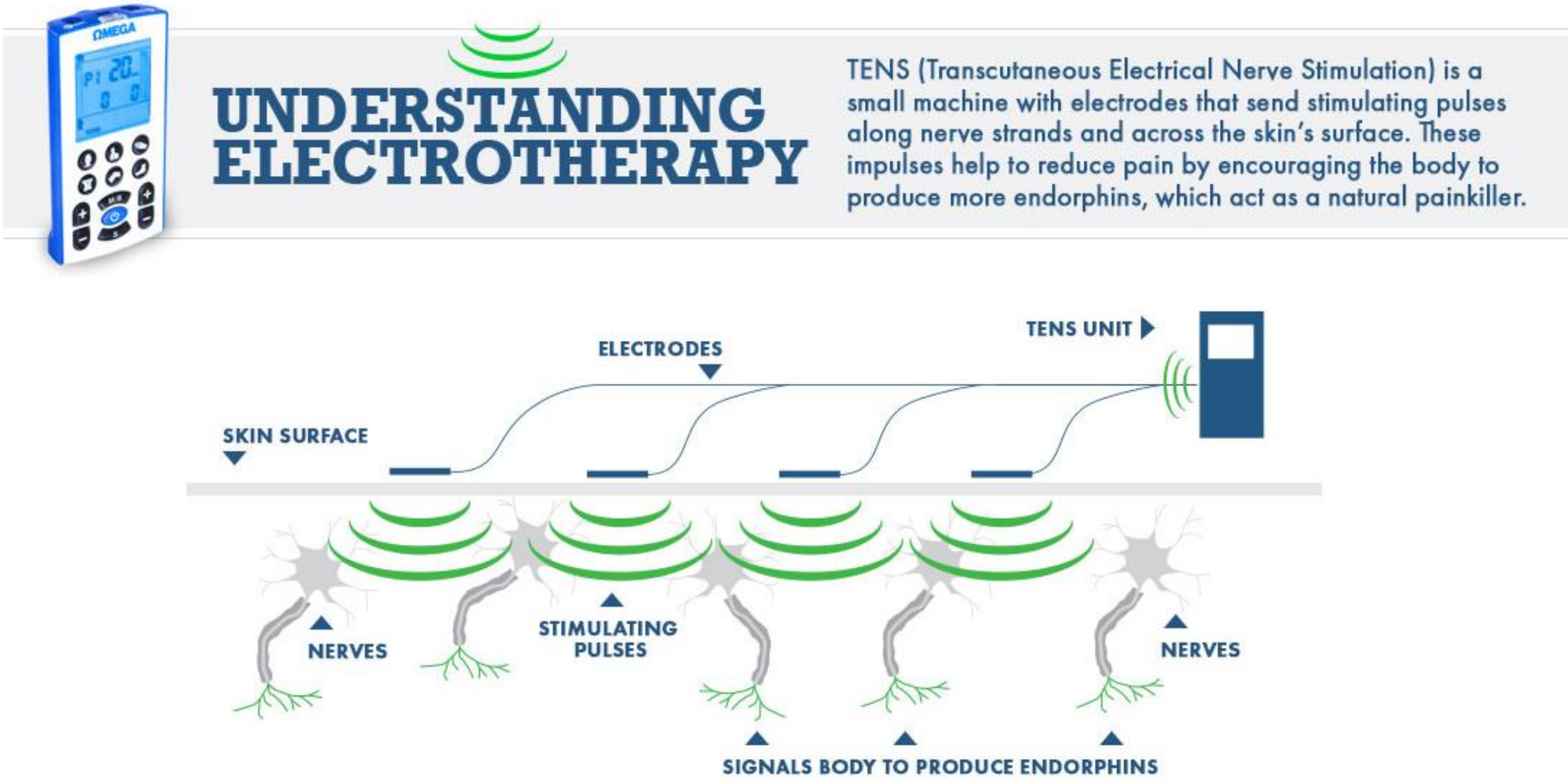
How Does A Tens Unit Work?



How Does a TENS Unit Work? TENS units are a machine with different adjustable settings to control amplitude (intensity) of stimulation by controlling the voltage. Current, and pulse width (duration) of each pulse. Electrodes are placed at specific sites on a user's body depending on the physical location of their pain. The machine sends electrical current that travels through electrodes and into the skin stimulating specific nerve pathways to produce a tingling or massaging sensation that reduces the perception of pain. When a Tens Unit is used as directed a T.E.N.S. is a safe, noninvasive, drug-free method of pain management. A TENS unit is used to offer a better quality of life for people with pain.

