

## Application Brief #9110A

### WOUND HEALING ACCELERATION WITH THE ACUTRON MENTOR USING MICROAMP AND NARROW PULSE MILLIAMP CURRENTS

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**INDICATIONS FOR TREATMENT:** Decubitus ulcers, slow healing wounds, septic or necrotic wounds, post surgical wounds, post-stroke necrotic areas, sports injuries.

**POSSIBLE CONTRAINDICATIONS:** Caution needed in applying any electrical stimulation to patients with malignancies.

**METHOD: Evaluate wounds to be treated according to stage of healing: \***

**Stage 1-** Reddening or blistering of superficial skin

**Stage 2-** Broken superficial skin, with possible transition into deeper tissues

**Stage 3-** Wound involvement extends to destruction of deeper fatty tissues

**Stage 4-** Wound penetrates through muscle to bone

The following treatments are primarily for stage 3 and 4 wounds, although similar procedures are applicable for stage 1 and 2

#### **A. For infected or necrotic tissues:**

Loosely fill wound with sterile gauze soaked in sterile saline solution. Place additional layer of sterile wetted gauze on top, covered with aluminum foil cut to size of wound. Secure very carefully with skin tape, taking care to only apply tape to healthy surrounding tissue. Use alligator clip adapter on black tip end of Acutron lead cords, and clip onto foil. Attach red tip end to same cord to larger dispersive pad 15 - 18 cm across from or proximal to wound, within same dermatome as wound. Set Acutron to the following parameters:

**Preset: Select  $\mu$ A Pad preset #2 (Dermatome/Distal), modify as follows:**

**Timer:** 20 minutes or Continuous for 30 minute treatment

**Intensity:** 50 - 300  $\mu$ A. Use higher end for larger wounds

**Frequency:** Set to direct current: modify Hz to 00

**Polarity:** Preset already set to Negative - Will make black-tip lead negative, red tip lead positive. Place negative pad on wound and positive pad across from or proximal to wound

**Waveform:** Square (microamp)

**Modulation:** Continuous, or Burst for patients with reactive neuralgias

Treat for 20 - 30 minutes, once a day. Check electrode sites for any evidence of skin irritation or exudation, if seen reduce current intensity. After three days, wound should show sloughing off of necrotic tissues. Use standard debridement methods to remove.

**B. Treatment to promote granulation of new tissue - For non-infected wounds with no necrosis, or after above treatments:**

Loosely pack wound with sterile gauze, as above. Attach black tip of TENS cord to gauze on wound, and attach red tip of same cord to distal dispersive electrode within same dermatome as wound. Set Acutron to following parameters:

**Acutron Preset: mA Pad preset #2 (Narrow Pulse Galvanic), modify as follows:**

**Timer:** Continuous for 30 - 45 minutes

**Intensity:** 20 - 50 mA - higher end for larger wounds

**Frequency:** 100 Hz

**Polarity:** Set to Polarized. Black-tip lead will be negative, red-tip lead positive. Use positive (red) lead on wound, negative (black) across or distal to wound

**Pulse Width:** 25 - 40  $\mu$ S

**Waveform:** Pulse (milliamp)

**Mode:** Continuous, or Burst for patients with reactive neuralgias

Reduce current if any muscle twitching or discomfort is noticed

Treat for 30 - 45 minutes, one or two times per day. Granulation of new tissue should be noticeable by the third treatment. If plateau in healing rate occurs in which there is no more progress, change electrode placements to those described in A, above. Use negative electrode over wound and positive dispersive electrode proximal to wound in same dermatome.

**Other notes:**

1) The Acutron's four independent pad channels can be used to treat several wounds simultaneously.

2) In the case of deep tunneling wounds, make sure tunnel is filled in with healing tissue before closure of surface opening. If not, surgical intervention may be necessary.

3) Sterility must be maintained at all times over over wounds.

4) Similar protocols to those described in B., above may be used to treat post-surgical wounds.

\*\*\* 5) You may alternate between protocols A and B, above to maintain positive progress in wound healing. Start with 3 days fo A, then three days of B, then back to A, etc.

\* Information on stages of healing has been adapted from Wound Healing- Alternatives and Management by Kloth, Feedar, and McCulloch, FA Davis publisher.