



Tourniquet Use

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Thank you Justin – I am looking forward to discussing the use of Tourniquets with our students.

Tourniquets are small and simple devices that stop arterial blood loss from injured limbs in just a few seconds. They work by pinching off the artery — similar to cutting off the flow of a garden hose, by pinching the hose in half.

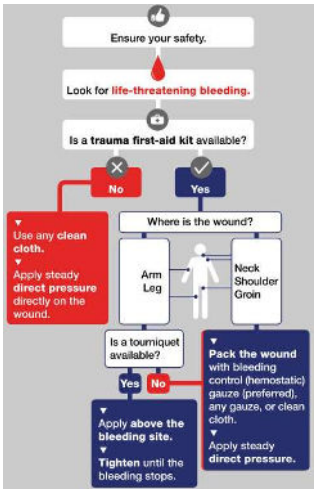
In this lesson, We will examine tourniquet application do's and don'ts, various types of tourniquets and their application, and finish up discussing improvised tourniquets.

Good studying.

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TOURNIQUET USE

- Tourniquets should be applied rapidly if extremity bleeding cannot be controlled with direct pressure, or if effective direct pressure is not possible
- The number one cause of death from a bleed is not using a tourniquet!!!



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The protocol for the use of a Tourniquet is as follows:

- Use when the bleeding is uncontrollable by direct pressure and hemostatic agents,
- Use only on extremity injuries. and
- Always apply between the wound and the heart.

Hence, Tourniquets should be applied rapidly if extremity bleeding cannot be controlled with direct pressure, or if effective direct pressure is not possible.
Battlefield testing has shown that Tourniquets are useful in severe bleeding, when not otherwise controllable. And that the average transport time of less than one hour does not pose a severe risk to the long-term outcome.
Also, Note that Removing a Tourniquet can dislodge clots that have formed, resulting in further blood loss.
Remember, the number one cause of death from a bleed is not using a tourniquet!!!

Tourniquet Use – Junctional Tourniquets

- Junctional tourniquets are in a different category and are not addressed in this program
- Control bleeding by compressing vessels in areas other than extremities
- Newer to the market | Relatively pricey
- The SAM® Junctional Tourniquet for hemorrhage control is designed to control bleeding in areas where standard tourniquets would not be effective, such as with IED/Blasts or high-level amputations

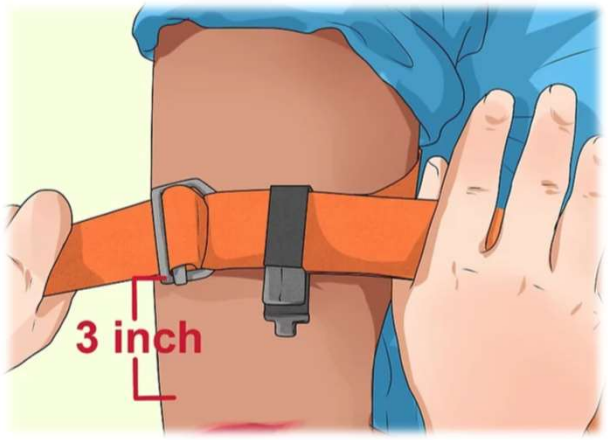


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Junctional tourniquets work by Controlling bleeding by compressing vessels in areas other than extremities.
The SAM® Junctional Tourniquet for hemorrhage control is designed to control bleeding in areas where standard tourniquets would not be effective, such as with IED Blasts or high-level amputations.
However, Junctional tourniquets are in a different category and are not addressed in this chapter.

Tourniquet Application Do's & Don'ts #1 of 3

- Commercial tourniquets should be applied per manufacture guidelines
- Ideally, tourniquets should be placed 2"-3"above the site of the injury
- An acceptable alternative is to place the tourniquet as high as possible on the extremity
- "Go High or Die"



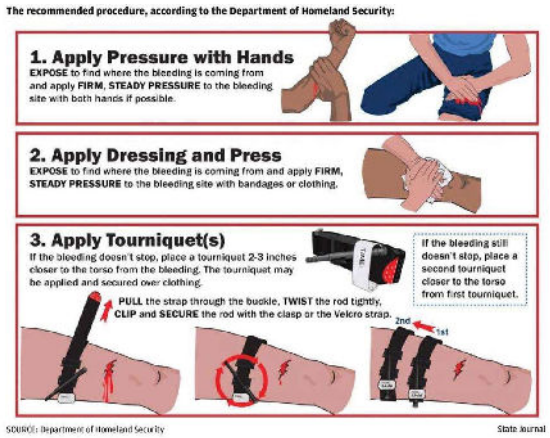
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So here is the first slide of some commonsense do's and don'ts, on the application of tourniquets.

