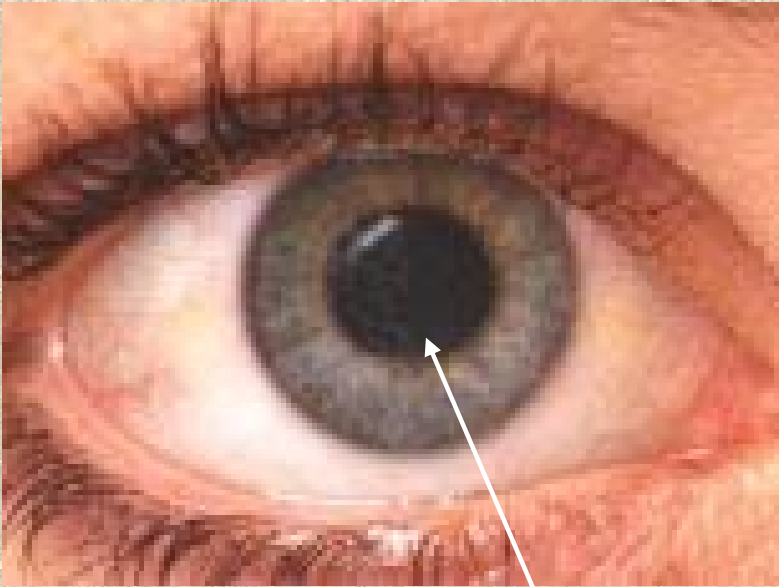
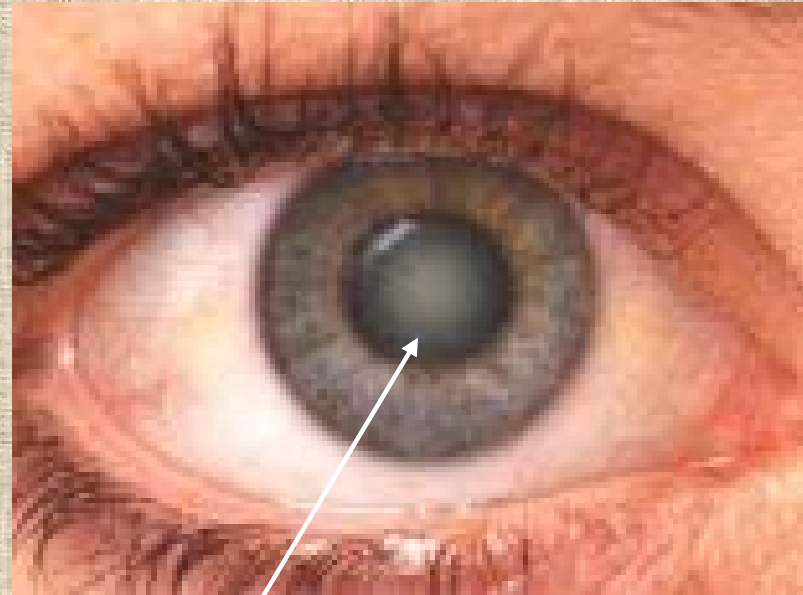


Cataracts



Normal Eye



Cataract

What is a Cataract?



An ocular opacity, partial or complete, of one or both eyes, on or in the lens or capsule, especially an opacity impairing vision or causing blindness.

The subsequent **cloudy appearance** of the eye resulted in the origin of the name cataract

Cataract Development

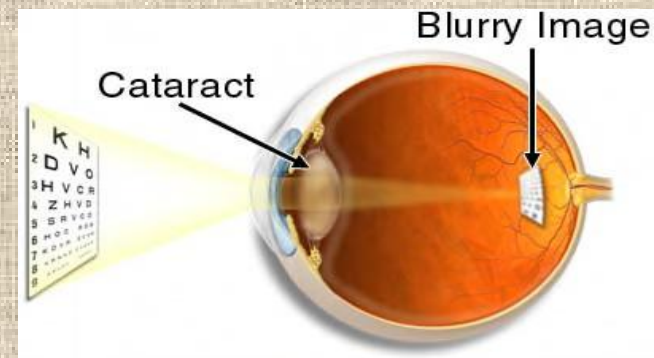


- The lens is made mostly of water and protein. The protein is normally arranged to let light pass through and focus on the retina.

Protein clumps together

- Small areas of lens begin to cloud
- Light is blocked from reaching the retina and vision is impaired

You would be able to see light and dark and maybe distinguish large objects and see movement.



