



MANAGE HEAD, NECK AND FACE INJURIES





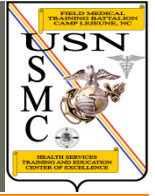
OVERVIEW



- Anatomy of the Head
- Types of Head Injuries
- Treatment of Head Injuries
- Anatomy of the Neck
- Types of Neck Injuries
- Treatment of Neck Injuries
- Anatomy of the Face
- Types of Facial Injuries
- Treatment of Facial Injuries



LEARNING OBJECTIVES

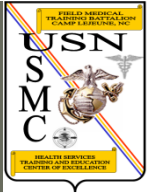


Please Read Your

Terminal Learning Objectives

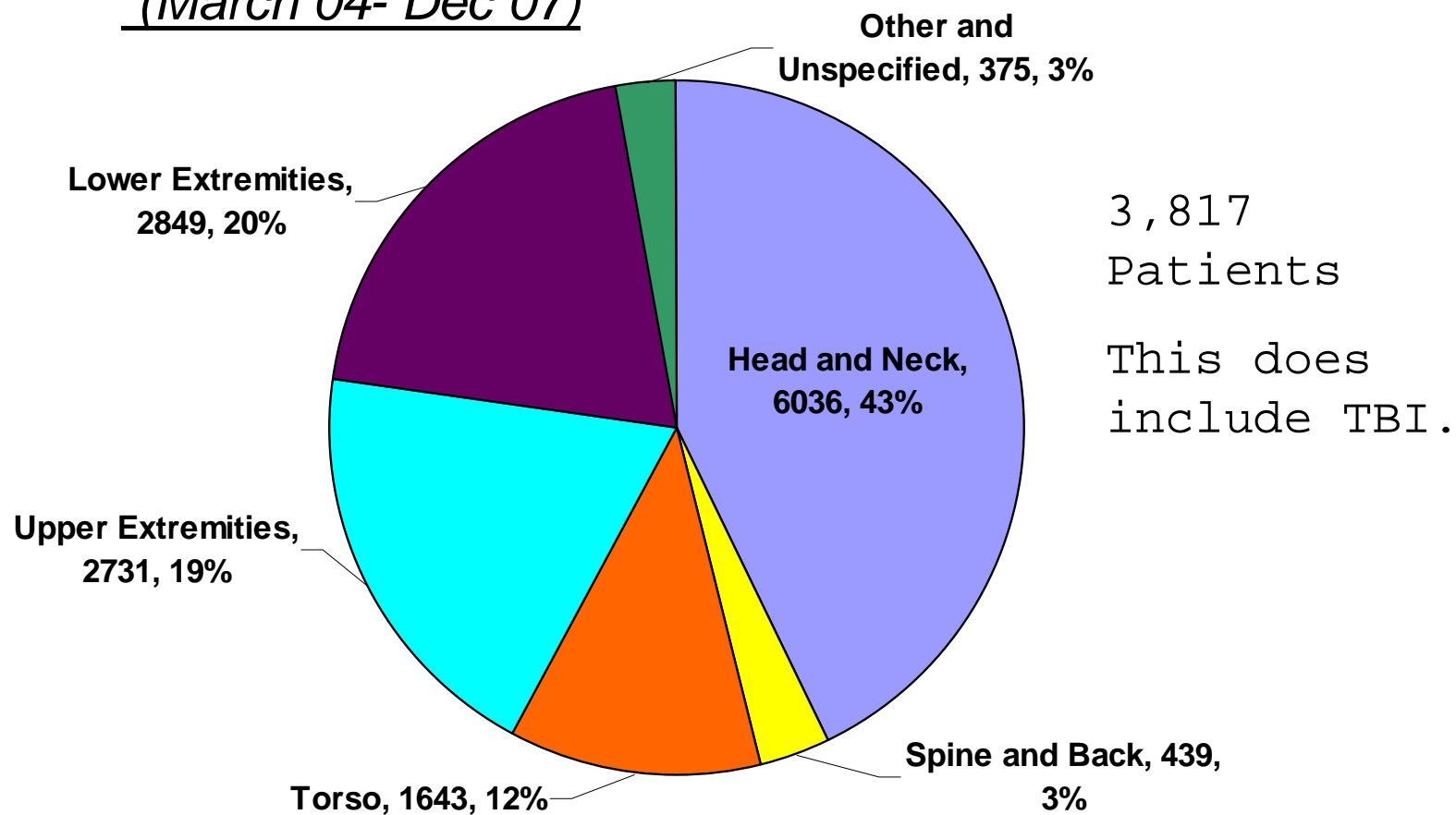
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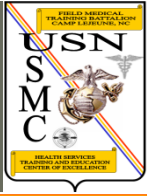
Enabling Learning Objectives





