



IN THE KNOW

The Inservice Club for Nursing Assistants

Instructions for the Learner

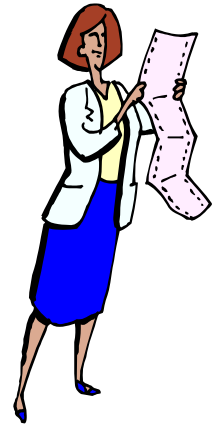
We hope you enjoy this Inservice, prepared especially for nursing assistants like you. You work very hard, and we appreciate the effort you make to complete these educational materials. It shows your desire to continue learning and growing in your profession!

After finishing this inservice, you'll be able to:

- Discuss at least four common eye disorders.
- Name at least two chronic conditions that affect the health of the eye.
- List at least six symptoms of eye disorders that should be reported.
- Describe how you can help your clients maintain healthy eyes.
- Demonstrate your ability to work with visually impaired clients.

If you are studying the inservice on your own, please:

- Read through all the attached materials. You may find it useful to have a highlighting marker nearby as you read. Highlight any information that is new to you or that you feel is especially important.
- If you have questions about anything you read, please ask



- Take the quiz. Think about each statement and circle the best answer.
- Check with your supervisor for the right answers. You pass the quiz with at least eight correct answers! Print your name, write in the date, and then sign your name.
- Keep the inservice information for yourself, and turn in the quiz page to _____ no later than _____.
- Show your Inservice Club Membership Card to _____ so that it can be initialed.

THANK YOU!

How Much Do You Know About Eyes?

Just take a guess...then turn this page upside down to see the answers!

- | | | |
|---|--|--|
| 1. Nearsighted people have trouble seeing things:
A. <i>Far away.</i>
B. <i>Close up.</i>
C. <i>To the side.</i> | 3. The colored part of an eye is a muscle called the:
A. <i>Pupil.</i>
B. <i>Cornea.</i>
C. <i>Iris.</i> | 5. Normal vision is usually measured as:
A. <i>20/200.</i>
B. <i>20/20.</i>
C. <i>20/10.</i> |
| 2. The human eye measures about one inch and is:
A. <i>Oval.</i>
B. <i>Round.</i>
C. <i>Flat.</i> | 4. The lacrimal gland in the eye is responsible for:
A. <i>Making tears.</i>
B. <i>Blinking.</i>
C. <i>Changing pupil size.</i> | 6. Conjunctivitis is the official medical name for:
A. <i>Pinkeye.</i>
B. <i>Cataracts.</i>
C. <i>Glaucoma.</i> |



It takes the human eye about one hour to adjust to seeing in the dark.

Did you know that no two people have the same exact iris? Because of this, the iris provides better identification than fingerprints!

Answers: 1. Far away. 2. Round. 3. Iris. 4. Making tears. 5. 20/20. 6. Pinkeye.

Fun Facts About Eyes

- Have you ever seen a photograph in which people seem to have red eyes? This is because light from the flash reflects off blood vessels inside the eye.
- The cornea is the only body part that has no blood supply.
- Babies are born with very poor vision. Their eyes continue to develop as their bodies grow.
- The average person blinks over 11,000 times every day. That's over 4 million times in a year—and *billions* of times over a lifespan!
- The external muscles that move the eyes are *100 times more powerful* than they need to be. This makes them some of the strongest muscles in the body.
- It's impossible to sneeze without closing your eyes.



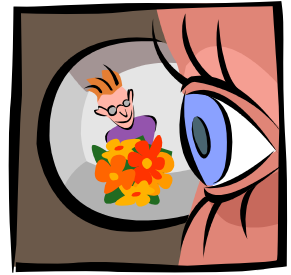
The human eye sees everything *upside down*...but the brain turns things right side up.

How Does the Eye Work?

