Abdominal Aortic and Junctional Tourniquet

Instruction in its use and function

version: 13 DEC 13

Abdominal Aortic and Junctional 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, inguinal region as well as the pelvis and upper extremity junctional bleeding in the axilla?
- Extremity tourniquets work well when they work
- 17 lives lost (DOW) in 10 years from isolated extremity hemorrhage
- 25-30% of deaths from hemorrhage are due to junctional bleeding

Mid Abdominal Pressure

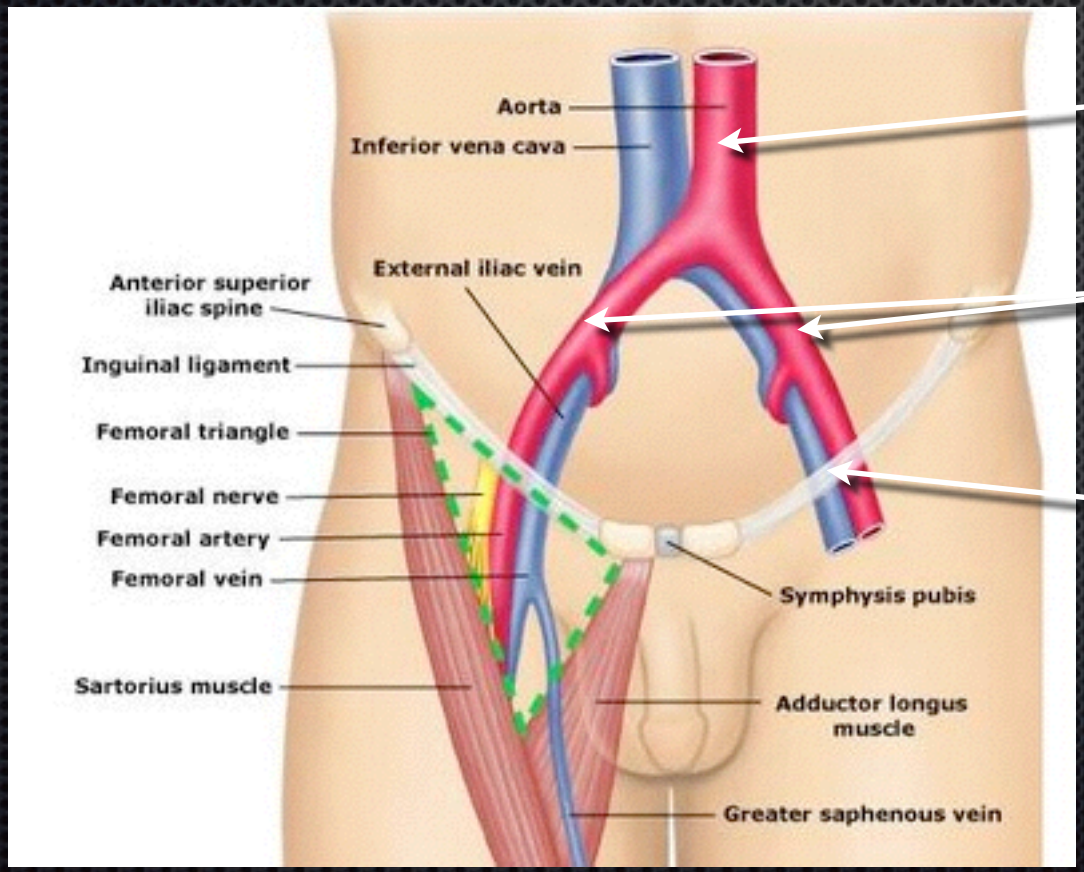
- Placing a knee in the mid-abdomen is known to stop flow in the lower aorta and thus to the legs
- Reference: Blaivas et al, December 2006, Prehospital and Disaster Medicine

Aortic Compression

- The AAJT™ works for pelvic and lower bilateral junctional bleeding by compressing the Aorta as it descends into the pelvis. By applying pressure at this point all blood flow to the pelvis and legs is controlled.
- Indications:
    - Pelvic Hemorrhage
    - Bilateral inguinal/groin hemorrhage

Indication for Use in Lower Pelvic Junctional Bleeding

Control of Difficult Bleeding in the Pelvis and Inguinal/ Groin Regions



AAJT Abdominal Application Site

Common Iliac Arteries

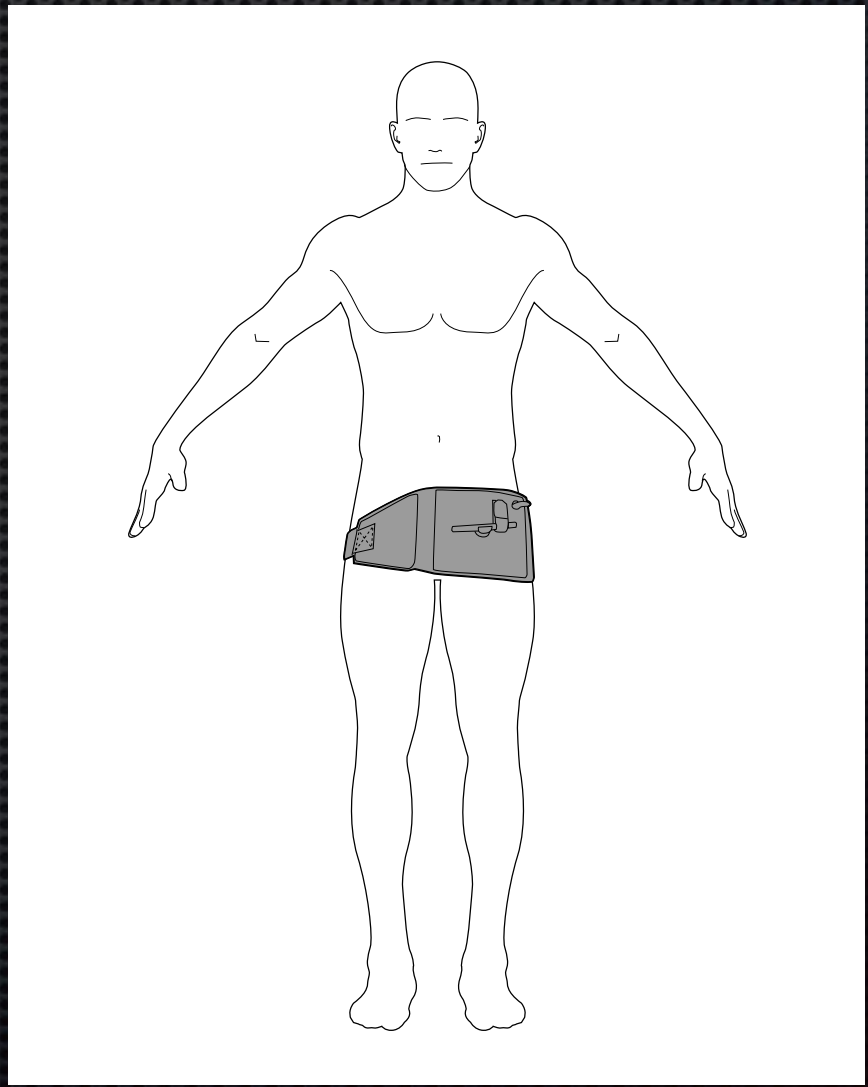
AAJT Groin Application Site

Inguinal Compression

- The AAJT™ works for unilateral lower junctional bleeding by compressing the vessels in the groin. Because of the larger surface area in which the pressure is being applied the tissue pressures are much lower than the other junctional devices. This improves patient comfort and reduces the risk of muscle and nerve injury.
- Indications:
    - Unilateral inguinal/groin hemorrhage

