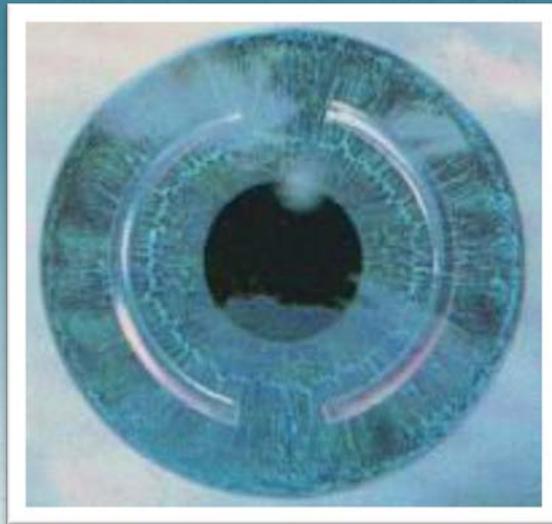


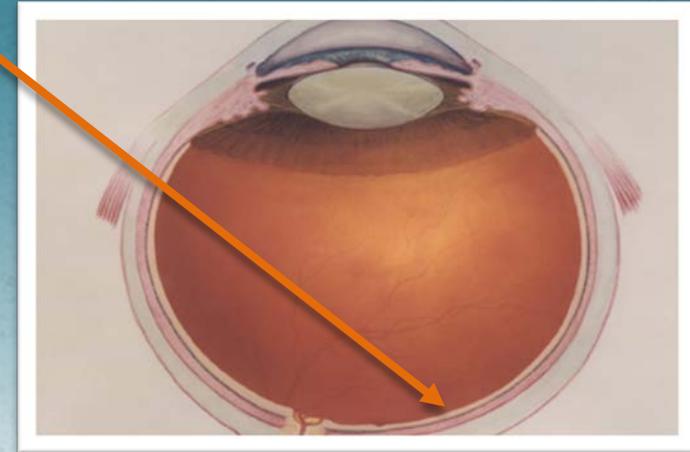
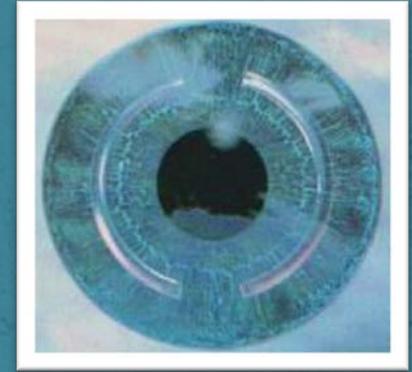
Sight Conservation and Eye Safety

A. Your Eyes' Defenses



Defenses

- Tears
 - Self-cleans the eyes of foreign material
- Eye lid
 - Physical barrier to some objects
- Cornea
 - Damaged ones can now be replaced
- Inner eye (retina)
 - Damage is irreversible



B. Types of Eye Injuries

Foreign Bodies

- Most common of injuries
- Abrasions & Scratches
 - Can cause permanent scar tissue
- Contusions from large objects
- Irritations from fibers
- Particles in smoke or fumes

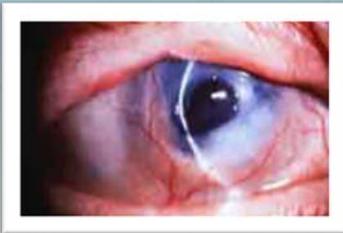


Chemical Burns

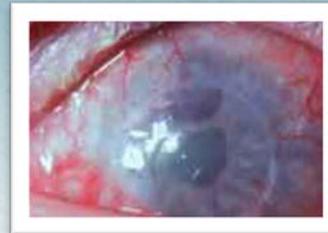
- Acids
 - Precipitate a protein barrier preventing further penetration into tissue
 - Burn the surface of the eye and cause scars
- Bases (alkalies)
 - Damages tissue as long as there is contact
 - Dissolves fat-soluble tissue, turning it into “jelly”
- Acids and Bases are both **CORROSIVE**

Chemical Burns

- Gases in air can burn or irritate
- Vapors and mists can irritate and produce scarring
 - Paints
 - Pesticides
 - Cleaners



Severe Acid Injury



Severe Alkali Injury

Irradiation Burns

- Infrared light (heat lamps)
 - Passes through cornea-absorbed by lens
- Ultraviolet light (sun, welding)
 - Causes flash burns
 - Delayed effects (4-6 hrs. after exposure)
- Infrared and Ultraviolet light can cause permanent eye damage



C. Recommended Sight Conservation Program Elements

Program Elements

- Identify eye hazards
 - Survey all work areas to determine potential eye hazardous areas



Program Elements

- Eliminate hazards by engineering controls
 - Eliminate hazards completely, where possible
 - Reduce eye hazards
 - Guards
 - Isolation of the process
 - Substitution of a less hazardous chemical

