Musculoskeletal Soft Tissue Clinic

Current Awareness Newsletter

April/May 2016
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Severe extremity injury in the adult patient

Authors: Jeremy W Cannon, MD, FACS; Todd E Rasmussen, MD, FACS

Literature review current through: May 2016. | This topic last updated: Feb 18, 2016.

INTRODUCTION — Trauma to the extremities represents one of the most common injury patterns seen in emergency medical and surgical practice. As extremity injuries are evaluated, each of four functional components (nerves, vessels, bones, and soft tissues) must be considered individually and together. If three of these four elements are injured, the patient has a “mangled extremity” [1,2]. Achieving the best outcome in patients with severe extremity injuries requires a multidisciplinary approach with oversight by the general or trauma surgeon and commitment from other specialists including orthopedic, vascular, and plastic surgeons, as well as rehabilitation specialists. In most instances, limb salvage can be attempted even if the patient has a mangled extremity. However, at times, the injury to the extremity is so severe that primary amputation at the initial operation is required to

Posterior cruciate ligament injury

Authors: James MacDonald, MD, MPH, FAAFP, FACSM, Richard Rodenberg, MD

Literature review current through: May 2016. | This topic last updated: Mar 10, 2016.

INTRODUCTION — The posterior cruciate ligament (PCL) is the primary restraint to posterior translation of the tibia at the knee joint [1-4]. The bulk of injuries to this ligament occur in combination with other internal derangements of the knee in association with multi-ligament trauma; isolated PCL injuries are uncommon [5,6]. The PCL is the knee ligament least frequently injured during sports [5-7]. Over time, increasing knowledge of the anatomy and biomechanics of this ligament has highlighted its importance with regard to knee stability and function. As isolated injury is uncommon, the natural history of injury has yet to be elucidated fully.
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Current Awareness Database Articles related to Musculoskeletal Soft Tissue

Below is a selection of articles recently added to the healthcare databases, grouped in the following categories:

- Acute Soft Tissue injuries
- Musculoskeletal
- Sports Injuries

If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

Acute soft tissue injuries

Title: Retrospective analysis of acute hand injuries in an academic tertiary hospital that need plastic surgeon consultation

Citation: European Journal of Plastic Surgery, April 2016, vol./is. 39/2(93-98)

Author(s): Kocer U., Ozer K., Dikmen A., Akdeniz H., Suadiye U., Oruc M., Aslan G.

Abstract: Background: Hand surgery covers a major area of plastic surgery practice. To our knowledge, there is no publication directly investigating the characteristics of hand injuries that plastic surgery consultation was requested, which could be an essential information to guide the plastic surgery education programs. This study determined the features of the hand injuries presented to the plastic surgery department during a year from an academic trauma hospital in Turkey. Methods: Epidemiological information of the patients with hand injuries who were admitted to the emergency department of an academic tertiary hospital and needed plastic surgery consultation was evaluated. Patients were analyzed retrospectively in terms of gender, distribution of age, occupation, mechanism of injury, cause of injury, injured soft tissue structures, and duration of hospitalization. Results: One thousand and forty-three (83.7 %) of the 1246 patients included in the study were male and 203 (16.3 %) were female. The mean age of patients was 32. The most common injured structure were the tendons with a rate of 41.2 %. The tendons were followed by fractures, tissue defects, nail injuries, nerve injuries, and vascular injuries with a rate of 18.8, 16.6, 10, 8.3, and 5.3 %, respectively. The most frequent mechanism of injury was crush type (38.6 %) followed by blunt cut (26.9 %), sharp cut (25.9 %), combined (4.8 %), and avulsion injuries (3.8 %). 7.8 % of the patients with hand injuries had amputations. Conclusions: Despite the limitations, our study can reflect emergency hand injuries that a plastic surgeon may be faced within a tertiary care center. By our work, a plastic surgeon will be aware of
demographic features of a patient with a hand injury presented by the emergency department. Level of Evidence: Level IV, risk/prognostic.

**Title:** Acute laparoscopic management of thoracoabdominal gunshot wound

**Citation:** Surgical Endoscopy and Other Interventional Techniques, March 2016, vol./is. 30/(S368),

**Author(s):** Kudav S., De La Torre R., Quick J.A.

**Abstract:** Introduction: Penetrating thoracoabdominal trauma is often associated with hemodynamic instability, precluding laparoscopic management. However, in hemodynamically stable patients, laparoscopy has the ability to both effectively characterize injuries not reliably diagnosed via imaging techniques, as well as provide a viable treatment modality. We present a case of a thoracoabdominal gunshot wound treated acutely with laparoscopic techniques. Case Presentation: A 27 year old male was evaluated in the emergency department after sustaining a highvelocity gunshot wound to the right chest. Physical exam revealed diminished breath sounds over the right hemithorax, mild tachycardia, with a normal blood pressure and pulse pressure. Focused assessment with sonography for trauma (FAST) revealed hemopneumothorax with no evidence of hemoperitoneum. Tube thoracostomy was performed with return of air and 400 mL blood. The patient remained hemodynamically stable and underwent contrasted CT imaging of the chest, abdomen and pelvis, revealing right lung injury with hemopneumothorax, multiple rib fractures, and a Grade 2 liver laceration. On imaging, the missile was seen with the right flank soft tissue. The presence of a liver laceration in the face of a gunshot wound to the right chest was suggestive of diaphragmatic injury. The patient was taken emergently for diagnostic laparoscopy. Upon identification of the diaphragmatic injury, pneumoperitoneum was decreased to 10 mmHg and thoracostomy collection container suction was confirmed. Our working ports were placed in a similar configuration to a laparoscopic cholecystectomy, with the exception of a 10 mm epigastric port to allow sutures to be passed. The laparoscope was inserted through the diaphragmatic injury and the chest examined and hemothorax evacuated. The right lower lobe was contused, and the lung adequately inflated without evidence of tension physiology. Ventilator peak pressures were kept under 30 mmHg. Hepatorrhaphy was performed laparoscopically with application of a topical hemostatic agent. Addressing the diaphragm injury, two sutures were placed at the lateral edges of the injury and pulled through opposite ports to allow the injury to be aligned properly, and was then repaired with interrupted nonabsorbable sutures. No complications occurred and the patient was discharged following tube thoracostomy removal. Conclusion: Selective acute laparoscopic management of penetrating thoracoabdominal wounds is safe and effective in hemodynamically stable patients. Attention to pulmonary physiology is crucial to successful laparoscopic completion. (figure present).

**Title:** Assessment of MRI as a Modality for Evaluation of Soft Tissue Injuries of the Spine as Compared to Intraoperative Assessment.

