

M.A.R.C.H PROTOCOL

BY DR. SAM SCHEINBERG

- Humans don't like to follow instructions



Wear a seatbelt when fleeing a bank-robbery



The Good old days



Toto we are not in Kansas anymore

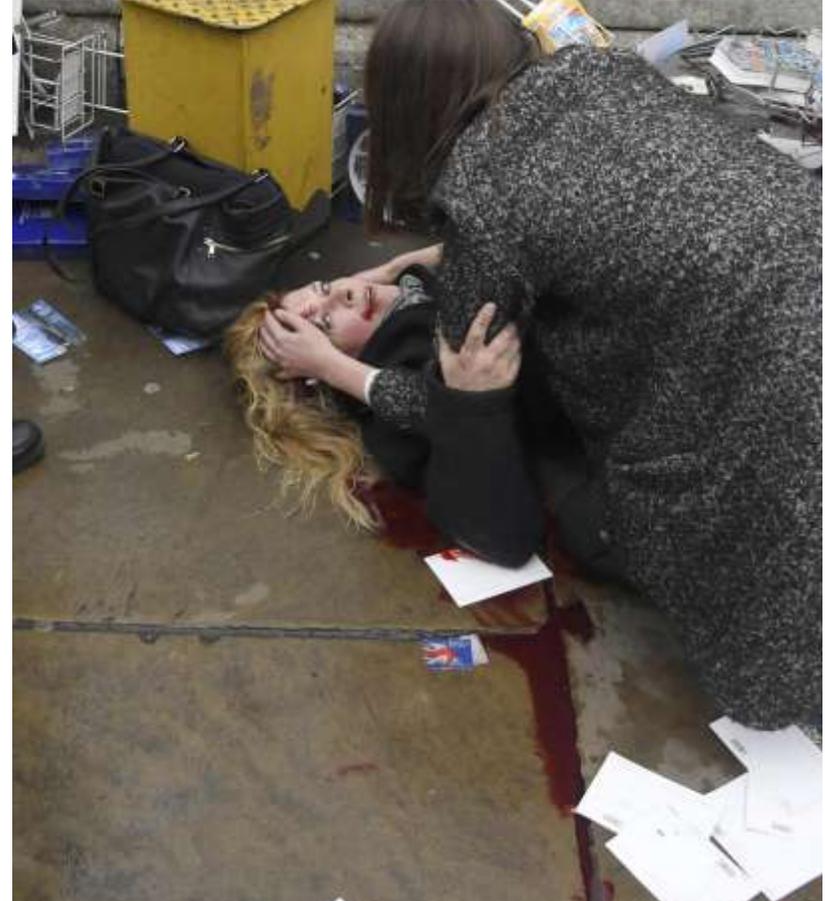








LOTS OF MOVEMENT WITH NO IMPROVEMENT



MOVEMENT WITH IMPROVEMENT



Movement with Improvement



Field Care (FC) - Care rendered by first responders while still in the field environment.

- FC focuses on assessment and management using the **M.A.R.C.H.** acronym.
- **Massive Hemorrhage ...** managed through the use of tourniquets, hemostatic dressings, junctional devices, and pressure dressings.
- **Airway ...** Managed by rapid and aggressive opening of the airway to include cricothyroidotomy for difficult airways.
- **Respiration and Breathing ...** managed by assessment for tension pneumothorax use of chest seals and needle decompression.

Circulation ... impairment is assessed, and managed through intravenous or I.O. access, followed by the administration of Tranexamic acid (TXA) if indicated, fluid resuscitation using the principles of hypotensive resuscitation. Early use of blood and blood products and discourages the use of crystalloids such as normal saline.

Hypothermia ... prevention is an early and critical intervention to keep a traumatized casualty warm regardless of the operational environment.

