

4. SPINAL INJECTIONS

Radio frequency ablation of Intraosseous Basivertebral nerve

Spine J. 2019 Jun 20. pii: S1529-9430(19)30800-9. doi: 10.1016/j.spinee.2019.05.598.

A Prospective, Randomized, Multi-Center Study of Intraosseous Basivertebral Nerve Ablation for the Treatment of Chronic Low Back Pain.

Khalil J¹, Smuck M², Koreckij T³, Keel J⁴, Beall D⁵, Goodman B⁶, Kalapos P⁷, Nguyen D⁸, Garfin S⁹; INTRACEPT Trial Investigators.

BACKGROUND CONTEXT: Current literature suggests that degenerated or damaged vertebral endplates are a significant cause of chronic low back pain (LBP) that is not adequately addressed by standard care. Prior 2-year data from the treatment arm of a sham-controlled randomized controlled trial (RCT) showed maintenance of clinical improvements at 2 years following radiofrequency (RF) ablation of the basivertebral nerve (BVN).

PURPOSE: The purpose of this RCT was to compare the effectiveness of intraosseous RF ablation of the BVN to standard care for the treatment of chronic LBP in a specific subgroup of patients suspected to have vertebrogenic related symptomatology.

STUDY DESIGN/SETTING: A prospective, parallel, open label RCT was conducted at 20 U.S. sites.

PATIENT SAMPLE: A total of 140 patients with chronic LBP of at least 6 months duration, with Modic Type 1 or 2 vertebral endplate changes between L3 to S1, were randomized 1:1 to undergo either RF ablation of the BVN or continue standard care.

OUTCOME MEASURES: Oswestry Disability Index (ODI) was collected at baseline, 3, 6, 9, and 12-months post-procedure. Secondary outcome measures included a 10-point Visual Analog Scale (VAS) for LBP, ODI and VAS responder rates, SF-36, and EQ-5D-5L. The primary endpoint was a between-arm comparison of the mean change in ODI from baseline to 3 months post-treatment.

METHODS: Patients were randomized 1:1 to receive RF ablation or to continue standard care. Self-reported patient outcomes were collected using validated questionnaires at each study visit. An interim analysis to assess for superiority was pre-specified and overseen by an independent data management committee (DMC) when a minimum of 60% of patients had completed their 3-month primary endpoint visit.

RESULTS: The interim analysis showed clear statistical superiority ($p < 0.001$) for all primary and secondary patient-reported outcome measures in the RF ablation arm compared to the standard care arm. This resulted in a DMC recommendation to halt enrollment in the study and offer early cross-over to the control arm. These results are comprised of the outcomes of the 104 patients included in the intent-to-treat (ITT) analysis of the 3-month primary endpoint, which included 51 patients in the RF ablation arm and 53 patients in the standard care arm. Baseline ODI was 46.1, VAS was 6.67, and mean age was 50 years. The percentage of patients with LBP symptoms ≥ 5 years was 67.3%. Comparing the RF ablation arm to the standard care arm, the mean changes in ODI at three months were -25.3 points versus -4.4 points, respectively, resulting in an adjusted difference of 20.9 points ($p < 0.001$). Mean changes in VAS were -3.46 versus -1.02, respectively, an adjusted difference of 2.44 cm ($p < 0.001$). In the RF ablation arm, 74.5% of patients achieved a ≥ 10 -point improvement in ODI, compared with 32.7% in the standard care arm ($p < 0.001$).

CONCLUSIONS: Minimally invasive RF ablation of the BVN led to significant improvement of pain and function at 3-months in patients with chronic vertebrogenic related LBP.

5. SPINAL SURGERY

Disc enclosure technique effective

European Spine Journal pp 1–7|

Two-year real-world results of lumbar discectomy with bone-anchored annular closure in patients at high risk of reherniation

Ardeshir Ardeshiri Larry E. Miller Claudius Thomé

Purpose

To determine the safety and effectiveness of limited lumbar discectomy with additional implantation of an annular closure device (ACD) among patients at high risk of herniation recurrence treated in routine clinical practice.

Methods

This was a prospective, single-center study of lumbar discectomy for sciatica caused by intervertebral disc herniation with adjunctive ACD implantation to reduce herniation recurrence risk among high-risk patients with large annular defects. Patients returned for follow-up visits at 6 weeks, 12 weeks, 26 weeks, 1 year, and 2 years. Main outcomes included reoperation, herniation recurrence, back pain severity, leg pain severity, and Oswestry Disability Index (ODI). The minimum important difference was defined as ≥ 20 mm decrease relative to baseline for leg pain severity, ≥ 20 mm decrease for back pain severity, and ≥ 15 -point decrease for ODI.

Results

Among 75 high-risk patients (mean age 45 years, 59% female), the cumulative event incidence through 2 years was 4.0% for reoperation and 1.4% for herniation recurrence. Mean leg pain severity decreased from 73 to 6 ($p < 0.001$), back pain severity decreased from 51 to 13 ($p < 0.001$), and ODI decreased from 49 to 7 ($p < 0.001$). The percentage of patients achieving the minimum important difference was 91% for leg pain, 65% for back pain, and 94% for ODI.

Conclusion

In patients at high risk of herniation recurrence following limited lumbar discectomy in routine clinical practice, additional implantation of an ACD was safe and reherniation recurrence rates were low at 2-year follow-up, which is favorably compared to reported rates in high-risk patients.

7. PELVIC ORGANS/WOMAN'S HEALTH

Diet

Maternal diet before and during pregnancy and risk of asthma and allergic rhinitis in children

- Nour Baiz Jocelyne Just, Julie Chastang, Anne Forhan, Blandine de Lauzon-Guillain, Anne-Marie Magnier, Isabella Annesi-Maesano and the EDEN Mother-Child Cohort Study Group

Allergy, Asthma & Clinical Immunology 2019;15:40

<https://doi.org/10.1186/s13223-019-0353-2>

Background

Consumption of certain foods during pregnancy has been shown to have beneficial effects on childhood asthma and allergic disease development and aggravation. However, most studies provide conflicting results and the relationships between maternal preconceptional diet and risks of childhood asthma and allergic disease have not previously been explored. The objective of this study was to assess maternal diet during the year before pregnancy and the last 3 months of pregnancy and investigate their associations with the risks of asthma, wheezing, allergic rhinitis and atopic dermatitis in young children.

Methods

The study sample consisted of 1140 mother–child pairs from the EDEN cohort. Mothers had responded to the food frequency questionnaires used to assess diet before and during pregnancy. Children were followed up using health questionnaires. The health outcomes studied were: asthma, wheezing, allergic rhinitis and atopic dermatitis by the age of 3 years.

