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What is TENS?

TENS stands for Transcutaneous Electrical Nerve Stimulation.
This rechargeable battery operated device will provide mild electrical impulses that will transmit through the skin to stimulate nerve fibers. TENS is a safe, non-pharmacological method of pain control in labor and is especially helpful for back labor. It is widely used for laboring women in other countries. It does not require a prescription when used for labor in the United States.

Does TENS work? A TENS device works in two ways:

Gate Control: By selectively exciting A-beta nerve fibers in the skin with TENS, the amount of painful stimulation being transmitted by smaller diameter A-delta and C-fibers can be reduced, causing the perception of pain to be reduced. The theory states that the brain can only process a certain amount of sensation at a time. With a TENS you flood the brain with electrical stimuli, therefore reducing its ability to perceive labor pains

Increased Endorphins: Stimulating small A-delta fibers reduces the release of excitatory neurotransmitters such as aspartate and glutamate and increases the release of inhibitory neurotransmitters such as GABA (gamma-aminobutyric acid) and serotonin (Sluka and Walsh, 2003), and endogenous opioids such as endorphins and encephalin. (2) This takes place particularly in early labor when the TENS unit is in a lower frequency mode, for the span of about 60-90 minutes. This process is also known as Diffuse Noxious Inhibitory Control. Using a higher intensity mode creates the release of endorphins, your body's pain relieving hormones.

Research findings on TENS have shown that laboring women using the device use less pain medication than women using a "sham" TENS device (3). The majority of women surveyed in the UK National Birthday Trust Survey rated it as moderately or very helpful in relieving pain and would use it again in a future labor (4). A study that investigated the use of TENS for back pain in labor found that "TENS has a specific beneficial effect on pain localized in the back."(1).

What are the contraindications for TENS?

TENS may be contraindicated in patients with demand cycle pace-makers and seizure disorders, but does not have any other known risks or side effects (4).

A TENS unit should not be used in water, (shower or bath), with the use of an epidural, or internal fetal monitoring. (NOTE: It does not interfere with external fetal monitoring).

How is TENS used in labor?

Please note that TENS is contraindicated for women less than 37 weeks pregnant. Two electrodes are placed on the middle back and two more are placed on the lower back, above the buttocks. Pads are never placed directly over the spine. Ideally, the unit will be used in continuous mode for up to 90 minutes in early labor to begin the production of endorphins. Later in labor, TENS should be used intermittently between contractions and with continuous stimulation during contractions. The unit is solely operated by the laboring person. Electrodes are wired into the unit and may be removed at any time and freedom of movement is still possible while using TENS.

It's also been found that allowing the laboring person to manipulate a TENS unit and select their level of intensity helps them feel in control of their labor and the sensations they are feeling, therefore decreasing the level of anxiety.

References

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(3) Chamberlain G, Wraight A, Steer P. Pain and Its Relief in Childbirth: The Results of a National Survey Conducted by the National Birthday Trust. Churchill Livingstone: Edinburgh, 1993.

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