

ABSTRACTS

June 2014

- EFFECTS OF FELDENKRAIS ON CHRONIC NECK/SCAPULAR PAIN IN PEOPLE WITH VISUAL IMPAIRMENT: A RANDOMIZED CONTROLLED TRIAL WITH ONE-YEAR FOLLOW-UP
- DOES THE FUSION OF A LUMBAR DISK HERNIATION IMPROVE THE CLINICAL OUTCOME? AN INVESTIGATION WITH A MINIMUM 10-YEAR FOLLOW-UP
- TRANSFORAMINAL EPIDURAL STEROID INJECTIONS FOLLOWED BY MECHANICAL DIAGNOSIS AND THERAPY TO PREVENT SURGERY FOR LUMBAR DISC HERNIATION
- LONGITUDINAL ASSOCIATIONS BETWEEN INCIDENT LUMBAR SPINE MRI FINDINGS AND CHRONIC LOW BACK PAIN OR RADICULAR SYMPTOMS: RETROSPECTIVE ANALYSIS OF DATA FROM THE LONGITUDINAL ASSESSMENT OF IMAGING AND DISABILITY OF THE BACK (LAIDBACK)
- ANATOMY OF THE ANTERIOR CRUCIATE LIGAMENT INSERTION SITES: COMPARISON OF PLAIN RADIOGRAPHY AND THREE-DIMENSIONAL COMPUTED TOMOGRAPHIC IMAGING TO ANATOMIC DISSECTION
- COMPARISON BETWEEN MASSAGE AND ROUTINE PHYSICAL THERAPY IN WOMEN WITH SUB ACUTE AND CHRONIC NONSPECIFIC LOW BACK PAIN
- THE GLOBAL BURDEN OF LOW BACK PAIN: ESTIMATES FROM THE GLOBAL BURDEN OF DISEASE 2010 STUDY
- ACHILLES TENDON INJURY RISK FACTORS ASSOCIATED WITH RUNNING
- ANOREXIA NERVOSA AND BONE METABOLISM
- SCREENING FOR LIFETIME CONCUSSION IN ATHLETES: IMPORTANCE OF OCULOMOTOR MEASURES
- ANTERIOR CRUCIATE LIGAMENT INJURIES: DIAGNOSIS, TREATMENT, AND PREVENTION
- THE EFFECTS OF STRETCHING ON PERFORMANCE

EFFECTS OF FELDENKRAIS ON CHRONIC NECK/SCAPULAR PAIN IN PEOPLE WITH VISUAL IMPAIRMENT: A RANDOMIZED CONTROLLED TRIAL WITH ONE-YEAR FOLLOW-UP

[Arch Phys Med Rehabil](#). 2014 Jun 4. pii: S0003-9993(14)00408-0. doi: 10.1016/j.apmr.2014.05.013. [Epub ahead of print]

[Lundqvist LO](#)¹, [Zetterlund C](#)², [Richter HO](#)³.

Author information

Abstract

OBJECTIVE: To determine whether the Feldenkrais method is an effective intervention for chronic neck/scapular pain in patients with visual impairment.

DESIGN: Randomized control trial with untreated control group.

SETTING: Low-vision center in Örebro County, Sweden.

PARTICIPANTS: Total of 61 visually impaired patients (mean 53.3 years) with nonspecific chronic (mean 23.8 years) neck/scapular pain.

INTERVENTION: Participants were randomly assigned to the Feldenkrais group (n=30) or untreated control group (n=31). Patients in the treatment group underwent one 2-hour Feldenkrais session per week during 12 consecutive weeks.

MAIN OUTCOME MEASURES: Blind assessment of perceived pain (visual analog scale [VAS]) during physical therapist palpation of the left and right occiput, upper trapezius, and levator scapulae muscle areas. Self-assessed degree of pain on the Visual, Musculoskeletal, and Balance Complaints questionnaire (VMB) and the Short Form-36 Bodily Pain Scale (SF36-BPS).

