



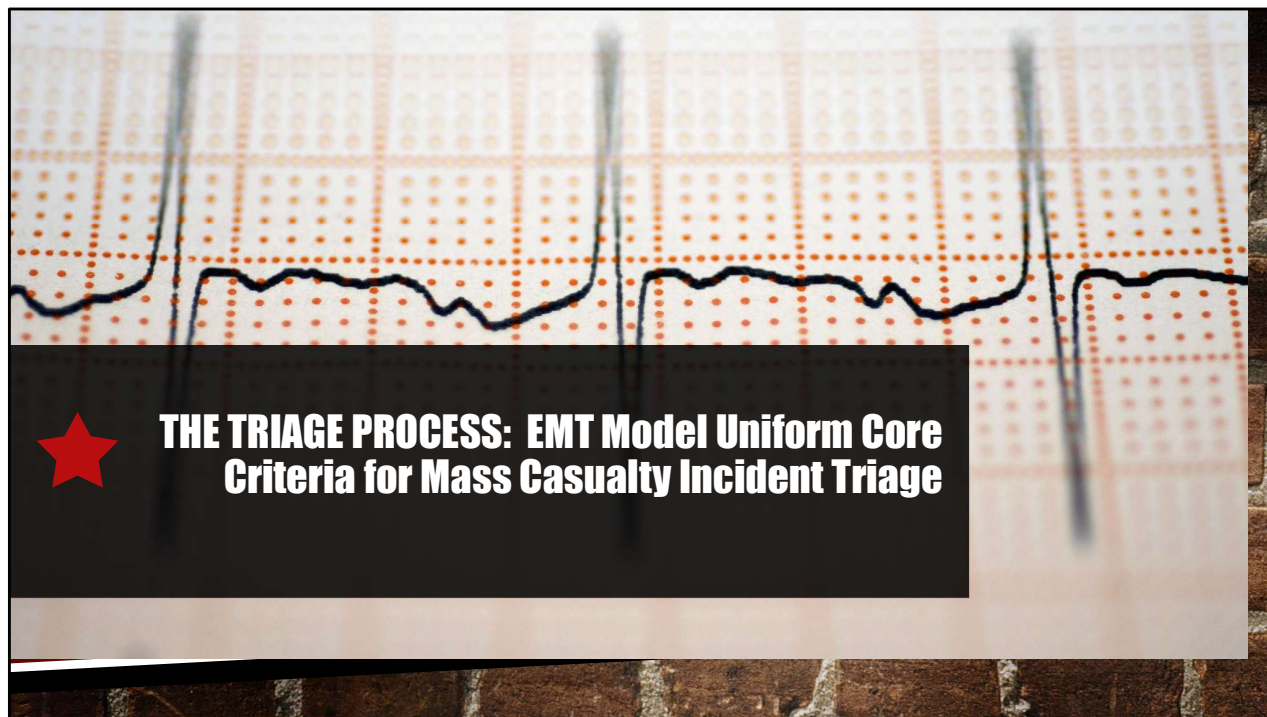
Triage is derived from the French word, “trier” meaning to sort. Why triage? Triage is a process for prioritizing multiple casualties when resources are not sufficient to treat everyone immediately.

Resources = not just equipment, supplies, but also include TRAINED individuals like yourselves

Process of triage allows us to allocate resources MOST efficiently and effectively

OBJECTIVES

- **Be able to perform a Casualty Systematic Assessment using the Casualty Systematic Assessment Process (CSAP)**
- **Be able to recognize life-threatening injuries within your scope of training**
- **Be able to intervene and stabilize life-threatening injuries using first aid skills within your scope of training**
- **Be able to assign casualty triage categories**
- **Be able to document casualty information on a Casualty Triage Tag**



Many different forms of triage; we'll be using the MUCC established as a national guideline for EMTs so that in the event of a disaster crossing state lines for example, everyone using a standardized form of triage. You'll be using YES/NO questions as the simplest way to quickly and efficiently triage patients.



