

Bioelectronic + Cryo Therapy 3-Phase Protocol for Knees (Arthroscopy, Total Knee, Knee Injury)

Prehab | OR & Post-op | Rehab & Recovery

Phase 1: Prehab – Prehab to Day of Surgery - Getting ready for optimal results from your procedure.

Goals:

1. Reduce inflammation, edema, and pain
2. Get to Pre-Surgical Range of Motion (ROM) goals (if defined)
3. Enable muscle activation when exercise therapy is advised
4. Present best possible tissue conditions for surgeon
5. Independent functional mobility
6. Prepare Patient to transition as quickly and easily as possible from Recovery to PT/Rehab

The good news is that everyone's goals are aligned. Your hospital, surgical center, surgeons, and nurses, and you all have one goal in common: **The best surgical outcome possible.**

Here is what you need to do as a key member of your own care team!

When: 2 weeks prior to surgery thru day of surgery

What: High Volt Galvanic Current (HVGC), DC Microcurrent Bioelectronic Devices can be used to reduce inflammation and pain and have been shown to accelerate healing times.

Why: In many cases, especially older patients, the condition of these two muscles has been compromised by mobility issues. When pain and inflammation go down, your ability to move around increases. As you feel better get moving – even before your surgery.

How: The combination of *Bioelectronics* and *Cryotherapy* reduce inflammation and pain, and best prepare the Knee tissues for optimal surgical outcomes and rehab results with:

1. Galvanized DC Microcurrent (very low microamperes) produces additional ATP (Adenosine Triphosphate) which reduces inflammation and the duration of the Inflammation phase of the Healing Cascade (*tissues heal faster*).
2. First Ice® and First Gel® packs reduce inflammation and edema with **41° x 4+ hour skin temperature**
3. The EzyWrap® compression wraps keep the FirstIce packs in position giving patients mobility while applying cold therapy exactly where it is needed. The patented four-way breathable wrap is comfortable but can also apply significant and meaningful compression.


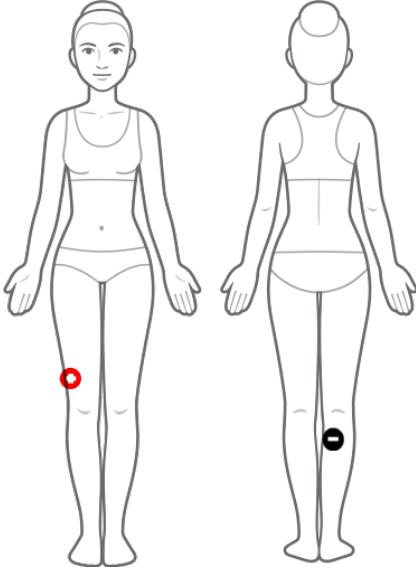
Suggested Pre-Surgical BioE + CryoT Protocol (For Patient & Care Team)




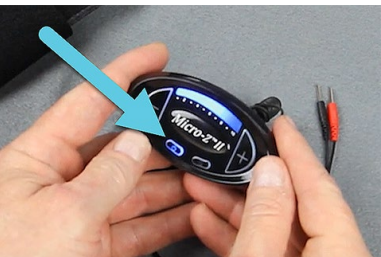
Do this in addition to any Prehab Exercise program prescribed by your Physician or Physical Therapist.

By increasing microcirculation to treat acute and chronic injuries pulsed galvanic very low μ A DC stimulation accelerates natural healing processes, reducing inflammation, edema, and pain. Patients not in significant pain are more likely to comply with both Prehab and Rehab instructions.

