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The Royal Liverpool  
and Broadgreen  
University Hospitals  
NHS Trust

## Patient Information

### **TENS for Chronic Refractory Angina at Liverpool Refractory Angina Centre**

#### **What is TENS and how does it work?**

Transcutaneous Electrical Nerve Stimulation (TENS) is a small device with self-adhesive electrode pads that passes electrical currents across the skin to stimulate the nerves. These impulses try to block the pain messages being sent to your brain. Imagine you have hurt your arm and you rub it better. TENS is just the same but the machine does it for you.

#### **Who can use it?**

Most people can use a TENS machine, but there are some exceptions:

- TENS is not recommended if you have certain heart conditions or have a pacemaker.
- TENS is not recommended during pregnancy.
- TENS is not recommended if you have epilepsy.

#### **What are the benefits of using a TENS machine?**

You may find that your pain gradually lessens while using your machine.

It is quite safe to continue taking your normal medication while using TENS. You may find that you are able to reduce your painkillers depending on the amount of pain you have.

You can carry on with everyday activities while using the machine. If you get good pain relief you may even be able to increase your activity.

#### **What are the risks of using a TENS machine?**

- There is a risk of developing minor skin irritation at the location of the self-adhesive electrode pads. This risk can be minimised by proper placement of the electrodes but this does not remove the risk entirely. If skin irritation occurs, it is temporary and improves after removal of the electrodes.

- There is a small risk that TENS can make symptoms worse. This resolves immediately on removal of the TENS. This risk is reduced by avoiding sudden rapid increases in the intensity of the stimulation – we will explain to you how to ensure always to make gradual, small adjustments to the level of stimulation.
- The machine should be kept dry at all times and should not be worn in a damp kitchen or bathroom.
- Do not drive or operate machinery while using TENS. A sudden change in stimulation may cause you to lose concentration.
- The pads should never be placed directly over the front of the neck.

### **Are there any alternative treatments available?**

Treatments for refractory angina include the use of medication and nerve block injections. Under the supervision of your doctor at Liverpool Refractory Angina Centre (LRAC) you may have discussed and tried some of these treatments to help your angina symptoms.

A TENS machine is one of these different treatments that may be suitable for you to use.

### **What will happen if I don't have any treatment?**

For many patients a TENS machines helps ease their pain, but for some the TENS machine does not work. If you chose not to try or use the TENS machine you will just continue on your usual treatment.

### **How do I use a TENS machine?**

- Make sure the skin is clean and dry before applying the self-adhesive pads. Never place the pads over jewellery, for example, a necklace.
- **Do not** use talc, creams, lotions or perfumes on the area you are applying the pads to; these will stop the pads sticking to your skin. Pads should not be applied to broken, inflamed or irritated skin.
- The pads should be placed at least two inches (5cms) apart.
- Always apply the pads before switching the machine on. You should not place the pads directly over a painful area as this can make the pain worse. Move the pads to either side of the pain to gain maximum pain relief.
- Connect the electrode wires to the TENS machine.
- Switch the TENS machine on.
- Slowly increase the intensity until you feel a 'strong but comfortable' tingling sensation. This should not be painful.
- Before you turn the machine off, slowly turn the intensity down.
- Switch the TENS machine off.
- Disconnect the electrode wires and then remove the pads.
- Some machines have different functions which will be explained to you in clinic.

## How long can I use a TENS machine for?

We will discuss with you how much to use the TENS device depending on your particular symptoms though, in principle, you can use TENS for as long as you want. If you have the machine on all the time, please change the position of the pads. Otherwise, your skin can become sore.

