

SportsMed Update

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In a case series of over 200 athletes with groin pain, the most common cause was hip pathology, followed by pubic symphysis injury – hip pathology was also associated with a reduced likelihood of returning to pre-injury activity level

Title: The diagnosis of longstanding groin pain: a prospective clinical cohort study

Authors: Bradshaw CJ, Bundy M, Falvey E

Reference: Br J Sports Med 2008; 42: 551-554

Type of study: Case series

Keywords: groin injury, athletes, diagnosis, aetiology

EB Rating: 5.5/10

CI Rating: 7/10

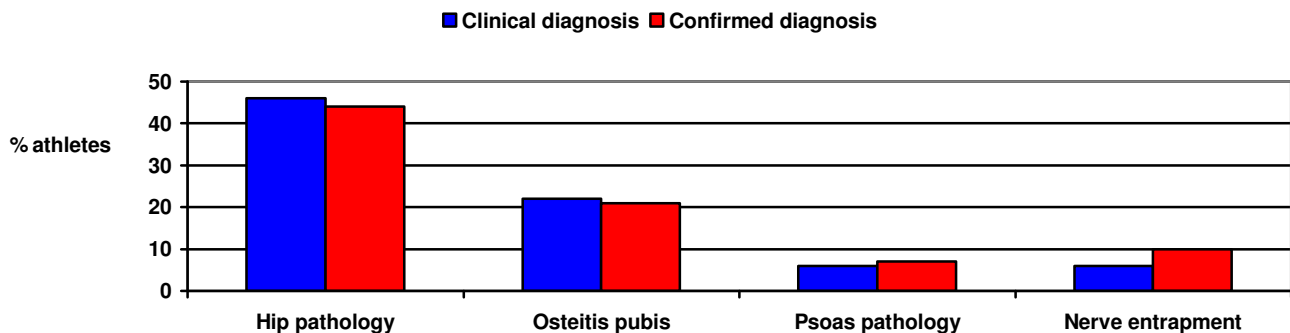
Background: Recently a system involving specific categories (adductor related, hernia and lower abdominal pain related, iliopsoas related) has been proposed for the clinical classification of groin pain in athletes

Research question/s: What is the usefulness and validity of the novel clinical classification of groin pain in athletes?

Methodology:

- Subjects: 218 consecutive athletes from 23 sporting codes with longstanding groin pain (mean age 32 yrs, male=1730) presenting to a primary care sports medicine clinic
- Experimental procedure: All the athletes underwent a clinical assessment (by the same sports physician) and an initial clinical diagnosis was made. Special investigations were done to confirm the diagnosis as required (n=141), and treatment was prescribed. Cases were then followed up (mean of 17 months) by telephonic interview and email to determine outcome (return to pre-injury level of activity)
- Main measures of outcome: Causes of groin pain (%), return to pre-injury activity according to diagnosis

Main finding/s:



- Hip pathology: Causes were acetabular labral pathology, osteoarthritis, chondral injury, capsular pathology
- Follow up: Athletes with hip pathology were less likely to return to pre-injury activity compared with those diagnosed with pubic pathology (28% vs. 15%)

Conclusion/s:

- In a case series of over 200 athletes with groin pain, the most common cause was hip pathology, followed by pubic symphysis injury – hip pathology was also associated with a reduced likelihood of returning to pre-injury activity level

Methodological considerations:

Case series, selection bias

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Hand and finger injuries appear to be common in American football and involve mostly the metacarpals and the fingers – fractures of the fingers and sprains are particularly common

Title: Upper extremity injuries in the national football league. Part 1: Hand and digital injuries