Follow these instructions, or [Watch This Video..](#)



<p>1. Place the two (2) AAA batteries in compartment, aligning (+) and (-) polarity symbols.</p> <p>Attach the lead wires on the back of the Micro-Z II™, making sure that the Black button (-) is attached to the negative snap and that the Red button is attached to the Positive (+) snap.</p>	
<p>2. Pad Placement(s) - Make sure the skin on the treatment area is clean and free of oils. Apply the Micro-Z II™ bioelectronic device to targeted area with black and red lead wires approximately positioned as in illustration.</p> <p>Remember: <u>Red is closer to the heart.</u></p>	

<p>3. Turn device “On” - Press the left button for one (1) second.</p> <p>The Micro-Z II is simple to operate - only two (2) modes:</p> <p>a. 30-Minute Mode - <u>default setting after turning device on</u> – indicated by illuminated button on <i>Left</i></p> <p>b. 8-Hour Mode – to activate the 8-hour session mode press the <i>Right</i> button for one second, and it will illuminate.</p> <p>8-hour Mode is designed for uninterrupted and is optimal during recovery and nocturnal use - <u>it will cycle 20 minutes On, then 40 minutes Off for 8 hours.</u></p> <p>c. The device cycles Off after 8-Hours</p>	 
<p>4. Set the device intensity - by pressing the “+” to desired level that is still comfortable, press the “-” to reduce intensity.</p> <p>For post-op pain or acute pain turn intensity up until it is uncomfortable then back off to “Comfortable”.</p> <p>When using 8-hr mode while sleeping turn the intensity down until you can no longer feel it.</p>	
<p>5. To Turn device “Off” Manually - Press and hold the left button for five (5) seconds.</p> <p>Note: Shortly after electrode pads are removed device will automatically turn Off.</p>	

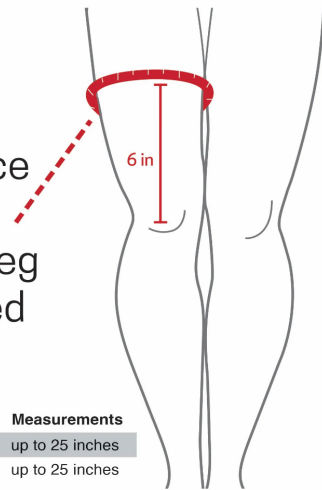
Cryo Therapy - Using the EzyWrap® and First Ice®

First Ice® – Safety. Performance. Simplicity - effective treatment starts with equipment that is not only clinically superior but also user-friendly.

Easy to use means improved patient compliance and better surgical outcomes with faster recoveries.

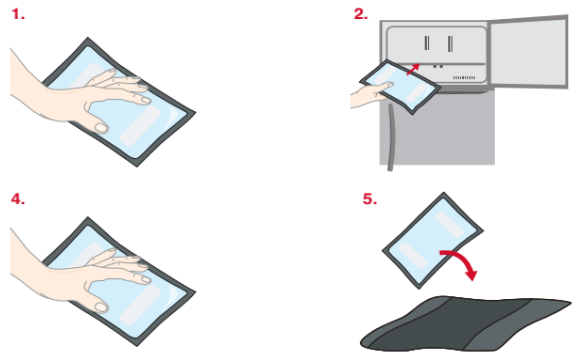
PRODUCT SIZING

Measure leg circumference 6" above mid patella with leg fully extended



Size	Measurements
Universal	up to 25 inches
Universal with Extender Strap	up to 25 inches

INSTRUCTIONS FOR USE



1. Evenly distribute contents in pack(s)
2. Place in freezer at least (4) hours before application
3. Remove pack(s) from the freezer and gently massage to loosen contents if stiff
4. Place anywhere on wrap

