BrienHoldenVisionInstitute

# PAINFUL RED EYE

## THINK

A man comes to see you and complains that he has a red, sore eye. What do you do?

## WHAT YOU WILL LEARN

When you have worked through this unit you should be able to:

- Recognise the importance of an immediate referral for red, painful eyes
- Identify the main causes of red, painful eyes.


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## EXAMINING A PAINFUL EYE

When a person has a painful, red eye it is very important to examine all parts of the eye and not miss any signs. This is not always easy because some people with a painful eye will have trouble keeping their eyes open. This could be because:

- the person is afraid of someone touching their eyes
- the eye is painful and hurts when opened
- the person is photophobic (sensitive to the light).

You need to talk to the person to reassure them. Tell them:

- you will try not to hurt them
- what you are going to do
- why you are doing it
- you need to examine what is wrong so you can help them.

Touch the eye gently when you are examining the eye.

- **Always wash your hands before and after examining the eye**
- **Wear disposable gloves if you think the condition might be contagious.**

## QUESTIONS TO ASK

To help you find out what the problem is, you need to collect information about the:

- **Symptoms:**
  - Things that the person TELLS you about their eyes
  - Example: “My eye feels itchy and dry.”
- **Signs:**
  - Things that you SEE when you look at the person’s eyes
  - Example: There is a bright red area on the white part of the eye (the sclera).

## RED AND PAINFUL EYES

- A person with a red and painful eye needs immediate referral to an ophthalmologist or other eye care professional who can prescribe the appropriate treatment.
- The most common causes of a red eye with pain are:
  - A corneal ulcer
  - Acute glaucoma
  - Acute iritis
  - Orbital cellulitis.
- These conditions can cause permanent loss of vision without timely and appropriate treatment.


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# CORNEAL ULCER

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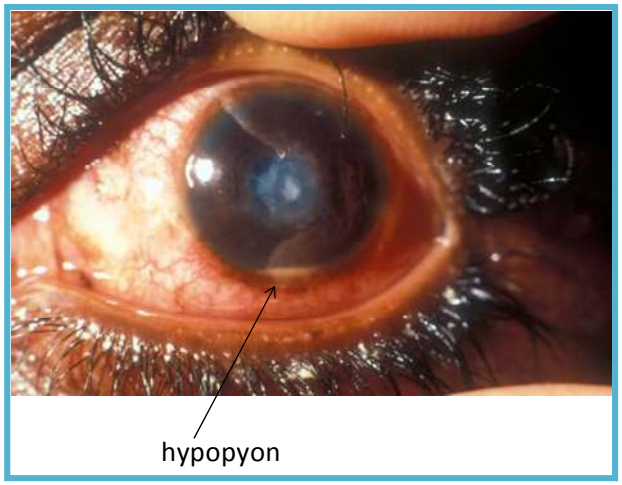
| **WHAT IS IT?** | • A corneal ulcer is an open sore on the cornea<br>• Corneal ulcers can be extremely painful<br>• Corneal ulcers are serious because they can scar the cornea and this may result in poor vision or even blindness<br>• Corneal ulcers are fairly common. |
| **CAUSES** | • Corneal ulcers are usually caused by an infection of the cornea<br>• The cornea of a healthy eye usually does not become infected unless its surface is damaged<br>• Trauma to the eye (such as a scratch, chemical burn, dryness or Vitamin A deficiency) can damage the corneal surface<br>• Once the cornea is damaged, micro-organisms (like bacteria, viruses or fungi) can enter the cornea and form a corneal ulcer. |
| **WHAT DO I ASK?** | • Have you hurt or scratched your eye recently?<br>• How does your eye feel?<br>• Does your eye hurt?<br>• When did your eye first start to hurt?<br>• How long has your eye been like this?<br>• What is your vision like? |
| **SYMPTOMS** | • Pain, usually in one eye only<br>• Will be sensitive to light (photophobic)<br>• Tearing<br>• Blurred vision<br>• May notice a white spot on the cornea. |
| **WHAT DOES IT LOOK LIKE?** |  <br>***Figure 8-1: A corneal ulcer – in this case it appears as a white spot on the central cornea, in a very red eye, which also has pus in the inferior anterior chamber (hypopyon) (photo courtesy of the International Centre for Eye Health)*** |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| **SIGNS** | • Severe conjunctival redness, especially near the cornea<br>• Watery eye, often pus<br>• Pus in the anterior chamber (hypopyon)<br>• Can usually see a white spot on the cornea<br>• Vision is usually worse<br>• The eyelids may be swollen<br>• The person may be very sensitive to light<br>• Usually occurs in one eye only<br>• Usually sudden onset. |
| **WHAT SHOULD I DO?** | • Measure vision<br>• Check for fluorescein staining on the cornea, if possible<br>• Refer to an ophthalmologist or general practitioner urgently<br>• Tell the person not to rub their eyes if they think they have a foreign body in it. |
| **WHAT SHOULD I NOT DO?** | • Do not pad or patch the eye. |
| **REFERRAL CRITERIA** | • All people with corneal ulcers need to be referred to an ophthalmologist or medical practitioner for intensive antibiotic treatment<br>• If it is a child with a corneal ulcer, advise the parent to also start a healthy diet rich in Vitamin A to avoid a deficiency. |

**VITAMIN A DEFICIENCY AND CORNEAL ULCERS:**

- **If a child has a corneal ulcer it may be as a result of Vitamin A deficiency**
- **All children who have corneal ulcers should be given treatment for the corneal ulcer as well as a course of Vitamin A.**

**REFERRALS AND CORNEAL ULCERS:**

- **Corneal ulcers are serious because they can scar the cornea and cause a decrease in vision or even blindness**
- **A person with a corneal ulcer needs to see an ophthalmologist or medical practitioner as soon as possible**
- **The referral is particularly urgent if there is discharge, if the cornea is cloudy, or if there is pus inside the eye.**


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# ACUTE ANGLE CLOSURE GLAUCOMA

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| **WHAT IS IT?** | • A rapid or sudden increase in pressure inside the eye, because the iris is pushed up against the angle of the eye where the aqueous is drained<br>• Usually happens at night when the light is dim and the pupil is bigger<br>• Intra-ocular pressures as high as 50 or 60 mm Hg<br>• Vision will be reduced in the affected eye<br>• Further attacks will follow and more damage is done to the eye each time there is an attack.<br>• Eventually the eye will become blind if it is not treated<br>• Angle closure glaucoma is quite common in Asian eyes<br>• People with hyperopia (far-sightedness) have shallow anterior chambers and are more at risk of angle closure. |
| **CAUSES** | • The increase in pressure inside the eye is caused by a blockage of the angle in the eye<br>• When the angle is blocked the aqueous cannot flow out of the eye<br>• The eye begins to ache because pressure builds up inside it<br>• An angle closure attack can also be caused by dilation of the pupils during an eye examination<br>• If angle closure glaucoma is not treated immediately, the increased pressure will damage the optic nerve; this can lead to blindness. |
| **WHAT DO I ASK?** | • Does your eye hurt? Did your eye hurt last night?<br>• Does your eye hurt more in bright light?<br>• Has your vision changed?<br>• Do you feel nauseous, have you vomited recently?<br>• Do you see rings around lights? |
| **SYMPTOMS** | • Severely painful eye<br>• Headache<br>• Nausea and vomiting<br>• Blurred vision<br>• Sees halos around lights (because the cornea is swollen)<br>• Redness and tearing<br>• Sensitive to light (photophobic)<br>• Usually in one eye only. |
| **SIGNS** | • A person who has an attack of acute angle closure glaucoma will have:<br>  ○ A very red eye<br>  ○ A cornea that is cloudy (the pupil and iris will not be easy to see)<br>  ○ The pupil in that eye is often bigger and not round when compared with the other eye<br>  ○ A pupil that does not react to light. |


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| **WHAT DOES IT LOOK LIKE?** | <br>***Figure 8-2: An eye with acute angle closure glaucoma – red eye, cloudy cornea, irregularly shaped pupil (photo courtesy of John DC Anderson – the International Centre for Eye Health)*** |
| **WHAT SHOULD I DO?** | • Measure vision<br>• Check pupil reactions<br>• If possible, check the eye pressure with a tonometer or with your fingers. With the person's eyes closed, gently press on the eye with your fingers. An eye with acute angle closure will feel like a hard rock.<br>• Look at the cornea with a slit lamp if possible. |
| **REFERRAL CRITERIA** | • Refer urgently to an ophthalmologist or medical practitioner for immediate treatment!<br>• Acute glaucoma needs to be treated quickly because it is a serious problem which can damage the optic nerve and cause a loss of vision<br>• Surgery will be needed to stop new attacks from happening. |

**PREVENTION OF ACUTE ANGLE CLOSURE GLAUCOMA:**

- **If the eye is not treated, further attacks will follow and more damage is done to the eye each time there is an attack**
- **The eye will become blind if not treated**
- **If a person has an attack of acute glaucoma in one eye, there is a 50% chance that there will be an acute attack in the other eye within 5 years.**


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# ACUTE IRITIS

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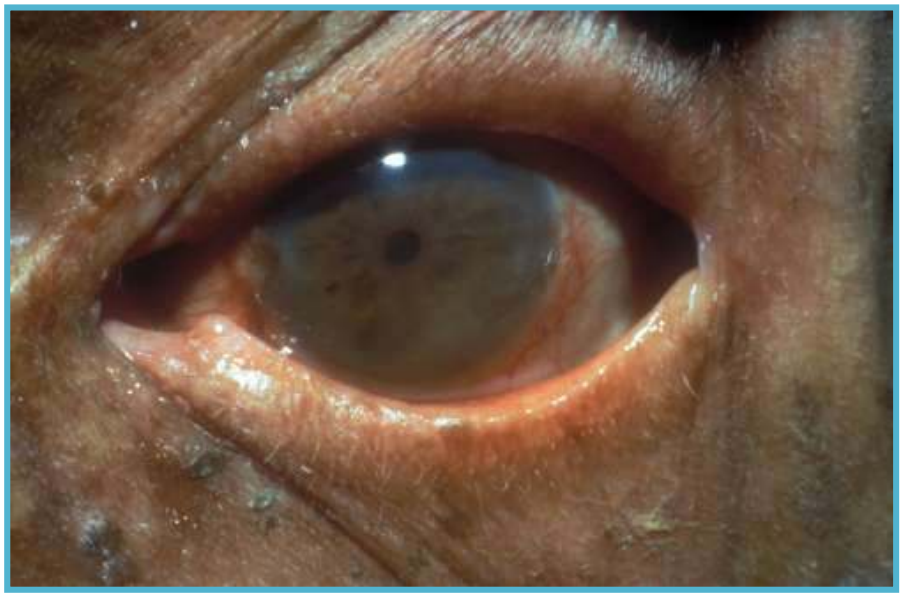
| **WHAT IS IT?** | • Iritis is an inflammation of the iris<br>• Acute iritis usually affects only one eye, but occasionally both<br>• A person can have repeated attacks of iritis many times and so they might need to be monitored by a medical practitioner<br>• Acute iritis is uncommon. |
| **CAUSES** | • Inflammation of the iris can be caused by an injury to the eye or another infection in the body. |
| **WHAT DO I ASK?** | • Do your eyes hurt?<br>• Has the pain gotten worse in the past few days?<br>• Is the pain worse in direct light?<br>• Do you have a headache?<br>• Has your vision changed? |
| **SYMPTOMS** | • Pain (which gets worse in bright light)<br>• Tearing<br>• Blurry vision<br>• Red eye, especially around the iris<br>• Small or irregularly shaped pupil<br>• Headache. |
| **WHAT DOES IT LOOK LIKE?** |  <br>***Figure 8-3: Acute iritis – red eye (particularly around the limbus), irregular pupil (photo courtesy of Hans Limburg: ICEH)*** |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| **SIGNS** | • A person with acute iritis may have:<br>  ○ redness, especially around the iris<br>  ○ a small and irregular pupil when compared with the other eye<br>  ○ no pussy discharge<br>  ○ tearing of the eye (epiphora)<br>  ○ blurred vision<br>• An eye with acute iritis could have lower intra-ocular pressure than the other eye<br>• In the early stages, the person's vision could be normal and they may not have all of these signs. |
| **WHAT SHOULD I DO?** | • Measure vision<br>• Check pupil reactions – the eye with iritis will be painful when you shine light in the other eye, which will cause the pupils to constrict<br>• Look at the conjunctiva and cornea closely with a torch – note any redness or swelling<br>• If possible, examine the anterior chamber of the eye with a slit lamp. |
| **REFERRAL CRITERIA** | • Refer immediately to an ophthalmologist or medical practitioner – prescription medication is required<br>• Iritis needs to be treated quickly because it can cause loss of vision. |


