

What is TENS?

TENS is a safe, easy to use and drug free method of pain relief used by hospitals and physiotherapy since the 1960's. TENS is an abbreviation of Transcutaneous Electrical Nerve Stimulation.

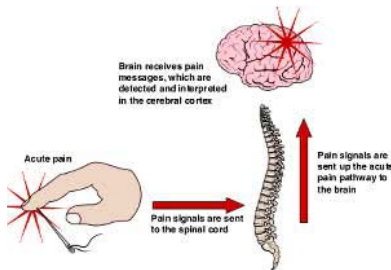
The TENS unit is a small battery operated box, which produces pain relieving electrical pulses. Four self-adhesive electrodes are applied to the skin and attached to the TENS unit with lead wires.

Tiny pulses are then passed from the TENS unit, via the lead wires and electrodes, so that they are applied to the nerves which lie underneath the skin surface. The electrodes are normally positioned over, or around, the area of pain.

How Does TENS Work?

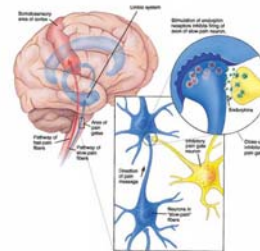
TENS works through 2 different mechanisms:

- First, electrical stimulation of the nerves can block a pain signal as they travel from the site of injury to the spine and upwards to the brain. If these signals arrive at the brain we perceive pain - if they are blocked en-route to the brain we do not perceive pain - this is known as "Gate Control Theory." When using TENS to "close the gate" we use the Modulation mode. Continuous Modulation TENS



mode produces a gentle and pleasant "tingling" under and between the electrodes. The "tingle" sensation helps to block the pain by closing the "pain gate" and slowing down the painful nerve signals - this produces analgesia (numbness) in the painful area.

- Secondly, the body has its own built in mechanism for suppressing pain. It does this by releasing natural chemicals called endorphins in the brain and spinal cord and these chemicals act as very powerful analgesics. The Continuous Modulation mode produces pulse, which should be strong enough to produce a "twitch" in the muscles underneath the electrodes. This muscle "twitch" helps to perform two benefits. First, the "twitch" releases endorphins and also helps the pain "switches" in the brain to be activated through muscular and reflex activity. Secondly, the "twitch" helps reduce post-operative edema.



What are the advantages of TENS?

- Non-invasive
- Operation is entirely under the patient's control, as in a PCA pump.
- Easy to apply and use.
- Portable – Can be worn on a brace, belt or in a pocket allowing the patient to return to normal daily activities without restriction.
- Can be used for as long as required.
- No side effects – occasional, but minor, skin irritation after long-term use. We have special hypoallergenic available for sensitive or delicate skin patients.

Contra-Indications

- Any person who is fitted with a cardiac pacemaker should not use TENS.
- A patient who is in the first 6 months of pregnancy.

Side Effects

- There are no adverse side effects other than a small risk of skin irritation from the electrode gel.
- As previously noted, we have specially formulated electrodes for those people who have sensitive skin or find that normal adhesives cause irritation.