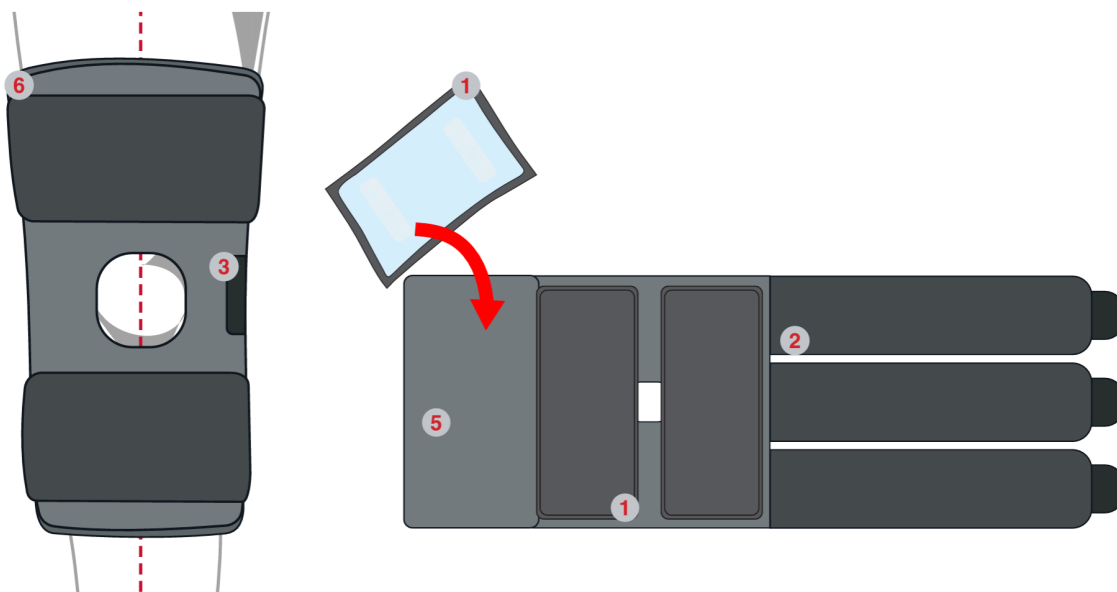
Note: Follow the instructions and regimen of your healthcare provider

The following feature sets and innovations make Ezy Wrap's systems perfectly and safely suited for accelerating recovery and rehab.:

- Patented Direct Stick™ system – easily position and connect First Ice pack to Ezy Wrap compression wraps. No pockets – simply place packet on wrap to apply.
- Patented First Ice and First Gel packs – **maintain safe and effective cold therapy on skin temperature for up to 5 Hours.**
- Patented breathable 4-way stretch wrap textiles – effective compression and comfortable, stable fit
- Reusable for up to 70 freeze-thaw cycles
- Snow-like material eliminates the thermal shock of gel
- Helps to mitigate the need for opioid-centric treatment.
- No pumps or hoses, allowing for flexibility and mobility
- Safe, Non-Toxic, and repeatably effective



Figure 1 - Click on image to watch video.



Patent No. 9,039,747 - and Other Patents Pending

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. First Ice® and First Gel® Direct Stick™ Hot or Cold Therapy application directly to the wrap 2. Three independent compressive straps for a tailored fit 3. Single-piece construction with quick assist closure tabs | <ul style="list-style-type: none"> 4. Universal sizing and dexterity, fits left and right to optimize inventory 5. Optional extension strap for a wide variety of anatomies 6. Non-neoprene hypoallergenic material |
|---|---|

Phase 2: Day of Surgery & Recovery

Patient:

2 - 4 hours prior to surgery

1. Apply Micro-Z II™ BioE device as you have been during Prehab.
2. Turn the device on, then select setting P2 (8-hr).
3. Place 2 ea. FirstIce packs in the Compression Knee Wrap and apply to Knee with moderate compression.
4. Bring these items to the hospital or surgery center:
 - a. The EzyWrap® carry bag (put items inside – write your name clearly on the white label section of bag)
 - b. 1 pair of 3" electrode pads in (new in package)

After your surgery, new FirstIce Pad(s) (provided at the hospital) will be placed in your Compression Knee Wrap and applied when the team finishes your procedure.

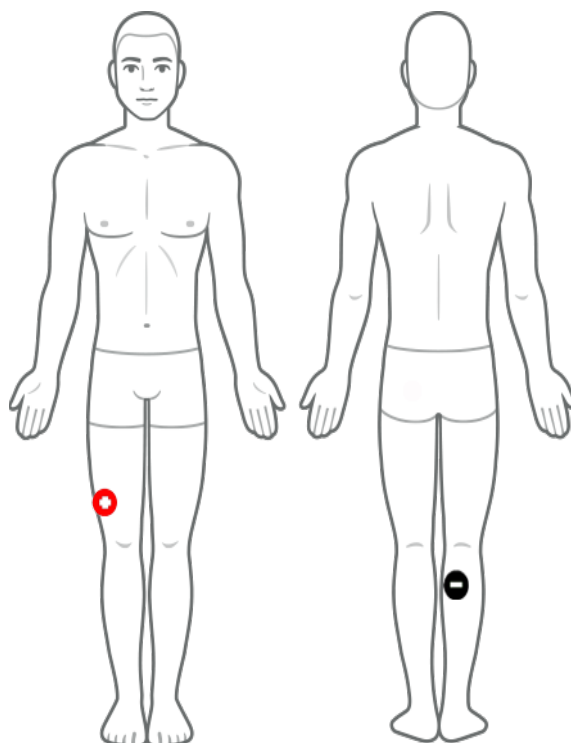
Surgical Care Team in Pre-Op:

1. Remove the Compression Wrap– then put into the EzyWrap carry bag that the patient brought with them - *it will go back on patient when the wound is bandaged. Substitute with a plastic bag if they did not bring a bag.*
2. Pull the 2- ea. attached FirstIce bags off of the Wrap and place them in the clear zip close bag, then place the bag in the PACU freezer. These FirstIce Packs will be reapplied in Recovery 2-3 hours after surgery.
3. Remove the Micro-Z II™ electrode pads, detach from the pigtail cable, and discard.
4. Turn off the Micro-Z II™ device by holding Left button down for 5-seconds, then put in carry bag (*it will also go back on when the surgical site is bandaged*)



Surgical Care Team in OR – After Incision is Closed

1. **Apply electrodes** to skin before dressing wound leaving 10 cm. margin from incision, approximately following electrode placement illustration - leaving connecting wires through dressing.
2. **Pad Placement(s)** - Make sure the skin on the treatment area is clean and free of oils. Leaving adequate margin from any incisions - **Apply the Micro-Z II™ bioelectronic device to targeted area** with black and red lead wires approximately positioned as in illustration.



Note: *Galvanic DC Microcurrent is a bactericide.*

Surgical Care Team - Dressing Application

3. Minimize dressing the amount of 4x4, ABD, Cotton roll, and elastic bandage dressing. The FirstIce Compression Cold Wrap will provide an even amount of compression onto the surgical site.
4. Attach drain to the Ace in such a way as to allow room for the First Ice Compression Cold Therapy Wrap application.
5. Use a fluid barrier as a precaution to protect the FirstIce Compression Cold Wrap from Fluid. (*Note: Wraps and FirstIce bags have been treated with a covalently bonded antimicrobial.*)

For a fluid barrier, keep the outer white plastic sheet from the patient sterile gown, or apply a blue plastic “Chuck’s Pad” onto the Knee. Retrieve (2) frozen FirstIce packs from the Pacu freezer and the Compression Wrap from the EzyWrap carry bag with patient’s name, place the FirstIce packs on the wrap per illustration and place over fluid barrier.

6. PACU will keep the additional (2) First Ice packs in First Ice freezer resealable bag (write Patient identification on bag label), place in PACU Freezer. When discharged from PACU send Freezer bag with FirstIce packs along with the patient when transferred to the Ortho Floor or if Outpatient to home. The patient is to receive a total of (2) FirstIce packs and a FirstIce Wrap. This will ensure a continuous cold application for the patient on the Ortho floor for in patient use or at Home.
7. The frozen FirstIce Packs should be placed onto the patient as quickly as possible once they are removed from the PACU freezer. This ensures (2+) hours of Cryotherapy after surgery in PACU on first application.

2-3 hours after surgery – Exchange the FirstIce packs. FirstIce packs will need to be changed before patient is discharged to the Ortho Floor or home if surgery is outpatient 23 hour stay.

Note: After initial inflammation and edema are controlled FirstIce packs will last 4+ hours (up to 5 hours), but post-surgical inflammation and edema can absorb the cold at up to (2) twice the regular rate.

8. The FirstIce Compression Cold Therapy Wraps may be used in conjunction with a CPM and physical therapy exercises may be performed while the patient wears their Compression Cold Therapy Wrap. Mobility: The patient can move about easily while applying cold compression therapy.
9. FirstIce packs should be kept in PPI FirstIce Freezer bag while stored in the Ortho Floor Freezer or at home. This allows good organization and retrieval of FirstIce packs. FirstIce Freezer bag should be labeled for patient identification, (Patient Name, Doctor Name, Room # and Bed).
10. Upon discharge, the patient takes all (4) FirstIce packs and their FirstIce Compression Cold Therapy Wrap on the Ezy Wrap tote bag. for home use.
11. Ezy Wrap Compression wraps can be hand washed and used for long-term application, plus with the antimicrobial treatment it won’t ever stink!

