

ABSTRACT EXAMPLES

Free Papers, Symposia, Rapid Five and Posters

Aim: to determine whether therapeutic exercise, the prescription of a program that involves undertaking voluntary muscle contraction and/or body movement to relieve symptoms, improve function or improve, retain or slow deterioration of health, is of benefit across broad areas of physiotherapy practice.

Design: A summary of systematic reviews on therapeutic exercise published from 2002 to September 2005.

Method: The study involved a variety of participants with neurological, musculoskeletal, cardiopulmonary and other conditions who would be expected to consult a physiotherapist and measured the effect of therapeutic exercise in terms of impairment, activity limitations, or participation restriction.

Results: The search yielded 38 systematic reviews of reasonable quality. The results provided high level evidence that therapeutic exercise was beneficial across broad areas of physiotherapy practice, including people with conditions such as multiple sclerosis, osteoarthritis of the knee, chronic low back pain, coronary heart disease, chronic heart failure, and chronic obstructive pulmonary disease. Therapeutic exercise was more likely to be effective if it was relatively intense and there were indications that more targeted and individualised exercise programs might be more beneficial than standardised programs. There were few adverse events reported.

Conclusion: Therapeutic exercise was beneficial for patients across broad areas of physiotherapy practice. High quality evidence is needed in emerging areas of practice.

Key Practice Points:

- Indications are that targeted, individualised exercise programs are more beneficial.
- Therapeutic exercise is more likely to be effective if relatively intense.
- Therapeutic exercise was beneficial in multiple settings.

Aim: To determine whether interventions that involve attempts at repetitive, effortful muscle contractions and including biofeedback, electrical stimulation, muscle re-education, progressive resistance exercise, and mental practice, after stroke is effective or harmful, and is it worthwhile?

Design: Systematic review with meta-analysis of randomised trials.

Method: Stroke participants were categorised as (i) acute, very weak, (ii) acute, weak, (iii) chronic, very weak, or (iv) chronic, weak. Strength was measured as continuous measures of force or torque or ordinal measures such as manual muscle tests. Spasticity was measured using the modified Ashworth Scale, a custom made scale, or the Pendulum Test. Activity was measured directly, e.g., 10-m Walk Test, or the Box and Block Test, or with scales that measured dependence such as the Barthel Index.

Results: 21 trials were identified and 15 had data that could be included in a meta-analysis. Effect sizes were calculated as standardised mean differences since various muscles were studied and different outcome measures were used. Across all stroke participants, strengthening interventions had a small positive effect on both strength (SMD 0.33, 95% CI 0.13 to 0.54) and activity (SMD 0.32, 95% CI 0.11 to 0.53). There was very little effect on spasticity (SMD -0.13, 95% CI -0.75 to 0.50).

Conclusion: Strengthening interventions increase strength, improve activity, and do not increase spasticity.

Key Practice Points:

- Following stroke, strengthening programs should be part of rehabilitation.
- Strengthening interventions improve activity.
- Strengthening interventions do not increase spasticity.

Aim: To determine the effect of a combined brain and spinal cord direct current stimulation treatment on chronic headache frequency, intensity, duration and pain sensitivity.

Design: An ABA design that involved three stages (baseline, intervention and post-intervention).

Method: Participants were five individuals, three that suffered from chronic tension type headache and two individuals with chronic migraine. Five consecutive daily sessions of a 20 minute brain stimulation treatment delivered to the primary motor cortex, followed by a 20 minute spinal cord stimulation treatment delivered over the 10th thoracic vertebrae at 1mA intensity. Pain sensitivity was recorded immediately before and after treatment using a pressure algometer to record pressure pain threshold. Headache symptoms of frequency, intensity and duration were recorded via a headache diary four weeks before and after treatment.

Results: Headache frequency reduced in all participants (mean number of headaches across participants pre 16.6±4.9; post 7.4±4.6). Headache duration and intensity, and pressure-pain sensitivity, were unaltered in all participants.

Conclusion: These preliminary data indicate that a combined brain and spinal cord stimulation may reduce headache frequency in headache sufferers, but when a headache is triggered, duration and intensity are unaltered.

Key Practice Points:

- Combined brain and spinal cord stimulation may reduce headache frequency prior to headache onset.
- Does not affect headache duration or intensity.

Aim: To determine the effect of sitting training early after stroke on sitting ability and quality and does it carryover to mobility?

Design: Randomised placebo-controlled trial with concealed allocation, assessor blinding and intention-to-treat analysis.

Method: The experimental group, 12 individuals who had a stroke less than 3 months previously and were able to sit unsupported, completed a 2-week sitting training protocol that involved practicing reaching tasks beyond arm's length. The control group completed a 2-week sham sitting training protocol.