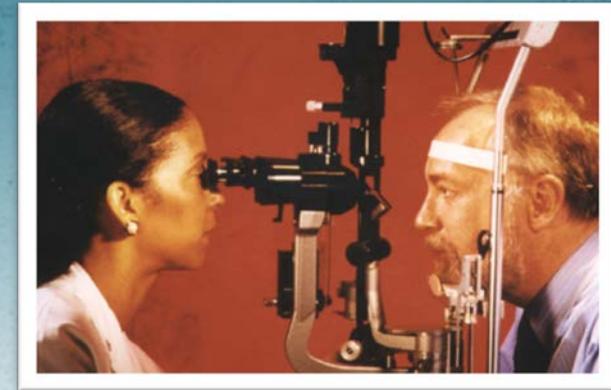
Program Elements

- Post eye hazardous areas
 - Label all areas and pieces of equipment which are potentially hazardous
 - Use yellow & black caution signs:
 - to warn of eye hazard areas
 - to specify eye protection required
 - Mark the areas around eye hazards with yellow and black striping or checkerboard tape on the deck



Program Elements

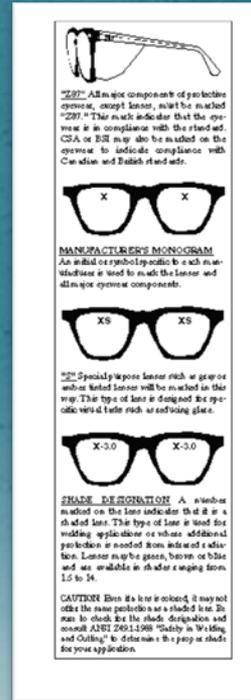
- Provide protection
 - Where hazards can't be eliminated or reduced, PPE is required
 - Your employer must provide all protective equipment
 - Protection must be specific to the job
 - Safety person will determine types to be worn
 - Use a medical provider for eye exams and screening:
 - for corrective needs
 - for personnel working around
 - radiation sources



D. Eye Protection--Personal Protective Devices

Must Meet ANSI Standards

- Each manufacturer's glasses or goggles must be tested and approved
- Testing includes:
 - Impact
 - Permeability
 - Shatter proofing
 - Frame breaking strength
- Only ANSI approved eyewear may be used as safety glasses
 - Must have "Z87" stamp



Devices Designed for Specific Hazards

- Six general types of protective eyewear
 - Safety glasses/spectacles
 - Chemical goggles
 - Welding goggles
 - Chipping goggles
 - Welding helmets
 - Face shields
- Wear the right type!! Wearing the wrong type can be dangerous



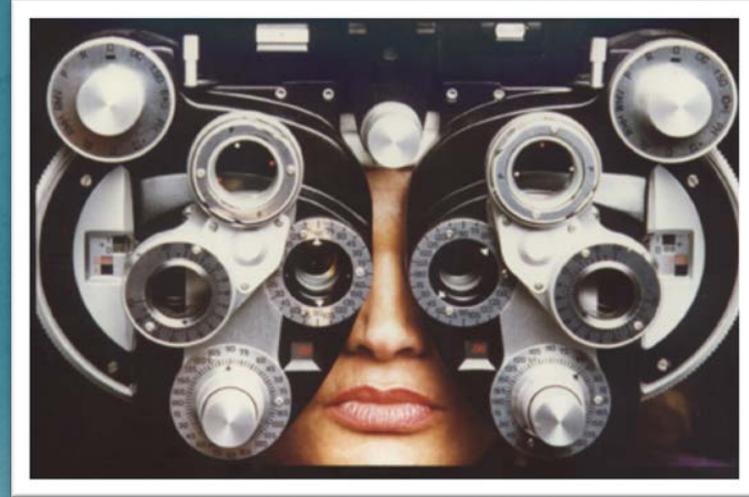
Wearing Protective Devices

- Wear double protection for acids and bases
 - Chemical goggles AND face shield !
- Face shields **MUST** be worn with safety glasses or goggles
 - Face shields may not be worn by themselves
- When working with UV light, wear protection based on level of light intensity
 - NO sunglasses!!



Wearing Protective Devices

- Your employer will provide prescription safety glasses
- Regular prescription glasses **CANNOT** be worn as safety glasses
- Keep devices clean
- Discard if badly scratched or damaged



E. Emergency Eye Wash Stations

Emergency Eye Wash Stations

- Must flush with fresh water for minimum of 15 minutes
- Flushing is used to:
 - Remove foreign objects
 - Dilute strong chemicals
- REQUIRED wherever
 - Corrosives are used (e.g. battery shops)
- Recommended:
 - Particulate hazards exist (machine shop)



Eye Wash Requirements

- Must meet ANSI standards
- Must provide continuous water flow
- Activated by one hand or foot motion
- Both hands free to hold eyes open (valve must stay open)
- May be combined with deluge shower for full body chemical first aid



Eye Wash Styles

- Plumbed into potable (drinking) water system
- Portable, pressurized tank-type
- Gravity-fed portable self-container

F. Program Enforcement

Enforcement

- Personnel working in eye hazardous areas MUST wear eye protection
- Supervisors must set the example
- Visitors/guests provided with eye protection
- Some sports (racquetball) are hazardous. Wear sport goggles
- Encourage all personnel to wear eye protection at home (hobbies/lawn work)

G. Eye Injury First Aid

First Aid

- Never rub eyes to remove particulates
- Chemical burns
 - Flush for 15 minutes (minimum)
 - Get medical attention!
- Punctures and trauma
 - Cover with a clean, soft cloth
 - Get medical attention!

First Aid

- Report ALL minor cuts and eye problems
 - Minor scratches may lead to potential infections with resulting scar tissue formation, loss of sight, or other significant damage