

Tactical Combat Casualty Care Guideline Change 13-05: Hemostatic Dressings



23 March 2014

Tactical Field Care Guidelines

4. Bleeding

- b. For compressible hemorrhage not amenable to tourniquet use or as an adjunct to tourniquet removal (if evacuation time is anticipated to be longer than two hours), **use Combat Gauze as the CoTCCC hemostatic dressing of choice. Celox Gauze and ChitoGauze may also be used if Combat Gauze is not available. Hemostatic dressings should be applied with at least 3 minutes of direct pressure.** Before releasing any tourniquet on a casualty who has been resuscitated for hemorrhagic shock, ensure a positive response to resuscitation efforts (i.e., a peripheral pulse normal in character and normal mentation if there is no traumatic brain injury (TBI)).

Tactical Field Care Guidelines

4. Bleeding

- b. (cont.) If the bleeding site is appropriate for use of a junctional tourniquet, immediately apply a CoTCCC-recommended junctional tourniquet. Do not delay in the application of the junctional tourniquet once it is ready for use. **Apply hemostatic dressings** with direct pressure if a junctional tourniquet is not available or while the junctional tourniquet is being readied for use.

CoTCCC-recommended Hemostatic Dressings



CoTCCC-Recommended Hemostatic Agents



Combat Gauze



Celox Gauze



ChitoGauze

Combat Gauze

- Tested in the ISR safety model
- Widely fielded in the DoD
- Case series from the battlefield and the civilian sector:
 - CG is effective at stopping bleeding
 - No safety issues reported
- Recommended by CoTCCC as first choice for hemostatic dressing



Alternative Hemostatic Agents

- Celox Gauze
- ChitoGauze
 - May be used if Combat Gauze is not available
 - Active ingredient is chitosan, a mucoadhesive
 - Function is independent of coagulation cascade
 - There are case series that report that chitosan dressings have stopped bleeding in surgical patients with life-threatening bleeding and severe coagulopathy
 - Does not cause reactions in persons allergic to shellfish

Alternative Hemostatic Agents

- Celox Gauze and ChitoGauze are as effective as Combat Gauze at hemorrhage control in laboratory studies:
 - Rall JM, Cox JM, Songer AG, et al. Comparison of novel hemostatic gauzes to QuikClot Combat Gauze in a standardized swine model of uncontrolled hemorrhage. *J Trauma Acute Care Surg.* 2013; 75(2 Suppl 2):S150-6.
 - Satterly S, Nelson D, Zwintscher N, et al. Hemostasis in a noncompressible hemorrhage model: An end-user evaluation of hemostatic agents in a proximal arterial injury. *J Surg Educ.* 2013;70(2):206-11.
 - Watters JM, Van PY, Hamilton GJ, et al. Advanced hemostatic dressings are not superior to gauze for care under fire scenarios. *J Trauma* 2011;70:1413-18.
 - Schwartz RB, Reynolds BZ, Shiver SA, et al. Comparison of two packable hemostatic Gauze dressings in a porcine hemorrhage model. *Prehosp Emerg Care* 2011;15:477-482

Alternative Hemostatic Agents

- Neither ChitoGauze nor Celox Gauze have been tested in the USAISR safety model, but
- Chitosan-based hemostatic dressings have been used in combat since 2004 with no safety issues reported.

CoTCCC-Recommended Hemostatic Agents

- For more information:
 - Combat Gauze
 - <http://www.z-medica.com/military/Home.aspx>
 - Celox Gauze
 - <http://www.celoxmedical.com/usa/products/celox-gauze/>
 - ChitoGauze
 - <http://www.hemcon.com/Products/ChitoGauzeHemostaticGauzeOverview.aspx>

Combat Gauze

NSN 6510-01-562-3325

- Combat Gauze™ is a 3-inch x 4-yard roll of sterile gauze impregnated with kaolin, a material that causes blood to clot.
- Found (in lab studies and actual use) to be safe and effective in controlling bleeding that would otherwise be fatal.