TYPES OF INJURIES IN AN EARTHQUAKE

- Fractures/dislocations
- Crush injuries
- Head/brain injuries
- Chest injuries
- Abdomen/pelvic injuries
- Spinal injuries
- Lacerations/traumatic amputations
- Medical emergencies

A magnitude 5-7 or greater earthquake can collapse homes, topple bookcases, cause someone to fall down stairs or shake pictures off the wall onto someone's head. Most earthquake injuries are from falling and/or flying objects.

Medical emergencies = heart attacks, asthma attacks

TRIAGE IS DYNAMIC



CASUALTY CONDITION



AVAILABLE RESOURCES



RESPONDER TRAINING

Triage is dynamic and can change based on

1. Casualty condition what are their injuries? Casualty condition can change after you perform a life-saving intervention so don't assign a triage category until AFTER intervening! E.G. Not breathing (immediate) changes to delayed after you open their airway and they start breathing.
2. Available resources. Resources available at the CAS that includes not just supplies, but also first aid team members.
3. Responder training. We are trained to give first aid care ONLY so a lot of the casualties you see will be Immediate category simply because we are trained to provide first aid ONLY so many injuries will be beyond our scope of training.



CASUALTY SYSTEMATIC ASSESSMENT PROCESS (CSAP)

- **PUT ON PPE**
- **ASSESS ABCS**
- **INTERVENE FOR LIFE
THREATENING CONDITIONS**
- **RE-ASSESS AND ASSIGN TRIAGE
CATEGORY**
- **DOCUMENT ON CASUALTY TRIAGE
TAG/RADIO IN**

THIS IS THE SYSTEMATIC PROCESS that you'll use for every casualty

CASUALTY TRIAGE TAG

TRIAGE TAG

No. **000000**

MOVE THE WALKING WOUNDED

NO RESPIRATION AFTER HEAD TILT/OPA

☐ RESPIRATIONS — OVER 30 **DECEASED**

☐ PULSE — NO RADIAL PULSE **IMMEDIATE**

☐ MENTAL STATUS — UNABLE TO FOLLOW SIMPLE COMMANDS **IMMEDIATE**

OTHERWISE... **DECEASED**

Time	Pulse	B.P.	Resp	Awake
				<input type="checkbox"/>
				<input type="checkbox"/>
				<input type="checkbox"/>
				<input type="checkbox"/>

☐ Verbal

☐ Pain

☐ Unconscious

P0 DECEASED

P1 IMMEDIATE

P2 DELAYED

P3 MINOR

PROPERTY ID TAG **TRIAGE TAG** **ACCIDENT LOCATION MARKER**

Name: _____

Address: _____

Phone: _____

Hospital: _____ Transport: _____

Gender: ☐ Male ☐ Female Age: _____

Major Injuries:

☐ HEAD ☐ BACK

☐ CHEST ☐ EXTREMITIES

☐ ABDOMEN ☐ OTHER _____

ALLERGY: _____

Rx: _____

NOTES: _____

P0 DECEASED Spinal cord injury, multiple major fractures, multiple head injuries, severe chest/abdominal, severe head injury, other, severe or multiple

P1 IMMEDIATE Spinal cord injury, multiple major fractures, multiple head injuries, severe chest/abdominal, severe head injury, other, severe or multiple

P2 DELAYED Spinal cord injury, multiple major fractures, multiple head injuries, severe chest/abdominal, severe head injury, other, severe or multiple

P3 MINOR All minor and uncomplicated fractures, sprains, minor head injuries, severe or multiple

Let's look at a scenario to understand how the CSAP works. These cards are in your first aid bags to document casualty information and their triage category



CASUALTY SYSTEMATIC ASSESSMENT PROCESS

- **PUT ON PPE**
- **ASSESS ABCS**
- **INTERVENE FOR LIFE
THREATENING CONDITIONS**
- **RE-ASSESS AND ASSIGN TRIAGE
CATEGORY**
- **DOCUMENT ON CASUALTY TRIAGE
TAG/RADIO IN**