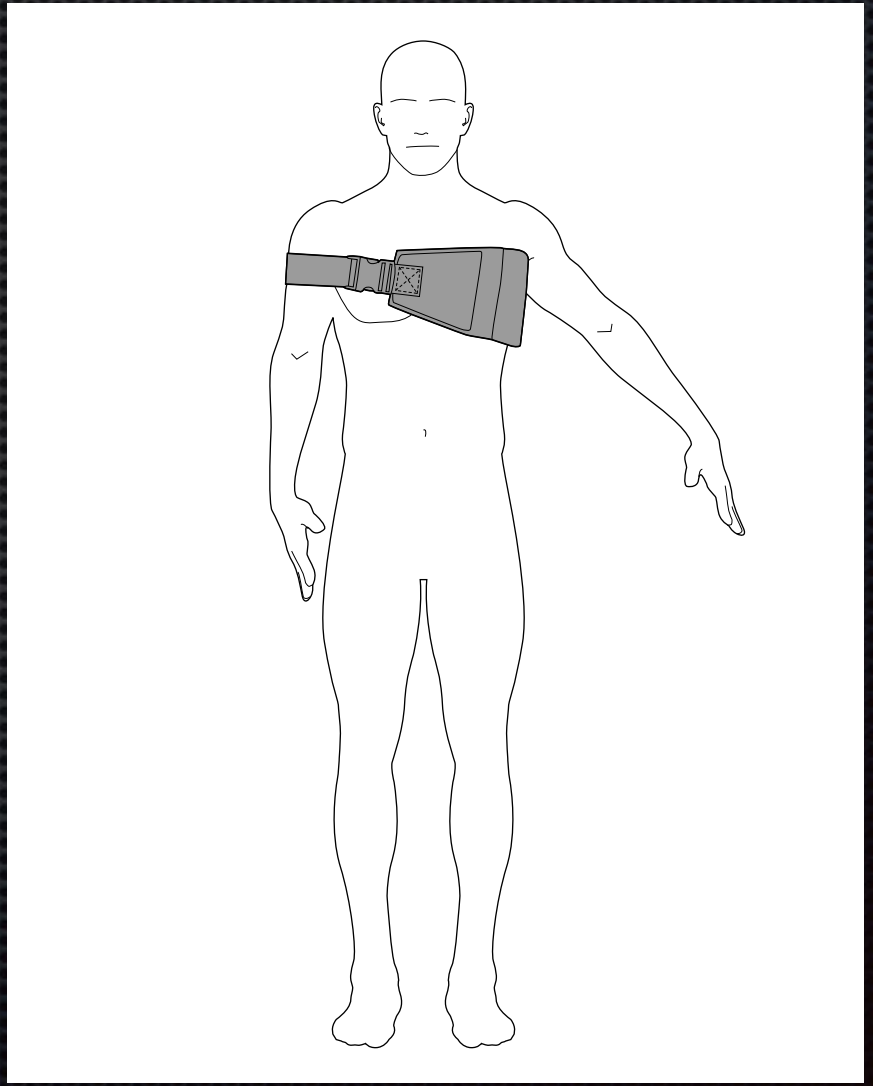
Inguinal/Groin Application

- 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

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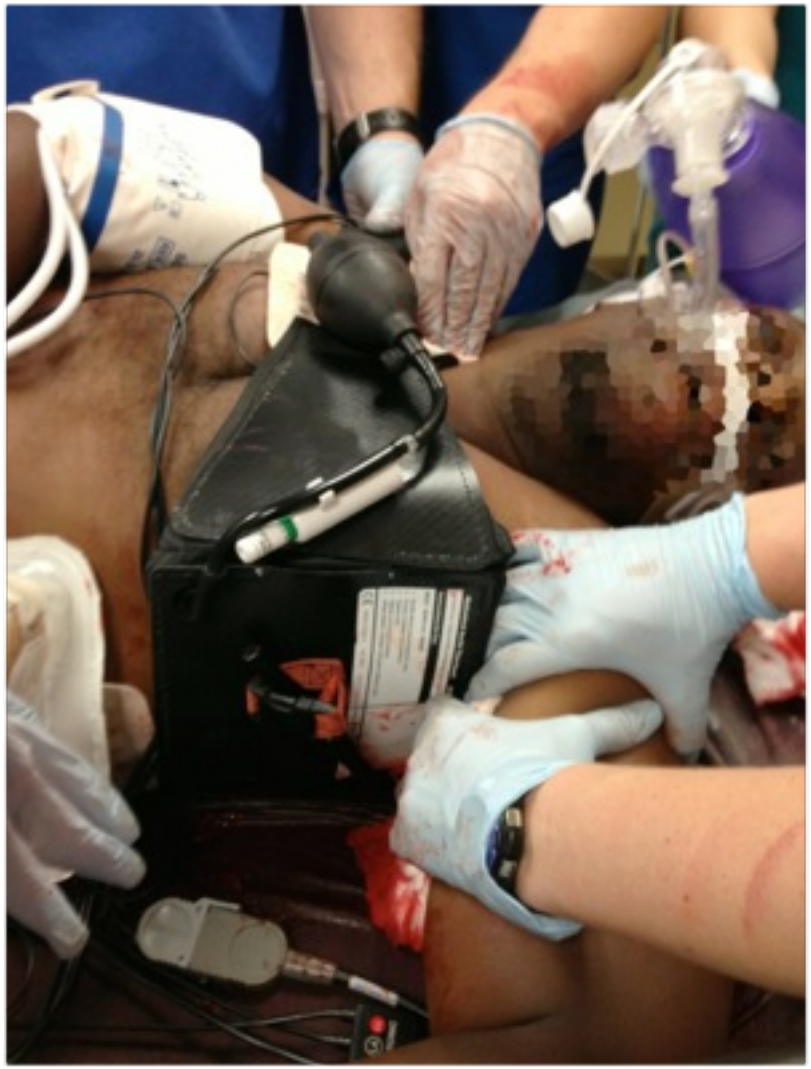


Axillary Compression

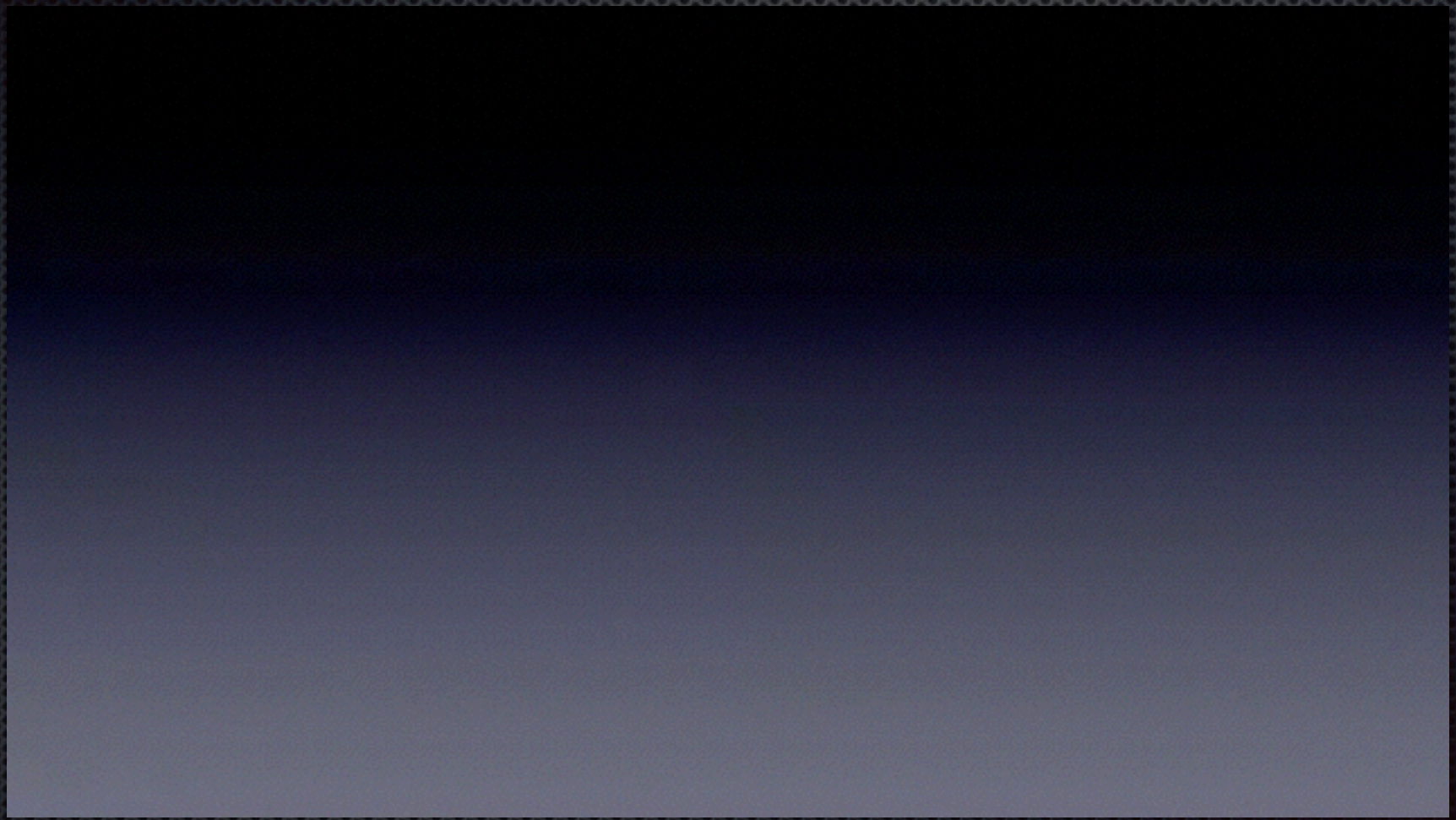
- The AAJT™ works for unilateral upper junctional bleeding by compressing the vessels in the axilla. Because of the larger surface area in which the pressure is being applied the tissue pressures are much lower than the other junctional devices. This improves patient comfort and reduces the risk of muscle and nerve injury.
- Indications:
    - Unilateral axillary hemorrhage

Contraindications for Abdominal Placement

- Absolute Contraindications:
- Known Abdominal Aortic Aneurysm (AAA)
- Pregnancy
- No Relative Contraindications

