may be especially at risk. However data is scarce and valid comparisons are difficult.
Objective To gauge the prevalence of psychological distress and the level of wellbeing amongst UK Olympic and Paralympic programme athletes.
Design Cross-sectional questionnaire cohort study.
Setting UK Olympic and Paralympic, summer and winter sport athletes.
Patients (or Participants) 394 athletes from 29 sports.
Interventions (or Assessment of Risk Factors) Between October 2018 and June 2019, participants completed the Kessler Psychological Distress Scale (K10) and the World Health Organisation-Five Well-Being Index (WHO5) questionnaires that indicate levels of psychological distress and subjective wellbeing respectively.
Main Outcome Measurements Percentage of athletes reporting low, moderate, high and very high psychological distress. Percentage of athletes reporting high and low wellbeing.
Results 24% of athletes reported high or very high psychological distress. More Paralympic that Olympic athletes reported high/very high distress (27% vs 22%). The mean distress score was comparable to age matched population samples. 19% of athletes reported low psychological wellbeing and this was more common in Paralympic athletes than Olympic athletes (23% vs 17%). The mean wellbeing score was comparable to age matched population samples.
Conclusions UK Olympic and Paralympic athletes report psychological distress and wellbeing levels similar to aged matched populations. Paralympic athletes have slightly higher levels of distress and lower wellbeing than Olympic athletes and this may relate to disability specific stressors. Sport programmes should have robust mental health support plans that includes regular athlete screening and commensurate support services with additional specific support for athletes with disabilities.

138 ACUTE PERIPHERAL FATIGUE INDUCES BRAIN ACTIVITY CHANGES DURING PREDEFINED AND REACTIVE BALANCE TASKS: NEW INSIGHTS CONCERNING THE FATIGUE-INJURY HYPOTHESIS

[1]Bruno Tassignon, [1]Jo Verschueren, [1,2]Sander De Bock, [1]Luk Buyse, [1,2]Kevin De Pauw, [3]Evert Verhagen, [1,2]Romain Meeusen. *[1]Human Physiology and Sports Physiotherapy, Brussels, Belgium; [2]Strategic Research Program Exercise and the Brain in Health and Disease: the added value of Human-Centered Robotics, Vrije Universiteit Brussel, Brussels, Belgium; [3]Amsterdam Collaboration on Health and Safety in Sports, Department of Public and Occupational Health, Amsterdam Movement Sciences, Amsterdam UMC, Vrije Universiteit Amsterdam, Amsterdam, Netherlands*

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Background An abundance of literature on the acute peripheral fatigue (APF)-injury-hypothesis exists without showing uniformity to support or refute this hypothesis. Previous research demonstrated that a decreased balance ability increases injury risk, and APF affects balance performance. Recently, reactive balance tasks were developed to assess balance performance in a more sport related context. However, it is unknown if APF induces changes in brain activity during predefined and reactive balance tasks and how it relates to injury occurrence.
Objective To study whether (1) APF fatigue alters brain activity during one predefined and one reactive balance task, and (2) performance on these balance tasks.
Design Cross-over design.
Setting Primary clinical setting.
Participant Twenty healthy participants (age = 24 ± 3 years; height = 1.8 ± 0.1 m; weight = 73.2 ± 11.3 kg).
Interventions APF was induced through a 30-second modified Wingate-protocol, while the control task encompassed sitting quietly on the stationary bike for 30s.
Main Outcome Measurements Brain activity was measured through electroencephalography during both balance tasks and computed by means of spectral power analysis. The predefined balance task was the Y-balance test (YBT), while the neurocognitive balance test encompassed the reactive balance test (RBT).
Results Decreased RBT accuracy was observed after APF ($p < 0.05$), yet YBT performance and RBT visuomotor reaction time were unaffected. APF induced α- and β-spectral power increments in the prefrontal, motor and posterior parietal cortex during YBT performance ($p < 0.05$). For the RBT, an α-spectral power increment in the posterior parietal cortex and a β-spectral power increment in the prefrontal cortex were observed due to APF ($p < 0.05$).
Conclusions APF induces different changes in brain activity during predefined and reactive balance tasks. It is likely that different central mechanisms are affected depending on the type of balance task. Further research is needed in an applied setting in order to gain insight in the possible interaction between APF and injury occurrence.