Authors: Mall NA, Carlisle JC, Matava JM, Powell JW, Goldfarb CA

Reference: Am J Sports Med 2008; 36(10): 1938-1944

Type of study: Retrospective case series

Keywords: hand injury, finger injury, American football, upper extremity

EB Rating: 6/10

CI Rating: 7/10

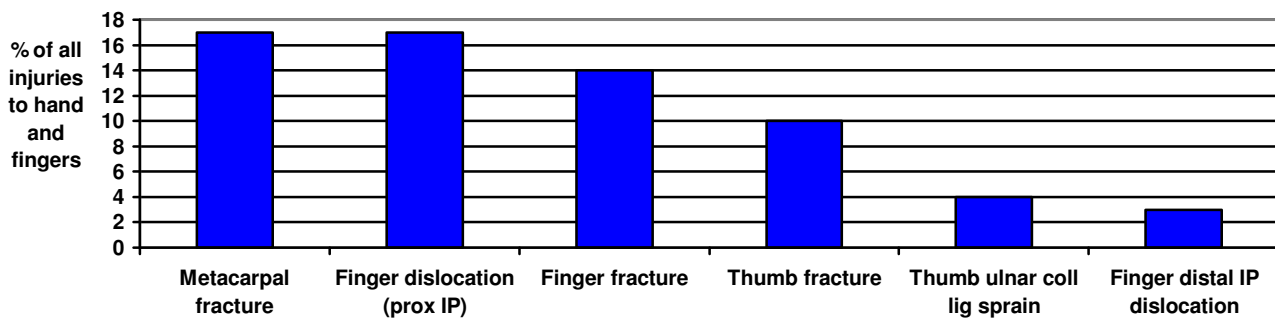
Background: The epidemiology of hand and finger injuries in American football has not been well documented

Research question/s: What is the pattern (anatomical site, injury type, athlete's position) of hand, first ray, and finger injuries in professional American football players?

Methodology:

- Subjects: American football players in the National Football League over a 10-year period (1996-2005)
- Experimental procedure: The basis of the methods for this study were the injury records (1385 injuries) in the League's injury surveillance database – data from 10 yrs were analyzed to document the anatomical site injured, type of injury, athlete position, and activity at the time of injury
- Measures of outcome: Anatomical site of injury (%), player position, type and mechanism

Main finding/s:



- Player position: Most injuries occurred in the offensive and defensive linemen
- Injury type: The most common injury types were fractures (48%) and sprains (36%)
- Mechanism of injury: Tackling caused most injuries (28%)

Conclusion/s:

- Hand and finger injuries appear to be common in American football and involve mostly the metacarpals and the fingers – fractures of the fingers and sprains are particularly common

Methodological considerations:

Case series, no documentation of exposure to determine true incidence

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43% of hikers climbing to over 4400m developed symptoms of acute mountain sickness (AMS) (Lake Louise score) - predictors of AMS were younger age, less hours acclimatizing at > 3000m, a past history of AMS, and taking analgesics

Title: Mt Whitney: Determinants of summit success and acute mountain sickness

Authors: Wagner DR, D'Zatko K, Tatsugawa K, Murray K, Parker D, Streeper T, Willard K

Reference: Med Sci Sports Exerc 2008; 40(10): 1820-1827

Type of study: Case control study

Keywords: altitude, mountaineering, risk factors, acute mountain sickness

EB Rating: 6.5/10

CI Rating: 7.5/10

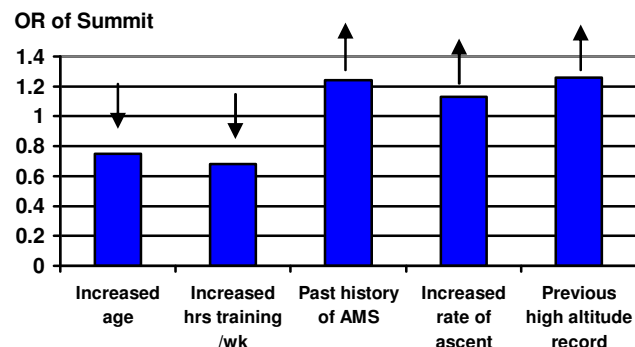
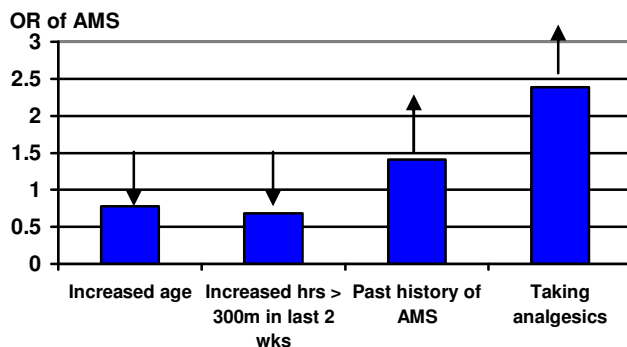
Background: More recreational hikers attempt summits at higher altitudes – factors that determine their risk for developing acute mountain sickness are important to study

Research question/s: What is the prevalence of a) summit success and b) acute mountain sickness (AMS) when ascending to 4419 m and what determines summit success and AMS?

