

**Royal Hospital for Women (RHW)
BUSINESS RULE
COVER SHEET**



Health
South Eastern Sydney
Local Health District

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NAME OF DOCUMENT	Transcutaneous Electrical Nerve Stimulation (TENS)
TYPE OF DOCUMENT	Clinical Business Rule
DOCUMENT NUMBER	RHW CLIN045
DATE OF PUBLICATION	20 May 2024
NATIONAL STANDARDS	Standard 2 – Partnering with Consumers Standard 5 – Comprehensive Care
RISK RATING	Low
REVIEW DATE	May 2029
FORMER REFERENCE(S)	Transcutaneous Electrical Nerve Stimulation (TENS)
EXECUTIVE SPONSOR	Midwifery Co-Director of Maternity
AUTHOR	CMC S Arbidans (Practice Development)
SUMMARY	Transcutaneous electrical nerve stimulation (TENS) is a non-invasive, non-pharmacological analgesic modality that can be used for labour pain.

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CLINICAL BUSINESS RULE

Transcutaneous Electrical Nerve Stimulation

RHW CLIN045

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1. BACKGROUND

Transcutaneous electrical nerve stimulation (TENS) is a non-invasive, pain-relieving modality that can be used for labour pain¹. TENS involves the application of electrodes to the surface of the skin, using low voltage electrical current to activate/excite the afferent nerves and thus inhibit the transmission of painful stimuli to a labouring woman's brain.

2. RESPONSIBILITIES

2.1 **Midwifery staff** – provide education, support, and assistance in the application, and use of a TENS machine in the first stage of labour

3. PROCEDURE

- Provide instructions to a woman and her support person on the correct application of electrode pads and use of TENS machine
- Ensure the skin is clean, dry, and unbroken for application of the electrode pads
- Ensure TENS machine is switched off before placing the electrode pads
- Place pre-gelled electrode pads at level T10-L1 and S2-S4 on either side of the spine (see diagram in educational notes)
- Ensure pads do not overlap and remain 2-3cms apart when applied
- Secure pads with tape if lifting occurs
- Advise woman of expected use of TENS, dependant on differing machines and individual preferences. The aim is:
 - an intense but comfortable tingling sensation felt at rest, and at end of the contraction
 - the additional 'boost' component that increases the intensity, to be considered at the onset and towards the peak of the contraction
- Turn TENS machine off before removing electrodes off the skin when a woman wishes to discontinue use
- Assess for irritation of the woman's skin from electrodes. Discontinue use if this is noted

3.2 Documentation

- Medical record

3.3 Educational Notes

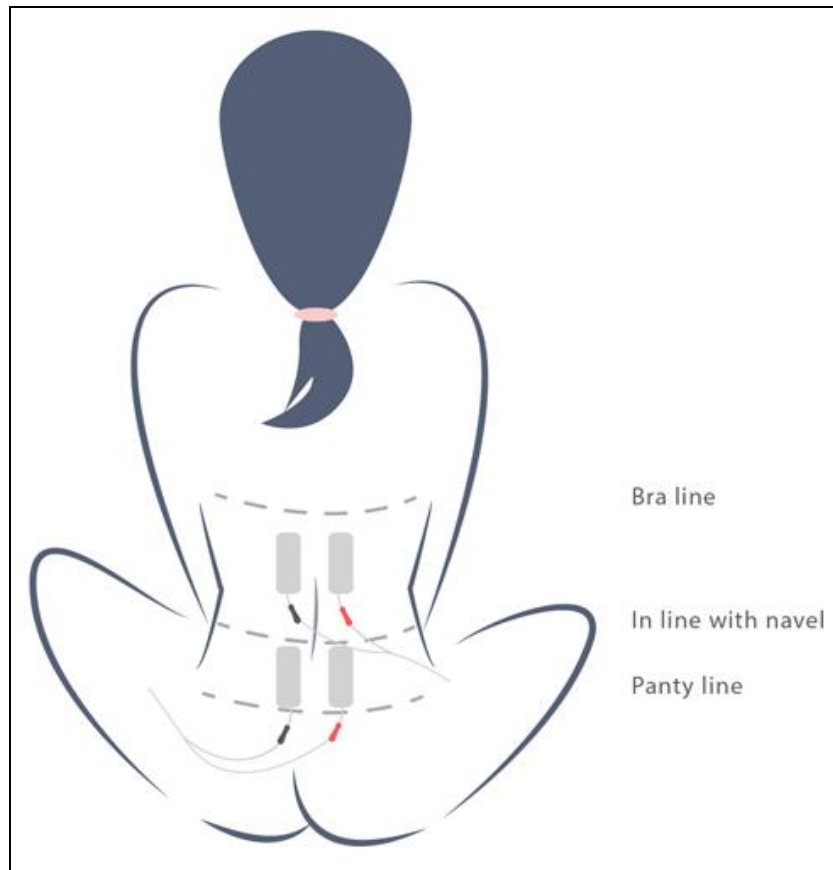
- TENS is a non-pharmacological analgesic technique, which uses three types of dosing regimens; low frequency, high frequency and intermittent or burst frequency⁴
- TENS has been shown to have no adverse effects on the mother or fetus^{3,4}
- TENS should not be used in and around water immersion, including shower/bath or birth pool^{3,4}
- TENS should not be used if a woman has a cardiac pacemaker or a heart rhythm problem^{3,4}
- TENS has been found to be favourable in 90% of birthing woman³
- Studies have found that the use of TENS during labour did not affect the childbirth process, maternal and or fetal outcomes⁴
- The pain of contractions can be categorised in to two elements² – visceral and somatic:
 - Visceral pain occurs during early first stage and second stage. The painful stimulus arises from uterine contractions and cervical dilatation and is transmitted to the posterior nerve root ganglia at T10-L1
 - Somatic pain occurs during the transitional and second stage, with painful impulses resulting from stretching, distension and injury of the perineum, vagina, pelvic floor, and cervix conducted via the pudendal nerve through the anterior rami of S2-S4

