Eye Health & Safe Vision

Every year, the second Thursday of October, is dedicated to raising global awareness about the problems of blindness, visual impairment and the rehabilitation of the visually impaired.

- An estimated 285 million people around the world are visually impaired (low vision or blindness)
- 90% of the world's visually impaired population live in developing countries
- 13.4 million total estimated people are blind in India

80% of blindness can be prevented or treated.

Loss of vision is usually considered acute if it develops within a few minutes to a couple of days. It may affect one or both eyes and all or part of a visual field. Patients with small visual field defects (eg, caused by a small retinal detachment) may describe their symptoms as blurred vision.

If you notice any signs of potential eye problems, see an eye doctor for a complete eye exam. Even if you have no signs, regular eye exams are recommended—especially for those with some chronic health conditions such as diabetes and high blood pressure. Early detection and treatment can be the key to preventing sight loss.

Some Myths

There's nothing you can do to prevent vision loss

Myth: At the very first signs of vision loss, such as blurred vision or flashes of light, you should seek medical advice. If detected early enough, depending on the cause, there are treatments that can correct, stop, or slow down the loss of vision.

Using computers can damage your eyes

Myth: Working on computers will not harm your eyes. Often, when using a computer for long periods of time, just as when reading or doing other close work, you blink less often than normal. This reduced rate of blinking makes your eyes dry, which may lead to the feeling of eyestrain or fatigue. Try to take regular breaks to look up or across the room. Looking at objects farther away often relieves the feeling of strain on your eyes. Keep the monitor between 18 to 24 inches from your face and at a slight downward angle. Splashing cold water in your eyes may help them relax

Common Conditions of Eye:

Conjunctivitis
Inflammation of the conjunctival tissue Symptoms: redness, watering, discharge, stickiness of lids, irritation Treatment: a) Cleaning of the eyes b) Antibiotic drops in case if diagnosed as Bacterial Conjunctivitis c) use of dark goggles
Glaucoma
It is due to raised intraocular pressure damaging the optic nerve head, causing defect in visual field (increased pressure within the eyeball, causing gradual loss of sight) Symptoms: Headache, Blood/cloudy vision, pain in eyes, frequent change of glasses, colored rings around light, Painless gradual loss of field vision Treatment: a) Medical line of treatment - eye drops & tablets, b) Surgical & Laser treatment
Night Blindness
It is a condition where Patient faces difficulty to see in the night Symptoms: Night Blindness, Bitot spots (foamy gray, triangular spots of keratinized epithelium on the conjunctiva, associated with vitamin A deficiency), dry conjunctiva Treatment with Vitamin A (Food sources of Vitamin A include carrot, tomatoes, pumpkin, sweet potatoes, broccoli, spinach)
Corneal Ulcer
It is ulcer of the cornea, can be caused by Bacteria, Fungus or Virus Symptoms: Pain, watering, foreign body sensation, discharge, lid edema, dimness of vision, redness. Treatment: a) Use of eye drops. b) Use of dark goggles c) Cleaning of eyes d) Rest to the eyes by mydriatics
Iritis
Inflammation of the iris in the eye Symptoms: Redness, discomfort of eyes, dimness of vision, pain in eyes Treatment: Local Steroid eye drops & ointment, systemic steroids, ocular anti-hypertensive drugs.
Cataract
Lens of the eye looses its transparency & becomes opacified, hence light cannot pass through the lens in required level. Symptoms: dimness of vision

Treatment: Surgery
Retinopathy
Inflammation of retinal blood vessels, exudates & hemorrhages are seen in retina Symptoms: dimness of vision/retinal changes, sudden loss of vision Treatment: Laser Surgery & Treatment of complication, control of diabetes & hypertension

General principles of Medication use for Ophthalmic Treatment:

There are several methods of achieving therapeutic drug concentrations within the eye and its surrounding structures. However, the most common is topical administration but, when higher concentrations of the drug are required, local injection or systemic administration is considered.

Topical administration

Eye drops

- Principally absorbed through the cornea but absorption through conjunctival mucosa also occurs, giving rise to systemic effects.
- High intraocular concentrations are achieved if applied regularly.
- Drops may be in solution form (clear - eg, anaesthetic drops) or in suspension (cloudy - eg, steroids).
- There is a short drug-eye contact time so they tend to need a more frequent application.
- Wash hands before and after using drops.
- Minimize systemic absorption and adverse effects by closing eyes after administering eye drops, gently but firmly pressing the tear duct against the nose for at least one minute, and then removing excess solution with absorbent tissue.

Eye ointments

- Ointments allow a prolonged contact time; therefore, less frequent applications are required (good for night use).
- They help lubrication so that concurrent lubricant use is not always necessary
- Apply a small amount of ointment along the INSIDE of the lower eyelid and blink to help spread over the cornea. Wipe excess ointment & clean before subsequent application.
- It may cause blurring initially; this will resolve as the ointment melts away.

Challenges with Ophthalmic Drug Treatment:

1. **Systemic absorption of topical drugs**

a) This occurs more readily with drops than with ointment; absorption occurs via conjunctival vessels.
b) It can be limited to some degree by compressing the medial punctum and nasolacrimal sac on drop application (press your finger firmly over your lids, next to the nose).

2. **Multiple drug treatment**
   a) If the patient needs more than one drop, allow five minutes between each drop.
   b) If there is a mixture of drops and ointments: instill drops first and then ointment after 4-5 minutes.
   c) Topical and systemic treatment: check for duplication (eg, beta-blockers) and drug interactions (eg, carbonic anhydrase inhibitors and loop diuretics).

3. **Avoiding microbial contamination**
   a) Wash hands before and after application; this is particularly important if you suspect, or are treating, infective eye disease.
   b) Discard bottles 30 days after opening.

Reference:

1. www.npcb.nic.in
2. www.patient.co.uk
3. http://www.maha-arogya.gov.in/diseasesinfo/blindness/default.htm

Prepared by:
Maharashtra State Pharmacy Council's
Drug Information Centre