RESULTS: Patients undergoing Feldenkrais reported significantly less pain than the controls according to the VAS and VMB ratings at follow-up and 1-year follow-up. There were no significant differences regarding the SF36-BPS ratings.

CONCLUSIONS: Feldenkrais is an effective intervention for chronic neck/scapular pain in patients with visual impairment.

Copyright © 2014 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

KEYWORDS: Feldenkrais; Neck/scapular pain; Visual impairment

DOES THE FUSION OF A LUMBAR DISK HERNIATION IMPROVE THE CLINICAL OUTCOME? AN INVESTIGATION WITH A MINIMUM 10-YEAR FOLLOW-UP

[Otani K¹](#), [Kikuchi S](#), [Sato K](#), [Yabuki S](#), [Yamauchi K](#), [Takeyachi Y](#), [Konno S](#).

Author information

Abstract

STUDY DESIGN: A retrospective long-term (minimum 10 y) follow-up and comparative study.

OBJECTIVE: To compare the clinical outcome of surgically treated primary lumbar disk herniation (LDH) by conventional discectomy alone and discectomy with posterolateral fusion without instrumentation.

SUMMARY OF BACKGROUND DATA: Primary LDH is usually treated by discectomy alone. The long-term outcome of discectomy alone is generally satisfactory. However, the superiority of a discectomy alone in comparison with a discectomy with fusion for primary LDH has yet to be determined.

METHODS: Conventional discectomy without fusion was performed in 39 patients in hospital A (without-fusion group) and conventional discectomy with posterolateral fusion without instrumentation was performed in 109 patients in hospital B (with-fusion group). The subjective symptoms (analgesic use, continuing gait time, 4-grade modified outcome criteria, numerical rating scale of pain and satisfaction with the operation, and the Japanese version of the Roland-Morris Disability Questionnaire) and objective symptoms (straight leg raising test, manual muscle test, and sensory disturbance) were assessed.

RESULTS: There were no differences detected in the subjective and objective symptoms between the without-fusion and with-fusion group.

CONCLUSIONS: Routine fusion surgery for a primary LDH was therefore found to have no apparent benefit even in the long-term outcome

[Pain Med.](#) 2014 May 7. doi: 10.1111/pme.12450. [Epub ahead of print]

[TRANSFORAMINAL EPIDURAL STEROID INJECTIONS FOLLOWED BY MECHANICAL DIAGNOSIS AND THERAPY TO PREVENT SURGERY FOR LUMBAR DISC HERNIATION](#)

[van Helvoirt H¹](#), [Apeldoorn AT](#), [Ostelo RW](#), [Knol DL](#), [Arts MP](#), [Kamper SJ](#), [van Tulder MW](#).

Author information

Abstract

STUDY DESIGN: Prospective cohort study.

OBJECTIVE: To report the clinical course of patients with MRI-confirmed lumbar disc herniation-related radicular noncentralizing pain who received transforaminal epidural steroid injections (TESIs) and mechanical diagnosis and therapy (MDT).

SUMMARY OF BACKGROUND DATA: Noncentralizing symptoms in patients with lumbar disc herniation are associated with poor outcome. Commonly used treatments for these patients include TESI and MDT. No study has evaluated the outcome of combining both strategies.

METHODS: Consecutive candidates for herniated lumbar disc surgery with noncentralizing chronic pain were eligible. Patients received TESI followed by MDT. The primary outcomes were pain severity in the leg, disability (Roland-Morris Disability Questionnaire for Sciatica), and global perceived effect (GPE). Outcomes were measured at baseline, discharge, and 12 months. Linear mixed-models and McNemar's tests were used to analyze outcome data.

