



Abstracts July 2023

The lived experiences of musculoskeletal physiotherapists managing patient expectations for diagnostic imaging: A qualitative study using a phenomenological analysis.

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Musculoskeletal Science and Practice July 23, 2023

<https://doi.org/10.1016/j.msksp.2023.102833>

Abstract:

Objectives: Unnecessary diagnostic imaging for musculoskeletal presentations is a pervasive phenomenon, placing a substantial weight on healthcare resources. Their overuse can lead to iatrogenic consequences associated with overdiagnosis and overtreatment. Factors which contribute to inappropriate imaging are multifactorial. Clinician-patient beliefs, behaviors, and expectations have been identified as central drivers. Physiotherapists play an important role in the utilization of diagnostic imaging for musculoskeletal presentations throughout healthcare settings. This study aims to explore the lived experiences of physiotherapists managing patient expectations for diagnostic imaging.

Design: A qualitative study using an interpretative phenomenological analysis. Five participants were purposefully recruited and took part in semi-structured individual interviews.

Results: The central themes identified were expectations for diagnostic imaging, managing expectations, communicating imaging findings, imaging as a therapeutic tool, and risk and uncertainty.

Conclusion: The findings from this study gives new insights into how musculoskeletal physiotherapists manage expectations for diagnostic imaging, the associated complexities, and the challenges encountered.

Towards modern understanding of the Achilles tendon properties in human movement research

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Journal of Biomechanics April 13, 2023

<https://doi.org/10.1016/j.jbiomech.2023.111583>

Abstract:

The Achilles tendon (AT) is the strongest tendon in humans, yet it often suffers from injury. The mechanical properties of the AT afford efficient movement, power amplification and power attenuation during locomotor tasks. The properties and the unique structure of the AT as a common tendon for three muscles have been studied

frequently in humans using in vivo methods since 1990's. As a part of the celebration of 50 years history of the International Society of Biomechanics, this paper reviews the history of the AT research focusing on its mechanical properties in humans. The questions addressed are: What are the most important mechanical properties of the Achilles tendon, how are they studied, what is their significance to human movement, and how do they adapt? We foresee that the ongoing developments in experimental methods and modeling can provide ways to advance knowledge of the complex three-dimensional structure and properties of the Achilles tendon in vivo, and to enable monitoring of the loading and recovery for optimizing individual adaptations.

Critically appraised paper: Corticosteroid injections combined with exercise therapy are superior to placebo injections and exercise therapy for Achilles tendinopathy symptoms.

Nina Østerås

Journal of Physiotherapy July 03.2023

<https://doi.org/10.1016/j.jphys.2023.05.013>

Synopsis:

Summary of: Johannsen F, Olesen JL, Øhlenschläger TF, Lundgaard-Nielsen M, Cullum CK, Jakobsen AS, et al. Effect of Ultrasonography-Guided Corticosteroid Injection vs Placebo Added to Exercise Therapy for Achilles Tendinopathy. JAMA Network Open. 2022;5: e2219661.

Question: Are corticosteroid injections and exercise therapy superior when compared with placebo injections and exercise therapy for Achilles tendinopathy?

Design: Superiority, double-blind, parallel group randomized controlled trial.

Setting: University clinic, Copenhagen, and a local private rheumatology clinic.

Participants: People aged 18 to 65 years with patient reported Achilles tendon pain for 3 months; insidious onset of pain aggravated by weight-bearing activities, worse in the morning and/or during the initial phases of weight-bearing activities; pain and swelling located 2 to 6 cm proximal to the Achilles tendon insertion; local tendon thickening (ultrasonography). 7 mm or 20% larger compared with the asymptomatic side. Main exclusion criteria: previous Achilles tendon surgery, injections or ruptures. Randomization of 100 participants allocated 48 to corticosteroid injections and exercise therapy and 52 to placebo injections and exercise therapy.

Interventions: Participants in the corticosteroid group were injected with 1 mL of methylprednisolone acetate (40 mg/mL) and 1 mL of lidocaine (10 mg/mL). Participants in the placebo group were injected with 1 mL of lipid emulsion and 1 mL of lidocaine (10 mg/mL). Injections were given at the first visit and the participants were offered up to three more injections at intervals of 4 weeks. Both groups received a heavy slow resistance program three times a week over 3 months including three two-legged heel rise exercises with 15-repetition maximum over three to four sets with 2-to-3-minute rests between sets. The program was supervised by a physiotherapist, with weekly decreased repetitions and increased loading guided by participant tolerance.

Outcome measures: The primary outcome was between group difference in change in the total score of the Victorian Institute of Sports Assessment-Achilles (VISA-A)

questionnaire (range 1 to 100, 100 = no symptoms) at 6 months compared with baseline. Secondary outcomes included morning pain, pain during exercise, global rating of change and tendon thickness.

Results: Ninety-one participants completed the 6-month follow-up. The corticosteroid injections and exercise therapy group had a greater improvement in VISA-A score from baseline to the 6-month follow-up compared with the placebo group (MD 18 points, 95% CI 8 to 27; p , 0.001).

Conclusion: Corticosteroid injections combined with exercise therapy were superior when compared with placebo injections and exercise therapy at 6 months for the treatment of Achilles tendinopathy.

An international consensus definition for contextual factors: findings from a nominal group technique

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Frontiers in Psychology July 03, 2023

<https://doi.org/10.3389/fpsyg.2023.1178560>

Abstract:

Objective: Emerging literature suggests contextual factors are important components of therapeutic encounters and may substantially influence clinical outcomes of a treatment intervention. At present, a single consensus definition of contextual factors, which is universal across all health-related conditions is lacking. The objective of this study was to create a consensus definition of contextual factors to better refine this concept for clinicians and researchers.

Design: The study used a multi-stage virtual Nominal Group Technique (vNGT) to create and rank contextual factor definitions. Nominal group techniques are a form of consensus-based research, and are beneficial for identifying problems, exploring solutions and establishing priorities.

Setting: International.

Main outcome measures: The initial stages of the vNGT resulted in the creation of 14 independent contextual factor definitions. After a prolonged discussion period, the initial definitions were heavily modified, and 12 final definitions were rank ordered by the vNGT participants from first to last.

Participants: The 10 international vNGT participants had a variety of clinical backgrounds and research specializations and were all specialists in contextual factors research.

Results: A sixth round was used to identify a final consensus, which reflected the complexity of contextual factors and included three primary domains: (1) an overall definition; (2) qualifiers that serve as examples of the key areas of the definition; and (3) how contextual factors may influence clinical outcomes.

Conclusion: Our consensus definition of contextual factors seeks to improve the understanding and communication between clinicians and researchers. These are especially important in recognizing their potential role in moderating and/or mediating clinical outcomes.