A man runs up to you In your golf cart from his house that displays a HELP sign; he says you need to come to the backyard...my wife Janice has collapsed. He tells you, "I was inside when the shaking started...my wife Janice was outside gardening. Introduce yourself...Go to yard...he says, "I found her like this and was afraid to move her" You have him help you roll her over and you start your Casualty Systematic Assessment Process; PPE...assess ABC's. Not breathing, no carotid pulse. ASK the husband, how long has she been like this? He tells you, I found her like this after the earthquake started earlier this morning (4 hours ago). Realistically, we won't be getting to casualties until Day 2 or even Day 3 depending on the extent of damage, trees down, etc.



CARDIAC ARREST AND SURVIVAL

- **0-4 MINUTES:**
BRAIN DAMAGE UNLIKELY
- **4-6 MINUTES:**
BRAIN DAMAGE POSSIBLE
- **6-10 MINUTES:**
HIGH PROBABILITY OF BRAIN DAMAGE
- **>10 MINUTES:**
SEVERE BRAIN DAMAGE:
****SURVIVAL UNLIKELY****

American Heart Association Resuscitation Science Symposium 2024

LIFE-SAVING INTERVENTIONS, ONLY IF:



**Equipment/supplies
readily available**



**Within your scope of
OHCC first aid training**



**Intervention can be
performed in <2 minutes**



**Intervention doesn't
require you to stay with
the casualty**

NO AED!

Let's go back and look at Janice in a different scenario...her husband tells you, I SAW HER FALL OVER just now, then flagged you down. No breathing/no pulse. What's the intervention? Start CPR? YES...NOTE THE TIME; Janice responds

Just did an intervention, what do you do now? RE-ASSESS!

TRIAGE CATEGORY: YES/NO QUESTIONS

- **A = CHECK AIRWAY/ A=ALERT=ABLE TO FOLLOW COMMANDS?**
- **B = BREATHING. IN OBVIOUS RESPIRATORY DISTRESS?**
- **C = CIRCULATION. HAS A CAROTID PULSE?**
- **D = DISABILITY/MECHANISM OF INJURY = WHAT HAPPENED?**
- **ARE INJURIES LIKELY SURVIVABLE GIVEN AVAILABLE RESOURCES?**

IMMEDIATE: look at casualty triage card.

Unable to follow commands.

RESPONDER'S CASUALTY ASSESSMENT CARD

E = √ ENVIRONMENT, EXPOSE

F = √ FAHRENHEIT (TEMPERATURE)

EVERY CASUALTY GETS A BLANKET

**Ask for their
Vial of Life
Form or for
them to access
SMART911**

TRIAGE TAG

○

No. 

MOVE THE WALKING WOUNDED

**NO RESPIRATION
AFTER HEAD TILT-OPA**

☐ **RESPIRATIONS** — OVER 30

☐ **PULSE** — NO RADIAL PULSE

☐ **MENTAL STATUS** — UNABLE TO
FOLLOW SIMPLE COMMANDS
OTHERWISE...

Time	Pulse	B/P	Resp.	
				<input type="checkbox"/> Awake
				<input type="checkbox"/> Verbal
				<input type="checkbox"/> Pain
				<input type="checkbox"/> Unconscious