Results

Using multivariable-adjusted logistic regression models, significant inverse associations were observed between cooked green vegetable consumption before pregnancy and childhood asthma; consumption of eggs and raw vegetables before and during pregnancy, consumption of grains before pregnancy, and consumption of cooked green vegetables during pregnancy and allergic rhinitis. For the first time, a significant positive association was found between meat intake during the preconceptional period and a risk of wheezing, allergic rhinitis and atopic dermatitis.

Conclusions

Based on our findings, preconceptional and prenatal maternal intake of certain type of food groups may be preventive against asthma, wheezing and allergic rhinitis, whereas higher maternal intake of meat before pregnancy may increase the risk of wheezing, allergic rhinitis and atopic dermatitis in young children.

Autism – the material factor

Lancet Psychiatry. 2019 Jul;6(7):590-600. doi: 10.1016/S2215-0366(19)30181-6.

Environmental risk factors and biomarkers for autism spectrum disorder: an umbrella review of the evidence.

Kim JY¹, Son MJ¹, Son CY², Radua J³, Eisenhut M⁴, Gressier F⁵, Koyanagi A⁶, Carvalho AF⁷, Stubbs B⁸, Solmi M⁹, Rais TB¹⁰, Lee KH¹¹, Kronbichler A¹², Dragioti E¹³, Shin JI¹⁴, Fusar-Poli P¹⁵.

BACKGROUND:

Numerous studies have identified potential risk factors and biomarkers for autism spectrum disorder. We aimed to study the strength and validity of the suggested environmental risk factors or biomarkers of autism spectrum disorder.

METHODS:

We did an umbrella review and systematically appraised the relevant meta-analyses of observational studies. We searched PubMed, Embase, and the Cochrane Database of Systematic Reviews for papers published between database inception and Oct 17, 2018, and screened the reference list of relevant articles. We obtained the summary effect, 95% CI, heterogeneity, and 95% prediction intervals. We examined small study effects and excess significance. We did analyses under credibility ceilings. This review is registered with PROSPERO, number CRD42018091704.

FINDINGS:

46 eligible articles yielded data on 67 environmental risk factors (544 212 cases, 81 708 787 individuals) and 52 biomarkers (15 614 cases, 15 433 controls). Evidence of association was convincing for maternal age of 35 years or over (relative risk [RR] 1.31, 95% CI 1.18-1.45), maternal chronic hypertension (odds ratio [OR] 1.48, 1.29-1.70), maternal gestational hypertension (OR 1.37, 1.21-1.54), maternal overweight before or during pregnancy (RR 1.28, 1.19-1.36), pre-eclampsia (RR 1.32, 1.20-1.45), prepregnancy maternal antidepressant use (RR 1.48, 1.29-1.71), and maternal selective serotonin reuptake inhibitor (SSRI) use during pregnancy (OR 1.84, 1.60-2.11). Only two associations, maternal overweight before or during pregnancy and SSRI use during pregnancy, retained their high level of evidence under subset sensitivity analyses. Evidence from biomarkers was scarce, being supported by p values close to the significance threshold and too few cases.

INTERPRETATION:

Convincing evidence suggests that maternal factors, such as age and features of metabolic syndrome, are associated with risk of autism spectrum disorder. Although SSRI use during pregnancy was also associated with such risk when exposed and non-exposed groups were compared, this association could be affected by other confounding factors, considering that prepregnancy maternal antidepressant use was also convincingly associated with higher risk of autism spectrum disorder. Findings from previous studies suggest that one possible confounding factor is underlying maternal psychiatric disorders.

13 B. TMJ/ORAL**Periodontal disease and dementia**

Clin Periodontol. 2019 Jun 1. doi: 10.1111/jcpe.13155.

Association between periodontitis and cognitive impairment: Analysis of national health and nutrition examination survey (NHANES) III.

Sung CE¹, Huang RY¹, Cheng WC¹, Kao TW^{2,3}, Chen WL^{2,3}.

OBJECTIVES:

Periodontitis has been hypothesized as being one of the most common potential risk factors for the development of dementia and cognitive impairment. In order to investigate the relationship between periodontitis and cognition impairment, the National Health and Nutrition Examination Survey (NHANES) database was analysed after adjusting for potential confounding factors, including age and other systemic co-morbidities.

MATERIALS AND METHODS:

In total, 4,663 participants aged 20-59 years who had received full-mouth periodontal examination and undergone the cognitive functional test were enrolled. The grade of periodontal disease was categorized into severe, moderate, and mild. Cognitive function examinations, including the simple reaction time test (SRTT), symbol digit substitution test (SDST), and serial digit learning test (SDLT), were adopted for the evaluation of cognitive impairment.

RESULTS:

The subjects with mild and moderate to severe periodontitis had higher SDLT and SDST scores, which indicated decreased cognitive function, compared with the healthy group. After adjusting for demographic factors, education, smoking, cardiovascular diseases, and laboratory data, periodontitis was significantly correlated with elevated SDST and SDLT scores (p values for trend = 0.014 and 0.038, respectively) by generalized linear regression models.

CONCLUSION:

Our study highlighted that periodontal status was associated with cognitive impairment in a nationally representative sample of US adults.

13 D. SLEEP**OSA increased risk of rotator cuff repair complications**

J Am Acad Orthop Surg. 2018 Dec 4. doi: 10.5435/JAAOS-D-18-00069

Obstructive Sleep Apnea and Arthroscopic Rotator Cuff Repair-Are Complication Rates Really Increased?

Cancienne JM¹, Brockmeier SF, Deasey MJ, Werner BC.

BACKGROUND:

A few investigations exist which evaluate the influence of obstructive sleep apnea (OSA) on complications after arthroscopic rotator cuff repair.

METHODS:

A database was queried for patients undergoing rotator cuff repair with and without OSA and further subdivided into those with and without a billing code for a continuous positive airway pressure (CPAP) device. Thirty-day and 6-month adverse events were assessed.

RESULTS:

After regression analysis, patients with OSA had markedly increased emergency department visits and hospital admission ($P < 0.05$). This risk was mitigated by CPAP orders compared with control subjects. Patients without CPAP use had markedly increased risks of emergency department visits, hospital admission, and respiratory complications compared with control subjects ($P < 0.05$).

CONCLUSIONS:

Patients with OSA have higher risks of emergency department visits and hospital admissions postoperatively; however, a CPAP order appears to mitigate this risk. The independent risk imparted by OSA for the studied complications was markedly lower than other comorbidities.

16. CONCUSSIONS

Gait and balance impacts 2 weeks after

Am J Phys Med Rehabil. 2019 Feb 5. doi: 10.1097/PHM.0000000000001152.

Balance and Gait Alternations Observed More than 2 Weeks after Concussion: A Systematic Review and Meta-analysis.

Wood TA¹, Hsieh KL¹, An R¹, Ballard RA², Sonoff JJ¹.

OBJECTIVE:

To systematically review and quantitatively synthesize the existing evidence of balance and gait alternations lasting more than two weeks following concussion in adults.

