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Spinal Outreach Team



Transcutaneous Electric Nerve Stimulation (TENS)

What is TENS?

TENS is a device used by physiotherapists to aid in the management of pain.

TENS delivers a low voltage electrical current to nerves via conductive pads called electrodes which are placed over specific areas of skin

TENS does not treat the cause of pain but acts on the perception or sensation of pain. TENS acts in 2 main ways.

- Electrical impulses block pain signals before they travel to the brain
- Triggers the release of the body's own pain relieving chemicals such as endorphins

PAIN AFTER SPINAL CORD INJURY

TENS may assist with 2 of the main types of pain that affect people with spinal cord injury

- **Musculo-skeletal pain** - damage to bones, ligaments, muscles and joints
- **Neuropathic or nerve pain***

*Having normal sharp/blunt sensation is necessary when using TENS, so it may NOT be beneficial for nerve pain below the level of injury

ADVANTAGES OF TENS

- Safe
- Portable
- Inexpensive
- Can use it yourself

USING TENS

- Ensure machine is switched **off** before applying and removing electrodes
- Use only the gel designed for TENS as this improves the current passing through the skin. Apply gel evenly over whole electrode. Self adhesive electrodes can also be used
- Slowly turn up intensity until **definite but comfortable** sensation is felt
- You will feel a tingling or prickling sensation under the areas of the electrodes
- You may need to further increase the intensity in the one session as the body "accommodates" or gets used to the sensation
- Avoid increasing the intensity to the point where definite muscle movement happens
- The amount of time you use it every day is very individual. Be guided by your physiotherapist
- It is useful to keep a diary about the different settings you used and electrode positioning and what effect there was on pain

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Electrode Position

- Position electrodes as shown by your physiotherapist
- Often placed at the site of pain but there are other positions as well
- Always place electrodes at least one electrode width apart
- Ensure good contact of whole electrode over skin – use tape

Settings

It is always important to be guided by your physiotherapist. This is a summary of options available on most TENS units

- Conventional high frequency
 - Frequency 50-100 per second
 - Pulse width 100
- Low frequency
 - Frequency 2-4 per second
 - Pulse width 150-250
 - Often more uncomfortable
- Burst (B)
 - Provides low frequency bursts of pulses
- Modulated (M)
 - Provides a variation in pulse width, frequency and intensity to prevent accommodation

Do Not Use TENS

- Over skin that has decreased sensation
- Over the heart or at the front of neck
- If you have a cardiac pacemaker
- Over broken skin or red areas
- Over scars or wounds
- Over abdomen if pregnant
- Over metal implants

Care of Your Skin

- Wash and dry skin before use
- Check skin under electrodes after use of TENS for irritation and redness. If this happens **STOP** using TENS and consult your physiotherapist
- Gel must be reapplied to electrodes if using TENS for greater than 3 hours continuously

Care of TENS Machine

- Wash electrodes with soap and water after use
- Keep electrodes clean and dry
- Self-adhesive electrodes should be cleaned and placed on backing sheet between use
- Remove electrode leads from TENS unit and wipe clean on a regular basis
- Battery will need replacing on a regular basis