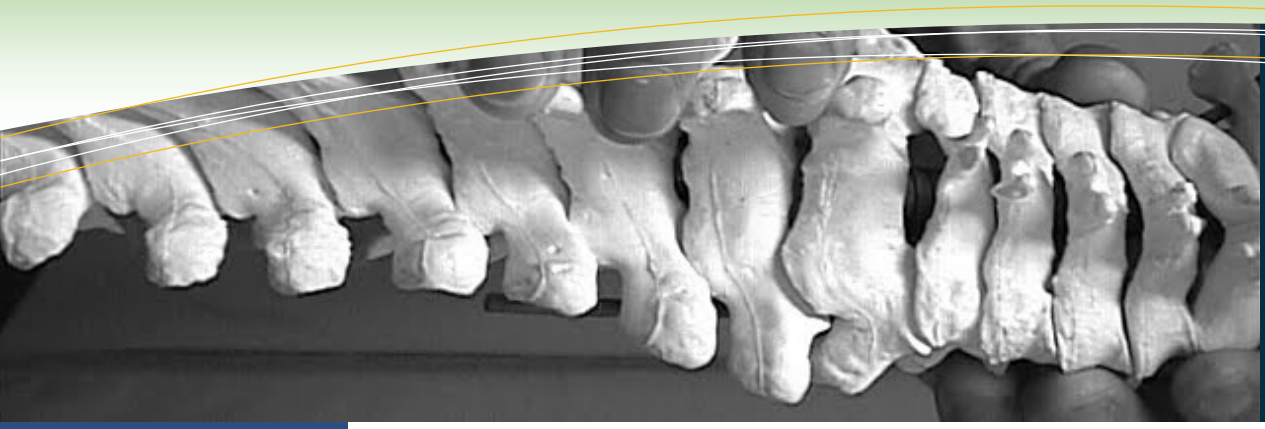
Manual Therapy Research Review



Issue 26
February 2022

This issue:

Welcome

Welcome to the 26th Edition of the Manual Therapy Research Review. 2022 is under way, and Covid 19 seems to be the gift the keeps on giving!! Hopefully things will settle over 2022, and we might be able to commence some international travel and start to see each other once again.

In this edition, we have paper by Saraceni et al (2021) on LBP and lifting, a review by Lin et al on best care musculoskeletal practice, a systematic review by Amendola et al on interventions for lumbar spinal stenosis, and finally, a paper by Akkarakittichoke on active breaks for neck pain in office workers.

Enjoy! Duncan Reid

Paper One

Nic Saraceni, Amity Campbell, Peter Kent, Leo Ng, Leon Straker & Peter O'Sullivan (2022): Does intra-lumbar flexion during lifting differ in manual workers with and without a history of low back pain? A cross-sectional laboratory study. Ergonomics, DOI: 10.1080/00140139.2022.2036819

Abstract

Advice to limit or avoid a flexed lumbar curvature during lifting is widely promoted to reduce the risk of low back pain (LBP), yet there is very limited evidence to support this relationship. To provide higher quality evidence, this study compared intra-lumbar flexion in manual workers with (n = 21) and without (n= 21) a history of LBP during a repeated lifting task. In contrast to common expectations, the LBP group demonstrated less peak absolute intra-lumbar flexion during lifting than the no-LBP group (adjusted difference -3.7° (95%CI - 6.9 to -0.6)). The LBP group were also further from end of range intra-lumbar flexion and did not use more intra-lumbar range of motion during any lift condition (both symmetrical and asymmetrical lifts and different box loads). Peak absolute intra-lumbar flexion was more variable in the LBP group during lifting and both groups increased their peak absolute intralumbar flexion over the lift repetitions. This high-quality capture of intra-lumbar spine flexion during repeated lifting in a clinically relevant cohort questions dominant safe lifting, there is a need for re-conceptualisation of musculoskeletal physiotherapeutic interventions.

Commentary

The common mantra when is comes to lifting advice to reduce the chances of injuring your back has been to "bend your knees and keep your back straight". This study unpacks this paradigm and demonstrates that as one goes through a repeated lifting task, we actually go into a more flexed or stooped posture.