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# ORBITAL CELLULITIS

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| **WHAT IS IT?** | • Orbital cellulitis is an infection of the tissue around the eye<br>• It is a very serious condition as it can lead to blindness and even death<br>• The lid of one eye is swollen and is usually red<br>• The eye is very painful, especially when touched<br>• The person will usually have a fever and feel unwell, they may have a history of sinusitis<br>• The conjunctiva can also be red and swollen<br>• The person may have a droopy upper eyelid (ptosis) that they cannot open<br>• Eye movements will be limited<br>• A person with orbital cellulitis will need immediate hospitalization<br>• This infection can be fatal, especially in young children<br>• This condition is uncommon. |
| **CAUSES** | • An injury to the eyelids like a scratch or an insect bite<br>• Spread of an infection from:<br>  ○ Near the eye (e.g. from a stye)<br>  ○ Not near the eye (e.g. from an ear or chest infection)<br>• Can also be due to infection of the sinuses. |
| **WHAT DO I ASK?** | • Did you have an injury to your eye or eye lid recently?<br>• Does the area around your eye hurt?<br>• Can you open your eye?<br>• Has your vision changed?<br>• Do you see double?<br>• Can you move your eyes in all directions?<br>• Did you have any ear, nose or chest infections recently?<br>• Do you feel hot, feverish or unwell? |
| **SYMPTOMS** | • Very swollen eyelid<br>• Pain (especially when touching the eye)<br>• Headache<br>• Fever<br>• Redness of the eyelid<br>• Double vision<br>• Decreased vision<br>• Eye movements are limited. |


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| **WHAT DOES IT LOOK LIKE?** | <br>***Figure 8-4: Orbital cellulitis – note the swollen, red eyelid and area around the eye (photo courtesy of Lori Fowlkes)*** |
| **SIGNS** | • They eyelid may be:<br>  ○ sore (especially when touched)<br>  ○ swollen, so that the person may not be able to open their eye<br>  ○ red<br>  ○ hot when you touch it.<br>• The person will not be able to look in different directions<br>• Eye will be painful and red. |
| **WHAT SHOULD I DO?** | • Ask the person about when and how this started<br>• Measure vision<br>• Take a close look at the lid and eye with a torch or a slit lamp<br>• Gently touch the lid to feel if it is hot<br>• Check to see if the eye can move in all directions<br>• Check the pupils. |
| **REFERRAL CRITERIA** | • Immediate referral and hospitalisation is important to stop the infection from spreading<br>• This is a life threatening condition which needs urgent treatment! |

**REFERRALS:**

- **Orbital cellulitis is a very serious infection that needs immediate attention!**
- **If a child or an adult with a swollen and red eyelid shows ANY of the following signs or symptoms, the person must be seen by a medical practitioner URGENTLY:**
  - **has a swollen, red eyelid**
  - **is unwell**
  - **has a fever**
  - **has poor vision**
  - **has pain on eye movement.**
- **If the person has a swollen eyelid but is not unwell, the swelling might be due to an insect bite or an allergy. They need to be monitored carefully.**


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# SUMMARY – PAINFUL RED EYE

## CORNEAL ULCER

- A corneal ulcer is an open sore on the cornea, usually caused by an infection
- Common causes include a scratch or other damage to the eye, dryness, or Vitamin A deficiency
- A person with a corneal ulcer will usually have a very red, watery, painful eye
- They are often sensitive to light
- You may notice a white spot on the cornea
- Corneal ulcers are serious because they can scar the cornea and this may result in poor vision or even blindness
- Refer to an ophthalmologist or medical practitioner urgently.

## ACUTE ANGLE CLOSURE GLAUCOMA

- A rapid or sudden increase in pressure inside the eye
- A result of the iris being pushed up against the angle of the eye where the aqueous is drained
- Usually happens at night when the light is dim and the pupil is bigger
- Typically in one eye only
- Very painful eye, headache, nausea and vomiting
- Vision is blurred, and the pupil doesn't react to light
- Further attacks will follow and more damage is done to the eye each time there is an attack
- Eventually the eye will become blind if not treated
- Urgent referral to an ophthalmologist or medical practitioner is required.

## ACUTE IRITIS

- Iritis is inflammation of the iris
- Acute iritis usually affects only one eye, but occasionally both
- Iritis is not common but may be recurring in the same person
- The person will have a painful and tearing red eye, and may also complain of headaches
- The pupil may be small and irregularly shaped, and vision could be blurry
- Iritis needs to be treated quickly because it can cause loss of vision
- Refer immediately to an ophthalmologist or medical practitioner.

## ORBITAL CELLULITIS

- Orbital cellulitis is an infection of the tissues of the eye
- A very serious condition – can lead to blindness and even death
- Very painful, red and swollen eye
- Limited eye movements
- Person will have a fever and be unwell
- Eyelid will be sore and may be so swollen that the person may not be able to open their eye
- Immediate referral and hospitalisation is important to stop the infection from spreading.


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## TEST YOURSELF QUESTIONS

1. **Why do corneal ulcers required urgent attention?**

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2. **What should you NOT do to an eye with a corneal ulcer?**

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3. **A person just had an attack of acute angle closure glaucoma. What do you expect to see when you examine their eye?**

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4. **Why might a person with acute iritis need to be monitored by a medical practitioner?**

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5. **Why is it so important to immediately refer a person if you think he/she has orbital cellulitis?**

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