DESIGN:

A systematic review was conducted through PubMed, CINAHL, SPORTDiscus, and Web of Science. Investigations must include adult participants with at least 1 concussion, were measured over 14 days after injury, and reported balance or gait measures. Balance error scoring system (BESS) scores, center of pressure (COP) sway area and displacement, and gait velocity were extracted for the meta-analysis.

RESULTS:

22 studies were included. Balance alterations were observed over two weeks after concussion when participants were tested with eyes closed, for longer durations of time, and with nonlinear regulatory statistics. The meta-analysis of COP sway area with no visual feedback indicated that concussed individuals had greater sway area ($p < 0.001$). Various gait alterations were also observed, which may indicate concussed individuals adopt a conservative gait strategy. The meta-analysis revealed that concussed participants walked 0.12 m/s ($p < 0.001$) and 0.06 m/s ($p = 0.023$) slower in single and dual task conditions, respectively.

CONCLUSIONS:

Subtle balance and gait alterations were observed after two weeks following a concussion. Understanding these alterations may allow clinicians to improve concussion diagnosis and prevent subsequent injury.

Long term impact of concussion

Neuroimage Clin. 2019 Jun 19;23:101907. doi: 10.1016/j.nicl.2019.101907

Mild traumatic brain injury: The effect of age at trauma onset on brain structure integrity.

Tremblay S¹, Desjardins M², Bermudez P³, Iturria-Medina Y³, Evans AC³, Jolicoeur P⁴, De Beaumont L⁵.

Mounting evidence suggests that mild traumatic brain injuries (mTBI) have long-term effects that interact with the aging process to precipitate cognitive decline. This line of research predicts that early exposure to brain trauma is particularly detrimental to long-term brain integrity. However, a second line of research into the effects of age at trauma onset predict that older brains are more vulnerable to the effects of mTBI than younger brains. We sought to determine whether patients who sustain a mTBI earlier in life fare better than patients who sustain a mTBI at an older age. We conducted a multi-cohort, case-control study, with participants randomly sampled from a population of patients with a history of mTBI. We recruited two cohorts of aging participants (N = 74, mean [SD] = 61.16 [6.41]) matched in age and education levels that differed in only one respect: age at mTBI onset. One cohort sustained their concussion in their early twenties (24.60 [6.34] y/o), the other in their early sixties (61.05 [4.90] y/o). Each mTBI cohort had its own matched control group. Participants underwent high-resolution MRI at 3 Tesla for T₁ and diffusion-weighted images (DWI) acquisition. Images were processed and analyzed using Deformation-Based Morphometry and DWI Tract-Based Spatial Statistics to identify group differences in a 2 × 2 ANOVA design.

Results showed a significant interaction on DWI measures of white matter integrity indicating larger anomalies in participants who sustained a mTBI at a younger age (F_{1,70}, P < .05, FDR corrected). These findings suggest that mTBI initiates a lifelong neurodegeneration process that outweighs the risks associated with sustaining a mTBI at an older age.

Implications are important for young athletes' populations exposed to the risk of mTBI in the practice of their sports and for retired athletes aging with a history of concussions sustained at a younger age.

18. CLAVICLE

SC joint dislocation

J Orthop Trauma. 2019 Jul;33(7):e251-e255. doi: 10.1097/BOT.0000000000001463.

Sternoclavicular Joint Dislocation: A Systematic Review and Meta-analysis.

Sernandez H¹, Riehl J².

OBJECTIVES:

This meta-analysis was performed to answer the following questions: (1) What is the expected outcome of sternoclavicular (SC) dislocations left untreated? (2) What are the indications for closed reduction of SC dislocations? (3) What are the indications for open reduction of SC dislocations? and (4) Does the evidence support the need for a cardiothoracic surgeon to be available for the open reduction of a SC dislocation?

DATA SOURCES:

Articles were obtained from the database EBSCOhost and supplemented by hand searching of bibliographies of included references. A search using the following terms: SC joint AND (dislocation OR injuries OR vascular injury OR cardiovascular surgeon) of the English-language literature from 1970 to 2018 on the topic of SC joint dislocations was performed.

STUDY SELECTION:

Studies were included if they contained clinical data on one or more of our study objectives. Articles were included if they contained participants presenting with an acute (<3 week old) SC joint dislocation who were 16 years of age or above. A total of 92 cases fit this participant criteria.

DATA EXTRACTION:

Studies chosen based on the inclusion and exclusion criteria were assessed for level of evidence and were then carefully reviewed for data pertaining to the current study questions. Data from individual articles were recorded in a spreadsheet program and grouped appropriately.

DATA SYNTHESIS:

Individual cases of acute SC joint dislocations reported in the literature were noted by the authors. The cases were organized into a spreadsheet, which allowed for the calculation of total patients treated and with what treatment option. Complications that followed treatment were also noted, allowing for a quantitative analysis of patient outcome.

CONCLUSIONS:

Based on the current body of literature, closed reduction should be attempted in the acute setting and open treatment performed in cases of failed closed reduction in posterior SC dislocations.

28. HIP REPLACEMENTS

Anterior approach less opioid use

J Pain Res. 2018; 11: 1327–1334. . doi: 10.2147/JPR.S166058 PMID: 30214269
PMID: 30214269

In-hospital outcomes with anterior versus posterior approaches in total hip arthroplasty: meta-analysis of randomized controlled trials

Larry E Miller,¹ Atul F Kamath,² Friedrich Boettner,³ and Samir K Bhattacharyya⁴

Purpose

The purpose of this study was to determine whether in-hospital outcomes are different with anterior approach (AA) or posterior approach (PA) in primary total hip arthroplasty (THA).

Methods

We performed a systematic review with random-effects meta-analysis of random-ized controlled trials (RCTs) comparing AA with PA in primary THA. Hospital outcomes were reported as odds ratio (OR), weight mean difference, or standardized mean difference (SMD).

Results

A total of seven RCTs with 609 patients were included. Outcomes favoring AA included 1.4 cm shorter incision ($p=0.045$), 0.5 days shorter hospital stay ($p=0.01$), 0.5 points less pain on a 0–10 scale ($p=0.007$), and less opioid use (SMD=-0.39 corresponding to 12 fewer morphine equivalents per day, $p=0.01$). The procedure time was 16 minutes longer with AA vs. PA ($p=0.002$). There were no statistical differences between AA and PA in operative blood loss (mean difference =19 mL, $p=0.71$), transfusions (9.7% vs. 16.2%, OR=0.45, $p=0.39$), or complications (5.5% vs. 4.1%, OR=1.42, $p=0.62$).

Conclusion

While the AA to primary THA may take longer time compared with the PA, the incision is shorter, and patients report slightly less pain, require less opioid medication, and leave the hospital earlier. The clinical relevance of these differences during longer-term follow-up is uncertain. The choice of surgical approach in primary THA should also consider factors such as experience of the surgeon and preferences of the surgeon and patient.