Diagnostic accuracy of the upper limb neurodynamic test with median bias (ULNT1) for cervical radiculopathy: a systematic review and meta-analysis

Peng Shena, Raymond Chi-Chung Tsang, Ying Liang, Xiwen Chen,

Physiotherapy June 07, 2023

<https://doi.org/10.1016/j.physio.2023.06.001>

Abstract:

Background: The upper limb neurodynamic test for median nerve (ULNT1) is commonly applied for assessment of cervical radiculopathy (CR). However, the diagnostic accuracy of ULNT1 in diagnosing CR remains unclear.

Objective: This study aimed to examine the diagnostic accuracy of the ULNT1 for the CR.

Data sources: Four databases were searched for relevant studies published up to April 30, 2023.

Study selection: Cross-sectional or cohort studies that assessed the diagnostic accuracy of ULNT1 for CR were included.

Data synthesis: The methodological quality of studies was assessed using the Quality Assessment of Diagnostic Accuracy Studies-2 (QUADAS-2) checklist. A bivariate random-effects regression model was used for the data synthesis. The overall quality of evidence was evaluated using the GRADE approach.

Results: A total of 592 references were identified, and five studies with 465 patients met the inclusion criteria. The overall quality of the body of evidence was very low across studies. Heterogeneity of studies was high. The pooled sensitivity and specificity of the ULNT1 were 0.69 (95% CI 0.50–0.83) and 0.54 (95% CI 0.36–0.71), respectively. The summary receiver operating characteristic curve area was 0.65 (95% CI 0.61–0.69).

Conclusion: There is low certainty of evidence that the ULNT1 has only fair accuracy in diagnosing CR. The ULNT1 was recommended as an add-on test after the existing diagnostic pathway to enhance diagnostic accuracy further. High-quality studies which follow the Standards for Reporting of Diagnostic Accuracy and the QUADAS-2; a revised tool for the quality assessment of diagnostic accuracy, are needed.

'What scientific evidence supports this?' how do physiotherapists in private practice use evidence-based practice and what are the main challenges? A convergent parallel mixed-methods study

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European Journal of Physiotherapy July 13, 2023

<https://doi.org/10.1080/21679169.2023.2234404>

Abstract:

Purpose: Evidence-based practice (EBP) has been defined as the integration of best available scientific evidence, patient preferences, and individual clinical expertise.

A range of barriers for implementing EBP in physiotherapy practice have been identified, but little is known about the underlying causes. The objective was to explore how physiotherapists in private practice perceive EBP, how they use, and what their main challenges are.

Materials and methods: This study used a convergent parallel mixed-methods design. It consisted of a 28-item questionnaire informed by systematic reviews with a deductive approach and semi structured interviews with a phenomenological and inductive approach.

Results: The results from the questionnaire (n = 216) and the interviews (n = 9) showed that physiotherapists are more likely to implement EBP if they have sufficient flexibility in time allocation to facilitate shared decision-making and increase the integration of patient preferences. Support from colleagues and the workplace culture were identified as both a challenge and a potential facilitator for increased use of EBP.

Conclusion: Participants in this study experienced several modifiable challenges, including lack of flexibility in time allocation and insufficient time to build rapport with the patient. Physiotherapists show inconsistency in their understanding of what EBP is – this ultimately becomes an additional and yet undescribed barrier for implementation of EBP.

Effect of exercise therapy versus surgery on mechanical symptoms in young patients with a meniscal tear: a secondary analysis of the DREAM trial

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British Journal of Sports Medicine March 06, 2023

<http://dx.doi.org/10.1136/bjsports-2022-106207>

Abstract:

Objective: To compare the effect of early surgery versus exercise and education on mechanical symptoms and other patient-reported outcomes in patients aged 18–40 years with a meniscal tear and self-reported mechanical knee symptoms.

Methods: In a randomized controlled trial, 121 patients aged 18–40 years with a MRI-verified meniscal tear were randomized to surgery or 12-week supervised exercise and education. For this study, 63 patients (33 and 30 patients in the surgery and in the exercise group, respectively) reporting baseline mechanical symptoms were included. The main outcome was self-reported mechanical symptoms (yes/no) at 3, 6 and 12 months assessed using a single item from the Knee Injury and Osteoarthritis Outcome Score (KOOS). Secondary outcomes were KOOS4 and the 5 KOOS-subscales and the Western Ontario Meniscal Evaluation Tool (WOMET).

Results: In total, 55/63 patients completed the 12-month follow-up. At 12 months, 9/26 (35%) in the surgery group and 20/29 (69%) in the exercise group reported mechanical symptoms. The risk difference and relative risk at any time point was 28.7% (95% CI 8.6% to 48.8%) and 1.83 (95% CI 0.98 to 2.70) of reporting mechanical symptoms in the exercise group compared with the surgery group. We did not detect any between-group differences in the secondary outcomes.

Conclusion: The results from this secondary analysis suggest that early surgery is more effective than exercise and education for relieving self-reported mechanical knee symptoms, but not for improving pain, function and quality of life in young patients with a meniscal tear and mechanical symptoms.

The association between forward head posture and non-specific neck pain: A cross-sectional study

Hilla Sarig Bahat, Andrei Levy & Tomer Yona

Physiotherapy Theory and Practice February 23, 2022

<https://doi.org/10.1080/09593985.2022.2044420>

Abstract:

Background: Poor posture is traditionally associated with various musculoskeletal disorders. Consequently, educators in the musculoskeletal field have been teaching postural observation as part of the physical assessment. Forward head posture (FHP) is hypothesized to be associated with neck pain; however, evidence in this topic remains inconclusive.

Purpose: To investigate the association between FHP and neck pain intensity, disability, and cervical kinematics in individuals with neck pain compared to asymptomatic individuals. A secondary aim of this study was to explore the possible effect of a head-mounted display (HMD) used in a virtual reality (VR) assessment on FHP.

Methods: The study was conducted with 43 volunteers (20 asymptomatic individuals, 23 individuals with neck pain) aged 19 to 62. FHP was assessed by measuring craniovertebral angle on profile photographs. Secondary outcome measures included pain intensity, the neck disability index (NDI) questionnaire, and neck kinematics using specialized VR software.

Results: There were no significant differences between individuals with neck pain and asymptomatic individuals in FHP (craniovertebral angle = 48.24 ± 7.29 ; 48.90 ± 5.89 , respectively, $p > .05$). The neck pain group demonstrated a restricted range of motion and slower neck movements ($p < .05$). We found no significant correlation between FHP and visual analog scale, NDI, and most neck kinematic measures.

Conclusions: Our findings cannot support a clinically applicable association between FHP and neck pain. Additionally, individuals with neck pain had a lower range of motion and slower neck movements.

