ABSTRACTS November 2024

Achilles Pain, Stiffness, and Muscle Power Deficits: Midportion Achilles Tendinopathy Revision - 2024

Ruth L Chimenti, Christopher Neville, Jeff Houck, Tyler Cuddeford, Dominic Carreira, Robroy L Martin

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Abstract:

The Academy of Orthopaedic Physical Therapy (AOPT) has an ongoing effort to create evidence-based clinical practice guidelines (CPG) for orthopaedic physical therapy management of patients with musculoskeletal impairments described in the World Health Organization's International Classification of Functioning, Disability, and Health (ICF). The 2024 Achilles Pain, Stiffness, and Muscle Power Deficit: Midportion Achilles Tendinopathy Clinical Practice Guideline (CPG) is a revision of the 2018 CPG and represents the third CPG from AOPT on this topic. The goals of the revision were to provide a concise summary of the contemporary evidence and to develop new recommendations or revise previously published recommendations to support evidence-based practice. This current CPG covers prevalence, pathoanatomical features, risk factors, clinical course, diagnosis, examination, imaging, and physical therapy interventions for the management of midportion Achilles tendinopathy.

Making sense of osteoarthritis: A narrative review

Ben Darlow, Joletta Belton, Melanie Brown, Jane Clark, Dawn P Richards, Naomi Simick Behera, Samantha Bunzli

Osteoarthritis and Cartilage. 2024 Oct 9:S1063-4584(24)01406-7.
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Abstract:

People make sense of osteoarthritis (OA) by drawing on information, beliefs, and knowledge. This narrative review summarises diverse qualitative and quantitative research investigating beliefs and knowledge about OA and the impact these have on behaviour and outcomes. It synthesises evidence and highlights key actions clinicians can take to support people to make sense of OA in helpful ways. Beliefs about OA inform the behaviour of those living with OA and the behaviour of clinicians caring for people with OA. Beliefs about OA often focus on joint degradation and inevitable progression. These impairment-focused fatalistic beliefs can result in reduced offer of, or engagement in, active management strategies. Alternative views focus on health as part of a dynamic ecosystem where people are healthy when they can participate in activities they value. These beliefs are associated with increased engagement in self-management and lifestyle-based interventions. Clinician actions that support people to make sense of OA ways that align with helpful behaviours and support participation in valued activities represent key opportunities to improve health and well-being.

McKenzie neck exercise versus cranio-cervical flexion exercise on strength and endurance of deep neck flexor muscles, pain, disability, and craniovertebral angle in individuals with chronic neck pain: a randomized clinical trial

Sawita Chaiyawijit, Rotsalai Kanlayanaphotporn

Journal of Manual & Manipulative Therapy 2024 Dec;32(6):573-583.
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Abstract:

Purpose: To compare the effectiveness of McKenzie neck exercise and cranio-cervical flexion (CCF) exercise on strength and endurance of deep neck flexor (DNF) muscles, pain, disability, and craniovertebral angle (CVA) in individuals with chronic neck pain**.**

Methods: Forty individuals with chronic neck pain were randomly allocated to the McKenzie neck or CCF exercise group. Each group performed exercises at home daily. The strength and endurance of DNF muscles were measured at baseline, immediately after the first exercise session, and each week follow-up for six weeks. Average pain over the past week was measured at baseline and each week follow-up for six weeks. Disability and CVA were measured at baseline and the end of six weeks.
Results: At six weeks, both groups exhibited significant improvements across all outcome variables ($p < 0.001$) but there were no differences between groups ($p > 0.05$). The significant difference from baseline in the strength of DNF muscles was observed as early as the second week of each intervention ($p \leq 0.001$). The significant difference from baseline in the endurance of DNF muscles was observed as early as the first week in the CCF exercise group ($p < 0.05$) and the second week in the McKenzie neck exercise group ($p < 0.05$). A significant decrease in pain intensity from baseline was observed after the first week in the McKenzie neck exercise group ($p < 0.001$) while it was after the second week in the CCF exercise group ($p < 0.05$).
Conclusion: Both the McKenzie neck exercise and CCF exercise produced similar effects in enhancing the strength and endurance of the DNF muscles, decreasing pain, alleviating neck disability, and improving the CVA.