31. KNEE

Taping impact

J Sport Rehabil. 2019 May 16:1-25. doi: 10.1123/jsr.2018-0452.

Effects of Taping and Balance Exercises on Knee and Lower Extremity Function in Amateur Soccer Players: A Randomized Controlled Trial.

Espí-López GV¹, Serra-Añó P¹, Cobo-Pascual D¹, Zarzoso M¹, Suso-Martí L¹, Cuenca-Martínez F¹, Inglés M¹.

CONTEXT:

Knee injury prevention is a critical aspect in sport rehabilitation sciences and taping is a widely used technique in this field. Nevertheless, the role and effectiveness of a long-term application of Kinesio Taping on knee function, disability and injury prevention remains unclear.

OBJECTIVE:

To determine the effect of Kinesio Taping, alone or in combination with balance exercises, on dynamic and static knee balance and flexibility.

DESIGN:

Randomized trial design.

SETTING:

University of Valencia (Spain).

PARTICIPANTS:

48 male amateur soccer players.

INTERVENTION:

Participants were assigned to three groups: Sham KT (sKT) + BE; KT + BE; and KT in isolation. The intervention period lasted 4 weeks. Three evaluations were performed: at baseline (pre), at two weeks (mid) and at four weeks post-treatment (post).

MAIN OUTCOME MEASURES:

Y-Balance Test (YBT), Unipedal Stance Test (UST), the Toe Touch Test (TTT) and the Knee Injury and Osteoarthritis Outcome Score (KOOS).

RESULTS:

Both sKT + BE and KT + BE groups achieved significant pre-post improvements in SEBT, UST and TTT. The KT group only showed significant intra-group differences in the left and right UST variable ($p < 0.05$, $d = 0.76$, $d = 0.62$ respectively). The sham KT group obtained the strongest results in all physical variables. Regarding the KOOS, pre-post significant changes were found in the sham group ($p < 0.05$, $d = 0.28$).

CONCLUSIONS:

Both sham and real KT in combination with BE achieved significant improvements on all physical variables, and these differences were significantly greater compared to those found in the KT in isolation group, suggesting that benefits in knee function are due to the BE.

LEVEL OF EVIDENCE: Therapy level 1b.

37. OSTEOARTHRITIS/KNEE**Instability**

J Orthop Sports Phys Ther. 2019 Jun 18;1-5. doi: 10.2519/jospt.2019.8619

Perceived Instability Is Associated With Strength and Pain, Not Frontal Knee Laxity, in Patients With Advanced Knee Osteoarthritis.

Chaudhari AMW^{1,2}, Schmitt LC^{1,3}, Freisinger GM⁴, Lewis JM⁵, Hutter EE⁶, Pan X⁷, Siston RA^{8,2}.

BACKGROUND:

Increased varus/valgus laxity and perceived knee instability are independently associated with poor outcomes in people with knee osteoarthritis. However, the relationship between laxity and perceived instability is unclear.

OBJECTIVE:

To assess whether knee extensor strength, pain, and knee laxity are related to perceived knee instability in patients with advanced knee osteoarthritis.

METHODS:

This was a secondary analysis of a prospective observational cohort study of 35 patients (24 female; mean \pm SD age, 60 \pm 8 years; body mass index, 33 \pm 5 kg/m²) with knee osteoarthritis awaiting total knee arthroplasty (36 knees). Within 1 month before arthroplasty, we measured isometric knee extension strength and self-reported knee pain (using the Knee injury and Osteoarthritis Outcome Score pain subscale). Patients rated their perception of knee instability as moderate to severe (n = 20) or slight to none (n = 15 patients, n = 16 knees) using the Knee Outcome Survey. We measured intraoperative varus/valgus knee laxity.

RESULTS:

Lower knee extension strength ($P = .01$) and greater pain ($P < .01$) were associated with the perception of moderate to severe knee instability. Laxity was not related to perceived knee instability ($P = .63$).

CONCLUSION:

Knee extension strength and pain were associated with perceived instability in people with advanced osteoarthritis. Varus/valgus laxity was not related to perceived knee instability.

LEVEL OF EVIDENCE:

Level 2, prognostic. *J Orthop Sports Phys Ther*, Epub 18 Jun 2019. doi:10.2519/jospt.2019.8619.

45 A. MANUAL THERAPY LUMBAR & GENERAL**Flexion distraction technique**

Complement Ther Med. 2019 Jun;44:61-67. doi: 10.1016/j.ctim.2019.02.012. Epub 2019 Mar 31.

Short-term effectiveness of the flexion-distraction technique in comparison with high-velocity vertebral manipulation in patients suffering from low-back pain.

Carrasco-Martínez F1, Ibáñez-Vera AJ2, Martínez-Amat A3, Hita-Contreras F3, Lomas-Vega R3.

OBJECTIVES:

To determine the short-term effects of a modified Flexion-Distraction (FD) technique in comparison with a high-velocity low-back spinal manipulation (HVLA-SM) protocol on patients suffering from chronic low-back pain (CLBP).

DESIGN AND METHODS:

A randomized controlled trial. The sample was composed of 150 patients suffering from CLBP, who were randomly assigned to either a FD (n = 75) or a HVLA-SM (n = 75) group. The variables used to study pain were the scores of the Visual Analogue Scale (VAS) and the Pressure Pain Threshold (PPT) on trigger points (TrPs) of the quadratus lumborum. In addition, the Oswestry Disability Index (ODI) was used to measure disability, and Schober's test and the Finger Floor Distance test (FFDT) to measure changes in low-back spine motion. An Analysis of Covariance (ANCOVA) was used to measure group effect, and Number Needed to Treat (NNT) for effect size.

RESULTS:

Greater improvements occurred in the FD group, with a statistically significant group effect ($p < 0.001$) for all outcome variables. The ETA2 value was larger than 0.100 in the Schober's and FDD tests, larger than 0.200 in the case of ODI and PPT, and larger than 0.300 for VAS. OR = 0.07 [IC 95% = 0.03 to 0.18] and NNT = 2.08 [IC 95% = 1.64-2.84) yielded improved values for the FD group.

CONCLUSION:

For patients suffering from CLBP, greater improvements in pain and function were observed in the group receiving the modified FD treatment than in the HVLA-SM group.

48 B. TRIGGER POINTS NEEDLING**Dry needling vs compression**

J Man Manip Ther. 2019 Jul;27(3):152-161. doi: 10.1080/10669817.2018.1530421. Epub 2018 Oct 15.

Dry needling versus trigger point compression of the upper trapezius: a randomized clinical trial with two-week and three-month follow-up.

Ziaefar M¹, Arab AM², Mosallanezhad Z², Nourbakhsh MR³.

Objectives: The purpose of this randomized controlled trial was to investigate the long-term clinical effect of dry needling with two-week and three-month follow up, on individuals with myofascial trigger points in the upper trapezius muscle.