Return to Sports Following Shoulder Injury: Clinical Evaluation, Isokinetic, and Functional Testing

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Current Sports Medicine Reports 2023

DOI: 10.1249/JSR.0000000000001072

Abstract:

The shoulder is commonly injured in overhead sports. This is associated with a high degree of mobility at the expense of stability, sports specific demands, high volume or intensity of practice and competition, biomechanical deficits, and poor technique. Following injury, the return to competition process includes nonsurgical or surgical treatment, comprehensive rehabilitation, and a structured return to sports program. The return to sports continuum is divided into phases which include return to practice of the sport, return to competition at a lower level or with reduced performance, and return to expected performance. Components of the return to sports decision include clinical evaluation of physical and psychological readiness, measurement of muscle strength using isokinetic tests, evaluation of overhead functional tasks, and progression in a supervised interval throwing program. The evidence for the effectiveness of return to sports programs following shoulder injury is limited but evolving and is an area that will merit continued investigation.

Hip strengthening exercise dosage is not associated with clinical improvements after total hip arthroplasty – a prospective cohort study (the PHETHAS-1 study)

Merete Nørgaard Madsen, Lone Ramer Mikkelsen, Michael Skovdal Rathleff, Kristian Thorborg, Thomas Kallemose, Thomas Bandholm

BMJ July 13, 2023

<https://doi.org/10.1101/2023.07.12.23292442>

Abstract:

Purpose: Postoperative rehabilitation exercise is commonly prescribed after total hip arthroplasty (THA), but its efficacy compared to no or minimal rehabilitation exercise has been questioned. Preliminary efficacy would be indicated if a dose-response relationship exists between performed exercise dose and degree of postoperative recovery. The objective was to evaluate the preliminary efficacy of home-based rehabilitation using elastic band exercise on performance-based function after THA, based on the association between performed exercise dose and change in performance-based function (gait speed) from 3 (start of intervention) to 10 weeks (end of intervention) after surgery.

Methods: A pre-registered ([NCT03109821](https://www.clinicaltrials.gov/ct2/show/study?term=NCT03109821)) prospective cohort study was conducted. Following primary THA, patients were prescribed home-based rehabilitation exercise using elastic bands. Performed exercise dose (repetitions/week) was objectively measured using attached sensor technology. Primary outcome was change in gait

speed (40m fast-paced walk test). Secondary outcomes included patient-reported hip disability. In the primary analysis, a linear regression model was used.

Results: Ninety-four patients (39 women) with a median age of 66.5 years performed a median of 339 exercise repetitions/week (1st-3rd quartile: 209-549). Across outcomes, participants significantly improved from 3 to 10-week follow-up. The association between performed exercise dose and change in mean gait speed was 0.01 m/sec [95% CI: -0.01; 0.02] per 100 repetitions.

Conclusions: We found no indication of preliminary efficacy of home-based rehabilitation exercise using elastic bands, as no significant and clinically relevant associations between performed exercise dose and changes in outcomes were present. Trials comparing postoperative rehabilitation exercise with no exercise early after THA are warranted.

Who should judge treatment effects as unimportant?

Christina Abdel Shaheed, Stephanie Mathieson, Ross Wilson, Ann-Mason Fumage, Christopher G Maher

Journal of Physiotherapy July 03, 2023

<https://doi.org/10.1016/j.jphys.2023.04.001>

Abstract:

Introduction: It is common to encounter authors of trials, systematic reviews and guidelines dismissing treatments on the grounds that their effects are not large enough to be worthwhile. The basis is often as simple as the treatment effect not surpassing a standard benchmark, such as 15 units on a 0 to 100 pain scale. We have been guilty of this practice ourselves, but now realize that things are more complex. This Editorial begins with a brief introduction to the smallest worthwhile effect, also referred to as the minimum clinically important difference. It then explains the limitations of the standard benchmark approach and proposes a more nuanced approach that considers the complexity of the clinical encounter and the wishes of the patient. An example from pain research is used.

Infographic. Aspetar clinical practice guideline on rehabilitation after ACL reconstruction: an interactive figure

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British Journal of Sports Medicine April 06, 2023

Doi:10.1136/bjsports-2022-106679

Abstract:

This infographic interactively summarizes the recommendations derived from the Aspetar clinical practice guideline on rehabilitation after anterior cruciate ligament reconstruction (ACLR).¹ The recommendations can be used by patients, clinicians,

researchers and healthcare decision makers as a simple way of knowing the evidence for the effectiveness of interventions during rehabilitation after ACLR and the return to activities criteria. The guideline was developed in accordance with the Appraisal of Guidelines for Research & Evaluation (AGREE II) instrument and used the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach. A guideline development group systematically reviewed evidence from randomized clinical trials and systematic reviews to evaluate the effectiveness of rehabilitation interventions and guide clinicians and patients on the content of the optimal rehabilitation protocol after ACLR. The guideline highlights several new elements of ACLR management such as: exercise initiation, eccentric training, plyometrics training, and cross education which complement a recent systematic review² and other existing guidelines.³ Exercise interventions should be considered the mainstay of ACLR rehabilitation. Adding modalities in the early phase may allow earlier pain-free commencement of exercise rehabilitation. However, the evidence for some modalities is conflicting, and the adverse effects, as well as the cost and time, required probably outweigh any benefits. Return to running and return to training/activity are key milestones for rehabilitation after ACLR however there is no evidence on which progression or discharge criteria should be used.^{4 5} We therefore propose return to running and return to sport criteria based on the current literature and our clinical expertise. While there is a very low level of certainty for most components of rehabilitation, most of the recommendations were agreed to by expert clinicians. These data may be used as the basis in developing care pathways for rehabilitation after ACLR.

Immediate and Delayed Effects of Joint Loading Activities on Knee and Hip Cartilage: A Systematic Review and Meta-analysis

Sally L. Coburn, Kay M. Crossley, Joanne L. Kemp, Stuart J. Warden, Tom J. West, Andrea M. Bruder, Benjamin F. Mentiplay, Adam G. Culvenor
Sports Medicine July 14, 2023

<https://doi.org/10.1186/s40798-023-00602-7>

Abstract:

Background: The impact of activity-related joint loading on cartilage is not clear. Abnormal loading is a mechanical driver of osteoarthritis (OA), yet moderate amounts of physical activity and rehabilitation exercise can have positive effects on articular cartilage. Our aim was to investigate the immediate effects of joint loading activities on knee and hip cartilage in healthy adults, as assessed using magnetic resonance imaging. We also investigated delayed effects of activities on healthy cartilage and the effects of activities on cartilage in adults with, or at risk of, OA. We explored the association of sex, age and loading duration with cartilage changes.

Methods: A systematic review of six databases identified studies assessing change in adult hip and knee cartilage using MRI within 48 h before and after application of a joint loading intervention/activity. Studies included adults with healthy cartilage or those with, or at risk of, OA. Joint loading activities included walking, hopping, cycling, weightbearing knee bends and simulated standing within the scanner. Risk of bias was assessed using the Newcastle–Ottawa Scale. Random-effects meta-

analysis estimated the percentage change in compartment-specific cartilage thickness or volume and composition (T2 relaxation time) outcomes. The Grading of Recommendations Assessment, Development and Evaluation (GRADE) system evaluated certainty of evidence.