MINOR **DECEASED** **IMMEDIATE** **IMMEDIATE** **DELAYED**

P0 DECEASED **P1 IMMEDIATE** **P2 DELAYED** **P3 MINOR**

PROPERTY ID TAG	TRIAGE TAG 	ACCIDENT LOCATION MARKER						
Name: _____ Address: _____ Phone: _____ Hospital: _____ Transport: _____ Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female Age: _____								
Major Injuries: <table style="float: right; margin-left: 20px;"> <tr> <td><input type="checkbox"/> HEAD</td> <td><input type="checkbox"/> BACK</td> </tr> <tr> <td><input type="checkbox"/> CHEST</td> <td><input type="checkbox"/> EXTREMITIES</td> </tr> <tr> <td><input type="checkbox"/> ABDOMEN</td> <td><input type="checkbox"/> OTHER</td> </tr> </table>			<input type="checkbox"/> HEAD	<input type="checkbox"/> BACK	<input type="checkbox"/> CHEST	<input type="checkbox"/> EXTREMITIES	<input type="checkbox"/> ABDOMEN	<input type="checkbox"/> OTHER
<input type="checkbox"/> HEAD	<input type="checkbox"/> BACK							
<input type="checkbox"/> CHEST	<input type="checkbox"/> EXTREMITIES							
<input type="checkbox"/> ABDOMEN	<input type="checkbox"/> OTHER							
ALLERGY: _____ Rx: _____ NOTES: _____ _____ _____ _____ _____								
<div style="background-color: black; color: white; padding: 5px; font-weight: bold; font-size: 1.2em;">P0 DECEASED</div> <div style="font-size: 0.8em; margin-top: 5px;"> Significant head-injury or death Unconscious, no vital signs, obvious fatal wounds, severe chest trauma, severe head injury, shock, burns or medical </div> <div style="background-color: red; color: white; padding: 5px; font-weight: bold; font-size: 1.2em;">P1 IMMEDIATE</div> <div style="font-size: 0.8em; margin-top: 5px;"> Significant head injury, multiple major fractures, moderate burns, unconscious/fatal injury </div> <div style="background-color: orange; color: white; padding: 5px; font-weight: bold; font-size: 1.2em;">P2 DELAYED</div> <div style="font-size: 0.8em; margin-top: 5px;"> Significant head injury, multiple major fractures, moderate burns, unconscious/fatal injury </div> <div style="background-color: yellow; color: black; padding: 5px; font-weight: bold; font-size: 1.2em;">P3 MINOR</div> <div style="font-size: 0.8em; margin-top: 5px;"> All minor and uncomplicated fractures, sprains, other injuries, burns or psychological problems </div>								

G= GET INFO: from husband.

--Rx: meds they're on that if they don't take them, they could die.

Neighbors willing to help? Time placed tourniquet, compression bandage, quikclot if can't write on the tourniquet.

use the cards to radio in triage category and speak w/the FA team as needed. and leave card with the casualty for EMS to use.



Other examples of immediate category injuries.

Severe bleeding that is uncontrollable w/FA supplies

Wife takes you to backyard; this man on the ground bleeding.

CSAP

TRIAGE CATEGORY: YES/NO QUESTIONS

- **A = CHECK AIRWAY A=ALERT, ABLE TO FOLLOW COMMANDS?**
- **B = BREATHING. IN OBVIOUS RESPIRATORY DISTRESS?**
- **C = CIRCULATION. HAS A LIFE-THREATENING EXTERNAL HEMORRHAGE?**
- **D = DISABILITY/WHAT HAPPENED? MECHANISM OF INJURY**
- **ARE INJURIES LIKELY SURVIVABLE GIVEN AVAILABLE RESOURCES?**

Max time of application (24 hrs) and tourniquets never removed except by EMS or hospital personnel. DO NOT use QuikClot on eyes, don't use it to pack an open major chest or abdominal wound, or an open skull fx's. External wounds only! NOTE TIME THEY WERE APPLIED.

Any casualty w/a tourniquet/Quikclot = IMMEDIATE and call EMS

TRIAGE CATEGORY?



Driving in golf car; see this lady sitting on curb holding her arm

TRIAGE CATEGORY: YES/NO QUESTIONS

- **A = CHECK AIRWAY A=ALERT, ABLE TO FOLLOW COMMANDS?**
- **B = BREATHING. IN OBVIOUS RESPIRATORY DISTRESS?**
- **C = CIRCULATION. HAS A LIFE-THREATENING EXTERNAL HEMORRHAGE?**
- **D = DISABILITY/MECHANISM OF INJURY (WHAT HAPPENED?)**
- **ARE INJURIES LIKELY SURVIVABLE GIVEN AVAILABLE RESOURCES?**

Let's use the CSAP I'm this older casualty; who wants to volunteer to start a Casualty Systematic Assessment on me? Use your ABC cards!

