**How does a TENS Unit work?**

1. There are two theories of pain relief: endorphin release and the gate theory
   1. Endorphins are your body’s natural pain fighting chemical
   2. The gate control theory serves as a neuro-blocker, and interrupts pain signals from reaching the brain.
2. The Endorphin release occurs at a low frequency level of 75Hz or under, combined with a high pulse width.
   1. In essence, max out all of your settings except the frequency – turning your frequency to at or below 75hz, and turn the intensity up to a strong but not overpowering level.
3. The Gate Theory occurs at a high frequency/high pulse width.
   1. In essence, max out all of your settings, and turn the intensity up to a strong but not overpowering level.

**General facts about TENS Modes**

1. The burst mode is best for short term therapy sessions
2. The normal mode is good for short- or long-term therapy sessions
3. The modulation mode is for long term therapy sessions.

When first using the TENS, use the normal mode for the first week of use. Then, try each mode independently to evaluate which is best for you and within what circumstance.

It is also quite common to start with the gate control theory vs. the endorphin release theory. Use the gate control theory for the first week or so, and then try experimenting with the endorphin release theory/settings.

**General facts about other TENS settings**

Pulse frequency – also known as pulse rate – can be viewed as how fast the current is going into the body. The higher the frequency, the faster the current is pushed into the body, which typically results in a more comfortable stimulation. Think about it like a needle piercing a haystack fast or slow. The faster the needle the less imposing it will “feel”.

Pulse width – can be viewed as how wide the wave is and is typically maxed out in most applications.

Wave forms –

1. Symmetrical biphasic square wave
2. Asymmetrical biphasic square wave
3. Monophasic wave

The first two are typical TENS wave forms, and the user may find benefit of one over the other. The Monophasic wave however, is a lot softer and oftentimes used to treat pain in the extremities.

**Electrode Placement**

1. Wash the skin area gently with water and dry thoroughly (placement site).
2. For TENS treatment, electrodes should be placed directly on the treatment site.
3. Place the red and black electrode about 1-6” apart.
4. One channel can be on the pain site and the other can be above the pain site
5. Experiment with placement – horizontal, vertical, or even diagonal to establish what works best for you.
6. Electrodes are typically good for 10-12 uses per pack. Always keep them sealed in the poly bag when not in use.

**General Set-up**

1. Always charge the batteries before use
2. Plug the lead wires into the device channels on the device
3. Plug the pins from the lead wires into the electrode pigtails
4. Then place the electrodes on the body
5. Once all is connected, and in place, then turn on your device.
6. All device settings vary, but in general a typical TENS device is setup by adjusting the following
   1. Pulse width
   2. Pulse frequency
   3. Mode – burst, normal, and modulation.
   4. Timer settings
7. More advanced devices offer presets, body part settings, and other extrapolated settings.
8. Most of these extrapolated settings are simply variations of the pulse width, frequency and mode
9. When adjusting the intensity slowly increase it until you feel it as a bit too strong, and then back it off from there. TENS should be comfortable and somewhat soothing. Certainly not more painful than your pain condition. After about 20 minutes, your body will adjust to the stim, and feel weak. You can chase it once by increasing the intensity again, but only chase it like this once or twice throughout your therapy session.

**Usage expectations**

1. It depends on your pain, but TENS can be used as little or as much as needed. TENS is a natural “aspirin” so it will quell your pain while it is on, and for some, an extended period while off.
2. If you are a first-time user, always try a normal mode, and the gate control theory settings. Which is maxing out your pulse frequency, pulse rate, and selecting the normal mode
   1. First time users typically want use this same setting for the first week and keep their therapy sessions to 60 min. After a week of acclimating to the stim, they can begin to experiment with their settings and electrode placement.
3. Adjusting and finding the perfect technical specifications for your unique pain condition is a bit of a trial and error process. Try a new setting for a full therapy session before trying a new one. Tech spec changes can be subtle to your senses, but pronounced in effect.