- Commercial tourniquets should be applied per the manufacturer's guidelines
- Ideally, tourniquets should be placed two to three inches above the site of the injury.
- An acceptable alternative is to place the tourniquet as high as possible on the extremity
- **Our EMS colleagues often quote: "Go High or Die"**

Tourniquet Application Do's & Don'ts #2 of 3

- If bleeding won't stop with one tourniquet, apply a second tourniquet above the first one
- If an additional tourniquet is required and there is no room above the tourniquet, put the second tourniquet below and as close to the first one as possible

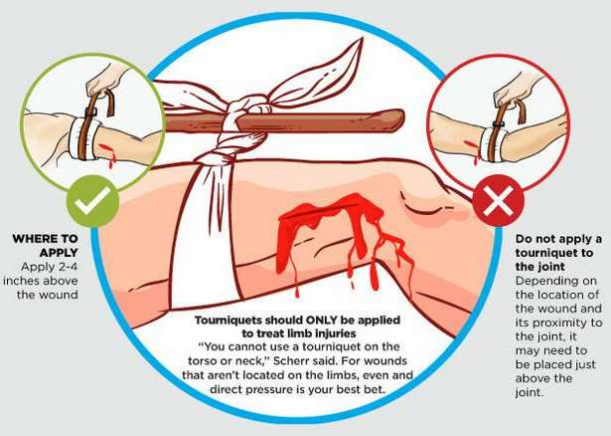


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If the bleeding won't stop with one tourniquet, apply a second tourniquet above the first one.
If an additional tourniquet is required and there is no room above the tourniquet, put the second tourniquet below and as close to the first one as possible.
Take a moment to read the advice from the department of homeland security shown in the diagram.

Tourniquet Application Do's & Don'ts #3 of 3

- Do not place a tourniquet over a joint. If the joint is the 2"-3"above the bleed, place the tourniquet above the joint
- Placing the tourniquet in direct contact with the skin is preferred
- Tourniquets can be placed over clothes but avoid placement over pockets containing any items



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And here are the final tidbits on dos and don'ts of tourniquet application.
First, Do not place a tourniquet over a joint. If the joint is two to three inches above the bleed, place the tourniquet above the joint.
Next, Placing the tourniquet in direct contact with the skin is preferred.
Finally, Tourniquets can be placed over clothes but avoid placement over pockets containing any items.

Types of Tourniquets

- There are several variations of tourniquets on the market.
- Mechanical tourniquets have 3 basic components:
  - ✓ A wide strap
  - ✓ A mechanical tightening mechanism
  - ✓ A method for securing the tightening mechanism
- Elastic tourniquets may be an acceptable alternative



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Looking at the many variations of tourniquets on the market, there is a commonality amongst the group.
First, Mechanical tourniquets have 3 basic components:

- A wide strap
- A mechanical tightening mechanism, and
- A method for securing the tightening mechanism.

And note, Elastic tourniquets may be an acceptable alternative.
Finally, Tourniquets should be chosen by the EMS service in cooperation and consultation with medical control.

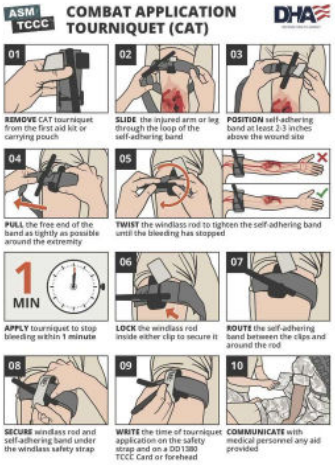
Tourniquet Examples

- Combat Action Tourniquet | (C-A-T)
- Special Operations Forces Tactical Tourniquet -(SOF®TT)
- SAM XT
- Improvised Tourniquets



