



*presentation*

guide

{ module 00 }



# introduction

# Table of Contents

## Presentation Guide Overview

Prevent Blindness America Contact Information .....	4
---	---

## Presentation Introduction

Prevent Blindness America .....	5
---------------------------------	---

The Need .....	5
----------------	---

# Presentation Guide Overview

Thank you for joining the Prevent Blindness America Healthy Eyes team. Your commitment to sharing this vital information will save sight not only for those who directly hear your presentation, but also those they impact as they spread this knowledge even further.

You are encouraged to present this program in a variety of venues. Community centers, health centers, retirement centers, businesses, colleges, and places of worship are just a few possibilities.

## Presentation Modules

The presentations are divided into modules to be customized for the audience. The Introduction and Eye Anatomy modules should be given at every presentation followed by the most appropriate modules. Too much information can overload the audience so, focus on only one or two modules per presentation.

At the end of every module is the following statement:

**HEALTHY EYES, HEALTHY VISION. TAKE CARE OF YOURSELF!**

**This cannot be over-emphasized.**

## Contact Information

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# Presentation Introduction

## Prevent Blindness America

Welcome to the Healthy Eyes Presentation Series. This series was developed by Prevent Blindness America to build public awareness of eye and vision basics; to share information on common adult vision issues related to health and safety; and to encourage proactive behaviors that give the best chance for a lifetime of healthy vision. The mission of Prevent Blindness America is to reduce preventable causes of blindness. Promoting lifelong vision health is done through education, research and programs. You can learn more about Prevent Blindness America at [PreventBlindness.org](http://PreventBlindness.org).

## The Need

The common perception of blindness is total vision loss in one or both eyes. However, “legal blindness” is defined as a visual acuity of 20/200 or a visual field (periphery) loss of 80%. While perhaps an over simplification this level of vision loss causes difficulties with daily living tasks.

Half of all blindness is preventable if the eye disease or disorder is detected and treated early. Regular eye exams from an eye care professional are necessary to stop the progression of vision loss. Many eye diseases evolve without symptoms or the changes are so subtle that the individual adapts to the loss. Unfortunately, even while virtually undetected, an eye disease can reach a point of no return. The vision lost cannot be regained.

Vision loss isn't just about disease or disorders, however, 90% of eye injuries could have been prevented. For example, every year doctors in emergency rooms across the country treat more than 250,000 product-related eye injuries, half of these happening at home.

Not surprisingly, the frequency of blindness and vision impairment increases rapidly with age, particularly after age 75, but most of the conditions begin much earlier in life.

The annual cost of adult vision problems in the U.S. is \$51.4 billion every year. While this number may be staggering, predictors indicate that this number could more than double over the next 30 years as the population ages and life expectancy increases.

We don't want you to be one of those statistics. If you know your risks, you can save your sight. So let's begin by understanding the anatomy of the eye.

{ module 01 }



*eye*  
**anatomy**

# Table of Contents

## Module 01: Eye Anatomy

Objective .....	8
Overview .....	8
Parts of the Eye .....	8
Conclusion.....	8

# Module 01: Eye Anatomy

[Click on slide 1](#)

**Objective:** [Click on slide 2](#)

Know and understand the functions of the parts of the eye.

## Overview:

Ninety percent of our sensory perception is visual. The eye is a small but intricate organ with several components working together. Each component has its own function as light passes through the eye into the brain where the visual information is processed. It is helpful to understand the areas and functions of the eye because disorders are specific to a particular part of the eye.

## Parts of the Eye: [Click on slide 3](#)

<b>Cornea</b>	clear, transparent outer layer that protects the front of the eye and focuses the light on the back of the eye.
<b>Lens</b>	curved disk that fine tunes the focus of light on the retina.
<b>Iris</b>	colored part of the eye that opens and closes to control the amount of light entering the eye.
<b>Retina</b>	light-sensitive area that turns image into electrical impulses to be sent to the brain.
<b>Macula</b>	center portion of the retina where the sharpest vision can be achieved.
<b>Optic Nerve</b>	transmits the electrical impulses from the retina to the brain.
<b>Vitreous</b>	clear gel that fills the space between the lens and the retina.

## Conclusion:

All of these parts encompass our amazing visual system. Most of us take for granted the miracle of sight. We open our eyes in the morning to our familiar room. Wouldn't you want to do all you can to assure yourself of a lifetime of mornings with healthy vision?

[Click on slide 4](#)

**HEALTHY EYES, HEALTHY VISION. TAKE CARE OF YOURSELF!**



{ module 02 }



*refractive*  
**errors**

errors

# Table of Contents

## Module 02: Refractive Errors

<b>Objective</b> .....	11
<b>Overview</b> .....	11
<b>Myopia</b> .....	11
<b>Hyperopia</b> .....	11
<b>Astigmatism</b> .....	12
<b>Presbyopia</b> .....	12
<b>Corrective Lenses</b>	
Glasses.....	12
Contact Lenses.....	12
<b>Refractive Surgery</b> .....	13
<b>Dilated Eye Exams</b> .....	13
<b>Eye Care Professionals</b> .....	13
<b>Conclusion</b> .....	14

# Module 02: Refractive Errors

[Click on slide 1](#)

**Objective:** [Click on slide 2](#)

Understand refractive errors that impact visual acuity and how they are corrected.

## Overview:

Refraction is the focus of light rays. For perfect vision the light rays should focus on the macula of the retina in the back of the eye. Refractive errors are the most common eye problem, generally known as nearsightedness and farsightedness, most people will need vision correction at some point in their lives. Even with 20/20 vision, the ideal standard for visual acuity, the aging process does impact the shape of the eye and flexibility of the lens. Around age 40 to 50 close-up tasks such as reading become more difficult to see.

**Myopia (Nearsightedness):** [Click on slide 3](#)

Myopia occurs because light entering from the front of the eye focuses in front of the retina. Either the eyeball is too long or the cornea is too curved so the image falls short.

- Can see images up close but images in the distance are blurred.

[Click on slide 4](#)

- Generally develops in years just before puberty, increases throughout the teen years and levels off in adulthood.
- Myopia is usually inherited.

**Hyperopia (Farsightedness):** [Click on slide 5](#)

Hyperopia occurs when light entering the front of the eye does not come into focus within the eye. In this case the eye is either too short or the lens cannot become round enough to adjust the focus.

- Can see images at a distance but have difficulty focusing on nearby images.

[Click on slide 6](#)

- Young children are normally a bit hyperopic, but it gradually decreases as the child grows.
- Hyperopia is usually inherited.



## Astigmatism: [Click on slide 7](#)

Because the cornea has an uneven surface or a high slope, light is refracted in multiple directions on the retina. Vision can appear wavy.

### [Click on slide 8](#)

- Causes difficulty in seeing fine detail.
- Very common condition impacting one in three people, prevalence increasing with age.
- Astigmatism is usually inherited.