**Citation:** Journal of clinical and diagnostic research : JCDR, Mar 2016, vol. 10, no. 3, p. TC01.
**Author(s):** Haris, Arafat Muhammed, Vasu, Chembumkara, Kanthila, Mahesha, Ravichandra, Gopalakrishna, Acharya, Koteswar Devadasa, Hussain, Mohamed Musheer

**Abstract:** Traumatic injuries of the spine and spinal cord are potentially devastating as they may lead to significant neurological damage as the clinical and prognostic spectrum of the effects of spinal injuries is vast. Timely imaging studies can help mitigate these possibly life threatening complications. There is a dearth of studies that directly compare MR imaging findings to surgical findings. Hence, this study was undertaken to assess the sensitivity of MRI in identifying injuries to the soft tissue structures of the spine. MRI scans were performed on 31 cases of acute spinal injuries that presented within 72 hours of the trauma and underwent surgical fixation by either an anterior or posterior approach. The non-osseous structures namely; Anterior Longitudinal Ligament (ALL), Posterior Longitudinal Ligament (PLL), Intervertebral Disc, Ligamentum Flavum, Interspinous Ligament (ISP) and the Spinal Cord were evaluated. They were classified as 'True Positive' if an injury was found to correlate with intraoperative findings and as 'False Negative' when diagnosed falsely as normal. The statistical sensitivity of MRI in diagnosing injuries to the non-osseous structures of the spine were thus calculated. Of the 31 patients, in 51.6% of patients the site of injury was to the cervical spine (n=16), thoracic spine was the next highest in occurrence of 39% (n=12) and lumbar spine accounted for the least. In correlating the imaging findings to the intraoperative findings, MRI was highly sensitive in detecting injuries to the Posterior Longitudinal Ligament (94.4%) and the Spinal cord (93%) and fairly high in detecting injuries to the Intervertebral disc. However coming to the Ligamentum flavum and interspinous ligaments, the sensitivity of the MRI dropped to 62.5% and 63.6% respectively. MRI was found to be highly sensitive in detecting injuries to the spinal cord and the posterior longitudinal ligament and moderately sensitive for detection of disc injuries. Though concerning the Anterior Longitudinal Ligament, Ligamentum Flavum and the Interspinous Ligaments MRI performed ineffectively with higher number of false negative interpretations.

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**Musculoskeletal**

**Title:** Comparison of skin pressure measurements with the use of pelvic circumferential compression devices on pelvic ring injuries.

**Citation:** Injury, Mar 2016, vol. 47, no. 3, p. 717-720, 1879-0267 (March 2016)

**Author(s):** Prasarn, Mark L, Horodyski, MaryBeth, Schneider, Prism S, Pernik, Mark N

**Abstract:** Pelvic circumferential compression devices are commonly used in the acute treatment of pelvic fractures for reduction of pelvic volume and initial stabilisation of the pelvic ring. There have been reports of catastrophic soft-tissue breakdown with their use. The aim of the current investigation was to determine whether various pelvic circumferential compression devices exert different amounts of pressure on the skin when applied with the force necessary to reduce the injury. The study hypothesis was that the device with the greatest surface area would have the lowest pressures on the soft-tissue. Rotationally unstable pelvic injuries (OTA type 61-B) were surgically created in five fresh,
whole human cadavers. The amount of displacement at the pubic symphysis was measured using a Fastrak, three-dimensional, electromagnetic motion analysis device (Polhemus Inc., Colchester, VT). The T-POD, Pelvic Binder, Sam Sling, and circumferential sheet were applied in random order for testing. The devices were applied with enough force to obtain a reduction of less than 10mm of diastasis at the pubic symphysis. Pressure measurements, force required, and contact surface area were recorded with a Tekscan pressure mapping system. The mean skin pressures observed ranged from 23 to 31kPa (173 to 233mm of Hg). The highest pressures were observed with the Sam Sling, but no statistically significant skin pressure differences were observed with any of the four devices (p>0.05). The Sam Sling also had the least mean contact area (590cm$^2$). In greater than 70% of the trials, including all four devices tested, skin pressures exceeded what has been shown to be pressure high enough to cause skin breakdown (9.3kPa or 70mm of Hg). Application of commercially available pelvic binders as well as circumferential sheeting commonly results in mean skin pressures that are considered to be above the threshold for skin breakdown. We therefore recommend that these devices only be used acutely, and definitive fixation or external fixation should be performed early as patient physiology allows. There may be some advantage of use of a simple sheet given its low cost, versatility, and ability to alter contact surface area. Copyright © 2015 Elsevier Ltd. All rights reserved.

Title: Emergency Magnetic Resonance Imaging of Musculoskeletal Trauma.

Citation: Magnetic resonance imaging clinics of North America, May 2016, vol. 24, no. 2, p. 391-402

Author(s): Kumaravel, Manickam, Weathers, William M

Abstract: Musculoskeletal (MSK) trauma is commonly encountered in the emergency department. Computed tomography and radiography are the main forms of imaging assessment, but the use of magnetic resonance (MR) imaging has become more common in the emergency room (ER) setting for evaluation of low-velocity/sports-related injury and high-velocity injury. The superior soft tissue contrast and detail provided by MR imaging gives clinicians a powerful tool in the management of acute MSK injury in the ER. This article provides an overview of techniques and considerations when using MR imaging in the evaluation of some of the common injuries seen in the ER setting. Copyright © 2016 Elsevier Inc. All rights reserved.

Title: A Clinical Perspective and Definition of Spinal Cord Injury.

Citation: Spine, Apr 2016, vol. 41 Suppl 7, p. S27.

Author(s): Kretzer, Ryan M

Abstract: Spinal cord injury (SCI) can be complete or incomplete. The level of injury in SCI is defined as the most caudal segment with motor function rated at greater than or equal to 3/5, with pain and temperature preserved. The standard neurological classification of SCI provided by the American Spinal Injury Association (ASIA) assigns grades from ASIA A
(complete SCI) through ASIA E (normal sensory/motor), with B, C, and D representing varying degrees of injury between these extremes. The most common causes of SCI include trauma (motor vehicle accidents, sports, violence, falls), degenerative spinal disease, vascular injury (anterior spinal artery syndrome, epidural hematoma), tumor, infection (epidural abscess), and demyelinating processes (1). (SDC Figure 1, http://links.lww.com/BRS/B91)(Figure is included in full-text article.).

Title: The Impact of a Preauthorization Policy on the After-hours Utilization of Emergency Department Computed Tomography Imaging.

Citation: Academic radiology, May 2016, vol. 23, no. 5, p. 588-591, 1878-4046 (May 2016)

Author(s): Burton, Kirsteen R, Lawlor, Raymond L, Dhanoa, Deljit

Abstract: We evaluated the effects of a streamlined emergency department (ED) policy for CT ordering, pre- and postimplementation, on the completed imaging study rates of all after-hours computed tomography (CT) studies. The study hypothesis was that a streamlined CT ordering process would increase the utilization rates of ED CT. A prospective cohort study was used to estimate the effect of enhancing a preauthorization policy for after-hours CT studies requested through the ED, performed between January 1 and June 30, 2013, and the postimplementation period, performed between January 1 and June 30, 2014. Inclusion criteria were all CT chest, CT abdomen/pelvis, musculoskeletal, neurological, and neuroangiographic examinations performed by ED physicians on adult patients. Pre- and postintervention examination imaging study rates were compared. The period following implementation of the preauthorization policy was associated with a statistically significant increase in utilization for most subtypes of CT examinations (CT chest, CT abdomen/pelvis, and musculoskeletal CT studies), with the exception of neurological examinations, which showed a significant decrease. This study demonstrates a trend toward increased utilization of CT resources after implementation of an ED preauthorization policy with most study types showing significantly increased utilization. In the case of neurological examinations, a potential "substitution effect" was observed, whereby the rates of neuroangiographic studies showed a marked increase, offsetting the decrease in general neurological examinations performed. Departments considering implementation of preauthorization policies should weigh carefully the benefits of ED workflow efficiencies against the potential harms of increased CT use.

Title: Demystifying damage control in musculoskeletal trauma.

