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Contents:

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In a cross sectional study in cricketers, shoulder injuries were reported in 23% of players in a season and these interfered mostly with fielding rather than batting or bowling - only 1.7% players were not available for team selection in the season due to shoulder pain

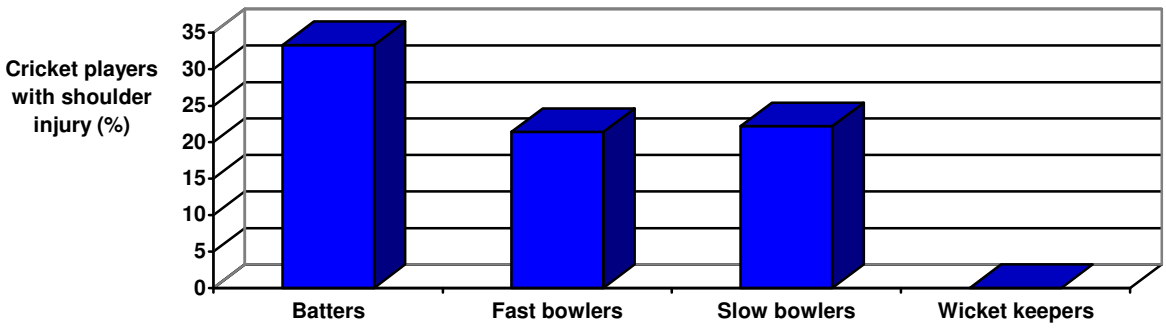
Title: Shoulder injury in professional cricketers
Authors: Ranson C, Gregory PL
Reference: Physical Ther Sport 2008; 9: 34-49
Type of study: Descriptive cross-sectional study
Keywords: cricket, shoulder, injury, epidemiology

EB Rating: 5.5/10 **CI Rating: 7/10**

Background: The patterns of shoulder injuries, and their impact on cricket performance has not been well studied
Research question/s: What is the prevalence of shoulder injuries in professional cricketers a first class cricket season, and what are the effects of these injuries on cricket performance?

Methodology:
- Subjects: 158 / 378 professional cricketers (42% response, 17-39 yrs) who completed 2 questionnaires
- Experimental procedure: All the subjects (divided into fast and slow bowlers, batters, and wicket keepers) were requested to compete 2 questionnaires (through their physiotherapists) that contained information about 1) the presence of shoulder injury (any shoulder pain, weakness or instability that resulted in payers to miss a cricket match or a training session and 2) the impact of any shoulder pain whilst playing cricket, 3) impaired cricketing performance and 4) shoulder injury related problems during training and activities of daily living
- Measures of outcome: Incidence of shoulder injury in the season (%), severity of injury (preventing playing a match in %), % players experiencing shoulder problems in components of the game

Main finding/s:
- Incidence of shoulder injuries in cricketers (season): 23%, In 1.7% players were not available for selection due to a shoulder injury



- Shoulder pain and fielding: 64% of players with shoulder injuries often or always had associated problems when fielding - 58% of the injured players fielded in a specific position to avoid shoulder injury related problems and 18% pain on throwing at some stage during the season
- The impact of shoulder pain on batting and bowling: 1-3 % of injured players reported that the injury interfered with components of either batting or bowling

Conclusion/s:
- In a cross sectional study of cricket players, shoulder injuries were reported in 23% of players in a season, and these interfered mostly with fielding rather than batting or bowling - only 1.7% players were not available for team selection in the season due to shoulder pain

Methodological considerations:
Descriptive study, self reported data, low response rate (selection bias)

In young male military recruits, the incidence of acute patellar dislocation is reported as 77 / 100 000 person years - factors associated with this injury are increased height and body weight, and haemarthrosis as well as medial patellofemoral ligament injury are very commonly associated with acute patellar dislocation