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- Electrode pads should be applied on either side of the spine, with the tops of two pads at bra-strap level, and the other two lower down, at the level of the dimples in the lower back, just above the woman's buttock



3.4 Implementation and education plan

The revised CBR will be distributed to all medical, nursing and midwifery staff via @health email. The CBR will be discussed at ward meetings, education and patient quality and safety meetings. Education will occur through in-services, open forum, and local ward implementation strategies to address changes to practice. The staff are asked to respond to an email or sign an audit sheet in their clinical area to acknowledge they have read and understood the revised CBR. The CBR will be uploaded to the CBR tab on the intranet and staff are informed how to access.

3.5 Related Policies/procedures

- Epidural Policy and Management Guidelines
- Labour and Birth in Water
- Morphine Sulphate (Subcutaneous injections) for antenatal and labour pain
- Fetal electrode

3.6 References

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1. Thuvarakan, K., Zimmermann, H., Kold Mikkelsen, M., Gazerani, P. (2020). Transcutaneous Electrical Nerve Stimulation As A Pain-Relieving Approach in Labor Pain: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Neuromodulation: Technology at the Neural Interface*, 23(6), 732-746. <https://doi.org/10.1111/ner.13221>.
2. Njogu, A., Qin, S., Chen, Y., Hu, L., Luo, Y. (2021). The effects of transcutaneous electrical nerve stimulation during the first stage of labour: a randomised controlled trial. *BMC Pregnancy Childbirth*, 23(164). <https://doi.org/10.1186/s12884-021-03625-8>
3. Gupta, R., Kaur, G., Kaur, J., Chawla, S., Kaur, S., Kullar, K. K., Aujla, S. (2020). Evaluating the effectiveness of TENS for maternal satisfaction in laboring parturients - Comparison with epidural analgesia. *Journal of Anaesthesiol Clinical Pharmacology*, 36(4), 500-505. https://doi:10.4103/joacp.JOACP_286_19
4. Waller-Wise, R. (2022). Transcutaneous Electrical Nerve Stimulation: An Overview. *The Journal of Perinatal Education. Advancing Normal Birth*, 31(1), 49-57. <https://doi:10.1891/J-PE-D-20-00035>
5. ElleTENS+ Instructions for use. 2023.

4. ABORIGINAL HEALTH IMPACT STATEMENT DOCUMENTATION

- Considerations for culturally safe and appropriate care provision have been made in the development of this Business Rule and will be accounted for in its implementation.
- When clinical risks are identified for a Aboriginal or Torre Strait Islander woman or family, they may require additional supports. This may include Aboriginal health professionals such as Aboriginal liaison officers, health workers or other culturally specific services

5. CULTURAL SUPPORT

- When clinical risks are identified for an Aboriginal or Torre Strait Islander women or family, they may require additional supports. This may include Aboriginal health professionals such as Aboriginal liaison officers, health workers or other culturally specific services.
- For a Culturally and Linguistically Diverse CALD woman, notify the nominated cross-cultural health worker during Monday to Friday business hours
- If the woman is from a non-English speaking background, call the interpreter service: [NSW Ministry of Health Policy Directive PD2017_044-Interpreters Standard Procedures for Working with Health Care Interpreters.](#)

6. REVISION AND APPROVAL HISTORY

Date	Revision No.	Author and Approval
Reviewed and endorsed Maternity Services LOPs 14/8/18 Approved Quality & Patient Safety Committee 15/4/10 Endorsed Obstetrics Guidelines Group March/April 2010		
2/04/2024 6.4.24	3	Maternity CBR Committee Endorsed at BRGC