MASSIVE HEMORRHAGE

Life threatening ... not a skin tear



EXTREMITY TOURNIQUETS SAM XT







WOUND PACKING



HEMOSTATIC DRESSINGS







PRESSURE BANDAGE

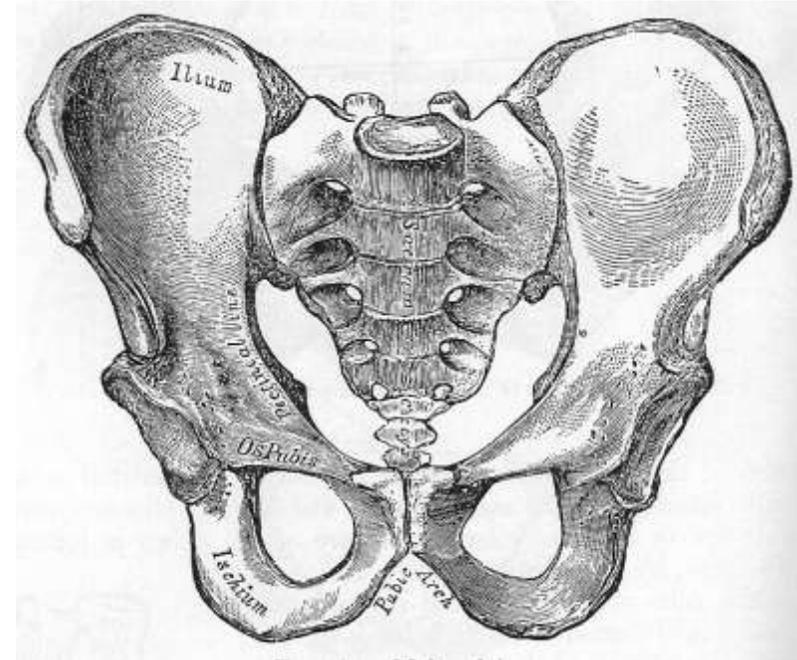


Emergency Treatment of Severe Pelvic Fractures



Anatomy of The Pelvic Ring

The pelvis consists of three bones – two innominate bones, (each made up of the ilium, ischium, pubis) and the sacrum.



When you Suspect it, Treat it.

- When patient's history is consistent with a pelvic injury.
 1. High velocity blunt trauma.
 2. Falls.
 3. Crush injuries.
 4. Blasts
- In the presence of bruising, tenderness, or open pelvic wounds.
- When injury history is consistent with pelvic fracture and patient is confused or unconscious

Control Hemorrhage Indirect Method

- Closed Reduction and Stabilization
 - Maintaining bones in stable opposition promotes clot formation and prevents clot displacement.
 - Is there a tamponade effect?
 - * not according to recent research.



