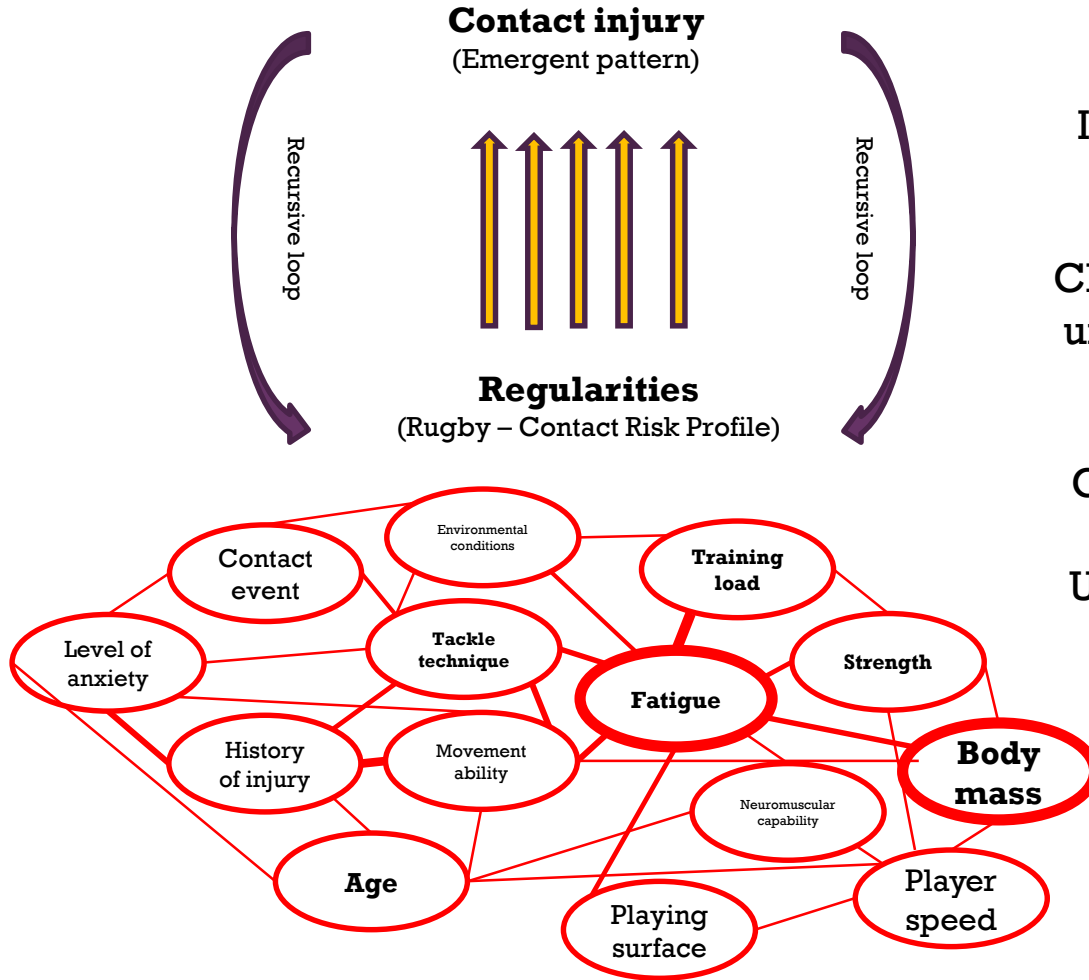
+ Less training injury = more of this





Contact injury model for rugby

Based on Bettencourt et. al., BJSM 2016



Injuries are complex and multi-factorial

Changing ONE thing is unlikely to change the WHOLE system

