



# Eye Safety

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## Eye Safety

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"The eye is like a mirror, and the visible object is like the thing reflected in the mirror." -- *Avicenna, early 11<sup>th</sup> century*

- This presentation will be centered on the importance of keeping the one pair of eyes we are given, safe and healthy. It will explore anatomy, age progression, at work, and home safety as well as preventative measures to maintain a healthy pair of eyes.



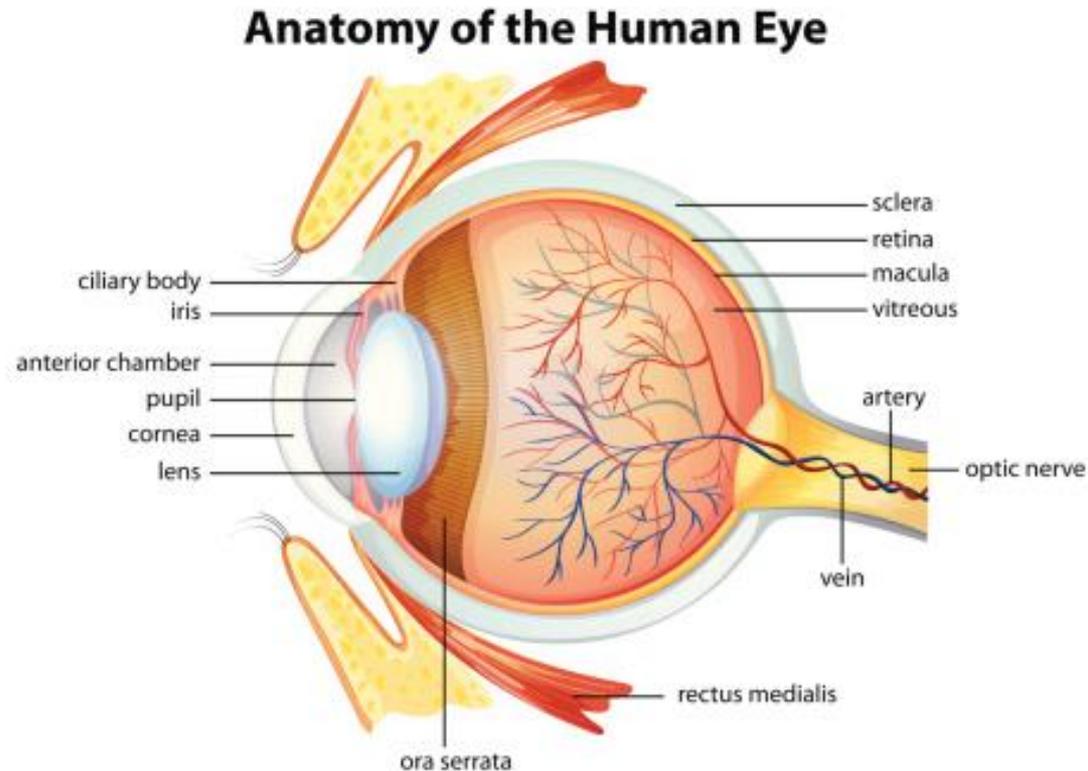
# Examination of the Eye

The human eye is one of the most complicated structures on earth and it requires many components to allow our advanced visual capabilities.

The eye has three major layers:

- the sclera, which maintains, protects, and supports the shape of the eye and includes the cornea;
- the choroid, which provides oxygen and nourishment to the eye and includes the pupil, iris, and lens; and
- the retina, which allows us to piece images together and includes cones and rods.

The optic nerve takes electrical signals from the retina of the eye to the brain.



The human visual system gives our bodies the ability to take in our physical environment.

# Aging of the Eyes

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## Infants/Toddlers

Their eyes and visual system are not fully developed but significant improvement occurs as they are able to focus and develop images.

## 20-30's

Your eyes are generally healthy. You may be exposed to greater risk of sports or work safety injuries. Vision changes such as near- or farsightedness may continue to progress, but at a slower rate.

## 40-50's

Normal changes in how your eyes focus may require the wear of reading glasses, or you may need to hold reading material farther away to read clearly.

## 60-above

Your pupil size will start to shrink, which makes it more difficult to see in low-light or fluctuating light environments. Your peripheral vision will be reduced, and your color vision may change or decline.

# Eye Safety at Work

## Causes

- **70%** of injuries are from flying or falling objects
- **20%** are from contact with chemicals
- **60%** of injured workers did not wear eye protection
- Others wore glasses, but had no side protection, or poor fitting glasses

[Elvex.com](http://Elvex.com)

## Effects

- Corneal abrasions, conjunctivitis
- Foreign objects imbedded in the eye
- Chemical burns
- Welders flash burn
- Lacerations
- Facial bruising, black eye from impact force
- Puncture injuries

## Prevention

- **Create** a safe work environment
- **Evaluate** safety hazards
- **Wear** the proper eye and face protection
- **Use** good work practices
- **Have** an eye wash or sterile solution on hand and do not rub
- **Know** the eye safety dangers at your work
- **Keep** safety eyewear in good condition and replace it if it is damaged

# Eye Safety at Home

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As the day winds down and home is heavy on the mind, it is easy to lose sight of the fact that dangers could be waiting for you at home.