An advanced stage cataract would be something like putting sheets of wax paper over your glasses

Cataract Formation

1. **Early Stages** – change prescription
2. **Late Stages** – surgical removal

It is 90% effective for age-related cataracts

- For secondary, traumatic and congenital cataracts surgery is not always an option

- Once a cataract begins to develop there is nothing that can be done to prevent its growth.



Types of Cataracts



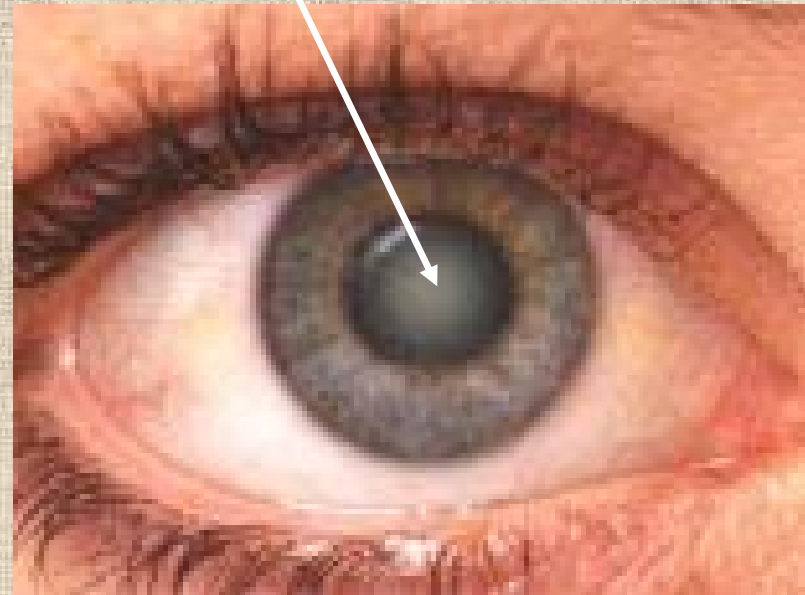
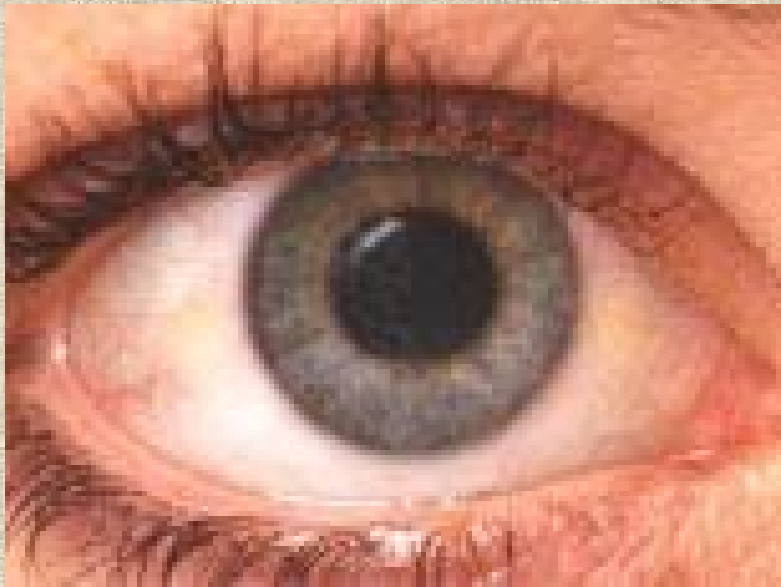
- There are **four** different types of cataracts
 1. Age-related cataract: Most cataracts are related to **aging**
 2. Congenital cataracts: Some babies are born with cataracts or develop them in **childhood**, often in both eyes. These can lead to blindness or may not affect vision at all
 3. Secondary cataract: Development in people who have certain other health issues, such as **diabetes** or things such as **steroid use**
 4. Traumatic cataract: cataracts which develop after an **eye injury**

What causes a Cataract?