## Presbyopia: [Click on slide 9](#)

In the natural course of aging, the eye's lens becomes less flexible. Loss of flexibility means the lens cannot refine the light rays into a sharp focus. This first becomes evidenced in dimly lit environments such as a restaurant, and can begin in one's 40s.

- Demonstrated as increasing difficulty seeing close objects.
- Increased lighting improves close vision.
- Often corrected with simple magnifying lenses such as over-the-counter reading glasses.

## Corrective Lenses:

### GLASSES [Click on slide 10](#)

Glasses or "spectacles" are still the most common corrective lenses for myopia and hyperopia. Presbyopia requires a bifocal lens to accommodate general vision on the top and detailed vision on the bottom. In some cases trifocals can also be prescribed for an intermediate correction such as distance to a computer screen. Correction for astigmatism is built into the prescription.

### CONTACT LENSES [Click on slide 11](#)

Contacts are worn directly on the cornea and are available in rigid gas permeable lenses or soft lenses. While soft lenses are considered more comfortable they often do not provide the same level of clarity as the gas permeable.

Recent advances in technology and treatment includes:

- Monovision prescription with one lens for distance and another for near to correct presbyopia.
- Multifocal lenses contain three focus levels (distance, intermediate and near) within the lens. The eye instinctively uses the appropriate correction.
- Orthokeratology using an overnight lens to flatten the cornea, leaving the eye free of correction during the day.

## Refractive Surgery: [Click on slide 12](#)

Lasik is the most commonly performed surgery to correct refractive error. A thin, circular flap is cut in the surface of the cornea with a laser. The flap is folded back so that the surgeon can reshape the cornea by removing tiny bits of tissue. The flap is then placed back into position.

To correct nearsightedness the cornea is flattened. For farsightedness the center of the cornea is made steeper. It is also possible to correct astigmatism but the results have been mixed. Lasik is most successful when moderate correction is required and before the candidate experiences presbyopia.

## Dilated Eye Exam: [Click on slide 13](#)

The dilated eye exam is a diagnostic procedure using eye drops to dilate (open) the pupil so that an eye care professional can fully exam the back of the eye (fundus) including the retina, macula, vitreous and optic disc (surface area that leads to the optic nerve) with an ophthalmoscope.

Every comprehensive eye exam should include a dilated exam. This is critical to fully determine visual health and assess risk for disorders such as retinal detachment.

## Eye Care Professionals: [Click on slide 14](#)

### OPTICIAN

Trained professional who makes, verifies and fits eyeglass lenses, frames and other optical devices such as contact lenses under the prescription of an optometrist or ophthalmologist .

### OPTOMETRIST

A state-licensed independent primary health care provider who specializes in the examination, diagnosis, treatment and management of the visual system, the eye and associated structures. An optometrist has completed four years of college, four years at a college of optometry and, in some cases, a residency. *[Definition provided by the American Optometric Association]*

### OPHTHALMOLOGIST

Licensed, board certified medical and surgical doctor who specializes in refractive, medical and surgical care of the eyes and visual system and in the prevention of eye disease and injury. The ophthalmologist has completed four or more years of medical school and four or more years of residency, including at least three years in ophthalmology. *[Definition provided by the American Academy of Ophthalmology]*

## Conclusion:

Virtually everyone will experience refractive vision errors at some point in his or her lifetime. Even with 20/20 vision, aging will catch-up with you.

[Click on slide 15](#)

**HEALTHY LIVING, HEALTHY VISION. TAKE CARE OF YOURSELF!**





{ MODULE 03 }



*contact lens*

**safety**

# Table of Contents

## Module 03: Contact Lens Safety

<b>Objective .....</b>	<b>17</b>
<b>Overview .....</b>	<b>17</b>
<b>Benefits .....</b>	<b>17</b>
<b>Complications .....</b>	<b>17</b>
<b>Infection .....</b>	<b>18</b>
<b>Cosmetic Lenses.....</b>	<b>18</b>
<b>Safe Contact Lens Wear .....</b>	<b>18</b>
<b>Conclusion.....</b>	<b>19</b>

# Module 03: Contact Lens Safety

[Click on slide 1](#)

## Objective: [Click on slide 2](#)

Instill importance of proper contact lens usage and consequences of misuse.

## Overview:

Contact lenses are worn by over 32 million people in the United States alone.

## Benefits: [Click on slide 3](#)

The original concept of a contact lens dates back as far as the early 1500's but it was not until the 1960's with advances in manufacturing technologies that contacts became widely available. The disadvantage of these "hard" lenses was that no oxygen was transmitted to the cornea limiting the wearing time and leaving the wearer vulnerable to severe corneal damage.

With the advent of rigid gas permeable lenses in the 1970's, wearers could retain the advantages of a rigid lens (clarity of vision, less prescription change) while experiencing greater wearability.

Soft lenses, also gas permeable, offer increased comfort and little adaptation time. Recent advances have improved acuity and can correct some astigmatism. The soft nature of the lenses requires replacement either monthly or daily depending upon the lens choice.

## Complications: [Click on slide 4](#)

"Approximately 1 out of every 20 contact lens wearers develops a contact lens-related complication each year." [Contact Lens Complications; Mark Ventocillak, OD; Clinical Professor, Michigan College of Optometry] That represents over 1.6 million people in the US every year.

Excessive wear, particularly overnight, is the most common safety concern resulting in dryness that can lead to abrasion and even infection. The eye's essential tear layer circulates moisture, oxygen and other nutrients on the surface of the eye. Blinking and movement continuously washes the surface of the eye. Stagnant tears dry out leaving the eye susceptible to bacteria and debris. With the larger size of soft lenses, reduced

tear exchange is even greater than with the smaller rigid lenses. Overnight wear also increases the protein content of tears, which can impact visual acuity and be difficult to remove from the lenses.

## Infection: [Click on slide 5](#)

As previously stated, overnight wear is overwhelmingly the most significant risk factor for infection but any invasion of the tear layer can increase susceptibility to infection. Other common sources of infection include swimming with contacts in, smoking or being in smoky rooms, and not cleaning contacts properly or often enough.

[Click on slide 6](#) – Keratitis is an infection of the cornea that is quite painful and can lead to vision impairment. Keratitis can be caused by bacteria, a fungus, a virus and even an amoeba.

[Click on slide 7](#) – Acanthamoeba Keratitis is a water-born pathogen that can cause corneal scarring and even blindness. Contact lens wearers who rinse their contacts in water rather than sterile solutions are particularly vulnerable to AK and soft lens wearers more than rigid.

## Cosmetic Lenses: [Click on slide 8](#)

Increasingly popular, particularly at Halloween, are cosmetic lenses. Over the counter lenses sold in beauty shops or novelty stores can contain colorings and contaminants that could result in infection and vision loss. Cosmetic lenses should only be prescribed by an eye care physician and should never be shared from person to person.

## Safe Contact Lens Wear: [Click on slide 9](#)

Only an eye care professional can prescribe contact lenses. The doctor will know what type is best for the individual's needs and preferences. Wear lenses only as prescribed and for the time recommended. Contact the doctor immediately if experiencing unusual redness, swelling, irritation, blurred vision or eye pain.

