

# TENS 101

By Gail Blom, MA, OTR, CHT

**Transcutaneous electrical nerve stimulation (TENS) is often touted as a profitable product line for HME providers to add. But what some providers forget is that these are complicated devices with a fair amount of science behind them.**

Your customers include the patient, the prescribing physician, and the orthopedic or physical therapist, and they all have special needs that require a working knowledge of the TENS unit, and an understanding of the theory behind TENS relief of pain.

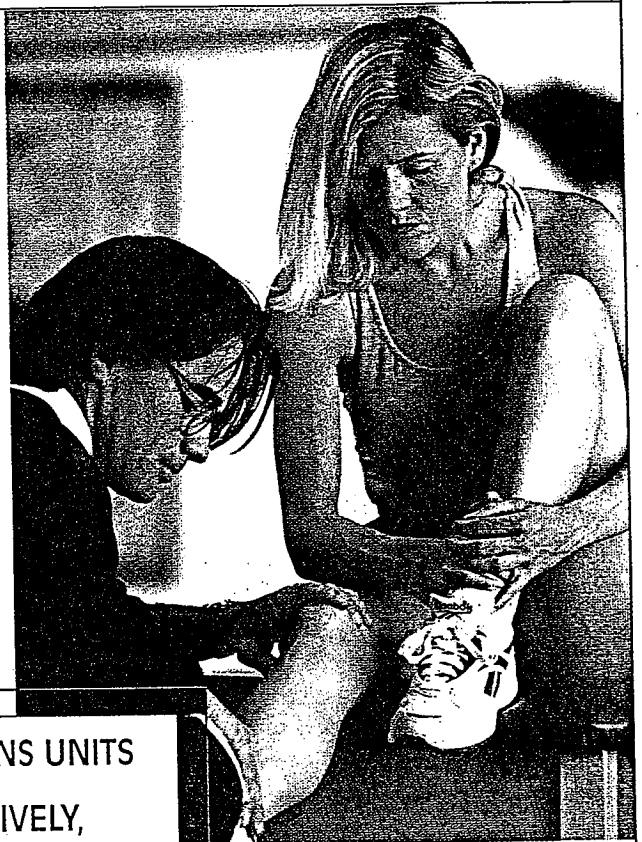
Fortunately, gaining this knowledge is easy. This article will outline the basics you need to know and how you can apply this knowledge to gain more customers. In addition, TENS manufacturer sales representatives are often helpful in providing additional information about the products they promote.

## HOW TENS WORKS

TENS is a clinically proven tool that helps to reduce edema (an abnormal accumulation of fluid) and pain in the orthopedic patient. Physicians, orthopedic and physical therapists, chiropractors, and athletic trainers readily acknowledge that TENS is an effective and efficient tool to reduce the symptoms of many orthopedic injuries and conditions.

There are two main theories of how TENS helps relieve chronic pain. The older of the two is the "Gate Control Theory" of pain relief. It holds that TENS works because there are a finite number of pain receptors in the spinal cord that transmit pain signals from the skin to the brain. Pain signals are carried by small diameter nerve fibers called C-fibers, while large diameter peripheral sensory nerves called A-fibers carry delicate sensations, such as a vibration or a light touch.

A-fibers are faster transmitters of sensation. Therefore, if one sufficiently stimulates the faster-conducting A-



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fibers, the pain impulses moving more slowly in the C-fibers are blocked.

Although this is a logical explanation of how TENS may be effective, this theory received further scrutiny. Many TENS specialists now favor the second theory of how TENS relieves pain, called the "Endorphin Theory." It holds that TENS relieves pain by increasing the level of a body chemical called endorphin—the same chemical that causes the pleasant feeling many people get after exercise, often referred to as "runner's high."

Researchers also believe that because TENS activates peripheral nerves and the surrounding tissues, it can enhance blood flow to an area, thus reducing ischemic pain (pain related to deficient blood supply). Furthermore, TENS seems to be able to reduce edema by causing a mechanical pumping of the surrounding muscular and vascular tissues.

However, because it masks pain, TENS should not be used for arthritis during the acute or "hot" phase of



inflammation, but only during the chronic phase. During the acute phase, when arthritis flares up, pain protects inflamed tissues by preventing strain from overuse.

**WHEN TENS WORKS**

Clinically, I have found that TENS helps patients with any number of orthopedic conditions. Just as it helps reduce pain and, secondarily, edema associated with low-back pain and chronic neck pain, it also helps following fractures, sprains, and contusions; tendonitis such as tennis elbow or golfer's elbow; nerve impingements including carpal tunnel syndrome; complex regional pain syndrome (RSD); and pelvic pain.