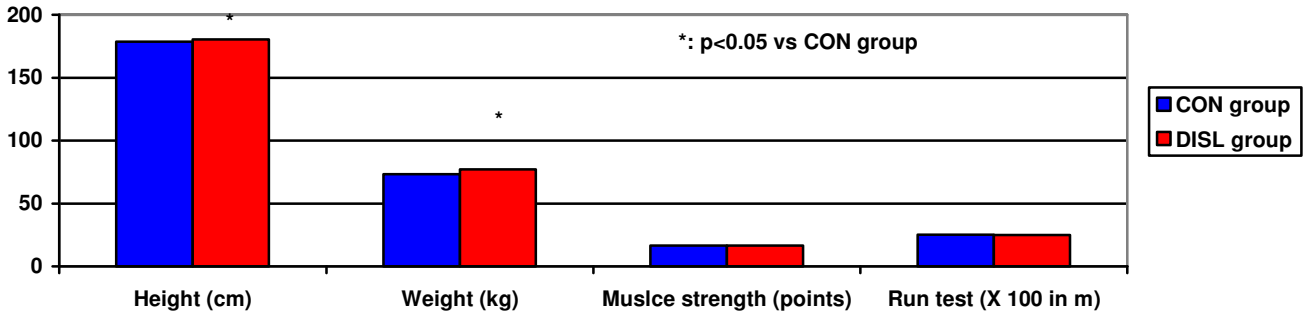
Title: Incidence and risk factors of acute traumatic primary patellar dislocation
Authors: Sillanpaa P, Mattila VM, Iivonen T, Visuri T, Pihlajamaki H
Reference: Med Sci Sports Exerc 2008; 40(4): 606-611
Type of study: Prospective cohort study
Keywords: knee, patella, dislocation, incidence, risk factors, military training

EB Rating: 7.5/10 **CI Rating: 7/10**

Background: Patellar dislocation is a relatively common cause of acute knee injury resulting in haemarthrosis – however the incidence and risk factors of this injury has not been well described
Research question/s: What are the incidence, nature, and risk factors of primary traumatic patellar dislocations?

Methodology:
- Subjects: 128 714 male military conscripts (17-30 yrs) each undergoing training between 6-9 months
- Experimental procedure: Of the cohort, background risk factor data from acute first-time confirmed (examination, MRI, arthroscopy) traumatic patellar dislocations (excluding previous patellar dislocations/subluxation, or knee trauma) (DISL group=72, 19.8±0.9 yrs) were identified from hospital records and compared with that of non-injured controls (CON=128 436, 20.0±1.3 yrs). Subjects in the DISL group were observed during their service period for a short-term outcome
- Measures of outcome: Incidence of patellar dislocation (per 100 000 person years), clinical features, factors associated with acute patellar dislocation

Main finding/s:
- Incidence: The incidence of acute traumatic primary patellar dislocations among male conscripts was 77.4 / 100 000 person years (95% CI: 61.1 – 96.8)
- Clinical features (% of injured subjects): haemarthrosis (100%), medial retinacular disruption and patellofemoral ligament (MPFL) injury (100%), osteochondral fracture (44%)



- Return to military serviced: Return was not related to type of treatment

Conclusion/s:
- In young male military recruits, the incidence of acute patellar dislocation is reported as 77 / 100 000 person years - factors associated with this injury are increased height and body weight, and haemarthrosis as well as medial patellofemoral ligament injury are very commonly associated with acute patellar dislocation

Methodological considerations:
Well conducted study

In an animal model of a healing tendon to bone interface, photoencapsulation of bone morphogenetic protein-2 (BMP) and periosteal progenitor cells improve tendon graft healing (biomechanical and histological parameters)

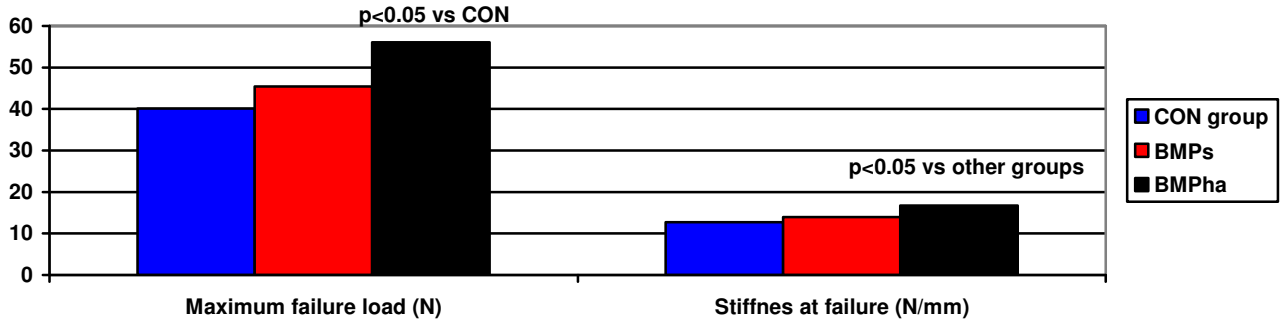
Title: Photoencapsulation of bone morphogenetic protein-2 and periosteal progenitor cells improve tendon graft healing in a bone tunnel
Authors: Chen C-H, Liu H-W, Tsai C-L, Yu C-M, Lin I-H, Hsiue G-H
Reference: Am J Sports Med 2008; 36(3): 461-473
Type of study: Controlled laboratory study (animals)
Keywords: tendon, bone healing, animal model, bone morphogenetic protein, periosteal progenitor cell

EB Rating: 8/10 **CI Rating: 8/10**

Background: There is an increasing interest to explore the use of tissue-engineering techniques to promote tendon graft incorporation within the bone tunnel
Research question/s: Does conjugation of hyaluronic acid-tethered bone morphogenetic protein-2 (BMP) stimulate periosteal progenitor cells direct fibrocartilagenous attachment and new bone formation in an extra-articular tendon-bone healing animal model?