Results: Forty studies of 653 participants were included after screening 5159 retrieved studies. Knee cartilage thickness or volume decreased immediately following all loading activities investigating healthy adults; however, GRADE assessment indicated very low certainty evidence. Patellar cartilage thickness and volume reduced 5.0% (95% CI 3.5, 6.4, I²=89.3%) after body weight knee bends, and tibial cartilage composition (T2 relaxation time) decreased 5.1% (95% CI 3.7, 6.5, I²=0.0%) after simulated standing within the scanner. Hip cartilage data were insufficient for pooling. Secondary outcomes synthesized narratively suggest knee cartilage recovers within 30 min of walking and 90 min of 100 knee bends. We found contrasting effects of simulated standing and walking in adults with, or at risk of, OA. An increase of 10 knee bend repetitions was associated with 2% greater reduction in patellar thickness or volume.

Conclusion: There is very low certainty evidence that minimal knee cartilage thickness and volume and composition (T2 relaxation time) reductions (0–5%) occur after weightbearing knee bends, simulated standing, walking, hopping/ jumping and cycling, and the impact of knee bends may be dose dependent. Our findings provide a framework of cartilage responses to loading in healthy adults which may have utility for clinicians when designing and prescribing rehabilitation programs and providing exercise advice.

Effect of Risk-Stratified Care on Disability Among Adults with Low Back Pain Treated in the Military Health System A Randomized Clinical Trial

Daniel I. Rhon, PhD; Tina A. Greenlee, PhD; Emily Poehlein, MB; Jason M. Beneciuk, PhD; Cynthia L. Green, PhD; Ben R. Hando, DSc; John D. Childs, PhD; Steven Z. George, PhD

JAMA July 6, 2023

doi:10.1001/jamanetworkopen.2023.21929

Abstract:

Importance: Tailored treatments for low back pain (LBP) based on stratifying risk for poor prognosis have emerged as a promising approach to improve quality of care, but they have not been validated in trials at the level of individual randomization in US health systems.

Objective: To assess the clinical effectiveness of risk-stratified vs usual care on disability at 1 year among patients with LBP.

Design, Setting, and Participants: This parallel group randomized clinical trial enrolled adults (ages 18-50 years) seeking care for LBP with any duration in primary care clinics within the Military Health System from April 2017 to February 2020. Data analysis was conducted from January to December 2022.

Interventions: Risk-stratified care, in which participants received physiotherapy treatment tailored for their risk category (low, medium, or high), or usual care, in

which care was determined by participants' general practitioners and may have included a referral to physiotherapy.

Main Outcomes and Measures: The primary outcome was the Roland Morris Disability Questionnaire (RMDQ) score at 1 year, with planned secondary outcomes of Patient-Reported Outcomes Measurement Information System (PROMIS) Pain Interference (PI) and Physical Function (PF) scores. Raw downstream health care utilization was also reported within each group.

Results: Analysis included 270 participants (99 [34.1%] female participants; mean [SD] age, 34.1 [8.5] years). Only 21 patients (7.2%) were classified as high risk. Neither group was superior on the RMDQ (least squares [LS] mean ratio of risk-stratified vs usual care: 1.00; 95% CI, 0.80 to 1.26), the PROMIS PI (LS mean difference, -0.75 points; 95% CI -2.61 to 1.11 points), or the PROMIS PF (LS mean difference, 0.05 points; 95% CI, -1.66 to 1.76 points).

Conclusions and Relevance: In this randomized clinical trial, using risk stratification to categorize and provide tailored treatment for patients with LBP did not result in better outcomes at 1 year compared with usual care.

“I felt uncertain about my whole future”—a qualitative investigation of people’s experiences of navigating uncertainty when seeking care for their low back pain.

Nathalia Costa, Prudence Butler, Miriam Dillon, Karime Mescouto, Rebecca Olson, Roma Forbes, Jenny Setchell

Pain Journal Online July 20, 2023

<http://dx.doi.org/10.1097/j.pain.0000000000002975>

Abstract:

Uncertainty pervades low back pain (LBP). This study aimed to explore individuals' experiences of navigating uncertainty when seeking care for their LBP, with a view to better understanding the contexts in which they experience uncertainty and gaining insight into how uncertainty may be better navigated during clinical encounters. We conducted 15 semi structured interviews with people who have experienced LBP. Interviews were audio-recorded, transcribed, and analyzed using reflexive thematic analysis. Analysis produced 4 themes. To reflect the unsettled nature of participants' discussions of navigating uncertainty, themes are framed as questions: (1) What will happen over time? (2) Can clinicians help me? Are they willing to? (3) What are clinicians talking about?; and (4) Am I being taken seriously? Participants also discussed how clinicians could better navigate these uncertainties. Suggestions included making time to (actively) listen to, and acknowledge, patients' concerns; asking open-ended questions; being honest about uncertainty; creating management plans and returning to them; challenging assumptions; remaining curious about patients' context; and providing guidance on how to manage LBP rather than simply giving certainty that symptoms will worsen, lessen, or continue. These findings indicate that many of the uncertainties individuals with LBP experience are intertwined with relational aspects of their interactions with clinicians. Clinicians therefore may need to consider these broader and relational aspects of care when navigating uncertainty with people who experience LBP, bringing attention to the

importance of drawing from knowledge produced outside of the usual hierarchy of evidence (e.g., systematic reviews and randomized controlled trials).

Effectiveness of spinal mobilization and postural correction exercises in the management of cervicogenic headache: A randomized controlled trial

Monika Rani, Jaspreet Kaur

Physiotherapy Theory and Practice February 09, 2022

<https://doi.org/10.1080/09593985.2022.2037032>

Abstract:

Objective: The study aims to assess the effect of spinal mobilization and postural correction exercises in patients suffering from cervicogenic headache.

Methods: A randomized controlled trial was conducted with 72 patients. Patients were randomly allocated into three groups: spinal mobilization (n = 24), postural correction exercises (n = 24), and control group (n = 24). The primary outcome measure was headache impact test-6, and secondary outcomes were headache intensity, neck pain intensity, and neck pain-related disability measured at baseline, postintervention, and follow-up period.

Result: Comparison of baseline data (at 0 weeks) among groups showed a statistically nonsignificant difference. There was statistically significant improvement at postintervention (immediately after fourth week) in postural correction exercises group [headache disability: 14.95 ± 7.91 ($p < .001$); headache intensity: 2.58 ± 1.24 ($p < .001$); neck disability: 27.66 ± 18.71 ($p < .001$); neck pain: 1.91 ± 1.44 ($p < .001$)] and spinal mobilization group [headache disability: 13.83 ± 6.21 ($p < .001$); headache intensity: 2.29 ± 1.23 ($p < .001$); neck disability: 23.39 ± 19.51 ($p < .001$); neck pain: 1.72 ± 0.84 ($p < .001$)] as compared to the control group. The result of within-group analysis suggests that there was a statistically significant improvement in postintervention (immediately after fourth week) and follow-up (immediately after eighth week) scores as compared to baseline (at 0 weeks) scores for all outcomes in postural correction exercises [headache disability ($p < .001$), headache intensity ($p < .001$), neck disability ($p < .001$), neck pain ($p < .001$)] as well as in spinal mobilization group [headache disability ($p < .001$), headache intensity ($p < .001$), neck disability ($p < .001$), neck pain ($p < .001$ for pre versus post; $p = .001$ for pre versus follow-up)]. There was a statistically nonsignificant difference between postintervention and follow-up scores of all the outcomes in the postural correction exercise and spinal mobilization group, which indicates that improvement in these groups was maintained during the follow-up period.