- Each year, nearly 50 percent of the annual 2.5 million eye injuries occur at home; that's more injuries than occur in school and at the work place combined.
- It is common to revert to a personal hobby to unwind after a long day at work but your home is only as safe as you are.
- You have to remember that the GoalZero safety mentality that is applied at work needs to be carried in to the comfort of your home.



[FriendsforSight.org](http://FriendsforSight.org)

# Eye Safety at Home

## Causes

- Household Chemicals
- Workshop/Yard Debris
- Battery Acid
- Sports Injuries
- UV Light
- Toys/Games

## Effects

- Corneal abrasions, conjunctivitis
- Foreign objects imbedded in the eye
- Chemical burns
- Welders flash burn
- Lacerations
- Facial bruising, black eye from impact force
- Eye Bleeding

## Prevention

- **READ** instructions and labels carefully
- **THINK** about the work you will be doing and wear protective eyewear
- **INVEST** in at least one pair of ANSI/UNE EN-approved eyewear

# Eye Protection

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There is a wide variety of eye protection for everyone. Whether you are a construction worker pouring concrete or an eight-year old helping Dad in the garage, there are safety glasses for everyone and every job.

- The type of eye protection that is worn should, at least, meet the requirements established by the regulations/laws set by your government to ensure that you are fully protected from the hazards associated with what you are doing.



# Types of Protective Eye Wear

## Safety Glasses

- Mechanical protection against
  - flying particles,
  - dusts, and
  - high impact objects



## Safety Goggles

- 360 eye coverage
- Mechanical protection against particle and dropped objects; dusty and smoky environments
- Biological protection against fines, gases, sprays, mists, aerosols.
- Protects against physical agents (specific treatment) such as IR, UV and sun radiations

## Welding Eye Protection

- Mechanical protection against hot particle impacts
- Protection against physical agents (with specific treatment)
  - IR,
  - UV, and
  - Sun Radiation



# Preventative Maintenance for Eyes

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- **Eat Healthy**

- Nutrients such as omega-3 fatty acids, lutein, zinc, and vitamins C and E might help ward off age-related vision problems

- **Quit Smoking**

- **Step Away from Your Computer**

- Every 20 minutes, rest your eyes by looking 20 feet away for 20 seconds. At least every 2 hours, get up and take a 15-minute break.



# Preventative Maintenance for Eyes

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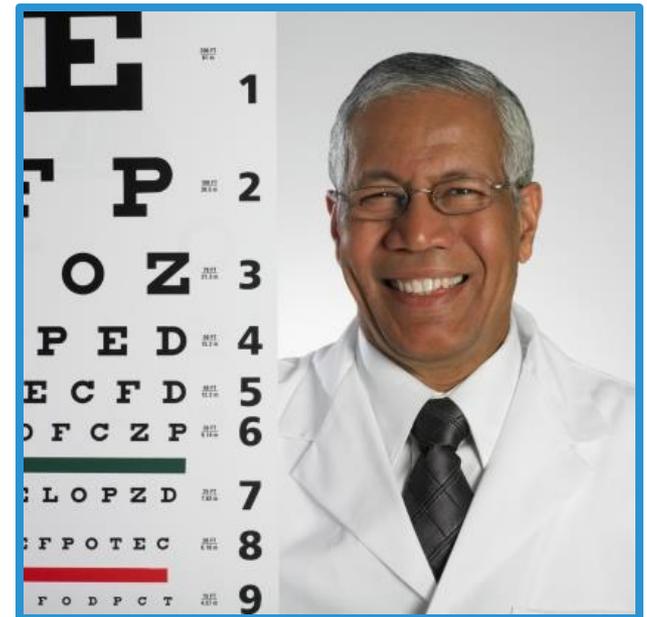
- **Visit Your Eye Doctor Regularly**

- Everyone, even young children, should get their eyes examined regularly

- **Use Safety Eyewear at Work and at Home**

- **Exercise Your Eyes**

- Eyes, as other body parts, should be exercised to keep them in good shape.



# Preventative Maintenance for Eyes

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## Eye exercises:

- Blinking exercises improve eye lubrication by reducing ocular dryness and associated symptoms
  - Open and close eyes strongly for 3-5 seconds
  - Repeat this movement 7-8 times
- Ocular muscle exercises improve the eye movements muscles, reduces fatigue and improves accuracy
  - Rotate the eyes clockwise and then counterclockwise. Repeat 5 times and blink between each time. It can be performed with closed or open eyes.
  - Look to the right, then look to the left, up and down, as well as to the 4 corners of your field of vision. It is important to force the position although the discomfort may occur.

Here's Looking at You...

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You only get one pair of eyes,  
so treat them right!



**Trivia Extra:**

- The muscle that allows your eye to blink is the fastest muscle in your body!

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