TENS can affect pain when the electrodes that deliver the stimulation are placed anywhere along the peripheral nerve that serves the affected structures. This is crucial knowledge with a severely painful area or a condition that can be aggravated by any stimulus, including electrical stimulation. In these cases, the

patient often cannot tolerate TENS electrodes placed directly around the affected area. But TENS can still relieve the pain if the electrodes can be placed proximal to the injury along the peripheral nerve between the lesion and the spinal nerve root. For example, patients who have crushed the little finger side of their hands may have open wounds and severe pain that prevent putting TENS electrodes near or on the little and ring fingers. However, TENS will still work if the electrodes are placed anywhere between the hand and the seventh or eighth vertebra nerve roots. Information on the path of the nerves is available in most TENS manufacturers' literature or in anatomy or medical textbooks.

Remember that TENS is a powerful tool, making it possible for patients to move and be functional more quickly and more completely. It is also powerful enough to hurt patients. A complete list of contraindications and precautions can be found in the clinician's manuals provided

with most units and should be read carefully. In general, remember to never use TENS over a malignancy; with a demand type pacemaker; with severe, untreated arrhythmia; while driving or operating machinery; in water; or over open wounds or infection.

**ENCOURAGING TENS REFERRALS**

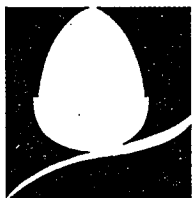
As a TENS provider, you face the unique problem of having three different types of customers—patients, physicians, and therapists—with different needs that must be considered. Being educated about TENS puts you in the best position to answer these needs.

The patient wants attention and relief. Sitting down with the patient to explain the TENS unit—both how it works and how to work it—and being attentive to any complaints and questions is essential to the patient's satisfaction with the unit and your service. Be prompt for the setup appointment and seamless with your application and explanation. Make your-

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self available if the patient has questions. Follow up in 1 day and in 1 week. Explain to the patient how to get supplies, what his or her insurance benefits are, and how your company's billing policies apply.

Physicians are looking to reduce their problems. TENS units can help by relieving the pain of their patients. But physicians will be even more appreciative of the TENS devices if you, the TENS provider, helps by paying attention to other needs of patients. For example, by listening you can give a patient an outlet to express the extent of the pain and how it affects his or her daily life. By being attentive, you fulfill the patient's need to be understood and to have more control over the pain. This reduces phone calls to physicians by patients needing pain medication prescriptions and assurance that their pain will subside.

Fraud and abuse laws limit how much you may help the physician when he or she must fill out paperwork to ensure you can bill the patient's insurer for a TENS

device and supplies. But you can provide a TENS prescription check-off list for all of the information required for billing.

Finally, the therapists are looking for help in delivering TENS treatments. Like everyone in health care, they are being squeezed by managed care and no longer have the luxury of time to sit and talk with each patient, listening to the patient's concerns and reassuring the patient of future relief. As you did for the physician, you can help the therapist by being an extension of their service to the patient. With TENS, the patient can self-administer a modality that will make the therapy appointments and the home program even more effective. This is very important in the current culture of managed care because the use of TENS can decrease the number of required therapeutic treatments and health care visits—an attractive idea to case managers and insurance adjusters tasked with controlling costs.

Therapists also drown in paperwork. If you can work from a copy of the therapy

chart face sheet and the insurance information sheet, the therapist will know that referrals to your company will mean help with no additional paperwork to contend with. All the therapist must do is have the patient sign the rental agreement.

While these three customers' needs are unique, all of them require a knowledgeable person as their TENS device and supplies provider. TENS can be a powerful tool in the patient's recovery. But it can also be virtually useless if not administered properly, and, worst of all, it can do harm.

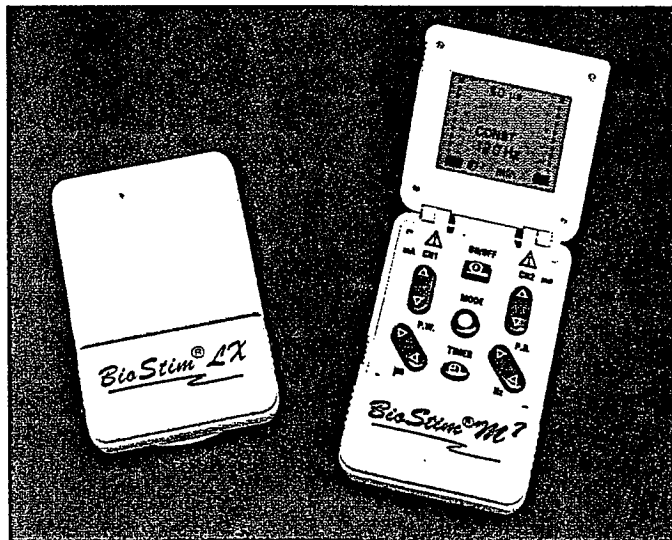
With a working knowledge of the TENS unit, the theory behind its effects, correct application of the best protocol for the problem, and comprehensive customer service, the TENS provider becomes part of the medical team, a sought-out adjunct to excellent patient treatment. □

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