



***MICRO-II***

**MICROCURRENT TENS**

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# PAIN

Have you ever wondered what pain really is?

The ancient Greeks called pain an emotion, the opposite of pleasure. This "definition" was the most widely accepted theory for pain until the 1600's. In the 17th century Rene Descartes noted that there are specific cells throughout our bodies which receive pain stimuli. These "receptors" convert the stimuli into electrical messages which travel along specific nerve pathways until they reach the brain where the message is recognized as pain.

In the 1800's physiologists recognized patterns in people who suffered from pain. Seemingly unrelated, and often non-painful events add up over a period of time until even a minor disturbance can trigger pain.

Today, pain is understood to be a complex event occurring throughout our nervous system. A delicate balance is maintained between nerves that carry pain messages. The brain also produces chemicals that help to block pain.

Pain is a symptom which most often causes us to seek out medical care. Acute pain is pain caused by a recent injury or illness. It helps to alert us when something is wrong. This type of pain usually lasts a few weeks or months, until the problem which first caused it is solved.

Chronic pain is pain that persists or recurs for a prolonged period of time. This is the type of pain which stems from ailments such as arthritis and other joint problems, certain back conditions, and many other problems concerning the nerves, muscles and bones.

Drugs are often effective in blocking acute pain. We certainly would not be able to go through surgery without them. But drugs also have side effects which may require us to limit such necessary activities as driving a car. For the chronic pain sufferer, drugs are often not effective enough. This is why, in this age of micro-electronics, electrical stimulation has been re-discovered and is being found to be an effective means of managing pain with the least side effects.

# TECHNICAL STIMULATION

Electrical stimulation for pain control is not new. Centuries ago, physicians used electric eels to relieve the pain of gout and headaches. In the 1800's dentists reported excellent results in pain control using crude machines. By the turn of the century, electrical devices were in widespread use to manage pain and cure everything from cancer to impotency. Because of the unrefined technology and claims of the manufacturers at that time, this form of therapy fell into disrepute by the medical profession.

In 1965 two researchers published a paper explaining a theory of how pain works. This theory also explained how electrical stimulation can interfere with the pain process. By 1967 electrical devices were surgically implanted to control severe low back pain. Shortly thereafter, surface electrical units were used to test the person's response as a means of screening suitable surgical candidates. It was soon discovered that these surface stimulators were also effective and they could be used for the relief of pain.

These devices, known as transcutaneous electrical nerve stimulators (TENS) have become widely accepted by doctors and dentists to control most forms of pain.

The MICROCURRENT utilizes the most advanced technology available. We hope it will help to manage your pain and improve the quality of your life.

## YOUR ROLE

Follow your doctor's instructions and those in this manual. If possible, keep a notebook for your doctor.

Become aware of your pain. Ask yourself when did it start? Is it constant? Is there anything you can do to lessen it or increase it? Does it feel deep under the skin or superficial? Are there any particular sensitive spots you can point to? Is it always in the same place or does it move around? Are you having any other symptoms which may be associated with it, such as fever, nausea and vomiting, dizziness, headaches, etc.? What kind of pain is it? What words describe it? And most of all, how does it change throughout the day and week?

## CAUTION

Federal law (U.S.A.) restricts this device to sale by, or on the order of a licensed practitioner. Keep out of reach of children.



## INDICATIONS

The MICROCURRENT is a non-invasive means of pain relief with broad applications for acute and chronic pain. It may be sufficient, in many cases as the only therapeutic method required. Effective results have been seen during and/or consequent to stimulation over effected body parts, adjacent skin areas and/or areas removed from those in pain.

The MICROCURRENT is used for the relief and management of chronic pain, and post surgical and post traumatic acute pain problems.

## ADVERSE EFFECTS

No clear documentation of adverse effects exists to date. No deaths have been reported following the use of MICROCURRENT. The most common area of concern in using MICROCURRENT devices is skin reactions at the electrodes sites. To minimize this problem, clean the skin prior to use. Cleaning the skin will also assure better electrode contact. If skin irritation occurs, consult your physician.

## CONTRAINDICATIONS

Absolute contraindications have not been established.

Any electrode placement that causes current to flow transcranially (through the head) is not allowed.

## PRECAUTIONS

For external use only. MICROCURRENT may affect the operation of cardiac pacemakers (particularly demand type pacemakers); not recommended for use by patients with known heart disease without physician evaluation. Do not stimulate directly over the eyes. Do not stimulate over the carotid sinus (upper side of neck).

The use of MICROCURRENT is not advised in cases where other types of analgesia would not normally be used, e.g., to retain the beneficial aspects of pain for diagnosis or in cases where patients might overuse painful areas. Do not allow children to operate MICROCURRENT devices without adult supervision. Do not operate potentially dangerous machinery or vehicles during period of stimulation.