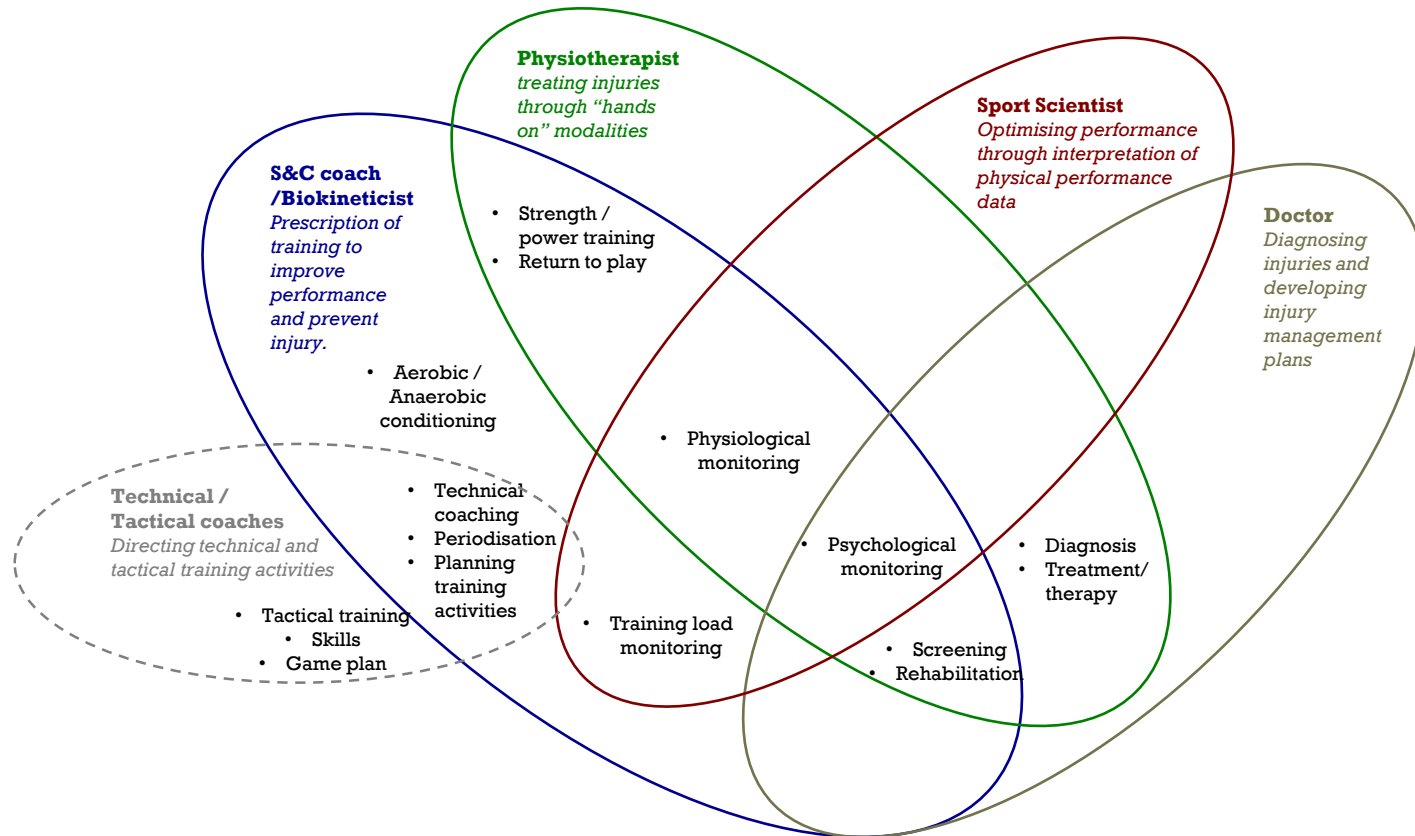
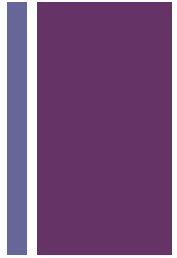
Changing the system may have UNEXPECTED results



+ How to approach a complex problem??? -
Use every tool in the box!!!