Always follow the replacement schedule. Rigid lenses become scratched and the porous nature of soft lenses demands that they be replaced regularly. Wearing beyond the prescription schedule increases the exposure to infection and disease.

Follow cleaning instructions carefully. A multitude of products are available for lens care. The doctor can recommend solutions best suited for the lens type. Be cautious of "no-rub" solutions. While convenient, new research is showing that these are not as effective as needed, once again increasing risk for infection. Never use tap water to rinse contact lenses. Micro-organisms can still live in distilled water. And, never rinse lenses in your mouth.

Use good hygiene. Always wash hands with soap and water then thoroughly dry before handling contacts. Lotions, make-up, soaps or other residue remaining on hands can cause irritation. And, never wear another person's contact lenses.

Replace contact case often. Care of the case to avoid infection is just as important as the lenses themselves. Clean the case after each use with sterile solution and let air dry. Cases should be replaced every 3 months but immediately if the case is cracked or damaged.

## Conclusion:

With regular eye examinations, proper care and healthy habits, one can expect to wear contact lenses over a lifetime. Complications can be avoided with proper care and regular replacement of lenses.

[Click on slide 10](#)

**HEALTHY EYES, HEALTHY VISION. TAKE CARE OF YOURSELF!**

{ MODULE 04 }



*adult eye*  
**disorders**

disorders

# Table of Contents

## Module 04: Adult Eye Disorders

<b>Objective</b> .....	<b>22</b>
<b>Overview</b> .....	<b>22</b>
<b>Age-related Macular Degeneration (AMD)</b>	
Definition and Treatment.....	23
Types of AMD .....	23
Symptoms .....	23
Signs.....	24
Risk Factors .....	24
Lifestyle Factors.....	24
<b>Cataracts</b>	
Definition and Treatment.....	24
Types of Cataracts.....	24
Symptoms .....	25
Risk Factors .....	25
<b>Diabetic Retinopathy</b>	
Symptoms .....	25
Risk Factors .....	26
Lifestyle Factors.....	26
<b>Glaucoma</b>	
Symptoms .....	27
Risk Factors .....	27
<b>Conclusion</b> .....	<b>28</b>

# Module 04: Adult Eye Disorders

[Click on slide 1](#)

**Objective:** [Click on slide 2](#)

Understand the risk factors, manifestation and prognosis of eye diseases and disorders that primarily affect adults.

**Overview:** [Click on slide 3](#)

Under age 40, the primary causes of blindness are childhood disorders or accidents. The aging eye poses new challenges, however, as it becomes vulnerable to medical conditions happening elsewhere in the body, such as with diabetic retinopathy, or the natural “maturing” of the eye itself as with cataracts.

The four primary conditions adults must be alert to are:

- Age-related Macular Degeneration (AMD)
- Cataracts
- Diabetic Retinopathy
- Glaucoma

According to the latest research from Prevent Blindness America and the National Eye Institute, of the 130 million Americans over the age of 40, 30 million suffer from one of these disorders. This may seem a staggering count, but that number is on the rise and is expected to double over the next 30 years as the baby boomer generation ages and life expectancy increases.

Cataract is the most commonly known condition because, if you live long enough, you will have cataracts. The other three are lesser known but ultimately could have more severe outcomes if not treated early and consistently. In 2008 the AMD Alliance International conducted a survey that found more than half of the respondents had never heard of AMD or knew very little about it. The challenge is that symptoms for these conditions are often subtle and can progress slowly. By the time vision loss is noticed the damage could already be permanent. Left untreated the results could be severe vision loss and even blindness. Early detection through regular dilated eye exams is the best precaution against these conditions.

[Click on slide 4](#) Early detection through regular dilated eye exams is the best precaution against these conditions.



# Age-related Macular Degeneration:

[Click on slide 5](#)

## DEFINITION AND TREATMENT

AMD, a disease that impacts the macula (the center of the retina), is the leading cause of vision loss over the age of 60. Gradually it destroys the sharp, central vision needed for daily tasks. Vision can become blurry or wavy and even cause a blind spot in the center of vision.

## TYPES OF AMD [Click on slide 6](#)

- Wet – Neovascular (“False” blood vessels)
- Dry – Atrophic (Deterioration of cells – atrophy)

Wet AMD, the least common but most serious, is caused by tiny unhealthy blood vessels that grow under the retina. These weak blood vessels often break and leak leading to the term “wet AMD.” Scarring can eventually cause irreversible damage. This can happen rapidly if left untreated. Recent medications and treatments have proven effective and can sometimes reverse the effects.

Dry AMD is the most common of the two types. The early warning sign for dry AMD is the formation of “drusen”, yellow deposits under the retina. The relationship between drusen and AMD is still unknown but by age 65 most people have some degree of drusen deposits in the macula.

Drusen itself can cause blurred vision, but as the disease progresses the drusen is coupled with the deterioration of the light and color sensitive cells behind the retina causing significant vision loss in the central vision. Dry AMD progresses much more slowly than wet AMD. While this form has no treatment available at this time, research has demonstrated that supplements with high doses of antioxidants have slowed the progression. Vitamins are not effective in prevention of AMD—only as treatment. An eye professional can prescribe the right amount and combination of vitamins for patients.

## SYMPTOMS [Click on slide 7](#)

- Blurred vision
- Central vision shadows, dark or empty spot
- Distorted, wavy affect of straight lines
- Trouble discerning colors, especially dark from light
- Difficulty going from bright to low light
- No symptoms – which again emphasizes the need for eye exams

## **SIGNS (EVIDENCED THROUGH A DILATED EYE EXAM) [Click on slide 8](#)**

- Build up of drusen
- Break down of pigment and light-sensitive cells
- Increase of retinal blood vessels
- Dramatic decrease in visual acuity

## **RISK FACTORS [Click on slide 9](#)**

- Aging – 10% of patients from 66 to 74; 30% by age 75
- Family History – 50% increased risk for those with a close relative
- Race – Caucasians have higher incidents and more likely to lose vision
- Gender – Slightly higher percentage of women
- Hyperopia – farsightedness

## **LIFESTYLE FACTORS [Click on slide 10](#)**

- Smoking – 2 to 3 times more likely; smoking has a toxic affect on the retina
- Obesity – can impact progression from early to advanced stages of AMD
- Cardiovascular – hypertension and/or high cholesterol
- Sunlight – exposure of 5 hours per day in teens through 30s develop drusen earlier, more susceptible to early AMD

# **Cataracts: [Click on slide 11](#)**

## **DEFINITION AND TREATMENT**

A cataract is the clouding of the normally clear lens of the eye located behind the pupil and iris. When the lens becomes opaque rather than transparent, light is diffused across the retina rather than beamed to a sharp focus. Vision becomes blurry or dim because of the limited light reaching the retina.

