

STIM



MADE
~ TO *move*

What is stim?

Electrical Stimulation is the application of electrical current to the body for therapeutic benefit.

What is TENS?

TENS stands for Trans-cutaneous Electrical Nerve Stimulation.

Who can buy a TENS unit?

Anyone can buy a TENS unit. Patients often purchase these for home use as well.

How does TENS help?



Decreases pain by using the gate control theory



Decrease pain by using the endorphin-release mechanism



Decrease pain by using the pain-spasm-pain cycle

How do you achieve pain reduction?

	Gate Control	Endorphin Release	Pain Spasm
Frequency	100-150 Hz	2-10 Hz	30-80 Hz
Intensity	To produce tingling	To produce contraction	To produce contraction
Duration	as needed	20-30 min	10-40 min

When to avoid TENS...

- ✘ Over electrical devices like a pacemaker
- ✘ Low back or abdomen during pregnancy
- ✘ Regions of known or suspected malignancy
- ✘ Actively bleeding tissue or infected tissue
- ✘ Patients with untreated bleeding disorder
- ✘ Areas with actively deep vein thrombosis
- ✘ Areas of impaired sensation
- ✘ Eyes, reproductive organs, neck/head of epileptic patients, or anterior neck

Gate Control Theory

The TENS unit initiates an Action Potential (electrical signal) in a peripheral nerve thereby causing the brain to focus on this stimulation rather than the painful input caused by your injury.

Endorphin Release Mechanism

The TENS unit repetitively stimulates motor and nociceptive A-delta (nerves that signal damage) causing contractions and brief moments of sharp pain. This triggers our internal opioid releasing system (painkillers our body makes!)

Pain–Spasm–Pain Cycle

The TENS unit causes sustained contracted followed by periods of relaxation thereby reducing the overall tone of muscular tissue.

Fatiguing the muscle reduces spasmming which reduces the patient's pain.