Methodology:
- Animal material: 42 rabbits (mature New Zealand White rabbits, 3.5±1.2kg)
- Experimental procedure: All the rabbits underwent a surgical procedure to create a healing tendon-bone model (transplantation of the long digitorum extensor tendon into a bone tunnel of the proximal tibia – pulling the tendon through a drill hole in the proximal tibia and attaching it to the medial aspect of the tibia). Animals were then randomly assigned to receive 1) either no bone morphogenetic protein (BMP) (CON), 2) soluble BMP (BMPs), or 3) hyaluronic acid-tethered BMP (BMPha) that was injected into the bone tunnel. Histological and biomechanical examination of the tendon-bone interface was evaluated at 3 and 6 weeks postoperatively
- Measures of outcome: histological analysis, biomechanical analysis (failure load, stiffness at failure load)

Main finding/s:
- Histological analysis: At 6 weeks, there was an interface fibrocartilage and new bone formed in the BMPha group by photoencapsulation of bone morphogenetic protein-2 and periosteal progenitor cells



Conclusion/s:
- In an animal model of a healing tendon to bone interface, photoencapsulation of bone morphogenetic protein-2 (BMP) and periosteal progenitor cells improve tendon graft healing (biomechanical and histological parameters)

Methodological considerations:
Well conducted study, application to the human model requires further investigation

The talk test (reciting a 31-word paragraph) during exercise correlates with the ventilatory threshold (as a measure of exercise intensity) in healthy adults – however, the talk test becomes negative only after 2 minutes or longer, even at high intensity exercise

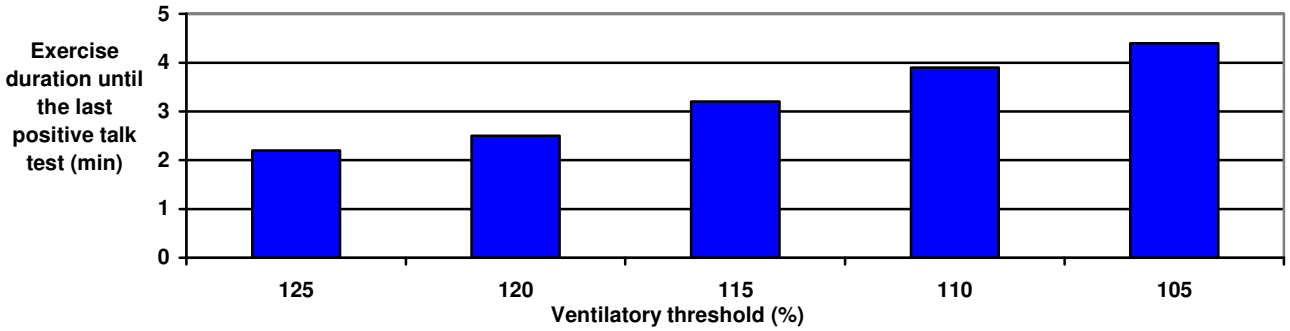
Title: The talk test as a marker of exercise training intensity
Authors: Foster C, Porcari JP, Anderson J, Paulson M, Smaczny D, Webber H, Doberstein ST, Udermann B
Reference: J Cardiopulm Rehab Prev 2008; 28: 24-30
Type of study: Correlation study for diagnostic test
Keywords: exercise prescription, exercise training, training intensity

EB Rating: 7/10 **CI Rating: 7/10**

Background: In chronic disease exercise rehabilitation programmes a variety of clinical tests can be used to assess exercise intensity during training – the Talk Test (TT) may be a surrogate of the ventilatory threshold (VT)
Research question/s: Is the talk test (TT), as a measure of exercise intensity, related to the ventilatory threshold (VT) as a measure of exercise intensity during exercise?