Softt-03

- 50% wider
- 25% lighter



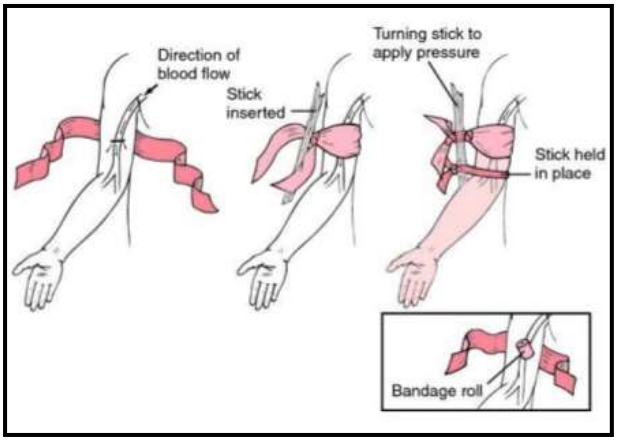
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We refer to four examples of tourniquets. Take a few moments to read through the diagram on the Combat Application Tourniquet.

IMPROVISED TOURNIQUETS – CAUTION!

- Improvised tourniquets can be considered when a commercial tourniquet is not immediately available
- Improvised tourniquets are more likely to fail than commercial tourniquets
- They should only be used when a commercial tourniquet is not available



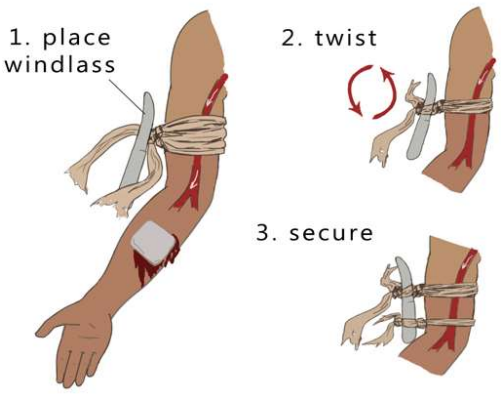
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We now finish up this section with four slides on improvised tourniquets. Some initial thoughts:

- First, Improvised tourniquets can be considered when a commercial type is not immediately available.
- Next, Improvised tourniquets are more likely to fail than commercial ones, and
- Finally, they should only be used when a commercial tourniquet is not available.

Improvised Tourniquets – Items Needed

- An appropriate length of material, at least 1”wide
  - ✓ 2”-3”width is preferred
- A rigid item to serve as a windlass (should resist bending or breaking such as a metal bar, trauma shears, large stick) strong enough to tighten the tourniquet
- Additional material to secure the windlass once the tourniquet is tightened



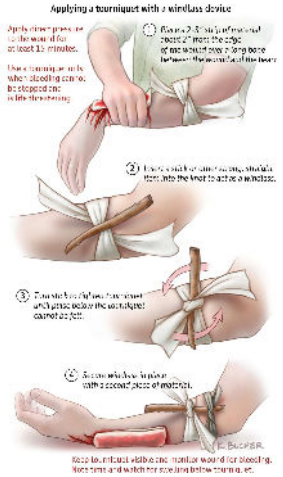
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If you must create a tourniquet, here are the items you will need.:

- First, An appropriate length of material, at least 1 inch wide. However, two to three-inch width is preferred.
- Next, A rigid item to serve as a windlass. The item should resist bending or breaking such as a metal bar, trauma shears, or a large stick; and be strong enough to tighten the tourniquet.
- And finally, some Additional material to secure the windlass once the tourniquet is tightened.

Improvised Tourniquets – Process

- Wrap the constricting material around the limb and secure with an appropriate knot
- Constrict the limb by twisting the material with a rigid item such as a ring cutter, shears or a carabiner
- Prevent the improvised windlass from loosening by securing it with additional material



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An effective process for applying the improvised tourniquet is:

- First, Wrap the constricting material around the limb and secure with an appropriate knot.
- Then, Constrict the limb by twisting the material with a rigid item such as a ring cutter, shears, or a carabiner.
- Finally, Prevent the improvised windlass from loosening by securing it with additional material.

Improvised Tourniquets – Likely Tools Available



Ring cutter as a windlass



Carabiner as a windlass



Shears as a windlass

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And we finish with three examples of how to use tools you may have on your truck, as a windlass for an improvised tourniquet. Take a few moments to look at the diagram.
So that's it for this lesson on Tourniquet Use.
Next is a short lesson on the State of Connecticut protocol for Tourniquet application.
Justin will be back to go over each step with you.
And after that, there will be two videos to watch.
Good studying.