- This is a somewhat complicated subject
 - a) **Aging** of the lens is caused by oxidation (the formation of free radicals)
 - b) **Free Radicals**: A molecule which has lost an electron and will do anything to get it back
 - They attack the protein of the lens, steal a hydrogen and cause oxidative damage. This leads to a snowball effect
 - The **protein then clumps together** and the **lens begins to cloud, blocking some light from reaching the retina and clouding vision**
- **Speed of oxidation is increased by:**
 1. Smoking /Alcohol use
 2. Diabetes
 3. Excessive exposure to ultraviolet sunlight

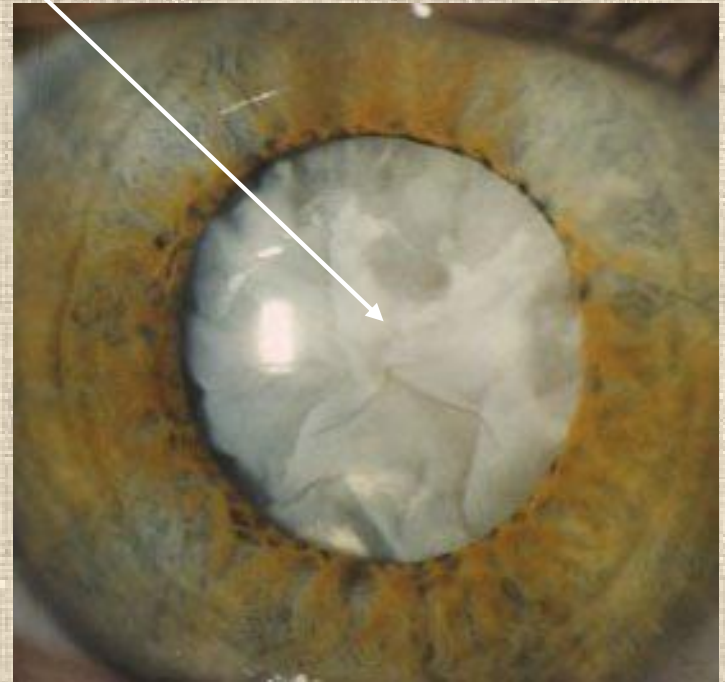
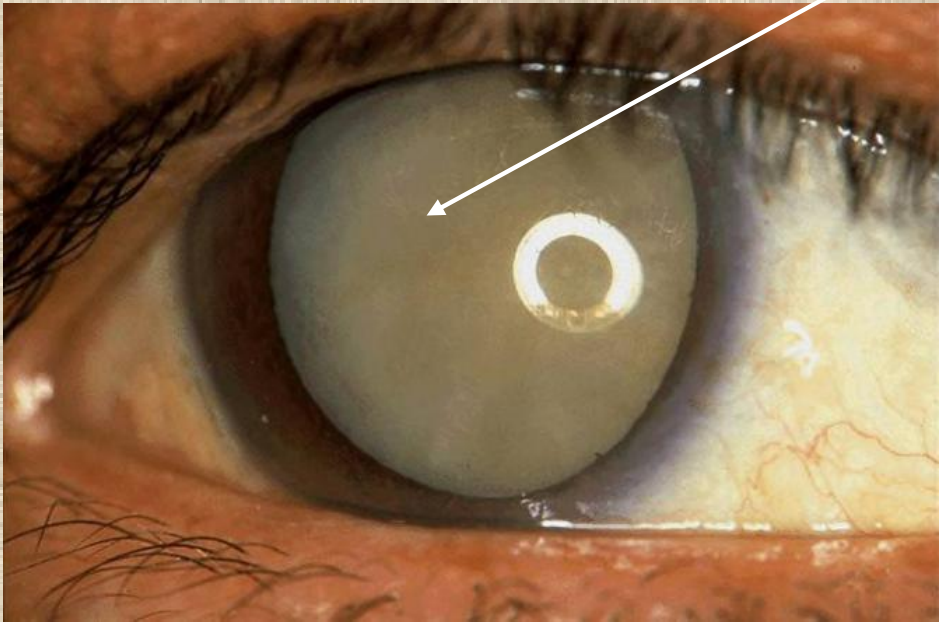


What does a mid-stage cataract look like?



The type of cataract you have will

What does a late-stage cataract look like?