The human eye is a complex organ that functions pretty much like a camera:

- The white of the eye is called the **sclera**. This tough covering protects the entire eyeball.
- At the front of the sclera is the **cornea**, a clear “window” that allows light to pass through.
- After going through the cornea, light rays pass through a hole called the **pupil**. The pupil is able to change size to let more or less light into the eye.
- The muscle that controls the size of the pupil is called the **iris**. This is the colored part of the eye—that is often blue, brown or green.
- After light rays have gone through the pupil, they enter the **lens** which is clear, rubbery and shaped like an egg.
- As light enters it, the lens changes shape so it can aim the light onto the **retina** at the back of the eye.
- The “picture” of what the eye sees is formed on the retina—but the picture is upside down!
- The retina transforms the light rays into electrical impulses and sends them along the **optic nerve** to the brain.
- The **brain** “unscrambles” the impulses and turns the picture right side up.

Isn't that an amazing process? And, just think! It happens constantly, without us thinking about it, all day long.



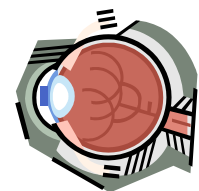
When people look at something pleasant, their pupils expand by as much as 45 percent.

More Eye Facts

- The eye is filled with liquid.
- Eyelids protect your eyes from the environment.
- Eyebrows help keep light and dust from getting into the eyes.
- Eyelashes also help “brush” things away from the eyes.
- Tears help keep the eyes moist. If something gets in your eye, tears help wash it away.
- Blinking helps spread a film of tears over the surface of the eye.
- The average blink lasts only one third of a second.
- Six different muscles surround the eye and help it turn in many different directions.
- Each optic nerve contains over one million nerve cells.
- The eye quivers continuously—from thirty to fifty times every second!

As people age, they:

- Need more light to see.
- May have trouble telling colors apart—especially blue and green.
- Have trouble focusing close up.
- May have problems seeing in the dark.



The average human eyeball weighs about one ounce.

Eye Care Professionals

Have you every wondered about the difference between the three main types of eye care professionals? Here are the details:

Ophthalmologists are physicians who have completed medical school and residency. Some of

them complete additional training in a specialty area such as cataract surgery or pediatric eye disorders.

Optometrists are doctors of optometry...but they are not physicians. They are trained to diagnose eye

disorders and prescribe lenses, but cannot perform surgery.

Opticians are trained to fill eyeglass prescriptions. In some states, they are also allowed to fit contact lenses, but they cannot examine eyes or prescribe corrective lenses.

Time For a Laugh!

At her eye doctor's office, Mrs. Williams stormed up to the reception desk and complained angrily, "Someone stole my wig while I was having surgery here yesterday. They left me another one in its place!"

The doctor came out and tried to calm Mrs. Williams down.

"I assure you, no one on my staff would have done such a thing," he said. "Why do you think it was taken here?"

Mrs. Williams said, "After the operation, I noticed the wig I had on was ugly and cheap-looking."

"I think," said the doctor, "that means your cataract operation was a success!"

A Few Myths About Our Eyes

MYTH: Reading in dim light harms your eyes.

FALSE: Reading in poor light may *strain* your eyes, but it doesn't cause permanent harm...and it has no effect on whether you'll need glasses some day.

MYTH: Wearing glasses causes your eyes to become lazy.

FALSE: Glasses do not *change* the eyes...they just help people see better. Some people may become *psychologically* dependent on their glasses.

MYTH: Most eye diseases cannot be prevented.

FALSE: Studies show that many common eye problems, including cataracts and macular degeneration, may be prevented—especially with proper nutrition.



The average human eyelash lives for about 150 days— with or without mascara!

Have you ever had lid myokymia? Sounds bad, but it's only an eyelid twitch—usually occurring when your eyes are tired, dry or irritated.



Sports can be dangerous to the eyes. It's especially common for people to suffer eye injuries while playing baseball or basketball.

Common Eye Disorders

- Eye disorders can be caused by bacteria, a virus, disease, injury or a birth defect.
- Not all eye disorders can be prevented, but proper eye care and a healthy lifestyle are important ways to avoid eye problems.
- For example, did you know that smoking cigarettes increases the risk of developing cataracts and macular degeneration? (Just one more reason why people are better off not smoking!)
- Keep reading to learn about *seven* of the most common eye disorders.