Pelvic Circumferential Compression Device SAM Sling





JUNCTIONAL TOURNIQUET

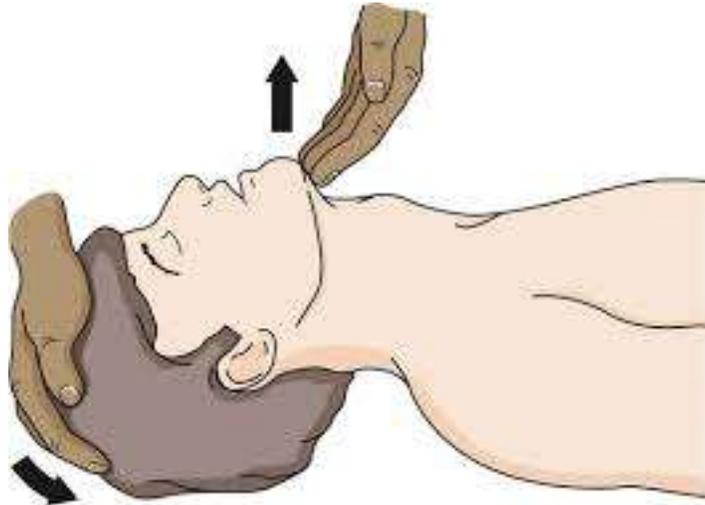




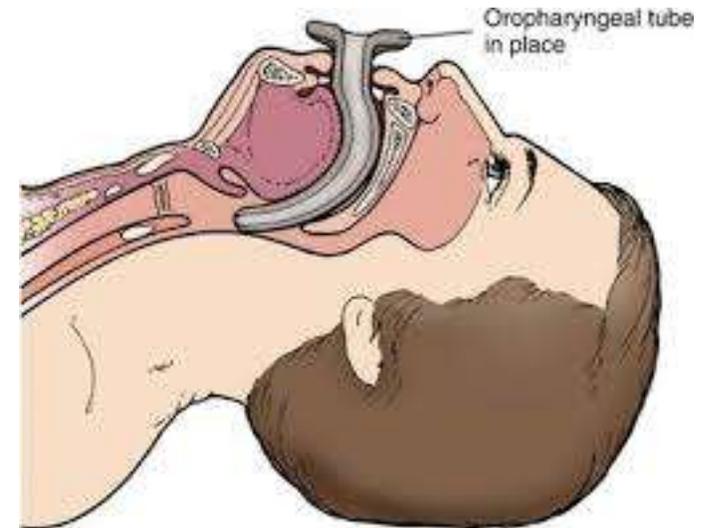