What does a TENS unit do to relieve, decrease or eliminate pain? There are two theories. One of these theories is called The Gate Control Theory and is the most advanced explanation. The gate-control theory suggests that there's a neural mechanism in spinal cord that acts as a kind of gate, shutting down or opening up the flow of signals from the periphery to the brain. Whether the gate is open, closed or partially closed depends on what sort of signal it receives from the brain to change the perception of pain in the user's body. These frequencies interfere with the transmission of pain messages at the so spinal cord level, and help block their transmission to the brain.

Another theory is called The Endorphin Release, which suggests that electrical impulses stimulate the production of endorphins and enkaphalins in the body. These natural morphine-like substances block pain messages from reaching the brain, in a similar fashion to conventional drug therapy, but without the danger of dependence of other side effects.

TENS units are used by hundreds of thousands of people all over the world for the relief of physical pain. This is why hundreds of doctors, nurses, and patient technicians often recommend that their patients use s T.E.N.S. unit for minor and major pain relief. The most trusted source for medical information for doctors and health professionals is the Merck manual. The Merck manual suggests Tens Therapy for pain Relief. ***(to read more about this click here)***

Some common uses for TENS treatment are: acute and chronic pain, post op incisions and post surgical pain, labor, and delivery, migraine and tension headaches, acute pain from sports and other injuries, arthritis, chronic pain from tendentious and bursitis, cancer pain, and wound healing.

1. ***General Information about Tens Therapy***
2. ***Non-Drug Pain Treatment***
3. ***About Pain***

1. **General Information about Tens Therapy**

TREATMENT AT YOUR FINGERTIPS

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It was Melzack and Wall's research in the 1960's that led to their coined named in 1965 called the "Gate Control Theory. When they first published their research in 1965, it was realized that electricity played an important part in reducing pain. The first practical test of the Gate Control Theory was the development of a transcutaneous electrical nerve stimulation unit called a TENS (2) Dr. Chris Wells has written extensively on the subject of pain and a TENS UNIT. He states, "A TENS ….. " is low intensity ….it doesn't't't hurt and produces just a tingling sensation and a high frequency stimulation and is about 100 times per second" He goes on to say, that if touch fibers could be stimulated, the resulting messages passing into the spinal cord would "jam the pain messages. Input of this type actually seemed to close the pain gate." '…..a current is then generated from a battery- powered unit. It produces tingling sensations on the skin beneath the pads, which sometimes spread between the pads. For the best result, the tingling must mix in with the pain and produce a pleasant substitute for it. Pain clinics often instruct patients in the use of these machines ….your doctor's technician will be glad to demonstrate how you should use your unit"

Today's medicine continues to draw on ancient and future discoveries. Advanced research will often draw from the old technology and combine it with new advances. For example, a TENS, which uses …"electrical nerve stimulation is a rediscovery of long- known principles."

"The ancient Greeks used a similar method with electric eels to relieve pain of headaches and gout. Documents prepared by physicians of the period show that significant care was taken to select the appropriate type of fish for the pain" (3).

Hand-held generated electricity became so popular in the 19th century that it was used to relieve pain and cure disease. Queen Victoria was very innovative for her time. When she became pregnant with her first child, she stated that she did not want to have pain during childbirth. She was the pioneer of anesthesia and used it during her labor. (4) We can thank her for opening the door of acceptance that enduring any type of pain is not only physiologically harmful to us, but emotionally as well.

"Almost a century later the gate control theory demonstrated that there was a physiological explanation for the use of electricity, and if applied correctly for the right type of condition it might be an appropriate and harmless treatment" (5).

2. Non-Drug Pain Treatment

TYPICALY APPLICATION POINTS FOR ELECTRODES WHEN USING A TENS UNIT(TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION UNIT), WHICH BRINGS A GENTLE ELECTRIC CURRENT WHEN APPLIED TO THE SKINS SURFACE AND RELIEVES PAIN.

According to “The Merck Manual of Medical Information,” latest edition, the world’s most widely used medical reference book, they write as follows about non-drug pain treatment:

“The more common approach to treating pain is to use drugs, but there are many other treatments that can be used to help relieve pain. Often, treating the underlying cause eliminates or minimizes the pain. For example: Setting a broken bone in a cast or giving antibiotics for an infected joint helps reduce pain.”

“Applying cold or hot compresses, often help.”