## What should I expect?

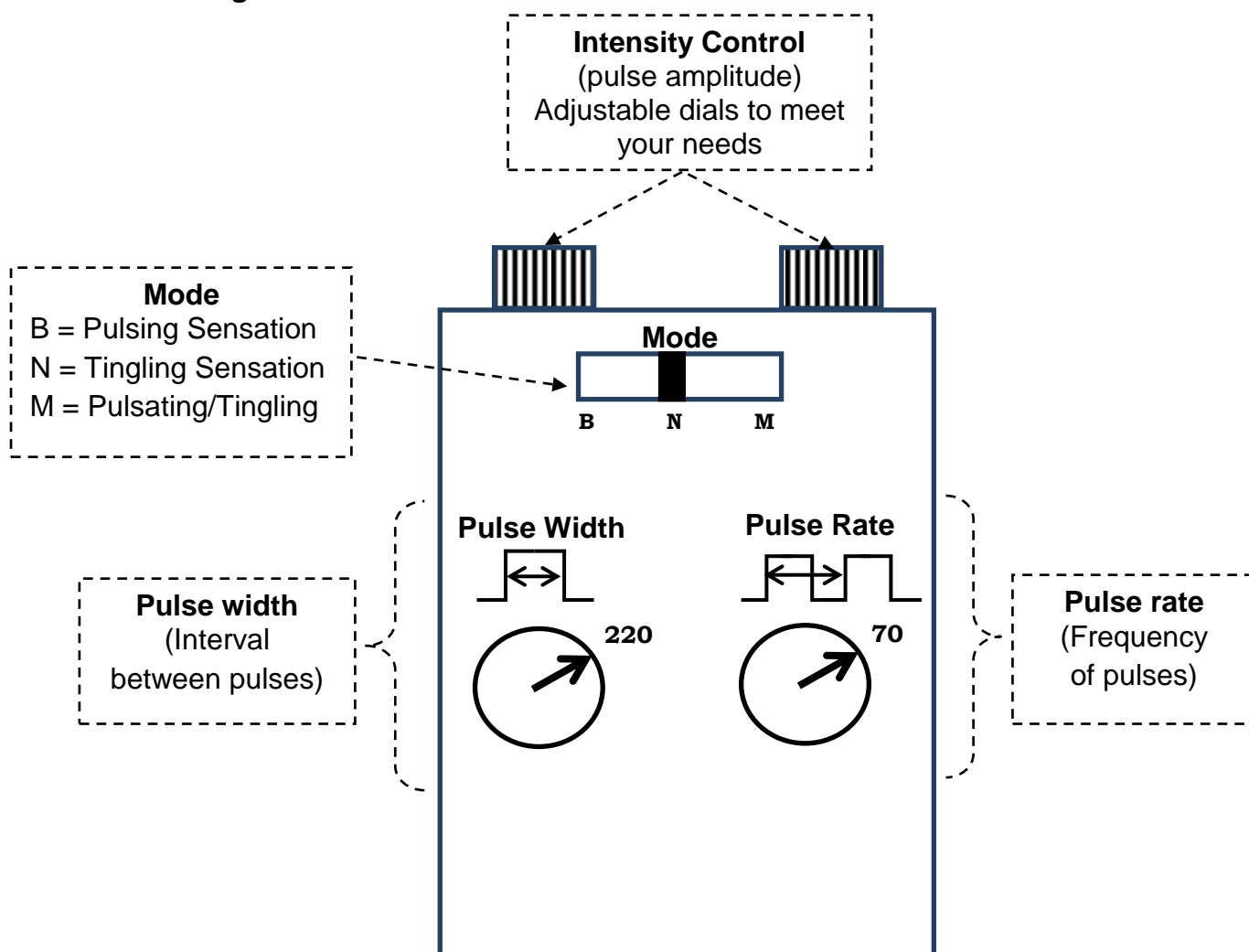
You may find that your angina symptoms gradually lessen while using your machine. However, you may also find that TENS does not help your symptoms and sometimes, it can even make your symptoms seem worse. If you do find that TENS makes your symptoms worse, simply stop using the device and we will discuss alternative treatments with you.

After each treatment check your skin when you remove the pads. Your skin may appear red. This is normal. This redness should fade within an hour. If you have any skin problems contact LRAC on Tel: 0151 600 1244. Textphone number: 18001 0151 600 1244

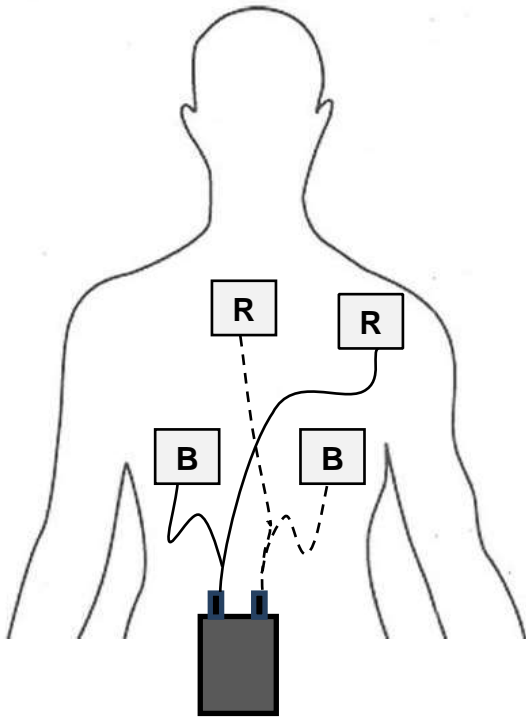
## Care of the TENS machine and electrodes

The machine can be cleaned with a soft, slightly damp cloth. Please replace 9v (MN1604) alkaline battery correctly. Always replace the pads onto the waxed paper when not in use. Stickiness can be re-activated by dampening the pads with a little water and then left to dry.

## Initial Settings



## Placement of electrode pads and leads



### Placement of the electrode pads:

- is carefully arranged by the patient and therapist, according to the area of the body where the individual patient feels angina;
- is most effective when placed around the area of the angina;
- usually works best for angina when the red (R) and black (B) leads are connected as shown here;
- should be at least two inches apart and up to a maximum of 20 inches.

## Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

## Further Information

**If you have any problems please contact LRAC**

**Tel: 0151 600 1244**

**Textphone Number: 18001 0151 600 1244**

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**Review Date: October 2021**

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