Number of Injuries by Body Region (March 04- Dec 07)

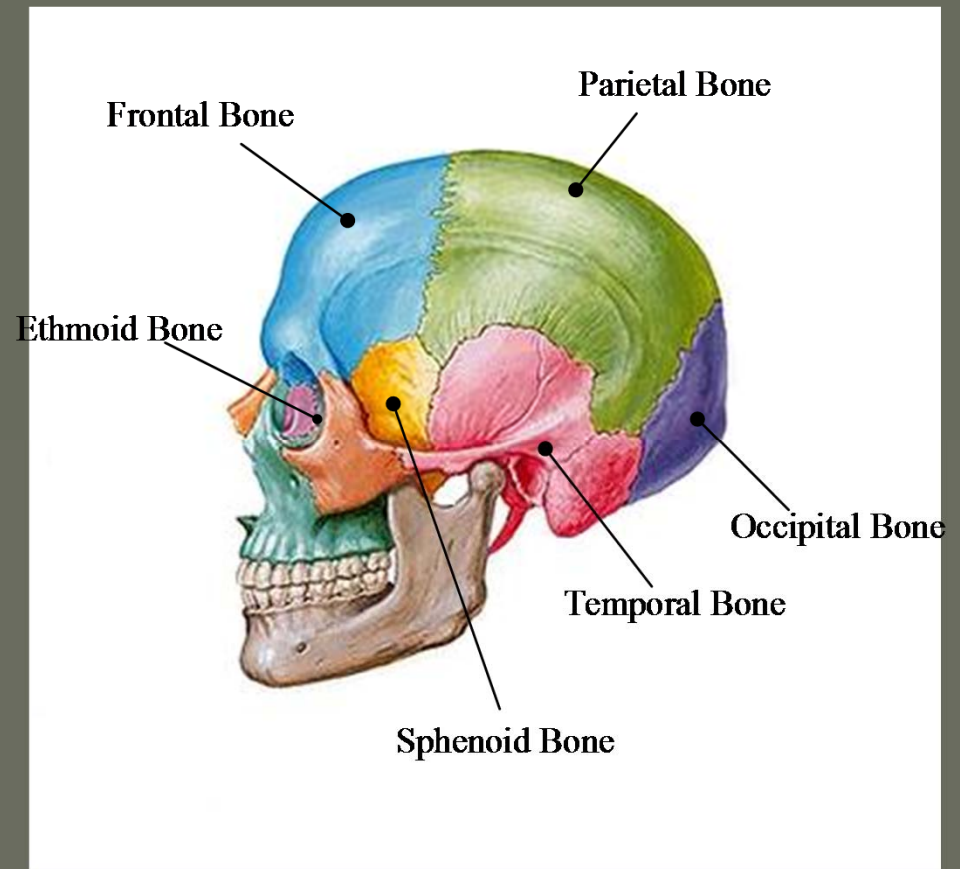




ANATOMY

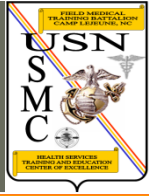
Cranial Vault – part of the skull that contains the brain

- Occipital
- Temporal
- Parietal
- Frontal
- Sphenoid
- Ethmoid





ANATOMY



- Major areas of the brain:
 - Cerebrum
 - Cerebellum
 - Brain Stem
 - Medulla
 - Pons
 - Midbrain
 - Reticular Activating System





TYPES OF HEAD INJURIES

TYPES OF HEAD INJURIES

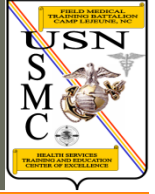
SOFT TISSUE INJURIES

- Injury to overlying skin of scalp
- May be combined with other injury

CAUSES

- Penetrating trauma
- Blunt trauma





TYPES OF HEAD INJURIES

SIGNS & SYMPTOMS OF SOFT TISSUE INJURIES:

- Obvious injury
- Profuse bleeding
- Pain
- Anxiety
- Edema
- Ecchymosis
- Signs / symptoms of hypovolemic shock

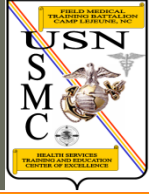
TYPES OF HEAD INJURIES

SKULL INJURIES

- Open Skull Injury
- Closed Skull Injury



Injury From Landmine



TYPES OF HEAD INJURIES

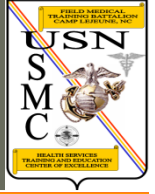
Open Skull Injury

Injury where cerebral substance is visible through a scalp laceration.

