

# BIOWAVE PRO<sup>®</sup>

SMARTER PAIN BLOCKING TECHNOLOGY

## quick reference for Biowave Noninvasive Electrodes



There are 5 buttons that control the neurostimulator:

1. **Power ON/OFF button**
2. **PLUS (+) button to increase intensity or increase treatment time**
3. **MINUS (-) button to decrease intensity or decrease treatment time**
4. **TIME button to enter TIME mode in order to change treatment time**
5. **OK button to accept and set a new treatment time**

### DIRECTIONS FOR USE

1. Clean skin and place electrodes on body. See Electrode Placement Examples inside.
2. Attach leadwire cable to electrodes. Either blue leadwire connector can be attached to either electrode.
3. On leadwire cable, align red dot on metal connector so it is facing up. Gently slide metal connector into device so it clicks in place.
4. Turn on device. Start up screen should read 0.0%.
5. Start treatment by pressing the PLUS (+) button.
6. Continue to press the PLUS (+) button throughout the 30-minute treatment so that a steady strong but comfortable tingling and pressure sensation is felt under the electrode(s) covering the pain site(s).

See User's Manual for detailed instructions.

**Designed to Block Pain  
at the Source<sup>™</sup>**

# BioWave Noninvasive Electrodes

The BioWavePRO Neuromodulation Pain Therapy System can be used with the following noninvasive reusable electrodes manufactured by BioWave Corporation:

## B-Set Pain in Two Locations

Two 2.0" diameter round equal area electrodes for treating:

- Two locations of pain,
- One location of pain and the source or origin of the pain,
- Pain over a large area

Pain conditions treated with B-set Electrodes include:

- Bilateral or unilateral pain in the low back and buttocks
- Sacroiliac joint pain
- Neuropathic pain - radiculopathies, neuritis, CRPS
- Two locations or bilateral pain in the cervical or thoracic region of the back
- Pain centered directly over the spine
- Two locations or bilateral pain in extremities



## E-Set Pain in a Single Location - Extremities

One 1.375" diameter round electrode placed over the pain site, and one 2" x 4" rectangular dispersive electrode placed over a bony prominence - a comfortable location to receive stimulation.

Pain conditions treated with E-set Electrodes include:

- One location of pain on extremities including knees, ankles, feet, toes, neck, shoulders, elbows, wrists, hands and fingers



## U-Set Pain in a Single Location - Mid-torso

One 2.0" diameter round electrode placed over the pain site, and one 5" x 8" rectangular dispersive electrode placed horizontally across the lumbar area.

Pain conditions treated with U-set Electrodes include:

- One location of pain in the mid-torso part of the body including: ribs, obliques, hips, buttocks, groin, adductors, abductors, gluteus maximus, hamstrings and quadriceps

See opposite page for electrode placement examples.

## Warning:

- Electrodes must not touch each other
- Minimum Spacing Between Electrodes = 1 inch
- No Maximum Spacing Between Electrodes



## Electrode Placement Rationale

BioWavePRO electrode placements are different from conventional electrical stimulation. The mixing of the proprietary therapeutic signals occurs in a 3 inch diameter hemisphere (think of half of a grapefruit) beneath and surrounding each electrode, not along the surface of the skin between the electrodes. As a result, electrodes need to be placed directly over locations of pain.

Electrical signals can be focused to different parts of the body by pairing electrodes of different areas with one another.

### B-Set: 2 Equal Area Round Electrodes for 2 Locations of Pain or Radiculopathies

If two electrodes of equal area are used, then two distinct volumes of tissue can be treated simultaneously. If the two equal area electrodes are placed close together so that there is only 1.0 inch of space between them, the pair can be used to treat one larger volume of tissue. The B-Set is also used to treat pain from radiculopathies. One electrode is placed over the origin of the pain, for example, directly over the spine, but slightly to the side in the direction of the nerve root in which the pain signals are traveling. The second electrode is placed proximally over where the pain first presents itself, for example, on the buttock.

### E-Set and U-Set: 1 Small Round Electrode for a Single Location of Pain and 1 Larger Rectangular Dispersive Electrode for a Bony Prominence (Comfortable Location)

By pairing an electrode of smaller area with an electrode of larger area, the density of the therapeutic low frequency electric field is greater in the volume of tissue beneath the smaller area electrode. Therefore, the smaller round electrode needs to be placed directly over the primary painful area. The larger rectangular electrode is still active but acts as a dispersive electrode and must be placed over a bony prominence typically near the treatment site. Placement of the larger electrode over a bony prominence allows the patient to more comfortably increase the intensity of the signal to higher levels allowing a stronger electric field to encompass the pain site under the smaller round electrode.