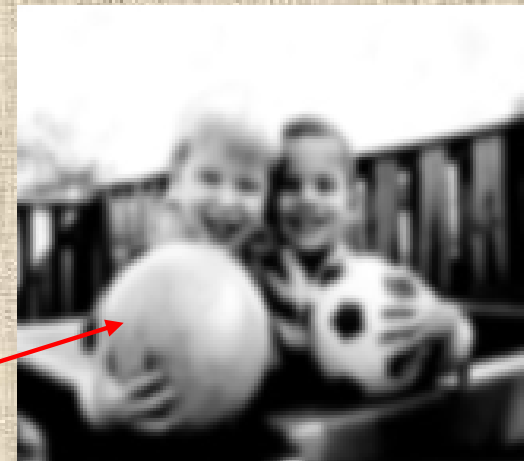
How an early stage cataract effects vision



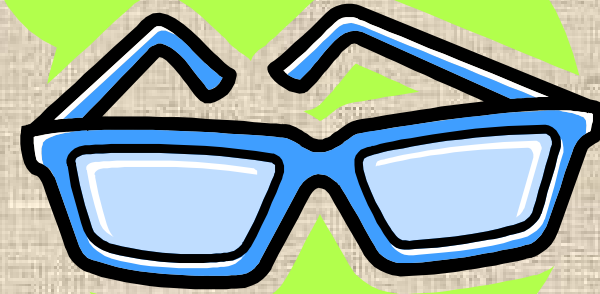
Normal vision



Vision through a cataract



Symptoms



- Cloudy, fuzzy, foggy or filmy vision
- Changes in the way you see colors
- Problems driving at night because headlights seem too bright
- Problems with glare from lamps or the sun
- Frequent changes in your eyeglass prescription
- Double vision
- Better near vision in those who are farsighted
 - As the lens becomes cloudier the optics of the eye change this may actually allow people who once needed glasses to be able to read without them

Cataract Detection

Eye examination



- **Visual acuity test:** This eye chart test measures how well you see at various distances
- **Pupil dilation:** the pupil is widened with eye drops to allow your eye doctor to see more of the lens and retina and look for other eye problems
- **Tonometry:** This is a standard test to measure fluid pressure inside the eye

How are cataracts treated?

- For early cataracts

- Vision may be improved by:

- Using different eyeglasses
- Magnifying lenses
- Stronger lighting



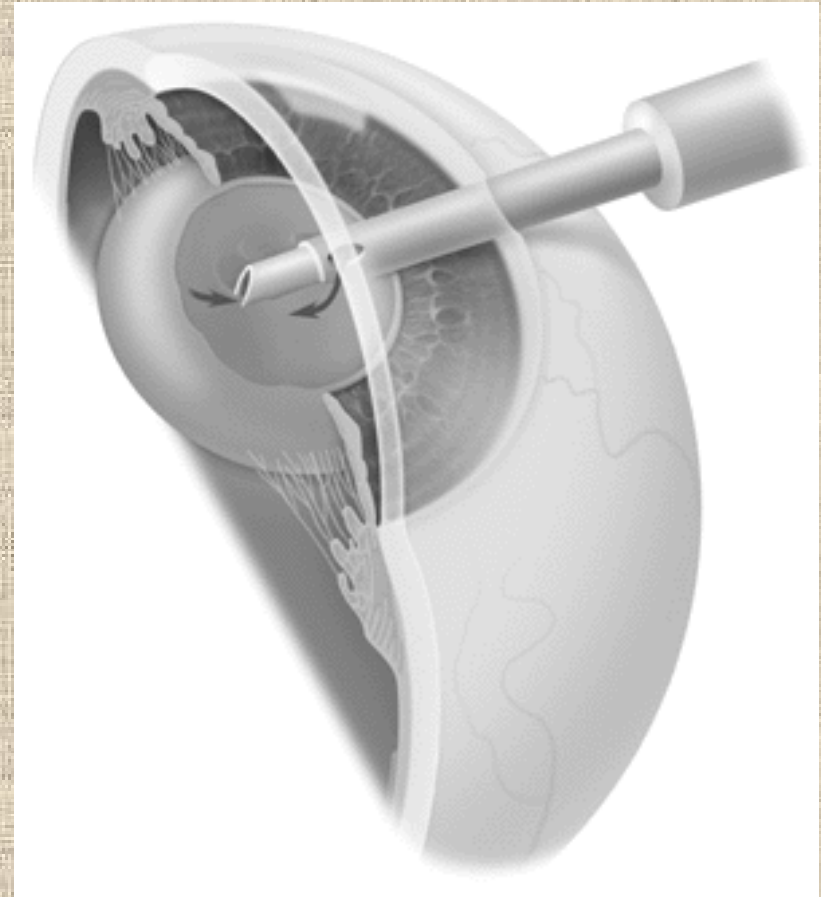
- If these measures do not improve quality of life, surgery is the only option

- Involves the removal of the cloudy lens and replacing it with a substitute lens