Safety of stimulation has not been established during pregnancy or delivery. Exercise caution when stimulating facial areas. Use MICROCURRENT only for the purpose for which it is prescribed. Turn power off before applying or removing electrodes.

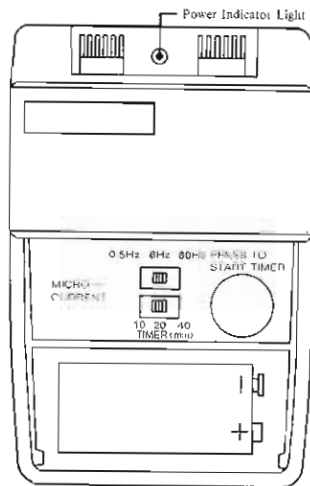
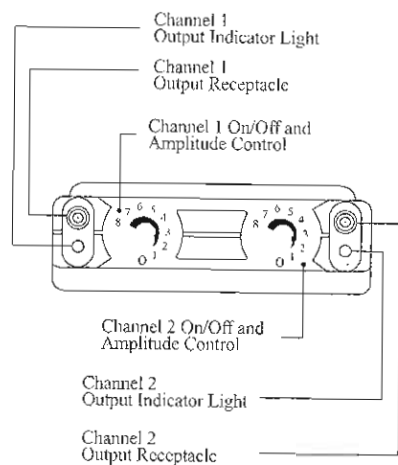
Effectiveness is dependent upon patient selection.

## TECHNICAL SPECIFICATIONS

Channels:	Dual
Power Source:	9V Battery
Output Waveform:	Modified Square DC Biphasic Pulses of 0.5Hz, 8Hz and 80Hz changing polarity at intervals of 1 seconds.
Output Voltage:	12 Volts.
Timer:	10, 20, 40 minutes
Frequency:	0.5, 8 and 80Hz

All Values have 10% ± tolerance

# CONTROLS AND INDICATORS



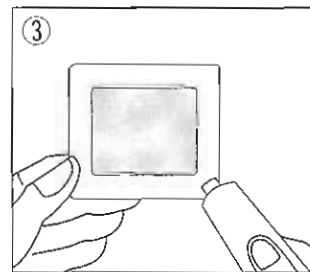
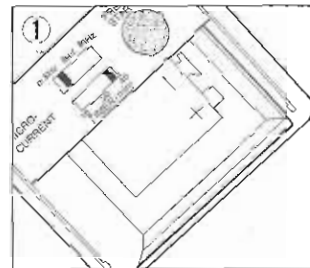
## HOW TO USE THE MICROCURRENT

**1. Check Battery.** Be sure you are using a fresh Alkaline or fully charged Nickel Cadmium (NiCad) battery. Insert battery into compartment following the diagram in the compartment.

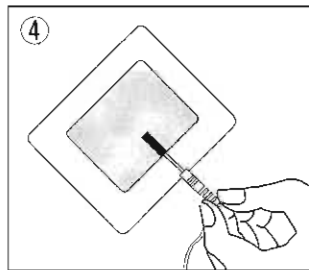
**2. Clean Skin.** It is important to clean the skin thoroughly and allow it to dry before applying electrodes. Use mild soap and water to prevent bacterial build up and skin irritation.

**3. Prepare Electrodes.** Peel off protective paper and wet electrodes slightly with ordinary tap water. Discard electrodes if the adhesive has split or has worn through to the silver or black carbon-rubber electrode.

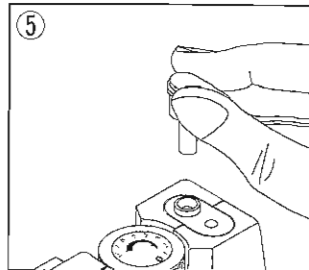
**Note :** If you are using reusable electrode, please disregard the procedure.



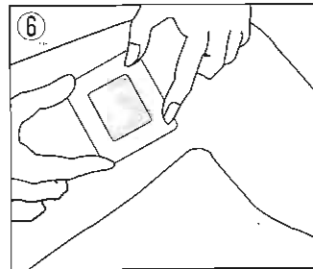
**4. Connect Electrodes.** Insert the pin connectors on one end of the cords into the electrodes and the other end into the electrode sockets on the side of their unit. Push the pins gently, but firmly into place for a good connection.



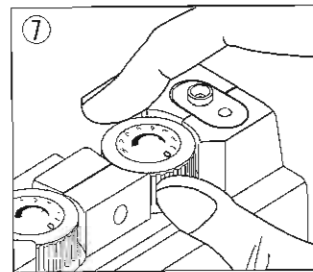
**5. Connecting Leads to the MICROCURRENT Unit.** Plug L shaped end of lead wire set into the channel output jack (1 and/or 2), pushing plug in as far as it will go.