## Contraindications

- DO NOT USE if you have an implanted pacemaker.
- DO NOT USE if you have epilepsy or are prone to seizure.
- DO NOT PLACE electrodes on top of the head, on the front or side of the neck or over the heart on the front of the chest.
- DO NOT PLACE electrodes over open wounds, broken or rashy skin.

**NOTE:** Electrodes MAY BE PLACED over locations on the body that have implanted metal hardware including total joint replacements, plates, rods, screws, anchors and clips. See User's Manual for more information.

## Body Position During Treatment

Position of the body during the treatment is important. Generally, the tissue being treated should be a little taut or in a stretch position. Generally, sitting in a supported position on an athletic training or physical therapy table, or in a comfortable chair is best for most treatment locations on the body.

### Low Back and Buttocks

The torso should be at approximately 90 degrees to the legs.

### Groin, Hips, Quadriceps, Hamstrings

Lying supine with the legs straight is best for groin and hip treatments. Sitting with the knee bent at 90 degrees is best for quadriceps treatments. Sitting with the torso at 90 degrees to the legs and the knees straight is best for hamstring treatments.

### Knees, Ankles and Feet

The knee should be bent at approximately 90 degrees. For posterior knee treatments, the knee should be kept straight. For ankles and feet sit with the foot pressing on a flat surface. If necessary, the foot may be elevated during treatment.

### Neck and Shoulders

For neck treatments, the head should be bent forward. Use medical tape over the back of the electrodes to help hold them in place during the treatment. For shoulder treatments, sit in a supported, neutral position.

### Elbows, Wrists, Hands and Fingers

The patient should rest their forearm in their lap or on a table and hold a ball or a rolled up towel to keep their hand and fingers in a comfortable position during the treatment.

## Motion During Treatment

The sensation from the treatment is a deep smooth tingling and pressure sensation as the muscle is held in tension in the volume of tissue being treated. Motion may cause a stronger or weaker sensation and will cause the location of the electrical field to shift slightly internally. Shifting of the electrical field is most prevalent when treating shoulders, elbows, wrists, hands, fingers and feet.

**The goal is to have the patient gently articulate the joint at the treatment location to shift the sensation caused by the electrical field so that it focuses directly onto and encompasses the primary location of pain. This is a fine tuning of the treatment that will provide the best treatment result.**

## Pain Conditions

BioWave is indicated to treat chronic, acute or postoperative pain including both nociceptive and neuropathic pain. Physicians and patients report significant efficacy from treating:

- Acute and chronic tendinopathies
- Ligamentous issues - joint sprains
- Myofascial pain - trigger points
- Adhesive Capsulitis
- Neuropathic pain - radiculopathies, neuritis, CRPS, phantom limb
- Traumatic acute pain - contusions
- Postoperative pain to facilitate rehabilitation
- Muscle spasm
- Pelvic floor pain - interstitial cystitis

## Treatment Regimen Protocols

### Intensity Settings

Patients should increase the intensity based on sensation (not an intensity number) to a level that is as strong as possible but still comfortable. The body adapts to the electrical field very quickly over the first 2 minutes and then less so over the remainder of the 30-minute treatment. As hypoesthesia is induced in the volume of tissue beneath each electrode and the sensation diminishes, patients should continue to increase the intensity level with individual presses of the (+) button.

Typical intensity ranges are as follows:

- Knees, ankles, feet: 60% - 90%
- Lumbar and thoracic back, shoulders: 40% - 60%
- Neck, elbow, wrist: 30% - 50%

Generally, patients should try to reach a minimum intensity level of 30%. Some patients may tolerate more, some less.

### Athletic Training

Three 30-minute treatments separated by 2-3 hours: immediately before practice or a game, immediately after practice or a game, and time permitting 2-3 hours later.

### Physical Therapy

Use BioWavePRO to facilitate motion and manage pain simultaneously. Use cohesive wrap or tape to help hold the electrodes in place. Start the BioWavePRO treatment at the beginning of the physical therapy regimen in place of heat for 8 minutes (BioWavePRO may be used in conjunction with heat). After 8 minutes, decrease the intensity by 5% to 10% to take the edge off of the sensation from the electrical field. While continuing the BioWavePRO treatment, *begin* active or passive range of motion, exercise or stretching therapy to significantly increase range of motion with less pain and facilitate therapy. The patient can move more resistance through a greater range of motion with less pain. Patients will have minimal post exercise soreness because of the long carryover effect from the treatment.