“Some other treatments include ultrasound, which provides deep heating and may relieve the pain of torn or damaged muscles and inflamed ligaments. Some people find pain relief by using a (TENS), transcutaneous electrical nerve stimulation unit, which brings a gentle electric current when applied to the skins surface, relieves pain.”

“In this technique, large surface electrodes are taped to the skin to stimulate the underlying nerves that supply the painful area. Under the patient’s control, the current is gradually increased until a tingling is felt. The stimulus is provided by a small hand-held box, and the patient is in complete control after an (initial training) period. This technique is widely used in the United States and Europe for localized pains, for postoperative pain, and during labor.”

3. About Pain

QUOTES
“Your chronic pain is all in your mind.”
(Reality: Chronic pain is in the brain—not in the mind.)
Dharma Singh, Khalsa, M.D.

If suffering alone, all the world would be wise. To suffering must be added love. ANNE MORROW LINDBERGH

WHAT IS PAIN?
According to “Dorland’s Illustrated Medical Dictionary” 30th edition it states that PAIN is a more or less localized sensation of discomfort, distress, or agony, resulting from the stimulation of specialized nerve endings. I t serves as a protective mechanism insofar as it induces the sufferer to remove or withdraw from the source. BASELINE PAIN is the average intensity of pain experienced for 12 or more hours in a 24-hour period.

THE UNIVERSAL EXPERIENCE
Do you suffer from constant or intermittent pain? Have you been to doctor after doctor, only to receive prescriptive temporary narcotic pain relievers? Or made to believe that “you’re just getting old”, “it’s all in your head,” or it’s stress”?

- Pain is a universal experience.
- Pain is the body’s alarm signal.
- Pain may be caused by many any number of factors (reasons?)
- Pain signals tell us that there is problem requiring attention.
- Relaxation techniques are suggested along with using a TENS as well as a healthy diet and exercise.
- Pain is often short-lived with not significant impact.
- In most cases it can be temporarily helped with over-the-counter pain relievers.
- When constant pain persists medical attention is often sought.
- Pain is the second most common reason for visiting a doctor after respiratory infections.
- The majority of patients say their pain returns even after therapeutic treatments.

THREE TYPES OF PAIN

(1) Episodic pain recurs periodically and can disrupt daily routines.
(2) Pathophysiological pain episodes are difficult to relieve and often misunderstood.
(3) Acute pain can be unremitting, extending for long periods of time, often years, or permanently

SOME OF THE EFFECTS OF PAIN

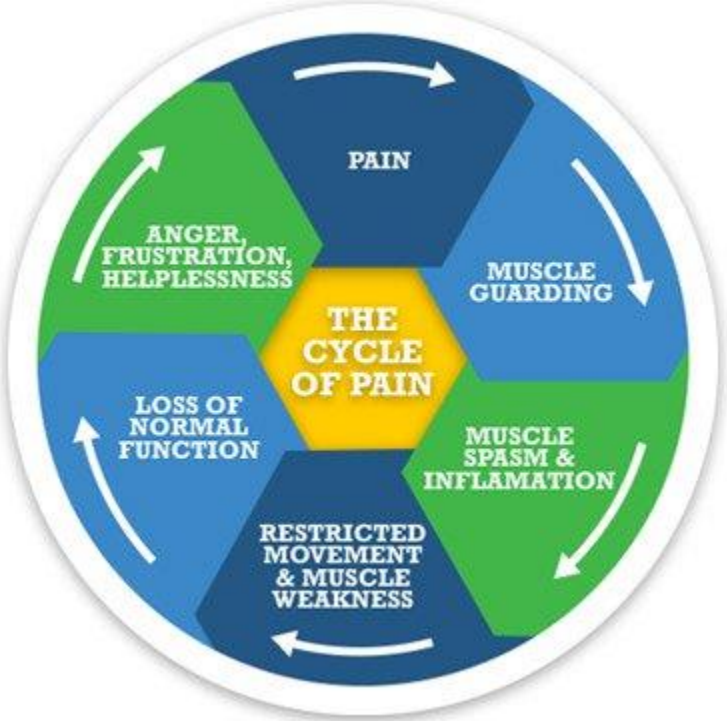
- Concentration becomes more difficult
- Irritability can occur
- Impatience
- Negative attitude
- Social life decreases
- Decrease in daily activities
- Decrease in self-confidence
- Stress, anxiety, and coping level diminishes
- Physical movement decreases-becomes more difficult
- Exercising decreases or stops
- Ability to work becomes more difficult
- Ability to work as effectively diminishes
- Increasing use of pain medications to help relieve pain
- Dependence on doctors increases
- Doctors' visits increase

The fact that you feel pain, no matter what the reason is, means your pain is "real", for "real." Pain takes a toll on your body and can often lead to other physical ailments. Overall, it causes continued physical and emotional stress on your body.

