

SUBJECT: WOUND CARE - ELECTRICAL STIMULATION	REFERENCE #8134
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PURPOSE:

- Electrical stimulation promotes tissue healing in the following ways:
 - Restores the skin’s battery potential
 - Cathodal stimulation has a bacteriocidal effect
 - Proliferative and migratory capacity of epithelial and connective tissue cells is increased
 - Increases cutaneous oxygen tension
 - Increases protein and DNA synthesis
 - Increases circulation

INDICATIONS:

- Ischemic skin ulcers, including stage III and IV pressure ulcers
- Non-healing or slow healing wounds
- Acute wounds

CONTRAINDICATIONS:

- Osteomyelitis (deep pain and signs of systematic infection)
- Healing fractures
- Areas of active bleeding
- Neoplastic cells in treatment area
- Phlebitis in treatment area

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- Superficial metal implants or metal ions in the treatment area (topical treatments must be flushed out with saline)
- Placed over pharyngeal or laryngeal muscles
- Pregnant females
- Patients with myocardial disease
- Internal cardiac pacemakers
- Implantable cardiac defibrillators

TREATMENT PARAMETERS:

- High Volt Galvanic Stimulation delivers a short duration high intensity stimulation with an average current amplitude of 100-500 microamperes resulting in comfortable tingling sensation, paresthesia and no muscle response.
- Low Volt direct current has current amplitude of 100-500 microamperes.
- Set-up options:
 - Direct application:
 - Use saline-soaked gauze to fill the cavity. Active electrode is place directly over the wound and affixed with paper tape. The dispersive electrode is placed proximal to the wound.
 - ◆ Active electrode should be negative for infected wound, and active electrode should be positive for culture-free wound.
 - Surrounding the wound:
 - Two (2) equal sized electrodes are placed lateral to the wound edges on intact skin.

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- Wound Types:
 - Infected wounds, inflammation and necrosis:
 - PPS, negative polarity, every day for 20-60 minutes, 50-200 pulses per second (pps), 20-100 μ sec, until clean granulating wound.
 - Action: to soften necrotic tissue, increase blood flow, possibly bactericidal.
 - Granulating wound:
 - PPS, positive polarity, 50-200 pulses per second (pps), 20-100 μ sec, every day for 20-60 minutes five (5) days per week.

PROCEDURE:

- Gather all necessary supplies and equipment.
- Identify the patient using two (2) patient identifiers.
- Explain the procedure to the patient.
- Confused or disoriented patients must be attended to during treatment.
- Perform hand hygiene and don gloves.
- Properly drape patient.
- Remove and discard dressings in red bag.
- Rinse wound thoroughly with sterile saline.
- Apply new. clean electrodes.
- Set parameters, per above guidelines.

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- Start treatment.
- When treatment is completed, remove electrodes.
- Cover wound and inform patient unit RN to apply prescribed dressing.

DOCUMENTATION:

- Document treatment parameter (machine settings)
- Area treated
- Electrode placement
- Patient response to treatment
- Description of wound or burn

REFERENCES:

- O'Sullivan, Susan B., Siegelman, Raymond P., *National Physical Therapy Examination Review and Study Guide*, International Educational Resources, 2010, p.339
- O'Sullivan, Susan B., Schmitz, Thomas J., *Physical Rehabilitation*, F.A. Davis Company; Fifth Edition, 2007, p.665-71