



**1. Overview**

- a. Corneal abrasions are eye injuries to the epithelial surface of the cornea commonly seen in primary care or the emergency department.
- b. Evaluate for corneal abrasions in eye injury resulting from eye trauma, suspected foreign bodies in the eye, or noted improper contact lens use.

**2. Goal of the procedure**

- a. Detect the presence or absence of a corneal abrasion without complications.
- b. Use a cobalt blue light (wood's light) to assess for corneal abrasion.

**3. References**

- a. [Colyar, M.R. \(2015\). Advanced practice nursing procedures. Philadelphia, PA: F.A. Davis.](#)

**4. Required Reading and Video**

a) Book

- Colyar, M. R. (2015). Corneal abrasion and foreign body removal: Eye. In M. R. Colyar, Advanced practice nursing procedures (pp. 335-339). Philadelphia, PA: F. A. Davis.
- This can be accessed through the University of Arizona Health Sciences Library.

b) UpToDate

- [UpToDate. \(2019\). Algorithm: Management of corneal abrasions.](#)

c) Article

- [Trobe, J. \(2009\). The eyes have it: An interactive teaching and assessment program on vision care. University of Michigan Kellogg Eye Center.](#)

d) YouTube

- <https://www.youtube.com/watch?v=Ls45AVffbtE&t=27s>

**5. Required Procedure Competencies**

- Identify contraindications warranting referral:
  - Emergent- immediate ophthalmologist consult
    - Chemical acid or alkali exposure
    - History of high-velocity injury
    - Ruptured globe
    - Corneal or sclera lacerations
    - Lid lacerations
    - Conjunctival lacerations
    - Corneal ulcerations
    - Deeply embedded foreign body
    - Unsuccessful removal of foreign body
    - Uncooperative patient requiring sedation
  - Urgent- ophthalmology consult within 48 hours
    - Onset of corneal opacities
    - Presence of a “rust ring”
    - Increasing pain

- Loss of vision
  - Onset of preseptal cellulitis with periorbital cellulitis
  - All children
- Gather equipment for corneal abrasion procedure:
  - Penlight
  - Direct ophthalmoscope
  - Gloves- nonsterile
  - Fluorescein strips (use individually packaged strips)
  - Cobalt blue light (Wood's lamp/light)
  - Tissue or 4 x 4 gauze- nonsterile
- Hand the patient a tissue and instill one or two drops of a topical ophthalmic anesthetic, i.e., proparacaine ophthalmic drops, into the affected eye if no contraindications.
- Inspect the affected eye, briefly but thoroughly, with a bright white light source, and compare it to the opposite eye. The sclera should be intact.
- Perform eversion of the upper lid, which is usually necessary to examine the entire conjunctiva.
- Cover the lateral corner of the face with a drape or facial tissue to prevent drainage of dye onto other areas of the face or clothing because permanent staining to clothing can occur.
- Instill fluorescein dye by moistening a sterile fluorescein strip with one or two drops of sterile saline or topical anesthetic, asking the patient to look up, retract the lower lid and gently touching the lower conjunctival sac for 3 to 5 seconds. Ask patient to blink several times to disperse the dye. Use a minimal amount of solution when wetting the strip.
- Turn off the overhead light and turn on Wood's light to inspect the cornea.
  - Corneal abrasions appear as bright fluorescent yellow or yellow-green.
- After exam, initiate irrigation with 0.9% sodium chloride to remove all dye from the eye.
- Always apply topical ophthalmic antibiotic of choice in cases of corneal abrasion.

## 6. During CSI Skills Lab

- a. Prior to arriving, you are expected to have read and watched the above. The skills lab is intended to build upon the above information and allow you to engage in a more patient-centered way.
- b. You will spend thirty minutes at each skills station. This will be divided in the following manner:
  - i. 5 minutes: Short introduction to the skill
  - ii. 5 Minutes: Focused HPI (consider pointing out one student for OLDCARTS) and Basic Exam
  - iii. 15 Minutes: Procedure
  - iv. 5 Minutes: Final Report and Preceptor Presentation
- c. Please see the Case Study Worksheet on the next page

## Case Study Worksheet: Student Guide

**CC:** John Doe is a 24 y.o. male presenting with right eye irritation, pain, redness and light sensitivity.

<b>O</b>	Onset	
<b>L</b>	Location/radiation	
<b>D</b>	Duration	
<b>C</b>	Character	
<b>A</b>	Aggravating factors	
<b>R</b>	Relieving factors	
<b>T</b>	Timing	

- Considering these answers, are there any follow up questions you would ask that would not be asked below in the ROS?

