Research in the Spotlight

GUARDIAN exercise rehabilitation

The effect of exercise intensity on exercise induced hypoalgesia in cancer survivors

The Question:

Studies that have gradually applied pressure to muscles to the point of provoking pain have found that exercise can increase the amount of pressure tolerated until pain is felt. This is referred to as a pain threshold. Higher intensity exercise is found to lead to greater pain reduction effects. Among people living with chronic pain, the ability of exercise to increase pain thresholds is more complicated. For some people, exercise is still helpful at increasing pain thresholds, while in others exercise leads to a lower pain threshold.

This study aimed to answer a few questions being:

1. Does exercise reduce pain thresholds among cancer survivors?
2. Does the intensity of the exercise matter?
3. What is the immediate effect of exercise and what is the effect following a small duration of exercise training?

What We Did:

- 20 people participated in the study. All participants completed both interventions with a 6 week gap between engagement in either group.
- The low intensity group exercised at a slow walk intensity
- The high intensity group exercised at a slow jogging pace
- Pain thresholds were measured prior to exercise, immediately following the first session of each intensity, and after 2 weeks of training 3 days/ week for 20 minutes.
- Bodily pain was measured with a questionnaire and compared before and after the two-week training session to see if the exercise reduced cancer related pain.

What We Found:

- Following one session of exercise, high intensity exercise reduced pain to a greater degree compared to low intensity exercise.
- Following two weeks of training, the low intensity exercise was as effective at reducing pain as the high intensity group.
- Cancer related pain did not change following either exercise program.

Clinical Implications:

- Low intensity exercise is as effective at reducing pain provided it is completed on a regular, ongoing basis. When prescribing exercise, consideration on where pain is felt is important as the largest effects were found in the limbs exercised i.e., a cycling program lead to increased pain threshold in the thigh, but not the bicep.
- Previous research has found effect sizes to be greater if the patient is told they can expect to feel less pain from completing the exercises prescribed, so be sure to mention this to your client.

Reference
Clifford et al (2021) The effect of exercise intensity on exercise-induced hypoalgesia in cancer survivors: A randomized crossover trial, *Psychological Reports*