RESULTS: Sixty-nine patients receive TESI. After TESI, symptoms were resolved completely in 11 patients (16%). In these patients, symptom resolution was maintained at 12 months. A second subgroup of 32 patients (46%) reported significantly less pain after TESI and showed centralization with MDT reassessment (significant reductions in leg pain and disability [$P < 0.001$]) and a satisfaction rate of 90% at 12 months. A third subgroup of 11 patients (16%) reported significantly less pain after TESI but still showed noncentralization with MDT reassessment (significant reductions in leg pain and disability [$P < 0.05$]) and a satisfaction rate of 50% at 12 months). A fourth subgroup of 15 patients (22%) did not respond on TESI and received an operative intervention.

CONCLUSION: The results indicate that a course of TESI followed by MDT may be able to avoid surgery in a substantial proportion of candidates for herniated lumbar disc surgery.

Wiley Periodicals, Inc.

[BMC Musculoskelet Disord](#). 2014 May 13;15(1):152. doi: 10.1186/1471-2474-15-152.

LONGITUDINAL ASSOCIATIONS BETWEEN INCIDENT LUMBAR SPINE MRI FINDINGS AND CHRONIC LOW BACK PAIN OR RADICULAR SYMPTOMS: RETROSPECTIVE ANALYSIS OF DATA FROM THE LONGITUDINAL ASSESSMENT OF IMAGING AND DISABILITY OF THE BACK (LAIDBACK)

Suri P¹, Boyko EJ, Goldberg J, Forsberg CW, Jarvik JG.

Author information

Abstract

BACKGROUND: There are few longitudinal cohort studies examining associations between incident MRI findings and incident spine-related symptom outcomes. Prior studies do not discriminate between the two distinct outcomes of low back pain (LBP) and radicular symptoms. To address this gap in the literature, we conducted a secondary analysis of existing data from the Longitudinal Assessment of Imaging and Disability of the Back (LAIDBACK). The purpose of this study was to examine the association of incident lumbar MRI findings with two specific spine-related symptom outcomes: 1) incident chronic bothersome LBP, and 2) incident radicular symptoms such as pain, weakness, or sensation alterations in the lower extremity.

METHODS: The original LAIDBACK study followed 123 participants without current LBP or sciatica, administering standardized MRI assessments of the lumbar spine at baseline and at 3-year follow-up, and collecting information on participant-reported spine-related symptoms and signs every 4 months for 3 years. These analyses examined bivariable and multivariable associations between incident MRI findings and symptom outcomes (LBP and radicular symptoms) using logistic regression.

RESULTS: Three-year cumulative incidence of new MRI findings ranged between 2 and 8%, depending on the finding. Incident annular fissures were associated with incident chronic LBP, after adjustment for prior back pain and depression (adjusted odds ratio [OR] 6.6; 95% confidence interval [CI] 1.2-36.9). All participants with incident disc extrusions (OR 5.4) and nerve root impingement (OR 4.1) reported incident radicular symptoms, although associations were not statistically significant. No other incident MRI findings showed large magnitude associations with symptoms.

CONCLUSIONS: Even when applying more specific definitions for spine-related symptom outcomes, few MRI findings showed large magnitude associations with symptom outcomes. Although incident annular fissures, disc extrusions, and nerve root impingement were associated with incident symptom outcomes, the 3-year incidence of these MRI findings was extremely low, and did not explain the vast majority of incident symptom cases.

[Knee Surg Sports Traumatol Arthrosc.](#) 2014 May 10. [Epub ahead of print]

[ANATOMY OF THE ANTERIOR CRUCIATE LIGAMENT INSERTION SITES: COMPARISON OF PLAIN RADIOGRAPHY AND THREE-DIMENSIONAL COMPUTED TOMOGRAPHIC IMAGING TO ANATOMIC DISSECTION](#)

[Lee JK](#)¹, [Lee S](#), [Seong SC](#), [Lee MC](#).

[Author information](#)

[Abstract](#)

PURPOSE: The aim of this study was to provide quantitative data on insertion sites of anterior cruciate ligament (ACL) and to assess the correlation among measurements of anatomic dissection, plain radiographs, and 3D CT images to determine whether radiologic data can accurately reflect real anatomic measurements.

