

trauma care and hemorrhage control



Injury has become a major cause of death and disability worldwide

Organized approaches to its prevention and treatment are needed



What Causes Hemorrhage?

- ***Bleeding, or hemorrhage, is the name used to describe blood loss. It can refer to blood loss inside the body, called internal bleeding. Or it can refer to blood loss outside of the body, called external bleeding.***
- ***Blood loss can occur in almost any area of the body. Internal bleeding occurs when blood leaks out through a damaged blood vessel or organ. External bleeding happens when blood exits through a break in the skin.***



What are the common causes of bleeding?

- ***Bleeding is a common symptom. A variety of incidents or conditions can cause bleeding***
- ***An injury can cause traumatic bleeding. Common types of traumatic injury include:***

- 1. abrasions or grazes that do not penetrate below the skin***
- 2. hematoma or bruises***
- 3. lacerations or incisions***
- 4. puncture wounds from items like needles or knives***
- 5. crushing injuries***
- 6. gunshot wounds***



- ***When trying to stop a cut from bleeding, you need to know how to tell the difference between a bleeding vein and a bleeding artery.***
- ***Memorize this saying: Arteries spurt. Veins don't.***
- ***Arteries pump. Veins dump***

Step 1: Apply pressure.

- ***Use gauze or a clean cloth. If you don't have anything else, use a gloved hand. If it's yourself, as a last resort, use your bare hand. If it's others, beware you could be exposing yourself to a blood-borne disease. Stuff a gash with a cloth (the cleanest you have) or gauze, and hold pressure. A shirt will do.***



Step 2: Determine whether it's an artery or vein.

- ***If the blood is oozing, it's a vein.*** *The blood is probably also a darker color because it doesn't have as much oxygen. The bleeding usually stops after about five minutes of pressure. If you can't apply direct pressure, apply pressure just distal (toward fingers or toes) to the wound. Remember, it's draining back to the heart.*
- ***If the blood is spurting, it's an artery.*** *Arteries contract and expand to aid in pumping the flow. They may need more pressure to stop the bleeding. If pressure does stop it, hold the wound for up to fifteen minutes if you can. Then pack it with clean cloth and apply a bandage. The bleeding should be under control before closing the wound with suture or tape.*

- ***If you can't apply enough pressure to stop the bleeding, try pressing down just proximal to the wound (the side of that's closer to the heart). Remember, the blood is coming from the heart. Arteries are too deep to see them from your skin surface, but sometimes you can feel the pulsing. If you can't, just press in different areas proximally until the bleeding stops. Then pack and bandage.***
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- ***A tourniquet placed proximal to the arterial bleeding (toward the heart) will stop it, but could cut off enough blood supply that you could lose limb. If you must, use material about two inches wide and wrap just tight enough to stop the bleeding. (The same goes for wrapping any bandage.) If you can wedge two fingers under it you're probably okay, but still loosen it every few minutes to let the blood flow distally.***

Capillary Bleeding

- Slow
- Typically oozes
- Blood clots quickly
- Risk of infection higher than with arterial or venous
 - Scratches
 - Minor cuts
 - Abrasions



- *Small cuts and scrapes are usually **capillaries**. They connect the arteries to the veins and are very small. Bleeding from capillaries can usually be stopped fairly easily. Even if they're squirting, a little pressure for five to 10 minutes does the trick*

PRIMARY PRINCIPLES OF TRAUMA CARE RESPONSE

- Ensure your own safety
- The ABCs of Bleeding
 - **A** – Alert – **call 103**
 - **B** – Bleeding – find the bleeding injury
 - **C** – Compress – apply pressure to stop the bleeding by:
 1. Covering the wound with a clean cloth and applying pressure by pushing directly on it with both hands, OR
 2. Using a tourniquet, OR
 3. Packing (stuffing) the wound with gauze or a clean cloth and then applying pressure with both hands.

We will go over each of these points as we go through this booklet.



A: Alert ■ B: Bleeding ■ C: Compress



- Before you offer any help, you must ensure your own safety!
- If you become injured, you will not be able to help the victim
- Provide care to the injured person if the scene is safe for you to do so
- If, at any time, your safety is threatened, attempt to remove yourself (and the victim if possible) from danger and find a safe location
- Protect yourself from blood-borne infections by wearing gloves, if available



- Find the source of bleeding



- Open or remove the clothing over the wound so you can clearly see it
- Look for and identify “life-threatening” bleeding

By removing clothing, you will be able to see injuries that may have been hidden or covered.



What is "life-threatening" bleeding?