Patients with worse disability respond best to cognitive functional therapy for chronic low back pain: a pre-planned secondary analysis of a randomised trial

Mark Hancock, Anne Smith, Peter O'Sullivan, Robert Schütze, J P Caneiro, Jan Hartvigsen, Kieran O'Sullivan, Alison McGregor, Terry Haines, Alistair Vickery, Amity Campbell, Peter Kent
Journal of Physiotherapy 2024 Oct;70(4):294-301.
doi: 10.1016/j.jphys.2024.08.005. Epub 2024 Sep 25..

Abstract:

Question: Do five baseline moderators identify patients with chronic low back pain who respond best to cognitive functional therapy (CFT) when compared with usual care?
Design: Secondary analysis of the RESTORE randomised controlled trial.
Participants: A total of 492 adults with low back pain for > 3 months with at least moderate pain-related activity limitation.

Intervention: Participants were allocated to CFT alone or CFT plus biofeedback; these two groups were combined for this secondary analysis. The control group was usual care.
Outcome measures: The outcome was activity limitation measured using the Roland Morris Disability Questionnaire (RMDQ) at 3, 6, 13, 26, 40 and 52 weeks. Investigated effect modifiers were baseline measures of activity limitation, cognitive flexibility, pain intensity, self-efficacy and catastrophising.
Results: Baseline levels of activity limitation and, potentially, cognitive flexibility were associated with different effects of CFT treatment, while pain intensity, self-efficacy and catastrophising were not. Patients who had higher baseline activity limitation had greater treatment effects at 13 and 52 weeks. A person with a baseline RMDQ score of 18 (90th percentile) would on average be 6.1 (95% CI 4.8 to 7.4) points better at 13 weeks if they received CFT compared with usual care. However, a person with a baseline score of 7 (10th percentile) would on average be 3.6 (95% CI 2.6 to 4.6) points better at 13 weeks.
Conclusion: The finding that CFT is most effective among patients who are most disabled and incur the greatest burden strongly suggests that CFT should be considered as a treatment for this group of patients.

'Leaving my comfort zone'. A qualitative study of physiotherapists' experiences blending an eHealth psychosocial intervention with face-to-face physiotherapy

L Bijker, G G M Scholten-Peeters, M H Donker, M W Coppieters, P Cuijpers, V Busink, E Y Poolman, L M de Wit
Musculoskeletal Science and Practice 2024 Oct:73:103121.
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Abstract:

Background: Many physiotherapists do not feel adequately equipped to address psychosocial risk factors in people with complex pain states. Hence, a biopsychosocial blended intervention (Back2Action) was developed to assist physiotherapists to manage people with persistent spinal pain and coexisting psychosocial risk factors associated with the development or maintenance of persistent pain.
Objective: This study aimed to gain insight into the experiences of physiotherapists with this blended psychosocial intervention.

Design and Methods: This was an interpretative qualitative study with a reflexive thematic analysis of semi-structured interviews with physiotherapists (N = 15) who delivered Back2Action. The interview started with the grand-tour question: "What was your experience in using Back2Action?" Physiotherapist were encouraged to provide examples, and follow-up questions were posed to ensure a deeper understanding could be reached.
Results: Four themes were constructed: Physiotherapists became increasingly aware of (1) their own implicit expectations, biases and skills, and underlying treatment paradigms, and (2) the implicit expectations from their patients towards them. This led to (3) creating a deeper and stronger therapeutic alliance with the patient, but also (4) an understanding that implementation of a true biopsychosocial intervention - even if offered in a blended form - requires more practice, confidence and resources.
Conclusions: Back2Action is considered a valuable treatment to deliver a biopsychosocial intervention in primary care. Considering the high level of knowledge, skills and competency of the participating physiotherapists, the perceived barriers may be more difficult to overcome for more junior physiotherapists.