METHODS: Fifteen cadaveric knees were assessed using the three measurement modalities. Lengths of the long and short axis, area, and centre position of each bundle insertion sites by quadrant method were examined on both the femur and tibia. Distances from the insertion centre to distal cortical and posterior cortical margins of condyle on femur, and distance between insertion centres on tibia were also inspected.

RESULTS: The average ACL insertion position in the three measurement modalities was at 33.9 % in deep-shallow position and at 26.5 % in high-low position for anteromedial (AM) bundle and at 39.2 and 54.8 %, respectively, for posterolateral (PL) bundle in femur. For tibia, it was at 36.9 % in anterior-posterior position and 47.1 % in medial-lateral position for AM bundle and at 43.1 and 53.5 %, respectively, for PL bundle. The slight differences in various measurements among the three modalities were not statistically significant.

CONCLUSIONS: The femoral insertion positions were considerably shallow and low, whereas tibial insertion positions were near the average compared to those in previous studies. Plain radiographic and 3D CT measurements showed a reliable correlation with anatomic dissection measurements. The clinical relevance is that plain radiographs rather than 3D CT can be used as a post-operative evaluation tool after ACL reconstruction.

[J Back Musculoskelet Rehabil.](#) 2014 May 27. [Epub ahead of print]

COMPARISON BETWEEN MASSAGE AND ROUTINE PHYSICAL THERAPY IN WOMEN WITH SUB ACUTE AND CHRONIC NONSPECIFIC LOW BACK PAIN

Kamali F, Panahi F, Ebrahimi S, Abbasi L.

Author information

Abstract

OBJECTIVE: The aim of this study was to investigate the comparison of massage therapy and Routine Physical Therapy on nonspecific low back pain (LBP).

METHODS AND MATERIALS: 30 volunteer female subjects with a sub acute or chronic nonspecific LBP were randomly enrolled in two groups, massage therapy and Routine Physical Therapy. After massage application, hamstring and paravertebral muscles stretching and also stabilizing exercises were prescribed. Pain intensity according to Numerical Rating Scale (NRS), functional disability level in accordance to Oswestry Disability Index (ODI), and modified Schober test, for measurement of flexion range of motion, before and after ten sessions of treatment were used to evaluate the effectiveness of the treatment.

RESULTS: Pain intensity, ODI and flexion range of motion had shown a significant difference before and after intervention for each groups ($p < 0.05$). Statistical analysis revealed that the massage group had significantly improved the pain intensity and ODI compared to Routine Physical Therapy group ($p < 0.05$), but ROM was not significant between two groups ($p > 0.05$).

CONCLUSION: Both massage therapy and Routine Physical Therapy are useful for sub acute and chronic nonspecific LBP especially if accompanied with exercise. Massage is more effective than other modalities for sub acute and chronic nonspecific LBP, and it can be used alone or with electrotherapy for LBP treatment.

KEYWORDS: Massage therapy; electrotherapy; nonspecific low back pain

[Ann Rheum Dis.](#) 2014 Jun;73(6):968-74. doi: 10.1136/annrheumdis-2013-204428. Epub 2014 Mar 24.

[THE GLOBAL BURDEN OF LOW BACK PAIN: ESTIMATES FROM THE GLOBAL BURDEN OF DISEASE 2010 STUDY](#)

[Hoy D¹](#), [March L](#), [Brooks P](#), [Blyth F](#), [Woolf A](#), [Bain C](#), [Williams G](#), [Smith E](#), [Vos T](#), [Barendregt J](#), [Murray C](#), [Burstein R](#), [Buchbinder R](#).

[Author information](#)

Abstract

OBJECTIVE: To estimate the global burden of low back pain (LBP).

