Psychosocial considerations in sports injury risk and prevention

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Today’s webinar is being produced jointly by the British Association of Sport and Exercise Sciences (BASES) and Human Kinetics.

It is scheduled to last for about an hour and will be recorded and made available for download and playback. You will receive an email containing a link to the recording when it is available.

All microphones and phone lines are muted so we ask that you submit questions by using the question box located in the lower right corner of your screen.

We’ll collect any questions sent throughout the presentation for Adam and he will answer as many as possible during the Q&A segment at the end.

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Dr Adam Gledhill is the Course Director for Undergraduate Sport and Exercise Science within the Carnegie School of Sport at Leeds Beckett University.

He has written academic modules, book chapters, conference presentations and peer-reviewed articles within the realms of the psychology of sports injury risk, rehabilitation and return to competition. Adam has worked in a range youth and senior sport settings with elite athletes, providing sport science support within interdisciplinary support teams. He currently works within female youth football as Head of Psychosocial Development at a Tier 1 Girls’ Regional Talent Club and is an Associate Editor (Psychology of Sports Injury) for the British Journal of Sports Medicine.
Scope of today...

- Risk of injury
  - Responses to injury
  - Rehabilitation
  - Return to competition
  - Retirement from injury

Psychological/ Psychosocial risk factors

Risk reduction/prevention strategies
Why should we be considering injury risk and prevention?
Why is this topic important?

Keeping your top players on the pitch: the key to football medicine at a professional level
Jan Ekstrand

1 month’s participation time-loss, for an elite football player, costs the club on average €500,000

Injury is associated with depression, suicidal ideation, anxiety, disordered eating, and substance use.

Injuries as the main cause of sport career termination among Finnish top-level athletes
Leena Ristolainen, Jyrki A. Kettunen, Urho M. Kujala & Ari Heinonen

Reasons for Career Termination in Danish Elite Athletes: Investigating Gender Differences and the Time-point as Potential Correlates
Karin MOESCH, Cecilie MAYER, Anne-Marie ELBE

Shouldn’t we be doing EVERYTHING possible to reduce (or prevent) sports injuries?
Injuries are multifactorial. Our injury prevention programmes should be the same.
Where does sport psychology fit, within injury risk?
Psychological injury risk factors...

Meta-analysis (Ivarsson et al., 2017) of published studies with cumulative c.12k participants.

Model of Stress and Athletic Injury (Williams & Andersen, 1998)

High levels of negative life-event stress and stress responsivity have strongest associations with injury risk (Ivarsson et al., 2017)
Psychological injury risk factors...

Physiological Mechanisms
- Stress hormone perturbation
- Immunosuppression
- Impaired skeletal muscle repair
- Peripheral narrowing

Psychophysiological stressors
- Negative life-event stress
- Intense physical training

Behavioural Mechanisms
- Impaired self-care
- Poor sleep quality
- Treatment noncompliance

Health outcomes
- Increased injury and illness incidence
- Exercise training maladaptation
- Increased injury recovery time

A Biopsychosocial Model of Stress, Athletic Injury and Health (Appaneal & Perna, 2014)
However...

Multifactorial causation ≠ multifactorial prevention

What does the evidence around intervention efficacy and effectiveness tell us?

- Time constraints?
- Resource constraints?
- Uncertainty?
- Intolerance?
- Perceived benefits?

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Organisation specific planning
Where might sport psychology sit, within injury prevention?
Potential benefits of psychological interventions...

- ↓ Psychosocial stress
- ↑ Perceived wellness
- ↑ Situational awareness
- ↓ Muscle tension
- Neuromuscular changes
- Altered hormone release
- ↑ Movement quality
- ↑ Skill learning
- ↑ Thought clarity
- ↑ Decision making
- ↑ Concentration
- Altered risk perception and risk-taking behaviours
- ↑ Perceived wellness
- ↓ Muscle tension

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What does the existing injury prevention evidence suggest?
What does the evidence tell us?

Three systematic reviews/meta analyses collectively support both the efficacy and the real-world effectiveness of psychological interventions.

Almost* every study investigating the role of psychological interventions in injury prevention ever published shows a smaller number of injuries and/or shorter time-loss in treatment groups than control groups (Gledhill et al., 2018; Ivarsson et al., 2017; Tranaeus et al., 2015).

Mean effect of the difference between injuries in intervention and control groups in included studies (N=7) = -0.67 (Ivarsson et al., 2017); effect sizes in included studies (N=14) ranged from -0.2 to -1.21 (Gledhill et al., 2018).
What does the evidence tell us?

Best evidence synthesis (Gledhill et al., 2018) suggests that interventions with a stress management and/or relaxation focus (e.g. Stress Inoculation Training) are likely to be effective.

Low-frequency and short-duration interventions, with a low risk of bias, reduce injury rates (Gledhill et al., 2018).

Athletes at higher injury risk due to higher stress response or higher negative life-event stress are likely to see more injury reduction/time-loss reduction benefits from stress management interventions (Ivarsson et al., 2017).

Mindfulness-based intervention (Ivarsson et al., 2015) returned medium effect size. Replication research using the same Mindfulness-Acceptance-Commitment approach (Gardner & Moore, 2007) is warranted.

Video-based awareness training has shown promising results in reducing match-related injuries in football (soccer), but results with training injuries are less promising (Arnason et al., 2005).
Future directions...

Where are we now? (Gledhill et al., 2018)

Almost all psychological intervention studies show a **clinically meaningful difference** between treatment and control groups.

Very heavy emphasis towards interventions with a stress management/relaxation component.

Underrepresentation of female athletes.

Where could we go from here? (Gledhill et al., 2018)

Multidisciplinary collaboration.

Studies aiming to replicate stress reduction (and other) intervention findings.

Intervention types:
- Motivational/behaviour change studies for prevention of overuse injuries
- Intervention studies aimed at eliciting neuromuscular/movement quality benefits.
Where can I go for support?

Examples of professional sports psychology associations (Forsdyke, Gledhill & Ardern, 2016)


Any Questions?

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We’ll try fit in as many as possible in the time remaining.
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What’s coming up?

We have some great webinars coming up:

- **Sleep & Performance: Time to wake up!** By Ian Dunican
  - **Date:** Wednesday 18th April 2018
  - **Time:** 15.00 GMT

Registration for these webinars are open so please join us.

Further details on: www.humankinetics.me

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Thank you again for your participation, enjoy the rest of your day.