No Contraindications for Inguinal or Axilla Placement

Animal Study



Device Components

Instructions for Use

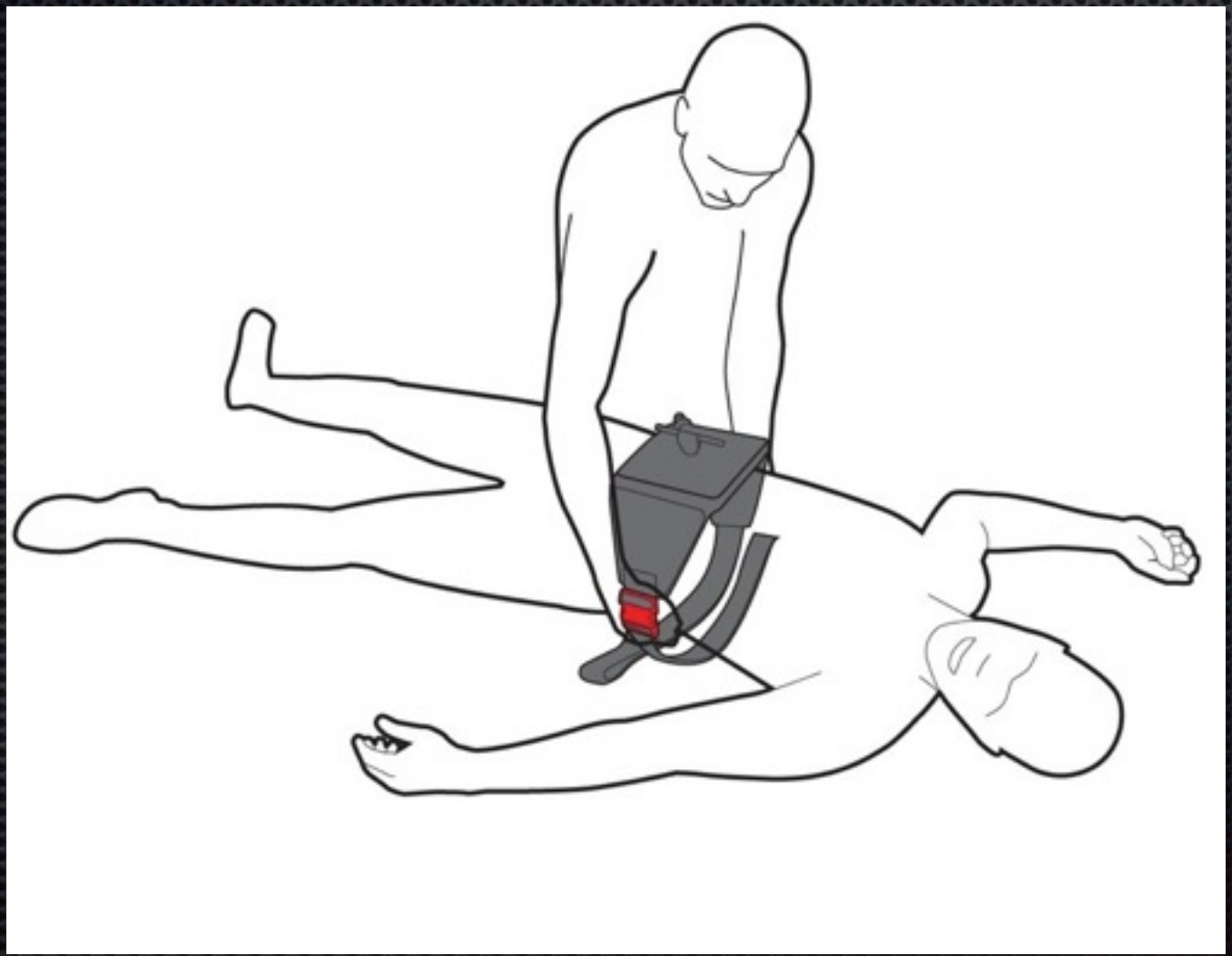
NOTE: It is important that the device is **very tight**, **prior to inflation** of bladder

Instructions for Use

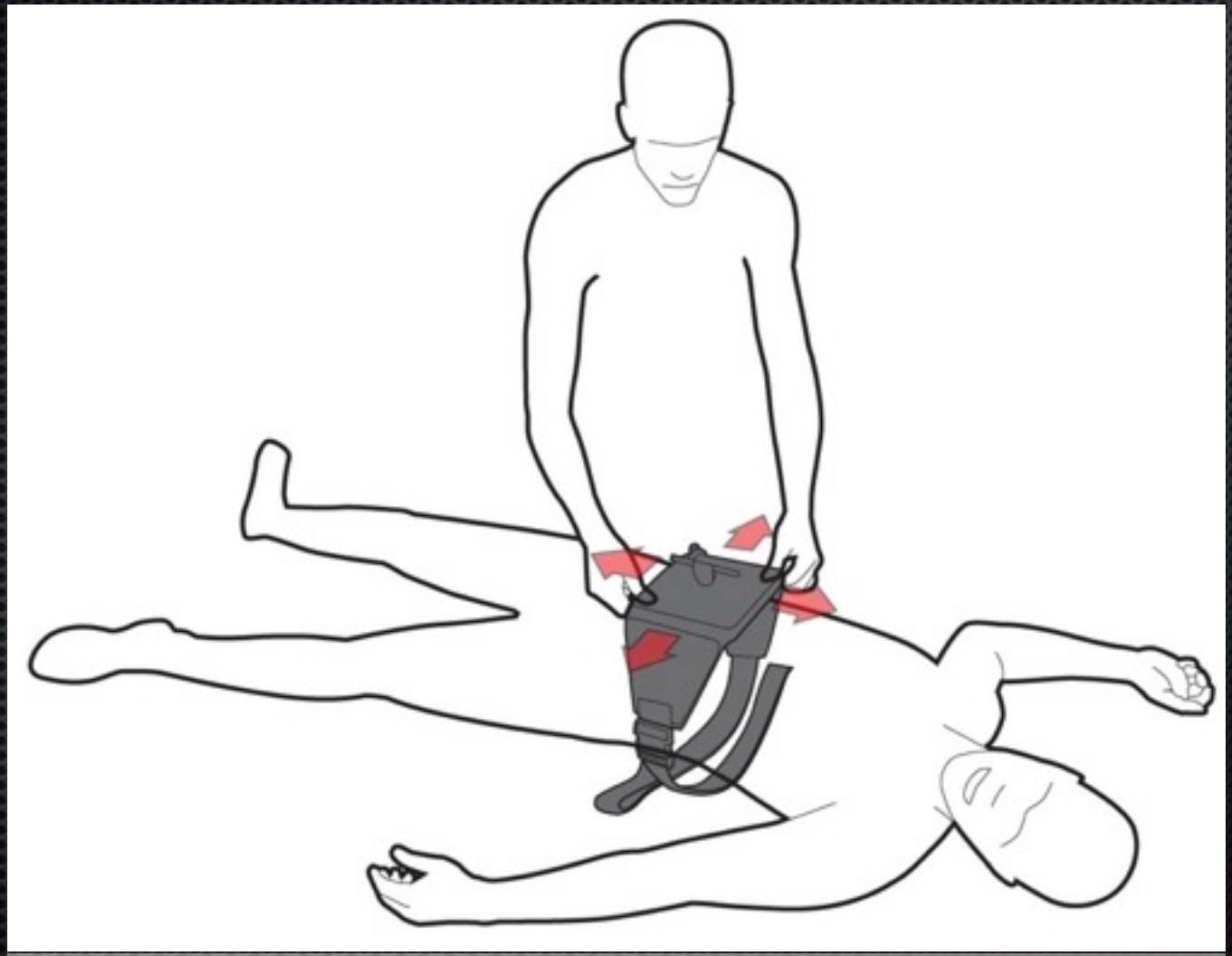
WAIST - WINDLASS - WEDGE

1. Buckle device around patient's waist, hips or shoulder
2. Position bladder over umbilicus (belly button), groin or axilla
3. Tighten belt (**REMOVE ALL SLACK**)
4. Tighten and secure windlass
5. Inflate bladder (wedge) until green indicator shows

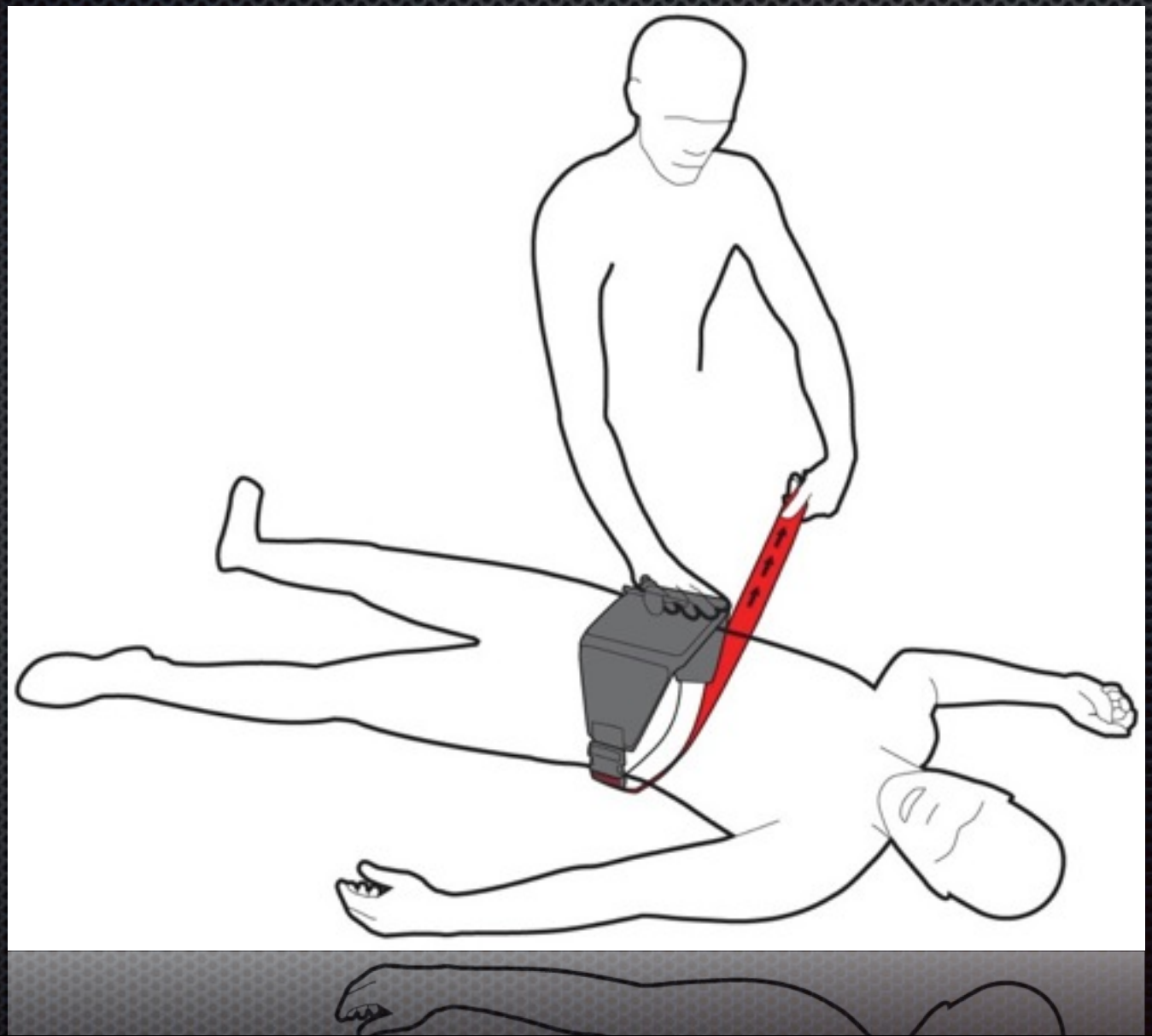
Buckle the device around the patient's waist