AIRWAY CONTROL

OPEN AIRWAY

Head tilt-Chin Lift



Oropharyngeal airway

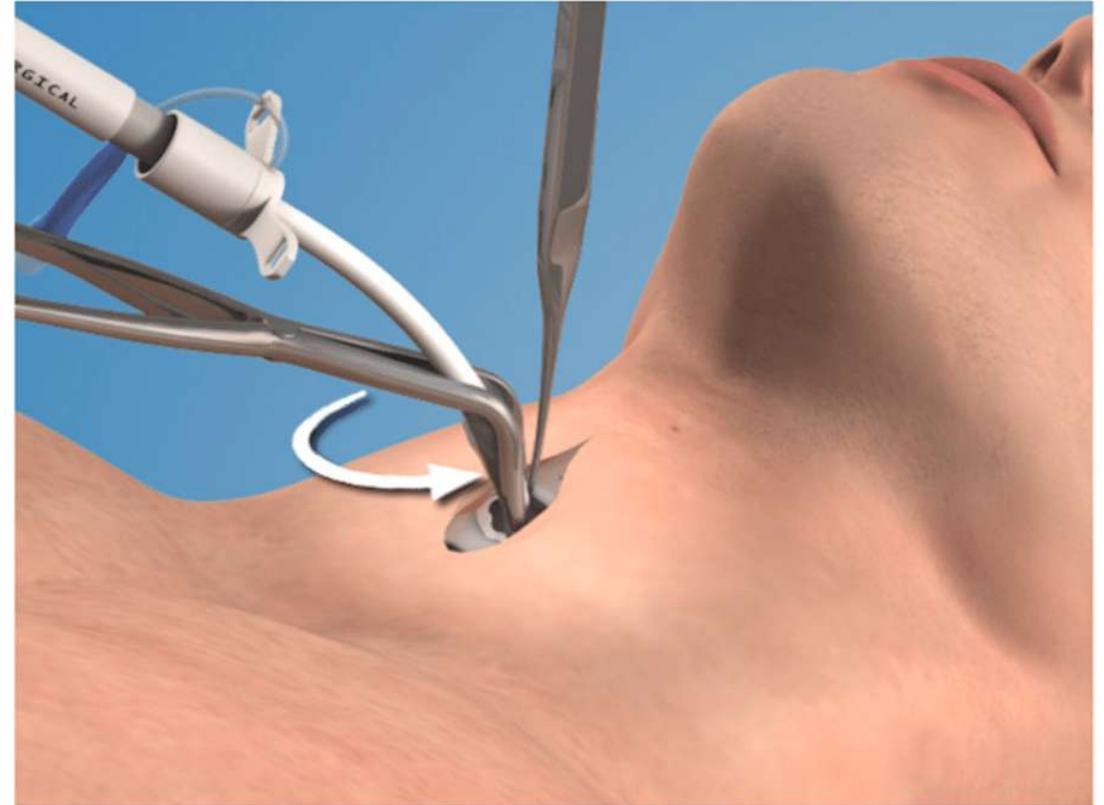
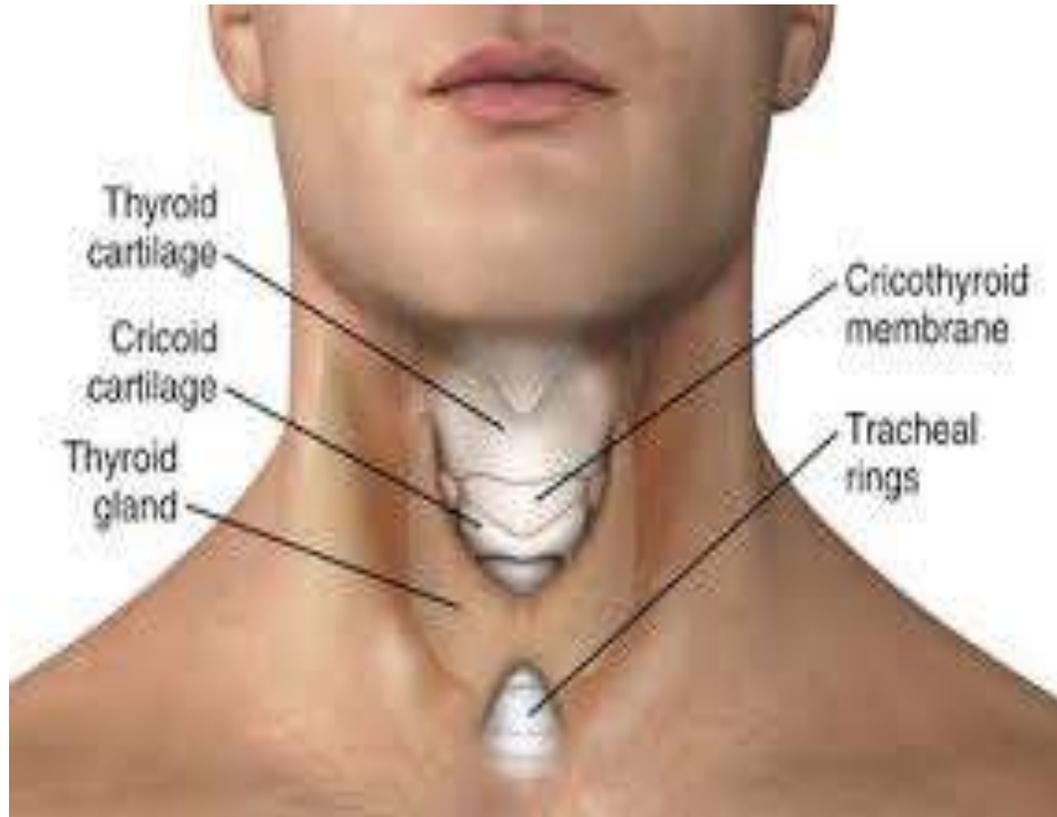