Citation: Annals of the Royal College of Surgeons of England, May 2016, vol. 98, no. 5, p. 291-294, 1478-7083 (May 2016)

Author(s): Bates, P, Parker, P, McFadyen, I, Pallister, I

Abstract: Trauma care has evolved rapidly over the past decade. The benefits of operative fracture management in major trauma patients are well recognised. Concerns over early total care arose when applied broadly. The burden of additional surgical trauma could


constitute a second hit, fuelling the inflammatory response and precipitating a decline into acute respiratory distress syndrome, sepsis and multiple organ dysfunction syndrome. Temporary external fixation aimed to deliver the benefits of fracture stabilisation without the risk of major surgery. This damage control orthopaedics approach was advocated for those in extremis and a poorly defined borderline group. An increasing understanding of the physiological response to major trauma means there is now a need to refine our treatment options. A number of large scale retrospective reviews indicate that early definitive fracture fixation is beneficial in the majority of major trauma patients. It is recommended that patients are selected appropriately on the basis of their response to resuscitation. The hope is that this approach (dubbed 'safe definitive fracture surgery' or 'early appropriate care') will herald an era when care is individualised for each patient and their circumstances. The novel Damage Control in Orthopaedic Trauma Surgery course at The Royal College of Surgeons of England aims to equip senior surgeons with the insights and mindset necessary to contribute to this key decision making process as well as also the technical skills to provide damage control interventions when needed, relying on the improved techniques of damage control resuscitation and advances in the understanding of early appropriate care.

Title: Incidence and prognostic factors of chronic pain after isolated musculoskeletal extremity injury.

Citation: European journal of pain (London, England), May 2016, vol. 20, no. 5, p. 711-722,

Author(s): Pierik, J G J, IJzerman, M J, Gaakeer, M I, Vollenbroek-Hutten, M M R,

Abstract: Chronic pain in patients is usually related to an episode of pain following acute injury, emphasizing the need to prevent progression from acute to chronic pain. Multiple factors in the acute phase might be responsible for perpetuating the pain. The presentation of patients at the emergency department (ED) presents a prime opportunity to identify patients at high risk for chronic pain and to start appropriate treatment. The PROTACT study is a prospective follow-up study aiming to estimate the incidence and prognostic factors responsible for the development of chronic pain after musculoskeletal injury. Data including sociodemographic, pain, clinical, injury- or treatment-related and psychological factors of 435 patients were collected from registries and questionnaires at ED visit, 6-week, 3- and 6-month follow-up. At 6 months post-injury, 43.9% of the patients had some degree of pain (Numeric Rating Scale (NRS) ≥1) and 10.1% had chronic pain (NRS ≥4). Patients aged over 40 years, in poor physical health, with pre-injury chronic pain, pain catastrophizing, high urgency level and severe pain at discharge were found to be at high risk for chronic pain. Two prognostic factors, severe pain at discharge and pain catastrophizing, are potentially modifiable. The implementation of a pain protocol in the ED and the use of cognitive-behavioural techniques involving reducing catastrophizing might be useful.

Title: Ultrasound-guided aspiration of wrist ganglions: a follow-up survey of patient satisfaction and outcomes.

Citation: Acta radiologica (Stockholm, Sweden : 1987), Apr 2016, vol. 57, no. 4, p. 481-486,

Author(s): Zeidenberg, Joshua, Aronowitz, Jessica G, Landy, David C, Owens, Patrick W,
Abstract: Ganglion cysts are one of the most frequently occurring masses of the wrist, often causing pain and interfering with daily activity. Ultrasound (US)-guided aspiration is a treatment for ganglion cysts of the wrist. To examine the results and patient satisfaction of US-guided aspiration of wrist ganglion cysts. Medical records from August 2009 through December 2013 were reviewed to identify all adult patients referred to a single musculoskeletal radiologist for US-guided aspiration of a painful wrist ganglion cyst. Records and patient satisfaction were evaluated using a telephone questionnaire at a minimum of 9 months after the procedure. Of 56 consecutive patients identified, follow-up data were available for 39 patients (69%) at a minimum of 9 months. There were 21 volar and 18 dorsal ganglion cysts. The overall recurrence rate was 20% (8 of 39 patients) and only five patients reported a pain score of greater than 2 out of 10. The mean age of patients with recurrence of the cyst was greater than that of patients without recurrence (52 vs. 35 years, \( P = 0.03 \)). Satisfaction with the outcome was high and varied by recurrence. There were no acute complications including infection, hemorrhage, or allergic reaction. US-guided aspiration is a safe and potentially effective treatment for ganglion cysts of the wrist, with high patient satisfaction. US-guided aspiration may be particularly advantageous for volar ganglion cysts, and in patients who are poor surgical candidates.

Title: Evaluation of Vacuum Assisted Closure Therapy for Soft Tissue Injury in Open Musculoskeletal Trauma.

Citation: Journal of clinical and diagnostic research : JCDR, Apr 2016, vol. 10, no. 4, p. RC05.

Author(s): Raj, Manish, Gill, S P S, Sheopaltan, Sunil Kumar, Singh, Pulkesh, Dinesh, Sigh, Jasveer, Rastogi, Prateek, Mishra, L N

Abstract: The application of controlled levels of negative or sub atmospheric pressure for a prolonged period of time on a wound had shown to accelerate removal of excess fluid and promote hyperaemia, which eventually promote wound healing. The study was conducted with the aim to evaluate the effectiveness of Vacuum Assisted Closure (VAC) therapy for soft tissue injury in open musculoskeletal trauma. Twenty cases of complex musculoskeletal wound involving different parts of body were included in this progressive randomized study. In patients, aggressive debridement was done before the application of VAC therapy. Controlled negative pressure was uniformly applied to the wound. Dressings were changed after every 4 to 5 days. The evaluation of results included healing rate of the wound, eradication of infection, complication rate, and number of secondary procedures. VAC therapy over the wound was administered for an average of 20.4 days \( \pm 6.72 \) days (range 14 to 42 days). There was decrease in wound size attained by VAC therapy ranged from 2.6 to 24.4cm\(^2\), with an average reduction of 10.55 cm\(^2\). Three wounds were infected at the start of VAC therapy. However, all patients were cleared of bacterial infection by the end of VAC therapy. VAC therapy using negative pressure promote Wound healing by increasing local capillary perfusion and increased rate of granulation tissue formation, decreases the duration of wound healing and requires fewer painful dressing change.

Title: Development and Validation of a Brief Interactive Educational Video to Improve Outpatient Treatment of Older Adults' Acute Musculoskeletal Pain.
**Citation:** Journal of the American Geriatrics Society, Apr 2016, vol. 64, no. 4, p. 880-881

**Author(s):** Platts-Mills, Timothy F, Quigley, Benjamin R, Duronio, Joseph P

**Title:** Proximal tibiofibular joint dislocation associated with tibial shaft fractures - 7 Cases.

**Citation:** Injury, Apr 2016, vol. 47, no. 4, p. 950-953,

**Author(s):** Haupt, Samuel, Frima, Herman, Sommer, Christoph

**Abstract:** Lower leg fractures of the tibia with or without fracture of the fibula are very common. Proximal tibiofibular joint (PTFJ) dislocation is a very rare injury that can occur together with a tibia shaft fracture. As there is only scarce literature about this injury available, we would like to present our experience with the treatment of this entity. We present a small case series of seven patients. In most cases, the tibia fracture was nailed in a closed technique. After distal locking the proximal fibula was exposed by a lateral approach exposing and preserving the peroneal nerve. After anatomical reduction into the corresponding articular facet of the proximal tibia, the fibula was transfixed to the tibia with a positioning screw. This indirectly provided a correct length and rotation of the tibia, which could finally be locked to the nail by inserting the proximal locking bolts. The positioning screw was removed after six weeks prior to full loading. Six of seven patients had been followed up by at least 7 months post-treatment. Out of 663 prospectively collected tibia shaft fractures treated at our institution from 1/2001 to 7/2014, we found seven patients with associated PTFJ dislocation. All except one had been caused by a high energy trauma. After one year, five patients showed excellent results with full range of motion and returning to their sporting activities as before the accident. Two patients have impaired function due to associated injuries. None complained of persistent pain or instability of the PTFJ. PTFJ dislocation with tibia shaft fracture can easily be overlooked if one is not familiar with this injury. It is important to diagnose and treat this uncommon dislocation anatomically to achieve good results. Otherwise, as the literature shows, it can lead to chronic instability of the proximal fibula with snapping, proximal fibular pain and even peroneal nerve palsy. Furthermore in complex tibial fractures correct length and rotation only can be restored after referencing with the fibula. We recommend a high index of suspicion of this injury with high energy tibia shaft fractures especially in cases with intact fibula.