## **TYPES OF CATARACTS [Click on slide 12](#)**

- Age-related – most common; 96% of all cataracts are age-related, usually after age 40
- Congenital – present at birth, usually caused by infection or inflammation during pregnancy, possibly inherited
- Traumatic – lens damage from a hard blow, cut, puncture, intense heat or chemical burn
- Secondary – result of eye infection, medicines, other eye diseases or medical conditions

Clouding of the lens is the first indicator of an age-related cataract. Left untreated the lens can swell with subsequent deterioration of the lens causing blindness.

[Click on slide 13](#) Surgery is the only treatment for cataracts. Historically cataract surgery was not performed until the lens was so significantly damaged as to warrant the procedure. Recovery time was several weeks with the results often less than desirable.

[Click on slide 14](#) Modern advances have changed the procedure so significantly that the surgery has become a routine, outpatient procedure. The clouded lens is removed and an “intraocular lens” is put in place of the natural lens. Implanted lenses can correct near or farsightedness. Bifocal or multi-focal lenses are also available.

Rather than waiting until the cataracts result in significant vision loss, surgery is now performed when the loss impacts the patient’s lifestyle. This is an individual decision made between the patient and the doctor.

### **SYMPTOMS** [Click on slide 15](#)

- Loss of visual acuity – frequent change in eyeglass prescription  
[Click on slide 16](#)
- Reduced contrast – dullness; lighting too dim for reading or close work; feeling there is a “film” over one or both eyes [Click on slide 17](#)
- Dazzled by strong lights – concern when driving [Click on slide 18](#)
- Halo around street lights at night – especially in one eye

### **RISK FACTORS** [Click on slide 19](#)

The following factors can cause early onset of cataracts:

- Heredity – family history
- Diseases – diabetes or other eye diseases
- Long-term steroid use
- Eye injuries
- Inflammation
- Smoking
- Long-term exposure to sun

## **Diabetic Retinopathy:** [Click on slide 20](#)

Retinopathy means damage to the retina, which in this case is caused by the complications of diabetes. Retinal blood vessels break down, leak or become blocked. Abnormal blood vessels, which are even more susceptible to leakage, can also develop on the surface of the retina causing blotchy vision. This condition affects nearly 80% of all patients who have had diabetes 10 years or more and can eventually lead to blindness. It is the number one cause of irreversible vision loss in working age adults in the U.S.

New treatments are on the horizon but diligent control of blood sugars, lipid levels and blood pressure can significantly deter the onset on diabetic retinopathy. At least 90% of new cases could be reduced with proper and vigilant treatment of diabetes. Fluctuating blood sugars within the day increases the risk for diabetic retinopathy. Keeping blood sugars consistent is most beneficial. Laser therapy and vitrectomy (surgery to remove blood and scar tissue in the vitreous) have proven beneficial treatments.

Unfortunately, the dangerous changes in the retina often happen before changes in sight are noticed. For those diagnosed with diabetes, annual dilated eye exams are critical to monitor changes. In some cases, eye doctors recommend twice yearly visits. Early intervention can drop the likelihood of blindness caused by diabetic retinopathy from 60% to 2%.

### **SYMPTOMS** [Click on slide 21](#)

- Often no early warning signs
- Macular edema (swelling) – may cause blurred vision but can fluctuate during the day or still may not show symptoms
- Bleeding – may begin with a small leak during sleep so no symptoms are noticed; generally followed by a larger leak in a few days which can lead to “floaters” in the field of vision or can form patches of blocked vision

### **RISK FACTORS** [Click on slide 22](#)

- Diagnosis of diabetes
- Ethnicities of color – especially African American and Hispanic
- Gender – women slightly more than men, however, men have more severe cases because they are less likely to seek treatment and monitor their diabetes
- Duration of disease – those with juvenile diabetes often have more severe cases
- Diabetic Retinopathy itself can become a risk factor for cataracts and glaucoma

### **LIFESTYLE FACTORS** [Click on slide 23](#)

- Blood sugar control – consistent monitoring can slow onset and progression
- Hypertension – high blood pressure
- Smoking
- Alcohol – a dangerous combination with diabetes
- Pregnancy – correlation is still unknown but diabetic women seem to have increased diabetic retinopathy during pregnancy; eye exams each trimester are recommended.

## Glaucoma: [Click on slide 24](#)

Glaucoma is actually a group of diseases that damage the optic nerve. When the nerve is damaged, peripheral vision (side vision) is lost. This can happen so gradually as to go unnoticed until significant, irreversible loss occurs. It's often called the "sneak thief of sight" because the vision loss progresses over several years. Again, vision loss from glaucoma can never be recovered. [Click on slide 25](#)

Glaucoma can be divided into two main categories, "open angle" and "closed angle." Closed angle can appear suddenly and is often painful. Vision loss can progress quickly but the discomfort sends patients to seek medical help before permanent damage occurs.

Open angle or chronic glaucoma progress more slowly. It is called "open angle" in reference to the chamber of the eye that should remain open to allow the natural flow of nutrient-rich fluid through the eye. When the fluid drains slowly pressure builds in the eye.

Many are familiar with the "puff" test or other glaucoma test at the eye doctor's office which checks the pressure levels within the eyeball. Glaucoma is closely linked to increased pressure that can damage the optic nerve, although not all those with glaucoma will have elevated pressure so pressure is only one of the risk factors.

A wide range of medications are available for glaucoma as well as laser or surgical treatment to relieve pressure. Regular eye exams and thorough consultations with an eye care professional is needed to assess the best course of treatment.

### **SYMPTOMS** [Click on slide 26](#)

- Loss of vision, particularly side vision
- Blurry or foggy vision
- Difficulty adjusting to dark rooms
- Rainbow-colored rings around lights

**Remember, even without any warning signs you may still have glaucoma. Don't wait for problems before getting a regular eye exam.**

### **RISK FACTORS** [Click on slide 27](#)

- High intraocular (eye) pressure
- Aging – everyone over 60 is at risk, African-Americans over age 40
- Hereditary – most likely if a sibling has glaucoma and slightly lower if a parent has glaucoma

- Race – African-Americans are 3 to 4 times more likely to get glaucoma and 6 times more likely to experience blindness as a result. Hispanic and Latino populations have recently been identified as a higher risk.
- Central corneal thinness – African-Americans tend to have thinner corneas
- Gender – Male

## Conclusion: [Click on slide 28](#)

The consistent message is that age-related eye disorders can sneak up on you. Any one of these conditions can go unnoticed while permanently damaging vision.

**HEALTHY EYES, HEALTHY VISION. TAKE CARE OF YOURSELF!**

**The conditions in this presentation are the risk factors and require attention.**

{ module 05 }



*low*  
**vision**  
VISION

# Table of Contents

## Module 05: Low Vision

Objective .....	31
Overview .....	31
Rehabilitation Services .....	31
Driving.....	31
Reading.....	32
Household Devices .....	32
Conclusion.....	32



# Module 05: Low Vision

[Click on slide 1](#)

**Objective:** [Click on slide 2](#)

Breakdown limiting beliefs about vision loss and understand that resources are available.