Outcome measures: The primary outcome was sitting ability (reach distance). Secondary outcomes were sitting quality (reach time and peak vertical force through affected foot during reaching) and carryover to mobility (peak vertical force through affected foot during standing up and walking speed during 10 m Walk Test).

Results: After 2-weeks training, the experimental group had increased their reach distance by 0.17 m (95% CI 0.12 to 0.21), decreased their reach time by 0.5 s (95% CI -0.8 to -0.2), increased their peak vertical force through the affected foot during reaching by 13% BW (95% CI 6 to 20) and during standing up by 21% BW (95% CI 14 to 28) compared with the control group. After 6 months, gains were maintained for reach distance and standing up.

Conclusion: The training was both feasible and effective in improving sitting and standing up early after stroke and somewhat effective six months later.

Key Practice Points:

- Sitting training is a valuable component of post stroke recovery and should be considered by practitioners
- The training was somewhat effective after six months
- After 6 months, gains were maintained for reach distance and standing up.

Trial registration: NCTR123456.

How To Presentations:

Background: Increased pain sensitisation assessed by quantitative sensory testing (QST), such as cold hyperalgesia, is associated with poor outcomes in cervical pain states. Thus, more detailed pain assessments of pain are warranted in clinical practice. Our work has demonstrated a relationship between clinical tests of pain sensitivity (ice pain and pressure pain tests) and QST. Other clinical tests used to assess for pain sensitisation include nerve trunk palpation, conditioned pain modulation and 2-point discrimination. Identification of pain sensitisation in the clinic is important to not only sub-classify pain, but to inform appropriate management.

Aims / objectives: To improve participants' knowledge, skills and clinical reasoning in the clinical assessment of pain sensitisation. Participants will be competent in clinical application of the ice-pain test, pressure pain thresholds, 2-point discrimination, upper limb nerve trunk palpation and conditioned pain modulation. Participants will understand how to interpret these tests to sub-classify pain and direct treatment.

Approach: The presenters will provide a lecture style background introduction (10 mins) followed by a practical demonstration of the tests (10 mins). Participants will then have the opportunity to practise 1-2 of these tests (10 minutes). Learning materials provided include a manual on how to perform these tests.

Key Practice Points:

- Participants will be able to more accurately assess for pain sensitisation in their clinic.
- Participants will understand the added benefits and limitations of using these tests in clinical practice
- Participants will be able to use information gained from pain assessment to inform treatment

Background: Interventions based on the Fear Avoidance Model that target catastrophising as a catalyst of the fear-avoidance-disability cycle have yielded modest effects. Our qualitative research into chronic back pain and high fear highlights limitations in this model and the need to account for heterogeneous beliefs underlying fear; contextual factors that influence beliefs; and the multiple pathways to fear-reduction.

Objectives: To present an alternative framework to understand and treat fear: the Common-Sense Model.

Approach: Three case studies drawn from our research illustrate how the process underlying the development, maintenance and reduction in fear will be similar for all people despite variance in individual experience. Individuals make sense of pain by forming a 'representation' based on their beliefs about the label, causes, consequences, time-line and controllability of symptoms at any given time. The representation guides problem-solving behaviour. Fear may be a 'common-sense' response to a threatening representation. If pain continues to be experienced as unpredictable, uncontrollable and intense despite problem-solving behaviour, the representation will no longer be useful in guiding sensible decisions. This inability to make sense of pain may perpetuate fear. Reconceptualising the meaning of pain and developing effective pain control strategies may assist individuals to make sense of pain and facilitate fear-reduction.

Key Practice Points:

Participants will learn:

- The influence clinicians can have in the formation of threatening pain representations.
- How to reconceptualise pain so it makes sense to individuals
- How to equip individuals with pain control strategies by improving pain predictability, controllability and intensity

Background: Infants with asymmetrical head shape are often referred to paediatric physiotherapy services. A common approach in busy clinics is observation of the head shape. It is important for the physiotherapist to systematically assess head shape to identify possible causes and severity of the asymmetry. An efficient and economical tool to measure head asymmetry is paramount to guide clinical management.

Aims / objectives: The aims of this session are to outline the differential diagnosis of positional versus synostotic causes of head asymmetry, and to introduce and demonstrate an objective measurement tool (modified Cranial Asymmetry Index) to measure head shape asymmetry. A paper on this measurement tool was published by the presenter in 2013. The participants should understand the different presentations of positional and synostotic causes of head asymmetry and the rationale, procedure, technique and application of the measurement tool.

Approach: PowerPoint presentation for theories, video to demonstrate techniques of measuring the modified Cranial Asymmetry Index and hands-on practice for participants. Handouts of the PowerPoint will be provided.

Key Practice Points:

It is expected that on completion of this session, participants will be able to:

- Increase accuracy in assessment of infants with asymmetrical head shape
- Learn a measurement tool that is efficient and economical to apply in clinics and home environments
- Use an objective measure to monitor progress of head asymmetry and guide clinical management