**Sports Injuries**

**Title:** Inflammatory Myopathy Causing Leg Pain in a Soccer Player: Case Report and Return-to-Play Considerations.

**Citation:** PM & R : the journal of injury, function, and rehabilitation, Apr 2016, vol. 8, no. 4, p. 380-383, 1934-1563 (April 2016)
Author(s): Lueders, Daniel R, Howe, Benjamin M, Sellon, Jacob L

Abstract: Leg pain is a common condition in athletes as well as in the general population, and has a broad differential diagnosis that includes musculoskeletal, vascular, rheumatologic, and neurologic etiologies. Idiopathic inflammatory myopathy (IM) is a relatively uncommon but recognized etiology of leg pain. In this case, we describe an acute presentation of IM in an athlete resulting in leg pain and activity limitation. The available literature suggests that moderate-intensity exercise is safe and beneficial in idiopathic IM, but studies to date have not assessed the effects of high-intensity exercise in IM or provided recommendations for return to competitive contact sport in this population.

Title: How reliable are Functional Movement Screening scores? A systematic review of rater reliability.

Citation: British journal of sports medicine, May 2016, vol. 50, no. 9, p. 527-536,

Author(s): Moran, Robert W, Schneiders, Anthony G, Major, Katherine M, Sullivan, S John

Abstract: Several physical assessment protocols to identify intrinsic risk factors for injury aetiology related to movement quality have been described. The Functional Movement Screen (FMS) is a standardised, field-expedient test battery intended to assess movement quality and has been used clinically in preparticipation screening and in sports injury research. To critically appraise and summarise research investigating the reliability of scores obtained using the FMS battery. Systematic literature review. Systematic search of Google Scholar, Scopus (including ScienceDirect and PubMed), EBSCO (including Academic Search Complete, AMED, CINAHL, Health Source: Nursing/Academic Edition), MEDLINE and SPORTDiscus. Studies meeting eligibility criteria were assessed by 2 reviewers for risk of bias using the Quality Appraisal of Reliability Studies checklist. Overall quality of evidence was determined using van Tulder's levels of evidence approach. 12 studies were appraised. Overall, there was a 'moderate' level of evidence in favour of 'acceptable' (intraclass correlation coefficient ≥0.6) inter-rater and intra-rater reliability for composite scores derived from live scoring. For inter-rater reliability of composite scores derived from video recordings there was 'conflicting' evidence, and 'limited' evidence for intra-rater reliability. For inter-rater reliability based on live scoring of individual subtests there was 'moderate' evidence of 'acceptable' reliability (κ≥0.4) for 4 subtests (Deep Squat, Shoulder Mobility, Active Straight-leg Raise, Trunk Stability Push-up) and 'conflicting' evidence for the remaining 3 (Hurdle Step, In-line Lunge, Rotary Stability). This review found 'moderate' evidence that raters can achieve acceptable levels of inter-rater and intra-rater reliability of composite FMS scores when using live ratings. Overall, there were few high-quality studies, and the quality of several studies was impacted by poor study reporting particularly in relation to rater blinding. Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to http://www.bmj.com/company/products-services/rights-and-licensing/

Title: Clay-Shoveler Fracture in a Paddler: A Case Report.
Citation: Clinical journal of sport medicine : official journal of the Canadian Academy of Sport Medicine, May 2016, vol. 26, no. 3, p. e69., 1536-3724 (May 2016)

Author(s): Olivier, Etienne Cornelis, Muller, Elouise, Janse van Rensburg, Dina Christina

Abstract: Clay-shoveler fracture is a fracture of the spinous process of lower cervical and upper thoracic vertebrae. It has only rarely been reported as being caused by an overuse sports injury. This case report describes the first reported clay-shoveler fracture in a paddler. A 51-year-old male paddler, preparing for a paddling adventure over 630 km, felt a click and a sharp pain paravertebrally on the level of the upper thoracic vertebrae while paddling. Sonar investigation did not reveal any muscular injury but computed tomography revealed a fracture of the spinous process of T1. In this case, it is a stress injury due to excessive paddling over a short period of time. This fracture causes debilitating pain in the acute phase and is mainly treated conservatively.

Title: Rock Climbing Injuries: Acute and Chronic Repetitive Trauma.

Citation: Current problems in diagnostic radiology, May 2016, vol. 45, no. 3, p. 205-214

Author(s): Chang, Connie Y, Torriani, Martin, Huang, Ambrose J

Abstract: Rock climbing has increased in popularity as a sport, and specific injuries related to its practice are becoming more common. Chronic repetitive injuries are more common than acute injuries, although acute injuries tend to be more severe. We review both acute and chronic upper and lower extremity injuries. Understanding the injury pattern in rock climbers is important for accurate diagnosis. Copyright © 2015 Mosby, Inc. All rights reserved.

Title: Sideline Management of Joint Dislocations.

Citation: Current sports medicine reports, May 2016, vol. 15, no. 3, p. 140-153,

Author(s): Schupp, Christian M, Rand, Scott E, Hanson, Travis W, Lee, Bryan M,

Abstract: Athletes can sustain a large variety of injuries from simple soft tissue sprains to complex fractures and joint dislocations. This article reviews and provides the most recent information for sports medicine professionals on the management of simple and complex joint dislocations, i.e., irreducible and/or associated with a fracture, from the sidelines without the benefit of imaging. For each joint, the relevant anatomy, common mechanisms, sideline assessment, reduction techniques, initial treatment, and potential complications will be discussed, which allow for the safe and prompt return of athletes to the field of play.

Title: Hamstring Injuries in the Athlete: Diagnosis, Treatment, and Return to Play.

Citation: Current sports medicine reports, May 2016, vol. 15, no. 3, p. 184-190,

Author(s): Chu, Samuel K, Rho, Monica E
**Abstract:** Hamstring injuries are very common in athletes. Acute hamstring strains can occur with high-speed running or with excessive hamstring lengthening. Athletes with proximal hamstring tendinopathy often do not report a specific inciting event; instead, they develop the pathology from chronic overuse. A thorough history and physical examination is important to determine the appropriate diagnosis and rule out other causes of posterior thigh pain. Conservative management of hamstring strains involves a rehabilitation protocol that gradually increases intensity and range of motion, and progresses to sport-specific and neuromuscular control exercises. Eccentric strengthening exercises are used for management of proximal hamstring tendinopathy. Studies investigating corticosteroid and platelet-rich plasma injections have mixed results. Magnetic resonance imaging and ultrasound are effective for identification of hamstring strains and tendinopathy but have not demonstrated correlation with return to play. The article focuses on diagnosis, treatment, and return-to-play considerations for acute hamstring strains and proximal hamstring tendinopathy in the athlete.

**Title:** A snapshot of chronic ankle instability in a cohort of netball players.

**Citation:** Journal of science and medicine in sport / Sports Medicine Australia, May 2016, vol. 19, no. 5, p. 379-383,

**Author(s):** Attenborough, Alison S, Sinclair, Peter J, Sharp, Tristan, Greene, Andrew,

**Abstract:** Ankle injuries account for the highest percentage of injuries in netball, yet the chronic nature of ankle sprains is under reported within this population group. Chronic ankle instability is a term used to describe certain insufficiencies that persist after an acute ankle sprain. The aim of this study was to investigate recurrent sprain, perceived ankle instability and mechanical ankle instability in a cohort of netball players. Cross-sectional study. Ninety-six female netball players (24.1±7.9 years) were recruited (42 club players and 54 inter-district players). Recurrent sprain was defined as two or more lifetime sprains to the same ankle. Perceived ankle instability was quantified with the Cumberland Ankle Instability Tool - Youth. Mechanical ankle instability was quantified via inversion-eversion rotations using an ankle arthrometer at torques of 3Nm. Forty-seven percent of the cohort had recurrently sprained an ankle. Of the 69 players with a previously sprained ankle, 64% had a moderate-severe degree of perceived ankle instability. The total inversion-eversion angle was 31.1±8.7 degrees. Club players had more cases of moderate-severe perceived ankle instability (p=0.01) and larger inversion-eversion angles (p=0.001) compared to inter-district players. Recurrent ankle sprain and perceived ankle instability are easily identifiable aspects of chronic ankle instability shown to be prevalent within this cohort. Additional research is required to quantify a cut-off value for mechanical instability. Club netball players were found to have more counts of moderate-severe perceived ankle instability and larger inversion-eversion angles when compared to the inter-district netball players.

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**Title:** Physiotherapists' experiences of the management of anterior cruciate ligament injuries.
Abstract: While extensive research has been reported for management of anterior cruciate ligament (ACL) injuries, variation in treatment by physiotherapists is evident. To explore physiotherapists' experiences regarding ACL injury rehabilitation and factors that influenced physiotherapists' decision making for ACL rehabilitation, and to elicit what research physiotherapists perceived would support their management of these patients. Qualitative study. Fifteen physiotherapists from six private clinics in New Zealand participated in semi-structured interviews. The interviews were recorded, transcribed verbatim and the general inductive approach was used to develop key themes. Participant's management strengths were evident by their intent and commitment to provide expert rehabilitation, using a biopsychosocial approach and evidence-informed practice. The lengthy management process (including prolonged rehabilitation and referral processes) and interprofessional disconnect concerned participants. Translational research was needed for clear directions for exercise prescription and milestones for return to sports and occupation following ACL injury. Participants provided a biopsychosocial and evidence-based approach to ACL injury management. Potential areas of improvement include simplifying the referral process and enhancing communication between physiotherapists and other health professionals. Future research should focus on clarifying areas of ACL rehabilitation uncertainty, or collating results in an accessible and usable format for clinical practice.

Title: A case report of a completely displaced stress fracture of the femoral shaft in a middle-aged male athlete - A precursor of things to come?

Abstract: Displaced stress fractures of the femoral shaft are very uncommon. The proportion of middle-aged and older age groups participating in long-distance running, triathlon and other high intensity sports is increasing. As a consequence stress fracture of the femoral shaft may be on the rise in the future. The patient was 43 years old male caucasian triathlete. The authors met the patient after he was admitted with a displaced femoral shaft fracture. The fracture occurred during running at the national championship in 1/2 Ironman. The patient reported that his symptoms had gradually developed over the last month before the fracture with pain localized anterior to the thigh. The patient interpreted the symptoms as local muscle damage. A clinical examination was conducted by a physiotherapist and the symptoms were interpreted as a simple muscle injury in the quadriceps. When presented with a patient with non-traumatic, diffuse anterior thigh pain in an individual of this age, who is participating in high-level endurance running; clinicians should consider the possibility that the cause of the symptoms may be a femoral shaft stress fracture.
Title: Prevalence and profile of musculoskeletal injuries in ballet dancers: A systematic review and meta-analysis.

Citation: Physical therapy in sport : official journal of the Association of Chartered Physiotherapists in Sports Medicine, May 2016, vol. 19, p. 50-56,

Author(s): Smith, Toby O, Davies, Leigh, de Medici, Akbar, Hakim, Allan, Haddad, Fares,

Abstract: To determine the prevalence of musculoskeletal disorders and anatomical regions which are most frequently injured in ballet dancers. Published (AMED, CiNAHL, EMBASE, SPORTDiscus, psycINFO, MEDLINE, the Cochrane Library) and grey literature databases (OpenGrey, the WHO International Clinical Trials Registry Platform, Current Controlled Trials and the UK National Research Register Archive) were searched from their inception to 25th May 2015 for papers presenting data on injury prevalence in ballet dancers. Two reviewers independently identified all eligible papers, data extracted and critically appraised studies. Study appraisal was conducted using the CASP appraisal tool. Pooled prevalence data with 95% confidence intervals were estimated to determine period prevalence of musculoskeletal disorders and anatomical regions affected. Nineteen studies were eligible, reporting 7332 injuries in 2617 ballet dancers. The evidence was moderate in quality. Period prevalence of musculoskeletal injury was 280% (95% CI: 217-343%). The most prevalent musculoskeletal disorders included: hamstring strain (51%), ankle tendinopathy (19%) and generalized low back pain (14%). No papers explored musculoskeletal disorders in retired ballet dancers. Whilst we have identified which regions and what musculoskeletal disorders are commonly seen ballet dancers. The long-term injury impact of musculoskeletal disorders in retired ballet dancers remains unknown. Copyright © 2016 Elsevier Ltd. All rights reserved.

Title: The interrater and intrarater reliability of the functional movement screen: A systematic review with meta-analysis.

Citation: Physical therapy in sport : official journal of the Association of Chartered Physiotherapists in Sports Medicine, May 2016, vol. 19, p. 57-65

Author(s): Cuchna, Jennifer W, Hoch, Matthew C, Hoch, Johanna M

Abstract: To synthesize the literature and perform a meta-analysis for both the interrater and intrarater reliability of the FMSTM. Academic Search Complete, CINAHL, Medline and SportsDiscus databases were systematically searched from inception to March 2015. Studies were included if the primary purpose was to determine the interrater or intrarater reliability of the FMSTM, assessed and scored all 7-items using the standard scoring criteria, provided a composite score and employed intraclass correlation coefficients (ICCs). Studies were excluded if reliability was not the primary aim, participants were injured at data collection, or a modified FMSTM or scoring system was utilized. Seven papers were included; 6 assessing interrater and 6 assessing intrarater reliability. There was moderate evidence in good interrater reliability with a summary ICC of 0.843 (95% CI = 0.640, 0.936; Q7 = 84.915, p < 0.0001). There was moderate evidence in good intrarater reliability with a summary ICC.
of 0.869 (95% CI = 0.785, 0.921; Q12 = 60.763, p < 0.0001). There was moderate evidence for both forms of reliability. The sensitivity assessments revealed this interpretation is stable and not influenced by any one study. Overall, the FMSTM is a reliable tool for clinical practice.

**Title:** Sonographic evaluation of athletic pubalgia.

**Citation:** Skeletal radiology, May 2016, vol. 45, no. 5, p. 689-699

**Author(s):** Morley, Nicholas, Grant, Thomas, Blount, Kevin, Omar, Imran

**Abstract:** Athletic pubalgia, or "sports hernia", represents a constellation of pathologic conditions occurring at and around the pubic symphysis. These injuries are primarily seen in athletes or those involved in athletic activity. In this article, we review the sonographic appearance of the relevant complex anatomy, scanning technique for ultrasound evaluation of athletic pubalgia, and the sonographic appearances of associated pathologic conditions.

