



EDUCATIONAL CONTENT POWERED BY EPT

Transcutaneous Electrical Nerve Stimulation (TENS)

Transcutaneous electrical nerve stimulation refers to the low frequency (10-100Hz) current of a rectangular wave through surface electrodes on the skin, over afferent nerve endings. This stimulates the sensory component of the peripheral nerves to decrease pain. Intensity of 30-150-milli-amperes stimulate sensory fibres only (not motor fibres), meaning there will be no visible contraction of muscle fibres.

Mechanism of TENS (How does TENS work?):

To understand the mechanism of TENS, one needs to understand Melzack and Wall's Gate Control Theory. Pain stimulation is carried by small, slow fibres (unmyelinated fibres) that enter the dorsal horn of the spinal cord. Other cells then transmit the impulses from the spinal cord up to the brain. The pain messages encounter a "nerve gate" that controls whether these signals are allowed to pass through to the brain. In theory, if a thick, myelinated fibres is stimulated, one can inhibit the small, unmyelinated fibres' message.

Electronic stimulation may increase the release of endogenous morphine-like substances, which has analgesic properties. The effects of TENS can be estimated by the level of opiate like substances in the system. These substances are endorphins and enkephalins. TENS can theoretically increase one's pain threshold.

Indications for the use of TENS:

Acute pain: musculoskeletal injuries, sport injuries, neurological conditions, 1st stage of labour.

Chronic pain: RA/OA, spondylosis, neuropathy, myofascial pain, post-operative pain, cardiopulmonary problems.

How to use TENS on a Compex machine:

Place the electrodes directly on the skin, over the painful area.

TENS can be used for 2-6 hours per day, as needed to control pain symptoms. Use the supporting Mi-TENS function for optimal results. A tingling sensation will be felt, with no visible muscle contractions.

For more information on the above article or to speak to an EPT representative, kindly contact > admin@eptrecovery.com