The brain may be relatively untouched, or it may be extensively bruised or lacerated.

Causes

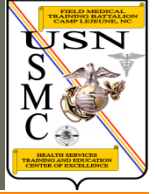
- Penetrating trauma
- Blunt trauma



TYPES OF HEAD INJURIES

SIGNS & SYMPTOMS OF OPEN SKULL INJURIES:

- Profuse bleeding
- Crepitus
- Edema
- Depressions
- Deformities
- Visualization of skull or bony fragments



TYPES OF HEAD INJURIES

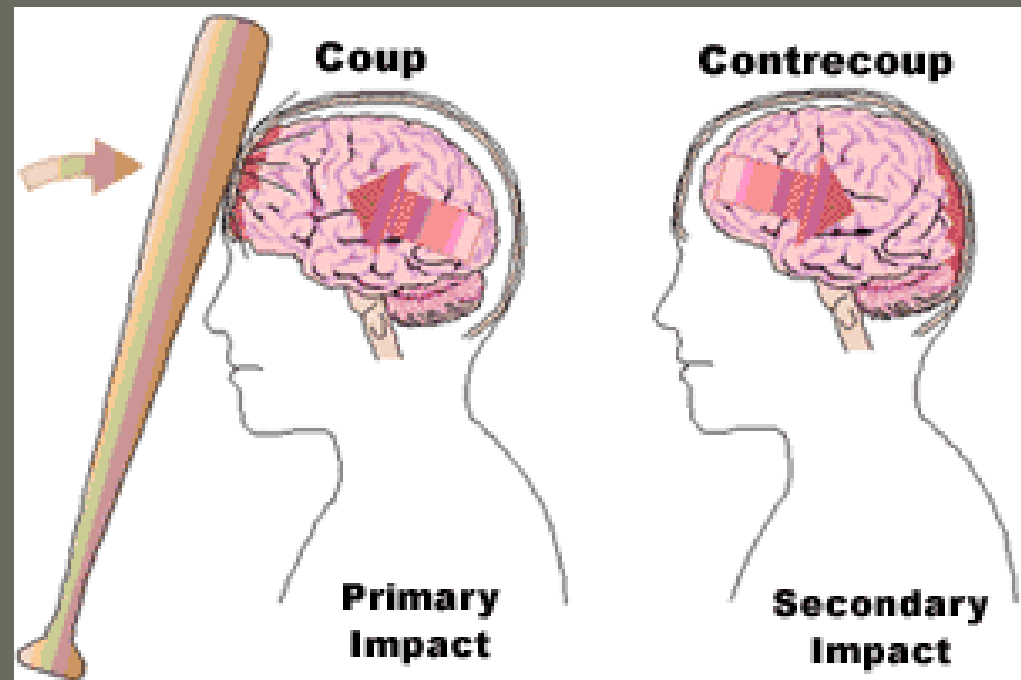
CLOSED SKULL INJURIES

- May or May NOT have scalp lacerations
- Skull is intact with no opening to the brain
- Brain Injury may be MORE extensive in closed head injuries due to pressure build up

TYPES OF HEAD INJURIES

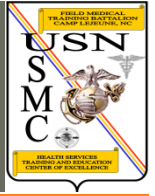
CAUSES CLOSED SKULL INJURIES

- Coup-Countercoup
- Traumatic Brain Injury (TBI)
- Rising intracranial pressure produces complications because the brain is enclosed a rigid box





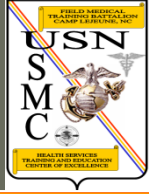
TYPES OF HEAD INJURIES



S/S OF CLOSED SKULL INJURIES:

- Crepitus around injury
- Headache
- Altered LOC
- Bruising..Raccoon Eyes, Battle's sign
- Bradycardia
- Increased SBP
- Nausea / Vomiting
- Decreased Respiration
- Deformity of the skull





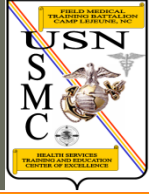
TYPES OF HEAD INJURIES

BRAIN INJURIES

- Results from contusion, hemorrhage, and/or edema
- May occur with or without lacerations/fractures