Resistance training prescription for muscle strength and hypertrophy in healthy adults: a systematic review and Bayesian network meta-analysis

Brad S Currier, Jonathan C Mcleod, Laura Banfield, Joseph Beyene, Nicky J Welton, Alysha C D'Souza, Joshua A J Keogh, Lydia Lin, Giulia Coletta, Antony Yang, Lauren Colenso-Semple , Kyle J Lau, Alexandria Verboom, Stuart M Phillips
British Journal of Sports Medicine 2024 2023 Sep;57(18):1211-1220.
doi: 10.1136/bjsports-2023-106807. Epub 2023 Jul 6.

Abstract:

Objective: To determine how distinct combinations of resistance training prescription (RTx) variables (load, sets and frequency) affect muscle strength and hypertrophy.
Data sources: MEDLINE, Embase, Emcare, SPORTDiscus, CINAHL, and Web of Science were searched until February 2022.

Eligibility criteria: Randomised trials that included healthy adults, compared at least 2 predefined conditions (non-exercise control (CTRL) and 12 RTx, differentiated by load, sets and/or weekly frequency), and reported muscle strength and/or hypertrophy were included.
Analyses: Systematic review and Bayesian network meta-analysis methodology was used to compare RTxs and CTRL. Surface under the cumulative ranking curve values were used to rank conditions. Confidence was assessed with threshold analysis.
Results: The strength network included 178 studies (n=5097; women=45%). The hypertrophy network included 119 studies (n=3364; women=47%). All RTxs were superior to CTRL for muscle strength and hypertrophy. Higher-load (>80% of single repetition maximum) prescriptions maximised strength gains, and all prescriptions comparably promoted muscle hypertrophy. While the calculated effects of many prescriptions were similar, higher-load, multiset, thrice-weekly training (standardised mean difference (95% credible interval); 1.60 (1.38 to 1.82) vs CTRL) was the highest-ranked RTx for strength, and higher-load, multiset, twice-weekly training (0.66 (0.47 to 0.85) vs CTRL) was the highest-ranked RTx for hypertrophy. Threshold analysis demonstrated these results were extremely robust.
Conclusion: All RTx promoted strength and hypertrophy compared with no exercise. The highest-ranked prescriptions for strength involved higher loads, whereas the highest-ranked prescriptions for hypertrophy included multiple sets.

'A challenge to my professional identity'- resisting the shift from over-management to self-management for back pain within an implementation trial: a qualitative study

Ron Feldman, Tamar Pincus, Noa Ben Ami
Physiotherapy. 2024 Dec:125:101424.
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Abstract:

Objective: The Enhanced Transtheoretical Model Intervention (ETMI) is based on behavioral models and focuses on guiding Chronic Low Back Pain (CLBP) patients to self-manage symptoms and engage in recreational physical activity. While there is promising evidence that ETMI benefits patients, it is unclear how challenging it might be to implement widely.

This investigation focused on the perceptions of physiotherapists trained to deliver ETMI for CLBP.
Design: A Qualitative study comprised of semi-structured interviews (July to November 2023). Interviews were audio-recorded, transcribed, coded, and analyzed thematically by two independent researchers.
Setting: Data were obtained as part of a large implementation study evaluating the uptake and impact of ETMI amongst physiotherapists in a large public healthcare setting.
Participants: 22 physiotherapists trained to deliver the ETMI approach and chose to use it with at least one patient.
Results: While physiotherapists acknowledged the evidence base behind ETMI and the clarity of the approach, they struggled to adapt it to routine delivery. Exploration of the reasons for this identified an overarching meta-theme, 'A challenge to my professional identity', and three main themes consisting of 1) interventions such as ETMI contradicted my training. 2) I am ambivalent/ do not accept evidence that contradicts my habitual practice, and 3) I am under-skilled in psychological and communication skills.
Conclusion: This study highlights the reluctance of physiotherapists to implement evidence-based interventions such as ETMI, which fundamentally challenge their traditional practice and therapeutic identity. The shift from over-management by experts seeking cures to supporting self-management was not palatable to physiotherapists. The challenge of embracing a new professional identity must be addressed to enable a successful implementation of the approach. CONTRIBUTION OF THE PAPER.

