



# CHARLOTTESVILLE-ALBEMARLE RESCUE SQUAD CLINICAL REVIEW AND TRAINING

## Hemostasis Policy

### CAT Tourniquet

**Indications:** Extremity hemorrhage (generally arterial) uncontrolled by direct pressure.

### Training Videos

- <http://combattourniquet.com/videos/buddy-aid-leg-application/> (Femoral/inguinal pressure)
- <http://combattourniquet.com/videos/buddy-aid-arm-application/> (Brachial pressure)

### Procedure:

**Skill Level: B/E/I/P**

1. Identify bleeding extremity with apparent arterial bleeding (bright red, pulsatile)
2. With two providers: First provider holds hard direct pressure to proximal artery or injury while the second applies tourniquet proximal to bleeding site.
3. With single provider: Approach patient and apply hard pressure proximal to affected artery with knee then apply tourniquet while continuing to hold pressure.
4. Once band is applied, tighten tourniquet by twisting rod until bright red bleeding and pulse have stopped.
5. Secure rod by placing it within clip.
6. If bleeding is still uncontrolled apply a second tourniquet proximal to first and consider CELOX gauze.
7. **Skill Level I/P:** After application consider pain control with fentanyl up to 1mcg/kg with 100mcg maximum for hemodynamically stable patients and TXA administration if internal injuries suspected.
8. **TRANSPORT IMMEDIATELY TO UVA**

### CELOX Z-fold Gauze

**Indications:** Non-extremity bleeding uncontrolled by direct pressure and for use in conjunction with tourniquets for control of extremity bleeding. **(Note: for arterial bleeding CAT should be applied before CELOX is attempted).**

**Training Video** <https://www.youtube.com/watch?v=SktWh8rcqaQ>

### Procedure:

**Skill Level: B/E/I/P**

1. Find source of bleeding and apply direct pressure with gloved hand or gauze if available. If extremity injury, apply CAT before moving any farther.
  - a. If blood has pooled then wipe it out with a gloved hand or sterile gauze before applying CELOX gauze
2. Pack wound with CELOX gauze and hold pressure for three minutes while moving towards trauma center





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- a. After 3 minutes reevaluate bleeding and continue to hold pressure for another 3 minutes if needed. If at this time bandage is completely saturated with bleeding uncontrolled, remove gauze and return to step 2 with new gauze.
- b. Once bleeding is controlled, apply bandage over the packed wound.
3. In prehospital setting do not remove gauze *if bleeding is controlled*.
4. **Skill Level I/P:** Administer TXA for patients with hemodynamic instability

### Notes:

- Tourniquets are safe and have been shown to be effective in improving outcomes for patients with life-threatening bleeding.<sup>1,2</sup>
- CELOX gauze is non-heat generating and non-allergenic unlike previous hemostatic agents. Below are two training pdfs with more information <http://www.celoxmedical.com/wp-content/uploads/Celox-introduction.pdf> <http://www.celoxmedical.com/wp-content/uploads/How-to-use-Gauze.pdf>
- CELOX Data sheet <http://www.celoxmedical.com/wp-content/uploads/Celox-Gauze-Z-Fold-data-sheet.pdf>

1. Beekley AC, Sebesta JA, Blackburne LH, et al. Prehospital tourniquet use in operation iraqi freedom: Effect on hemorrhage control and outcomes. *J Trauma*. 2008;64(2 Suppl):S28-37; discussion S37. doi: 10.1097/TA.0b013e318160937e [doi].

2. Kragh JF,Jr, Walters TJ, Baer DG, et al. Practical use of emergency tourniquets to stop bleeding in major limb trauma. *J Trauma*. 2008;64(2 Suppl):S38-49; discussion S49-50. doi: 10.1097/TA.0b013e31816086b1 [doi].