

How to Use a TENS machine

TENS stands for Transcutaneous Electrical Nerve Stimulation

PLACEMENT

- Find the exact location of pain & outline the area of pain and tenderness
- Always use 2 or 4 pads at the same time (2 with each Channel on the machine)
- Never have the pads less than 1 inch apart & do not have them touch. Also, be aware that placing the pads really far apart will decrease the effectiveness of the current.
- Do not place pads directly over a joint, such as a knee, elbow or ankle because the natural movement of the joint can make the pad fall off.

DIRECTION OF PAD PLACEMENT

- *Pain is across a significant distance?* (i.e. Back to knee), place 1 pad vertically on top of pain & the other vertically on the bottom of the pain
- *Pain over a smaller area?* Place pads parallel on each side of the pain [pad: area • of pain: pad]
- *Pain overlaps a joint?* (i.e. elbow) Place the pads on soft tissue just above and below the joint in horizontal & parallel positions such as a '+' pattern
- *Pain is wide?* Place the pads to the left & right side of your pain. For example, pain between your shoulder & neck –place pads on either side of the spine. If the pain extends out further, angulate the pads to reach the entire area

GEL PADS

Pads come in various sizes and are most often small squares or larger rectangles. Use them according to the size of the area. For example, small squares are more easily adhered to spots around the elbow or wrist, while larger pads are most often used for the back or leg.

The gel on the back of the pad is adhesive. Check the integrity of the gel every time before use: is the gel sliding or does it have holes? Are the electrical wires intact? If either of these occur, the pad may give you a small shock or feel really sharp & painful instead of consistent & strong. If this is the case with your pads, throw them out immediately and use new pads. We supply smaller pads and you should be able to order them online or get them at Shoppers Home Health.

To get good contact with the pads and your skin, ensure that you *clean the pads* after each use by dabbing your finger in water and rubbing the gel surface in a circular motion. Let the pads dry for 30 seconds before placing them back on the plastic sheet they come on. You can test the 'tackiness' by touching the dried surface –it should be significantly more sticky. Do not let the pads dry out. The pads are only effective if they are fully adhered to your skin. For even better contact, wipe off lotions or gels & only put on clean skin. Note that you should not pull on the wires to remove the pads, as they can come right out of the pad and will be useless. The pads should last 4-5 months of daily use and will then need to be replaced as the gel will have begun to wear down.

NEVER put pads on the following:

- | | | |
|-------------------------|---------------------|--------------------------|
| 1. Head | 3. Chest | 5. Eyes |
| 2. Throat/front of neck | 4. Over a pacemaker | 6. Over wounds or tumors |

Electrodes are for single patient use only and should not be shared.

If irritation starts with the pads, discontinue use and consult a Chiropractor or therapist.

TENS is a tool → not a cure.

HOW OFTEN SHOULD I USE MY TENS?

ACUTE PAIN: 20-60 min. up to 4 x day

CHRONIC PAIN: 20-30 min. up to 5 x day

PULSE RATE/WIDTH & AMPLITUDE

1. **Pulse Rate (PR):** is important because different frequency settings target different nerve groups and the setting will determine if the "Gate Theory" or "Endorphin Theory" of TENS will be used
2. **Pulse width (PW):** the higher the pulse width, the more "aggressive" the stimulation feels. If the pulse width is set high enough, it will elicit a muscle contraction, which is typically not the desired result with a TENS unit, but having the pulse too low may not produce enough stimulation for the patient.
3. **Amplitude:** also known as Milliamps (mA), is what causes the "buzzing" sensation of the TENS unit and what you feel when you turn it higher. This should be set to your comfort level.

Adjusting the TENS is like adjusting a stereo: Increasing the Pulse Width is like the bass, adjusting the Amplitude is like the volume and adjusting the Pulse Rate is like adjusting the speed of the music.

There are 2 theories behind how TENS units work and both should be tried and/or alternated by the patient.

GATE CONTROL THEORY: It theorized that the "Gate Theory" of TENS is attained when the Pulse Rate is used because the high frequencies will "block" the pain signal from the end of the nerve to the brain, so when it reaches the brain it is not perceived as pain. This works very quickly (15 minutes) but the signal is no longer blocked and the pain returns. This way TENS works for a greater percentage (80%) of the population especially if the patient is taking pain medication. Example of this is when you rub or shake your hand after you bang a finger – the movement of rubbing stops the pain sensory from getting to the brain.

ENDORPHIN THEORY: It is theorized that "Endorphin Theory" is attained when the Pulse Rate is low because the low pulsing sensation triggers the release of Endorphins, which can take up to 45 minutes to reach the area when a TENS unit is applied, but the relief can last up to 6 hours. If the patient is already on pain medication, the endorphins are already being released chemically in the body and the localized effect is hindered.