**6. Place Electrodes On Skin.** You must always use both electrodes to complete the circuit. Apply each electrode to the exact site indicated by your physician, dentist, or therapist. Press the electrode firmly to assure good contact. If necessary, tape electrodes securely into place with a paper surgical tape (available at your local pharmacy).



**7. Adjust The Controls.** Your clinician may instruct you how to set the controls. If no specific settings were given, the following guidelines should be followed:

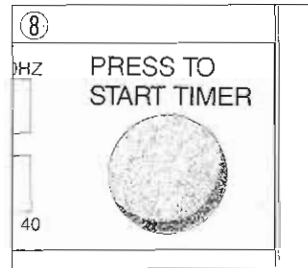


**A. Minutes:** The amount of time needed to effectively manage your pain depends on the cause and severity of your pain, your overall health, and any ongoing conditions which may make your pain worse. Most people with a single pain area will usually only require 10 minutes, 1 to 3 times per day, or less. Set the timer for 10 minutes. Use additional or less times as needed, or as instructed by your clinician.

**B. Frequency:** Usually 0.5 Hz provides the best spain relief. If insufficient relief is obtained, try the 80 Hz frequency setting or discuss it with your clinician.

**C. Adjust Output.** Turn Amplitude control knob for Channel 1 or 2 clockwise. The indicator will light up while the unit is in operation. Slowly turn the channel control in a clockwise direction until you reach the setting recommended by your medical professional. Repeat for the other channel, if both channels are to be used.

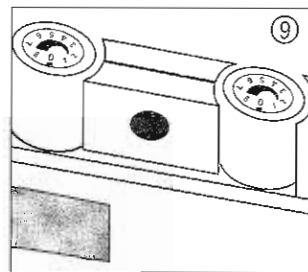
**8. Beign Timing Cycle.** Press START TIMER button. The yellow CYCLE ON light will blink for the preselected amount of time.



**9. End Timing Cycle.** At the end of the timing cycle, the yellow CYCLE ON light will go off.

**10. Power off.** Turn unit off when not in use, and the green light will go off.

**11. Remove Electrodes.** Carefully peel electrodes off skin and replace protective paper. Repeat the above as directed, or if your clinician so instructs, repeat as often as needed.



## SKIN CARE

1. Apply electrodes on clean, dry and unbroken skin only.
2. Before applying electrodes and after removing them — always wash the site with mild soap and water. Rinse and dry thoroughly.
3. Excess body hair in the electrode placement site should be clipped and not shaved.
4. If clinician recommends skin prep usage — follow instructions as directed.
5. When applying electrode do not stretch skin or electrodes.
6. When removing electrode — always peel back in direction of hair growth, or moisten edges or underside of electrode.
7. Applying unflavored Milk of Magnesia over electrode placement sites after removing electrodes helps maintain the natural pH of the skin and reduces irritation problems.
8. If perspiration occurs in the area of the electrodes causing the electrodes to slide out of position, wipe area with unscented antiperspiration pads and allow to dry before reapplying electrodes.

**IMPORTANT:** If skin irritation arises and persists from the use of electrical stimulations and certain type of electrodes, discontinue usage immediately and consult your clinician.

## SOME FREQUENTLY ASKED QUESTIONS

### **WILL ONE APPLICATION OF THE MICROCURRENT BE ENOUGH?**

Usually not. Electrical stimulation for the relief of chronic pain requires repeated use.

### **WILL IT HURT?**

Not at all. Sometimes you will feel a slight tingling.

### **MY PAIN HAS NOT BEEN RELIEVED BY OTHER MEANS OF THERAPY. CAN THE MICROCURRENT HELP ME?**

Possibly. You may need an initial series of daily therapy, after which you can probably be maintained on a less frequent program.

### **DOES THIS INSTRUMENT WORK FOR EVERYONE?**

No, but most doctors report that it helps a high percentage of their patients.

### **WHEN WILL I FIRST FEEL THE RESULTS?**

Usually after the first session, but sometimes it takes three or four sessions to begin to feel better.

### **WHAT ARE THE POSSIBLE HARMFUL EFFECTS**

In many thousands of sessions, none have been found. It should, however be avoided by pregnant women and people with pacemakers or with a bad heart condition.

# TROUBLE SHOOTING

IF NONE OF THESE MEASURES WILL CORRECT THE PROBLEM, THE UNIT SHOULD BE SENT IN TO BE SERVICED.

Power indicator blinking but unit does not function properly

“ON” and yellow light are dim  
None of the red light up

Check control settings. Are they set to values prescribed by your clinician?

Are electrodes in proper position?

Check lead wires. Make sure all connections are firmly seated.

Replace battery with new one.