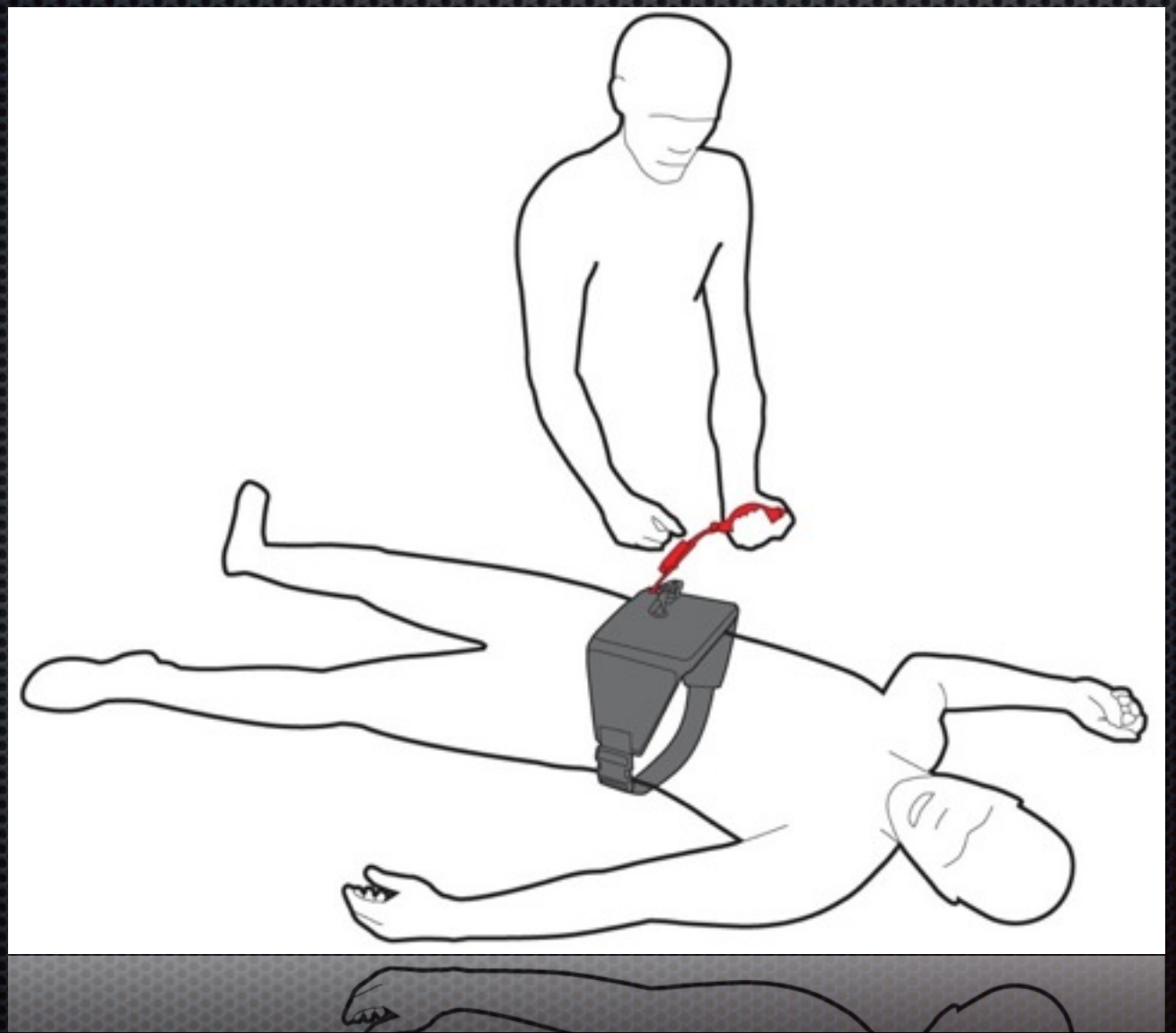
Position bladder over the patient's umbilicus