In this study those participants in lifting jobs, but had not complained of LBP used a more flex posture as their standard lifting procedure. Those with LBP used a less flexed lumbar spine position, but as the number of lifts increased, they moved to a more flexed position as did the no LBP group. This study is also consistent with the findings of Mawston et al (2021) who found that in pain free individuals undertaking a repeated lifting task , a more flexed posture was associated with increased lumbar strength. It is great to see a study that challenges long standing advice and encourages us to look at things differently given this new evidence. Nice work from Peter O'Sullivan and his research team.

Reference

Mawston, G., Holder, L., O'Sullivan, P., & Boocock, M. (2021). Flexed Lumbar Spine Postures Are Associated with Greater Strength and Efficiency Than Lordotic Postures During a Maximal Lift in Pain-Free Individuals. Gait Posture, 86, 245-250. doi:10.1016/j.gaitpost.2021.02.029

Paper Two

Lin, I., Wiles, L., Waller, R., Goucke, R., Nagree, Y., Gibberd, M.,... & O'Sullivan, P. P. (2020). What does best practice care for musculoskeletal pain look like? Eleven consistent recommendations from high-quality clinical practice guidelines: systematic review. British journal of sports medicine, 54(2), 79-86

Objectives: To identify common recommendations for high-quality care for the most common musculoskeletal (MSK) pain sites encountered by clinicians in emergency and primary care (spinal (lumbar, thoracic and cervical), hip/knee (including osteoarthritis [OA] and shoulder) from contemporary, high-quality clinical practice guidelines (CPGs).
Design: Systematic review, critical appraisal and narrative synthesis of MSK pain CPG recommendations.
Eligibility criteria: Included MSK pain CPGs were written in English, rated as high quality, published from 2011, focused on adults and described development processes. Excluded CPGs were for: traumatic MSK pain, single modalities (eg., surgery), traditional healing/medicine, specific disease processes (eg., inflammatory arthropathies) or those that required payment.
Data sources: Four scientific databases (MEDLINE, Embase, CINAHL and Physiotherapy Evidence Database) and four guideline repositories.
Results: 6 232 records were identified, 44 CPGs were appraised and 11 were rated as high quality (low back pain: 4, OA: 4, neck: 2 and shoulder: 1). We identified 11 recommendations for MSK pain care: ensure care is patient centred, screen for red flag conditions, assess psychosocial factors, use imaging selectively, undertake a physical examination, monitor patient progress, provide education/information, address physical activity/exercise, use manual therapy only as an adjunct to other treatments, offer high-quality non-surgical care prior to surgery and try to keep patients at work.
Conclusion: These 11 recommendations guide healthcare consumers, clinicians, researchers and policy makers to manage MSK pain. This should improve the quality of care of MSK pain.

Commentary

This paper by Lin and colleagues provides a nice overview of concepts that are being more engrained in musculoskeletal practice. I particularly like that the list of 11 items starts with patient centred care as this should be front and centre with all we do. Another key feature of the 11 items was to reduce the need for imaging. This is pervasive in many countries and physiotherapist can lead change by ensuring we have done a thorough assessment and determine a clinical diagnosis and guide patient management. We are good at this shown in research around Advanced Practice Physiotherapists (APPS). (Vedanayagam et al 2021). One of the interesting things in the paper is that we must provide education and advice to patients. The paper in this review that led to this comment comes from GP's lack of ability to give advice. I think we are also good with the advice!!

Reference

Vedanayagam, M., Buzak, M., Reid, D., & Saywell, N. (2021). Advanced practice physiotherapists are effective in the management of musculoskeletal disorders: A systematic review of systematic reviews. Physiotherapy. 113;116–130 doi:10.1016/j.physio.2021.08.005

Paper Three

Ammendolia, C., Hofkirchner, C., Plener, J., Bussières, A., Schneider, M. J., Young, J. J., ... & Ornelas, J. (2022). Non-operative treatment for lumbar spinal stenosis with neurogenic claudication: an updated systematic review. BMJ open, 12(1), e057724 doi:10.1136/bmjopen-2021-057724