**Title:** A Systematic Evaluation of Field-Based Screening Methods for the Assessment of Anterior Cruciate Ligament (ACL) Injury Risk.

**Citation:** Sports medicine (Auckland, N.Z.), May 2016, vol. 46, no. 5, p. 715-735,

**Author(s):** Fox, Aaron S, Bonacci, Jason, McLean, Scott G, Spittle, Michael, Saunders, Natalie

**Abstract:** Laboratory-based measures provide an accurate method to identify risk factors for anterior cruciate ligament (ACL) injury; however, these methods are generally prohibitive to the wider community. Screening methods that can be completed in a field or clinical setting may be more applicable for wider community use. Examination of field-based screening methods for ACL injury risk can aid in identifying the most applicable method(s) for use in these settings. The objective of this systematic review was to evaluate and compare field-based screening methods for ACL injury risk to determine their efficacy of use in wider community settings. An electronic database search was conducted on the SPORTDiscusTM, MEDLINE, AMED and CINAHL databases (January 1990-July 2015) using a combination of relevant keywords. A secondary search of the same databases, using relevant keywords from identified screening methods, was also undertaken. Studies identified as potentially relevant were independently examined by two reviewers for inclusion. Where consensus could not be reached, a third reviewer was consulted. Original research articles that examined screening methods for ACL injury risk that could be undertaken outside of a laboratory setting were included for review. Two reviewers independently assessed the quality of included studies. Included studies were categorized according to the screening method they examined. A description of each screening method, and data pertaining to the ability to prospectively identify ACL injuries, validity and reliability, recommendations for identifying 'at-risk' athletes, equipment and training required to complete screening, time taken to screen athletes, and applicability of the screening method across sports and athletes were extracted from relevant studies. Of 1077 citations from the initial search, a total of 25 articles were identified as potentially relevant, with 12 meeting all inclusion/exclusion criteria. From the secondary search, eight further studies met all criteria,
resulting in 20 studies being included for review. Five ACL-screening methods—the Landing Error Scoring System (LESS), Clinic-Based Algorithm, Observational Screening of Dynamic Knee Valgus (OSDKV), 2D-Cam Method, and Tuck Jump Assessment—were identified. There was limited evidence supporting the use of field-based screening methods in predicting ACL injuries across a range of populations. Differences relating to the equipment and time required to complete screening methods were identified. Only screening methods for ACL injury risk were included for review. Field-based screening methods developed for lower-limb injury risk in general may also incorporate, and be useful in, screening for ACL injury risk. Limited studies were available relating to the OSDKV and 2D-Cam Method. The LESS showed predictive validity in identifying ACL injuries, however only in a youth athlete population. The LESS also appears practical for community-wide use due to the minimal equipment and set-up/analysis time required. The Clinic-Based Algorithm may have predictive value for ACL injury risk as it identifies athletes who exhibit high frontal plane knee loads during a landing task, but requires extensive additional equipment and time, which may limit its application to wider community settings.

**Title:** Susceptibility to Hamstring Injuries in Soccer: A Prospective Study Using Muscle Functional Magnetic Resonance Imaging.

**Citation:** The American journal of sports medicine, May 2016, vol. 44, no. 5, p. 1276-1285

**Author(s):** Schuermans, Joke, Van Tiggelen, Damien, Danneels, Lieven, Witvrouw, Erik

**Abstract:** Running-related hamstring strain injuries remain a delicate issue in several sports such as soccer. Their unremittingly high incidence and recurrence rates indicate that the underlying risk has not yet been fully identified. Among other factors, the importance of neuromuscular coordination and the quality of interplay between the different hamstring muscle bellies is thought to be a key determinant within the intrinsic injury risk. Muscle functional magnetic resonance imaging (mfMRI) is one of the tools that has been proven to be valid for evaluating intermuscular coordination. To investigate the risk of sustaining an index or recurring soccer-related hamstring injury by exploring metabolic muscle characteristics using mfMRI. Cohort study; Level of evidence, 2. A total of 27 healthy male soccer players and 27 soccer players with a history of hamstring injuries underwent standardized mfMRI. The mfMRI protocol consisted of a resting scan, a strenuous bilateral eccentric hamstring exercise, and a postexercise scan. The exercise-related T2 change, or the signal intensity shift between both scans, was used to detect differences in metabolic characteristics between (1) the different hamstring muscle bellies and (2) the prospective cohorts based on the (re)occurrence of hamstring injuries during a follow-up period of 18 months. The risk of sustaining a first hamstring injury was associated with alterations in the intermuscular hierarchy in terms of the magnitude of the metabolic response after a heavy eccentric effort, with the dominant role of the semitendinosus set aside for a higher contribution of the biceps femoris (P = .017). Receiver operating characteristic (ROC) curve analysis demonstrated that this variable was significantly able to predict the occurrence of index injuries with a sensitivity of 100% and a specificity of 70% when the metabolic activity of the biceps femoris exceeded 10%. The risk of sustaining a reinjury was associated with a substantial deficit in hamstring strength endurance (P = .031). Soccer players who sustained a reinjury were only able to perform prone leg curls for a mean duration of 146.50 ± 76.16
seconds, whereas those with an injury history but no recurrence during follow-up were able to continue for a mean of 237.45 ± 110.76 seconds (95% CI, 11.9-230.5 seconds; P = .031). This was the first study to assess the causal relation between the intramuscular recruitment pattern and the risk of sustaining an index or secondary hamstring strain. Changes in intermuscular interplay seem to significantly increase the risk of sustaining index hamstring injuries in male amateur soccer players. Inadequate eccentric muscle endurance could be associated with an increased risk of sustaining a recurring hamstring injury. © 2016 The Author(s).

Title: The role of emergency radiology in spinal trauma.

Citation: The British journal of radiology, May 2016, vol. 89, no. 1061, p. 20150833., 1748-880X (May 2016)

Author(s): Guarnieri, Gianluigi, Izzo, Roberto, Muto, Mario

Abstract: Spinal trauma is very frequent injury with different severity and prognosis varying from asymptomatic condition to temporary neurological dysfunction, focal deficit or fatal event. The major causes of spinal trauma are high- and low-energy fall, traffic accident, sport and blunt impact. The radiologist has a role of great responsibility to establish the presence or absence of lesions, to define the characteristics, to assess the prognostic influence and therefore treatment. Imaging has an important role in the management of spinal trauma. The aim of this paper was to describe: incidence and type of vertebral fracture; imaging indication and guidelines for cervical trauma; imaging indication and guidelines for thoracolumbar trauma; multidetector CT indication for trauma spine; MRI indication and protocol for trauma spine.

Title: Athletic groin pain (part 1): a prospective anatomical diagnosis of 382 patients-clinical findings, MRI findings and patient-reported outcome measures at baseline.