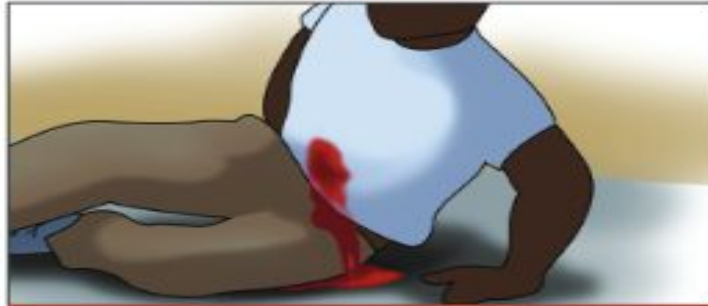
Blood that is spurting out of the wound.



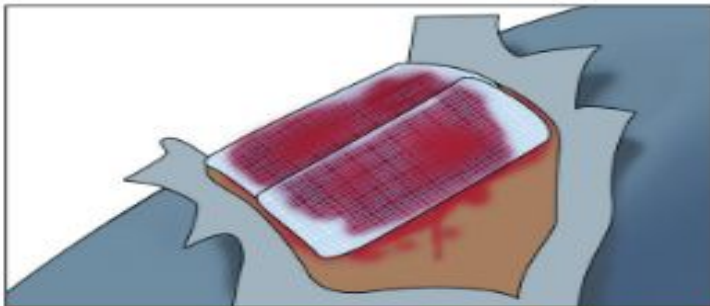
Blood that won't stop coming out of the wound



Blood that is pooling on the ground



Clothing that is soaked with blood



Bandages that are soaked with blood



Loss of all or part of an arm or leg



Bleeding in a victim who is now confused or unconscious

KEY POINT: *There are a number of methods that can be used to stop bleeding and they all have one thing in common – compressing a bleeding blood vessel in order to stop the bleeding.*

- If you **don't** have a trauma first aid kit:
 - **Apply Direct Pressure on the wound**
Cover the wound with a clean cloth and apply pressure by pushing directly on it with both hands
- If you **do** have a trauma first aid kit:
 - **For life-threatening bleeding from an arm or leg and a tourniquet is available:**
Apply the tourniquet
 - **For life-threatening bleeding from an arm or leg and a tourniquet is NOT available OR for bleeding from the neck, shoulder or groin:**
Pack (stuff) the wound with a bleeding control (also called a hemostatic) gauze, plain gauze, or a clean cloth and then apply pressure with both hands

We will discuss each of these actions in more detail in the next few pages.



DIRECT PRESSURE ON A WOUND



1. Take any clean cloth (e.g. shirt) and cover the wound
2. If the wound is large and deep, try to “stuff” the cloth down into the wound





3. Apply continuous pressure with both hands directly on top of the bleeding wound
4. Push down as hard as you can
5. Hold pressure to stop bleeding. Continue pressure until relieved by medical responders



APPLYING A TOURNIQUET

If you do have a trauma first aid kit:

For life-threatening bleeding from an arm or leg and a tourniquet is available:

- Apply the tourniquet
1. Wrap the tourniquet around the bleeding arm or leg about 2 to 3 inches above the bleeding site (*be sure NOT to place the tourniquet onto a joint – go above the joint if necessary*)

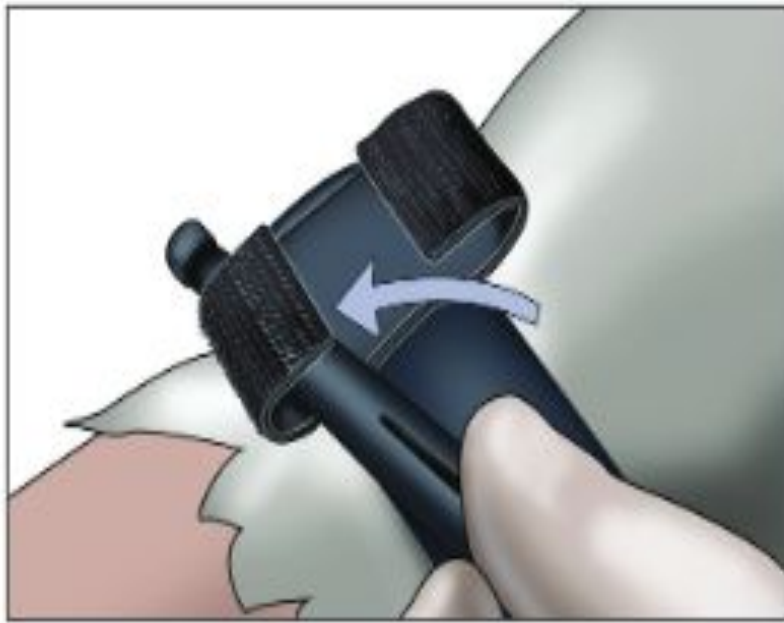


2. Pull the free end of the tourniquet to make it as tight as possible and secure the free end



3. Twist or wind the windlass until bleeding stops





4. Secure the windlass to keep the tourniquet tight



5. Note the time the tourniquet was applied

Note: A tourniquet will cause pain but it is necessary to stop life-threatening bleeding.