## Overview:

Visual acuity is the clarity or sharpness of vision. [Click on slide 3](#) Normal vision acuity is generally identified as 20/20 vision. This level of acuity allows one to comfortably perform everyday tasks. Vision acuity, however, has a wide range of acceptable and/or manageable strengths from perfect vision of 20/12 to legal blindness of 20/200. Vision tools and/or treatment can improve daily living for those with vision loss greater than 20/200.

Low vision experts specialize in providing services such as education and rehabilitation, as well as work and social integration. Too many people suffer from loneliness and isolation because they are unaware that resources are available to them.

## Rehabilitation Services: [Click on slide 4](#)

- Low vision device prescription and training – finding the right adaptive tools for the individual.
- Individual counseling – help in adjusting to vision loss.
- Support groups – opportunity to talk with others facing same challenges.
- Home and personal management skills – adaptive techniques such as labeling medications, managing money, safe food preparation and personal care.
- Communication skills – use of tape recorders, specialized computers and large print devices.
- Independent movement and travel skills – assess new environments, move safely and efficiently, ask for assistance, even driving.

## Driving: [Click on slide 5](#)

Safe driving requires complex visual processing—abilities that may begin to decline as we age.

[Click on slide 6](#) A loss in your visual abilities could endanger you and others on the road. But you can maintain your independence and drive safely longer if you get a complete eye exam regularly; know the vision issues that can affect your driving; understand the laws in your state about driving as you age; and, talk to your eye doctor about maintaining your fitness to drive.

[Click on slide 7](#) It is important to note that visual processing is but one component of safe driving. Other key factors include:

- the motor ability to scan rapidly changing environments
- the sensory ability to perceive information in a rapidly changing environment
- the attentiveness to process multiple pieces of information
- the cognitive and motor ability to judge information in a timely fashion and to make appropriate decisions.

## Reading: [Click on slide 8](#)

When reading, sewing or other close work is challenging, low vision devices can be of great assistance. [Click on slide 9](#) Magnifiers come as spectacles, hand-held or hands-free devices as high as 12X the magnifications. [Click on slide 10](#) Those with lights not only enlarge an object but increase the contrast between print and the page improving visibility.

## Household Devices: [Click on slide 11](#)

Many adaptive tools have been created to assist with everyday living such as computer aids that magnify text. [Click on slide 12](#) Many everyday items such as large button phones, large face clocks or watches, money holders and jumbo playing cards have been redesigned to assist those with low vision. [Click on slide 13](#) Cooking aids include coded measuring cups, high contrast timers, large print cookbooks or a liquid alarm for pouring hot drinks.

## Conclusion:

All of these services and techniques are designed to maintain independence and build confidence as one faces vision loss. Vision loss does not need to result in loss of independence. Help is available.

[Click on slide 14](#)

**HEALTHY EYES, HEALTHY VISION. TAKE CARE OF YOURSELF!**

{ module 06 }



*home*  
**safety**

# Table of Contents

## Module 06: Home Safety

Objective .....	35
Overview .....	35
Causes of Eye Trauma.....	35
Indoor Safety .....	36
Outdoor Safety .....	36
UV Damage .....	36
Eye Emergencies.....	37
Be Prepared .....	38
Take Precautions.....	38
Conclusion.....	38

# Module 06: Home Safety

[Click on slide 1](#)

**Objective:** [Click on slide 2](#)

Understand that accidents happen quickly and learn how to minimize injuries. Preparation is the only safeguard.

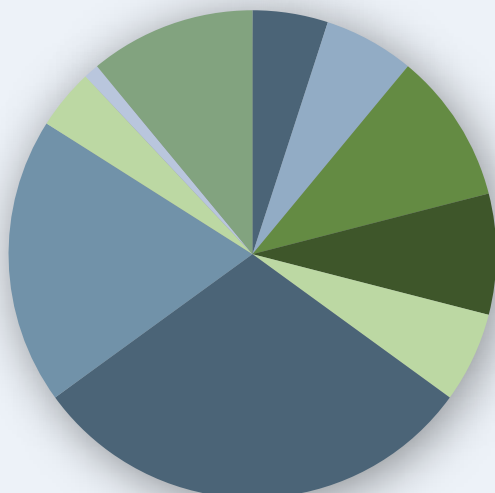
## Overview:

We often take our home for granted because we feel safe and secure in familiar surroundings. We can become lax about home safety with little thought of hazards in our environment but accidents can happen very quickly. An otherwise useful household object, gardening tool or even a toy can suddenly become dangerous.

[Click on slide 3](#) Approximately 2 million eye injuries occur each year with about 42,000 of those injuries requiring hospitalization. Common household products alone cause 125,000 eye injuries every year. Ninety percent of these eye injuries could have been prevented through understanding, safety practices and the use of proper eye protection.

[Click on slide 4](#) According to the American Society of Ocular Trauma (ASOT) and the American Academy of Ophthalmology (AAO), 50,000 Americans permanently lose their vision each year due to injuries – 44% of these happen at home. The kitchen and the yard are two of the most dangerous areas.

**Causes of Eye Trauma:** [Click on slide 5](#) It's interesting to look at the causes of eye trauma. We can laugh about our parent's warning "Don't run with that stick; you'll poke your eye out" but the leading cause of eye injury is blunt object trauma. Those persistent warnings may have saved many of us our sight because we now consciously carry a stick or pencil or scissors more carefully. We call these precautions common sense until an accident happens, then it becomes a tragedy.



**Causes of Eye Trauma**

- |                    |                          |
|--------------------|--------------------------|
| ■ Fireworks 5%     | ■ BB/Pellet Gun 6%       |
| ■ Other 10%        | ■ Motor Vehicle Crash 8% |
| ■ Gun 6%           | ■ Blunt Object 30%       |
| ■ Sharp Object 19% | ■ Fall 4%                |
| ■ Unknown 1%       | ■ Nail/Hammer 11%        |

## Indoor Safety: [Click on slide 6](#)

- Keep clutter off the floor to avoid falls – also avoid sharp objects from being obscured by soft items such as clothing.
- Properly store kitchen utensils, desk supplies and toiletries – obviously this is a primary precaution for children but also for adults. Proper storage avoids accidents.
- Store chemicals in secured cabinets – left lying around they become too familiar and “less threatening;” treat chemicals seriously and read the directions.
- Wear eye protection when using cleaning chemicals, such as oven cleaner or anything with ammonia.
- Point objects away from your face when opening chemicals, cleaners and champagne or anything carbonated.
- Provide safe, age-appropriate toys – avoid toys with projectiles or flying parts, teach precautions to children for themselves and others around them.

## Outdoor Safety: [Click on slide 7](#)

- Inspect and remove debris from lawn before mowing.
- Properly store paints, pesticides, fertilizers – again be careful opening containers.
- Keep tools in good condition – when using force, parts can come apart.
- Wear safety goggles – working with power saws, lawn trimmers, mowing, chemicals.
- Remember: It’s not just your sight you are protecting. Projectiles and spills can affect others around you, particularly children.
- Wear sunglasses with 99-100% UV A and B protection – don’t wear sunglasses with no or low UV protection. The dark lenses of sunglasses with no or low UV protection actually cause the pupils to dilate further, allowing more of the harmful rays to damage the eyes.