Methodology:
- Subjects: 4 groups of healthy young adults (males and females)
- Experimental procedure: The subjects were part of four independent experiments that were designed to alter the ventilatory threshold (VT) (decreasing VT by blood donation; increasing VT by 6 weeks exercise training, and vary VT by systematically changing the exercise intensity above and below the VT). During all these tests, alterations of the VT were matched to responses of the talk test (TT – ability to recite a 31 word paragraph at the end of each exercise stage)
- Measures of outcome: Last stage of positive talk test (LPTT)

Main finding/s:
- After blood donation and exercise training: There was a match between changes in the exercise intensity at VT and at the last positive stage of the TT



- The time required for the TT to become negative (unable to recite 31 word paragraph) at high intensities (> VT) decreased but was still more than 2 minutes

Conclusion/s:
- The talk test (reciting a 31-word paragraph) during exercise correlates with the ventilatory threshold (as a measure of exercise intensity) in healthy adults – however, the talk test becomes negative only after 2 minutes or longer, even at high intensity exercise

Methodological considerations:
Well conducted study

In young athletes undergoing pre-participation screening for diseases associated with sudden cardiac death, a family history and a personal symptom questionnaire alone do not adequately identify these diseases - a resting ECG is recommended as an additional investigation

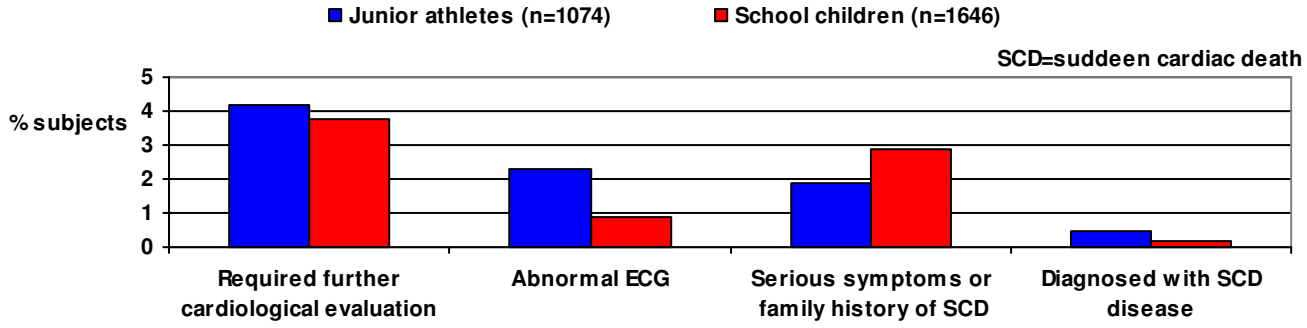
Title: Efficacy of personal symptoms and family history questionnaires when screening for inherited cardiac pathologies: the role of electrocardiography
Authors: Wilson MG, Basavarajaiah S, Whyte GP, Cox S, Loosemore M, Sharma S
Reference: Br J Sports Med 2008; 42: 207-211
Type of study: Diagnostic test evaluation
Keywords: athlete, young, pre-participation, screening, cardiac pathology, sudden cardiac death, ECG

EB Rating: 7.5/10 **CI Rating: 8/10**

Background: Pre-participation screening to identify athletes at risk of sudden cardiac death is very important – however, the nature of the screening procedure is not clear, and whether a resting ECG should be included has not been resolved. Cost and the practicality of tests are also important considerations
Research question/s: What is the efficacy of a resting 12-lead ECG together with personal symptoms and family history questionnaires and physical examination in the screening for diseases with the potential to cause sudden cardiac death in the young?

Methodology:
- Subjects: 1074 national and international junior athletes (15.8±0.7 yrs, 10-27 yrs) and 1646 physically active schoolchildren (16.1±2.1 yrs, 14-20 yrs)
- Experimental procedure: All the subjects underwent screening (personal medical history – fainting, dizziness, palpitations, chest pain, breathlessness, family history of heart disease or sudden death) by questionnaire, and then underwent physical examination as well as a 12-lead resting ECG
- Measures of outcome: Number (%) athletes diagnosed with a disease that is associated with sudden cardiac death in athletes with positive personal medical history, family history and positive resting ECG

Main finding/s:



- There were 9 participants with a positive diagnosis of a disease associated with sudden cardiac death (SCD), and none of the subjects diagnosed with a disease associated with SCD were symptomatic or had a family history of note

Conclusion/s:
- In young athletes undergoing pre-participation screening for diseases associated with sudden cardiac death, a family history and a personal symptom questionnaire alone do not adequately identify these diseases - a resting ECG is recommended as an additional investigation

Methodological considerations:
Well conducted study