

Main Outcome Measurements Using typical IOC injury report data and data extracted from Team Korea EMR (electronic medical records) system tracking injuries of all national team, epidemiological datum were analyzed. These include injury body parts, types, RTP within 1 year and RTP over 1 year.

Results A total of 80 [(47 recurrent (59%)) and 39 [17 recurrent (44%)] injuries were identified during 2017S and 2017W respectively. Top two injured parts in 2017S were lumbar (n=9, 11%) and ankle (n=8, 10%) in within 1 year from RTP whereas shoulder (n=5, 6%) and lumbar (n=4, 5%) in over 1 years from RTP. Top two injured types in 2017S were strain (n=11, 14%) and tendonitis (n=9, 11%) in within 1 year from RTP whereas strain (n=6, 8%) and nerve injury (n=3, 4%) in over 1 years of RTP. Top two injured parts in 2017W were knee (n=5, 16%) and lumbar (n=3, 9%) in within 1 year from RTP whereas lumbar (n=4, 13%) and hip (n=1, 3%) in over 1 years of RTP. Top two injured types in 2017W were sprain (n=7, 22%), meniscus (n=2, 6%) in within 1 year RTP whereas sprain (n=5, 16%) and nerve injury (n=1, 3%) in over 1 years from RTP.

Conclusions Athletes who RTP within a year should be cautious to be re-injured during major sports events. Major body parts to be considered are lumbar, knee, and ankle with muscle and ligament injuries.

265 COMMUNITY-BASED REHABILITATION IMPLEMENTATION FRAMEWORK TO ADDRESS INJURIES & ITS RISKS AMONG RUNNERS IN UNDER-RESOURCED COMMUNITIES: DELPHI CONSENSUS

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Background Athletes in low socioeconomic communities generally present with poor health outcomes as compared to those in privileged communities. A high prevalence and risks of sports-related injuries have been reported among runners in under-resourced communities. These have a negative impact on their quality of life and level of sports participation.

Objective To develop a community-based rehabilitation implementation framework for sports-related injuries among runners in under-resourced communities, using South African communities as an example.

Design The Delphi technique was used in building consensus on the appropriate framework.

Setting The study was based in South Africa.

Participants Sport medicine experts (including sports physicians, physiotherapists, biokineticists, sports therapists, psychologists, nutritionists/dieticians, podiatrists) in treating and rehabilitating sports-related injuries were recruited to participate.

Main Outcome Measurements The questionnaire was then sent to participants to make comments and rate each item using a four-point Likert scale.

Results 19 experts participated in the study: 3 physicians, 5 physiotherapists, 2 sports therapists, 2 biokineticists, 2 podiatrists, 2 dieticians, and 2 psychologists. 10 were females and 9 were males of which 13 were aged 36–55 years. All experts were based in South African with 11 – 20 years of clinical experience. The Delphi process yielded four core framework items. These were: 1) the establishment of transdisciplinary rehabilitation teams, 2) upskilling of available clinicians, their

assistants, and trainers, 3) implementation of a community-based rehabilitation programme at low-level/no-cost and 4) referral of cases to secondary/tertiary institution for further intervention.

Conclusions Consensus was reached for a comprehensive rehabilitation framework aimed at addressing the specific needs of athletes in under-resourced communities where rehabilitation services are scarce. A further study to test the feasibility of the agreed-upon framework is underway.

266 SLOW, UNILATERAL ELASTIC RESISTANCE TRAINING ELICITS A CROSS-EDUCATION EFFECTS IN THE CONTRALATERAL LIMB, MEASURED BY DYNAMOMETRY AND ELECTROMYOGRAPHY

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Background Cross-education occurs when unilateral resistance training results in a strength transfer to the contralateral limb. This study explores the application of cross-education in injury rehabilitation.

Objective This study investigated the effectiveness of unilateral elastic resistance training on shoulder and elbow strength and neuromuscular activation in the contralateral limb. The secondary aim was to identify the impact of training velocity on these adaptations.

Design A within-subject randomised controlled trial.

Setting University students were tested in the lab before and after a home-based training programme.

Patients (or Participants) Twenty-nine healthy, sedentary, young adults (21.2 ± 0.9 years) were match randomised into four intervention groups according to training arm dominance and movement velocity (60°/s vs. 240°/s): fast-dominant, fast-non-dominant, slow-dominant and slow-nondominant.

Interventions (or Assessment of Risk Factors) Participants completed a home-based 6-week unilateral strength programme including resistance tubing exercises of shoulder internal/external rotation and elbow flexion/extension.

Main Outcome Measurements Peak torque (PT) and surface electromyography (EMG) was recorded during maximal voluntary isometric contractions (MVIC), isokinetic concentric 60°/s and 240°/s contractions two weeks before intervention, pre-intervention, and post-intervention.

Results All groups had significant PT increases in untrained arm elbow extension at 60°/s and 240°/s ($P < 0.01$). The slow and the dominant arm groups experienced significant PT improvements ($P < 0.05$) in internal rotation at 240°/s.

The trained arm of the slow-dominant group had significant increases in EMG peak amplitude for supraspinatus external rotation 60°/s and triceps elbow extension MVIC ($P < 0.05$), with the untrained arm also increasing significantly in elbow extension MVIC. The dominant groups showed significantly greater peak EMG increases than the non-dominant groups in trained supraspinatus 240°/s and untrained teres major MVIC ($P < 0.05$).

Conclusions Unilateral elastic resistance training produces strength and neuromuscular benefits in both arms, suggesting that home-based interventions are a potential rehabilitation adjunct in preventing reinjuries. Cross-education is greatest when the dominant arm is trained at slower velocities.