WOUND PACKING AND DIRECT PRESSURE

If you do have a trauma first aid kit:

For life-threatening bleeding from an arm or leg and a tourniquet is **NOT** available

OR

For life-threatening bleeding from the neck, shoulder or groin:

- Pack (stuff) the wound with bleeding control gauze (also called hemostatic gauze), plain gauze, or a clean cloth and then apply pressure with both hands.



1. Open the clothing over the bleeding wound
2. Wipe away any pooled blood





3. Pack (stuff) the wound with bleeding control gauze (preferred), plain gauze, or clean cloth.

4. Apply steady pressure with both hands directly on top of the bleeding wound

5. Push down as hard as you can

6. Hold pressure to stop bleeding. Continue pressure until relieved by medical responders.





3. Pack (stuff) the wound with bleeding control gauze (preferred), plain gauze, or clean cloth.



If bleeding has not stopped after 15 minutes of direct pressure, apply strong pressure at one of these points between the wound and the heart



Use a tourniquet **ONLY AS A LAST RESORT**, if bleeding cannot be stopped and the situation is life-threatening



ADAM



Identifying and Using Pressure Points to Control Bleeding:-



Temporal



Carotid



Facial



Brachial



Femoral



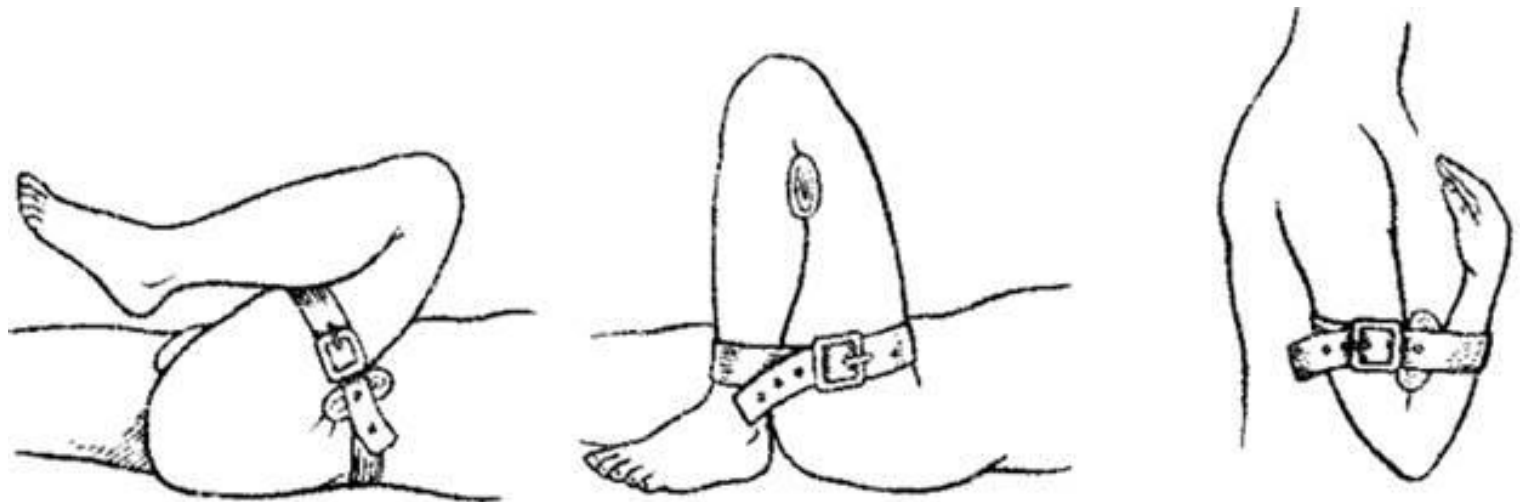
Radial-ulnar



Subclavian

Bleeding from femoral artery:-

- Exsanguination from a femoral artery wound can occur in seconds and may be encountered more often due to increased use of body armor. Some military physicians teach compression of the distal abdominal aorta (AA) with a knee or a fist as a temporizing measure.***
- Active bleeding from the femoral artery in the inguinal bending popliteal artery at the knee, the brachial artery at the elbow. This kind of stop the bleeding at the expense of flexion or abduction limb by bandages.***
- Pressing the blood vessels in the wound. Dressed sterile glove or hand quickly processed alcohol, chlorhexidine and index finger inserted into the wound, pressed vessels in a place where there is a stream of blood***



Bleeding from carotid artery :-

- Injuries involving the neck are always considered serious, regardless of its cause. Knowing first aid for severed neck blood vessels is essential in preventing catastrophic bleeding.***
- First aid for severed neck blood vessels***
- Bleeding from a severed carotid artery can be very difficult to manage because of the pressure of the blood. Trained first aiders and EMTs use this technique to control bleeding from severed [neck blood vessels](#)***

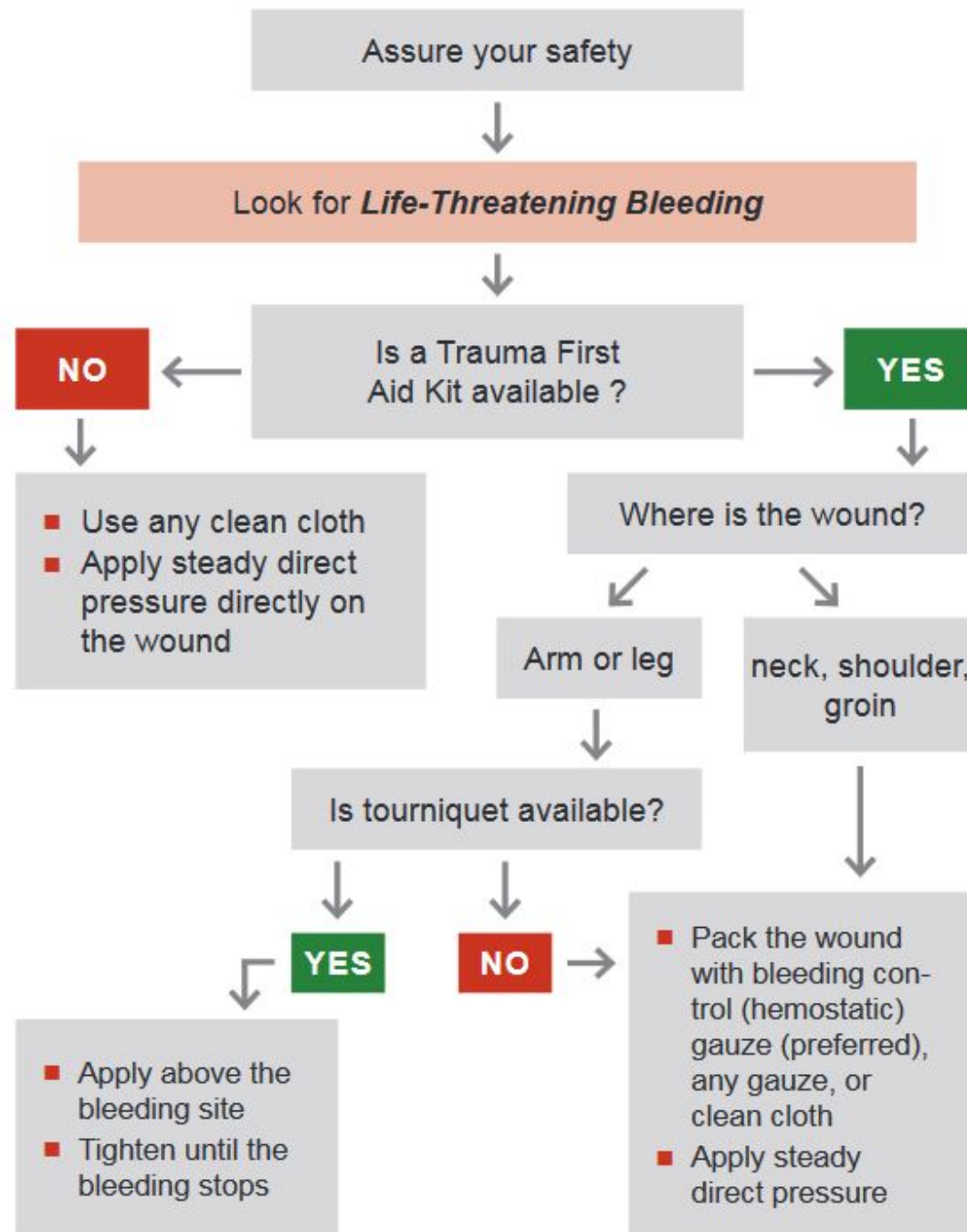


- ***Apply occlusive dressing over the wound site. Place a roll of gauze over the dressing.***
- ***Secure the dressing in place using bandage. To do this, wrap the bandage over the dressing, then cross over opposite shoulder. Bring bandage under the armpit and cross back over the shoulder. Do this for several times. This anchors the bandage and the dressing in place.***

Place the victim on his left-side, and tilt the body so the feet are higher than the head. This technique will trap any “air bubbles” (known as air emboli) in the right atrium.

- ***If available, provide high concentration of oxygen.***
- ***Monitor for signs of shock while waiting for ambulance.***
- ***Be ready to provide CPR.***







STOP
THE BLEED[®]

SAVE A LIFE

The only thing more tragic than a
death from bleeding...

**IS A DEATH THAT COULD
HAVE BEEN PREVENTED.**