1. Glaucoma

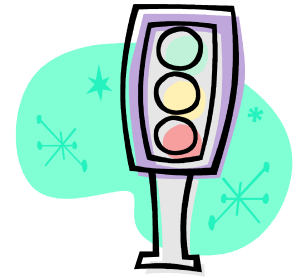
- Glaucoma causes fluid to build up inside the eye. This puts increased pressure on the optic nerve—slowly causing damage to the retina.
- Many people with glaucoma have no symptoms until the eye is already damaged.
- Glaucoma is a leading cause of blindness in the United States. At least two million Americans have glaucoma—although half of them don't even know it! The risk for glaucoma increases with age.

2. Cataracts

- When a cataract develops on the eye, the lens becomes cloudy or “fogged up”.
- Cataracts are not contagious—and can't spread from eye to eye. However, some people develop cataracts in both eyes at the same time.
- The most common type of cataract is caused by the aging process. More than half of all people over age 65 have a cataract.
- Infections and eye injuries can cause cataracts to form at any age.

3. Conjunctivitis

- Also known as “pink eye”, conjunctivitis is the medical term for an inflammation of the white part of the eye. It is one of the most common eye disorders and affects people of all ages.
- Conjunctivitis has many causes including viral infections, bacterial infections and allergies.
- “Pink eye” makes the eye look red and irritated. (Some people say it looks “blood-shot”.) The eye often itches and has a pus-like discharge.



Nearly three million Americans are color blind. They can't tell the difference between red and green.

Every year in the U.S., 400,000 more people develop cataracts and doctors perform over 1,350,000 cataract surgeries.



Glaucoma is three to four times more common among African-Americans.

Common Eye Disorders *(continued)*

4. Macular Degeneration

- In the center of the retina lies a small pea-sized spot called the macula. If the macula deteriorates for some reason, people experience blurry vision. This condition is known as macular degeneration. It usually gets progressively worse over a period of a few years.
- The most common type of macular degeneration is age-related. It occurs in people over age 55, especially among Caucasians.
- People with macular degeneration usually don't go *completely* blind—though they may be considered legally blind.

5. Refractory Error

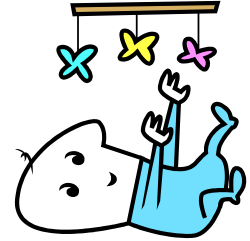
- More than half of all Americans use glasses or contact lenses to correct a refractory error.
- Refractory errors include being *nearsighted* or *farsighted*.
- It's normal for people over age 40 to have a refractory error called *presbyopia*. Their eyes have problems focusing for reading or close work.
- Most refractory errors can be corrected by wearing glasses or contacts.

6. Blepharitis

- People who have a chronic inflammation of the edges of their eyelids suffer from blepharitis.
- Symptoms include irritation, itching, swelling and burning. The eyes look like they are rimmed in red and may develop a "crust" on one or both eyelids.
- Blepharitis is usually caused by an excess of bacteria on the edge of the eyelid. The bacteria thrive in this moist, warm environment!

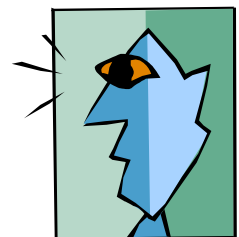
7. Dry Eye Syndrome

- Dry Eye Syndrome affects about 10 million Americans and is caused by a decrease in the quality or quantity of tears.
- Symptoms include constant eye pain, a feeling of grit or sand in the eyes, sensitivity to light and being unable to cry.
- Dry Eye Syndrome can be caused by normal aging of the tear glands or by a number of eye diseases.
- Dry eyes are made worse by wind and tobacco smoke.



More boys than girls are born colorblind. Usually, both eyes are affected equally.

The retina can become detached due to age, disease or injury. Detached retinas can be surgically repaired 90% of the time.



Nearly 75% of people over age 65 experience Dry Eye Syndrome. It is somewhat more common among women.