Conclusion: Spinal mobilization and postural correction exercises are effective in the management of cervicogenic headache.

Should we give patients what they want? Patient expectations and financial pressures need to be addressed to increase uptake of evidence-based practice.

Sarah Lord Ferguson

Musculoskeletal Science Practice July 18, 2023

DOI: 10.1016/j.msksp.2023.102831

Abstract:

Contextual factors such as patient expectations and financial pressures are overlooked challenges for Physiotherapists (PTs) and other rehabilitation professionals trying to implement evidence-based practice (EBP), particularly in private practice settings. In today's hypercompetitive pain management market, PTs may risk detrimental impacts to their reputation and livelihood if they do not give patients what they want, even if what they want does not align with clinical guidelines and research evidence. The aim of this professional practice paper is to shed light on these real-world challenges and encourage discussion among the PT community about strategies to increase uptake of EBP that involve multiple stakeholders such as PT training programs, professional organizations, researchers and clinic owners, which all have a role to play in supporting the translation of evidence into practice in our profession.

Does a corticosteroid injection plus exercise or exercise alone add to the effect of patient advice and a heel cup for patients with plantar fasciopathy? A randomized clinical trial

Henrik Riel, Bill Vicenzino, Jens Lykkegaard Olesen, Martin Bach Jensen, Lars Holger Ehlers, Michael Skovdal Rathleff

British Journal of Sports Medicine June 20, 2023

<http://dx.doi.org/10.1136/bjsports-2023-106948>

Abstract:

Objective: To compare the effectiveness of patient advice plus heel cup alone (PA) versus PA and lower limb exercise (PAX) versus PAX plus corticosteroid injection (PAXI) to improve self-reported pain in patients with plantar fasciopathy.

Methods: We recruited 180 adults with plantar fasciopathy confirmed by ultrasonography for this prospectively registered three-armed, randomized, single blinded superiority trial. Patients were randomly allocated to PA (n=62), PA plus self-dosed lower limb heavy-slow resistance training consisting of heel raises (PAX) (n=59), or PAX plus an ultrasound-guided injection of 1 mL triamcinolone 20 mg/mL (PAXI) (n=59). The primary outcome was change in the pain domain of the Foot Health Status Questionnaire (ranging from 0 'worst' to 100 'best') from baseline to the 12-week follow-up. The minimal important difference in the pain domain is 14.1 points. The outcome was collected at baseline and at 4, 12, 26, and 52 weeks.

Results: The primary analysis found a statistically significant difference between PA and PAXI after 12 weeks favoring PAXI (adjusted mean difference: -9.1 (95% CI

–16.8 to –1.3; $p=0.023$) and over 52 weeks (adjusted mean difference: –5.2 (95% CI –10.4 to –0.1; $p=0.045$)). At no follow-up did the mean difference between groups exceed the pre-specified minimal important difference. No statistically significant difference was found between PAX and PAXI or between PA and PAX at any time. **Conclusion:** No clinically relevant between-group differences were found after 12 weeks. The results indicate that combining a corticosteroid injection with exercise is not superior to exercise or no exercise.

Diagnostic Test Accuracy of Provocative Maneuvers for the Diagnosis of Carpal Tunnel Syndrome: A Systematic Review and Meta-Analysis

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Physical Therapy & Rehabilitation Journal March 10, 2023

<https://doi.org/10.1093/ptj/pzad029>

Abstract:

Objective: The purpose of this study was to summarize and evaluate the research on the accuracy of provocative maneuvers to diagnose carpal tunnel syndrome (CTS).

Methods: The MEDLINE, CINAHL, Cochrane, and Embase databases were searched, and studies that assessed the diagnostic accuracy of at least 1 provocative test for CTS were selected. Study characteristics and data about the diagnostic accuracy of the provocative tests for CTS were extracted. A random-effects meta-analysis of the sensitivity (Sn) and specificity (Sp) of the Phalen test and Tinel sign was conducted. The risk of bias (ROB) was rated using the QUADAS-2 tool.

Results: Thirty-one studies that assessed 12 provocative maneuvers were included. The Phalen test and the Tinel sign were the 2 most assessed tests (in 22 and 20 studies, respectively). The ROB was unclear or low in 20 studies, and at least 1 item was rated as having high ROB in 11 studies. Based on a meta-analysis of 7 studies (604 patients), the Phalen test had a pooled Sn of 0.57 (95% CI = 0.44–0.68; range = 0.12–0.92) and a pooled Sp of 0.67 (95% CI = 0.52–0.79; range = 0.30–0.95). For the Tinel sign (7 studies, 748 patients), the pooled Sn was 0.45 (95% CI = 0.34–0.57; range = 0.17–0.97) and the pooled Sp was 0.78 (95% CI = 0.60–0.89; range = 0.40–0.92). Other provocative maneuvers were less frequently studied and had conflicting diagnostic accuracies.

Conclusion: Meta-analyses are imprecise but suggest that the Phalen test has moderate Sn and Sp, whereas the Tinel test has low Sn and high Sp. Clinicians should combine provocative maneuvers with sensorimotor tests, hand diagrams, and diagnostic questionnaires to achieve better overall diagnostic accuracy rather than relying on individual clinical tests.

Impact: Evidence of unclear and high ROB do not support the use of any single provocative maneuver for the diagnosis of CTS. Clinicians should consider a combination of noninvasive clinical diagnostic tests as the first choice for the diagnosis of CTS.

Rest and exercise early after sport-related concussion: a systematic review and meta-analysis

John J. Leddy, Joel S. Burma, Clodagh M. Toomey, Alix Hayden, Gavin A. Davis, Franz E Babl, Isabelle Gagnon, Christopher C. Giza, Brad G. Kurowski, Noah D. Silverberg, Barry Willer, Paul E. Ronksley, Kathryn J. Schneider

British Journal of Sports Medicine March 08, 2023

<http://dx.doi.org/10.1136/bjsports-2022-106676>

Abstract:

Objective: To synthesize the evidence regarding the risks and benefits of physical activity (PA), prescribed aerobic exercise treatment, rest, cognitive activity and sleep during the first 14 days after sport-related concussion (SRC).

