Main Outcome Measurements Prevalence and characteristics of LBP and C-LBP and their determinants.

Results LBP had a prevalence of 91.6% and 74.2% for lifetime and 1-year respectively, while C-LBP had a prevalence of 23.9%. Prevalence of LBP in Show-Jumping was 61%, in Dressage 13.6%, in Eventing 6.3%, in Horse Country Riding 2.9% and in Reining 2.2%. Weight has a positive association with LBP (O.R. 1.05 95% CI=[1.02, 1.09] p<0.05), while age has a negative association (O.R. 0.95 95% CI=[0.94, 0.98] p<0.05). Practicing activity more than 5–6 hours a week has a positive association with C-LBP (O.R. 1.21 95% CI=[1.05, 1.4] p<0.05). C-LBP is associated with interrupted activity (p< 0.001), drugs consumption (p< 0.001) and restriction in participation (p< 0.001).

Conclusions LBP and C-LBP are very common conditions in equestrian athletes and their prevalence is higher compared to general population and other sports. LBP is more frequent in show-jumping compared to other disciplines. Age and weight are associated with lifetime LBP, with, respectively, a negative and positive association. Athletes with C-LBP showed more disability in activities of daily living (ADLs) and tendency to suspend sports more frequently.

132 NEUROMUSCULAR RESPONSES OF THE HAMSTRING AND TRUNK MUSCLES DURING UNANTICIPATED TRUNK PERTURBATIONS

Ayako Higashihara, Jurdan Mendiguchia, Takashi Ono, Yasuharu Nagano, Shogo Sasaki, Shinshiro Mineta, Norikazu Hirose. Institute of Physical Education, Keio University, Kanagawa, Japan; 2Department of Physical Therapy, Zentrum Rehabilitation and Performance Center, Pamplona, Spain; 3Kitasato University College of Liberal Arts and Sciences, Kanagawa, Japan; 4Japan Women’s College of Physical Education, Department of Sports Wellness Sciences, Tokyo, Japan; 5Faculty of Health Sciences, Tokyo Airlake University of Medical and Health Sciences, Tokyo, Japan; 6Graduate school of Sport and Exercise Sciences, Osaka University of Health and Sport Sciences, Osaka, Japan; 7The Japan Society for the Promotion of Science, Tokyo, Japan; 8Faculty of Sport Sciences, Waseda University, Saitama, Japan

Background Trunk movement is considered to be involved in lower extremity injuries. Hamstring strain injuries often occur when movements are unanticipatedly perturbed by the opponents.

Objective To examine the neuromuscular responses of the hamstring and trunk muscles during unanticipated trunk perturbations in the athletes with and without a history of hamstring strain injury.

Design Descriptive laboratory study.

Setting College athletes.

Participants Male college athletes were recruited, 11 with a history of unilateral hamstring strain injury and 10 without prior injury.

Assessment In the kneeling position, the participants wore a chest harness attached to a cable that was pulled backward as a resisting force. They were instructed to resist the force isometrically and keep their initial position as possible as they could when the perturbations were applied. The force was released with a cue (CUE) and without cue (NoCUE). Trunk acceleration, three-dimensional kinematic data, and surface electromyography (EMG) signals of the erector spinae, internal oblique, gluteus maximus, biceps femoris, and semitendinosus muscles were measured.
may indicate a need for higher activation of core muscles. Therefore, GS-EE exercises could also develop core muscles that have protective mechanism on low back.

**Abstracts**

### 134 WHAT ARE THE MOVEMENT PATTERNS ASSOCIATED WITH GOOD AND POOR LUMBOPELVIC STABILITY?

1Margaret Perrott, 1Jill Cook, 2Don Vicendese, 1Tania Pizzari. 1La Trobe Sport and Exercise Medicine Research Centre, Melbourne, Australia; 2La Trobe University, Melbourne, Australia

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**Background** Poor lumbopelvic stability (LPS), defined as the lack of optimal alignment of the spine, pelvis, and thigh, is a risk factor for sports injury. Clinicians can validly assess LPS using rating criteria for two movement tests: single leg squat (SLS) and dip test (DT) to assess movement pattern errors. LPS is typically categorised as good, poor or neither but simplistic categories are not sensitive to change nor provide direction for management. Specific movement errors made in each test may be more sensitive to change after exercise interventions than the three-category rating and require investigation.

