

Subject: Treatment – ALL PROVIDERS
Hemorrhage Control Policy

I. PURPOSE

- A. Hemorrhage control should only be utilized for the management of patients that have an external injury that has damaged arterial or venous blood vessels resulting in large volume blood loss.
- B. Hemorrhage control is not intended for the management of smaller lacerations where traditional methods of bleeding control may be effective.

II. INDICATIONS AND PROCEDURES – DIRECT PRESSURE, WOUND PACK, COMPRESSION BANDAGE

A. Compressible Wounds and Lacerations

1. Direct Pressure:

- a. First-line bleeding control during wound assessment and/or in patients with minor to moderate bleeding/hemorrhage. Apply direct pressure using appropriate gauze or dressing to wound. If bleeding becomes controlled, provider may address additional patient issues as needed.
- b. If bleeding is not controlled, consider:
 - i. Insert finger(s) into laceration and locate the source of the hemorrhage.
 - ii. Apply direct pressure to source of bleeding with finger(s) to slow bleeding.
- c. If direct pressure and traditional dressing are insufficient in controlling the bleeding or hemorrhage, continue to wound packing and/or compression bandage.

2. Wound Packing and Compression Bandage

a. Wound Packing:

- i. Pack either gauze or hemostatic impregnated gauze deep inside the wound using the other hand.
- ii. Continue to pack gauze into the wound creating firm pressure to the source of the bleeding.
- iii. Remove the fingers holding pressure and continue to pack the wound with gauze until no more gauze can be placed in the wound.
- iv. This packing should be tight in the wound and fill all voids, so pressure is maintained to the source of the bleeding.
- v. If the wound is large enough to accept multiple gauze, a count should be maintained and communicated to the receiving hospital.
- vi. Once wound has been sufficiently packed, continue to compression bandage/emergency bandage.
- vii. Do not pack wounds that open into the thoracic cavity or head wounds with a suspected open skull fracture.

3. Compression Bandage:

- a. Place trauma dressing(s) over the packed wound and apply compression bandage or emergency bandage to affected area.
 - i. Ensure the bandaging has been tightly placed to ensure continuous

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pressure to the hemorrhage while maintaining the wound packing.

III. INDICATIONS AND PROCEDURES - TOURNIQUETS

A. Tourniquet (Extremity):

Adult or pediatric patient with uncontrolled extremity hemorrhage or major hemorrhages where wound packing and compression bandaging would be insufficient in controlling bleeding or in situations of MCI or unsafe scene where previous steps require too much time.

- A. Tourniquets shall be placed 2-3 inches above the wound, avoiding the knee or elbow. If bleeding cannot be quickly identified or there is an unsafe scene, place the tourniquet to the thigh or upper arm proximally to the wound (“high and tight”) and in accordance with manufacturers specifications.
- B. Tourniquets will be tightened to eliminate the distal pulse in the extremity, not to just “slow” the bleeding.
- C. Tourniquets should be used in conjunction with wound packing and/or compression dressings or emergency bandages, do not remove bandaging.
- D. Once tourniquet has been applied, document the time of application.
- E. Tourniquets applied by lay rescuers or other responders shall be evaluated for appropriateness and may be adjusted or removed if necessary – all improvised tourniquets should be removed by prehospital personnel.
- F. If application is indicated and appropriate, a commercial tourniquet should not be loosened or removed by prehospital personnel unless time to definitive care will be greatly delayed (>2 hrs).
 - a. If extended transport >2 hrs, attempt tourniquet conversion if the patient is not in shock, the wound can be monitored, and it is not controlling an amputation
 - i. Add one loose tourniquet (Plus-1 tourniquet) above the original tourniquet in case the original tourniquet breaks during conversion
 - ii. Slowly release pressure from the tourniquet windlass, unwinding a half turn every 10 seconds. Continually monitor for wound bleeding throughout and after conversion. Dress wound with a hemostatic dressing and hold manual pressure for 3-5 minutes, then secure with a pressure dressing.
 - iii. If conversion fails and the wound bleeds, move the original tourniquet as close to the wound possible and retighten.
 - iv. If bleeding continues, tighten the Plus-1 tourniquet

IV. INDICATIONS AND PROCEDURES – HEMOSTATIC DRESSING USE

A. Hemostatic Dressing Use:

After tourniquet placement and to aid in severe arterial bleeding, to control severe bleeding where tourniquets are not indicated, or severe uncontrolled

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nosebleed use of a hemostatic agent is indicated.

1. If bleeding persists despite using all other measures for control, apply State approved hemostatic dressing (see approved list in BLS Equipment List) directly to the bleeding site according to manufacturer's direction.
2. Replace absorbent pad/pressure dressing.
3. Apply direct pressure per manufacture's recommendation.
4. Do not place dressing on open head wounds with possible brain exposure.

V. DOCUMENTATION

- A. Hemorrhage control measures
- B. Tourniquet time, if applicable
- C. Tourniquet conversion, if applicable

VI. QUALITY IMPROVEMENT INDICATORS

- A. Tourniquet placement
- B. Tourniquet conversion

RESOURCE

Drew, B., Bird, D., Matteucci, M., & Keenan, S. (2015). Tourniquet conversion: A recommended approach in the prolonged field care setting. *Journal of Special Operations Medicine*, 15(3), 81–85. <https://prolongedfieldcare.org/wp-content/uploads/2015/09/drew-jsom-fall-2015-edition-2.pdf>