HOW TO MAKE A SLING

[HTTPS://YOUTU.BE/PWFbgkBXKfA](https://youtu.be/PWFbgkBXKfA)

**Using a Tri-Angular
Wrap**



TRIAGE CATEGORY

- **DEEP CUTS/GAPING WOUNDS
CONTROLLABLE WITH
COMPRESSION BANDAGE**



Man lying on lawn in front of a house that has obviously burned. CSAP

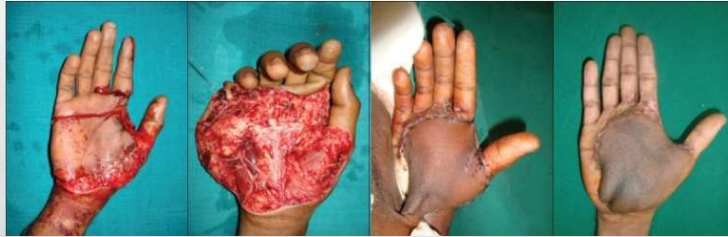
IMMEDIATE

TRIAGE CATEGORY



An older man walks up to you as you're leaving and says, "can you look at this, I fell down, what should I do?". He is shaking and distraught. You're thinking minor injury and ask him to turn his hand over and see.....

E=EXPOSE



E not only environment but think EXPOSE. Always inspect all aspects of a wound.

Think of expose as removing clothing but also means asking them to turn their hand over, lift their leg, roll over if possible and look at their back starting at the head to toe.



TRIAGE CATEGORY?

- **ASSESS ABC'S**
- **INTERVENE FOR LIFE-THREATENING CONDITIONS**
- **ASSIGN TRIAGE CATEGORY**
- **DOCUMENT/CALL IN**

CSAP

DELAYED triage category



Day 2; in your golf cart assessing structures. You see a home demolished like in the top picture. A man is outside on the curb asking you to help his wife who he has dragged out into the street.

CASUALTY SYSTEMATIC ASSESSMENT: TRIAGE CATEGORY

- UNABLE TO FOLLOW COMMANDS
- NOT BREATHING
- LIFE-THREATENING EXTERNAL HEMORRHAGE
- UNLIKELY TO SURVIVE GIVEN AVAILABLE RESOURCES

Crush injury to chest

Right side of head deformed with open, bleeding skull fx

Struggling to breathe, can't find a carotid pulse

UNLIKELY to survive?



TRIAGE CATEGORY: **EXPECTANT/DECEASED**

Provide basic first aid/COVER.....insure safety. Expectant. Call it in to OPS

DEAD BODY

California Code, Government Code - GOV § 27491

In California, you are not permitted to move a body after an unattended death without the explicit permission of the county coroner or their deputy. Violating this law is a misdemeanor offense.

Why the body cannot be moved

An unattended death, where a physician was not present, automatically falls under the coroner's jurisdiction. The scene and the body are considered evidence in an official inquiry to determine the cause and manner of death. Any unauthorized movement of the body or other items could compromise the investigation.

What to do after an unattended death

1. Do not touch or move the body. It is crucial to leave the body and surrounding items exactly as they are.
2. Contact law enforcement immediately. A death must be reported immediately to the coroner if it occurs under unusual or unattended circumstances. Call 911 or your local law enforcement's non-emergency line.
3. Provide access for the coroner. Once the proper authorities arrive, the coroner or their appointed deputy will examine the scene. They may order the body to be removed for further investigation or an autopsy.