Citation: British journal of sports medicine, Apr 2016, vol. 50, no. 7, p. 423-430,

Author(s): Falvey, É C, King, E, Kinsella, S, Franklyn-Miller, A

Abstract: Athletic groin pain remains a common field-based team sports time-loss injury. There are few reports of non-surgically managed cohorts with athletic groin pain. To describe clinical presentation/examination, MRI findings and patient-reported outcome (PRO) scores for an athletic groin pain cohort. All patients had a history including demographics, injury duration, sport played and standardised clinical examination. All patients underwent MRI and PRO score to assess recovery. A clinical diagnosis of the injured anatomical structure was made based on these findings. Statistical assessment of the reliability of accepted standard investigations undertaken in making an anatomical diagnosis was performed. 382 consecutive athletic groin pain patients, all male, enrolled. Median time in pain at presentation was (IQR) 36 (16-75) weeks. Most (91%) played field-based ball-sports. Injury to the pubic aponeurosis (PA) 240 (62.8%) was the most common diagnosis. This was followed by injuries to the hip in 81 (21.2%) and adductors in 56 (14.7%) cases. The adductor squeeze test (90° hip flexion) was sensitive (85.4%) but not specific for the pubic
aponeurosis and adductor pathology (negative likelihood ratio 1.95). Analysed in series, positive MRI findings and tenderness of the pubic aponeurosis had a 92.8% post-test probability. In this largest cohort of patients with athletic groin pain combining clinical and MRI diagnostics there was a 63% prevalence of PA injury. The adductor squeeze test was sensitive for athletic groin pain, but not specific individual pathologies. MRI improved diagnostic post-test probability. No hernia or incipient hernia was diagnosed. NCT02437942.

**Title:** Malunited anterior inferior iliac spine fracture as a cause of hip impingement: A case report and review of literature.

**Citation:** Chinese journal of traumatology = Zhonghua chuang shang za zhi / Chinese Medical Association, Apr 2016, vol. 19, no. 2, p. 119-121

**Author(s):** Pingal, Desai, Marqueen, Timothy, Prakash, Karanvir

**Abstract:** Apophyseal injuries of the pelvis have increased recently with increased participation of teenagers in contact sports. Apophyseal fractures of the pelvis should be ruled out from apophysitis, os acetabuli and bony tumors. We report a case of fracture of anterior-inferior iliac spine following indirect injury to the hip in a young football player. The patient failed to get better with nonoperative management and continued to have pain in the left hip and signs and symptoms of impingement. He improved following surgical excision of the heterotopic bone and did not have any evidence of recurrence at 2 years follow-up.

**Title:** Rethinking the Standard of Care in Treating Professional Athletes.

**Citation:** Clinics in sports medicine, Apr 2016, vol. 35, no. 2, p. 269-274

**Author(s):** Poma, Caroline, Sherman, Seth L, Spence, Bradley, Brenner, Lawrence H, Bal

**Abstract:** There is public discussion and debate about the role of the team physician in professional sports. There is uncertainty over whether a separate legal standard of care should apply when treating professional athletes. This article advocates a single standard of care for all patients. This article also proposes that it would be useful for team physicians to develop a consensus that there should be a health policy for professional athletes. This health policy should aspire that professional athletes can complete their career, while minimizing the risk of cognitive or physical injuries that affect later quality of life. Copyright © 2016 Elsevier Inc. All rights reserved.

**Title:** MR-arthrography and CT-arthrography in sports-related glenolabral injuries: a matched descriptive illustration.

**Citation:** Insights into imaging, Apr 2016, vol. 7, no. 2, p. 167-177

**Author(s):** Jarraya, Mohamed, Roemer, Frank W, Gale, Heather I, Landreau, Philippe
Abstract: The combination of a large range of motion and insufficient bony stabilization makes the glenohumeral joint susceptible to injuries including dislocation in young athletes. Magnetic resonance arthrography (MR-arthrography) and computed tomography arthrography (CT-arthrography) play an important role in the preoperative workup of labroligamentous injuries. This paper illustrates MR-arthrography and CT-arthrography findings acquired at the same time on the same subjects to illustrate common causes and sequelae of shoulder instability. Teaching Points • MR-arthrography and CT-arthrography are equivalent for SLAP and full-thickness rotator cuff tears. • CT-arthrography is superior in evaluating osseous defects and cartilage surface lesions. • MR-arthrography is superior in evaluating intrasubstance and extra-articular tendinous injuries

Title: Knee Control and Jump-Landing Technique in Young Basketball and Floorball Players.

Citation: International journal of sports medicine, Apr 2016, vol. 37, no. 4, p. 334-338

Author(s): Leppänen, M, Pasanen, K, Kulmala, J-P, Kujala, U M, Krosshaug, T, Kannus, P

Abstract: Poor knee alignment is associated with increased loading of the joints, ligaments and tendons, and may increase the risk of injury. The study purpose was to compare differences in knee kinematics between basketball and floorball players during a vertical drop jump (VDJ) task. We wanted to investigate whether basketball players, whose sport includes frequent jump-landings, exhibited better knee control compared with floorball players, whose sport involves less jumping. Complete data was obtained from 173 basketball and 141 floorball players. Peak knee valgus and flexion angles during the VDJ were analyzed by 3D motion analysis. Larger knee valgus angles were observed among basketball players (-3.2°, 95%CI -4.5 to -2.0) compared with floorball players (-0.9°, 95%CI -2.3 to 0.6) (P=0.022). Basketball players landed with a decreased peak knee flexion angle (83.1°, 95%CI 81.4 to 84.8) compared with floorball players (86.5°, 95%CI 84.6 to 88.4) (P=0.016). There were no significant differences in height, weight or BMI between basketball and floorball players. Female athletes exhibited significantly greater valgus angles than males. This study revealed that proper knee control during jump-landing does not seem to develop in young athletes simply by playing the sport, despite the fact that jump-landings occur frequently in practice and games. © Georg Thieme Verlag KG Stuttgart · New York.

Title: Quantifying Emergency Department Visits From Sport and Recreation: Focus on the Lower Extremity and Knee, 1997-2009.

Citation: Journal of athletic training, Apr 2016, vol. 51, no. 4, p. 309-316

Author(s): Tenan, Matthew S

Abstract: Few authors have reported nationally representative data on the number of sport and recreation (SR) injuries resulting in emergency department (ED) visitation. The existing studies have only provided 1 or 2 years of data and are not longitudinal in nature. To use a novel algorithmic approach to determine if ED visitation is due to SR, resulting in a substantially larger longitudinal dataset. Descriptive epidemiology study. Hospital. The
National Hospital Ambulatory Medical Care Survey, a stratified random-sample survey of US hospital EDs was combined for years 1997-2009. There were 15 699 unweighted patient visits determined to be from SR. A custom algorithm classified SR visits based on the International Classification of Diseases, Ninth Revision, Clinical Modification E-code and pattern recognition of narrative text. Sport and recreation visits were assessed by age and categorized according to broad injury classifications. Additional quantification was performed on SR visits for lower extremity and knee-specific injuries. Sample weights were applied to provide national annual estimates. Annually, 4 243 000 ED visits resulted from SR. The largest classification of injury from SR was sprains and strains (896 000/y). Males had substantially more SR-related ED visits than females (2 929 000/y versus 1 314 000/y). For patients 10-49 years old, 1 093 000 lower extremity and 169 000 knee-specific injury visits annually were from SR. For both injury types, males had a higher rate of ED visitation; however, females had 25% and 39% greater odds of visitation for lower extremity and knee-specific injury, respectively. The burden on the health system of ED visits from SR was substantial. Males presented in the ED at a higher rate for SR injury, though females had a higher proportion of lower extremity and knee-specific injury ED visitations from SR. This longitudinal analysis of population-level data provides the information to target research on specific subpopulations to mitigate SR injury.

Title: Isolated Teres Major Rupture: A case report with a suggested dedicated imaging protocol and review of the literature.

Citation: Journal of radiology case reports, Apr 2016, vol. 10, no. 4, p. 31-36

Author(s): Fitzpatrick, Darren, Cagle, Paul, Flatow, Evan

Abstract: Isolated injuries to the teres major muscle occur in competitive sporting activities such as baseball pitching, hockey and tennis. We report a similar event of a physically fit man sustaining an isolated teres major rupture while waterskiing. Non-operative management was chosen, with pain resolution and no appreciable functional limitations at follow up. Because teres major muscle injury was suspected at the time of imaging, we present a dedicated imaging protocol to optimize assessment for teres major injury.