**Objective** To establish which movement errors and demographic factors are associated with LPS categories.

**Design** Observational study.

**Setting** Adult recreational athletes.

**Participants** Recreational athletes (n =122, 50 men, 73 women) 18–49 years, playing land-based sports, with no conditions preventing performance of movement tests.

**Assessment of Risk Factors** Independent variable: LPS rating category: good, neither, poor.

**Main Outcome Measurements** Athletes were filmed performing SLS and DT on each leg. Two physiotherapists independently categorised their LPS, noting the presence of movement errors defined in the rating criteria. Independent variable: movement errors, demographic factors.

**Results** Good LPS was associated with the absence of specific movement errors: trunk lateral flexion or rotation, hip adduction and jerk movement in SLS and pelvic obliquity and jerk movement in DT (sensitivity 0.97, specificity 0.94). Poor LPS was associated with hip abduction (non-trial leg) in SLS, jerky movement in DT (sensitivity 0.97, specificity 0.94). Poor LPS was associated with the absence of specific errors, demographic factors.

**Conclusions** Specific movement errors, and limited dorsiflexion and increasing age are associated with sub-optimal LPS. Strength programs improving movement control and mobility exercises improving ankle dorsiflexion should be implemented. As athletes age they should give more attention to maintaining optimal LPS.

### 135 ABSTRACT WITHDRAWN

### 136 PSYCHOSOCIAL FACTORS ARE ASSOCIATED WITH LOWER RE-INJURY RISK IN COMPETITIVE ATHLETES

Adam Gledhill, Ross Craig. Leeds Beckett University, Leeds, UK

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**Background** Psychosocial factors have achieved growing acceptance in their role in successful return to sport. However, as yet, few studies have demonstrated which of the commonly cited psychosocial variables can most strongly predict re-injury rates in competitive athletes. Understanding this could support clinicians in best directing valuable resource towards the holistic support of injured athletes, with a view to facilitating a successful return to sport.

**Objective** To examine whether social support, psychological readiness to return to sport and re-injury anxiety can predict re-injury in competitive athletes.

**Design** Retrospective, cross-sectional study.

**Setting** Competitive sport.

**Participants** 141 competitive athletes, from a range of sports, aged 19 to 24 years (mean age: 20.1 years; SD 1.1 years; 72 male and 69 female).

**Interventions (or Assessment of Risk Factors)** Independent variables: injury time-loss, perceived availability of social support, psychological readiness to return to sport and re-injury anxiety.

**Main Outcome Measurements** Re-injury.

**Results** There was a significant difference (p = <0.001) between competitive athletes who re-injured the same injury versus those who didn’t. Specifically, re-injury anxiety was lower in athletes who did not re-injure, and perceived availability of social support and psychological readiness to return to sport were higher in athletes who did not re-injure. Athletes who did not re-injure also had a longer return to sport. There was no significant difference in injury rates between male and female athletes (p = .105). Regression analysis indicated that 61.9% of variance in re-injury rates was predicted by the included predictor variables, with the most significant predictors of reduced re-injury risk being perceived availability of informational support (p = 0.003) and time out of sport (p = 0.003).

**Conclusions** Clinicians seeking to reduce the risk of re-injury in competitive athletes should consider strategies to reduce reinjury anxiety and facilitate the provision of social support, specifically the provision of high-quality informational support. Delayed return to sport is also important in reducing the risk of re-injury.

### 137 PSYCHOLOGICAL DISTRESS AND WELLBEING IN UK OLYMPIC AND PARALYMPIC ATHLETES

1Craig Ranson, 2Sandra Leyland, 2Lisa Board, 1Rod Jaques, 1,2,3Alan Currie. 1English Institute of Sport, Manchester, UK; 2University of Sunderland, Sunderland, UK; 3Northumberland Tyne and Wear NHS Foundation Trust, Newcastle, UK

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**Background** Despite the known mental health benefits of exercise the prevalence of mental health symptoms and disorders in high performance athletes appears to be slightly higher than in the general population and athletes with disabilities...