Methodology:

- Subjects: 886 hikers who attempted to summit a 4419m mountain
- Experimental procedure: All the subjects were interviewed during the descent. A questionnaire was used and this included demographic data, acclimatization, training and altitude history (hours spent at > 3000m in last 2 weeks), and information about the attempted ascent (rate). Acute mountain sickness (AMS) was determined using the lake Louise Self-Assessment Score and subjects were classified as those with AMS (AMS=377, 43%) and no AMS (N=509). 81% of the subjects reached the summit (SUMM group)
- Measures of outcome: Odds ratios (OR) for summit success and AMS (linear regression analysis)

Main finding/s:



Conclusion/s:

- 43% of hikers climbing to over 4400m developed symptoms of acute mountain sickness (AMS) (Lake Louise score) - predictors of AMS were younger age, less hours acclimatizing at > 3000m, a past history of AMS, and taking analgesics

Methodological considerations:

Selection bias, recall bias, self-reported data immediately after descent (symptoms similar to AMS could be fatigue)

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In an animal experiment, 8 weeks of exercise training, that induces intermittent myocardial ischemia, improved coronary collateral formation through increased vascular endothelial growth factor (VEGF) expression

Title: Effect and mechanism of intermittent myocardial ischemia induced by exercise on coronary collateral formation

Authors: Lu X, Wu T, Huang P, Lin S, Qiu F, Meng X, Gao J, Li J

Reference: Am J Phys Med Rehabil 2008; 87: 803-814

Type of study: Randomized clinical trial (animal model)

Keywords: exercise, ischaemia, coronary collateral formation

EB Rating: 7/10

CI Rating: 8/10

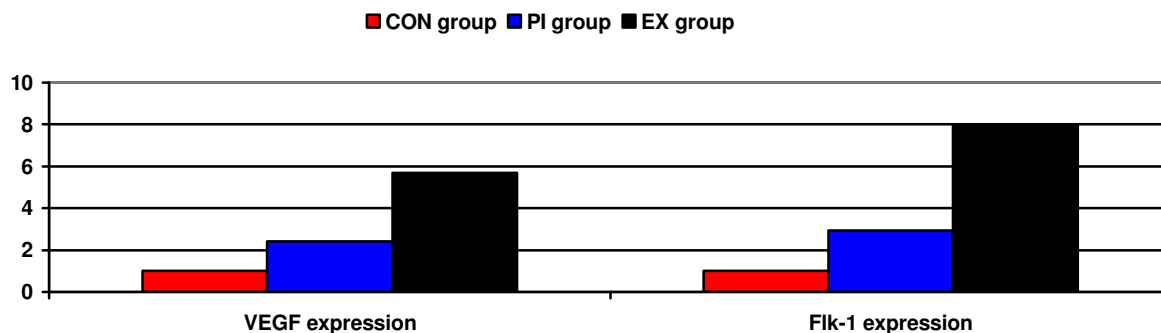
Background: Relative ischaemia that is induced by exercise training may increase coronary collateral circulation-increased expression of vascular endothelial growth factor (VEGF) and its receptor may be used as markers of collateral formation

Research question/s: Does intermittent myocardial ischemia that is induced by exercise safely promote coronary collateral formation in the ischemic area of the myocardium?