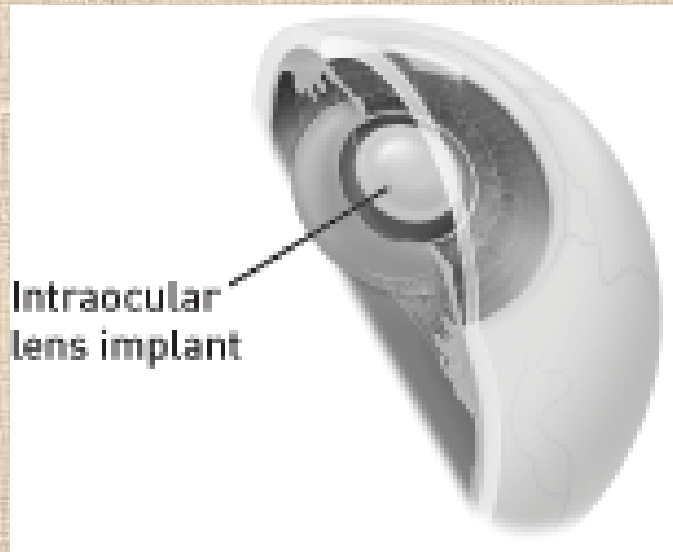
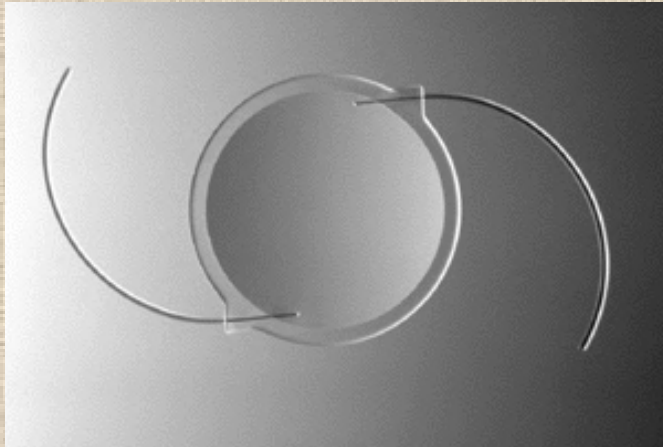
A cataract needs to be removed only when vision loss interferes with everyday activities such as driving, reading or watching TV

How is a cataract removed?

- **Phacoemulsification:**
The most common method of removal. Phaco involves a small incision on the side of the cornea. A tiny probe is inserted which emits ultrasound waves that soften and break up the cloudy center of the lens so it can be removed with suction



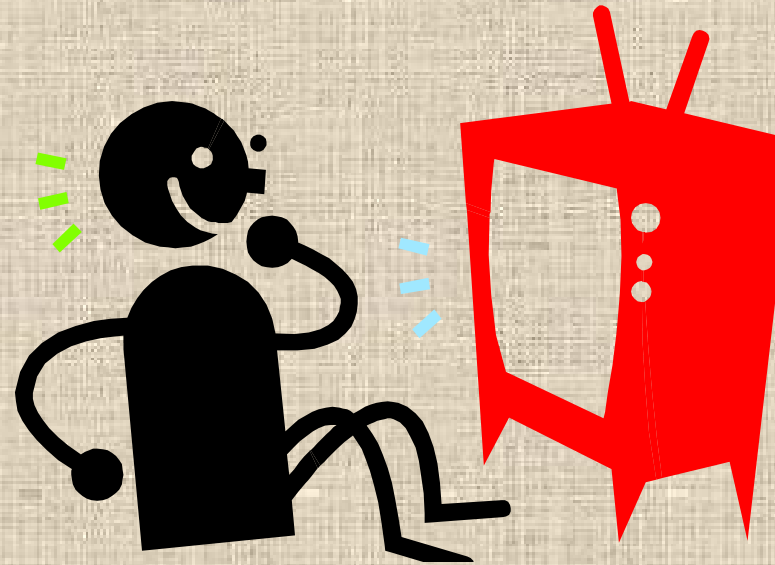
Intraocular Lens



- After the lens is removed a clear, artificial lens called an Intraocular lens (IOL) is required. The IOL becomes a permanent part of the eye and must last the rest of the patients life

Benefits of Cataract Surgery

- Improvements in activities
 - Driving
 - Watching TV
 - Reading
 - Working
 - Moving around
 - Social activities
 - Hobbies
 - Safety
 - Self-confidence
 - Independence



BUT....