WE MAY KNOW WHAT TO DO



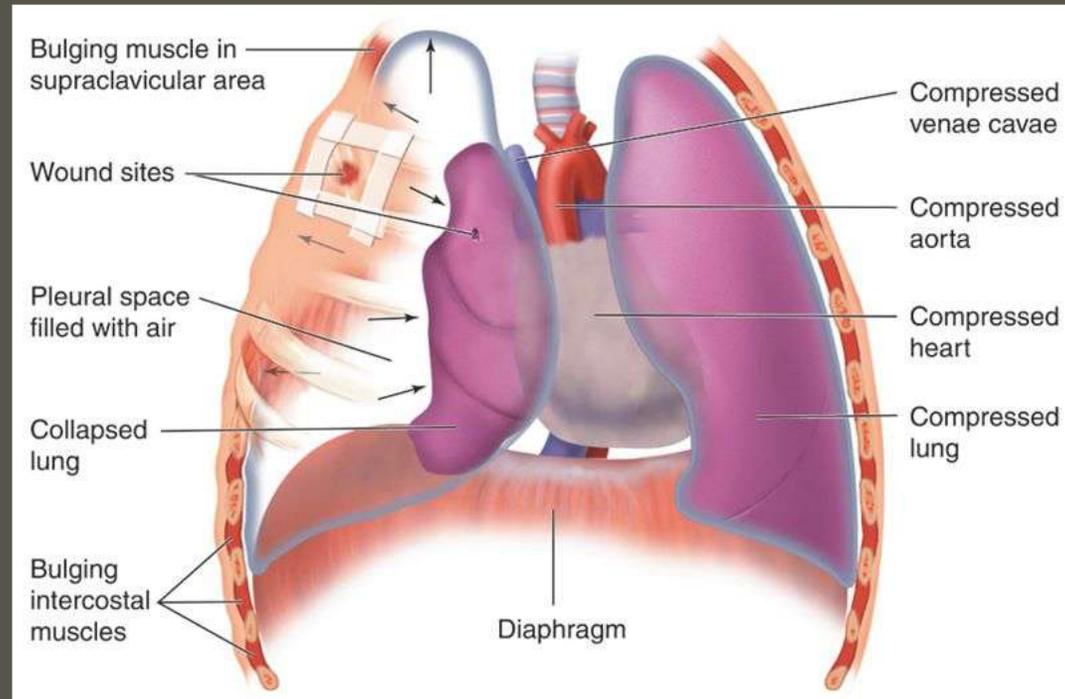
CRICOTHYROIDOTOMY

But we still stand around thinking of reasons not to do it!!



