

### Patient advice and liaison service (PALS)

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# Transcutaneous Electrical Nerve Stimulation (TENS)

## A patient's guide



### What is TENS?

TENS stands for Transcutaneous Electrical Nerve Stimulation. For some people, it can be used as an alternative to pain-relieving medication.

A TENS machine is a small portable, battery-operated device which is worn on the body. The device is attached by wires to sticky pads stuck to the skin, and small electrical pulses are transmitted to the body. This can help to ease certain types of pain in some people.

### How does TENS work?

TENS stimulates the body's own defences against pain. This can happen in two ways:

- The electrical impulses generated by the TENS can interfere with and block pain messages sent to the brain.
- TENS can stimulate your body to produce endorphins, which are the body's natural painkillers.

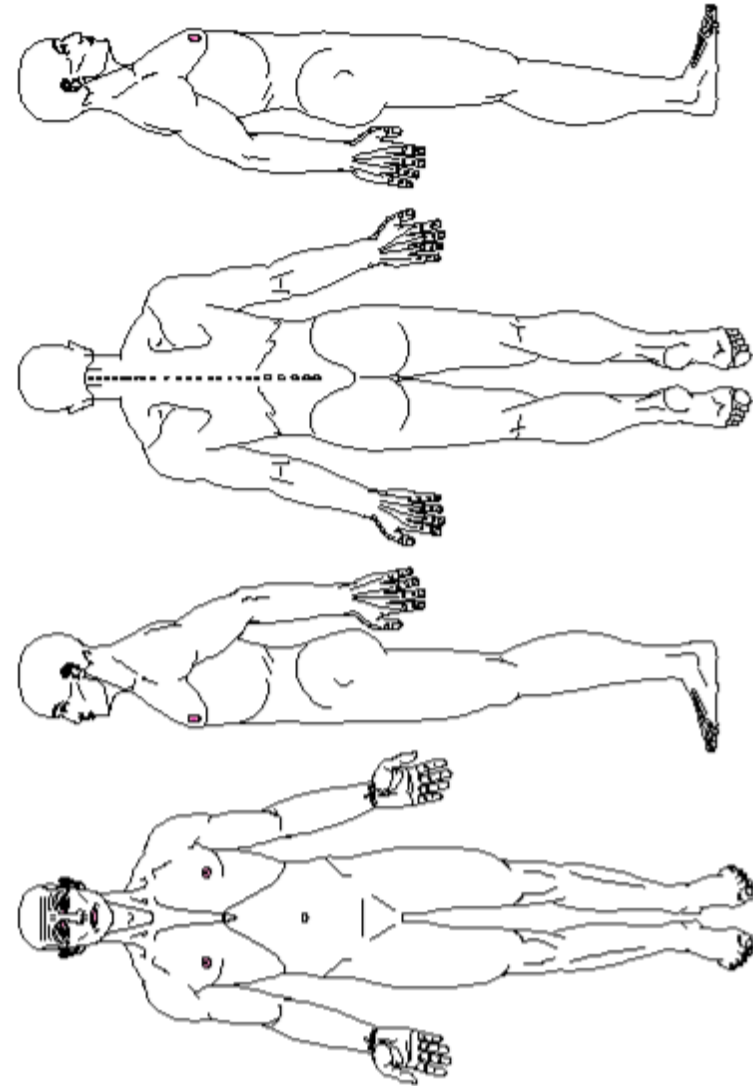
### What is TENS used for?

TENS is most commonly used for musculoskeletal pain, such as long-term back pain or knee joint arthritis.

TENS is also sometimes used for pain relief in the early stages of labour. Other less common uses include migraine headaches, period pains and sports injuries.

### Where to place the electrodes

These are suggestions – you can try different positions, except those mentioned under “precautions”.



If you are not getting as much pain relief as you expected:

- Gradually increase the intensity, making sure the sensation is strong but not uncomfortable
- Try different settings until you find one that helps your pain
- TENS does not relieve everyone's pain. If you think it is not effective for you, please speak to your pain nurse or physiotherapist.

### Suggested settings:

Below are suggested settings to try – you can adjust these and try different settings.

TENS mode:	Normal	Burst	Modulation
Pulse width:	..... to ..... mS		
Frequency:	..... to ..... Hz		
Intensity:	Mild	Strong	Close to tolerance

### Can everyone use TENS?

You should not use TENS if:

- the cause of the pain is not medically diagnosed
- you have a pacemaker device fitted
- you are or might be pregnant (unless in labour or specifically medically advised)
- you suffer from epilepsy (unless specifically medically advised)

### Precautions

Do not apply TENS:

- to broken skin, damaged skin or varicose veins
- across the chest, temples or front of your neck
- close to the eyes or mouth
- over any area of skin that is numb

TENS must not be used:

- when driving or operating machinery
- in the bath or shower
- if you experience an allergic reaction to the electrodes

### What do all the settings mean?

**Mode** – there are different ways that TENS can be used. Your pain nurse or physiotherapist can explain these to you.

TENS delivers small pulses of electrical energy. The **pulse rate** or **frequency** is how often these pulses are delivered. The **pulse width** refers to the length of time of each pulse.

The **intensity** is how strong the pulses are, and this can be adjusted gradually.

You can adjust all of these settings until you find the right settings to help your pain.

## How do I use TENS?

Always follow the manufacturer's instructions supplied with the machine. The following are some general points.

Before use:

- Before placing the electrode pads on the skin, make sure the machine is switched off.
- Test the machine by holding the pads between the fingers and carefully turn it on – you should feel a tingling sensation.
- Make sure the skin where the pads are applied is clean and dry.
- Place the pads either side of the pain, or where the pain nurse or physiotherapist showed you to place them.
- The pads should not be touching, and they should be at least 2 to 3 centimetres apart.

During use:

- Set the mode, pulse width and pulse rate (or frequency) as suggested by the pain nurse or physiotherapist.
- Switch on the machine, and use the dials to increase the intensity until you feel a tingling sensation. The sensation needs to be quite strong but not uncomfortable.
- After a few minutes, the sensation will reduce slightly – increase the intensity slightly and then leave it.
- The TENS should be used for a minimum of 30 minutes, but can be used for longer periods.

After use:

- When you have finished using the TENS, switch the machine off and disconnect the electrodes.
- Remove the electrodes from the skin – these can be re-used, and will last longer if you stick them back on to the clear plastic and put them back in the packet.
- Clean and dry your skin after removing the electrode pads.
- If there is any redness from the electrode pads, use a different area of skin next time.

## Troubleshooting

- If the power light fails to come on, try a new battery.
- If the tingling is not going to the area of pain, try moving the electrodes (switch the machine off first).
- If you get painful tingling or muscle twitching, try reducing the intensity. If this does not work, try a different TENS mode.
- If you get painful tingling when moving around, check the electrodes are properly stuck down.

If you feel nothing:

- Check the power light is on
- Check all the connections
- Turn up the intensity gradually
- Try moving the electrodes (switch the machine off first)