Methodology:

- Animals: 32 Guangxi BA-MA miniature pigs
- Experimental procedure: A balloon constrictor was surgically implanted in the first obtuse marginal coronary artery of each animal (to selectively occlude this vessel) and they were divided into 3 groups: 1) sham-operated (CON- no occlusions and sedentary), 2) pure ischemia (PI - episodes of pure ischemia induced by brief balloon occlusion), and 3) exercise training (EX - two episodes of pure ischemia were induced by brief balloon occlusion and animals then performed treadmill programs with 2 episodes of exercise-induced ischemia for 8 wks).
- Measures of outcome: VEGF and its receptor (Flk-1) expression, capillary density, relative myocardial blood flow, cardiac troponin were measured before and after intervention

Main finding/s:



- Relative myocardial blood flow, VEGF, Flk-1 and capillary density were increased in the EX group compared with the PI and CON groups, and the same variables were higher in the PI compared with the CON group

Conclusion/s:

- In an animal experiment, 8 weeks of exercise training, that induces intermittent myocardial ischemia, improved coronary collateral formation through increased vascular endothelial growth factor (VEGF) expression

Methodological considerations:

Well conducted study

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Rapid weight reduction in young wrestlers reduces muscle and fat tissue size (cross sectional area) – rehydration after weigh-in resulted in some recovery of the reduced size of the tissues

Title: MRI evaluation of body composition changes in wrestlers undergoing rapid weight loss

Authors: Kukidome T, Shirai K, Kubo J, Matsushima Y, Yanagisawa O, Homma T, Aizawa K

Reference: Br J Sports Med 2008; 42: 514 - 518

Type of study: Prospective cohort study

Keywords: wrestling, weight, dehydration, body composition

EB Rating: 7/10

CI Rating: 7/10

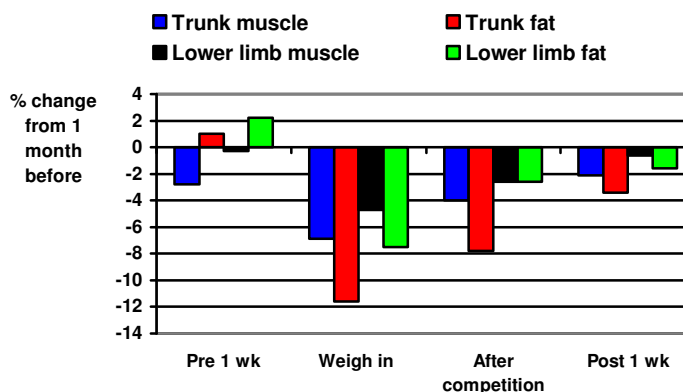
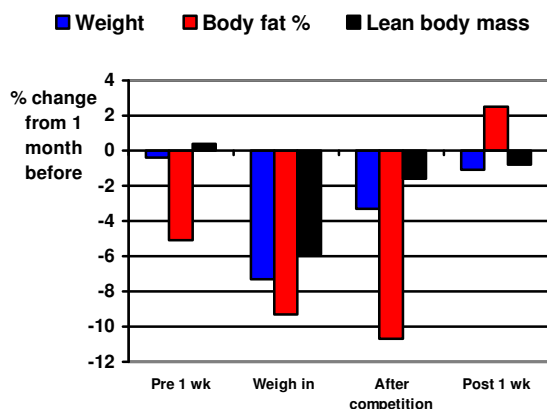
Background: Making weight is common in some sports such as wrestling and boxing – this is to achieve the correct body mass at the time of weigh-in before competition

Research question/s: What are the changes in body composition (using magnetic resonance imaging to determine tissue size) that occur in college wrestlers who undergo rapid weight reduction?

Methodology:

- Subjects: 12 collegiate male wrestlers (18–22 yrs, 170 ± 4.6 mc, 74.5 ± 9.2 kg)
- Experimental procedure: All the subjects were serially assessed to accurately determine body composition. Body weight, body fat percentage, body water content and magnetic resonance imaging (MRI of the right femoral region and the trunk to determine muscle and subcutaneous fat) were measured serially (1 month and 1 week before weigh-in, on the day of the weigh-in, on the day of the match (after the match), and 1 week after the weigh-in). Food and fluid intake was also assessed
- Measures of outcome: Serial changes (% change from first measurement 1 month before match) in body composition variables, including novel MRI data (visceral area, total muscle area, subcutaneous fat area)

Main finding/s:



Conclusion/s:

- Rapid weight reduction in young wrestlers reduces muscle and fat tissue size (cross sectional area) – rehydration after weigh-in resulted in some recovery of the reduced size of the tissues

Methodological considerations:

Well conducted study

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