CAUSES

- Blunt or penetrating trauma
- Coup-Countercoup injuries



TYPES OF HEAD INJURIES

S/S OF BRAIN INJURIES:

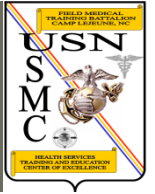
- All signs and symptoms of closed skull injuries
- Unusual behavior (#1 indicator)
- Altered LOC
- Paralysis
- Convulsions/seizures
- Hyperthermia



LEVEL OF CONSCIOUSNESS

The Glasgow Coma Scale

Eye Opening	
Spontaneous eye opening	4
Eye opening on command	3
Eye opening to painful stimulus	2
No Eye opening	1
Best Verbal Response	
Answers appropriately (oriented)	5
Gives confused answers	4
Inappropriate responses	3
Makes unintelligible noises	2
Makes no verbal response	1
Best Motor Response	
Follows command	6
Localizes painful stimuli	5
Withdrawal to pain	4
Responds with abnormal flexion to painful stimuli (decorticate)	3
Responds with abnormal extension to pain (decerebrate)	2
Gives no motor response	1
Total _____	

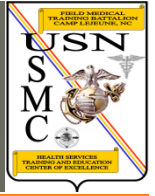




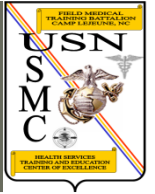
TREATMENT OF HEAD INJURIES

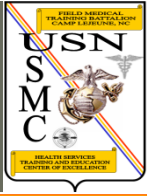


TREATMENT OF HEAD INJURIES



- Maintain airway
- C-Spine precautions
- Hemorrhage control
- Fluid resuscitation PRN
- Check for CSF drainage
- NPO
- TACEVAC in high Fowlers
- Do NOT give pain medications

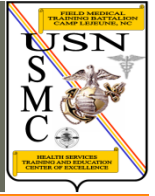




ANATOMY OF THE NECK



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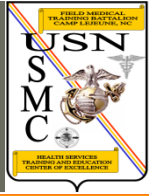


Structures

- Esophagus
- Trachea
- Thyroid gland
- Larynx
- Pharynx
- Epiglottis



ANATOMY OF THE NECK

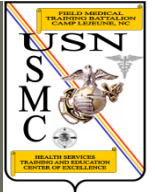


Vasculature

- Arteries – Carry oxygenated blood to the brain
- Veins – Carry blood away from the brain

Cervical Spine

- Vertebrae
- Spinal cord





TYPES OF NECK INJURIES

TYPES OF NECK INJURIES

Structures

- Injury to the associated anatomy of the neck

Causes

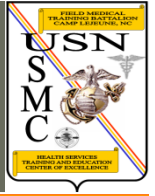
- Blunt Trauma
- Penetrating Trauma



**STAB WOUND TO NECK /
TRACHEA**

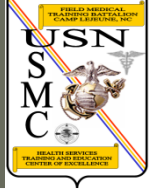


TYPES OF NECK INJURIES



S/S of Structure Injuries:

- Subcutaneous emphysema
- Hematemesis
- Hemoptysis
- Dysphagia
- Dyspnea
- Hoarseness
- Deformity



TYPES OF NECK INJURIES

Vasculature

- Injury to the carotid arteries and/or jugular veins

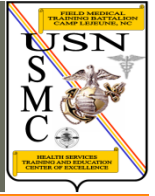
Causes

Blunt Trauma

Penetrating Trauma

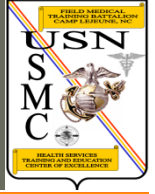


TYPES OF NECK INJURIES



S/S of Vasculature Injuries:

- Hemorrhage
- Hemoptysis
- Hematemesis



TYPES OF NECK INJURIES

Cervical Spine

Injury to the cervical vertebrae, may result in irreversible spinal cord injury

Causes

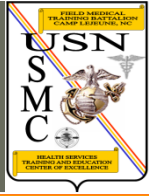
Compression injury

Flexion (bending too far forward or backward)

Lateral bending

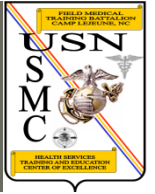


TYPES OF NECK INJURIES



S/S of Cervical Injuries:

- Deformity
- Head fixed in abnormal position
- Muscle spasms
- Parasthesia in the arms
- Pain
- Paralysis or other neural deficits





