

**ED Initiative**  
**Guidelines for Wound Closure: Scalp/Head**

**Purpose:** The purpose of this guideline is to ensure early identification of the wound requiring operative exploration, irrigation, and closure. The guideline also serves to ensure adequate wound irrigation and closure so as to prevent development of local and/or systemic infection.

**Guideline:**

- I. History: Special attention should be paid to factor that can affect wound healing
  - a. Onset of injury (time of exposure to environmental elements)
  - b. Mechanism of injury
  - c. Host factors
  - d. Extreme older or younger age group
  - e. Diabetes Mellitus
  - f. Chronic renal failure
  - g. Obesity
  - h. Malnutrition
  - i. Use of immunosuppressive medications
  - j. Connective tissue disorders
  - k. History of keloid formation
  - l. Allergies
  - m. Immunization status: Tetanus
- II. Wound Examination: Adhering to sterile technique the wound should be evaluated and the Neurosurgery team should be notified for;
  - a. Violation of the galea
  - b. Dural penetration
  - c. Presence of underlying fracture;
- III. Galea Violation (laceration down to bone)
  - a. Requires either separate galea closure or placement of deep sutures Using of 2.0 nylon with a through and through technique capturing the galea
  - b. All galea closures must be supervised by either Neurosurgery or the on-call ED Attending
- IV. Dural Penetration
  - a. Requires operative irrigation and closure
- V. Depressed Skull Fractures:
  - a. Open (compound) fractures depressed greater than skull thickness should undergo operative intervention to prevent infection
  - b. Open (compound) depressed skull fractures may be treated non-operatively if:
    - i. No clinical or radiographic evidence of dural penetration
    - ii. No significant intracranial hematoma
    - iii. No depression > 1cm
    - iv. No frontal sinus involvement

- v. No gross cosmetic deformity
- vi. No wound infection
- vii. No pneumocephalus
- viii. No gross wound contamination

#### VI. Wound Preparation

- a. Hair removal via clipping or shaving
- b. Irrigation
  - i. Use 1-2 liters normal saline, apply under 5-8lbs of pressure per square inch
- c. Debridement
  - i. Debride any devitalized tissue: fat, muscle, skin
  - ii. Remove all foreign body material

#### VII. Wound Closure

- a. Timing: Within 6 hours of presentation
  - i. Attempts should be made to provide closure in the ED, when appropriate, prior to transferring to ICU, 4B, 4D, or med-surg units
- b. Administer a local anesthetic agent
- c. Materials: 3.0 Nylon suture unless;
  - i. Wound size <1cm (ok to staple)
  - ii. Presence of Acute active bleeding and temporary stapling needed for tamponade
    - 1. Must have washout and definitive closure using 3.0 Nylon suture within 6 hours of presentation
- d. Apply Bacitracin ointment for 3 days
- e. Antibiotic Administration
  - i. Routine prophylactic antibiotics is not recommended
  - ii. Antibiotic use should be tailored to the individual on the basis of the degree of bacterial contamination, the presence of infection-potentiating factors, mechanism of injury, and host factors