

## Pain Relief Without Drugs

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More and more people are turning to small compact electronic devices like TENS machines to bring them pain relief without having to depend on drugs that can often have unwanted side effects. These small digital machines can be worn unobtrusively while carrying out normal day to day activities.

What is TENS, how does it work and what sort of pain relief can it be used for?

TENS stands for Transcutaneous Electrical Nerve Stimulation where transcutaneous means through the skin. A TENS machine produces small electrical impulses which are transmitted from the machine through the skin by means of a wire connected to a small conductive patch which is placed on the skin.

TENS machines are believed to work in a two ways. The small electrical signal they transmit blocks pain signals from the body's sensory nerves to the brain resulting in pain relief. The signals generated by the TENS machines can also encourage your body to release endorphins, nature's own pain relieving 'feel good' hormone.

A study in Sweden showed that backache is one type of pain which was best treated with the use of TENS machines. It also showed that TENS machines were the only painkillers required by 70 per cent of women in labour.

More recently some TENS machines are available with an electrical probe which can be used to stimulate acupuncture points to bring pain relief. While almost all TENS machines have cautions about placing the electrode pads on the head and neck these 'acupuncture' machines will permit users to stimulate the acupuncture points or channels elsewhere on the body to bring relief to head or neck pain.

Placement of electrode pads is all important for effective pain relief. Usually the pads are placed close to the source of the pain particularly with muscle pain or joint pain. In the case of sciatic nerve pain the electrode pads are likely to be placed either side of the spinal column and the top part of the affected leg. Your health care provider should advise on the best point to place the pads for optimum pain relief. Correct placement is very important and sometimes may take a little trial and error with careful reference to the manufacturer's guidelines. Pads should never be placed near the eyes or over the nerves from the neck to the throat or brain.

Most TENS machines have three main program modes, Conventional (some machines may refer to this as Normal or Constant), Burst and Modulation. Each mode has subtle differences in the effect they have. Usually a combination of these modes will work best to provide maximum short and long term pain relief. With the TENS machine set to the Conventional mode (frequency between 90 and 120Hz and pulse width between 80µs and 200µs) the pain relief tends to be short lasting after the machine is switched off. To obtain longer lasting pain relief you should choose a Burst mode, or select a low-rate TENS program (usually between 2Hz to 5Hz with a pulse width close to 200µs). The burst or 'low TENS' mode encourages the release of endorphins and gives longer lasting pain relief.

All TENS machine will allow you to control the level of electrical signal and once again it is important to set the machine to the optimum setting. If you set the level too high your muscles may start to twitch. You should adjust the TENS machine to a level where you can just feel a slight tingling sensation.

Many TENS machines are powered by a 9V battery. The downside of this is that the 9V batteries only last a few days so it is well worth while to invest in some high capacity NiMH rechargeable batteries accompanied by a battery charger. The only other part which will require frequent replacing is the electrode pads and very rarely the electrode leads. The internet offers a wide range of sources for all these commodities.

If you are a first time TENS user you might find it takes a few days or weeks to obtain maximum relief.

TENS machines should only be used on the advice of a doctor or other health professionals. They may not be suitable for all types of pain or all conditions. Always follow the manufacturer's instructions supplied with the machine. TENS machines should never be used by people who have a pacemaker or have heart problems.

Pregnant women should avoid using TENS machines as the affects on the unborn baby are not known. Never place TENS electrodes on your head or neck.

### **Short note about the author**

Bill Morrison has his own website <http://www.help4urback.com> where he describes his own personal experiences and how he uses his TENS machine to provide pain relief. He also includes personal recommendations for people who suffer from sciatica or lower back pain on what books to buy and what web sites to check out.

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