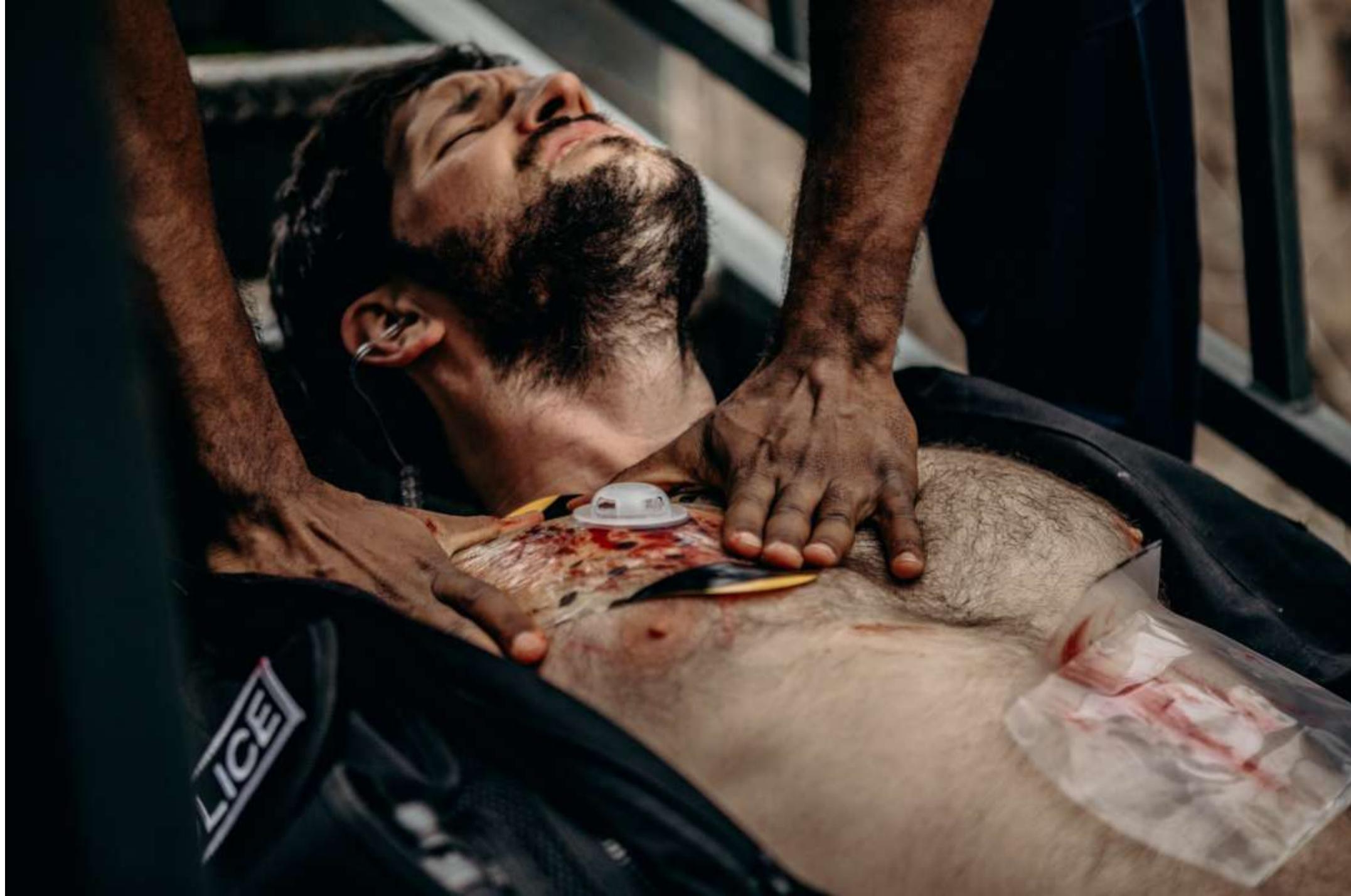
RESPIRATION AND BREATHING

Tension Pneumothorax



CHEST SEAL



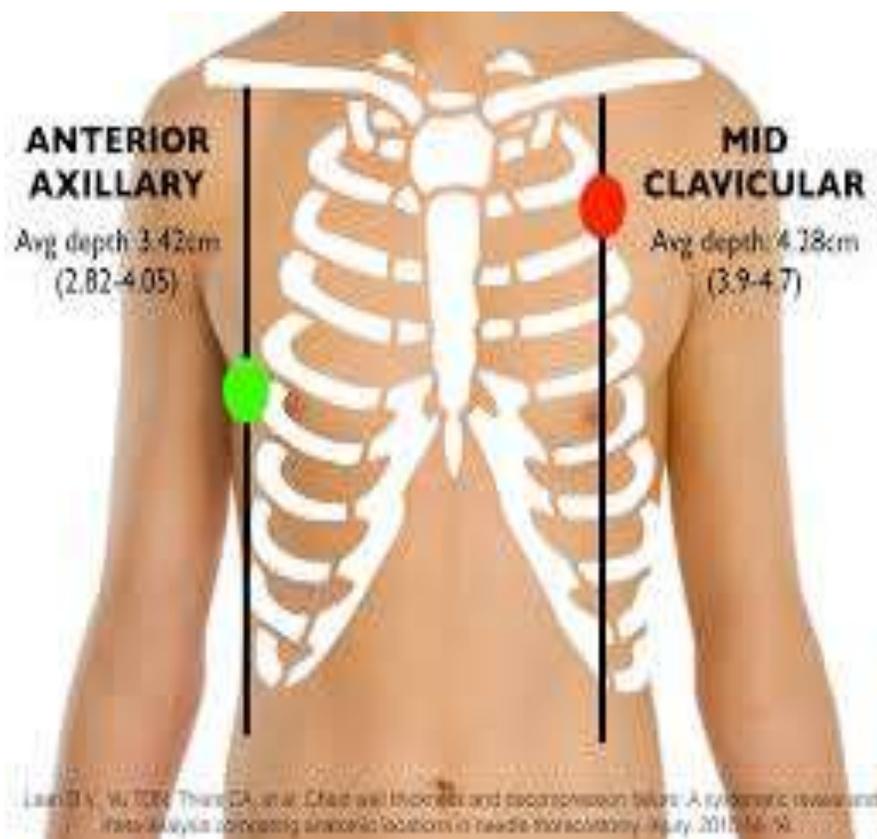


Valved vs Vented Chest Seals:

Occludability Comparison

DECOMPRESSION NEEDLE





Leah D.V., W. TCR, Thair CA, et al. Chest wall thickness and pneumothorax rates: A systematic review and meta-analysis comparing anatomic locations of needle thoracostomy. July 2015;16: 92.

CIRCULATION

INTRAVENOUS OR INTRAOSSEOUS ACCESS





MANUAL

At some point it ceases to be useful.

IMPACT DRIVEN





IMPACT DRIVEN



TRANEXAMIC ACID



Hypotensive Resuscitation as part of Damage Control Management

Hypotensive resuscitation consists of a restrictive approach to the administration of IV fluids and blood with the goal of keeping mean arterial pressures (MAP) high enough for essential organ perfusion but lower than normal in order to limit bleeding. Multiple animal studies have shown this approach to be beneficial in acute hemorrhage. These studies show less blood loss at lower blood pressures. In the actively bleeding patient, these lower MAPs translate into less acute blood loss and less coagulopathy. Because of this, hypotensive resuscitation is rapidly replacing the high volume resuscitation standard of care in the acute phase of trauma care

HYPOTHERMIA PREVENTION





Table 3: Major consequences of severe acidosis in trauma patients

Cardiovascular	Decreased cardiac output and arterial blood pressure
	Decreased cardiovascular response to catecholamines (epinephrine)
	Reduced threshold for developing v fib
Pulmonary	Hyperventilation
	Decreased strength and increased fatigue of respiratory muscles
Brain	Decreasing mental status and coma
Bleeding	Decreased function of coagulation factors and platelets to make clot and thus stop hemorrhage

THANK YOU