Title: Acute hamstring injury in football players: Association between anatomical location and extent of injury-A large single-center MRI report.

Citation: Journal of science and medicine in sport / Sports Medicine Australia, Apr 2016, vol. 19, no. 4, p. 317-322

Author(s): Crema, Michel D, Guermazi, Ali, Tol, Johannes L, Niu, Jingbo, Hamilton, Bruce,

Abstract: To describe in detail the anatomic distribution of acute hamstring injuries in football players, and to assess the relationship between location and extent of edema and tears, all based on findings from MRI. Retrospective observational study. We included 275 consecutive male football players who had sustained acute hamstring injuries and had positive findings on MRI. For each subject, lesions were recorded at specific locations of the hamstring muscles, which were divided into proximal or distal: free tendon, myotendinous
junction, muscle belly, and myofascial junction locations. For each lesion, we assessed the largest cross-sectional area of edema and/or tears. We calculated the prevalence of injuries by location. The relationships between locations and extent of edema and tears were assessed using a one-sample t-test, with significance set at p<0.05. The long head of biceps femoris (LHBF) was most commonly affected (56.5%). Overall, injuries were most common in the myotendinous junction and in proximal locations. The proximal myotendinous junction was associated with a greater extent of edema in the LHBF and semitendinosus (ST) muscles (p<0.05). Proximal locations in the LHBF had larger edema than distal locations (p<0.05). Distal locations in the ST muscle had larger tears than proximal locations (p<0.05). The proximal myotendinous junction (LHBF and ST muscles) and proximal locations (LHBF muscle) are more commonly affected and are associated with a greater extent of edema in acute hamstring muscle injury. Distal locations (ST muscle), however, seem to be more commonly associated with larger tears.

Title: Peroneal tendinosis as a predisposing factor for the acute lateral ankle sprain in runners.

Citation: Knee surgery, sports traumatology, arthroscopy : official journal of the ESSKA, Apr 2016, vol. 24, no. 4, p. 1175-1179

Author(s): Ziai, Pejman, Benca, Emir, Wenzel, Florian, Schuh, Reinhard, Krall, Christoph,

Abstract: A painful episode in the region of the peroneal tendons, within the retromalleolar groove, is a common precipitating event of an acute lateral ankle sprain. A forefoot striking pattern is suspected to cause peroneal tendinosis. The aim of this study is to analyse the role of peroneal tendinosis as a predisposing factor for ankle sprain trauma in runners. Fifty-eight runners who had experienced acute ankle sprain trauma, with pre-existing pain episodes for up to 4 weeks in the region of the peroneal tendons, were assessed clinically. Fractures were excluded by conventional radiography. An magnetic resonance imaging (MRI) scan had been performed within 14 days after the traumatic event and was subsequently evaluated by two experienced radiologists. MRI revealed peroneal tendinosis in 55 patients (95 % of the total study population). Peroneus brevis (PB) tendinosis was found in 48 patients (87 % of all patients with peroneal tendinosis), and peroneus longus (PL) tendinosis was observed in 42 cases (76 %). Thirty-five patients (64 %) had combined PB and PL tendinosis. A lesion of the anterior talofibular ligament was found to be the most common ligament injury associated with peroneal tendinosis (29 cases; 53 %), followed by a lesion of the calcaneofibular ligament (16 cases; 29 %) and a lesion of the posterior tibiofibular ligament (13 cases; 24 %). The results of this study reflect the correlation between peroneal tendinosis and ankle sprain trauma. Injuries of one or more ligaments are associated with further complications. A period of rest or forbearance of sports as well as adequate treatment of the peroneal tendinosis is essential to prevent subsequent ankle injuries, especially in runners. Modification of the running technique would also be beneficial. IV.

Title: Endoscopic treatment of the posterior ankle impingement syndrome on amateur and professional athletes.
Citation: Knee surgery, sports traumatology, arthroscopy : official journal of the ESSKA, Apr 2016, vol. 24, no. 4, p. 1396-1401

Author(s): Dinato, Mauro Cesar Mattos E, Luques, Isabela Ugo, Freitas, Marcio de Faria,

Abstract: To determine whether professional and amateur athletes showed differences in ankle function when treated with endoscopic technique for posterior ankle impingement syndrome, to verify the impact of the presence of associated lesions in clinical evolution and to assess time to return to sport (we hypothesize that time will be the only difference between groups). Thirty-two athletes with a diagnosis of posterior impingement syndrome underwent surgery endoscopically. The American Orthopaedics Foot and Ankle Society (AOFAS) scale was used to compare functional results between amateur (15) and professional athletes (17). The satisfaction, time to return to sport, operative time, intraoperative findings and complications were evaluated, and the presence of associated injuries interfering in these results was verified. The preoperative AOFAS score range for the professional group was 62.9 ± 14 preoperatively and 92.3 ± 7.7 postoperatively, and for the amateur group was 67.9 ± 19.7 and 94 ± 9.3. The satisfaction was excellent or good in 94% of all cases and fair in 6%. The average time of surgery was 48.3 ± 25 min. Bone involvement was present in 100% of cases and complications in three cases. Time to return to sports was similar (n.s.) in both groups, and the mean time was 15.6 ± 13.7 and 16.3 ± 9 weeks, respectively. No significant difference regarding functional results and time to return to sports between professionals and amateur athletes operated was found. Athletes showed mainly good and excellent results and low complication rate. The presence of associated injuries did not significantly influence the results. With these results, the high-level athlete can better programme their surgeries so they can fully recover and perform better in the most important competitions. Level III.

Title: Introduction: Sports injuries: diagnosis and management strategies.

Citation: Neurosurgical focus, Apr 2016, vol. 40, no. 4, p. E2.,

Author(s): Ban, Vin Shen, Bailes, Julian E, Berger, Mitchel S, Vaccaro, Alexander R, Hunt

Title: Elbow Imaging in Sport: Sports Imaging Series.

Citation: Radiology, Apr 2016, vol. 279, no. 1, p. 12-28, 1527-1315

Author(s): Bucknor, Matthew D, Stevens, Kathryn J, Steinbach, Lynne S

Abstract: Elbow pain is a frequent presenting symptom in athletes, particularly athletes who throw. The elbow can be injured as a result of acute trauma, such as a direct blow or a fall onto an outstretched hand or from chronic microtrauma. In particular, valgus extension overload during the throwing motion can precipitate a cascade of chronic injuries that can be debilitating for both casual and high-performance athletes. Prompt imaging evaluation facilitates accurate diagnosis and appropriate targeted interventions. (©) RSNA, 2016.
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http://www.e-jacme.com/

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### Upcoming Lunchtime Drop-in Sessions

#### July (1pm)
- Tue 5th: Critical Appraisal
- Wed 13th: Statistics
- Thurs 21st: Information resources
- Fri 29th: Literature Searching

#### August (12pm)
- Tue 2nd: Critical Appraisal
- Wed 10th: Statistics
- Thurs 18th: Information resources
- Fri 26th: Literature Searching

#### September (1pm)
- Fri 2nd: Critical Appraisal
- Mon 5th: Statistics
- Tue 18th: Information resources
- Wed 21st: Literature Searching
- Thurs 29th: Critical Appraisal

#### October (12pm)
- Fri 7th: Statistics
- Mon 10th: Information resources
- Tue 18th: Literature Searching
- Wed 26th: Critical Appraisal
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