TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION (TENS)

Key Words: TENS, transcutaneous electrical nerve stimulation, pain relief in labour, non-pharmacological

AIM

- To provide a safe, non-invasive method of pain relief for women in labour.

BACKGROUND INFORMATION

Transcutaneous electrical nerve stimulation (TENS) is thought to assist the prevention of the perception of pain sensation which is based on the gate control theory. The small electrical sensations produced by the TENS unit stimulate the large peripheral nerve fibres and pain sensations are blocked from reaching the brain. It is believed that the TENS machine also stimulates the production of natural endorphins. Low level settings (2-5 Hz) are believed to stimulate the body to produce endorphins, while high pulse settings (90-130Hz) trigger the ‘pain gate’ to close preventing the pain stimuli reaching the brain.

The TENS machine consists of four electrodes and four flexes which connect these to the machine. The controls adjust the frequency and intensity of the impulse. The TENS appears to be more effective when used early in labour, and women may feel it allows them more control over their labour and birth.

Limited evidence indicates that while women would use TENS again in labour, it has not been consistent in proving beneficial for labour pain relief. However, it has no adverse effect for the woman or fetus, therefore should be available for use to all women.

KEY POINTS

1. There is insufficient evidence to determine TENS effectiveness on reducing labour pain. However, TENS may delay the need for pharmacological analgesia.
2. There is no evidence of adverse effects to women or the fetus.
3. Women should be encouraged to commence preparation about the use of TENS machine in the antenatal period. The physiotherapy department at KEMH provides education. A patient information sheet: “The Use of TENS in Labour” is available from the physiotherapy department.
4. Women attending KEMH should be given the choice to use TENS in labour.
5. The use of TENS is often more effective if used early in labour.
6. Use of the TENS during fetal monitoring has the potential to cause interference to the monitor.
7. Prior to the application of the TENS machine, women should be checked for allergies to tapes.
8. The TENS is contraindicated / should not be used when a woman:
   • has a pacemaker in situ.\textsuperscript{9,11}
   • labours in the bath or shower.\textsuperscript{4,10}
9. Avoid the use of TENS prior to 37 weeks gestation.\textsuperscript{9}
10. A patient with epilepsy using the TENS should never be left alone. A seizure could accidently increase the rate/level of the impulse and risk skin damage.\textsuperscript{11}
11. It takes approximately 30 minutes of nerve stimulation before the effect of TENS is felt.\textsuperscript{4} Therefore, TENS should not be offered to women already in established labour.\textsuperscript{3,12}

**PROCEDURE**

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>ADDITIONAL INFORMATION</th>
</tr>
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<tbody>
<tr>
<td>1 Prior to use</td>
<td></td>
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<tr>
<td>• Obtain verbal consent.</td>
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<tr>
<td>• Ensure the woman has no tape allergies.\textsuperscript{9}</td>
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<tr>
<td>• Assess for contraindications to use of the TENS.</td>
<td>Avoid TENS if a pacemaker in situ, or if labouring in the bath or shower.\textsuperscript{4}</td>
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<tr>
<td>2 Application of the TENS</td>
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<tr>
<td>The first two electrodes are positioned between T10 &amp; L1 on the woman’s back.\textsuperscript{2} Secure with tape.</td>
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</tr>
<tr>
<td>The other electrodes are positioned between S2 and S4.\textsuperscript{2} Secure with tape.</td>
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<tr>
<td>Application at this level has shown to be effective in controlling pain during the first stage of labour.\textsuperscript{2}</td>
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<tr>
<td>Placement at this level is for pain relief:</td>
<td></td>
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<tr>
<td>• when labour is experienced in sacral area</td>
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<tr>
<td>• late in first stage of labour</td>
<td></td>
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<tr>
<td>• in the second stage of labour\textsuperscript{2}</td>
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</tbody>
</table>
## 3 Using the TENS

Advise the woman how to use the TENS by:
- Controlling the device herself\(^3\)
- Adjusting the dials to increase or decrease the intensity of the current.\(^3\)

The TENS may reduce the woman’s awareness of pain by stimulating sensations\(^2\) like buzzing or prickling.

When a woman is contracting, she turns the stimulation from low intensity to high intensity electrical impulses.\(^2,3\) High intensity should be applied for at least 1 minute to produce endorphins.\(^13\)
REFERENCES / STANDARDS


National Standards – 1- Care Provided by the Clinical Workforce is Guided by Current Best Practice; 2- Partnering with Consumers and/or Carers to Design the Way Care is Delivered to Better Meet Patient Needs and Preferences

Legislation - Nil

Related Policies - WNHS Policy W107: Use of Complementary Therapies


RESPONSIBILITY

Policy Sponsor Nursing & Midwifery Director OGCCU

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Do not keep printed versions of guidelines as currency of information cannot be guaranteed. Access the current version from the WNHS website.

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