

INTRODUCTION TO T.E.N.S.

You have just been prescribed a medical T.E.N.S. device to assist you in your management of pain. This T.E.N.S. system should be used only under the supervision of your physician or a qualified medical practitioner to whom you are referred by your physician. Use it only for the condition for which it is prescribed.

WHY DO WE HAVE PAIN?

Pain is the body's warning system. It alerts us to injury or illness. When the body is functioning normally, pain serves as a vital warning sign when something is not right. Without pain, a person would not know when to get away from danger or to seek medical help.

Pain signals, in the form of electrical impulses, travel through the body's nervous system from the site of injury or ailment to the brain. Then, at the brain, these impulses are interpreted as pain.

WHAT IS T.E.N.S.?

T.E.N.S. stands for Transcutaneous Electrical Nerve Stimulation. Pain, whether chronic (long-term) or acute (short-term, often from surgery or trauma), can be relieved through a variety of methods including drugs, topical ointments, surgery, and electrical stimulation. T.E.N.S. devices deliver mild electrical pulses through the skin to stimulate the cutaneous (surface) and afferent (deep) nerves to help control pain. Unlike drugs and topical ointments, T.E.N.S. does not have any known side effects.

HOW DOES T.E.N.S. CONTROL PAIN?

There are two major theories as to how electrical stimulation relieves pain. According to the "**gate control theory**," pain and non-pain impulses are sent to the brain from the local nervous system. These impulses travel through the cutaneous nerves to the deeper afferent nerves and then to the spinal cord and brain. Along the path are many areas referred to as "gates." These gates control which impulses are allowed to continue to the brain. The gates prevent the brain from receiving too much information too quickly. Since the same nerve cannot carry a pain impulse and a non-pain impulse simultaneously, the stronger, non-pain impulse (from the T.E.N.S. device) "controls the gate," and basically overrides the pain signal, resulting in less pain perception.

According to the second theory, T.E.N.S. stimulation encourages one's body to produce and release greater amounts of a chemical called **endorphin**. Endorphins are our body's own natural painkillers that are released as a natural function to overcome pain. Endorphins interact with pain receptors, blocking the perception of pain, much as the pharmaceutical drugs or narcotics such as morphine does, but without the side effects associated with these types of drugs.

T.E.N.S. has no curative value; however, for many people who are suffering from pain due to an injury or ailment, the use of T.E.N.S. can help manage their pain considerably. Pain sufferers who have not been able to find relief from drugs or who may have experienced uncomfortable side effects from drugs, may find T.E.N.S. to be a great alternative in controlling their pain. In today's fast-paced lifestyle, many people just do not have the time to be set back due to pain. T.E.N.S. devices can help them control and manage their pain, so that they may still be able to perform their daily functions at home or at work, return to work sooner, or perhaps enjoy more activities than they have before.

CONTROLS AND THEIR FUNCTIONS

Please read the following information before proceeding to operate your T.E.N.S. device.

AMPLITUDE CONTROLS

These controls located at the top of the unit regulate the strength, or intensity, of the stimulation and are the ON/OFF controls. The ON indicator light will stay lit as long as the unit is working, and mimics the output of the electrical pulses.

RATE and WIDTH CONTROLS

Open the front control panel to expose the pulse RATE and pulse WIDTH controls. These controls determine how fast and how long the electrical impulses are applied through the skin. Please follow any instructions given to you by your physician or therapist for proper control settings.

PULSE RATE:

The pulse rate control adjusts the number of pulses per second of each wave. Pulse rate is also referred to as frequency. The device offers adjustable rates, or frequencies (Hz), of 2 - 150 pulses per second. This simply means how many pulses are coming out per second. Lower pulse frequencies produce a "beating" sensation, whereas higher pulse frequencies produce a smoother, constant sensation.