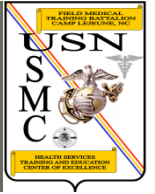
TREATMENT FOR NECK INJURIES

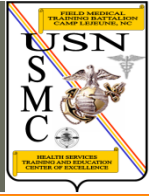


TREATMENT OF NECK INJURIES



- C-Spine precautions (assume injury)
- Hemorrhage control
- Consider cricothyroidotomy for airway
- Fluid resuscitation
- NO PAIN MEDICATIONS
- TACEVAC

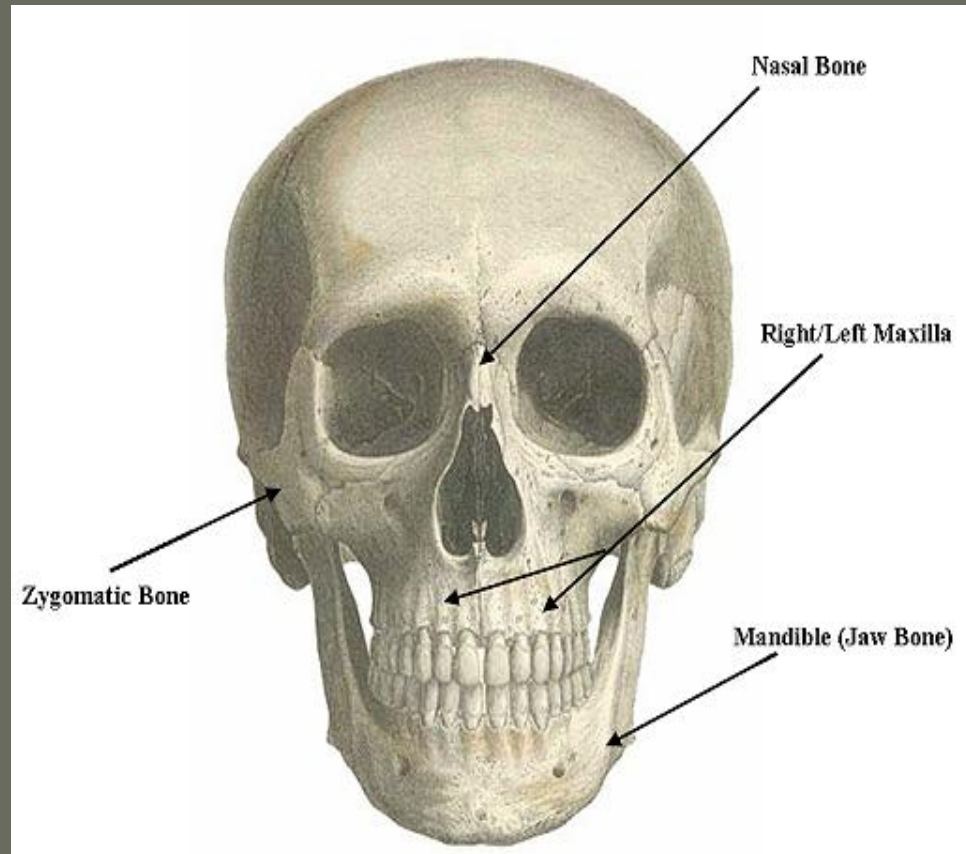


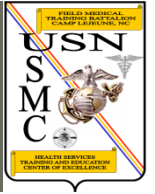


ANATOMY OF THE FACE

Bones of the face:

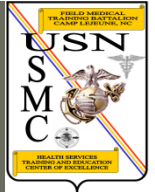
- Nasal bone
- Zygomatic
- Maxillary bones
- Mandible





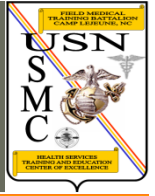


FACIAL INJURIES





FACIAL INJURIES



Soft Tissue Injuries

- Injury of the soft tissue with NO injury to the bone
- Causes
 - Blunt Trauma
 - Penetrating Trauma



FACIAL INJURIES



S/S of Soft Tissue Injuries:

- Massive hemorrhage
- Edema
- Laceration
- Ecchymosis
- Avulsion

FACIAL INJURIES

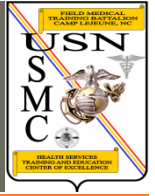
Bone Injuries

- Injuries around the face, mouth and jaw are serious because of closeness of airway
- Causes
 - Blunt Trauma
 - Penetrating Trauma





FACIAL INJURIES



S/S of Bone Injuries:

- Obvious injury (lacerated gums, unable to open mouth, misaligned teeth, etc)
- Facial asymmetry
- Epistaxis
- Difficulty swallowing
- Lacerations
- Pain
- Visual disturbances
- Edema/ecchymosis
- Limited ocular movements
- Crepitus

FACIAL INJURIES

Eye Injuries

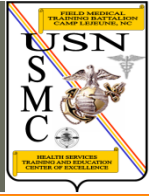
Causes

- Blunt Trauma
- Penetrating Trauma
- Burns
- Foreign Objects





FACIAL INJURIES



S/S of Eye Injuries

- Loss of vision
- Pain
- Anxiety
- Hemorrhage
- Subconjunctival hemorrhage
- Orbital bony deformity
- Intraorbital deformity

FACIAL INJURIES

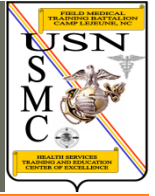


SEPTAL HEMATOMA
(Rifle Butt)

Nasal Injuries

- Before controlling hemorrhage, it is important to determine if there is CSF present
- If CSF is present:
Treat as skull fracture!!





TREATMENT OF FACIAL INJURIES



TREATMENT OF FACIAL INJURIES



Soft Tissue:

- Consider C-spine precautions
- Maintain airway
- Control hemorrhage
- Consider fluid resuscitation



TREATMENT OF FACIAL INJURIES



Bone Injuries:

- Maintain airway
- Control hemorrhage
- NO PAIN MEDS!
- Cold pack to injury
- Apply modified Barton bandage for mandibular fracture
- TACEVAC

TREATMENT OF FACIAL INJURIES



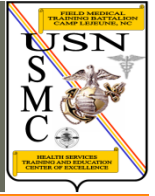
Eye Injuries

- In combat, only patch affected eye
- If the injury is clearly a *MINOR* one:

REFRAIN FROM INTERFERENCE!!



TREATMENT OF FACIAL INJURIES

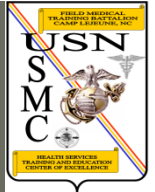


Penetrating Eye Injuries

- Check casualties vision
- Cover eye immediately with a rigid eye shield
– NOT a pressure patch.
- Have casualty take 400 mg moxifloxacin in his/her Combat Pill Pack
- Give IV/IM antibiotics if unable to take PO meds



TREATMENT OF FACIAL INJURIES



Eye Injuries

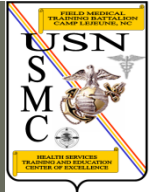
– Chemical Burns

- Copious amounts of water
- TACEVAC





TREATMENT OF FACIAL INJURIES



Eye Injuries

Thermal Burns

- Cover w/ loose dry dressing



Heat (flash) Injury
(Welding without Dark
Helmet)

TREATMENT OF FACIAL INJURIES

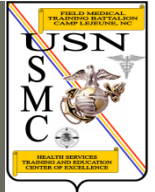
Impaled Objects

- Do NOT remove
- Pass dressing over object
- Cushion object





TREATMENT OF FACIAL INJURIES



Eyelid Laceration

- Direct pressure

Eyeball Laceration

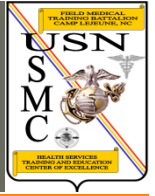
- No pressure
- Cover with dressing



Eyelid Laceration
(Dog bite)

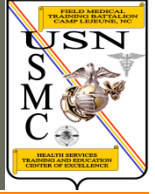


TREATMENT OF FACIAL INJURIES



Protruding Globe

- Do NOT place eye back into socket
- Apply bulky moist dressing around eye and a cup to secure eyeball



TREATMENT OF FACIAL INJURIES

Nose Injuries

Control Hemorrhage

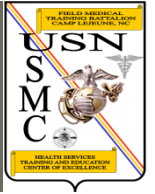
- Pinch nostrils, do not tilt head back

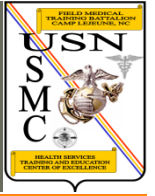
Apply Ice

Padded splint

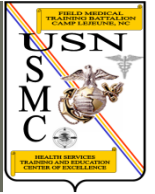
- Cotton/gauze rolls to each side
- Tape lightly

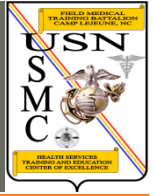
Monitor and TACEVAC





DEMONSTRATION





PRACTICAL APPLICATION





MANAGE HEAD, NECK, & FACE INJURIES