Objectives: Neurogenic claudication due to lumbar spinal stenosis (LSS) is a growing health problem in older adults. We updated our previous Cochrane review (2013) to determine the effectiveness of non-operative treatment of LSS with neurogenic claudication.
Design: A systematic review.
Data sources: CENTRAL, MEDLINE, EMBASE, CINAHL and Index to Chiropractic Literature databases were searched and updated up to 22 July 2020.
Eligibility criteria: We only included randomised controlled trials published in English where at least one arm provided data on non-operative treatment and included participants diagnosed with neurogenic claudication with imaging confirmed LSS.
Data extraction and synthesis: Two independent reviewers extracted data and assessed risk of bias using the Cochrane Risk of Bias Tool 1. Grading of Recommendations Assessment, Development and Evaluation was used for evidence synthesis.
Results: Of 15 200 citations screened, 156 were assessed and 23 new trials were identified. There is moderate-quality evidence from three trials that: Manual therapy and exercise provides superior and clinically important short-term improvement in symptoms and function compared with medical care or community-based group exercise; manual therapy, education and exercise delivered using a cognitive-behavioral approach demonstrates superior and clinically important improvements in walking distance in the immediate to long term compared with self-directed home exercises and glucocorticoid plus lidocaine injection is more effective than lidocaine alone in improving statistical, but not clinically important improvements in pain and function in the short term. The remaining 20 new trials demonstrated low-quality or very low-quality evidence for all comparisons and outcomes, similar to the findings of our original review.
Conclusions: There is moderate-quality evidence that a multimodal approach which includes manual therapy and exercise, with or without education, is an effective treatment and that epidural steroids are not effective for the management of LSS with neurogenic claudication. All other non-operative interventions provided insufficient quality.

Commentary

This paper was referred to me from Dr Annalie Basson. Thanks, Annalie! The systematic review makes for interesting reading and provides moderate evidence to the use of manual therapy along with other multimodal approaches to help those patients presenting with Lumbar Spinal Stenosis (LSS) and neurogenic claudication. It is a good example of the need to have a trial of conservative care before the patient in rushed off for epidural steroid and/or potential surgery. The findings of this review are a little more positive towards physiotherapy than a previous systematic review by this author that stated physiotherapy was no better in improving walking ability compared to no treatment in people with LSS. These recommendations were made on low quality evidence, so it shows updating reviews are regular intervals can change the messages!

Reference

Ammendolia, C., Stuber, K., Tomkins-Lane, C., Schneider, M., Rampersaud, Y. R., Furlan, A. D., & Kennedy, C. A. (2014). What interventions improve walking ability in neurogenic claudication with lumbar spinal stenosis? A systematic review. European spine journal, 23(6), 1282-1301.

Paper Four

Akkarakittichoke, N., Waongenngarm, P., & Janwantanakul, P. (2021). The effects of active break and postural shift interventions on recovery from and recurrence of neck and low back pain in office workers: A 3-arm cluster-randomised controlled trial. Musculoskeletal Science and Practice, 56, 102451

Objectives: To investigate the efficacy of active break and postural shift interventions aimed to reduce sitting discomfort on recovery duration and recurrence of neck and low back pain among high-risk office workers.

Methods: A 3-arm cluster-randomised controlled trial with 12-month follow-up was conducted in 193 healthy, but high-risk office workers. Participants in the intervention groups received custom-designed apparatus to facilitate either active breaks or postural shifts to reduce sitting discomfort at work. Participants in a control group received a placebo seat pad. Incidence of neck and low back pain with pain intensity and disability level was recorded monthly. Main outcome measures were recovery time and performed using log rank test and Cox proportional hazard models.

Results: Median time to recovery in those receiving active break and postural shift interventions (1 month) was significantly shorter than those in the control group (2 months). Neck and low back pain recurrent rates for the active break, postural shift, and control groups were 21%, 18%, and 44%, respectively. Hazard rate (HR) ratios after adjusting for biopsychosocial factors indicated a protective effect of active break and postural shift interventions for neck and low back pain recurrence (HRadj 0.22, 95% CI 0.06–0.83 for active breaks and HRadj 0.35, 95% CI 0.16–0.77 for postural shift).
Conclusion: Active break and postural shift interventions shortened recovery time and reduced recurrence of neck and low back pain among high-risk office workers.

Commentary
I was asked to be part of a health programme for TV before Xmas and talk about posture. In doing some research I came upon this paper (along with many others). I found the study useful and always enjoy reading studies that back up common sense- frequent breaks reduce neck pain in office workers. I am sure with the Covid lockdowns, we are all suffering from ZOOM neck so maybe we too need to take our own advice and move more often!