Methods: A sample of convenience (33 individuals) with a trigger point in the upper trapezius muscle, participated in this study. The individuals were randomly assigned to two groups: trigger point compression ($N = 17$) or dry needling ($N = 16$). Pain intensity, neck disability, and disability of the arm, hand, and shoulder (DASH) were assessed before treatment, after treatment sessions, and at two-week and three-month follow ups.

Results: The result of repeated measures ANOVA showed significant group-measurement interaction effect for VAS ($p = .02$). No significant interaction was found for NPQ and DASH ($p > .05$). The main effect of measurements for VAS, NPQ, and DASH were statistically significant ($p < .0001$). The results showed a significant change in pain intensity, neck disability, and DASH after treatment sessions, after two weeks and three months when compared with before treatment scores in both groups. There was no significant difference in the tested variables after two-week or three-month as compared to after treatment sessions between the two groups. However, pain intensity after treatment sessions was significantly different between the two groups ($p = .02$).

Discussion: Dry needling and trigger point compression in individuals with myofascial trigger point in the upper trapezius muscle can lead to three-month improvement in pain intensity and disability.

Manip and dry needling

J Man Manip Ther. 2019 Jul;27(3):141-151. doi: 10.1080/10669817.2019.1574389. Epub 2019 Feb 9.

A randomized clinical trial comparing non-thrust manipulation with segmental and distal dry needling on pain, disability, and rate of recovery for patients with non-specific low back pain.

Griswold D¹, Gargano F², Learman KE¹.

Objective: The purpose of this study was to examine the within and between-group effects of segmental and distal dry needling (DN) without needle manipulation to a semi-standardized non-thrust manipulation (NTM) targeting the symptomatic spinal level for patients with non-specific low back pain (NSLBP).

Methods: Sixty-five patients with NSLBP were randomized to receive either DN ($n = 30$) or NTM ($n = 35$) for six sessions over 3 weeks. Outcomes collected included the Oswestry Disability Index (ODI), Patient Specific Functional Scale (PSFS), Numeric Pain Rating Scale (NPRS), and Pain Pressure Thresholds (PPT). At discharge, patients perceived recovery was assessed.

Results: A two-way mixed model ANOVA demonstrated that there was no group*time interaction for PSFS ($p = 0.26$), ODI ($p = 0.57$), NPRS ($p = 0.69$), and PPT ($p = 0.51$). There was significant within group effects for PSFS (3.1 [2.4, 3.8], $p = 0.018$), ODI (14.5% [10.0%, 19.0%], $p = 0.015$), NPRS (2.2 [1.5, 2.8], $p = 0.009$), but not for PPT (3.3 [0.5, 6.0], $p = 0.20$).

Discussion: The between-group effects were neither clinically nor statistically significant. The within group effects were both significant and exceeded the reported minimum clinically important differences for the outcomes tools except the PPT. DN and NTM produced comparable outcomes in this sample of patients with NSLBP. Level of evidence: 1b.

Deep better than superficial

J Man Manip Ther. 2019 Jul;27(3):128-140. doi: 10.1080/10669817.2019.1589030. Epub 2019 Mar 19.

The effectiveness of superficial versus deep dry needling or acupuncture for reducing pain and disability in individuals with spine-related painful conditions: a systematic review with meta-analysis.

Griswold D¹, Wilhelm M², Donaldson M³, Learman K¹, Cleland J⁴.

Objective: The purpose of this systematic review was to evaluate the effects of deep versus superficial dry needling or acupuncture on pain and disability for spine-related painful conditions. A secondary purpose was to account for the differences of needling location in relation to the painful area.

Methods: This PROSPERO (#CRD42018106237) registered review found 691 titles through a multi-database search. Following a comprehensive search, 12 manuscripts were included in the systematic review and 10 in the meta-analysis. Standardized mean differences (SMD) with 95% confidence intervals were calculated for pain and disability.

Results: The included studies demonstrated an unclear to high risk of bias recommending a cautious interpretation of the results. A consistent effect supporting deep needling over superficial with an SMD of 0.585 [0.335, 0.835], $p < 0.001$ from 10 articles for pain but a non-significant effect of 0.197 [-0.066, 0.461], $p = 0.14$ from 2 studies for disability. A temporal examination was similar for effects on pain with an SMD of 0.450 [0.104, 0.796] immediately, 0.711 [0.375, 1.048] short-term (1 to 11 weeks), and 0.470 [0.135, 0.805] for time-points ≥ 12 weeks. Regionally, there was a greater effect needling the area of pain locally (SMD = 0.754) compared to remotely (SMD = 0.501).

Discussion: Statistically significant between-group differences were observed favoring deep needling over superficial. Both superficial and deep needling resulted in clinically meaningful changes in pain scores over time. However, differences between groups may not be clinically meaningful. More high-quality trials are needed to better estimate the effect size of deep versus superficial needling while controlling for location and depth of the lesion. Level of evidence: 1a.

52. EXERCISE**Restricted blood flow**

J Appl Physiol (1985). 2019 Jan 1;126(1):30-43. doi: 10.1152/jappphysiol.00685.2018. Epub 2018 Oct 18.

Stimuli and sensors that initiate skeletal muscle hypertrophy following resistance exercise.

Wackerhage H¹, Schoenfeld BJ², Hamilton DL³, Lehti M⁴, Hulmi JJ⁵.

One of the most striking adaptations to exercise is the skeletal muscle hypertrophy that occurs in response to resistance exercise. A large body of work shows that a mammalian target of rapamycin complex 1 (mTORC1)-mediated increase of muscle protein synthesis is the key, but not sole, mechanism by which resistance exercise causes muscle hypertrophy. While much of the hypertrophy signaling cascade has been identified, the initiating, resistance exercise-induced and hypertrophy-stimulating stimuli have remained elusive. For the purpose of this review, we define an initiating, resistance exercise-induced and hypertrophy-stimulating signal as "hypertrophy stimulus," and the sensor of such a signal as "hypertrophy sensor." In this review we discuss our current knowledge of specific mechanical stimuli, damage/injury-associated and metabolic stress-associated triggers, as potential hypertrophy stimuli. Mechanical signals are the prime hypertrophy stimuli candidates, and a filamin-C-BAG3-dependent regulation of mTORC1, Hippo, and autophagy signaling is a plausible albeit still incompletely characterized hypertrophy sensor.

Other candidate mechanosensing mechanisms are nuclear deformation-initiated signaling or several mechanisms related to costameres, which are the functional equivalents of focal adhesions in other cells. While exercise-induced muscle damage is probably not essential for hypertrophy, it is still unclear whether and how such muscle damage could augment a hypertrophic response.

Interventions that combine blood flow restriction and especially low load resistance exercise suggest that resistance exercise-regulated metabolites could be hypertrophy stimuli, but this is based on indirect evidence and metabolite candidates are poorly characterized.