Combat Gauze Directions (1)

Expose Wound & Identify Bleeding

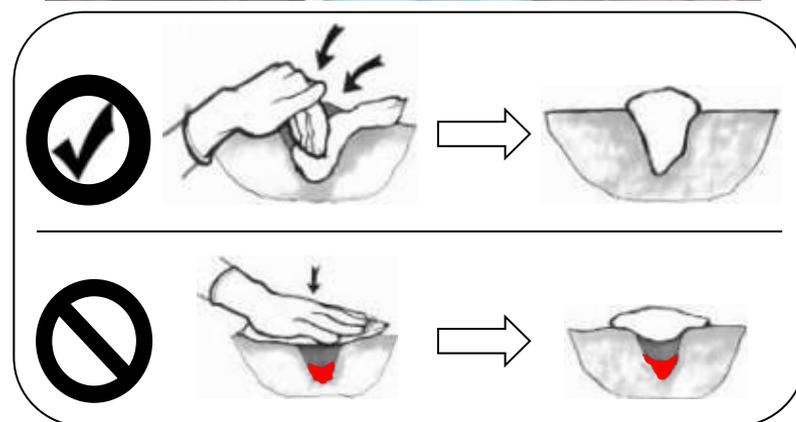
- Open clothing around the wound.
- If possible, remove excess pooled blood from the wound while preserving any clots already formed in the wound.
- Locate the source of the most active bleeding.



Combat Gauze™ Directions (2)

Pack Wound Completely

- Pack Combat Gauze tightly into wound and directly onto the source of bleeding.
- More than one gauze may be required to stem blood flow.
- Combat Gauze may be re-packed or adjusted in the wound to ensure proper placement.



Combat Gauze Directions (3)

Apply Direct Pressure

- Quickly apply pressure until bleeding stops.
- Hold continuous pressure for 3 minutes.
- Reassess to ensure bleeding is controlled.
- Combat Gauze may be repacked or a second gauze used if initial application fails to provide hemostasis.



Combat Gauze Directions (4)

Bandage over Combat Gauze™

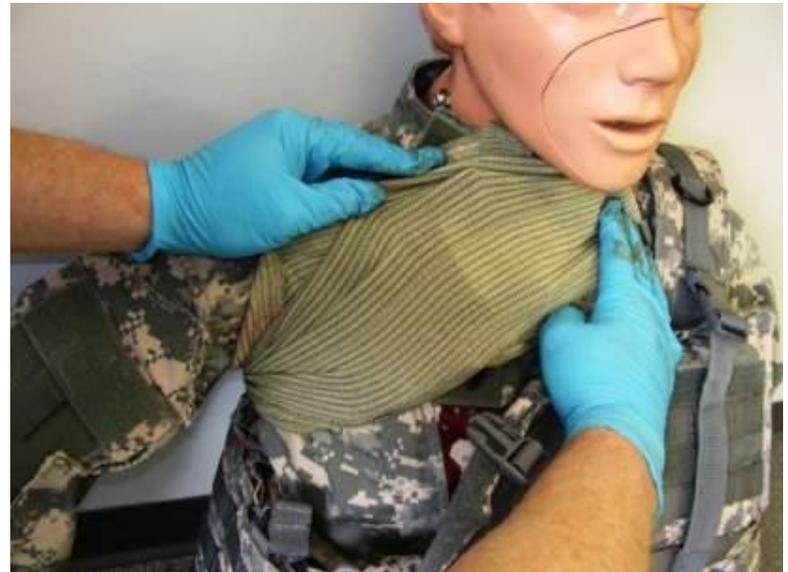
- Leave Combat Gauze in place.
- Wrap to effectively secure the dressing in the wound.



Although the Emergency Trauma Bandage is shown in this picture, the wound may be secured with any compression bandage, Ace wrap, roller gauze, or cravat.

Combat Gauze Directions (5) Transport & Monitor Casualty

- Do not remove the bandage or Combat Gauze.
- Transport casualty to next level of medical care as soon as possible.



Combat Gauze Video

Access Z-Medica's training module at:

<http://www.z-medica.com/Training/TrainingLinks.aspx>



Questions?