Running is acceptable and efficacious in adults with non-specific chronic low back pain: the ASTEROID randomised controlled trial

Christopher Neason, Claire L Samanna, Scott D Tagliaferri, Daniel L Belavý, Steve J Bowe, Matthew J Clarkson, Emma A Craige, Romina Gollan, Luana C Main, Clint T Miller, Ulrike H Mitchell, Niamh L Mundell, David Scott, Jamie L Tait, Grace E Vincent, Patrick J Owen
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Abstract:

Objectives: Running is one of the most accessible forms of exercise, yet its suitability for adults with chronic low back pain (LBP) is unknown. This study assessed the efficacy and acceptability of running in adults with chronic LBP.

Methods: This two-arm parallel (1:1) individually randomised controlled trial allocated 40 participants (mean (SD) age: 33 (6) years, female: 50%) with non-specific chronic LBP to a 12-week intervention or waitlist control. The intervention was a progressive run-walk interval programme comprising three 30-min sessions per week that were digitally delivered and remotely supported by an exercise physiologist. Efficacy outcomes were self-reported pain intensity (100-point visual analogue scale) and disability (Oswestry Disability Index). Acceptability outcomes were attrition, adherence and adverse events.
Results: At 12-week follow-up, the intervention improved average pain intensity (mean net difference (95% CI): -15.30 (-25.33, -5.27) points, p=0.003), current pain intensity (-19.35 (-32.01, -6.69) points, p=0.003) and disability (-5.20 (-10.12, -0.24) points, P=0.038), compared with control. There was no attrition, and mean (SD) training adherence was 70% (20%; ie, 2.1 of 3 sessions per week). Nine non-serious adverse events deemed likely study-related were reported (lower limb injury/pain: n=7, syncope associated with an underlying condition: n=1, LBP: n=1).
Conclusions: A run-walk programme was considered an acceptable intervention by the participants to improve the pain intensity and disability in individuals aged 18-45 years with non-specific chronic LBP when compared with the control. An individualised and conservative run-walk programme should be considered a suitable form of physical activity for adults with chronic LBP.

The Effects of Shock Wave Therapy on the Symptoms and Function of Individuals With Dupuytren Disease: A Systematic Review

Amid Yazdani, Parsa Nasri, Sadegh Baradaran Mahdavi
Archives of Physical Medicine and Rehabilitation 2024 Oct;105(10):1985-1992.
doi: 10.1016/j.apmr.2024.05.030.Epub 2024 Jun 10.

Abstract:

Objective: To systematically evaluate the effects of extracorporeal shockwave therapy (ESWT) on pain, clinical and functional outcomes, and satisfaction of patients with Dupuytren disease.
Data sources: A thorough search for all the study types published in English was conducted in PubMed, Scopus, Web of Science, and Embase from inception to August 31, 2022.

Study selection: Title and abstract and then full-text screening against eligibility criteria was performed independently by 2 reviewers, and a third reviewer achieved consensus.
Data extraction: Reviewers identified 26 studies, of which 6 were included in the analysis (145 cases). The methodological quality was assessed using the National Heart, Lung, and Blood Institute and the Joanna Briggs Institute checklists. The certainty of evidence was evaluated using the Grading of Recommendation Assessment, Development, and Evaluation.
Data synthesis: Assessments represented a remarkable improvement in the pain and function through the measurements including the visual analog scale, the Disabilities of Arm Shoulder and Hand Questionnaire, the Michigan Hand Outcome Questionnaire, and Mayo Wrist Score. Patients' satisfaction was also favorable using the Roles and Maudsley score. The hand grip strength improvement was noted in one study measured via a Jamar dynamometer. In addition, the ultrasonographic assessment of the nodules revealed a decrease in the size of the nodules in a patient with multiple bilateral nodules after the treatment. The quality of the included studies was good for all studies except for one that was fair. The certainty of evidence was moderate for pain and function and was low for patients' satisfaction and ultrasonographic findings.
Conclusions: ESWT can lead to significant pain improvement, functional rehabilitation, and patient satisfaction with no adverse effect in the management of Dupuytren disease. Pain may return over time, but not to that severity before the intervention. ESWT-related characteristics and the need for continuation of treatment remain to be fully elucidated in future large clinical trials.