**ROS:** Given the above, which systems will you focus on?

General	
HEENT	
Respiratory	
Cardiovascular	
Musculoskeletal	
Endocrine	
GI/GU	
Genital	
GYN (if applicable)	
Neuro/Psych	

**Exam:**

- How would you document the exam?

**Differential Diagnoses:**

- List three differentials in their order of likelihood
  1. Probable:
  2. Possible:
  3. Unlikely:

**Preceptor Report:**

## Case Study Worksheet: Instructor's Guide

**CC:** John Doe is a 24 y.o. male presenting with right eye irritation, pain, redness and light sensitivity.

<b>O</b>	Onset	"When I woke up this morning."
<b>L</b>	Location/radiation	Right eye, non-radiating
<b>D</b>	Duration	8 hours
<b>C</b>	Character	Sandpaper-like irritation
<b>A</b>	Aggravating factors	Bright lights (photophobia), blinking
<b>R</b>	Relieving factors	Eye rest, avoiding light
<b>T</b>	Timing	The pain is constant

- Considering these answers, are there any follow up questions you would ask that would not be asked below in the ROS?
  - Have you had any eye injury or trauma?
  - Do you feel like there is something in your eye?
  - Do you wear contact lenses?
  - Did you sleep with contact lenses in?
  - Do you clean your contact lenses daily?

**ROS:** Given the above, which systems will you focus on?

General	Denies fatigue, fever, chills, night sweats, weight gain, weight loss.
HEENT	Denies rhinorrhea, ear pain, blurred vision, restricted eye movement
Respiratory	Denies cough, SOB
Cardiovascular	
Musculoskeletal	
Endocrine	
GI/GU	
Genital	
GYN (if applicable)	
Neuro/Psych	Denies headaches, dizziness

**Exam:**

- How would you document the exam?

**Differential Diagnoses:**

- List three differentials in their order of likelihood
  1. Probable: Corneal abrasion
  2. Possible: Conjunctivitis
  3. Unlikely: Uveitis

**Preceptor Report:**

John Doe is a 24 y.o. male who presents to clinic complaining of right eye pain and irritation. He reports that he first noticed this when he woke up this morning; it has been persistent over the last eight hours. He reports that the pain is localized to his right eye and does not radiate. The patient describes the pain as "sandpaper like irritation". The patient reports that bright lights and blinking seem to make the irritation worse; conversely, eye rest and dark rooms seem to help. The patient does note that the pain is constant. Exam is benign except for the following: Right eye erythema, excessive lacrimation. EOMs intact; PERRLA. No FBs were noted. Fluorescein stain was applied and eye was examined under a Wood's Lamp. Patient appears to have an ~6mm abrasion was noted at 3 o'clock. Working diagnosis: Right corneal abrasion. Plan includes erythromycin eye ointment QID x7 days, eye rest, warm compresses. Patient can use IBU 400 mg TID PRN for pain. Patient should monitor for any worsening pain or vision. If these occur, he should follow up immediately. Either which way, patient was encouraged to follow up with ophthalmology in 48-72 hours.

### **Documentation Example:**

**CC:** John Doe is a 24 y.o. male presenting with right eye irritation, pain, redness and light sensitivity.

**S:** He reports that he first noticed this when he woke up this morning; it has been persistent over the last eight hours. He reports that the pain is localized to his right eye and does not radiate. The patient describes the pain as "sandpaper like irritation". The patient reports that bright lights and blinking seem to make the irritation worse; conversely, eye rest and dark rooms seem to help. The patient does note that the pain is constant.

**O:** VS: Temperature: 98.4 Pulse: 73, regular. Respirations: 16, easy and unlabored. Blood Pressure: 95/70. Height: 69 inches. Weight: 135# Exam is benign except for the following: Right eye erythema, excessive lacrimation. EOMs intact; PERRLA. No FBs were noted. Fluorescein stain was applied and eye was examined under a Wood's Lamp. Patient appears to have an ~6mm abrasion was noted at 3 o'clock.

**A:**

1. Probable: Right corneal abrasion
2. Possible: Conjunctivitis
3. Unlikely: Uveitis

**P:**

1. Erythromycin eye ointment QID x7 days
2. Eye rest, warm compresses.
3. Patient can use IBU 400 mg TID PRN for pain.
4. Patient should monitor for any worsening pain or vision. If these occur, he should follow up immediately.
5. Follow up with ophthalmology in 48-72 hours.