Tighten Belt



Inflate bladder until green indicator shows



1 - Buckle Device Around Waist

2 - Position bladder over umbilicus

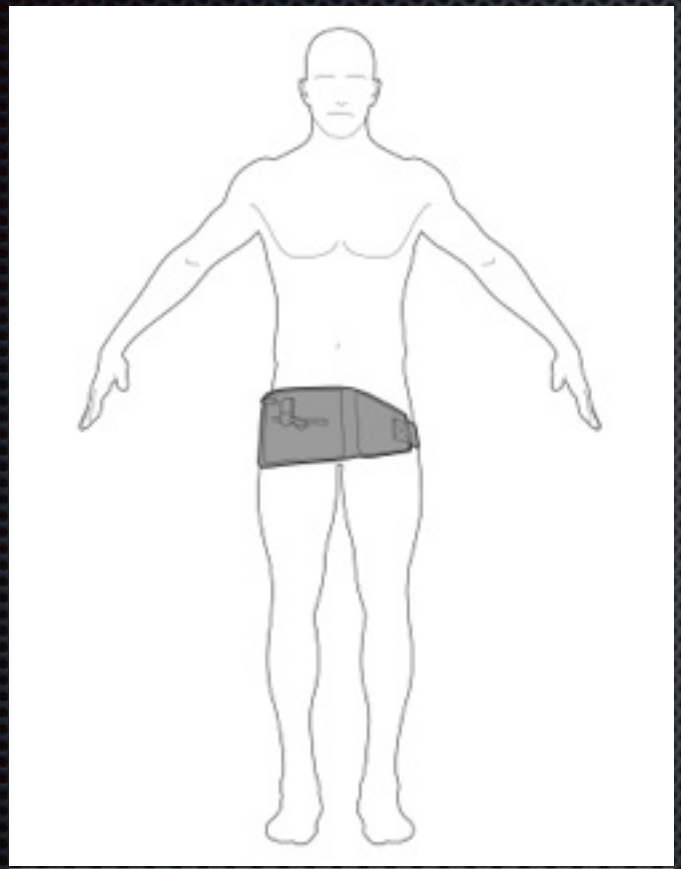
3 - Tighten Belt

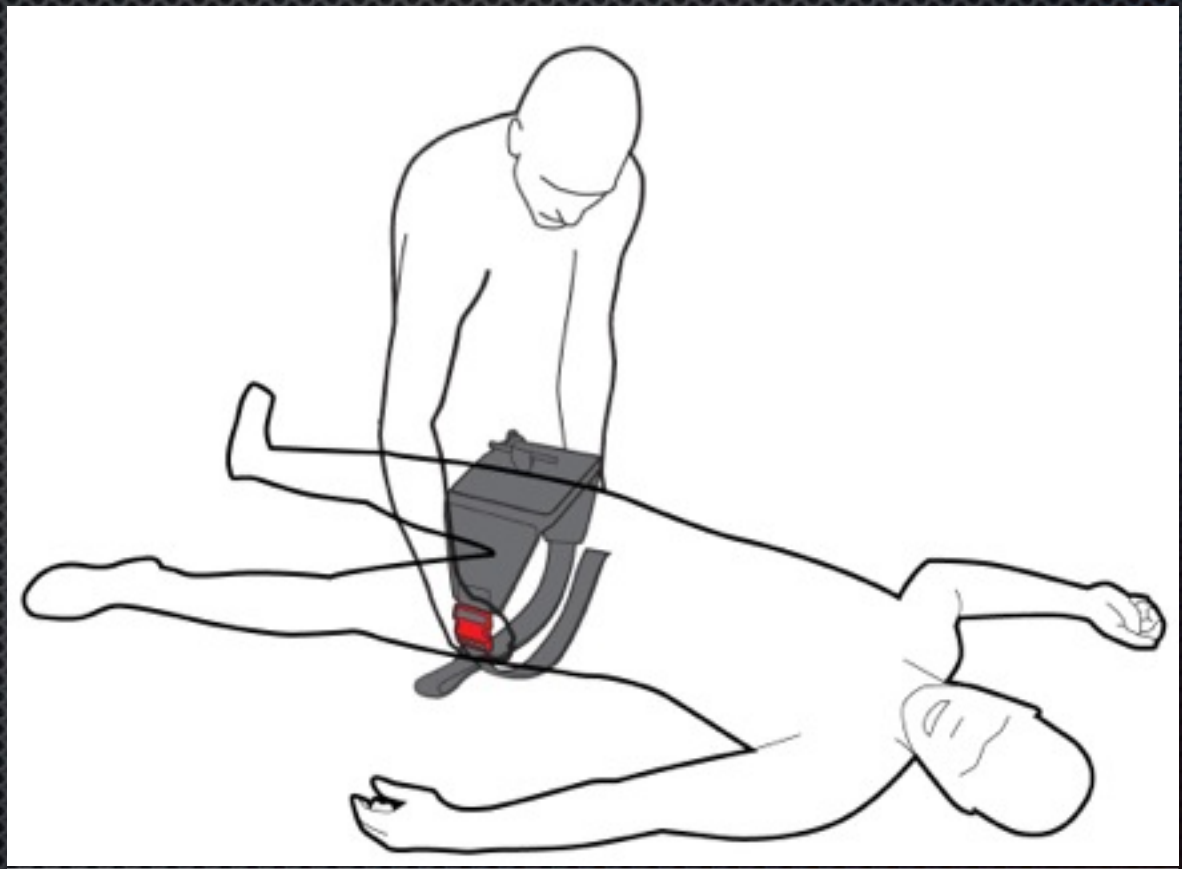
4 - Tighten and secure windlass