Take a 10 minute break

FIRST AID FOR SELECT INJURIES

- **HEAD INJURIES**
- **EYE INJURIES**
- **CHEST INJURIES**
- **ABDOMEN**
- **SHOCK**



Most earthquake injuries from falling or flying objects



Battle's Sign
Bruising of the mastoid process of the temporal bone

Raccoon eyes
Bruising around the eyes

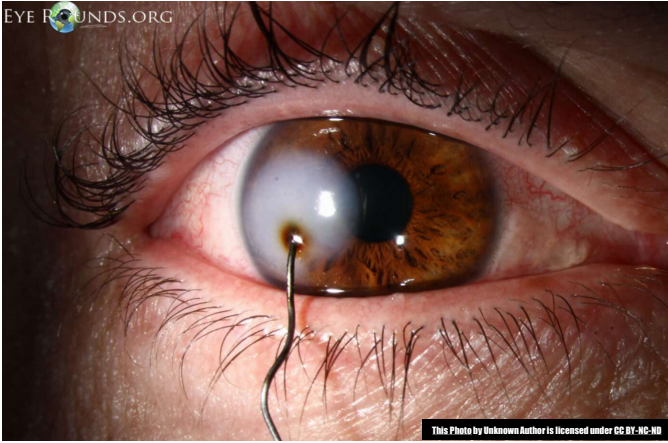
HEAD INJURIES

- CASUALTY SYSTEMATIC ASSESSMENT PROCESS
- INTERVENE FOR LIFE-THREATENING BLEEDING
- WOUND MANAGEMENT
- TRIAGE CATEGORY?

Possibly 2-3 days when you get to a casualty or this might be someone who walks into our CAS.
Battle's sign= basilar skull fx. (named after English surgeon William Battle)
Raccoon eyes=basilar skull fx

MOI= blunt trauma to back of head or temporal region
TRIAGE IMMEDIATE; call EMS

EYE FOUNDS.ORG



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EYE INJURIES

- CASUALTY SYSTEMATIC ASSESSMENT PROCESS
- DON'T REMOVE IMPALED OBJECT
- NO PRESSURE ON AN OPEN GLOBE INJURY
- DRESSING BOTH EYES; DON'T TOUCH THE EYE/EYE SOCKET
- IF POSSIBLE, ELEVATE HEAD FOR ALL EYE INJURIES
- TRIAGE CATEGORY?

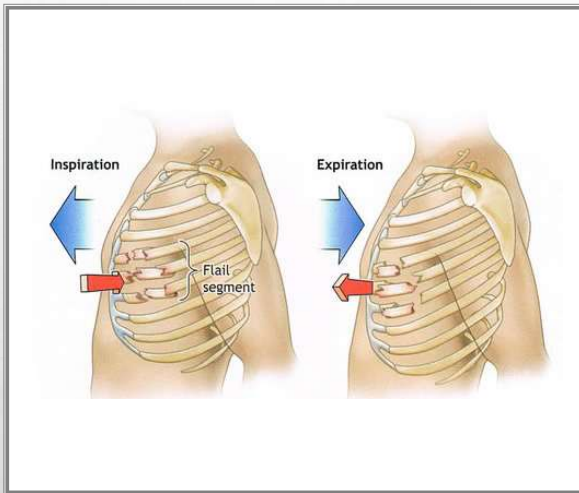
IMMEDIATE; call EMS



RECOGNIZING A CHEST INJURY

- **DIFFICULTY BREATHING/FAST BREATHING**
- **"CAN'T CATCH MY BREATH"**
- **PALE, BLUE SKIN**
- **BRUISING OR DEFORMITY OF THE CHEST WALL**
- **PARADOXICAL BREATHING**

Bookcase falls on husband



PARADOXICAL BREATHING: FLAIL CHEST

- **CASUALTY SYSTEMATIC ASSESSMENT**
- **STABILIZE THE FLAIL PORTION OF THE CHEST**
- **TRIAGE CATEGORY?**

You also notice something called paradoxical breathing, an unusual movement of the chest. Put your hands over your chest on either side, take a deep breath, now exhale

A flail chest is when multiple contiguous ribs on one side are broken in more than one place causing that loose segment to move or “flail” separately from the rest of the rib cage