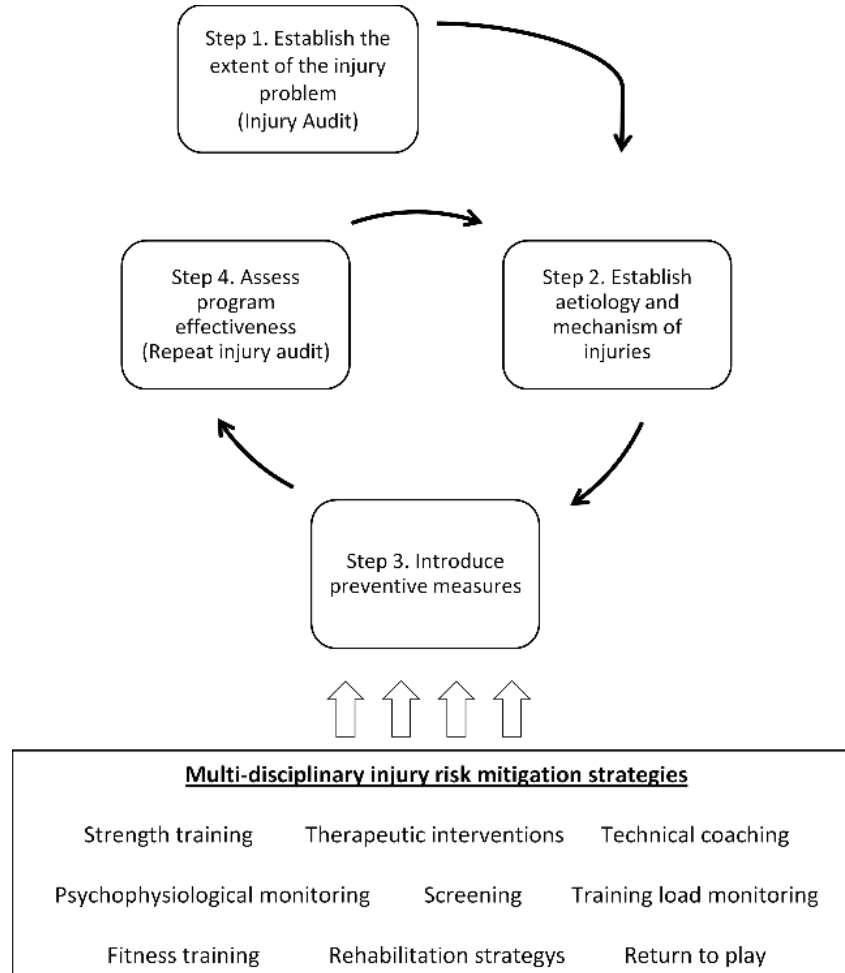
+ Using the multi-disciplinary team



+ Day to day flow of information



Assessing outcomes in a complex system



+ Successes - Screening

PRESEASON FUNCTIONAL MOVEMENT SCREEN COMPONENT TESTS PREDICT SEVERE CONTACT INJURIES IN PROFESSIONAL RUGBY UNION PLAYERS

JASON C. TEE,¹ JANNIE F.G. KLINGBIEL,² ROBERT COLLINS,^{2,3} MIKE I. LAMBERT,⁴ AND
YOGA COOPOO¹



+ Conditioning interventions

T.J. Gabbett et al. / Journal of Science and Medicine in Sport 15 (2012) 496–504

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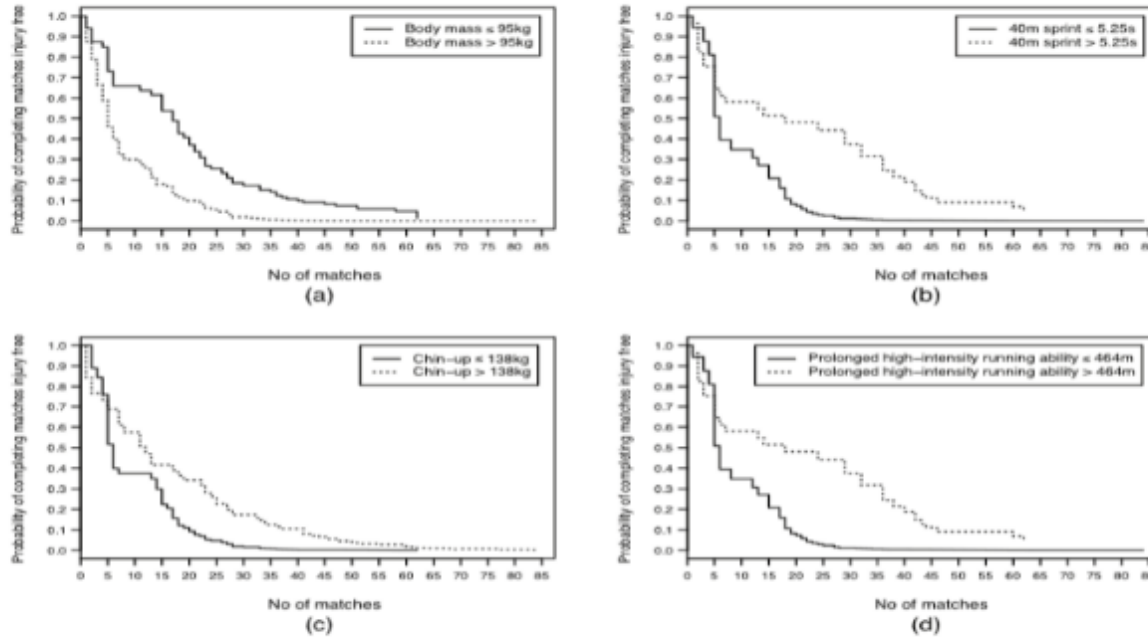