5 - Inflate bladder until indicator shows green

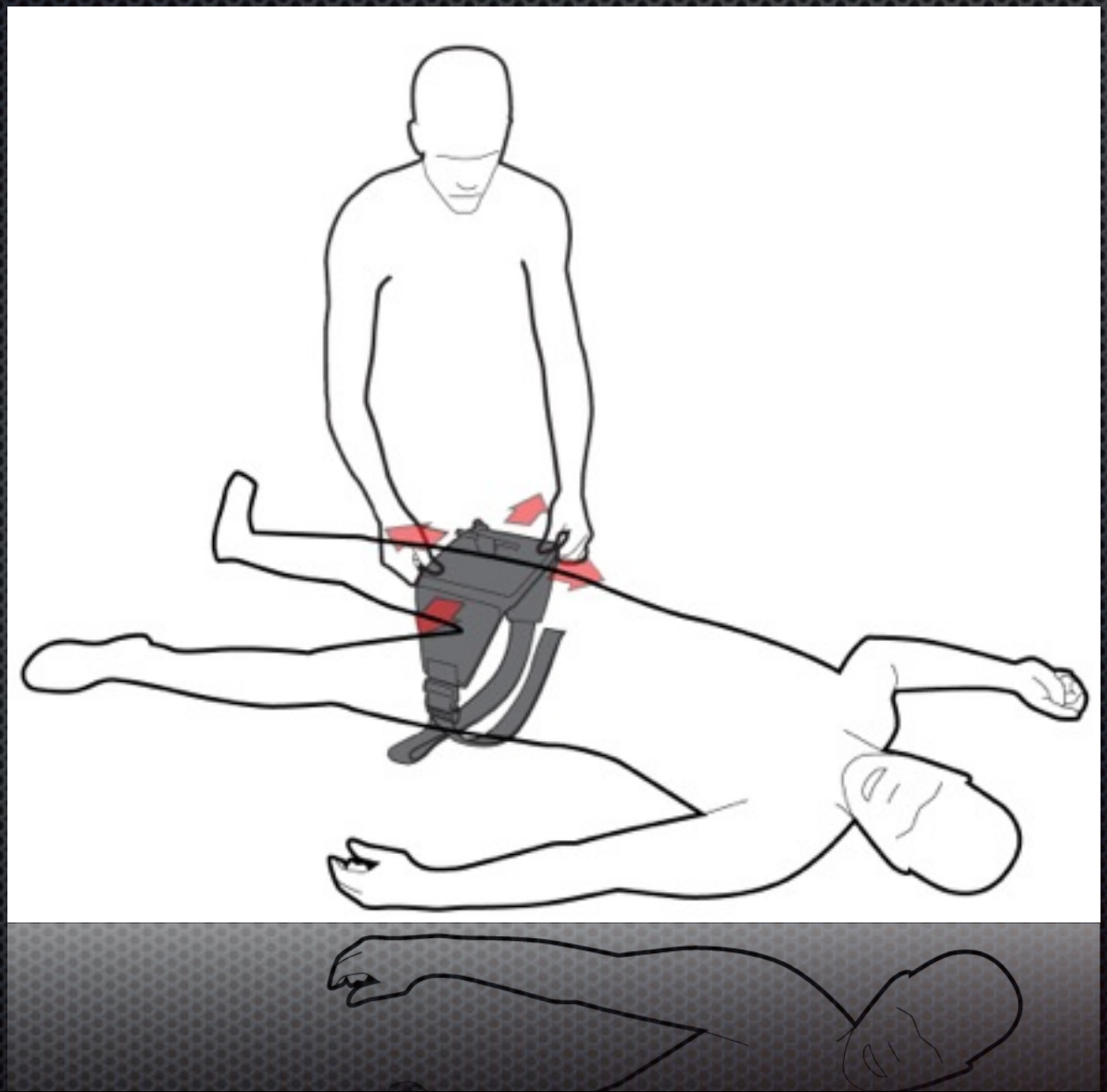
Abdominal Application - Helmet Cam

Buckle the device around the patient's hips

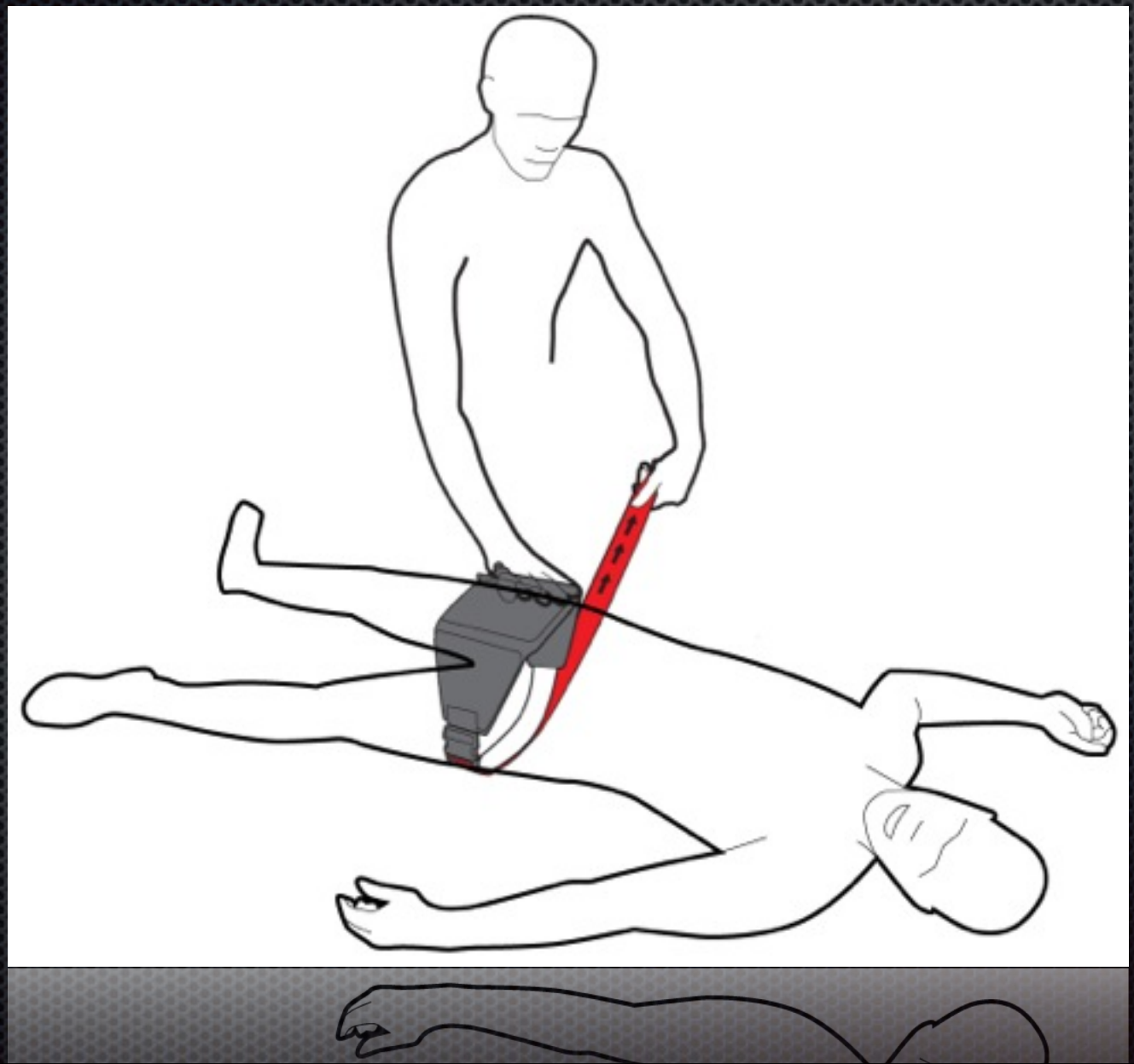




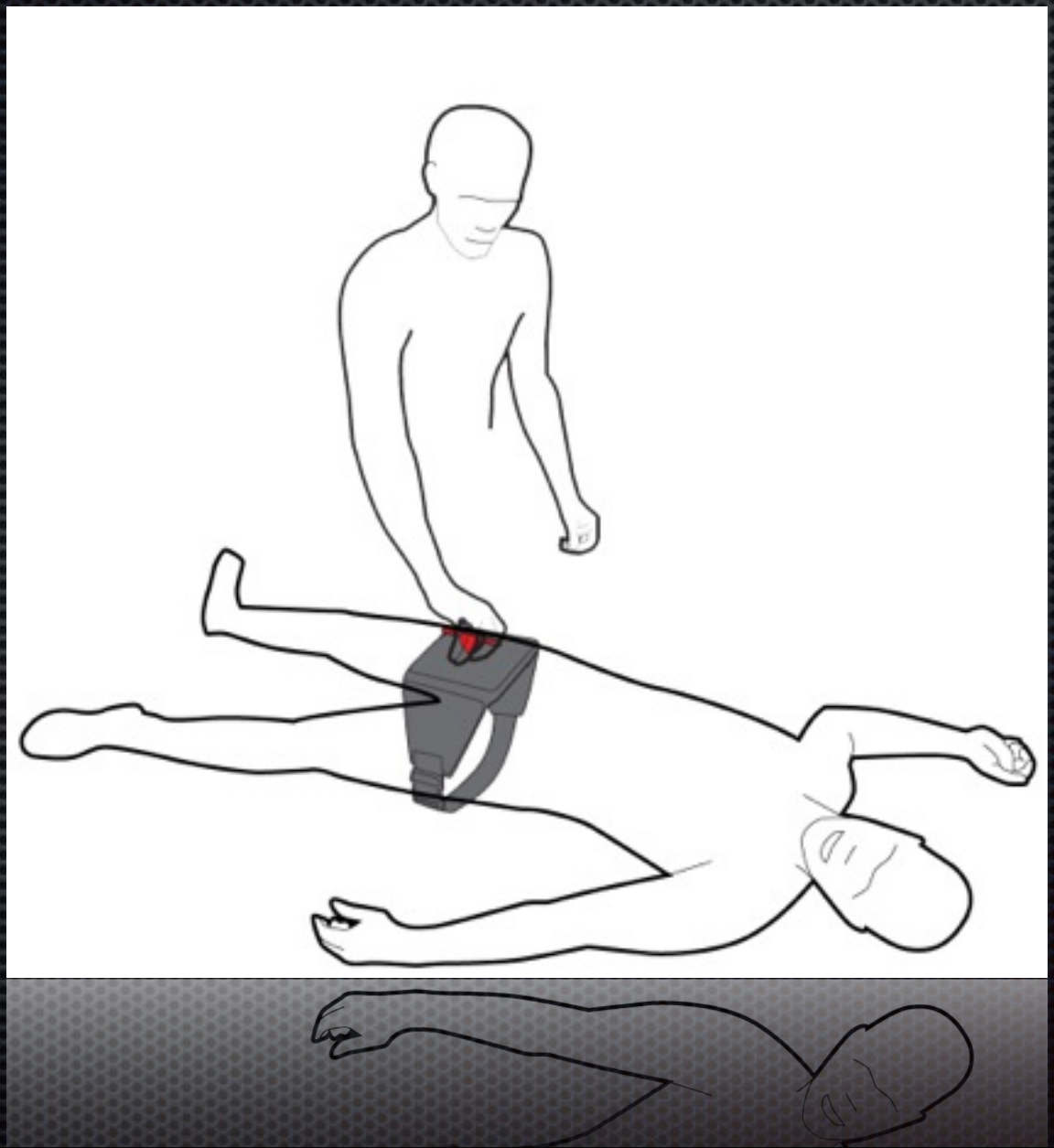
Position bladder over the patient's groin