Design: Meta-analysis was performed for PA/prescribed exercise interventions and a narrative synthesis for rest, cognitive activity and sleep. Risk of bias (ROB) was determined using the Scottish Intercollegiate Guidelines Network and quality assessed using Grading of Recommendations, Assessment, Development and Evaluations.

Data sources: MEDLINE, Embase, APA PsycINFO, Cochrane Central Register of Controlled Trials, CINAHL Plus and SPORT Discus. Searches were conducted in October 2019 and updated in March 2022.

Eligibility criteria: Original research articles with sport-related mechanism of injury in >50% of study sample and that evaluated how PA, prescribed exercise, rest, cognitive activity and/or sleep impact recovery following SRC. Reviews, conference proceedings, commentaries, editorials, case series, animal studies and articles published before 1 January 2001 were excluded.

Results: 46 studies were included and 34 had acceptable/low ROB. Prescribed exercise was assessed in 21 studies, PA in 15 studies (6 PA/exercise studies also assessed cognitive activity), 2 assessed cognitive activity only and 9 assessed sleep. In a meta-analysis of seven studies, PA and prescribed exercise improved recovery by a mean of -4.64 days (95% CI -6.69, -2.59). After SRC, early return to light PA (initial 2 days), prescribed aerobic exercise treatment (days 2–14) and reduced screen use (initial 2 days) safely facilitate recovery. Early prescribed aerobic exercise also reduces delayed recovery, and sleep disturbance is associated with slower recovery.

Conclusion: Early PA, prescribed aerobic exercise and reduced screen time are beneficial following SRC. Strict physical rest until symptom resolution is not effective, and sleep disturbance impairs recovery after SRC.

“Restoring that Faith in my Shoulder”: A Qualitative Investigation of how and why Exercise Therapy Influenced the Clinical Outcomes of Individuals with Rotator Cuff-Related Shoulder Pain

Jared K Powell, BExSc/BBus, DPhty, Nathalia Costa, PhD, BPhy (Honours), Ben Schram, B.Ex.Sci., DPhty., PhD, Wayne Hing, PhD, FNZCP, Jeremy Lewis, PhD, FCSP

Physical Therapy & Rehabilitation Journal July 13, 2023

<https://doi.org/10.1093/ptj/pzad088>

Abstract:

Objective: Rotator cuff-related shoulder pain is the most common form of shoulder pain. Exercise therapy is a first-line recommended treatment for rotator cuff-related shoulder pain. However, the causal mechanisms underpinning the beneficial effects of exercise for rotator cuff-related shoulder pain are not well understood. Moreover, how individuals with lived experience of rotator cuff-related shoulder pain believe exercise helped or did not help is unknown. This study aimed to gain insights into how individuals with rotator cuff-related shoulder pain believe exercise influenced their shoulder pain and identify the clinical conditions that promoted or inhibited their beliefs.

Methods: This qualitative study was underpinned by a critical realist approach to thematic analysis. Participants were recruited using hybrid purposive and convenience sampling techniques. Each participant attended an online semi structured interview. The data were coded by 2 members of the research team (JKP & NC) and verified by a third (BS). Recruitment continued until theoretical sufficiency was achieved. Participants reviewed and validated preliminary causal explanations.

Results: Three causal explanations were consistently expressed by 11 participants to explain the benefits of exercise therapy: (1) shoulder strength; (2) changes to psycho-emotional status; and (3) exercise has widespread health effects. However, the activation of these causal mechanisms depended on (1) the presence of a strong therapeutic relationship; (2) the provision of a structured and tailored exercise program; and (3) experiencing timely clinical progress.

Conclusions: Participants believed exercise improved their shoulder pain through associated health benefits, improved shoulder strength, and psych emotional variables. Whether an exercise program was able to cause a clinical improvement for an individual with rotator cuff-related shoulder pain was contingent on clinical contextual features. Thus, the clinical context that an exercise program is delivered within may be just as important as the exercise program itself.

Impact: Exercise is a recommended primary, first-line intervention to manage rotator cuff-related shoulder pain. The results of this study suggest that a positive experience and outcome with exercise for rotator cuff-related shoulder pain is contingent on several clinical contextual features, such as a strong therapeutic relationship. The clinical context an exercise program is prescribed and delivered should be considered by clinicians.

"Restoring that faith in my shoulder" A qualitative investigation of how and why exercise therapy influenced the clinical outcomes of individuals with rotator cuff related shoulder pain.

Jared K. Powell, Nathalia Costa, Ben Schram, Wayne Hing, and Jeremy Lewis

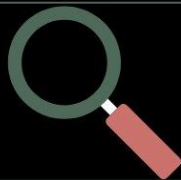


THE PROBLEM

RCRSP* is a common and disabling MSK condition. Exercise is a recommended treatment but little is known about the causal mechanisms underpinning its effect.

THE STUDY

We interviewed 11 individuals with lived experience of RCRSP and explored their beliefs about how exercise helped or didn't help their shoulder pain.



THE RESULTS

All participants reported a positive experience with exercise therapy, under certain clinical conditions:

THE CONDITIONS

- 1) A strong therapeutic relationship
- 2) The provision of a structured and tailored exercise program
- 3) Timely clinical progress is experienced



If the above conditions were partially or fully satisfied, exercise was perceived to have helped participants shoulder pain via the following causal explanations:



THE CAUSAL EXPLANATIONS

- 1) An improvement in shoulder strength
- 2) Changes to psycho-emotional status
- 3) Exercise has widespread positive health effects



THE IMPLICATIONS

To maximise the possibility of success, clinicians should consider not just the exercise parameters of an exercise program but also the clinical context (e.g therapeutic relationship) in which the exercises are prescribed.

THIS STUDY IS FREE TO READ



PTJ

Citation: Powell, JK., Costa, N., Schram, B., Hing, W., Lewis, J., "Restoring that Faith in my Shoulder": A Qualitative Investigation of how and why Exercise Therapy Influenced the Clinical Outcomes of Individuals with Rotator Cuff-Related Shoulder Pain, Physical Therapy, 2023.



*RCRSP: Rotator cuff related shoulder pain

Joint associations of physical activity and sleep duration with cognitive ageing: longitudinal analysis of an English cohort study

Mikaela Bloomberg, Laura Brocklebank, Mark Hamer, Andrew Steptoe

The Lancet July 2023

[https://doi.org/10.1016/S2666-7568\(23\)00083-1](https://doi.org/10.1016/S2666-7568(23)00083-1)

Summary:

Background: Physical activity and sleep duration are key factors associated with cognitive function and dementia risk. How physical activity and sleep interact to influence cognitive ageing is not well explored. We aimed to examine the associations of combinations of physical activity and sleep duration with 10-year cognitive trajectories.