Fig. 1. Standard Kaplan–Meier survival curves for completing matches free of contact injury for 66 professional rugby league players. Four significant (or almost significant) risk factors are shown: (a) high body mass, (b) fast speed (40 m sprint), (c) poor upper-body strength (chin-up), and (d) poor prolonged high-intensity running ability. All curves are adjusted for players' age, playing experience and usual playing position.

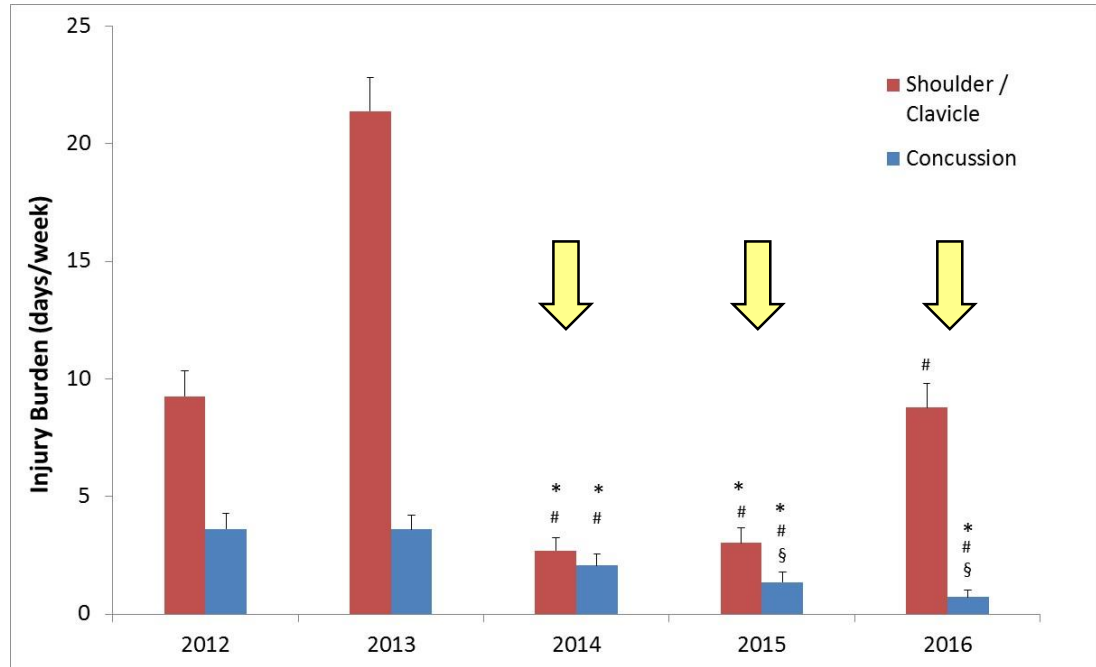
+ Coaching contact technique frequently



+ Successes – Reduced tackle injuries

Interventions

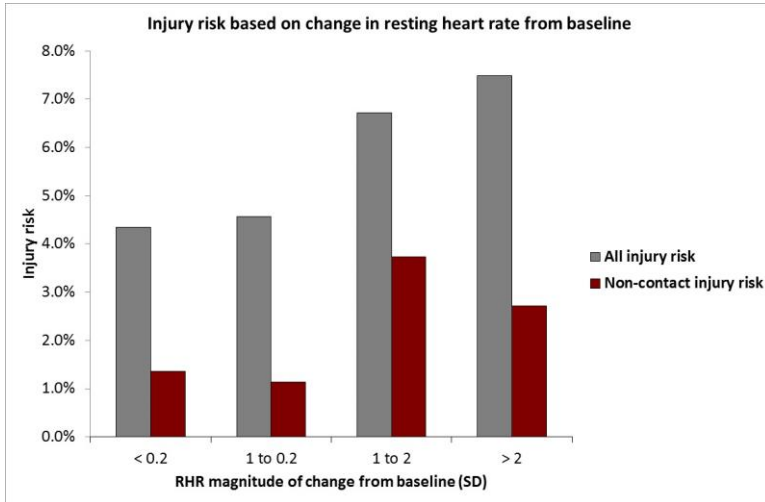
- Targeted strength program
- Increased exposure to contact skills training



