

# Fact Sheet

## Queensland Spinal Cord Injuries Service

### SPINAL INJURIES UNIT

Ph: 3176 2215

Fax: 3176 7642

### OUTPATIENT DEPARTMENT

Ph: 3176 2641

Fax: 3176 5644

### Postal and Location

Princess Alexandra Hospital  
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AUSTRALIA

### TRANSITIONAL REHABILITATION PROGRAM

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### Email

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### SPINAL OUTREACH TEAM

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## 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

### 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



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## 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

**Last Reviewed August 2017  
Review Due August 2019**



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