PULSE WIDTH:

The pulse width control adjusts the time length of each pulse within the wave. Pulse width is measured in micro (μ) seconds. The device offers adjustable pulse widths of 40 - 260 μ seconds. Wider pulse widths, greater than 100 μ seconds, usually create a sensation of "deeper" stimulation.

MODE SELECTOR CONTROL

Located below the pulse rate and width dials is the Mode Selector switch. The TENS device offers three different mode settings for a variety of stimulation sensations: BURST, NORMAL, and MODULATION.

BURST:

The Burst mode provides a “burst” of seven pulses per second at a fixed rate of 100 Hz. There are two bursts that are delivered per second. Width and amplitude are fully adjustable in this mode.

- Use the burst mode at low intensity settings to treat acute, superficial pain. Use at higher intensity settings—resulting in strong muscle contractions—to treat chronic, deep pain. This type of treatment is usually given in sessions lasting 15-30 minutes. You will feel a strong rhythmic pumping action of the affected muscles.

NORMAL:

The Normal mode produces a continuous train of impulses. The stimulation parameters are not automatically interrupted nor varied in any way. In this mode, the pulse rate, width, and amplitude are fully adjustable. The normal mode is quite versatile because it may be applied with a variety of rate and width settings.

High Rate Normal Mode Settings (most common):

- RATE: 60 -150 Hz
- WIDTH: 70 - 100 μ sec.
- wear 30 minutes or longer
- for most general applications

Low Rate/High Width Normal Mode Settings (acupuncture-like):

- RATE: 2 Hz
- WIDTH: 225 μ sec.
- treat 15 - 30 minutes
- greater endorphin release
- can help with pain from muscle spasms

Brief Intense Normal Mode Settings (analgesic effect):

- RATE: 150 Hz
- WIDTH: 260 μ sec.
- restrict to less than 20 minutes, depending on degree of muscle stimulation and discomfort.
- brings short-term relief for acute pain

MODULATION MODE:

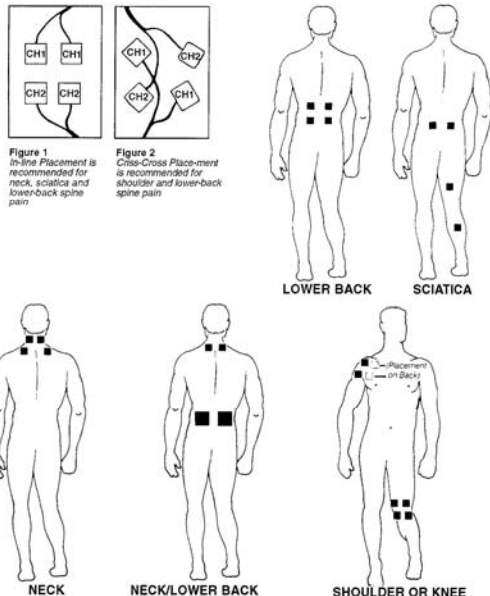
In the modulation mode, the pulse width or rate (depending on your model) is automatically varied in a cycle to produce a pleasant, massage-like sensation. It is believed that nerves can become accustomed to, or “accommodated” to the same electrical stimulus after a period of time and thus would require increasing the intensity to further “block” the pain. The Modulation mode was produced to offer a variety of different electrical stimuli, thus preventing nerve accommodation so that less intensity is required for long and effective treatment.

Using high intensity and/or wide pulse widths with this mode is recommended for 30 minutes to one hour. The analgesic effect may last an hour or more after the unit is turned off.

- If narrow pulse widths under 100 μ sec. and/or low intensities are used, the treatment may be prolonged.
- Intensity and pulse width may be set high for shorter treatment time. Conversely, the pulse width may be set narrow and the stimulation continued all day.

ELECTRODE PLACEMENT GUIDELINES

This chart shows typical electrode placement positions for treatment of typical pain conditions. This is only a guideline. If you are not sure where to place your electrodes or what settings to use, please consult your physician or therapist.



If you need further assistance or need to order more supplies, please contact your authorized medical equipment distributor: