

Abdominal Aortic Tourniquet

Instruction in its use and function

Abdominal Aortic Tourniquet

- Easy to use
- Rapid Application
- External Use
- Non-sterile
- Used for difficult to control inguinal hemorrhage



Solution for a problem

- How can we treat non-compressible hemorrhage that is not treatable by a tourniquet in the leg, groin and inguinal region?
- Extremity tourniquets work well when they work
 - 17 lives lost (DOW) in 10 years from isolated extremity hemorrhage
- 25% of deaths from Hemorrhage are due to junctional bleeding

Mid Abdominal Pressure

- Placing a knee in the mid-abdomen is known to stop flow in the lower aorta and thus to the legs
- Reference: Blaivas et al, December 2006, Prehospital and Disaster Medicine

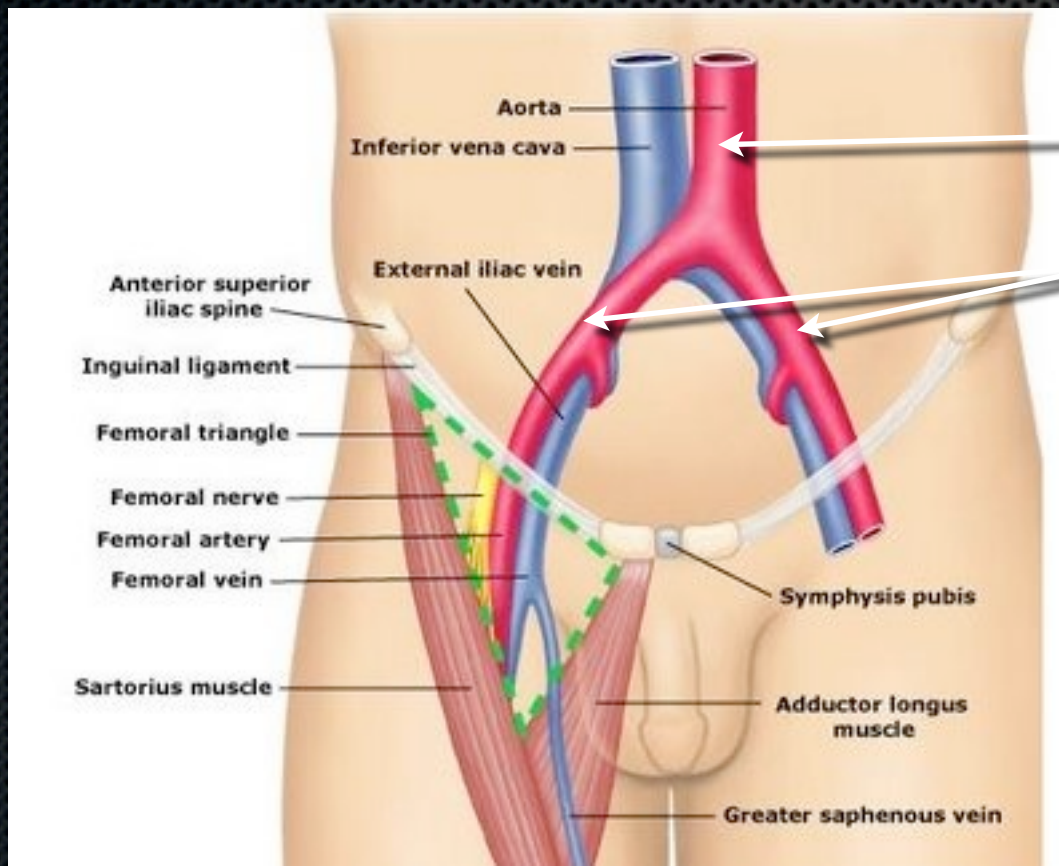


Aortic Compression

- The AAT works by compressing the Aorta as it descends into the pelvis. By applying pressure at this point all blood flow to the legs is controlled.
- Distal point arterial compression does not stop collateral flow. One study showed that although **femoral arterial compression** initially stopped a popliteal pulse, it **returned in 27 sec** from collateral flow to the leg.

Indication for Use

- Control of Difficult Bleeding in the Inguinal Region



AAT Application Site

Common Iliac Arteries

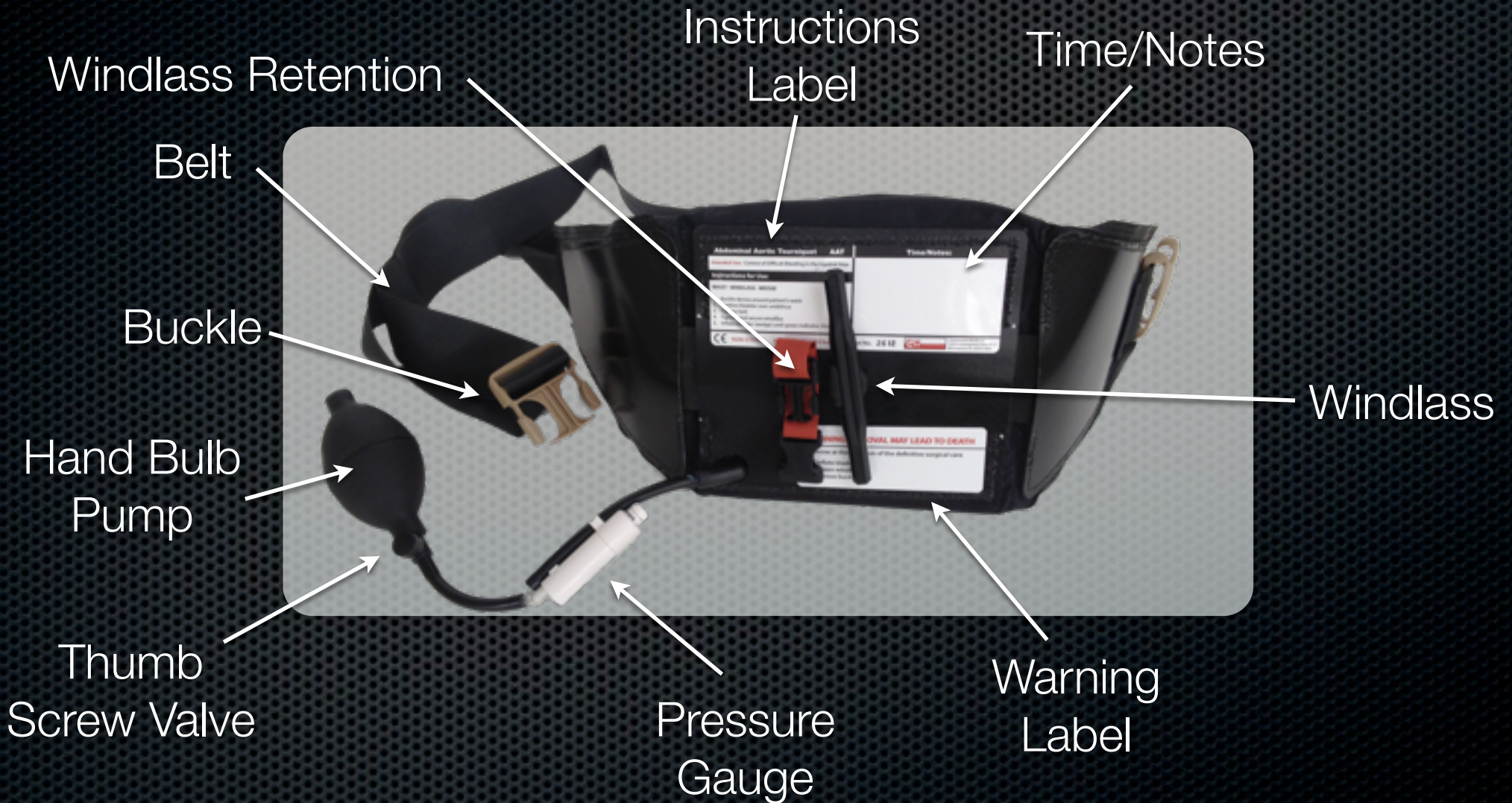
Contraindications for Use

- Absolute Contraindications:
 - Known Abdominal Aortic Aneurysm (AAA)
 - Pregnancy
- Relative Contraindications:
 - Abdominal Penetrating Trauma

Animal Study



Device Components



Instructions for Use

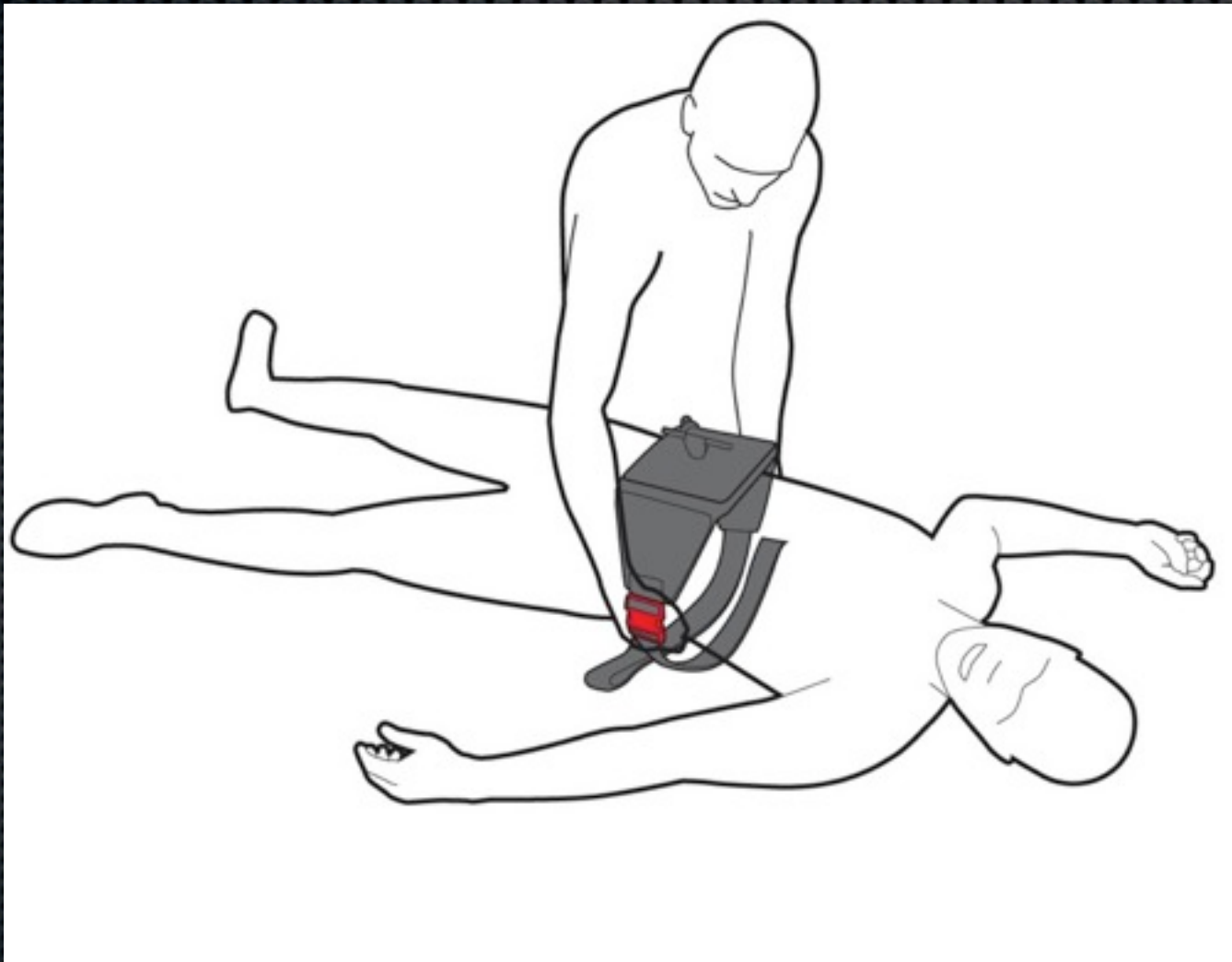
NOTE: It is important that the device is **very tight, prior to inflation** of bladder

Instructions for Use

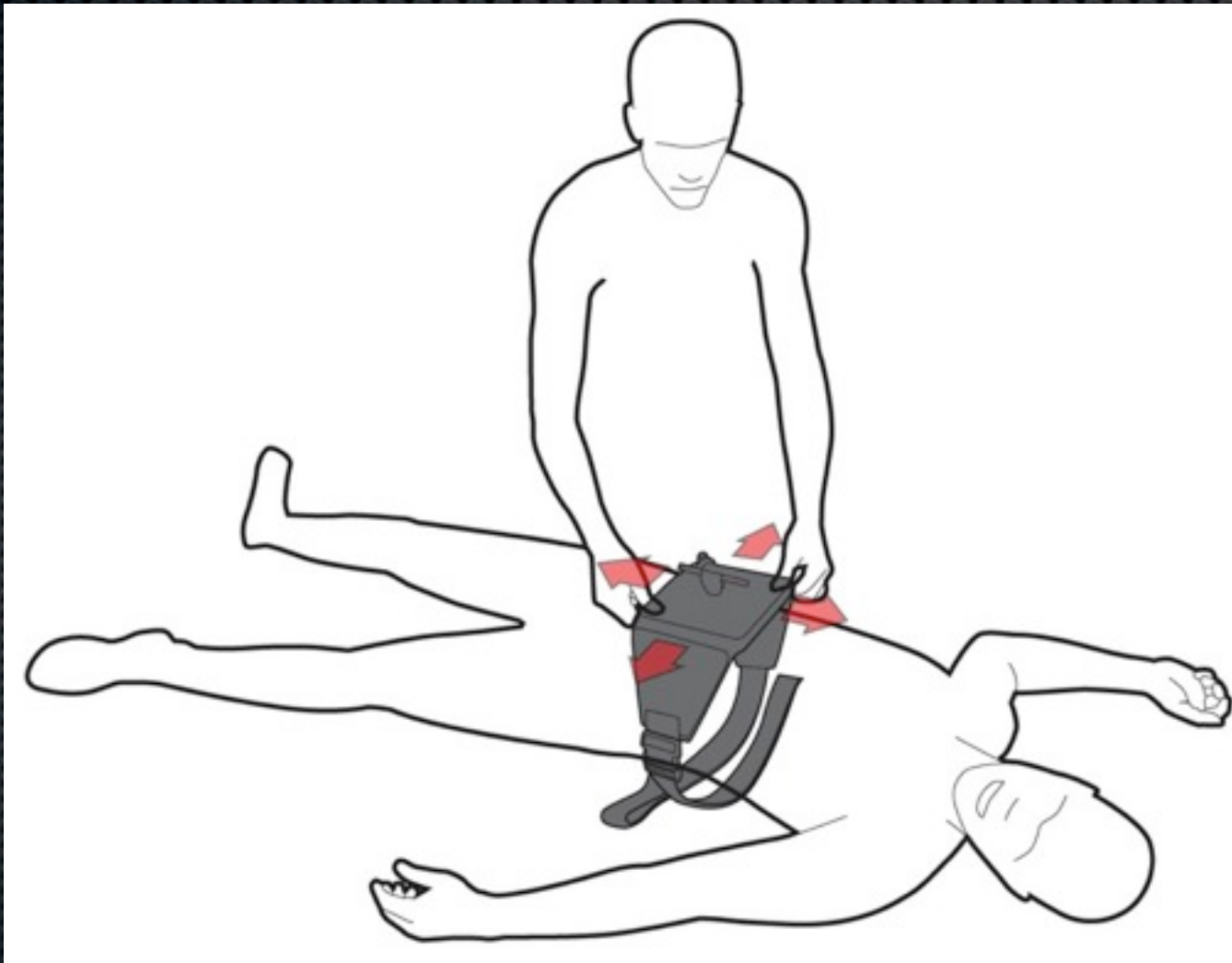
WAIST - WINDLASS - WEDGE

1. Buckle device around patient's waist
2. Position bladder over umbilicus (belly button)
3. Tighten belt
4. Tighten and secure windlass
5. Inflate bladder (wedge) until green indicator shows

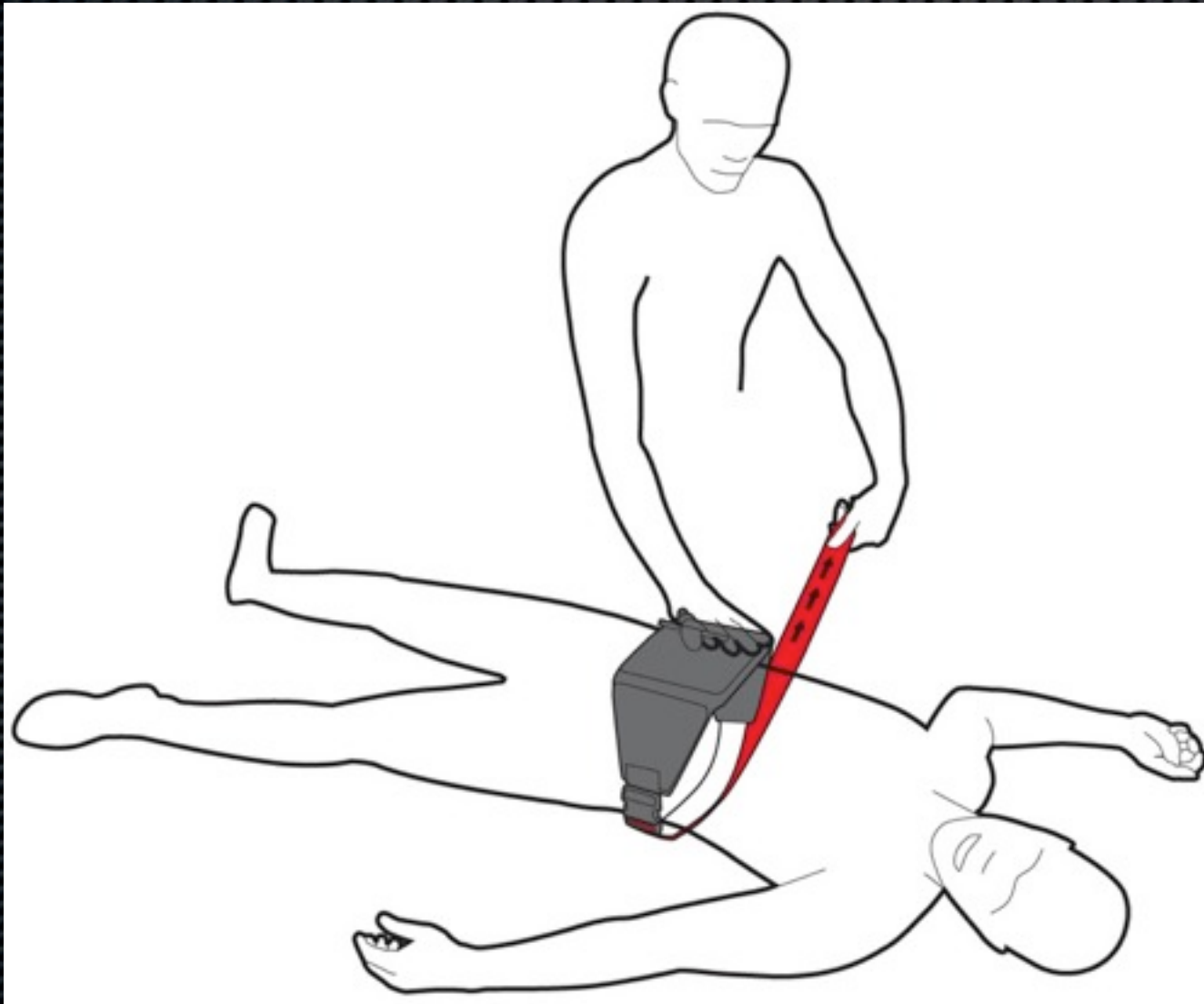
Buckle the device around
the patient's waist



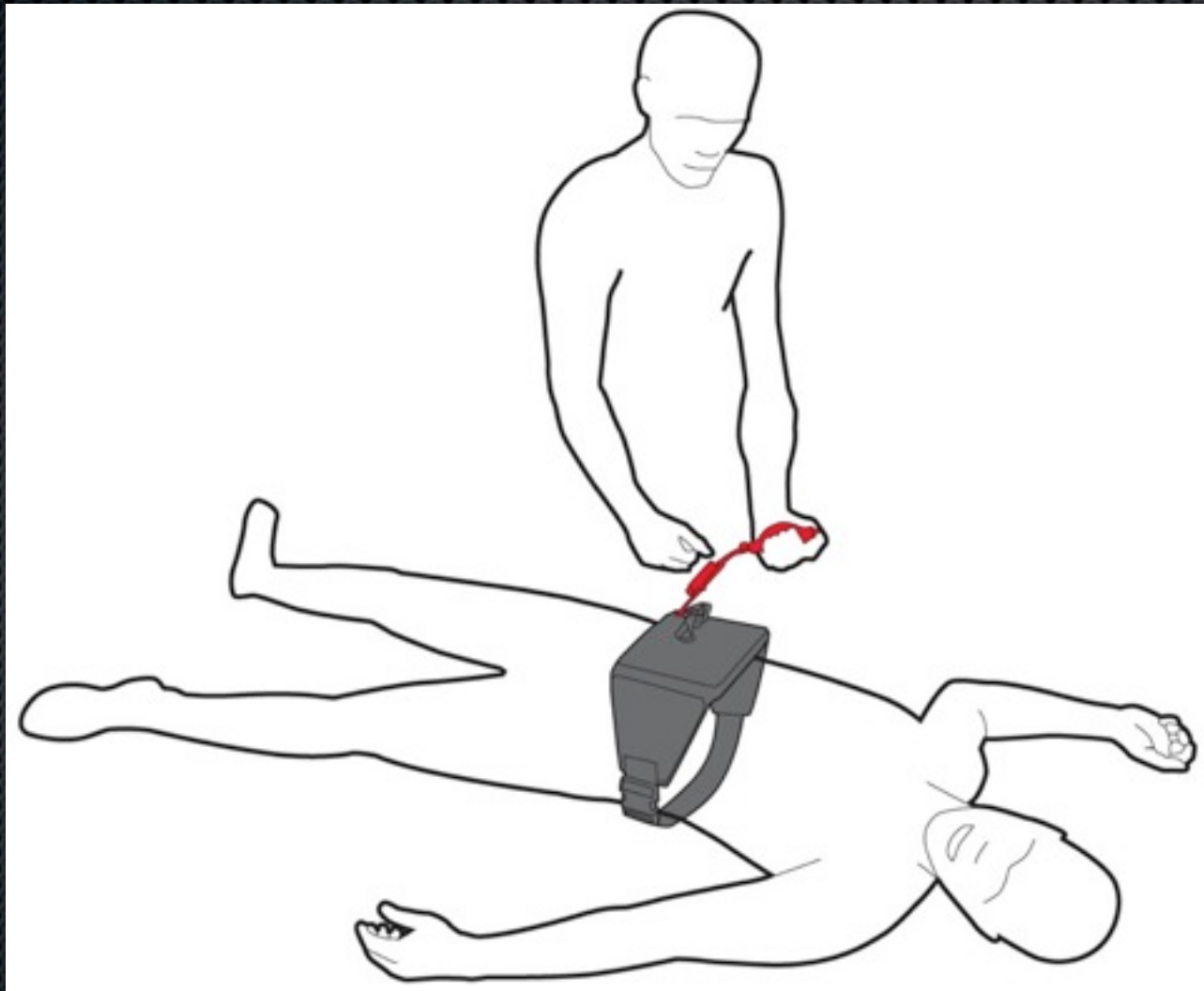
Position bladder over the patient's umbilicus



Tighten Belt



Inflate bladder until green indicator shows



1 - Buckle Device Around Waist



2 - Position bladder over umbilicus

3 - Tighten Belt



4 - Tighten and secure windlass



5 - Inflate bladder until indicator shows green



Application - Helmet Cam

Inflating the Bladder

- Continue to squeeze the 5 oz. hand bulb until the pressure gauge shows green
- GREEN: 250-300 mm Hg
- RED: > 300 mm Hg



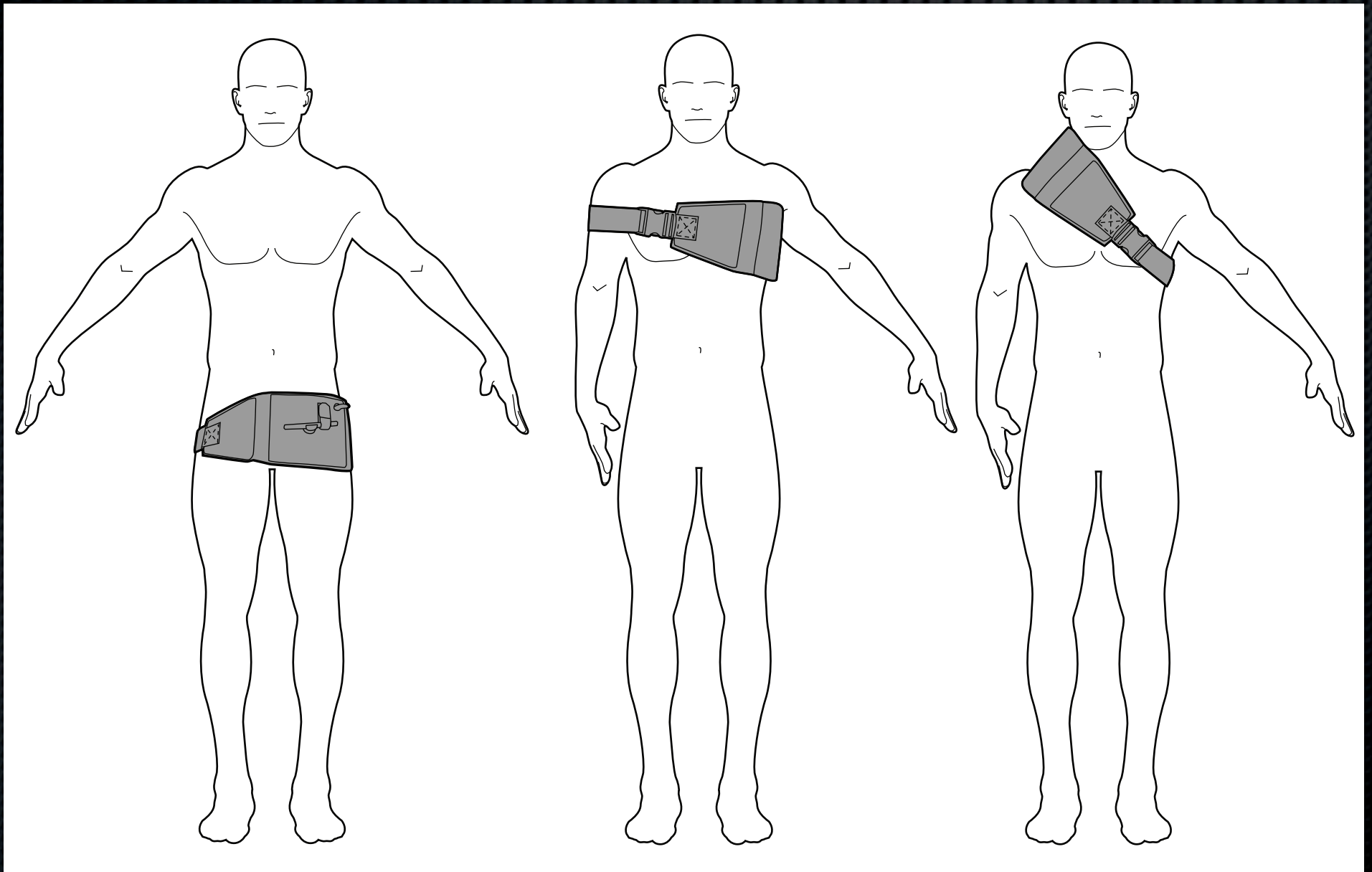
Stabilization is the Key

- **ALL** of the slack must be removed from the device. If this is not done then the device can roll off the abdomen
- If this happens the device will not be able to function as designed
- To prevent this, the device must be **tightened before inflation**. This is a two part procedure.
- A strong **tightening of the belt** to remove all slack and then **several turns on the windlass** will keep the bladder properly oriented and anchored as it is inflated.

Transport issues

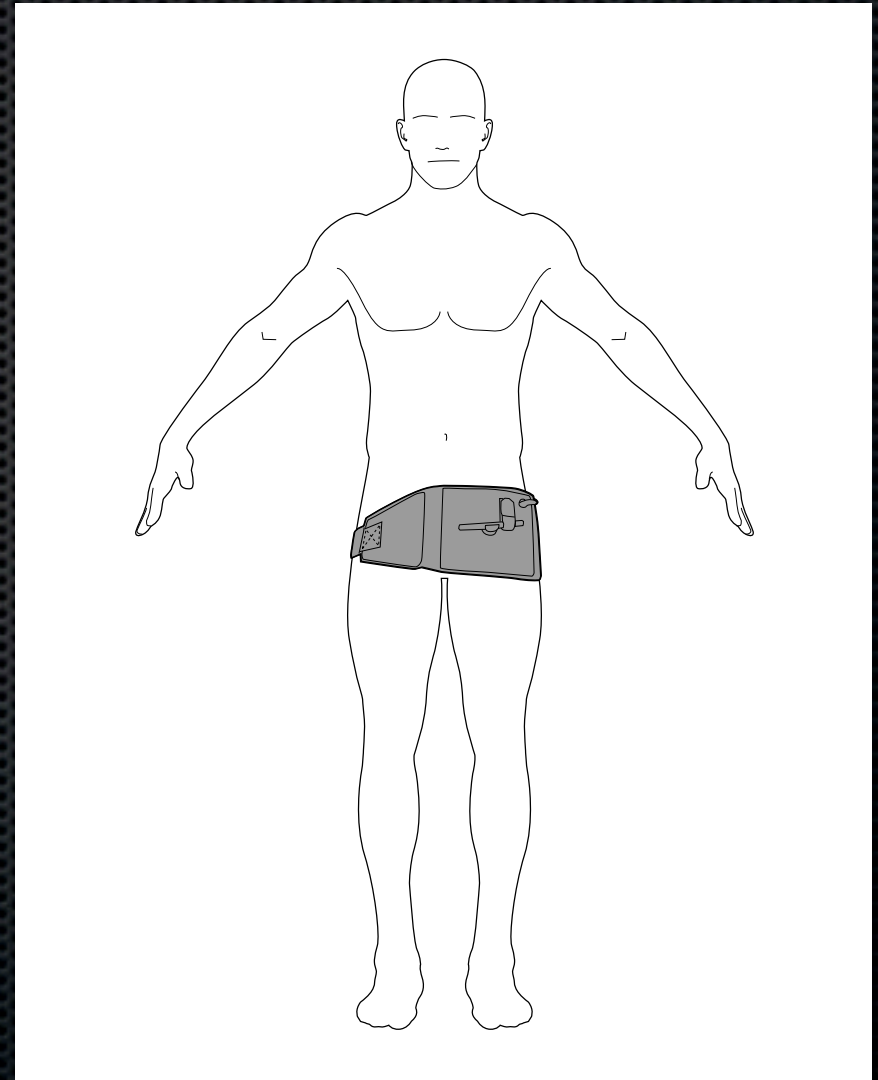
- ✦ When transporting a patient that has the AAT applied be mindful of altitude changes. As ambient pressure changes, the internal bladder pressure will change as well
- ✦ This is not an issue on ascent, the device will depressurize to prevent bladder pressures greater than 300 mm Hg
- ✦ On descent, provide pressure to maintain the bladder pressure gauge in the green zone as needed
- ✦ This issue will be more noticeable when ascending above 10,000 feet

New Application Sites



Single Groin Application

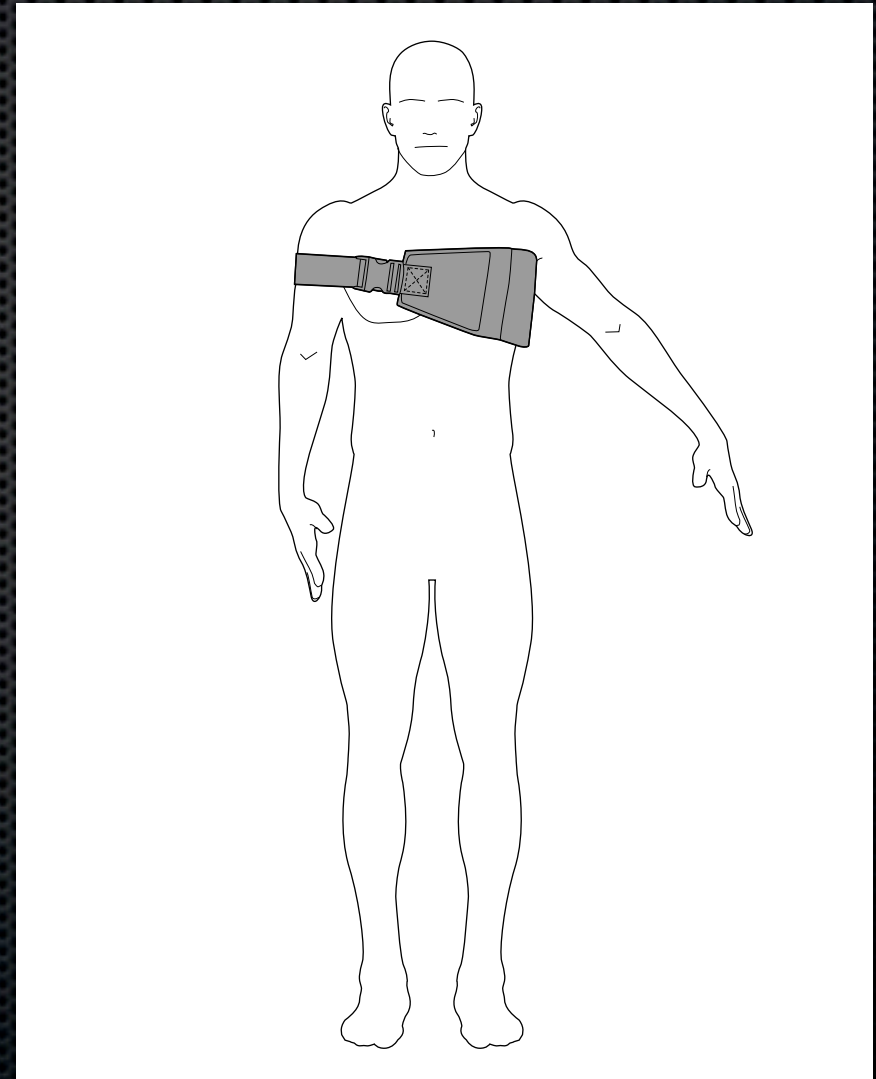
- Isolated groin injury
- Single leg amputation
- Quick application time
- More comfortable than other mechanical compression devices
- Larger surface area of tissue displacement mean lower pressures to the tissue
- Stable during transport

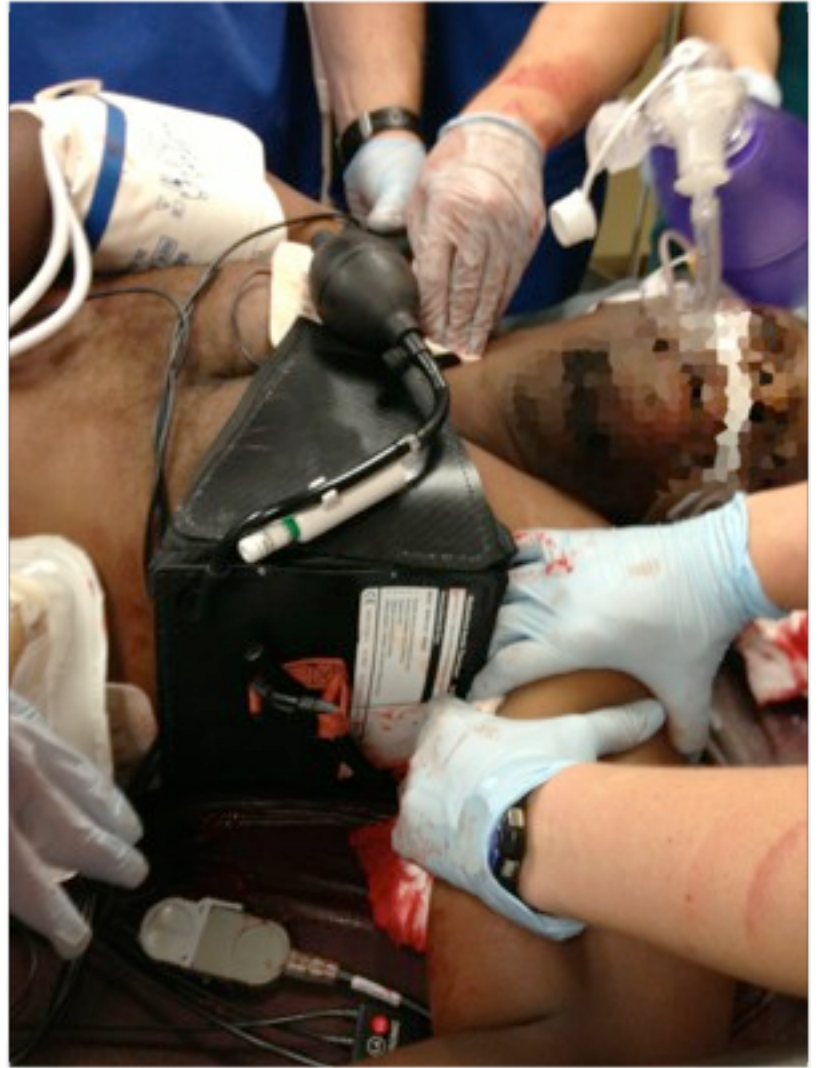




Axilla Application

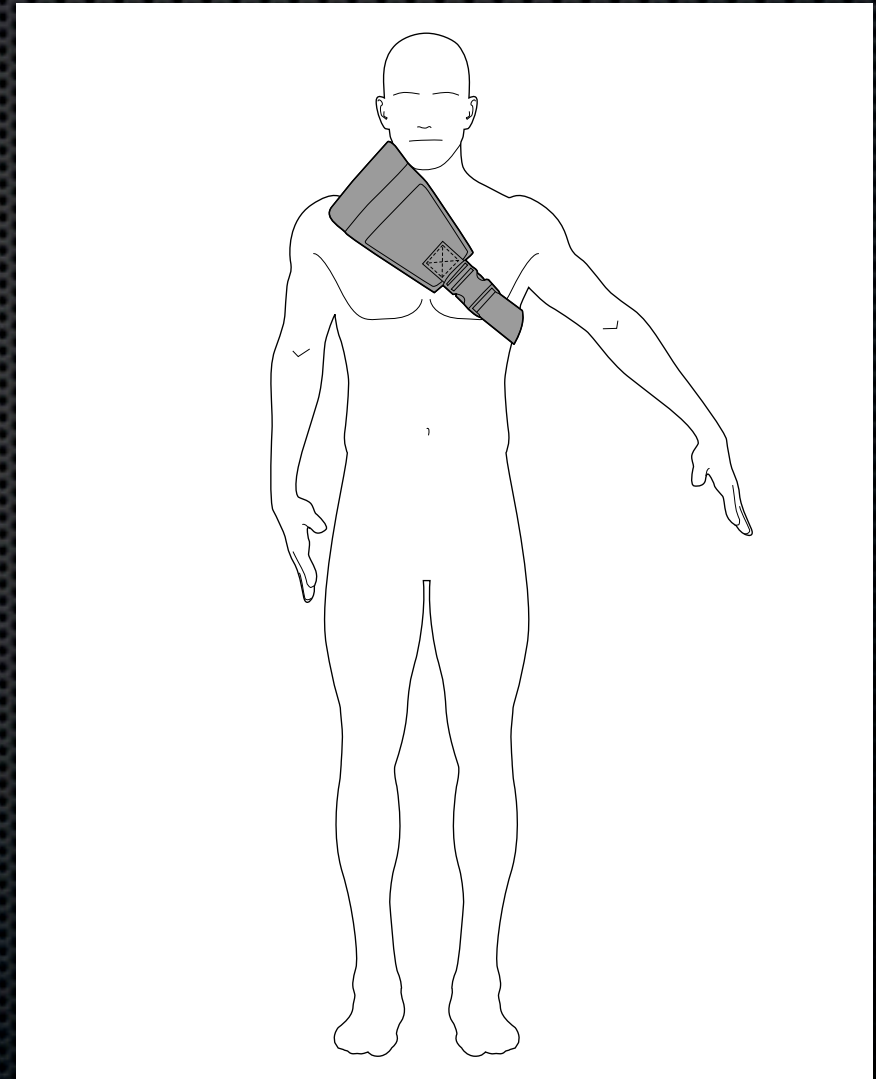
- ✦ SUBclavian and/or Axilla injury
- ✦ Single arm amputation
- ✦ Quick application time
- ✦ Pneumatic compression displaces a large amount of tissue that is able to stop blood flow in the subclavian artery
- ✦ Can be anchored around contralateral upper arm or the neck





Base of Neck Application

- ✦ Base of neck, carotid or proximal subclavian injury
- ✦ Difficult to control area
- ✦ Quick application time
- ✦ Pneumatic displacement provides largest surface area to affect blood flow
- ✦ Stable during transport





Preventive Maintenance Checks and Services

- If the vacuum sealed packaging is intact the device is ready to use. If the packaging is undamaged but the vacuum seal is lost it is still ready to use. The device is not a sterile device.
- If the packaging is damaged, PMCS should be conducted to verify the product is serviceable
- Shelf life is 5 years

PMCS Checklist

- Remove Device from packaging
- Unbuckle and extend belt, inspecting for cuts or fraying. Do not use if belt contains a cut extending more than 2 mm
- Inspect the buckles for cracks or breaks
- Ensure Windlass is at its initial state without twisting
- Inspect Windlass retention hardware for breaks or cracks
- Inspect Tubing for signs of wear or damage
- Inflate bladder until pressure gauge shows green. Allow the bladder to remain inflated for 5 minutes.

Device Removal

WARNING: REMOVAL MAY LEAD TO DEATH

Remove when definitive surgical care is immediately available.

1. Deflate bladder
2. Loosen windless
3. Remove buckle

- The lower label is shown above.
- The device should not be removed until definitive surgical care is prepared to treat the underlying injuries

Device Issues

- Please report any device issues to:

QA@compressionworks.net

or 1-888-427-5231 for Speer Operational
Technologies

Questions?