Nordic hamstring ex decreases tears**Including the Nordic hamstring exercise in injury prevention programmes halves the rate of hamstring injuries: a systematic review and meta-analysis of 8459 athletes**

Nicol van Dyk¹, Fearghal P Behan², Rod Whiteley³
Br J Sports Med 2019

Research question Does the Nordic hamstring exercise (NHE) prevent hamstring injuries when included as part of an injury prevention intervention?

Design Systematic review and meta-analysis.

Eligibility criteria for selecting studies We considered the population to be any athletes participating in any sporting activity, the intervention to be the NHE, the comparison to be usual training or other prevention programmes, which did not include the NHE, and the outcome to be the incidence or rate of hamstring injuries.

Analysis The effect of including the NHE in injury prevention programmes compared with controls on hamstring injuries was assessed in 15 studies that reported the incidence across different sports and age groups in both women and men.

Data sources MEDLINE via PubMed, CINAHL via Ebsco, and OpenGrey.

Results There is a reduction in the overall injury risk ratio of 0.49 (95% CI 0.32 to 0.74, $p=0.0008$) in favour of programmes including the NHE. Secondary analyses when pooling the eight randomised control studies demonstrated a small increase in the overall injury risk ratio 0.52 (95% CI 0.32 to 0.85, $p=0.0008$), still in favour of the NHE. Additionally, when studies with a high risk of bias were removed ($n=8$), there is an increase of 0.06 in the risk ratio to 0.55 (95% CI 0.34 to 0.89, $p=0.006$).

Conclusions Programmes that include the NHE reduce hamstring injuries by up to 51%. The NHE essentially halves the rate of hamstring injuries across multiple sports in different athletes.

Resisted exercise reduces systolic BP

Br J Sports Med. 2016 Dec;50(23):1438-1442. doi: 10.1136/bjsports-2015-094715. Epub 2016 Mar 8.

Resistance training reduces systolic blood pressure in metabolic syndrome: a systematic review and meta-analysis of randomised controlled trials.

Lemes ÍR¹, Ferreira PH², Linares SN¹, Machado AF¹, Pastre CM¹, Netto J Júnior¹.

AIM:

To evaluate the effects of resistance training on metabolic syndrome risk factors through comparison with a control group.

DESIGN:

Meta-analysis comparing resistance training interventions with control groups. Two independent reviewers selected the studies and assessed their quality and data. The pooled mean differences between resistance training and the control group were calculated using a fixed-effects model.

DATA SOURCES:

The MEDLINE, PEDro, EMBASE, SPORTDiscus and The Cochrane Library databases were searched from their earliest records to 10 January 2015.

ELIGIBILITY CRITERIA FOR SELECTING STUDIES:

Randomised controlled trials that compared the effect of resistance training on metabolic syndrome risk factors with a control group were included. All types of resistance training, irrespective of intensity, frequency or duration, were eligible.

RESULTS:

Only systolic blood pressure was significantly reduced, by 4.08 mm Hg (95% CI 1.33 to 6.82; $p < 0.01$), following resistance training. The pooled effect showed a reduction of 0.04 mmol/L (95% CI -0.12, 0.21; $p > 0.05$) for fasting plasma glucose, 0.00 (95% CI -0.05, 0.04; $p > 0.05$) for high-density lipoprotein (HDL) cholesterol, 0.03 (95% CI -0.14, 0.20; $p > 0.05$) for triglycerides, 1.39 mm Hg (95% CI -0.19, 2.98; $p = 0.08$) for diastolic blood pressure and 1.09 cm (95% CI -0.12, 2.30; $p = 0.08$) for waist circumference. Inconsistency (I^2) for all meta-analysis was 0%.

CONCLUSIONS:

Resistance training may help reduce systolic blood pressure levels, stroke mortality and mortality from heart disease in people with metabolic syndrome.

High intensity exercise

High intensity exercise for 3 months reduces disease activity in axial spondyloarthritis (axSpA): a multicentre randomised trial of 100 patients

Silje Halvorsen Sveaas¹, Annelie Bilberg², Inger Jorid Berg³, Sella Arrestad Provan³, Silvia Rollefstad⁴, Anne Grete Semb⁴, Kåre Birger Hagen¹, Melissa Woll Johansen⁵, Elisabeth Pedersen⁶, Hanne Dagfinrud¹

Background Exercise is considered important in the management of patients with rheumatic diseases, but the effect of high intensity exercises on disease activity is unknown.

Objective To investigate the effectiveness of high intensity exercises on disease activity in patients with axial spondyloarthritis (axSpA).

Method Assessor blinded multicentre randomised controlled trial. 100 patients (aged from their 20s to their 60s) with axSpA were randomly assigned to an exercise group or to a no-intervention control group. The exercise group performed cardiorespiratory and muscular strength exercises at high intensity over 3 months. The control group received standard care and was instructed to maintain their usual physical activity level. Primary outcome was disease activity measured with the Ankylosing Spondylitis (AS) Disease Activity Scale (ASDAS, higher score=worst) and the Bath AS Disease Activity Index (BASDAI, 0–10, 10=worst). Secondary outcomes were inflammatory markers, physical function and cardiovascular (CV)-health. There was patient involvement in the design and reporting of this study.

Results 97 of the 100 (97%) randomised patients completed the measurements after the intervention. There was a significant treatment effect of the intervention on the primary outcome (ASDAS: -0.6 [-0.8 to -0.3], $p<0.001$ and BASDAI: -1.2 [-1.8 to -0.7], $p<0.001$). Significant treatment effects were also seen for inflammation, physical function and CV-health.

Conclusion High intensity exercises reduced disease symptoms (pain, fatigue, stiffness) and also inflammation in patients with axSpA. It improves patients' function and CV health. This debunks concerns that high intensity exercise might exacerbate disease activity in patients with axSpA.

Responses to resisted exercise

J Sports Sci. 2019 Jun;37(12):1420-1428. doi: 10.1080/02640414.2018.1561389. Epub 2018 Dec 30.

Physiological responses in different intensities of resistance exercise - Critical load and the effects of aging process.

Arakelian VM^{1,2}, Goulart CDL¹, Mendes RG¹, Sousa NM^{1,3}, Trimer R¹, Guizilini S^{4,5}, Sampaio LMM⁶, Baldissera V³, Arena R⁷, Reis MS⁸, Borghi-Silva A^{1,2,7}.

Aim was to identify critical load (CL) in young and elderly apparently healthy male cohorts.

To contrast the metabolic, cardiovascular and perceptual responses on CL according to age. We evaluated 12 young (23 ± 3 years) and 10 elderly (70 ± 2 years) apparently healthy active males, who underwent: (1) 1 repetition maximum (1RM) test on a 45° Leg Press; (2) on different days, three high-intensity resistance exercise constant load tests (60%, 75% and 90% 1RM) until fatigue (Tlim).