139 MENTAL FATIGUE INTERACTS WITH BRAIN ACTIVITY DURING PREDEFINED AND REACTIVE BALANCE TASKS: IS IT TIME TO ADD MORE CONTEXT TO INJURY PREVENTION SCREENING?

[1]Bruno Tassignon, [1]Jo Verschueren, [1]Jeroen Van Cutsem, [1,2]Kevin De Pauw, [1]Bart Roelands, [3]Evert Verhagen, [1,2]Romain Meeusen. *[1]Human Physiology and Sports Physiotherapy, Brussels, Belgium; [2]Strategic Research Program Exercise and the Brain in Health and Disease: the added value of Human-Centered Robotics, Vrije Universiteit Brussel, Brussels, Belgium; [3]Amsterdam Collaboration on Health and Safety in Sports, Department of Public and Occupational Health, Amsterdam Movement Sciences, Amsterdam UMC, Vrije Universiteit Amsterdam, Amsterdam, Netherlands*

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Background Athletes indicate that mental fatigue (MF) interferes with maximal performance. MF has also been hypothesized to play an important role in injury occurrence. Clinically applied studies show that MF affects brain activity and decreases endurance, skill and decision-making performance. Nevertheless, no clear insights exist on how MF might affect brain activity during predefined and reactive balance test performance. Gaining insights into this topic could further strengthen or challenge the MF-injury hypothesis.
Objective To study whether (1) MF alters the electrophysiological functioning of the brain during one predefined and one reactive balance task, and (2) performance on these balance tasks.
Design Cross-over design.
Setting Primary clinical setting.
Participants Twelve healthy participants (age = 22 ± 1 years; height = 176.9 ± 8.4 cm; weight = 69.7 ± 10.4 kg).
Interventions MF was induced by a 90-minute Stroop task, while the control task included watching a 90-minute documentary.

Main Outcome Measurements Brain activity was measured through electroencephalography during both balance tests and computed by means of spectral power analysis. The predefined balance task was the Y-balance test (YBT), while the reactive balance test (RBT) was selected as the neurocognitive balance test.
Results For the YBT, θ-power of the prefrontal cortex significantly increased due to MF. For the RBT, brain activity remained unchanged. RBT accuracy worsened ($p < 0.05$) following MF, while YBT performance did not significantly change.
Conclusions The MF intervention induced unfavourable brain activity changes during the YBT, but did not affect YBT performance. However, no changes in brain electrophysiological functioning were observed during RBT execution while a decrease in RBT accuracy occurred. These results suggest that sustained attention tasks might affect different central mechanisms depending on the type of balance task. Further research is needed in order to elucidate the role of the brain and MF in balance performance and injury occurrence.

140 PSYCHOLOGICAL FACTORS FOR AN INJURY FREE ATHLETIC CAREER

[1,2]Ulrika Tranaeus, [1]Linn Hallgren, [1]Hanna Jörlund. *[1]The Swedish School of Sport and Health Sciences, GIH, Stockholm, Sweden; [2]Karolinska Institutet, Stockholm, Sweden*

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Background Many athletes remain uninjured during their careers. Little is known about if and which psychological factors that may contribute to protect from athletic injuries.
Objective Do uninjured athletes use buffering coping skills and/or other protecting psychological factors to remain injury free?
Design Qualitative interview study.
Setting Face to face interviews, using a semi-structured interview guide with open questions, with Swedish elite athletes.
Patients (or Participants) Six athletes (four males and two females), 23–25 years old, competing at elite level in team sports or running without severe time-loss injuries during their careers volunteered to participate. The definition of uninjured was less than a total of four weeks absence from training due to injury or pain. Time for competing varied from five years to nineteen years.
Main Outcome Measurements The inductive thematic content analysis was aiming to identity common psychological factors in the narratives.
Results The analysis showed six themes that were suggested to influence the athletes to perform and compete without sustaining severe injuries. The themes with examples of underlying categories were 1) structure during the daily life (time management, logistic), 2) all-round training (late specialisation), 3) knowledge (education), 4) coping strategies (acceptance, goal oriented), 5) recovery strategies (body awareness, food and sleep habits) and 6) social support (support from coaches and parents).
Conclusions Adaptive coping strategies and identified psychological factors are suggested to have possible impact on athletes' potential to stay uninjured. This study can play a role of generating hypotheses for testing in future studies, until then athletes and coaches are encouraged to bear these findings in mind in order to prevent injuries and support athletes.