Risks of Cataract Surgery

- **Possible complications:**
 - High pressure in the eye
 - Blood collection inside the eye
 - Infection inside the eye
 - Artificial lens damage
 - Drooping eyelids
 - Retinal detachment
 - Severe bleeding inside the eye
 - Swelling or clouding of the cornea
 - Blindness
 - **LOSS OF EYE**

Epidemiology of Cataracts

- According to the World Health Organization cataracts are the number one cause of blindness worldwide
 - 50 million persons in the world are BLIND from cataracts
 - More than half of people over 65 have cataracts
 - 60% of people over the age of 75 have cataracts
 - **If you live long enough you are virtually GUARANTEED to develop a cataract**



Primary Prevention

Intake of dietary antioxidants prevent cataract formation by blocking the oxidative modification of the lens

Vitamins A, C and E

People who had regular daily doses of the antioxidants Vitamin C and E were 32% less likely to have developed cataracts

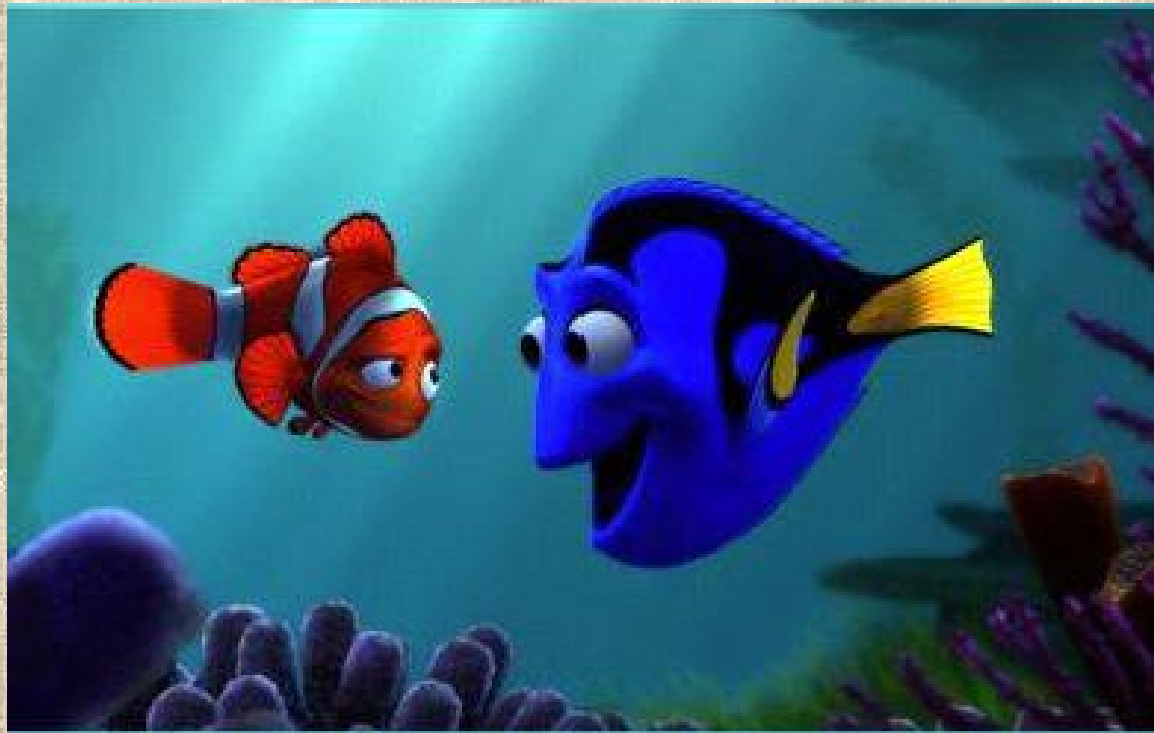
VITAMIN A



VITAMIN C



VITAMIN E



What can I do to protect my vision?

- **Wearing sunglasses** and a hat with a brim to block ultraviolet sunlight may help to delay cataract.
- If you smoke, **stop**. Researchers also believe good nutrition can help reduce the risk of age-related cataract.
- They recommend **eating** green leafy vegetables, fruit, and other foods with antioxidants



What can I do to protect my vision? Cont...

- If you are age 60 or older, you should have a comprehensive dilated **eye exam** at least once every two years.
- In addition to cataract, your eye care professional can **check** for signs of age-related macular degeneration, glaucoma, and other vision disorders.

Early treatment for many eye diseases may save your sight.

THANK
YOU