## UV Damage: [Click on slide 8](#)

There are two types of UV rays: UV-A and UV-B. UV-A affects the central vision, damaging the macula (central part of the retina). UV-B is absorbed by the cornea and lens in the front of the eye.

Over time UV rays can contribute to eye problems: [Click on slide 9](#)

- Macular degeneration – the leading cause of blindness in older Americans.

- Cataracts – if you have had cataract surgery, you may be at an even greater risk of UV damage.
- Pterygium – growth that begins in the white of the eye and then stretches over the cornea. Most common in people who work outside in the sun and wind.
- Skin cancer – develops on eyelids.
- Corneal sunburn – caused by high, short-term exposure of UV-B rays such as several hours at the beach or skiing without proper eye protection. This can be very painful and may cause temporary vision loss.
- Again, it is very important for adults and children to wear sunglasses with 99-100% UV A and B protection – don't wear sunglasses with no or low UV protection.

## Eye Emergencies [Click on slide 10](#)

Acting quickly in an accident can save sight. Knowing what to do and being prepared is essential. Never assume an eye injury is harmless. See an eye doctor or go to an emergency room immediately.

[Click on slide 11](#) An injured person might want to rub the eye. NEVER rub the eye under any circumstance. A simple issue can become serious if an object gets imbedded in or moved around in the eye.

The type of emergency will dictate the course of action.

### SPECKS IN THE EYE [Click on slide 12](#)

- DO NOT rub the eye.
- Use an eye wash or let tears wash out the speck.
- Lift upper eyelid outward and down over the lower lid.
- If the speck doesn't wash out – keep the eye closed, bandage lightly and see a doctor.

### CHEMICAL BURNS [Click on slide 13](#)

- Immediately flush the eye with water. Open eye as wide as possible during the flushing. Continue flushing for at least 15 minutes. Hold the eye under a faucet, shower or pour water into the eye using a clean container.
- DO NOT use an eye cup to cover the eye.
- If a contact lens is in the eye, begin flushing over the lens immediately. Flushing may dislodge the lens.
- DO NOT bandage the eye.
- Seek medical help.

## CUTS AND PUNCTURES OF EYE AND EYELID [Click on slide 14](#)

- DO NOT wash out eye with water.
- DO NOT try to remove an object stuck in the eye.
- Cover the eye with a rigid shield without pressure. [Click on slide 15](#);  
[Click on slide 16](#)
- Keep quiet – limit movement, move slowly.
- See doctor immediately.

## BLOWS TO THE EYE [Click on slide 17](#)

- Apply cold compress without pressure.
- Seek emergency medical care in cases of pain, reduced vision or discoloration (black eye) which could mean internal eye damage.  
[Click on slide 18](#) [Click on slide 19](#)
- Cover the eye with a rigid shield without pressure.

## Be Prepared [Click on slide 19](#)

- Wear eye protection for all hazardous activities and sports.
- Stock a first aid kit with rigid eye shield and eyewash.

## Take Precautions [Click on slide 20](#)

- DO NOT rub the eye.
- DO NOT assume that an eye injury is harmless.

## Conclusion: [Click on slide 21](#)

**HEALTHY EYES, HEALTHY VISION. TAKE CARE OF YOURSELF!**



{ module 07 }



*workplace*  
**safety**

# Table of Contents

## Module 07: Workplace Safety

<b>Objective .....</b>	<b>41</b>
<b>Overview .....</b>	<b>41</b>
<b>Common Causes .....</b>	<b>41</b>
<b>Eye Protection</b>	
Types of Eye Protection .....	41
<b>An Eye Saved .....</b>	<b>42</b>
<b>Eye Emergencies.....</b>	<b>42</b>
<b>Outdoor Professions.....</b>	<b>43</b>
<b>Be Prepared .....</b>	<b>44</b>
<b>Take Precautions.....</b>	<b>44</b>
<b>Conclusion.....</b>	<b>44</b>

# Module 07: Workplace Safety

[Click on slide 1](#)

## Objective: [Click on slide 2](#)

Understand that accidents happen quickly and learn how to minimize injuries.

## Overview: [Click on slide 3](#)

Workplaces across the country are certainly safer than a few decades ago thanks to government agencies such as OSHA (Occupational Safety and Health Administration) and many others. Additionally, each industry has its own unique regulations to protect workers and the public.

Despite these precautions, the workplace accounts for approximately 2,000 eye injuries every day. Each year nearly 100,000 of these injuries will be disabling, resulting in temporary or permanent vision loss. According to the Bureau of Labor Statistics, the estimated cost of occupational eye injuries approaches nearly one billion dollars annually. That accounts for medical bills, worker compensation and lost production time.

Being conscious of potential hazards and being proactive about securing the environment are essential to assure vision safety.

## Common Causes: [Click on slide 4](#)

Eye injuries happen in the workplace most often from

- Flying particles
- Molten metals
- Liquid chemicals
- Gases and vapors
- High-intensity light radiation

## Eye Protection:

Three out of five job related eye injuries happen because a worker was not wearing eye protection. Others were wearing the wrong type of eye protection for the hazard.

## TYPES OF EYE PROTECTION [Click on slide 5](#)

- Safety Glasses – side shields are recommended at all times. In eye injuries that still occurred while wearing safety glasses, 93% were caused by particles or chemical splashes that went around the protection.
- Goggles – completely cover eye but chemical splashes can still get through ventilation openings.
- Face Shields – are considered secondary protection. Goggles or safety glasses are still required underneath.
- Welding Masks – also secondary protection but are designed for high-intensity light radiation. Infrared light can't be seen but significantly damages the retina.
- Check the regulations for your work and seek professional assistance for the appropriate form of eye protection.

## An Eye Saved [Click on slide 6](#)

This story comes from the US Department of Labor.

As the result of a private contractor safety glasses program, an employee began encouraging his eighteen year-old son, who installed siding on houses, to wear safety glasses while working. The son finally relented when aluminum dust started getting in his eyes. About one week later, he was applying siding with an airpowered staple gun.

When the son fired a staple, it hit a metal plate behind the siding, ricocheted back towards his face and one leg of the staple penetrated the safety glasses' lens. The staple hit with such force that the frames were cracked and the son received bruising on the eyebrow and cheekbone.

The safety glasses definitely saved his eyesight and possibly even his life!

## Eye Emergencies [Click on slide 7](#)

Acting quickly in an accident can save sight. Knowing what to do and being prepared is essential. Never assume an eye injury is harmless. See an eye doctor or go to an emergency room immediately.

[Click on slide 8](#) An injured person might want to rub the eye. NEVER rub the eye under any circumstance. A simple issue can become serious if an object gets imbedded in or moved around in the eye.

The type of emergency will dictate the course of action.