Diseases That Affect the Eyes

Diabetes

- Nearly half of all diabetics in the U.S. develop some degree of diabetic eye disease.
- Diabetics can experience double vision if their disease has affected the nerves that control eye movement.
- People with diabetes have a higher risk of developing cataracts.
- A condition called diabetic retinopathy is a serious problem. It develops after diabetes weakens the tiny blood vessels in the eye.
- People who have had diabetes for at least twenty years have a 90% chance of having retinopathy.
- If left untreated, retinopathy can cause blindness. However, if it is caught early enough, it can be treated with laser therapy.

Herpes Virus

- The herpes virus (including the “bug” that causes chicken pox) can be dangerous for the eyes.
- The virus can cause serious infections that can lead to vision loss.

Headaches

- People who suffer from migraine headaches may experience visual disturbances before and during the headache. They may see flickering spots or jagged lines, especially right before the onset of a migraine.

Parkinson’s Disease

- People with Parkinson’s disease may seem like they are staring—because they are unable to blink normally.
- Following an object with their eyes may be difficult since their eye muscles are affected by the disease.

AIDS

- The HIV virus lives in bodily fluids—including tears. However, there are *no known cases* of AIDS being transmitted from contact with tears.
- Eye problems are common for people with AIDS and are usually caused by CMV (a virus found in 1/3 of people with AIDS) or by Kaposi’s sarcoma (a type of cancer that can affect the eye).
- Because their immune systems are weak, people with HIV tend to have frequent eye infections.

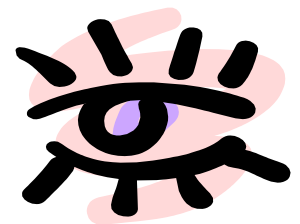
Thyroid Disorders

- People with *underactive* thyroids may have swelling around their eyes and often suffer from Dry Eye Syndrome.
- If the thyroid is *overactive*, people may have eyes that bulge and tend to burn, itch and feel “gritty”.



Keep in mind that some common medications can cause vision problems. These include drugs for arthritis, depression, cancer, TB and high cholesterol.

People with diabetes can protect their eyes by controlling their blood sugar and by not smoking. Help your diabetic clients live a healthy lifestyle!



Did you know that lice can hatch in people’s eyelashes? They cause the eyelids to look red, scaly and thick.

Information on Blindness

Because the eye is complex, a number of things can go wrong with it, including:

- The **eyeball** itself may be defective or damaged.
- The **lens** in the eye may be injured or diseased.
- The **retina** may suffer damage or may begin to *detach* itself from the back of the eye.
- The **optic nerve** can lose its ability to send impulses to the brain. (The eye itself still functions, but no signal gets to the brain—and the person is totally blind.)

Every year in the U.S., 50,000 people become blind. There are five main causes of blindness:

1. Cataracts

- Some people are born with cataracts.
- The chance of developing a cataract increases with age.

2. Glaucoma

- Studies show that one of every seven cases of blindness is caused by glaucoma.
- If the disease is detected and treated early, vision loss may be avoided.

3. Macular Degeneration

- This disorder may progress slowly or rapidly.
- Many doctors agree that eating leafy green vegetables helps prevent age-related macular degeneration.

4. Diabetic Retinopathy

- Because people with diabetes are living longer, there are more people than ever before with diabetes-related vision loss.

5. Retinitis Pigmentosa

- This hereditary disorder frequently begins as “night blindness” and progresses to “tunnel vision”.
- The disorder is progressive—causing people to become legally blind by young adulthood.
- There is no known treatment for retinitis pigmentosa.



Sudden blindness that goes away within thirty to forty minutes may be a warning of an oncoming stroke.

Blindness can afflict people at any age. Some people are born blind, and some become blind due to injury or disease.

Want More Information About Blindness?

Try these resources:

The American Foundation for the Blind

www.afb.org
1-800-232-5463

Lighthouse International

www.lighthouse.org
1-800-334-5497

National Eye Institute Health Education

www.nei.nih.gov
1-301-496-5248



Many people who are “legally” blind can still see a little bit—even if it’s just a bit of shadow and light.

