

Should I use Ice or Heat for my Back Pain, Doctor?

Every day Practitioners in clinics across the country hear this question. The clinical decision of whether to apply heat or ice for back pain remains surrounded in confusion and misinformation. There appears to be two camps of thought, one advising heat and the other using ice.

Heat has been used for pain management and healing for centuries, mediated by inhibiting purine receptors in nociceptive pathways via gated calcium channels sensitive to temperature (1) a number of studies have examined the effect of continuous low level heat wraps on back pain (2,3) showing relief of back pain superior to paracetamol and ibuprofen in acute low back pain.

Applying ice is well indicated in treatment of an effused synovial joint to vaso-constrict, limiting the exudative processes surrounding haemorrhage and swelling combined with compression in the acute phase, typically encountered in large joint trauma such as ankle or knee ligamentous strains. Application of ice for back pain is less evident, with the incidence of traumatic back muscle tears and associated haemorrhage or synovial swelling less commonly seen in practice to indicate ice application. Cryotherapy is not as supported as an intervention to relieve muscular spasm and pain associated with acute non-specific low back pain as heat. (4)

A Cochrane review and meta-analysis of the relevant research (4,5) states: "there is insufficient evidence to support the use of superficial ice for back pain and moderate support for use of heat", specifically low level continuous heat wrap therapy. This recent development in heat therapy delivery has been shown in multiple RCT studies (2,3) to improve clinical outcomes for back pain. As a result it is now adopted by major hospitals, Chiropractors and Physiotherapists around Australia as the preferred evidence based application of heat therapy and recommended in recent American Physician guidelines for back pain promoting a non drug first line approach.

As primary care practitioners one of our fundamental principles is to advise patients with back pain to remain active, advocating a drug free approach to spinal treatment and management. The use of low level continuous heat wraps enables patients to remain ambulatory whilst receiving hours of penetrating low level heat promoting increased circulation for healing and relaxation of elastic muscle and connective tissue to maintain spinal functionality resulting in drug free pain relief.

Recommendation of a low level continuous heat wrap worn overnight has also shown efficacy in relieving low back pain (6). The introduction of heat wraps into clinical practice following treatment provides an evidence based heat therapy (7) in combination with spinal manipulation to deliver an effective management for low back pain patients.

Low level continuous heat therapy relieves pain by inhibition of ascending pathways via spinothalamic tracts acting at the level of the PAG within the brain when applied for periods longer than an hour. This is different to the application of higher temperature heat for a short duration typically seen with the use of a wheat bag or gel pack often necessitating the patient to remain seated.

Next time a patient asks whether to use heat or ice for back pain consider the research supporting low level continuous heat wrap therapy, this may help guide your clinical judgement for either application of heat or ice.

- (1) Stanchev, D et al, Cross-inhibition between native and recombinant TRPV1 and P2X(3) receptors. *Pain*, 2009. 143(1-2); p. 26-36.
- (2) Stark, J et al, Continuous low-level heatwrap therapy relieves low back pain and reduces muscle stiffness. *Phys. Sportsmed*, 2014. 42(4): p. 39-48.
- (3) Mayer, J.M et al, treating acute low back pain with continuous low-level heat wrap therapy and/or exercise: a randomised controlled trial. *Spine J*, 2005. 5(4): p. 395-403
- (4) French, S.D et al, A Cochrane review of superficial heat or cold for low back pain. *Spine (Phila Pa 1976)*, 2006. 31(9): p. 998-1006.
- (5) French, S.D et al, Superficial heat or cold for low back pain. *Cochrane Database Syst* 004750.
- (6) Nadler, S.F et al, Overnight use of continuous low-level heat wrap therapy for relief of low back pain. *Arch Phys Med Rehabil*, 2003. 84(3): p. 335-42.
- (7) Petrofsky, J. Continuous low level heat wraps; Faster healing and pain relief during rehabilitation for back,knee and neck injuries. *World Journal of preventative Medicine*, Vol.3, No.3 (2015): 61-72 doi: 10.12691/jpm-3-3-3.