### **SPECKS IN THE EYE** [Click on slide 9](#)

- DO NOT rub the eye.
- Use an eye wash or let tears wash out the speck.
- Lift upper eyelid outward and down over the lower lid.
- If the speck doesn't wash out – keep the eye closed, bandage lightly and see a doctor.

### **CHEMICAL BURNS** [Click on slide 10](#)

- Immediately flush the eye with water. Open eye as wide as possible during the flushing. Continue flushing for at least 15 minutes. Hold the eye under a faucet, shower or pour water into the eye using a clean container.
- DO NOT use an eye cup to cover the eye.
- If a contact lens is in the eye, begin flushing over the lens immediately. Flushing may dislodge the lens.
- DO NOT bandage the eye.
- Seek medical help.

### **CUTS AND PUNCTURES OF EYE AND EYELID** [Click on slide 11](#)

- DO NOT wash out eye with water.
- DO NOT try to remove an object stuck in the eye.
- Cover the eye with a rigid shield without pressure. [Click on slide 12](#);  
[Click on slide 13](#)
- Keep quiet – limit movement, move slowly.
- See doctor immediately.

### **BLOWS TO THE EYE** [Click on slide 14](#)

- Apply cold compress without pressure.
- Seek emergency medical care in cases of pain, reduced vision or discoloration (black eye) which could mean internal eye damage.  
[Click on slide 15](#) [Click on slide 16](#)
- Cover the eye with a rigid shield without pressure.

## **Outdoor Professions** [Click on slide 17](#)

In addition to the hazards previously described, those who work outside have an additional precaution to protect their eyes against wind and sun damage.

UV rays can contribute to: [Click on slide 18](#)

- Macular degeneration – the leading cause of blindness in older Americans
- Cataracts – if you have had cataract surgery, you may be at an even greater risk of UV damage.
- Pterygium – growth that begins in the white of the eye and then stretches over the cornea. Most common in people who work outside in the sun and wind.
- Skin cancer – develops on eyelids
- Corneal sunburn – caused by high, short-term exposure of UV-B rays such as hours working near water or concrete where the sunlight is reflected.
- Can be very painful and may cause temporary vision loss.

Use good quality sunglasses or safety glasses that reduce glare and filter 100% of the UV rays.

## Be Prepared [Click on slide 19](#)

- Wear eye protection for all hazardous activities and sports.
- Stock a first aid kit with rigid eye shield and eyewash.

## Take Precautions [Click on slide 20](#)

- DO NOT rub the eye.
- DO NOT assume that an eye injury is harmless.

## Conclusion: [Click on slide 21](#)

Wearing eye protection must be an instilled habit. Safety and protection come before the job starts because accidents are not scheduled events. Safety first—every time.

## And, remember: [Click on slide 22](#)

**HEALTHY EYES, HEALTHY VISION. TAKE CARE OF YOURSELF!**

{ module 08 }



*sport*  
**safety**

# Table of Contents

## Module 08: Sport Safety

<b>Objective</b> .....	<b>47</b>
<b>Overview</b> .....	<b>47</b>
<b>Risk Factors</b> .....	<b>47</b>
<b>Sport Risk Levels</b>	
Low-Risk .....	48
Moderate-to High-Risk .....	48
High-Risk .....	48
<b>Outdoor Sports</b> .....	<b>48</b>
<b>Paintball</b> .....	<b>49</b>
<b>Eye Protection</b>	
Considerations .....	49
<b>Eye Emergencies</b> .....	<b>50</b>
<b>Be Prepared</b> .....	<b>50</b>
<b>Take Precautions</b> .....	<b>51</b>
<b>Conclusion</b> .....	<b>51</b>



# Module 08: Sport Safety

[Click on slide 1](#)

## Objective: [Click on slide 2](#)

Understand the risks associated with sports and understand the benefits of wearing the appropriate eye protection.

## Overview: [Click on slide 3](#)

Living an active lifestyle often includes participating in individual or competitive sports. Whether with an organized league or simply a neighborhood pick-up basketball game, protective eyewear should be worn.

Hospital emergency rooms treat over 33,000 sports-related eye injuries every year. These are only the injuries that are reported. Injuries treated in doctor's offices and Clinics go unreported in the overall statistics. The actual number is estimated to be two to three times greater.

[Click on slide 4](#) With appropriate protective eyewear worn during game plan, 90% of these eye injuries are preventable.

[Click on slide 5](#) Any traumatic eye injury may also increase the risk of other eye problems such as glaucoma and cataracts.

## Risks Factors: [Click on slide 6](#)

Skill level, current visual impairment, pre-existing conditions and type of sport all contribute to the risk factors of playing a sport.

Beginners tend to be injured more frequently than intermediate or advanced players. However, injuries to advanced players are often more serious because their action is more aggressive.

Visual impairment in one or both eyes not only impacts skill level but impacts one's ability to avoid collisions.

Pre-existing conditions leave one vulnerable to not only direct eye injury but also blows to the head that could worsen the condition.

## Sport Risk Levels:

Some sports by their nature pose a higher risk for eye injury than others.

## Low-Risk [Click on slide 7](#)

Sports that do not involve throwing or hitting a ball, a bat or stick, or body contact. Track and field, swimming and gymnastics

## Moderate-to High-Risk Sports [Click on slide 8](#)

Sports that involve a stick or racquet, a high-speed ball, body contact or a combination of factors. Hockey, lacrosse, soccer, football, volleyball, and racquet sports. A racquet ball can travel 60 to 200 miles per hour.

## High-Risk Sports [Click on slide 9](#)

Basketball is the leading cause of a sport eye injury for people aged 15 to 64.

According to The Coalition to Prevent Sports Eye Injuries, “One-in-eighteen college athletes will sustain an eye injury each season. The odds increase to one-in-ten for basketball players.”

Water and pool activities are most susceptible to being poked by fingers.

Baseball not only has a ball moving upwards of 50 plus miles per hour but the swing of a bat is also executed at full force.

## Outdoor Sports:

In addition to the traumatic eye injury, continued exposure to UV rays can cause vision problems.

[Click on slide 10](#) There are two types of UV rays: UV-A and UV-B. UV-A can hurt the central vision, damaging the macula (central part of the retina). UV-B is absorbed by the cornea and lens in the front of the eye.

Over time UV rays can contribute to eye problems: [Click on slide 11](#)

- Macular degeneration – the leading cause of blindness in older Americans
- Cataracts – if you have had cataract surgery, you may be at an even greater risk of UV damage.
- Pterygium – growth that begins in the white of the eye and then stretches over the cornea. Most common in people who work outside in the sun and wind.
- Skin cancer – develops on eyelids
- Corneal sunburn – caused by high, short-term exposure of UV-B rays. Long hours at the beach or skiing without proper eye protection. Can be very painful and may cause temporary vision loss.

Be sure to always wear sunglasses or safety eyewear, appropriate for your activity, with 100% UV-A and UV-B protection.

## Paintball: [Click on slide 12](#)

Paintball markers (air guns) are increasingly popular and pose a particular concern. In controlled environments such as commercial paintball parks, safety precautions are stringently enforced. Players found removing their face masks are ejected from the parks.