Treating Eye Disorders

Glasses & Contacts

- In order to see clearly, the cornea and the lens need to focus light onto the retina. Some people's eyes are unable to do this because of the unusual shape or length of their eyes. These *refractory errors* are usually treated with glasses or contact lenses.
- For example, Jim's eyeballs are longer than normal causing him to be *nearsighted*. He wears contacts to see things that are far away.
- Mary's eyeballs are shorter and smaller than normal, causing her to be *farsighted*. Mary wears glasses to help her see things close up.
- Glasses or contacts can correct blurry or distorted vision caused by imperfections in the eye.

Medications

- Medications are helpful in a number of different eye disorders.
- *Dry Eye Syndrome* is often treated with eye drops or ointments known as "artificial tears".
- Antibiotic creams or drops are often used to treat *conjunctivitis* and *blepharitis*—but they only help if the conditions are caused by bacteria.
- Some types of *glaucoma* can be treated with special medicated eye drops.
- For *eye cuts* and *abrasions*, doctors might prescribe eye drops that numb the pain.
- Some types of cataracts can be treated with an eye drop that dilates the pupil—so that more light enters the eye.

Surgery

- A common type of eye surgery involves *removing a cataract*. The defective lens is removed and replaced with an artificial one. Most people still need glasses or contacts after cataract surgery.
- *Enucleation* is surgery to remove the eye. It is often the only treatment for cancer of the eye. Most people wear a prosthetic eye that fits in the eye socket and looks quite real.
- Surgeons may do a *corneal graft* to transplant the cornea of a donor onto the eye of someone with serious vision problems. Cornea transplant surgery has the highest success rate of any transplant—85% of people who receive new corneas are able to see again.



Some researchers say that the Chinese first developed eyeglasses 2000 years ago. However, they used them to protect their eyes from evil spirits—not to improve their vision.

It's impossible to transplant the entire eye since it is connected to the brain by the optic nerve. However, the cornea—the clear part on the front of the eye—can be transplanted.



Are you willing to donate your corneas when you die? Why or why not?

Keeping the Eyes Healthy

Life Style

- Encourage your clients to eat plenty of green vegetables, tomatoes and carrots every day. Help them limit their intake of fatty and salty foods.
- Remind your clients that smoking can contribute to eye disease.
- Remind your clients to wear sunglasses when they are in the sun. (Sunlight can be very damaging to the eyes.)

Eye Care

- Encourage your clients to get their eyes checked on a regular basis.
 - Rubbing is not the best way to remove dust or particles from the eye. Tell your clients to blink rapidly to dislodge the particle.
 - If your client cuts his eye or eyelid, bandage it lightly and get help right away. Don't wash the eye. And, *don't* apply pressure to try to stop the bleeding.
- If chemicals get in a client's eyes, flood them with water immediately, using your fingers to keep the eyes open as much as possible. Get help immediately.
 - If a client gets hit or bumped in the eye, gently put a cold cloth on the eye for fifteen minutes—and report the incident immediately.
 - If an object (like a pencil) gets stuck in an eye, don't pull it out. Get help!



Sunglasses should block **99-100% of both UV-A and UV-B rays**. (Check the label before buying.) And, remember, if sunglasses don't fit properly, the UV protection is lost.

Prevent the spread of infectious eye disorders by washing your hands—and helping your clients to do the same. Also, remind them not to rub their eyes. Germs can travel from the hands to the eyes.

Let your supervisor know if a client begins to:

- See "double".
- Have blurry vision.
- See "halos" around lights.
- Bump into objects or brushes the wall while walking.
- Squint when trying to focus.
- Have watery eyes.
- See "sparks" of light off to the side.
- See "spots".
- Have red, crusty or swollen eyelids.
- Have sudden pain in one or both eyes.
- Complain about dry, itchy eyes.
- Have a color change in the iris or pupil.
- Have trouble reading.
- Ask for stronger light in the room.
- Have trouble getting food onto a fork.
- Pour liquid over the top of a cup.