Absolute values of both the CL asymptote and curvature constant (kg) were significantly lower in elderly subjects ($P < 0.05$). In contrast, elderly subjects demonstrated a significantly higher number of repetitions at CL when compared with young subjects ($P < 0.05$). As expected, oxygen uptake (VO_2) and heart rate (HR) during maximal aerobic exercise testing were significantly reduced in older subjects. However, percent-predicted aerobic capacity were higher in older subjects ($P < 0.05$). In addition, blood lactate ($[\text{La}^-]$) corrected to Tlim and rating of perceived exertion values were greater in younger subjects at all intensities ($P < 0.05$).

These findings, despite reduced force production in older subjects, endurance-related parameters are well preserved according to age-adjusted percent-predicted values in apparently healthy males.

58. RUNNING**Previous injuries**

J Physiother. 2013 Dec;59(4):263-9. doi: 10.1016/S1836-9553(13)70203-0.

Previous injuries and some training characteristics predict running-related injuries in recreational runners: a prospective cohort study.

Hespanhol Junior LC¹, Pena Costa LO, Lopes AD.

QUESTIONS:

What is the incidence of running-related injuries (RRIs) in recreational runners? Which personal and training characteristics predict RRIs in recreational runners?

DESIGN:

Prospective cohort study.

PARTICIPANTS:

A total of 200 recreational runners answered a fortnightly online survey containing questions about their running routine, races, and presence of RRI. These runners were followed-up for a period of 12 weeks.

OUTCOME MEASURES:

The primary outcome of this study was running-related injury. The incidence of injuries was calculated taking into account the exposure to running and was expressed by RRI/1000 hours. The association between potential predictive factors and RRIs was estimated using generalised estimating equation models.

RESULTS:

A total of 84 RRIs were registered in 60 (31%) of the 191 recreational runners who completed all follow-up surveys. Of the injured runners 30% (n=18/60) developed two or more RRIs, with 5/18 (28%) being recurrences. The incidence of RRI was 10 RRI/1000 hours of running exposure. The main type of RRI observed was muscle injuries (30%, n=25/84). The knee was the most commonly affected anatomical region (19%, n=16/84). The variables associated with RRI were: previous RRI (OR 1.88, 95% CI 1.01 to 3.51), duration of training although the effect was very small (OR 1.01, 95% CI 1.00 to 1.02), speed training (OR 1.46, 95% CI 1.02 to 2.10), and interval training (OR 0.61, 95% CI 0.43 to 0.88).

CONCLUSIONS:

Physiotherapists should be aware and advise runners that past RRI and speed training are associated with increased risk of further RRI, while interval training is associated with lower risk, although these associations may not be causative.

Injuries for distance runners

J Orthop Sports Phys Ther. 2019 Jun 18;1-11. doi: 10.2519/jospt.2019.8473.

Running Themselves Into the Ground? Incidence, Prevalence, and Impact of Injury and Illness in Runners Preparing for a Half or Full Marathon.

Franke TPC¹, Backx FJG¹, Huisstede BMA¹.

OBJECTIVE:

To describe the incidence, prevalence, and impact of running-related injuries (RRIs) and illness symptoms in half marathon and marathon runners during the 16-week period before the Utrecht Marathon.

METHODS:

In this prospective cohort study, we used the Oslo Sports Trauma Research Center questionnaire to register RRIs and illness symptoms every 2 weeks during the 16-week study period. When an injury or illness occurred, questions were added regarding its nature. We calculated the incidence proportion (the number of new cases divided by the number of runners at risk) and the period prevalence (the number of existing and new cases within a 2-week period, divided by the total number of runners at risk during that period).

RESULTS:

Of the 161 included runners, 9 out of 10 reported an RRI or illness symptom at some time during the study period. In any 2-week period, 5.6% to 14.8% of the runners reported a new RRI, and 6.3% to 13.8% of the runners reported a new illness symptom. The prevalence of RRIs ranged from 29.2% to 43.5%, and the prevalence of illness symptoms ranged from 28.3% to 71.2%. The most prevalent RRIs were in the lower leg (prevalence range, 5.4%-12.3%) and knee (prevalence range, 2.7%-9.3%). The most prevalent illness symptoms were rhinorrhea/sneezing (prevalence range, 3.9%-12.7%) and coughing (prevalence range, 3.9%-11.9%). The incidence and prevalence of illness symptoms peaked at the same time as the influenza-like illness epidemic of the winter of 2015-2016.

CONCLUSION:

Nine out of every 10 runners reported an RRI or illness symptom in the lead-up to a half or full marathon. In any 2-week period, up to 1 in 7 runners reported a new RRI or illness symptom.

LEVEL OF EVIDENCE:2b. J Orthop Sports Phys Ther, Epub 18 Jun 2019.
doi:10.2519/jospt.2019.8473.

59. PAIN**Use of pain science by PT's**

Physiother Theory Pract. 2019 May 27;1-10. doi: 10.1080/09593985.2019.1622162.

Physiotherapy treatment experiences of persons with persistent musculoskeletal pain: A qualitative study.

Calner T¹, Isaksson G¹, Michaelson P¹.

The aim of this study was to explore and describe the physiotherapy treatment experiences of persons with persistent musculoskeletal pain.

Eleven participants with persistent musculoskeletal pain in the back, neck, or shoulders were included in the study. Data was collected via semi-structured interviews and were analysed with qualitative content analysis.

The analysis resulted in the theme "Towards acceptance and management of pain", comprising four sub-themes: 1) Establishing and maintaining a therapeutic alliance; 2) Being active, taking initiative and facing challenges; 3) Appreciating guidance, incentive and having a sounding board; and 4) Acquired knowledge and new body awareness change behaviours. The theme and sub-themes describe how the participants used increased knowledge, awareness, movements and exercises learned from the physiotherapy treatment to develop strategies for managing pain and the process of acceptance.

A trusting relationship and continual dialogue with the physiotherapist was considered to be important. The participants were actively involved in the process as exercises, activities and other treatment modalities were individualized.

This was rewarding but also challenging and required effort on their part. The physiotherapist's initiatives and actions were an important incentive and means of support.

Central sensitization and greater trochanteric pain

Musculoskelet Sci Pract. 2019 May 18;43:6-11. doi: 10.1016/j.msksp.2019.05.006

Do features of central sensitisation exist in Greater Trochanteric Pain Syndrome (GTPS)? A case control study.

French HP¹, Jong CC², McCallan M³.

BACKGROUND:

Greater Trochanteric Pain Syndrome (GTPS), which is commonly due to Gluteal Tendinopathy, refers to pain over the lateral hip that can become persistent and disabling. Central nervous sensitisation has been implicated in upper limb tendinopathy, but no studies have investigated if it plays a role in GTPS.

OBJECTIVES:

To investigate if features of central sensitisation were present in people with GTPS.