METHODS: LBP was defined as pain in the area on the posterior aspect of the body from the lower margin of the twelfth ribs to the lower gluteal folds with or without pain referred into one or both lower limbs that lasts for at least one day. Systematic reviews were performed of the prevalence, incidence, remission, duration, and mortality risk of LBP. Four levels of severity were identified for LBP with and without leg pain, each with their own disability weights. The disability weights were applied to prevalence values to derive the overall disability of LBP expressed as years lived with disability (YLDs). As there is no mortality from LBP, YLDs are the same as disability-adjusted life years (DALYs).

RESULTS: Out of all 291 conditions studied in the Global Burden of Disease 2010 Study, LBP ranked highest in terms of disability (YLDs), and sixth in terms of overall burden (DALYs). The global point prevalence of LBP was 9.4% (95% CI 9.0 to 9.8). DALYs increased from 58.2 million (M) (95% CI 39.9M to 78.1M) in 1990 to 83.0M (95% CI 56.6M to 111.9M) in 2010. Prevalence and burden increased with age.

CONCLUSIONS: LBP causes more global disability than any other condition. With the ageing population, there is an urgent need for further research to better understand LBP across different settings.

KEYWORDS: Epidemiology; Low Back Pain; Outcomes Research

[Sports Med.](#) 2014 Jun 5. [Epub ahead of print]

ACHILLES TENDON INJURY RISK FACTORS ASSOCIATED WITH RUNNING

[Lorimer AV](#)¹, [Hume PA](#).

Author information

Abstract

BACKGROUND: Research into the nature of overuse Achilles tendon injuries is extensive, yet uncertainty remains around how to identify athletes susceptible to Achilles tendon injury.

OBJECTIVE: To identify the strength of evidence for biomechanical risk factors associated with Achilles tendon injuries.

RESEARCH METHODS: SPORTDiscus, CINAHL, Web of Science and PubMed were searched for Achilles tendon injury risk factors and biomechanical measures which are altered in runners with Achilles tendon injuries, excluding ruptures. Fifteen articles were included in the analysis.

RESULTS: Two variables, high vertical forces and high arch, showed strong evidence for reduced injury risk. High propulsive forces and running on stiffer surfaces may also be protective. Only one biomechanical variable, high braking force, showed clear evidence for increasing Achilles injury risk.

DISCUSSION: Gait retraining to direct the centre of mass further forward to reduce high braking force could be useful in decreasing the risk of Achilles injury. The majority of biomechanical risk factors examined showed unclear results, which is likely due to the multifactorial nature of Achilles overuse injuries. Many risk factors are related to how the athlete's body interacts with the environment during gait, including ground reaction forces, muscle activity both prior to landing and immediately post ground contact, and joint motion throughout stance.

CONCLUSION: Multiple risk factors have been associated with the development of Achilles tendon injuries in running athletes but most effects remain unclear. Advice for athletes recovering from Achilles tendon injuries could include avoiding soft surfaces and reducing the pace of recovery runs. Orthotic intervention could assist athletes with low arches but modification of pronation should be viewed with caution. Strength training and gait retraining could be beneficial for reducing injury risk.

[Bone](#). 2014 May 29. pii: S8756-3282(14)00189-6. doi: 10.1016/j.j.bone.2014.05.014. [Epub ahead of print]

ANOREXIA NERVOSA AND BONE METABOLISM

[Fazeli PK](#)¹, [Klibanski A](#)².

Author information

Abstract

Anorexia nervosa (AN) is a psychiatric disorder characterized by self-induced starvation with a lifetime prevalence of 2.2% in women. The most common medical co-morbidity in women with AN is bone loss, with over 85% of women having bone mineral density values more than one standard deviation below an age comparable mean. The low bone mass in AN is due to multiple hormonal adaptations to under nutrition, including hypothalamic amenorrhea and growth hormone resistance. Importantly, this low bone mass is also associated with a seven-fold increased risk of fracture. Therefore, strategies to effectively prevent bone loss and increase low bone mass are critical. We will review hormonal adaptations that contribute to bone loss in this population as well as promising new therapies that may increase bone mass and reduce fracture risk in AN.