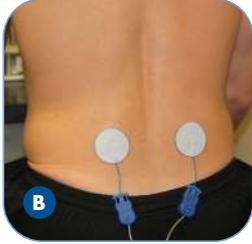
### Pain Management

One 30-minute treatment per day or on an as needed basis. May be used up to four times per day or as needed with each 30 minute treatment separated by approximately 2 hours.

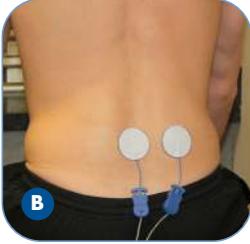
BioWavePRO is complimentary with heat or cold therapy. Use wrap or another barrier between the electrodes and the temperature stimulus.

# Electrode Placement Examples

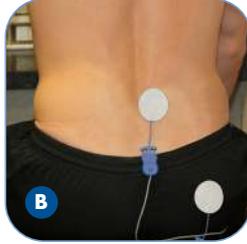
## Low Back



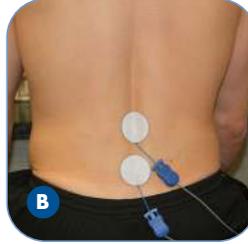
**B** Bilateral Low Back Pain



**B** Unilateral Low Back Pain Focused on one Side of Spine



**B** Radiculopathy (right side) Pads must be placed on skin



**B** Low Back Pain Focused Over the Spine



**B** Sacroiliac (SI) Joint Pain, Interstitial Cystitis

## Hips/Ribs/Obliques/Quadriceps/Hamstrings



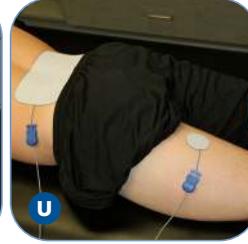
**U** Hip Pain in One Location



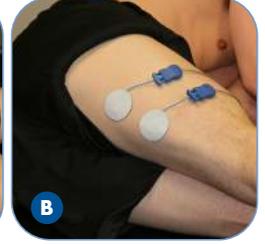
**U** Rib or Oblique Pain in One Location



**U** Quadriceps Pain in One Location



**U** Hamstring Pain in One Location



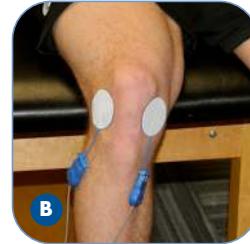
**B** Hamstring Pain Over Large Area

## Groin

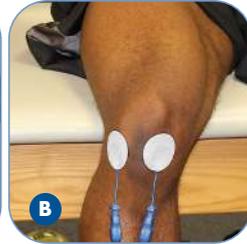


**U** Groin Pain in One Location

## Knees



**B** Pain in Two Locations or Through Entire Knee (e.g. OA, TKR)



**B** Pain Toward the Front of the Knee (e.g. ACL)



**E** Patellar Tendinitis

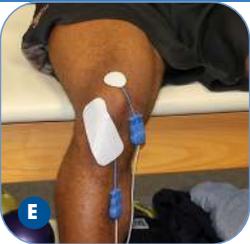


**E** Medial Knee Pain (e.g. MCL Sprain, Bursitis, OA)

## Knees



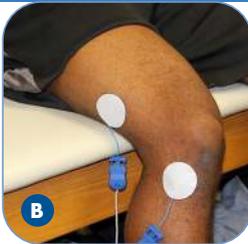
**E** Lateral Knee Pain (e.g. LCL Sprain, Bursitis, OA)