USING TENS TO CONTROL PAIN

You don't have to feel powerless anymore. Use the latest in pain control technology. Our direct discount pricing makes it affordable for you to purchase our TENS which will relieve pain by bringing more blood flow to your painful area.
TENSUNITS.com also has other pain relief units called an Interferential Unit and a Muscle Stimulator (EMS), that is used for more specific problems associated with pain. Your doctor or therapist will recommend which one is best for you.

THE CYCLE OF PAIN



Inside our body is a very complex system of electrical signals that travel through a very complicated pathway system of nerves. The exact way that this system works still to this day is not completely understood. The basis of our knowledge originates from two different areas of our bodies, the Brain and the Nerve receptors. These two areas are well understood by the medical community. The way that these parts of the body communicate are not completely understood. TENS are designed to interfere with the communication of these two areas of the body to help relive the cycle of pain.For example: When a cell phone is used to dial a number it immediately transmits (sends) an airwave path to the dialed number. The reception is either clear, weak, or non-working on the air pathways. The cycle of pain can be interrupted by endorphins, distraction and electrical impulses (TENS).

The communication of pain to the brain from nerve endings or "cycle of Pain" works through a complex system. First, the area of pain travels through our body to the spinal cord. It then quickly continues to the spine until it reaches the subconscious part of our brain. Finally, the message is sent to the conscious part of our brain. This is where our brain pick-ups the warning and evaluates the situation and let us know if something is going wrong by giving pain.

When a doctor performs a specific minor operation he/she will numb the area. If it’s major operation he/she will use anesthesia. For example: An abdominal operation would entail making an incision and anesthetizing us so there will no feeling of pain. Our nerves around that area are now not capable of sending brain signals. The pathway to our brain is not able to send a message from that

injured location. Our brain can only receive pain messages from individual routes in our body. This automatic process has been learned by observing newborns. When they feel pain they will withdraw into a fetal position and cry or scream. He/s knows that it has been hurt, but is not yet able to distinguish where the pain is coming from. By the time an infant is one year old its brain will have developed the sensory to tell where specific pain is coming from. This is a built-in protective circuit.

It was not until the 1960's that pain research officially began. That is when more and more studies began to prove "The Cycle of Pain Theory".

This same research discovered that pain can manifest itself in different ways. There are scenarios where people will experience severe pain in their left arm and their immediate reaction is to assume that they were having a heart attack. The person goes to the closest hospital to be diagnosed by a doctor. Since the nerve pathways are located in the same pathway as for heart the person is confused and assumes that they are having a heart attack. As mentioned earlier, infants brains learn different pain paths. But since heart attacks, gallbladder problems, and certain other adult illnesses usually occur later in life, our body has not yet been programmed to be able to send an accurate alert pathway message to the brain, telling us where the exact location is.

Researchers now know that once this pathway is open and our brain continues to receive painful messages, other factors come into play. Our whole pain transmission process becomes super sensitive and the pain continues long after the initial trigger cause. It no longer needs another stimulus. We might describe this as saying our brain has been programmed to have continuous lasting chronic pain.

Research has also discovered that after the initial body injury has supposedly been healed, ten years later the patient can still feel the pain from that same area. This is why time after time so many people go back to their doctor for another pain evaluation in the same area. But when the doctor reexamines the area he finds nothing wrong. This can lead to a lack of trust and confidence between doctor and patient.

Another major pain discovery has been made about pain pathways. Our brain not only receives pain messages, but it can also send messages through this same pathway to our spinal cord and subconscious part of our brain. The reason for this response is so the brain can order the release of chemicals that will actually reduce or prevent pain. This chemical is called endorphins. They are our body's natural painkillers, and they are one of the most or the most built-in reserve unit powerhouse that we have. We each produce varying amounts of endorphins, depending on the circumstance and the degree of pain we have.

When people experience and accident and are injured there are endorphins that are "injected" into the blood stream. These endorphins are natural pain killers and will temporarily stop the receptors for pain. Endorphins make us feel good in order to buy (give) us time to get help or to find help. TENS devices have been shown to release endorphins through the electrical stimulation.

People with long-term chronic pain can become depressed and may not cope or function well. This may be because their station gates are wide open, allowing more pain messages through to their brain.