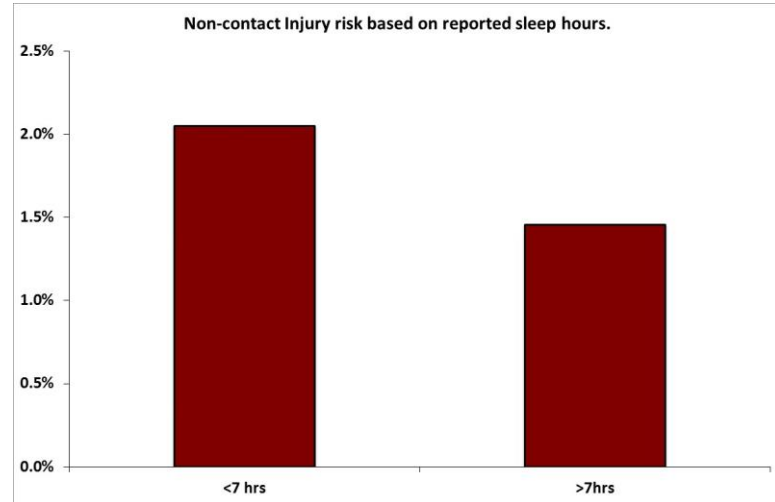
+ Successes - Monitoring



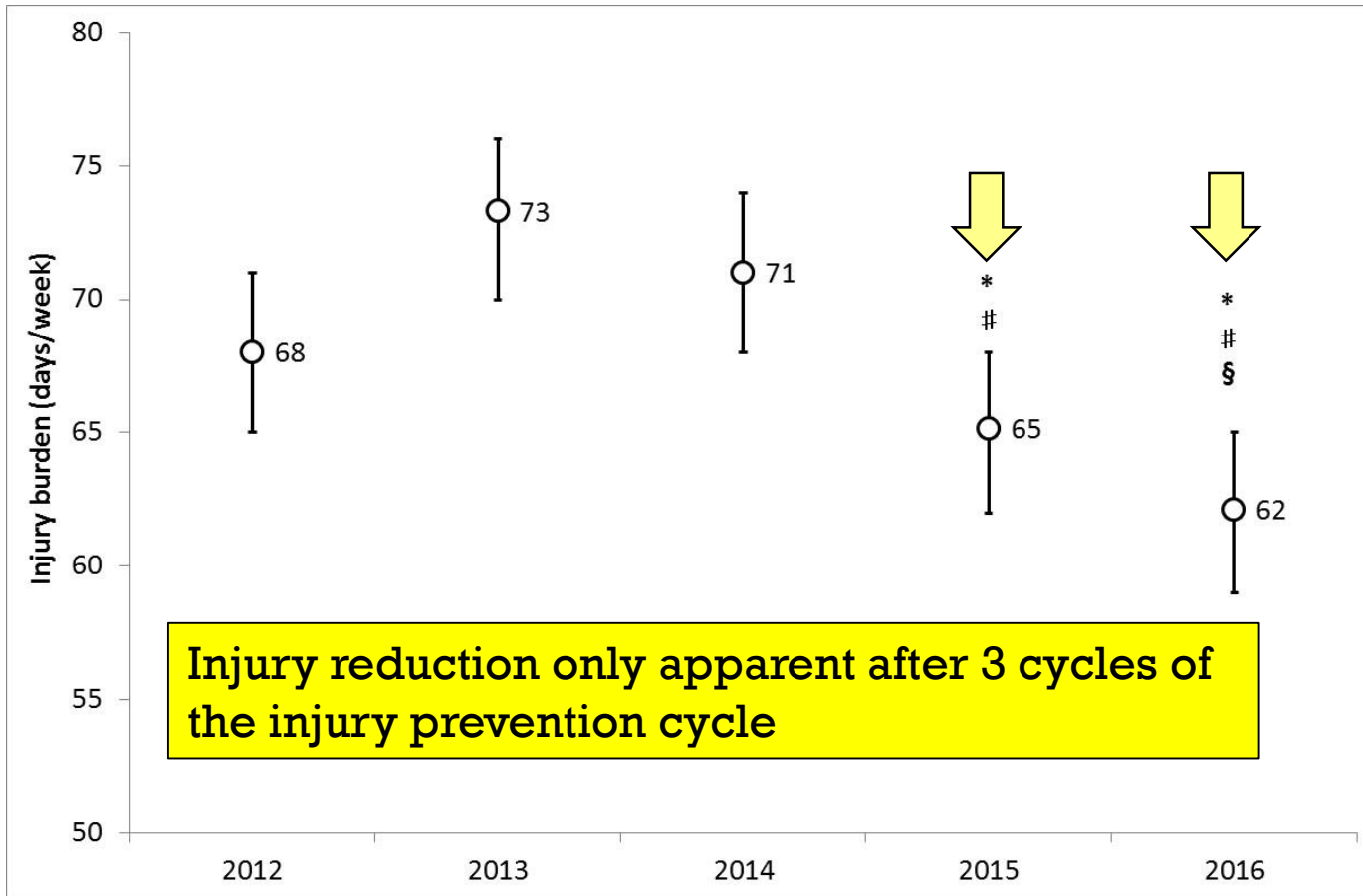
Resting heart rate



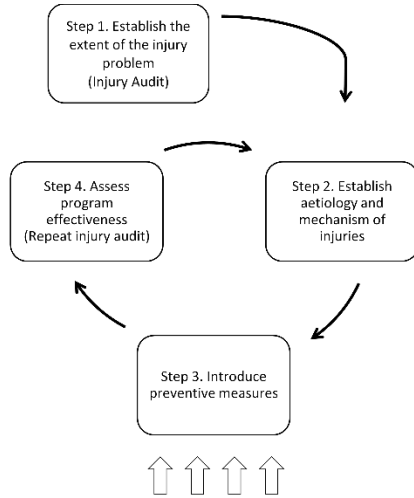
Sleep hours



+ Effectiveness of the multi-disciplinary approach



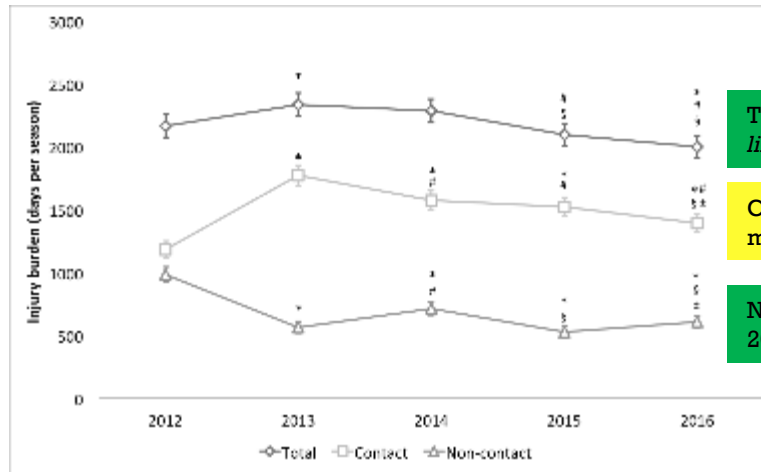
+ Not a short-term process



Multi-disciplinary injury risk mitigation strategies

Strength training	Therapeutic interventions	Technical coaching
Psychophysiological monitoring	Screening	Training load monitoring
Fitness training	Rehabilitation strategies	Return to play

It takes time to fine tune the injury prevention program to attain the desired result



Total injuries -9% since 2012, likely beneficial

Contact injuries -21% since 2013, most likely beneficial

Non-contact injuries -39% since 2012, most likely beneficial

Job never done as the system is constantly changing!!!