**E** Quadriceps Tendinitis



**E** Iliotibial (IT) Band Pain in One Location

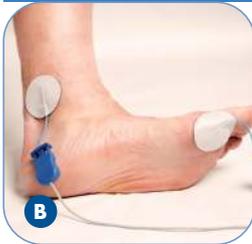


**B** Iliotibial (IT) Band Pain in Two Locations



**E** Posterior Knee Pain

## Ankles & Feet



**B** Pain from Diabetic Neuropathy (Tibial Nerve Stimulation)



**E** Lateral Low Ankle or Foot Pain in One Location



**E** Medial Low Ankle or Foot Pain in One Location



**B** Foot or Ankle Pain in Two Locations, High Ankle Sprain



**E** Plantar Fasciitis

**B** B-Set  
2 Locations  
of Pain

**E** E-Set  
1 Location  
of Pain

**U** U-Set  
1 Location  
of Pain

**WARNING: Electrodes must not touch each other. See back cover for electrode descriptions.**

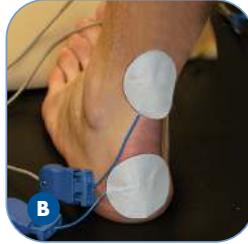
**Ankles & Feet**



Achilles Tendinitis



Achilles Tendinitis with Primary Pain at Insertion Point



Achilles Tendinitis with Pain in Two Locations



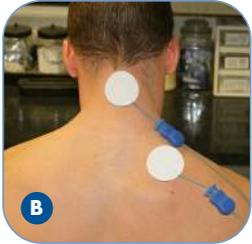
Neuroma Pain, Metatarsal Joint Pain. For Turf Toe Pain, Small Round Pad is Placed Over Toe

**Neck**

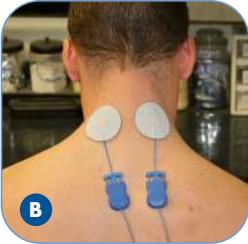


Cervical or Neck Pain in One Location

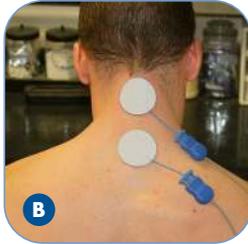
**Neck**



Cervical or Neck Pain in Two Locations or Radiculopathy

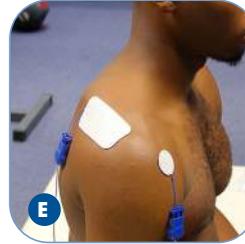


Bilateral Neck Pain (Equal Pain in Two Locations)

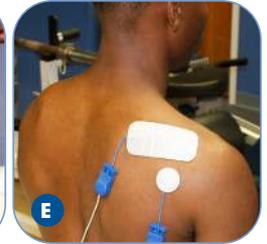


Neck Pain Over Several Cervical Discs

**Shoulders**



Anterior Shoulder Pain (e.g. Biceps Tendinitis)



Posterior Shoulder Pain (e.g. Infraspinatus Strain)

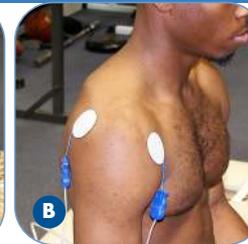
**Shoulders**



Pain at Edge of Shoulder (e.g. Rotator Cuff Tendinitis)



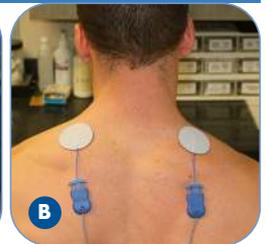
Pain at AC Joint or Inside the Shoulder (e.g. AC Sprain)



Shoulder Pain in Two Locations or Frozen Shoulder or OA

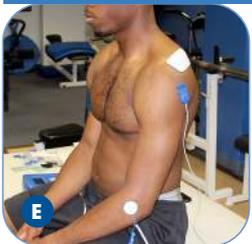


Trapezius Pain in One Location



Bilateral Trapezius Pain

**Elbows**



Lateral Elbow Pain (e.g. Lateral Epicondylitis)



Medial Elbow Pain (e.g. Medial Epicondylitis)



Posterior Elbow Pain (e.g. Triceps Tendinitis)

**Wrists, Hands & Fingers**



Posterior Wrist Pain (e.g. Sprains, Strains, Tendinosis)



Anterior Wrist Pain (e.g. Sprains, Strains, Tendinosis)

**Wrists, Hands & Fingers**



Lateral Wrist Pain (e.g. TFCC Sprain, Tendinosis)



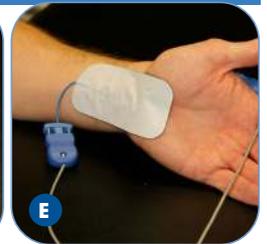
Finger Sprain at Base of Thumb (e.g. UCL Sprain)



Pain at Metacarpal Phalangeal or Interphalangeal Joint



Alternative Placement of Rectangular Electrode for Small Diameter Wrists



Alternative Placement of Rectangular Electrode for Small Diameter Wrists

**B** B-Set  
2 Locations of Pain

**E** E-Set  
1 Location of Pain

**U** U-Set  
1 Location of Pain

**WARNING: Electrodes must not touch each other. See back cover for electrode descriptions.**



# BIOWAVE PRO

## Need help?

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**BIOWAVE**



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MADE IN  
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Device must only be  
used with power  
supply provided.



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