Methods: In this longitudinal study, we analyzed data from the English Longitudinal Study of Ageing collected between Jan 1, 2008, and July 31, 2019, with follow-up interviews every 2 years. Participants were cognitively healthy adults aged at least 50 years at baseline. Participants were asked about physical activity and nightly sleep duration at baseline. At each interview, episodic memory was assessed using immediate and delayed recall tasks and verbal fluency using an animal naming task; scores were standardized and averaged to produce a composite cognitive score. We used linear mixed models to examine independent and joint associations of physical activity (lower physical activity or higher physical activity, based on a score considering frequency and intensity of physical activity) and sleep duration (short [<6 h], optimal [6–8 h], or long [>8 h]) with cognitive performance at baseline, after 10 years of follow-up, and the rate of cognitive decline.

Findings: We included 8958 respondents aged 50–95 years at baseline (median follow-up 10 years [IQR 2–10]). Lower physical activity and suboptimal sleep were independently associated with worse cognitive performance; short sleep was also associated with faster cognitive decline. At baseline, participants with higher physical activity and optimal sleep had higher cognitive scores than all combinations of lower physical activity and sleep categories (eg, difference between those with higher physical activity and optimal sleep vs those with lower physical activity and short sleep at baseline age 50 years was 0.14 SDs [95% CI 0.05–0.24]). We found no difference in baseline cognitive performance between sleep categories within the higher physical activity category. Those with higher physical activity and short sleep had faster rates of cognitive decline than those with higher physical activity and optimal sleep, such that their scores at 10 years were commensurate with those who reported low physical activity, regardless of sleep duration (eg, difference in cognitive performance after 10 years of follow-up between those with higher physical and optimal sleep and those with lower physical activity and short sleep was 0.20 SDs [0.08–0.33]; difference between those with higher physical activity and optimal sleep and those with lower physical activity and short sleep was 0.22 SDs [0.11–0.34]).

Interpretation: The baseline cognitive benefit associated with more frequent, higher intensity physical activity was insufficient to ameliorate the more rapid cognitive decline associated with short sleep. Physical activity interventions should also consider sleep habits to maximize benefits of physical activity for long-term cognitive health.

Prolonged slumped sitting causes neck pain and increased axioscapular muscle activity during a computer task in healthy participants – A randomized crossover study

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Applied Ergonomics March 21, 2023

<https://doi.org/10.1016/j.apergo.2023.104020>

Abstract:

Introduction: Sitting posture may contribute to spinal pain. Effects of postures on pain, sensitivity and muscle activity during computer tasks were investigated.

Methods: Twenty-five healthy participants, seated at a workstation without backrest, completed four, 15-min typing tasks: A) Upright with forearm-support; B) Upright without forearm-support; C) Slumped with forearm support; D) Slumped without forearm-support. Participants rated pain every minute on a numerical rating scale (NRS). RMS-EMG was recorded from upper/lower trapezius (UT, LT), serratus anterior and anterior/middle deltoid. At baseline and after tasks, pressure pain thresholds (PPTs) were recorded bilaterally over the head, UT, and leg.

Results: All tasks caused clinically relevant increased NRS ($\geq 2/10$) compared to baseline ($P < 0.001$). NRS was higher in Task-D ($P < 0.003$) and lower in Task-B ($P < 0.005$) than others. PPTs did not change from baseline. Task-D caused higher UT and LT RMS-EMG ($P < 0.02$) than other tasks.

Conclusion: A 15-min task caused pain irrespective of posture with some causing larger changes than others.

Just start and keep training! What is the best resistance training prescription for strength and hypertrophy?

Pascal Edouard, João Pedro Nunes, Jérôme Koral, Jane S. Thornton, Joanne L. Kemp, Thomas Gronwald

British Journal of Sports Medicine July 05, 2023

<http://dx.doi.org/10.1136/bjsports-2023-107234>

Abstract:

Resistance Training: The Key to a Robust Musculoskeletal System:

The maintenance of quality and efficient skeletal muscle structure and function is essential for physical function and overall health, as it provides strength and stability for bodily movement, and plays a role in numerous metabolic processes. Resistance training (RT) is established as the primary means to maintain and build muscles.¹ Prescribing RT in clinical and performance settings can be challenging given the wide range of exercise and training variables (e.g., intensity of load, number of sets, repetitions, velocity in both concentric and eccentric phases, time under tension and weekly frequency).² To determine how different RT prescriptions affect muscle strength, hypertrophy and physical function in healthy adults, Carrier et al³ recently

performed a systematic review and Bayesian network meta-analysis including 192 studies. Their results summarized the most up-to-date evidence with data from the last ~40 years of literature. We aim through this editorial to highlight these results and discuss their implications on the design of RT programs for clinical and sports populations.

New Insights to Develop Guidelines on Resistance Training Prescriptions:

The use of network meta-analysis allows for the inclusion of multiple treatments that may or may not have been compared directly against each other in previous studies.⁴ This is a strength of the article from Currier et al,³ extending usual meta-analyses to more complex comparisons and thus providing more accurate results. Authors analyzed 12 distinct RT prescriptions based on the combination of factors concerning the intensity of load (lower or higher (than 80% one repetition maximum)), sets (single or multiple) and weekly frequency (1x, 2x or 3x+) of the RT programmes.³ While the best strategy identified was RT at higher loads, multiple sets implemented 2–3times/week, all RT programs performed at lower or higher loads with >3 sets per exercise per week also elicited significant adaptations.³ It is highly encouraging to see that as soon as individuals start training at a certain minimum dosage regularly, it is effective at improving muscle structure and function. This information may help optimize RT prescription, as performing the most efficient and less time-consuming program may be necessary for busy people and/ or whose program adherence can be a challenge. This can be more easily implemented in clinical settings to help patients' functional improvement, and in the sports context to aid injury prevention and performance enhancement. However, individuals with chronic disease and welltrained elite athletes were excluded from this systematic review; caution is thus necessary when translating these results to these populations.

Tailoring Resistance Training for use in Clinical Populations:

RT is associated with health benefits and reduced mortality in the general population,¹ as in patients with different chronic conditions.^{5 6} Current guidelines advise healthy adults to engage in RT; a recommended dose is at least twice weekly.⁷ Momma et al¹ reported that the most appropriate dose was 30–60min of RT per week. The results from Currier et al³ provide information that will help tailor the RT program according to the aim. If the major objective is to improve strength, training with higher loads is superior.³ If the focus is to induce muscle growth, increasing the number of sets done per week is ideal.³ In addition, the data from Currier et al³ support the WHO's claim that doing some physical activity (e.g., minimum-dose RT) is better than none,⁷ encouraging everyone to engage in RT exercises to improve their musculoskeletal and overall health.