All humans have pain tolerance and pain threshold. They can vary in each of us, depending on different circumstances and the way someone feels at the time. Experiments have shown that people can tolerate more pain if people are watching or are around during an injury. There are many different factors involved in peoples threshold to pain. For example: If a person pinches a finger in a drawer, they may go over their threshold-but the pain may pass shortly. On the other hand, if someone breaks a finger they will surpass their pain tolerance and quickly go to the emergency room.

There is fast pain and a slow pain. Using the above example-the pinched finger-displays fast pain to get the bodies attention so that the brain will quickly tell someone to retract their finger from the drawer. This is known as a post warning,. A normal reaction would be to rub the injured finger and/or put heat on it to make it feel better This personal attention will somewhat or totally close off pain gates so that the brain receives less pain.

Slow pain is more complex than fast pain. It references in past experiences schema (background) resources to tell people how to react to more serious pain injuries (situations) such as similar situations. Slow pain tolerance level varies depending on past experiences and how the person feels at the time of injury. They also may react differently to slow pain verses fast pain. Instead of quickly pulling away (retracting from the situation) the muscles become contracted or freeze, allowing time for the body to compose itself and to release endorphins to the area. Both types of pain react positively to comforting, soothing, and rubbing, etc.

Both types of pain receive messages to the brain by pain receptors. These pain receptors are tiny nerve endings throughout the body that continuously scout (observe) unusual physical feelings. There are two types of pain receptors. One lies just beneath our skin. These tiny nerve endings register fast and slow pain. The second one also carries pain receptor messages to the brain but they are located in peoples joints and all of the large internal organs. For example, touching hot and cold or sharp and blunt objects to the skin. Some receptors constantly give back general information while others report damage or injury. Different pain receptors send different sensations to the brain so it can decipher which type of pain to report.

Researchers have discovered that each type of pain receptor has its own pathway that carries messages to the brain. Painkillers affect each pain receptor differently. Depending on the strength, they block slow pain receptor messages of chronic pain, but can have little effect on fast-pain receptor messages to the brain. Painkillers work on pain tolerance, but have little or no effect on pain threshold.

According to Dr. Chris Wells and Mervyn Jones, “This technique has been fine-tuned by medical science, and doctors can achieve the same effect [without using pain medication], by electrical nerve stimulation, known as TENS [which stands for transcutaneous electrical nerve stimulation].

POSSIBLE CHRONIC-PAIN SIDE EFFECTS:

immobilization . bed rest . energy loss . less movement . weight gain . bed rest . insomnia . tissue deterioration . muscle tightness . spasms . unemployment . missed work . lack of job concentration . loss of income . worry . lack of self-confidence . decrease in social life . depression . lack of sexual function & desire . family difficulties . role changes . dependence . withdrawal

The longer people have chronic pain, the more difficult it is to get rid of. That is why so many people continue to seek stronger and different pain medications. Doctor and pharmacists call this the “analgesic ladder”. Aspirin, codeine, or morphine related drugs are progressively used so they may find pain relief. If you have pain at this moment and are either overusing non-prescriptive or prescriptive drugs, over time all or some of these medications most likely will have negative side effects or will create a tolerance and fight pain less and less.

Along with using a TENS unit you may find that exercise is one of the most powerful pain fighters there is. By exercising, endorphins are released to help desensitize pain feelings. (please consult your doctor before exercising)

FOODS THAT MAY HELP REHABILITATION AND LESSEN PAIN
(please consult with your doctor concerning your diet)

Reducing total fat intake and eating more EFA’s (essential fatty acids) may help a persons health to produce more endorphins. EFA’s can be found in fish, flaxseed oil, and in certain cooking oils. Omega 9 oils have also shown to have excellent health benefits. These can be found in avocados, olive oil, almonds, sesame oil.

Staying away from saturated fats, meats, cheese, eggs, pastries, have been shown to help with peoples overall health. A key to overall health is to take a daily natural vitamin.

WATER - Our bodies are made up of 70% water. The formula for knowing the correct amount of water to drink daily is to take your body weight and divide it by two and that will give you how many ounces of water you should drink per day.

MASTERING RELAXATION TECHNIQUES WITH TENS?
Pain researchers and doctors who work with chronic pain will tell you that it is almost impossible to have pain without having tight muscles or muscle spasm. The more tense a person with chronic pain becomes the more pain they have been shown to occur. This is why (TENS) research, (TENS) clinical trials, and all types of doctors have recommended using a TENS unit for all degrees of pain. It has been shown to relax the muscles around an injury and bring blood flow to the area, allows the body to become less tense, and muscle spasms can disappear or be reduced.