141 THE EFFECT OF FATIGUE ON TRUNK AND PELVIC JUMP-LANDING BIOMECHANICS: A SYSTEMATIC REVIEW

[1,2]Stefan Vermeulen, [1,2]Camilla De Bleecker, [1]Cedric De Blaiser, [3]Özge Onursal Kilinc, [1]Tine Willems, [2]Jos Vanrenterghem, [1]Philip Roosen, [1]Roel De Ridder. *[1]University of Ghent, Department of Rehabilition Sciences, Ghent, Belgium; [2]KU Leuven, Leuven, Belgium; [3]Hacettepe University, Ankara, Turkey*

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Background Physical active induced fatigue may result altered trunk and pelvic biomechanics during athletic tasks.
Objective To summarize and determine the effect of physical fatigue on trunk and pelvic biomechanics during jump-landings in healthy, physically active populations.
Design Systematic review of literature.
Setting Electronic databases PubMed, Web of Science, Embase, CINAHL, and SPORTDiscus were consulted up to and including April 2021.
Patients (or Participants) Cross-sectional studies including healthy, physically active populations.
Interventions (or Assessment of Risk Factors) Two reviewers independently screened for relevant studies. Methodological quality was assessed by a modified Downs and Black checklist.
Main Outcome Measurements Studies investigating the effect of fatigue on trunk and pelvic kinematics and/or muscular activity during double- and single-legged jump-landings and jump-landing related cutting tasks in healthy, physically active populations.
Results Eighteen studies investigating trunk and pelvic landing biomechanics before and after fatigue met the inclusion criteria. Methodological quality was moderate to high among the included studies. The results of the systematic review show a wide variability of trunk and pelvic landing strategies after fatigue. Based on the kinematic results, there is evidence for more trunk flexion during standardized jump-landings after fatigue (p=0,001–0,007). Regarding muscular activity, there is no evidence of fatigue-related alterations in lumbo-pelvic muscular activations during landing.
Conclusions The results of this systematic review provide evidence for adaptive trunk and pelvic biomechanical strategies during landing after fatigue to potentially unload fatigued lower extremity musculoskeletal structures.

142 THE FATIGUE-INJURY HYPOTHESIS: WHAT IS THE EFFECT OF ACUTE PERIPHERAL FATIGUE ON FUNCTIONAL AND NEUROCOGNITIVE PERFORMANCE TESTS?

[1]Jo Verschueren, [1]Bruno Tassignon, [2]Evert Verhagen, [1,3]Romain Meeusen. *[1]Human Physiology Research Group, Faculty of Physical Education and Physiotherapy , Vrije Universiteit Brussel, Brussels, Belgium; [2]Amsterdam Collaboration on Health and Safety in Sports, Department of Public and Occupational Health, Amsterdam Movement Sciences, Amsterdam UMC, Vrije Universiteit Amsterdam, Amsterdam, Netherlands; [3]Strategic Research Program Exercise and the Brain in Health and Disease: the added value of Human-Centered Robotics, Vrije Universiteit Brussel, Brussels, Belgium*

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Background Physical fatigue is known to decrease an athlete's functional test performance (FPT), but less is known about the impact on the injury risk profile. Furthermore, adaptability and neurocognitive performance tests have been put forward as relevant concepts within injury prevention, but to date it is not known if acute peripheral fatigue affects functional and neurocognitive performance tests.