

# Cold Therapy

In post-operative patients, how effective is using cold therapy compared to not using cold therapy in decreasing pain?

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## Introduction

- ❖ Pain is a dynamic and subjective uncomfortable sensation many hospitalized patients experience (Lewis, Dirksen, Heitkemper, Bucher, & Camera, 2014). Pain can be mild or intense, and can be treated through many different therapies, not only pharmaceutically.
- ❖ Without management, pain can severely impact a patient's quality of life and if left untreated can even develop into chronic, difficult to manage pain (Lewis et al., 2014).
- ❖ Some patients may not wish to rely on pharmaceutical therapy alone, as this can result in side effects or unaffordable expenses; therefore, it is beneficial to offer non-pharmaceutical interventions, such as cold therapy.
- ❖ Cold therapy is the application of ice in treating acute or chronic injuries to manage symptoms of pain. Applying cold on an injured site can decrease inflammation, reduce swelling, and provide pain relief. This works by reducing the blood flow to the area due to vasoconstriction and by decreasing the pain sensation (Lewis et al., 2014)
- ❖ After reviewing research, we have found that it can be effective in reducing pain for post-operative patients (Fang, L., Hung, C., Wu, S., Fang, S., & Stocker, J., 2010).

## Application in Practice

- ❖ Assess the site - ensure that the skin is not irritated or damaged.
- ❖ Never apply ice directly to the skin (Lewis, pg. 1814). If ice pack is not available, put ice cubes in a plastic bag and wrap the bag in a towel.
- ❖ Leave ice pack for no more than 20 to 30 minutes to avoid nerve or tissue damage (Chailier, Ellis, Stolarik, & Woodend 2010).
- ❖ Monitor and assess skin colour, temperature, sensation, swelling, capillary refill, pain, peripheral circulation and movement of limb extremities (Fang et al., 2010). Best to assess 5 minutes after application to assess patient's sensitivity.
- ❖ Compartment syndrome should also be assessed simultaneously.
- ❖ Different forms include ice in a bag, reusable and non-resuable ice packs, or cuffs (Lewis et al., 2014).
- ❖ Contraindicated in patients with cardiovascular disease, local loss of sensation, Raynaud's disease, peripheral vascular disease, immune system abnormalities, cold intolerance, allergies, and communication impairment.



(Rady's Children Hospital, 2014)

## Benefits

- ❖ Low cost & low risk
- ❖ Easily accessible
- ❖ Patients can do independently
- ❖ Used as alternative or adjunct therapy to pain

## Limitations

- ❖ Not meant for all injuries
- ❖ Non-compliance
- ❖ Improper use



(Wisegeek, 2018)



(At Home Medical, 2018)

## From The Research

Fang, Hung, Wu, Fang, & Stocker (2010) conducted a quasi-experimental study in order to see whether cold therapy using ice in a bag was effective in reducing the severity of wound pain after an arthroscopy procedure.

- ❖ They recruited 59 subjects in which 33 subjects were put into the experimental group receiving cold therapy along with analgesics, and 26 subjects into the control group who did not receive cold therapy, but did receive analgesics when needed. Patients in the experimental group received three 10-minute sessions of cryotherapy with 50-minute intervals within three hours
- ❖ Independent variable: cold therapy, Dependent variable: severity of wound pain
- ❖ Overall, the experimental group showed a significant decrease of pain levels compared to the control group

Chailier, Ellis, Stolarik, & Woodend (2010) conducted a randomized crossover trial to determine whether the use of cold therapy in post cardiac surgical patients would provide better pain relief compared to no cold therapy while doing deep breathing and coughing exercises

- ❖ Sample: 32 patients
- ❖ Independent variable: cold therapy, Dependent variable: patient pain scores
- ❖ Results: Before the use of cold therapy, pain scores after deep breathing and coughing were on average 3.5/10. With the use of cold therapy during deep breathing and coughing, the average pain scores were 2.6/10. Pain was statistically and clinically reduced with the use of the cold packs.

## Conclusion

- ❖ Cold therapy is a practical, inexpensive therapy that patients can use independently or with a nurse to decrease their pain experience, and increase their quality of life (Lewis et al., 2014).
- ❖ Our findings show that it is effective in decreasing pain for post-operative patients (Fang et al., 2010).
- ❖ Used as alternative or adjunct to other pain management interventions, including analgesics, but have fewer side effects (Lewis et al., 2014).

## References

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