Swimmer arm-to-shoulder test for early differentiation between shoulder and cervical spine pathology in patients with shoulder pain

Hesham Hamoud, Hany Aly, Yasser A Elmotaleb, Mohamad M Ghit, Ahmad Mosalam, Tarek M Nasrallah, Saad M El Zokm, Ibrahim Fawzy, Abdelwahab N Bayoumy, Maha S Mohamed, Seham A Elazab, Amal M Elmesiry, Eman A Rageh, Mai A Moussa, Ahmed Elyasaki, Sherif Refaat, Ahmed M Elhilasy, Ahmed M El Deeb, Walid Elshaitany, Ashraf Eltabiey
BMC Musculoskelet Disorders. 2024 Nov 21;25(1):940.
doi: 10.1186/s12891-024-08013-9.

Abstract:

Background: Several tests have been suggested for screening and diagnosis of cervical spine and shoulder girdle conditions underlying shoulder pain with variable degrees of clinical accuracy. The present study aimed to test the reliability, clinical benefit and screening value of the Swimmer Arm-to-Shoulder (SAS) test; a new clinical test developed to differentiate shoulder impingement from cervical radiculopathy in patients with shoulder pain of ≤ 12 weeks.
Methods: The study included 718 patients aged 40-65 years, with unilateral and localized shoulder girdle pain lasting for ≤ 12 weeks. Diagnosis based on clinical, electromyography and radiological findings was considered as the reference gold standard for test assessment.
Results: Clinical diagnosis identified shoulder pathology in 288 patients (40.1%) and cervical spine pathology in 430 patients (59.9%). SAS test was positive in 274 patients (38.2%). The SAS test proved to be effective in distinguishing shoulder from cervical spine pathology with a sensitivity of 89.2% (95% CI: 85.0-92.6%), specificity of 96.1% (95% CI: 93.8-97.7%), PPV of 93.8% (95% CI: 90.5-96.0%), NPV of 93.0% (95% CI: 90.5-94.9%), LR + of 22.6% (95% CI: 14.1-36.0%), LR- of 0.11 (95% CI: 0.08-0.16) and accuracy of 93.3% (95% CI: 91.2-95.0%).
Conclusions: SAS test is an easy to perform, patient dependent and reliable as a screening test and diagnosis confirmatory test.

Why might fears and worries persist after a pain education-grounded multimodal intervention for chronic back pain? A qualitative study

Rodrigo R N Rizzo, Benedict M Wand, Hayley B Leake, Edel T O'Hagan, Adrian C Traeger, Sylvia M Gustin, G Lorimer Moseley, Saurab Sharma, Aidan G Cashin, Matthew K Bagg, James H McAuley, Samantha Bunzli

Pain Reports. 2024 Nov 13;9(6):e1197.
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Abstract

Introduction: The effect of pain education (PE) on pain intensity and function diminishes after a few months in people with chronic low back pain (CLBP). One possible explanation is the return of underlying fears and worries related to the condition.
Objective: To explore topics related to participants' beliefs and feelings that might explain why fears and worries persist after a PE-grounded intervention for CLBP.
Methods: We conducted a qualitative study involving semistructured interviews with participants from the active arm of a randomised controlled trial who received an individualised PE-grounded intervention for adults with CLBP. We used reflexive thematic analysis with an inductive approach.
Results: Twenty participants were interviewed (9 women and 11 men, median age = 54 years, median pain duration = 4 years, 13 reporting at least 30% pain reduction on the trial primary outcome). Three themes were identified: 1) "Are you implying my pain is not real?": a few participants believed the validity of their pain was being questioned. 2) "You don't understand, my pain is different": most participants considered the influence of an altered nervous system but did not exclude the possibility of having structural and biomechanical influences for the persistence of their back pain. 3) "I am unsure how to fit it into my daily life": fear and worries persisted when participants could not figure out how to apply an alternative way of making sense of pain in their daily lives.
Conclusion: Patients' perceptions about PE should be monitored and might be addressed with communication strategies, educational content that matches patients' characteristics, and reinforcements over time.