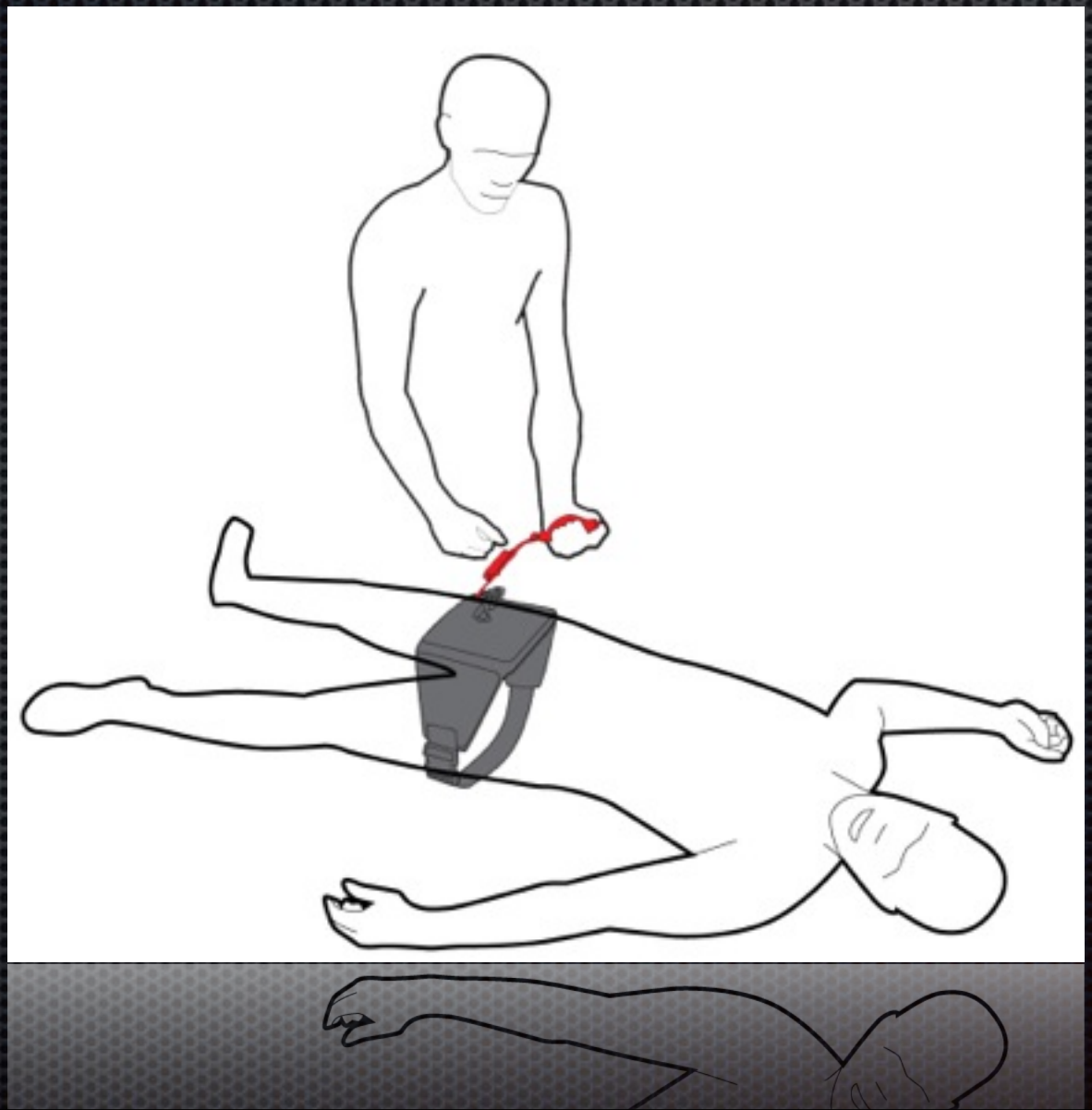
Tighten Belt



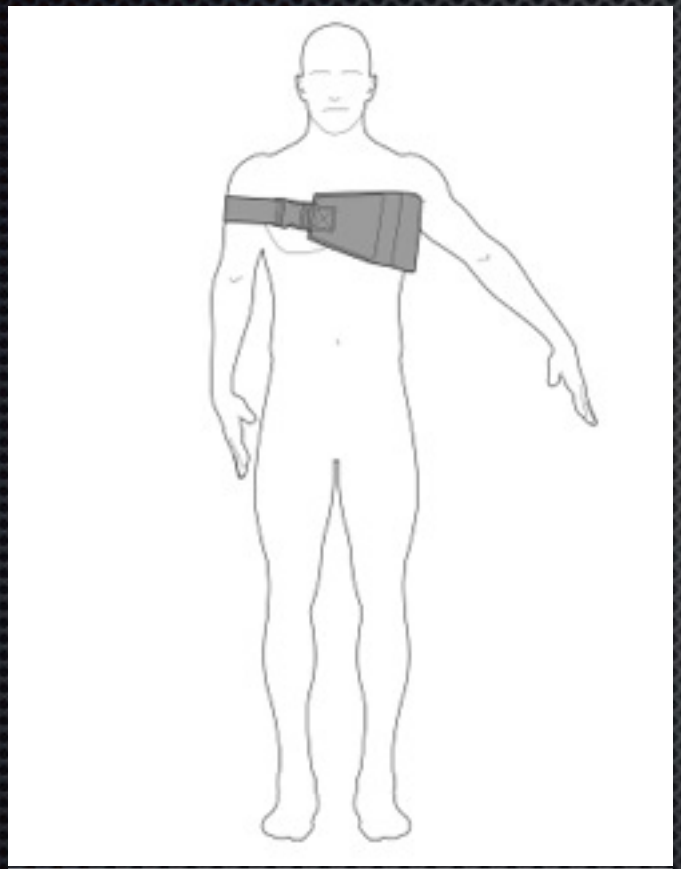
Tighten & Secure Windlass

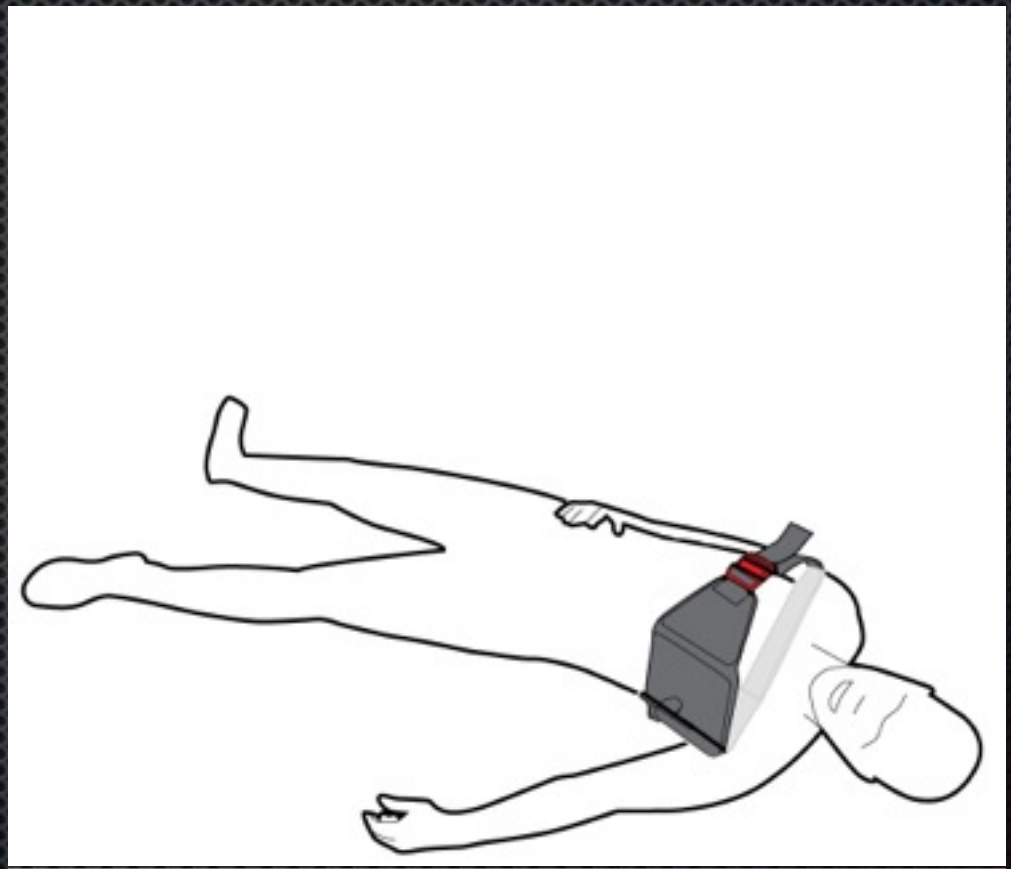


Inflate bladder until green indicator shows

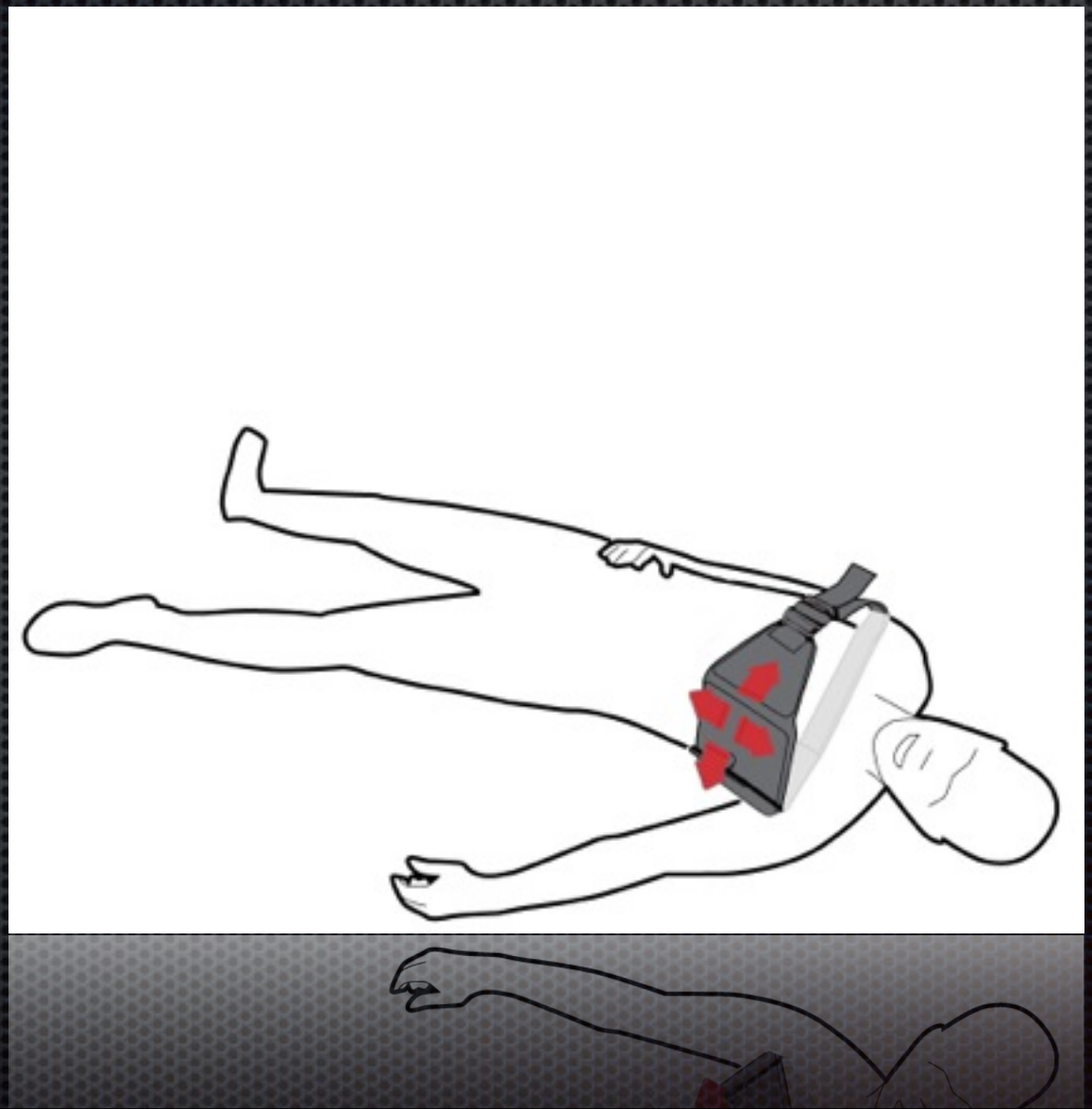


Buckle the device around the patient's shoulder

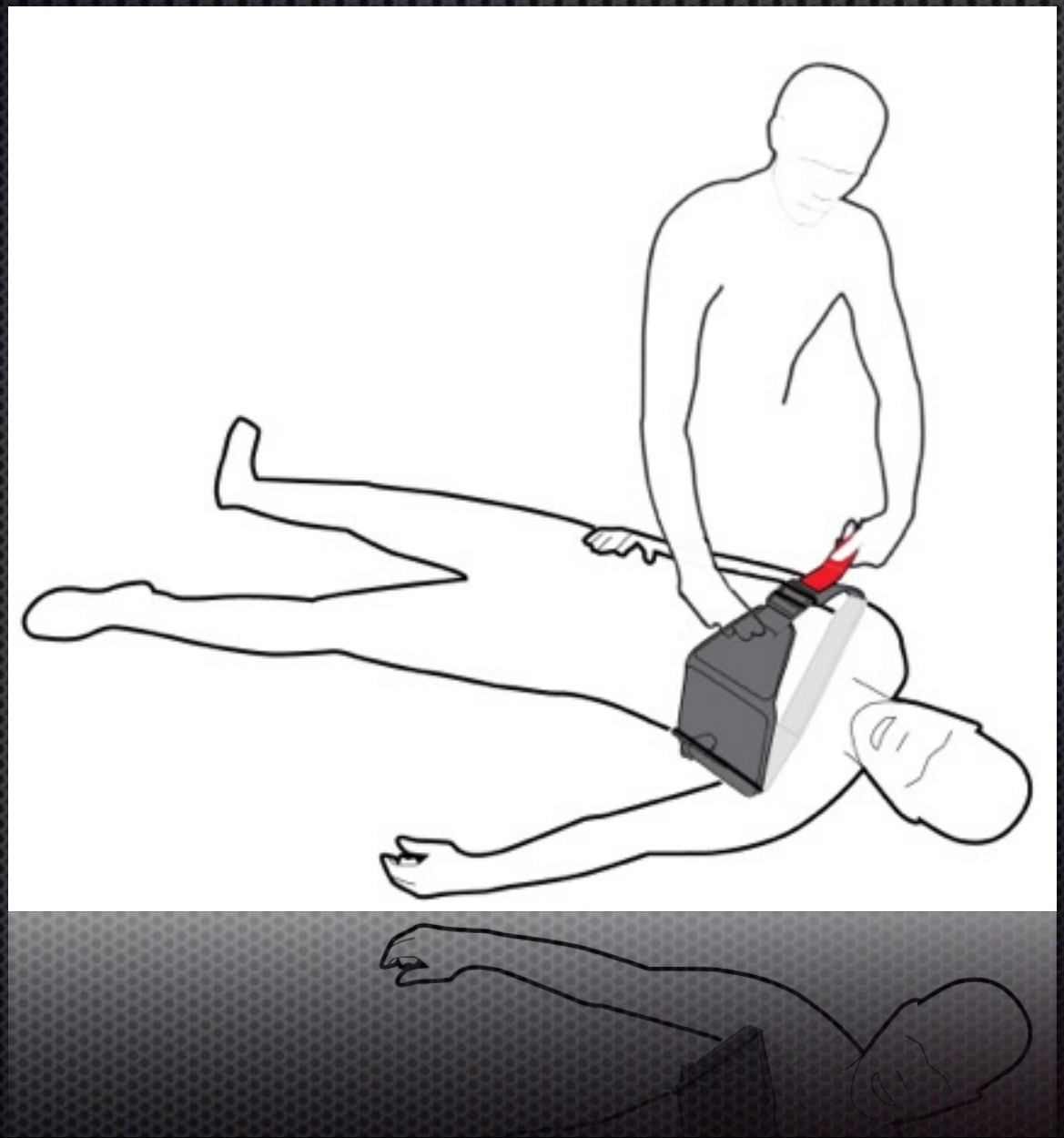




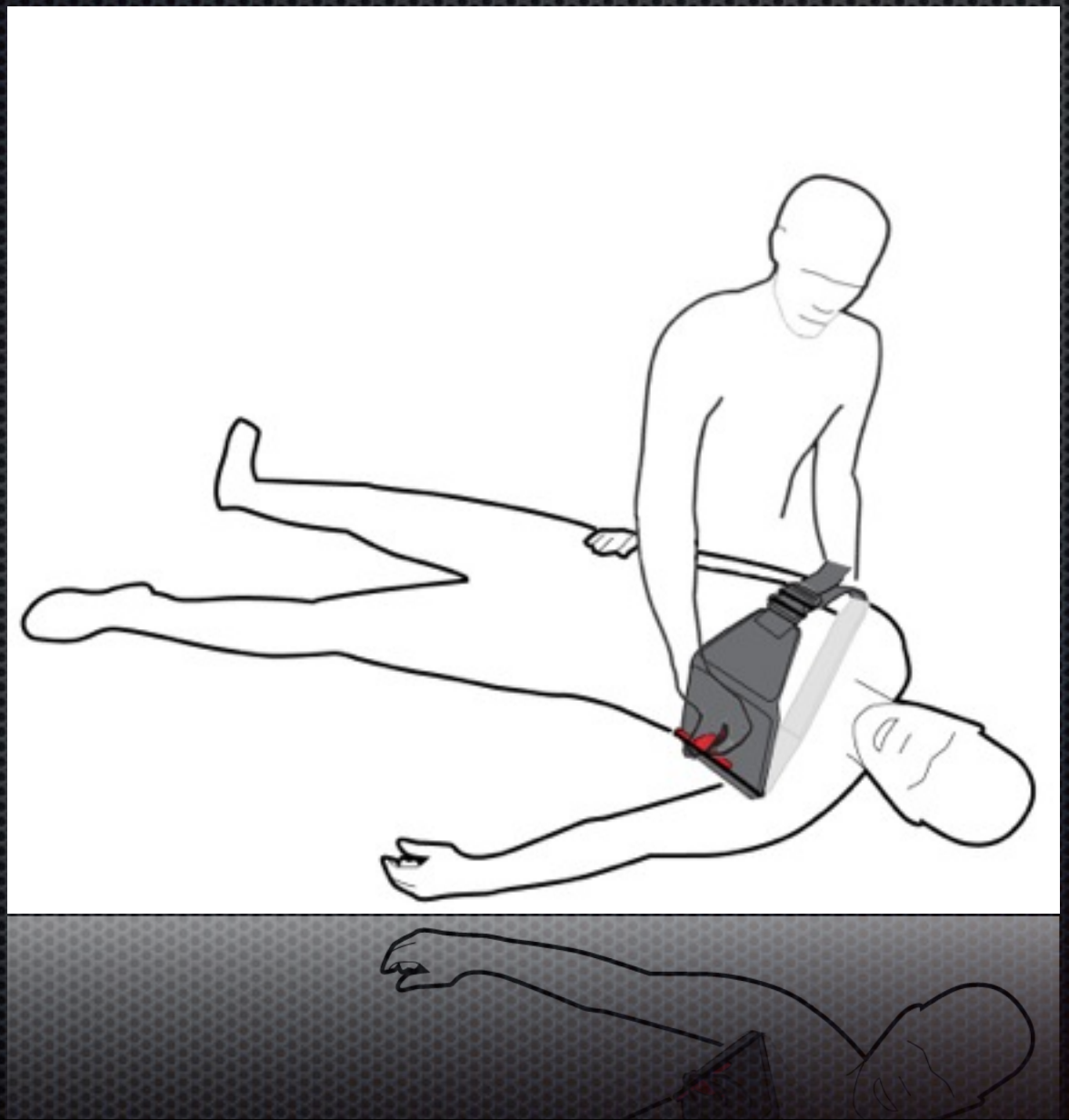