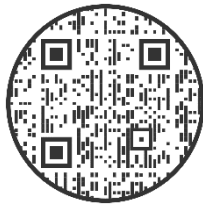
12. Turn device “On” - Press the left button for one (1) second. **Then set to 8-Hr mode**

b. Use **8-Hour Mode** – to activate the 8-hour session mode press the *Right* button and it will illuminate.

8-hour Mode is optimal for post-surgical recovery and nocturnal use - it will cycle 20 minutes **On** then 40 minutes **Off** for 8 hours.

c. The device cycles **Off** after 8 Hours

Or watch this video - [How to Use Micro-Z II Device \(1:52\)](#)



13. Set the device intensity - by pressing the “+” button on the right side of the device ten (10) times



14. To Turn device “Off” Manually - Press and hold the left button for five (5) seconds.

Note: Shortly after electrode pads are removed device will automatically turn Off.



Phase 3 – Rehab & Ongoing Recovery (For Patient & Care Team)

Using Intermittent BioE + CryoT During Rehab - To be done concurrently with Rehab instructions from your professional care team.

1. **Apply BioE + CryoT** to Ankle 1-3 times daily for 30-minutes to one hour, including after therapy session or exercises
 - a) Apply Micro-Z II™ device per instructions above
 - b) Place FirstIce bags from freezer inside Compression Ankle Wrap and put wrap on over electrode pads.
2. **While Sleeping** - Apply Micro-Z II™ before going to bed nightly on 8-Hour mode (P2) using pad placement above – set to “0” intensity (sub perceptible). Put a sock on over electrodes and secure Micro-Z II™ device with black strap (provided).
3. **Go to bed!**

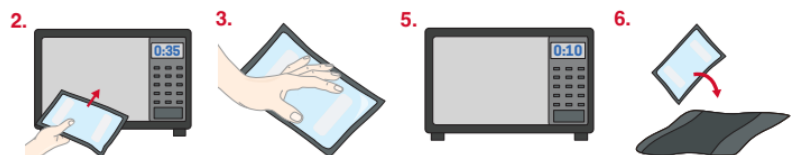
The biologic impact of bioelectronics on the healing process is most significant while sleeping.

Hot Therapy - for Warm-up in addition to Cold after therapy session.

Warm Up Before Rehab or Workout

1. Apply Micro-Z II™ device per instructions above for 30-minute Mode and increase intensity to tolerance
2. Warm FirstGel (NOT FirstIce) pack per instruction (right).
3. Place Compression Ankle Wrap over electrode pads and secure straps per above).

INSTRUCTIONS FOR USE - HOT THERAPY



1. Allow pack to reach room temperature
2. Heat in microwave at full power for 35 seconds
3. Remove from microwave and knead pack(s)
4. If pack is too hot, allow cooling
5. If pack is too cool, heat in increments of 10 seconds
6. Place anywhere on wrap

Note: Follow the instructions and regimen of your healthcare provider

R&ID# *286619*



Cool Down Following Rehab or Exercise

1. Apply Micro-Z II™ device per instructions above for 30-minute Mode adjusting to tolerance of intensity.
2. Place FirstIce packs inside Compression Ankle Wrap and put wrap on over electrode pads.
3. **Continue these routines until inflammation and pain are no longer present.**

After Finishing Your Rehab Program

1. Continue to use BioE-CryoT tools if you experience pain or inflammation from work outs or physical activity.
2. Many amateur and elite athletes use the same protocols to shorten the recovery intervals between their work outs. Especially beneficial for older athletes.
3. Use FirstIce, FirstGel, and Micro-Z II™ for other injuries, aches, and pains, too.



**Cost-effective advanced
bioelectronic and cryo therapeutics.**

Safe. Easy. Non-drug. No plugs!