Resistance Training for Sports Performance:

Maximal strength, rate of force development and power are critical determinants of sports performance.⁸ Thus, improving knowledge of the most efficient RT prescription is of great importance for strength and conditioning coaches, as well as coaches and athletes in general, seeking to develop and optimize RT programs to improve muscle strength and neuromuscular performance in youth⁹ and adult⁸ athletes from different sports. When aiming to improve maximal strength and hypertrophy, a higher load (over 80% of one repetition maximum), multiple sets, 3times/week RT³ can be included in sport specific and individual-specific physical training routines. Then, a transference effect from maximal strength to sports performance is expected,⁸ and hypertrophy may be beneficial in some sports, especially when greater muscle mass is needed to improve strength further and help carry more absolute loads (e.g., powerlifting, throws) and/or be at an advantage during direct contact against the opponent (e.g., rugby, soccer).

Conclusions:

The results from Currier et al³ represent important knowledge for designing RT programs, which should be adapted to specific aims, conditions, sports and individuals. These findings should also be included in future guidelines on RT prescription. Given that most RT programs were proven effective in improving muscle conditioning, the take-home message is Just start and keep training on a regular basis. Long-term adherence to RT is the key to optimizing physical function and overall health, as well as all the other benefits RT can provide.

Level of pain catastrophizing determines if patients with long-standing subacromial impingement benefit from more resistance exercise: predefined secondary analyses from a pragmatic randomized controlled trial (the SExSI Trial)

Mikkel Bek Clausen, Michael Skovdal Rathleff, Thomas Graven-Nielsen, Thomas Bandholm, Karl Bang Christensen, Per Hölmich, Kristian Thorborg
British Journal of Sports Medicine March 10, 2023
<http://dx.doi.org/10.1136/bjsports-2022-106383>

Abstract:

Objective: The primary aim was to investigate the effectiveness of adding more resistance exercise to usual care on pain mechanisms (including temporal summation, conditioned pain modulation (CPM) and local pain sensitivity) and pain catastrophizing in people with subacromial impingement at 16 weeks follow-up. Second, to investigate the modifying effect of pain mechanisms and pain catastrophizing on the interventions' effectiveness in improving shoulder strength and disability.

Methods: 200 consecutive patients were randomly allocated to usual exercise-based care or the same plus additional elastic band exercise to increase total exercise dose. Completed add-on exercise dose was captured using an elastic band sensor. Outcome measures recorded at baseline, 5 weeks, 10 weeks and 16 (primary end point) weeks included temporal summation of pain (TSP) and CPM assessed at the lower leg, pressure pain threshold at the deltoid muscle (PPT-deltoid), pain catastrophizing and the Shoulder Pain and Disability Index.

Results: Additional elastic band exercise was not superior to usual exercise-based care in improving pain mechanisms (TSP, CPM and PPT-deltoid) or pain catastrophizing after 16 weeks. Interaction analyses showed that pain catastrophizing (median split) modified the effectiveness of additional exercises (effect size 14 points, 95% CI 2 to 25), with superior results in the additional exercise group compared with the usual care group in patients with less pain catastrophizing.

Conclusion: Additional resistance exercise added to usual care was not superior to usual care alone in improving pain mechanisms or pain catastrophizing. Additional exercise was, however, superior in improving self-reported disability in patients with lower levels of pain catastrophizing at baseline.

The cervical spine in tension type headache

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Lidiane L. Florencio

Musculoskeletal Science and Practice May 29, 2023

<https://doi.org/10.1016/j.msksp.2023.102780>

Abstract:

Introduction: The concept that headaches may originate in the cervical spine has been discussed over decades and is still a matter of debate. The cervical spine has been traditionally linked to cervicogenic headache; however, current evidence supports the presence of cervical musculoskeletal dysfunctions also in tension-type headache.

Purpose: This position paper discusses the most updated clinical and evidence-based data about the cervical spine in tension-type headache.

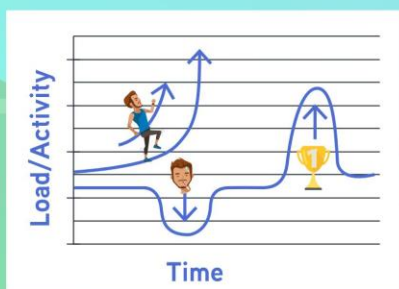
Implications: Subjects with tension-type headache exhibit concomitant neck pain, cervical spine sensitivity, forward head posture, limited cervical range of motion, positive flexion-rotation test and also cervical motor control disturbances. In addition, the referred pain elicited by manual examination of the upper cervical joints and muscle trigger points reproduces the pain pattern in tension-type headache. Current data supports that the cervical spine can be also involved in tension-type headache, and not just in cervicogenic headache. Several physical therapies including upper cervical spine mobilization or manipulation, soft tissue interventions (including dry needling) and exercises targeting the cervical spine are proposed for managing tension-type headache; however, the effectiveness of these interventions depends on a proper clinical reasoning since not all will be equally effective for all individuals with tension-type headache. Based on current evidence, we propose to use the terms cervical “component” and cervical “source” when discussing about headache. In such a scenario, in cervicogenic headache the neck can be the cause (source) of the headache whereas in tension-type headache the neck will have a component on the pain pattern, but it will be not the cause since it is a primary headache.

TENDINOPATHY MANAGEMENT

Infographic 1 of 4 based on Physio Edge Podcast 138 with @PhysioDMSilvan

Tendinopathies love load, but how, what and when do we load them?

1. History: Tendinopathies often occur over time. Explore the injury history, particularly fluctuations in load over recent days, weeks, months and even years (e.g. rapid increase in new activity, inactive periods, competition periods etc). Ask the patient to help you understand the type and frequency of loading in their dominant sport/activities.



2. Contributing factors: Identify both internal and external factors contributing to the tendinopathy & hypothesise the dominant factors to address.

Internal	External
<ul style="list-style-type: none">• Age• Gender• Metabolic diseases• Genetic predisposition• Medication (Anticoagulants) <p>Generally not changeable</p>	<p>Change in:</p> <ul style="list-style-type: none">• Training load - volume, intensity• Technique• Training environment (e.g. surface)• Equipment & attire (e.g. bike, shoes) <p>Generally changeable</p>



3. Tendinopathy management starts with education:

⚙️ Educate patients that symptoms may be delayed until hours or days after an activity/exercise. This aids self-management, identifying patterns and monitoring load/symptoms over a longer period.



⚙️ Address the role of load, contributing internal/external factors and highlighting the difference between resolving pain and solving the problem - shifting the focus to function.

⚙️ The patient should gain an understanding of how and when to load the affected area and how to self-manage pain (acute/chronic).

4. Collaborative approach

⚙️ Integrate the patients 'expert knowledge' of their own bodies into assessment, treatment and progression. Teach them where you want them to feel a local discomfort, stress or tension (e.g. over the patella tendon), then utilise their feedback to adapt the exercise until this is achieved.

⚙️ Provide patients with flexible options of how and when they complete the exercises, that incorporates their interests, time availability and motivation. Reinforce the importance of their feedback of what is/isn't working throughout this process so that timely adaptations can be made.

⚙️ The best exercises are ones that are actually performed, not ones that they are supposed to be doing.

⚙️ Use symptom diaries to facilitate buy-in and reinforce improvements following exercises.



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