Copyright © 2014. Published by Elsevier Inc.

[rain Inj](#). 2014;28(4):475-85. doi: 10.3109/02699052.2014.888771. Epub 2014 Apr 4.

SCREENING FOR LIFETIME CONCUSSION IN ATHLETES: IMPORTANCE OF OCULOMOTOR MEASURES

[Poltavski DV](#)¹, [Biberdorf D](#).

Author information

Abstract

HYPOTHESIS/OBJECTIVE: The purpose of the present study was to determine the utility of oculomotor-based evaluation protocols in screening for lifetime concussion incidence in elite hockey players.

METHODS: Forty-two Division I collegiate male and female hockey players were evaluated using the guidelines of an overall oculomotor-based diagnostic clinical test protocol for the mTBI population. The sensitivity of the collected measures to lifetime concussion was then compared with the corresponding sensitivity of measures of neuropsychological functioning (ImPACT) often used with athletes for acute concussion diagnosis.

RESULTS: This model showed that a hockey player with a Near Point of Fixation Disparity (NPF) equal to or greater than 15 cm, Visagraph comprehension rate less than 85% and the total score on part A of an ADHD questionnaire equal to or greater than 11 was on average 10.72-times more likely to have previously suffered a concussion than an athlete with lower values on the NPF and ADHD questionnaire and a higher comprehension rate on the Visagraph. None of the IMPACT baseline assessment measures were significantly predictive of the individual's concussion history.

CONCLUSION: The study provides a relatively sensitive screening tool to assess the probability of previous concussion(s) in an athlete. This model may allow athletic personnel to address in a timely manner the risks associated with repeat concussions and to develop individualized concussion management protocols.

[pediatrics](#). 2014 Apr 28. [Epub ahead of print]

ANTERIOR CRUCIATE LIGAMENT INJURIES: DIAGNOSIS, TREATMENT, AND PREVENTION

[Labella CR](#), [Henrikus W](#), [Hewett TE](#); [COUNCIL ON SPORTS MEDICINE AND FITNESS](#), and [SECTION ON ORTHOPAEDICS](#).

Abstract

The number of anterior cruciate ligament (ACL) injuries reported in athletes younger than 18 years has increased over the past 2 decades. Reasons for the increasing ACL injury rate include the growing number of children and adolescents participating in organized sports, intensive sports training at an earlier age, and greater rate of diagnosis because of increased awareness and greater use of advanced medical imaging. ACL injury rates are low in young children and increase sharply during puberty, especially for girls, who have higher rates of noncontact ACL injuries than boys do in similar sports. Intrinsic risk factors for ACL injury include higher BMI, subtalar joint overpronation, generalized ligamentous laxity, and decreased neuromuscular control of knee motion. ACL injuries often require surgery and/or many months of rehabilitation and substantial time lost from school and sports participation. Unfortunately, regardless of treatment, athletes with ACL injuries are up to 10 times more likely to develop degenerative arthritis of the knee. Safe and effective surgical techniques for children and adolescents continue to evolve. Neuromuscular training can reduce risk of ACL injury in adolescent girls. This report outlines the current state of knowledge on epidemiology, diagnosis, treatment, and prevention of ACL injuries in children and adolescents.

KEYWORDS: adolescents; athletes; knee injuries; sports

[Curr Sports Med Rep](#). 2014 May-Jun;13(3):179-85. doi: 10.1249/JSR.0000000000000052.

THE EFFECTS OF STRETCHING ON PERFORMANCE

Peck E¹, Chomko G, Gaz DV, Farrell AM.

Author information

Abstract

Stretching long has been commonplace in the training programs of recreational and competitive athletes. Its role in performance enhancement has been debated. This review discusses the literature concerning the effects of static, dynamic, and proprioceptive neuromuscular facilitation stretching on performance in three categories of sporting activity: strength- and power-dominant, speed- and agility-dominant, and endurance-dominant activities.

PMID:24819010
[PubMed - in process]