Use pillow/towel to splint flail chest. If have to leave; abd pad w/triangular bandages LOOSE
TRIAGE IMMEDIATE; call EMS



SPLINTING A FLAIL CHEST

- **TRIANGULAR
BANDAGES**
- **CHECK
BREATHING**



SUCKING CHEST WOUND

- **CASUALTY SYSTEMATIC ASSESSMENT**
- **DO NOT COVER WOUND**
- **3-SIDED DRESSING**
- **TRIAGE CATEGORY?**

Same guy; here, part of the broken bookcase punctured his chest and during your Casualty Systematic Assessment you see this and hear a sucking, gurgling sound every time he takes a breath.

TRIAGE: IMMEDIATE call EMS



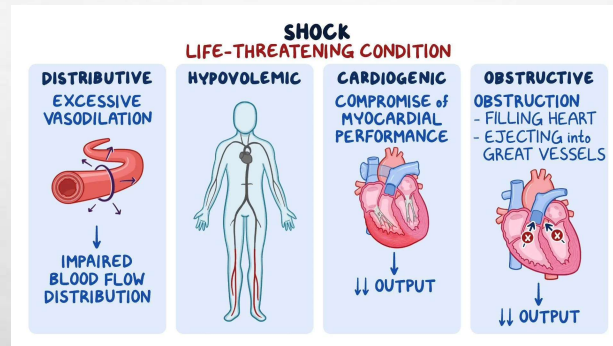
ABDOMINAL INJURY

- **CASUALTY SYSTEMATIC ASSESSMENT PROCESS**
- **DO NOT PUSH ORGANS BACK INTO CAVITY OR APPLY DIRECT PRESSURE**
- **WOUND DRESSING**
- **TRIAGE CATEGORY?**

Moisten sterile dressing w/clean, warm tap water and apply over the wound. Cover w/plastic wrap or aluminum foil.

TRIAGE CATEGORY immediate and radio in open abdominal wound injury. Call EMS

SHOCK



Learning point: shock not always from massive hemorrhage so MOST important you can recognize signs (something you can see w/your eyes) and symptoms (something the person tells you).