Position bladder over the patient's axilla



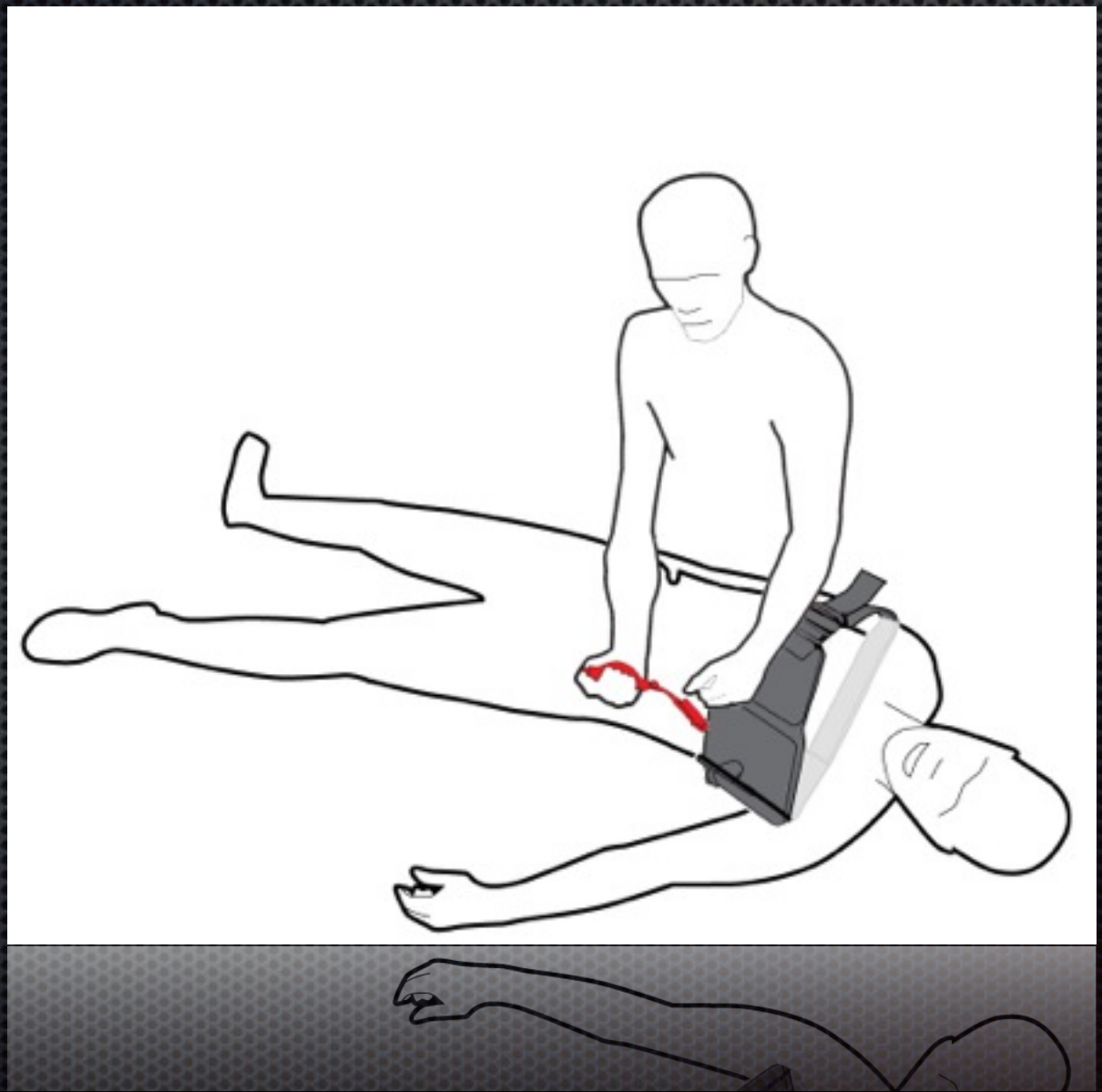
Tighten Belt



Tighten & Secure Windlass



Inflate bladder until green indicator shows



Inflating the Bladder

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

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

- 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?