METHODS:

Eighteen people with GTPS were matched with 18 healthy controls in this cross-sectional study. The VISA-G and Central Sensitisation Inventory (CSI) self-report questionnaires were completed and pressure pain detection thresholds (PPDTs) at local and remote sites were measured in all participants. Data were analysed for between-group differences using Mann-Whitney U tests. Correlation between CSI and PPDTs were assessed using Pearson correlation co-efficients.

RESULTS:

PPDT values were lower at local (symptomatic greater trochanter) and remote sites in the GTPS group, indicative of central sensitisation, resulting in statistically significant between-group differences. 44.4% of the GTPS group were classified as having symptoms of central sensitisation, based on the CSI.

CONCLUSION:

There is preliminary evidence of central sensitisation in people with GTPS. Results need to be validated using other objective quantitative sensory testing measures in larger samples.

Neuropathic pain

Pain Med. 2019 Jun 5. pii: pnz118. doi: 10.1093/pm/pnz118

Electrical (Pain) Thresholds and Conditioned Pain Modulation in Patients with Low Back-Related Leg Pain and Patients with Failed Back Surgery Syndrome: A Cross-Sectional Pilot Study.

Goudman L^{1,2,3}, Huysmans E^{2,3,4,5,6}, Coppieters I^{2,3,6}, Ickmans K^{2,3,6}, Nijs J^{2,3,6}, Buyl R⁷, Putman K^{4,5}, Moens M^{1,8,9}.

OBJECTIVE:

When evaluating sensory dysfunctions and pain mechanisms in patients with low back pain (LBP), a specific subgroup of patients with radicular symptoms is often excluded. Comparative studies that evaluate sensory sensitivity in patients with a dominant nociceptive and neuropathic pain component are rarely performed. Therefore, the goal of this study was to examine differences in electrical thresholds and conditioned pain modulation (CPM) between patients with low back-related leg pain (LBRLP) and patients with failed back surgery syndrome (FBSS).

DESIGN:

Cross-sectional study.

SETTING:

University Hospital Brussels.

SUBJECTS:

Twenty-one patients with LBRLP and 21 patients with FBSS were included.

METHODS:

Electrical detection thresholds (EDTs), electrical pain thresholds (EPTs), and CPM were evaluated on the symptomatic and nonsymptomatic sides. Within- and between-group differences were evaluated for all parameters.

RESULTS:

No between-group differences were found for EDT and EPT at both sides. On the nonsymptomatic side, a significantly lower CPM effect was found in the FBSS group ($P = 0.04$). The only significant within-group difference was an increased EDT at the symptomatic side in patients with FBSS ($P = 0.01$).

CONCLUSIONS:

LBP patients with a primary neuropathic pain component revealed altered detection sensitivity at the symptomatic side, without severe indications for altered nociceptive processing, compared with LBP patients without a dominant neuropathic pain component. Endogenous modulation is functioning in LBP patients, although it is possible that it might only be functioning partially in patients with a dominant neuropathic pain component.

MS pain subgroups**Matching treatment options for risk sub-groups in musculoskeletal pain: a consensus groups study**

- Joanne Protheroe, Nadine E. Foster

BMC Musculoskeletal Disorders 2019 **20**:271

<https://doi.org/10.1186/s12891-019-2587-z>

Background

Musculoskeletal (MSK) pain represents a considerable worldwide healthcare burden. This study aimed to gain consensus from practitioners who work with MSK pain patients, on the most appropriate primary care treatment options for subgroups of patients based on prognostic risk of persistent disabling pain. Agreement was sought on treatment options for the five most common MSK pain presentations: back, neck, knee, shoulder and multisite pain, across three risk subgroups: low, medium and high.

Methods

Three consensus group meetings were conducted with multi-disciplinary groups of practitioners ($n = 20$) using Nominal Group Technique, a systematic approach to building consensus using structured in-person meetings of stakeholders which follows a distinct set of stages.

Results

For all five pain presentations, “education and advice” and “simple oral and topical pain medications” were agreed to be appropriate for all subgroups. For patients at low risk, across all five pain presentations “review by primary care practitioner if not improving after 6 weeks” also reached consensus. Treatment options for those at medium risk differed slightly across pain-presentations, but all included: “consider referral to physiotherapy” and “consider referral to MSK-interface-clinic”. Treatment options for patients at high risk also varied by pain presentation. Some of the same options were included as for patients at medium risk, and additional options included: “opioids”; “consider referral to expert patient programme” (across all pain presentations); and “consider referral for surgical opinion” (back, knee, neck, shoulder). “Consider referral to rheumatology” was agreed for patients at medium and high risk who have multisite pain.

Conclusion

In addressing the current lack of robust evidence on the effectiveness of different treatment options for MSK pain, this study generated consensus from practitioners on the most appropriate primary care treatment options for MSK patients stratified according to prognostic risk. These findings can help inform future clinical decision-making and also influenced the matched treatment options in a trial of stratified primary care for MSK pain patients.

61. FIBROMYALGIA

Body awareness therapies

Eur J Phys Rehabil Med. 2019 May 15. doi: 10.23736/S1973-9087.19.05291-2

Effectiveness of movement and body awareness therapies in patients with fibromyalgia: a systematic review and meta-analysis.

Bravo C¹, Skjaerven LH², Guitard Sein-Echaluce L¹, Catalan-Matamoros D^{3,4}.

INTRODUCTION:

Fibromyalgia is a long-term condition that is associated with widespread pain and is recognized as one of the major common causes of disability. The standard clinical guidance for fibromyalgia includes both pharmacological and non-pharmacological interventions. In the latter, different interventions are implemented such as aerobic exercises, flexibility exercises, strength training, stretching and body awareness therapies. The aims of this review were to provide a summary of movement and Body Awareness Therapies in patients with fibromyalgia and to compare the different therapies in relation to outcomes.

EVIDENCE ACQUISITION:

The search strategy was undertaken using the following databases from inception to October 2018: Pubmed, Cinahl, PEDro, PsychoInfo and The Cochrane Library. Articles were eligible if they were randomized controlled trials (RCTs) comparing movement and body awareness therapies with another intervention.

EVIDENCE SYNTHESIS:

Two authors independently extracted data and assessed trial quality. 418 studies were found, twenty-two of which met the inclusion criteria. Pain symptom was improved with movement and body awareness therapies such as, Affective Self-Awareness, T'ai Chi, Yoga, Belly dance, strengthening program and Resseguier method. Forest plot analysis in short term confirms positive trend in favor of body awareness; however a great heterogeneity was found between trials.

CONCLUSIONS:

This systematic review and meta-analysis shows positive results in favour of movement and body awareness therapies as adjunct treatment to usual care in patients who suffer from fibromyalgia. Further work in identifying the mechanism of action by which body awareness therapies benefit outcomes should be undertaken.