Take care of your eyes, too, by having regular eye exams!

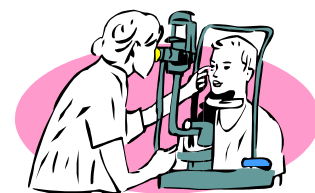
Tips For Working with Visually Impaired Clients

- Make sure there is plenty of light available for clients with poor vision.
- Try placing light objects against a dark background so they are easier to see. For example, it may be hard for your client to see a white plate on a white table. To make it easier, put a dark placemat underneath the plate.
- When serving a meal to visually impaired clients, ask if they'd like to know what's on their plate. You can describe the location of each food by comparing the plate to the face of a clock. (*"Your mashed potatoes are at 11:00 and your peas are at 2:00."*)
- Consider padding or cushioning any sharp corners on furniture—so a client won't be bruised by bumping into the furniture.
- Always announce yourself by name when you approach a person with poor vision.
- Don't be afraid to say things like *"It's nice to see you."* or *"Watch your step."* Visually impaired people use these words, too.
- When having a conversation with a visually impaired client, be sure to excuse yourself before you walk away—so the person knows you are leaving.
- To avoid startling a person with poor vision, explain what you are about to do—*before* touching the person.
- When walking with visually impaired clients, warn them about any upcoming bumps or turns.
- If your client uses a guide dog, don't pet the dog while it is "working".
- Most blind people prefer to take the arm of the person guiding them—and following a step behind. This gives them more control over ambulation.
- Try to keep your client's personal items in the same place. This helps the person find his or her belongings without asking for help.
- Consider "labeling" personal items for your visually impaired clients—so they can identify the items as their own. For example, try wrapping a rubber band around the handle of a toothbrush.
- The color of clothing can be identified by sewing a differently shaped button on the inside of each garment. For example, attach *round* buttons on the inside of blue clothes, and *square* buttons on green clothes.



Keep in mind that a half-opened door to a room, cabinet or car is hazardous to people with poor vision. Be sure to leave doors either all the way open or fully closed.

Be sure to ask visually impaired people if you can help them...rather than just assuming they need your assistance. They may be able to do most things for themselves.



Remember!
Regular eye exams—for your clients and for yourself—help prevent vision loss.



EMPLOYEE NAME (Please print):

DATE: _____

- ***I understand the information presented in this inservice.***
- ***I have completed this inservice and answered at least eight of the test questions correctly.***

EMPLOYEE SIGNATURE:

SUPERVISOR SIGNATURE:

Inservice Credit:

<input type="checkbox"/> Self Study	1 hour
<input type="checkbox"/> Group Study	1 hour

File completed test in
employee's personnel file.

IN THE KNOW

The Inservice Club for Nursing Assistants

Are You "In the Know" about Eye Disorders?

Circle the best choice and then check your answers with your supervisor!

- 1. Which of the following eye problems should you report to your supervisor? A client who:**
 - A. Has dry, itchy eyes.
 - B. Begins to bump into the furniture in his room.
 - C. Complains of pain in one eye.
 - D. All of the above.
- 2. True or False**
Conjunctivitis causes redness and inflammation of the sclera.
- 3. If your client needs cataract surgery, he will be treated by:**
 - A. An optician.
 - B. An ophthalmologist.
 - C. A neurosurgeon.
 - D. An optometrist.
- 4. True or False**
People who are HIV+ tend to see flickering lights and jagged lines.
- 5. If your client has presbyopia, she will probably:**
 - A. Have red, crusty eyelids.
 - B. Need to use artificial tears.
 - C. Need reading glasses.
 - D. Go blind one day.
- 6. True or False**
Many people who are legally blind can still see some shadows and light.
- 7. True or False**
Glaucoma causes the lens of the eye to become cloudy.
- 8. True or False**
Dry Eye Syndrome affects about 25% of people over age 65.
- 9. True or False**
The longer your clients have had diabetes, the more likely they are to develop eye problems.
- 10. True or False**
Eating dark green leafy vegetables may help prevent macular degeneration.