However, more and more people are using paintball guns for personal recreation in unsupervised areas often becoming lax about using eye protection. [Click on slide 13](#) Because of the force of the paintball and the concentrated size of the “ammo”, injury is frequently severe and visually devastating. [Click on slide 14](#)

[Click on slide 15](#) Only use eye protection certified by the Protective Eyewear Certification Council as meeting or exceeding the requirements of the American Society of Testing and Materials – Standard Specification for Eye Protection Devices for Paintball.

Paintball markers (air guns) should be treated with the same safety precautions as firearms. The marker should be placed on safe and barrel plugs should be used when exiting a playing field. The marker should be unloaded, de-gassed and locked in a storage unit when not in use.

## Eye Protection: [Click on slide 16](#)

The nature of the sport will dictate the type of protection that will reduce the chance of eye injury. Regular eye glasses or contact lenses do not provide adequate protection. They can actually contribute to an eye injury. Even industrial safety glasses do not provide the type of protection needed for sports.

## Protective Eyewear Considerations

[Click on slide 17](#)

- Impact, scratch-resistant material such as polycarbonate
- Comfortable fit with a secure strap
- Clear vision with adequate field of vision range for the sport
- UV protection for outdoor sports
- Prescription lenses when needed

[Click on slide 18](#) Consult an eye care physician to determine the best protection for the sport and your personal vision requirements.

## Eye Emergencies [Click on slide 19](#)

Acting quickly in an accident can save sight. Knowing what to do and being prepared is essential. Never assume an eye injury is harmless. See an eye doctor or go to an emergency room immediately.

[Click on slide 20](#) An injured person might want to rub the eye. NEVER rub the eye under any circumstance. A simple issue can become serious if an object gets imbedded in or moved around in the eye.

The type of emergency will dictate the course of action.

### SPECKS IN THE EYE [Click on slide 21](#)

- DO NOT rub the eye.
- Use an eye wash or let tears wash out the speck.
- Lift upper eyelid outward and down over the lower lid.
- If the speck doesn't wash out – keep the eye closed, bandage lightly and see a doctor.

### CUTS AND PUNCTURES OF EYE AND EYELID [Click on slide 22](#)

- DO NOT wash out eye with water.
- DO NOT try to remove an object stuck in the eye.
- Cover the eye with a rigid shield without pressure. [Click on slide 23](#);  
[Click on slide 24](#)
- Keep quiet – limit movement, move slowly.
- See doctor immediately.

### BLOWS TO THE EYE [Click on slide 25](#)

- Apply cold compress without pressure.
- Seek emergency medical care in cases of pain, reduced vision or discoloration (black eye) which could mean internal eye damage.  
[Click on slide 26](#) [Click on slide 27](#)
- Cover the eye with a rigid shield without pressure.

## Be Prepared [Click on slide 28](#)

- Wear eye protection for all hazardous activities and sports.
- Stock a first aid kit with rigid eye shield and eyewash.

## Take Precautions [Click on slide 29](#)

- DO NOT rub the eye.
- DO NOT assume that an eye injury is harmless.

## Conclusion: [Click on slide 30](#)

When the game is over you should be sitting with friends reliving the highlights not sitting on an emergency room exam table in pain. Eye injuries are traumatic and pose a serious threat to vision health, even to the point of blindness. Simple precautions can keep you safe while you enjoy a healthy lifestyle.

[Click on slide 31](#)

**HEALTHY EYES, HEALTHY VISION. TAKE CARE OF YOURSELF**

{ module 09 }



*healthy living*  
healthy vision

# Table of Contents

## Healthy Eyes, Healthy Vision

Avoid Smoking.....	54
Eat Healthy Foods .....	54
Talk to Your Doctor Before Adding Vitamins To Your Diet.....	55
Stay Active.....	55
Control Your Blood Pressure .....	55
Protect Your Eyes From the Sun .....	55

# Healthy Living, Healthy Vision

[Click on slide 1](#)

[Click on slide 2](#)

Good health is an important part of good vision. The healthier you are, the better chance you have of avoiding risks to your eyes.

[Click on slide 3](#) You can lower your risk of eye disease and vision loss if you:

- Avoid smoking
- Eat healthy foods
- Stay active
- Control your blood pressure
- Protect your eyes from the sun

## [Click on slide 4](#) Avoid Smoking

Quitting smoking can have many good effects on your health. Avoiding smoking can also protect the health of your eyes. By quitting smoking, you can help to possibly reduce your risk of developing several different types of eye diseases.

Quitting smoking may reduce your risk of developing:

- Age-related Macular Degeneration
- Cataracts
- Glaucoma

Quitting smoking will also reduce your risk of developing diabetic retinopathy if you are diabetic.

## [Click on slide 5](#) Eat Healthy Foods

Guide and Slide: Lifelong good nutrition may lower your risk of some eye diseases. By eating a healthy, balanced diet, you will have a better chance of staying healthy and keeping your eyes healthy.

[Click on slide 6](#) Eating a healthy, balanced diet, you will have a better chance of staying healthy and keeping your eyes healthy.

In October 2001, the National Eye Institute (NEI) released a study called the Age-related Eye Disease Study (AREDS). This study found that people who were at risk of developing advanced age-related macular degeneration (AMD) benefited from pharmacological-level doses of zinc, vitamins C and E, and beta-carotene.



## [Click on slide 7](#) Talk to your doctor before adding vitamins to your diet.

Also, other research has suggested that a lifetime diet rich in certain dark green vegetables, such as spinach and kale, may reduce your risk of getting AMD.

Another way that your vision can benefit from a healthy diet is that by eating healthy foods, you will lower your risk of developing other diseases, such as diabetes, which can lead to diabetic eye disease. Diabetes is also a risk factor for developing glaucoma.

## [Click on slide 8](#) Stay Active

Staying active is part of a healthy lifestyle that can improve your overall health. Exercising regularly can reduce your risk of developing problems that can lead to eye disease.

Talk to your doctor before starting an exercise program.

## [Click on slide 9](#) Control Your Blood Pressure

Controlling your blood pressure is not just a good idea for your heart. It is also a good idea for protecting your eyesight. High blood pressure can increase your risk for glaucoma. It may also increase your risk for diabetic retinopathy if you have diabetes.

## [Click on slide 10](#) Protect Your Eyes from the Sun

You already know that you need to wear sunscreen to protect your skin from ultraviolet (UV) rays when you are outdoors. But do you know that you also need to wear protective sunglasses to protect your eyes from those same UV rays?

UV rays may be related to some eye diseases later in life, such as macular degeneration, cataracts and even skin cancer around the eyelids. They can also cause corneal sunburn, called photokeratitis, which can lead to temporary vision loss.

Everyone who spends time outdoors (including children) should wear sunglasses and a wide brimmed hat. Your sunglasses should fit well and be able to absorb 99–100% of both UV-A and UV-B rays.

[Click on slide 11](#)

**HEALTHY LIFE, HEALTHY VISION. TAKE CARE OF YOURSELF!**