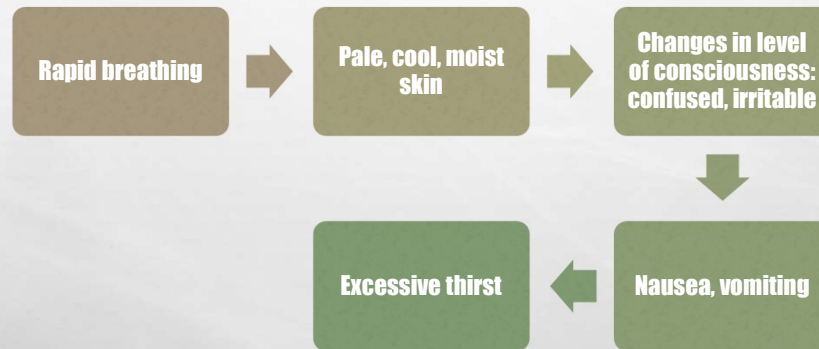
Distributive: anaphylaxis

Hypovolemic; hemorrhage

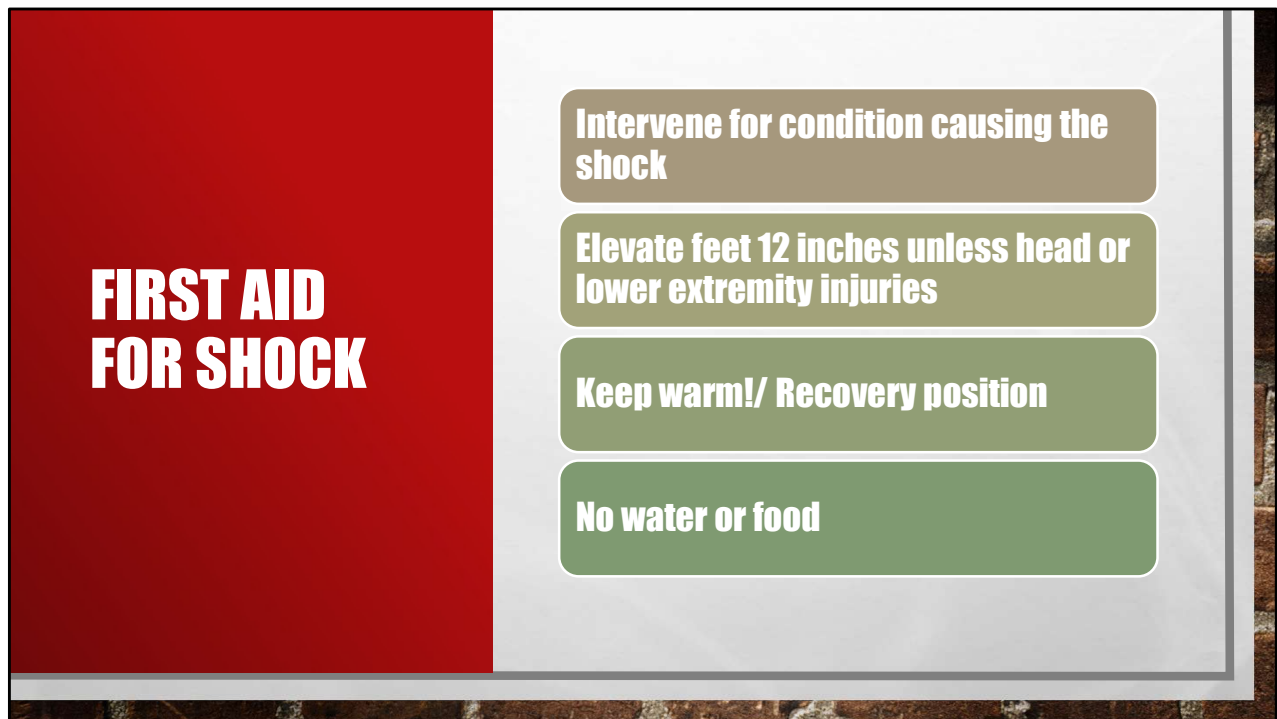
Cardiogenic: heart attack now heart failing

Obstructive: pulmonary embolism

RECOGNIZING SHOCK



DO NOT give water/food as they may aspirate/vomit



Anaphylactic; EPI pen

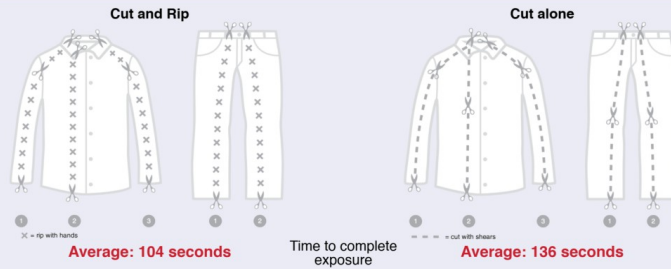
Intervene: CSAP, provide first aid for life-threatening external hemorrhage

No matter how thirsty; no water !

Triage category: IMMEDIATE. Call EMS

E=EXPOSE

Cutting versus cutting and ripping clothing removal in trauma



Take Home Message: When speed is the primary objective, a cutting and ripping technique is superior to cutting alone in removing clothing from trauma patients

Sibley et al. *CJEM*. July 2018

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Created by A. Chin and S. Huang. Editor: B. Thoma. CanadiEM.



QUESTIONS?



I'd like to conclude by saying how impressive it is that all of you are here today preparing yourselves to help neighbors during a MASCAL event here at OHCC. That takes courage and a good amount of sacrifice on your part! It's my honor to be part of something much larger than us and that is a willingness to serve others in a time of need. Thanks for your attention.

Any questions?