

Ocular Injuries and Vision-Threatening Conditions in Prolonged Field Care

When “SHIELD and SHIP” is not an available option for conditions that require rapid ID and treatment

GOALS OF CARE

- History: High index of suspicion based on mechanism/use of eyepro/level of consciousness of casualty
- Assess/document visual function: Basic Ocular Examination (Appendix B, C).
 - Visual Acuity (VA) (read letters → count fingers → hand motion → light perception)
 - Relative Afferent Pupillary Defect (RAPD): Swinging flashlight test for retina/optic nerve function (Appendix A)
 - Extra-ocular muscles (EOM)/ Intraocular pressure (IOP)/ Visual Fields by confrontation (VFc)
 - Lids, conjunctiva, cornea, anterior chamber, pupil/iris, lens, fundus
- Maintain patient comfort/prevent further damage (pain/anxiety/anti-emetics (↑HOB)/rigid eye shield).
- Establish contact with eye care specialist/prioritize evacuation.
 - Required surgery should occur within 24 hours. Prompt teleconsultation may confirm safety of delay.
 - Teleconsultation: 833-ADVSRLN (833-238-7756)

SPECIFIC CONDITIONS: (Appendix E: Minimum/Better/Best)

OPEN GLOBE INJURY (OGI): (either penetrating injury or massive compressive force)

- Goals: Prevent further damage to eye/ prevent infection/ evacuation to eye surgeon ASAP/ **Do not palpate for pressure if suspect OGI. No pressure on eye! No use of Ocular Ultrasound!**
- VA/ rigid eye shield/ antibiotic prophylaxis/ pain control/antiemetic/↑HOB /telecon w/photos/real time, if possible

ORBITAL COMPARTMENT SYNDROME (OCS): (from retrobulbar hemorrhage/ burn resuscitation) +RAPD < 90min

- Goals: Lower orbital compartment pressure ASAP w/ **Lateral Canthotomy/Cantholysis (LCC)** evac w/in 24 hours
- Proptosis/+RAPD→LCC; pain control/ antiemetic/↑HOB/ Acetazolamide/ teleconsultation w/photo

BLUNT/CLOSED GLOBE INJURY: (anterior segment/hyphema/vitreous hemorrhage/retinal detachment)

- Goals: Identify ocular injuries (ant chamber vs. posterior chamber) / protect w/ rigid eye shield → evac 24 hours
- Mechanism/eye pro/pain control (no NSAIDS)/ antiemetics/ ↑HOB/ telecon w/ photos/ med instructions?

EYELID LACERATION (sharp or blunt)/ **CONSIDER GLOBE INJURY:** (concern for infection in bite wound)

- Goals: **Preserve all tissue! /prevent infection!** (visible fat = violation of infection barrier)→antibiotics ASAP
- VA/RAPD; Irrigate/ eye shield/ pain control/antiemetics/tetanus+rabies prophylaxis/ telecon w/ photos→ evac

ORBITAL FRACTURE: (risk of acute expansion/herniation of orbital contents/ muscle entrapment→ ↓ EOM)

- Goals: r/o **OGI/Closed Globe Injury**/ prevent complications/telecon → evacuation (monitor f/pneumo-orbita)
- VA/RAPD/ No nose blowing! Pain control/decongestants/antiemetics/ antibiotic if sinus fx/ consider **OCS** → LCC

CHEMICAL INJURIES: Acid/Alkali Burns—graded on modified Hughes Classification (Table 1- corneal opacity)

- Goals: Irrigate ASAP to reduce damage to eye/ treat to minimize scarring and loss of vision
- Irrigate w/min 2L (or to pH of 7 w/ test strips)/pain control/ telecon w/ photos to discuss treatment options

PRESEPTAL and ORBITAL CELLULITIS: (Fig 15,16) Eyelid only vs. Orbital Findings (proptosis/EOM defects/VA changes)

- Goals: Recognize infection early/start **appropriate antibiotics** to prevent vision loss/ intracranial extension
- Orbit infection associated w/ sinusitis, skin infection, puncture wounds, foreign bodies/ telecon /evac w/in 24 hours

CORNEAL ULCER (Infectious Keratitis); most commonly associated with contact lens use

- Goals: Limit infection w/ moxifloxacin drops/ culture r/o HSV/telecon w/ photos for more meds→evac w/in 24 hours

EYE CARE in the multi-trauma/burn patient: if unconscious risks corneal abrasion/exposure keratopathy/entropion.

- Goals: Prevent ocular exposure and corneal injury. **NO Surgilube in eye** (corneal toxicity).



This information is pulled from the evidence-based Joint Trauma System (JTS) Ocular Injuries and Vision-Threatening Conditions in Prolonged Field Care Clinical Practice Guideline (CPG). JTS CPGs can be found at the [JTS CPG website](#) or the [JTS Deployed Medicine site](#).