

POLAR CARE WAVE®



Clinical Data Sheet

Advantages of Cold and Active Compression

The combination of cold therapy and active compression has clinical advantages over cold therapy alone in four ways.

Cold and active compression have been proven through clinical studies to:

1. Provide better pain control,¹
2. Result in a greater likelihood of independence from narcotic use,¹
3. Improve range of motion during post-op recovery,²
4. Contribute to better short-term clinical outcomes than cold therapy alone.¹

Cold therapy and active compression each have individual benefits, but the multi-modal approach may provide better outcomes and quicker recovery, which may translate into fewer complications and costs post-operatively.

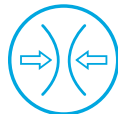


Studies have shown the following benefits:



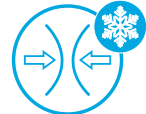
Cold Therapy

- Decreases pain
- Decreases swelling & inflammation
- Decreases narcotic usage



Active Compression

- Mimics natural muscle contractions
- Mechanically flushes edema from the affected site
- Stimulates tissue repair to encourage the healing process



Cold + Active Compression

- Better pain control
- Greater likelihood of independence from narcotic use compared with cold alone
- Improves range of motion during post-op recovery
- Improves post-operative recovery
- May contribute to better short-term clinical outcomes



Combating the Opioid Crisis

According to the U.S. Centers for Disease Control and Prevention, in 2015 the amount of opioids prescribed in the United States was approximately three times as high compared to 1999.³ Opioid overdoses accounted for more than 42,000 deaths in 2016, more than any previous year on record.⁴

Motorized cold therapy and compression devices, like Polar Care Wave, have also been shown to decrease narcotic use post-operatively.¹

Cold and Compression Clinical Evidence

There is adequate clinical evidence behind the efficacy of cold and active compression. These five studies aptly demonstrate its clinical benefits.

1. Study information: The Efficacy of Combined Cryotherapy and Compression Compared With Cryotherapy Alone Following Anterior Cruciate Ligament Reconstruction. Waterman B et al: Journal of Knee Surgery, 2012.

What was studied: Compared subjective and objective patient outcomes following ACL reconstruction with combined compression and cryotherapy compared with traditional ice therapy alone.

Conclusion: "The use of combined cryotherapy and compression in the post-operative period after ACL reconstruction results in improved, short-term pain relief and a greater likelihood of independence from narcotic use compared with cryotherapy alone."

2. Study information: Cryotherapy With Dynamic Intermittent Compression For Analgesia After Anterior Cruciate Ligament Reconstruction. Preliminary Study. Murgier J., Cassard X.: Orthopaedics and Traumatology Surgery and Research, 2014.

What was studied: Compared the efficacy of two compression modalities combined with cryotherapy in relieving postoperative pain and restoring range of knee motion. Both groups received the same analgesic drug protocol. One group was managed with cryotherapy and dynamic intermittent compression and the other with cryotherapy and static compression.

Conclusion: "Dynamic intermittent compression combined with cryotherapy decreases analgesic drug requirements after ACL reconstruction and improves the postoperative recovery of range of knee motion."

3. Study information: Cryotherapy With Dynamic Intermittent Compression Improves Recovery From Revision Total Knee Arthroplasty. Murgier J. et al: Journal of Arthroplasty, 2017.

What was studied: Evaluated efficacy of cold therapy with dynamic intermittent compression in relieving postoperative pain, decreasing blood loss and improving functional scores after revision total knee arthroplasty.

Conclusion: "The cold therapy with dynamic intermittent compression group had significantly lower total blood loss, significantly less pain on day 3, and a significantly higher functional score than the control group. Cold therapy with dynamic intermittent compression improves the recovery of patients who underwent rTKA."

4. Study information: Cryocompression Therapy After Elective Arthroplasty of the Hip. Leegwater, NC et al: Hip International, 2012.

What was studied: Patients undergoing elective hip arthroplasty received either a compression bandage alone or a compression bandage plus intermittent cryocompression therapy 15 times for 30 minutes.

Conclusion: "In the patients that received intermittent cryocompression, a trend towards less analgesic use, shorter hospital stay, less wound discharge and less pain at 6 weeks postoperatively was observed."

5. Study information: A Prospective, Multi-Center, Randomized Trial To Evaluate the Efficacy of a Cryopneumatic Device on Total Knee Arthroplasty Recovery. Su E.P et al: Journal of Bone and Joint Surgery, 2012.

What was studied: Patients were randomized to treatment with a cryopneumatic device or ice with static compression. Both treatments were initiated within three hours post-operation and used at least four times per day for two weeks.

Conclusion: "We did find a significantly lower amount of narcotic consumption in the treatment group (509 mg morphine equivalents) compared with the control group (680 mg morphine equivalents) at up to two weeks post-op, when the cryopneumatic device was being used."



References: 1) The Efficacy of Combined Cryotherapy and Compression Compared With Cryotherapy Alone Following Anterior Cruciate Ligament Reconstruction. Waterman B et al: Journal of Knee Surgery, 2012. 2) Cryotherapy With Dynamic Intermittent Compression For Analgesia After Anterior Cruciate Ligament Reconstruction. Preliminary Study. Murgier J., Cassard X.: Orthopaedics and Traumatology Surgery and Research, 2014. 3) Centers for Disease Control and Prevention. (2017). Vital signs: Changes in opioid prescribing in the United States, 2006-2015. Morbidity and Mortality Weekly Report (MMWR), 66(26), 697-704. <https://doi.org/10.15585/mmwr.mm6626a4> 4) Reeves, Bradley MD: Using Cold Therapy To Improve Patient Satisfaction and Reduce Opioid Use Post Surgery, 2018.