

Why Grandma Can't See
Or
Common Vision Problems of
the Elderly
And
What Can Be Done to Prevent
Them



Grandma

- First a word about seeing
- Eye as a camera analogy
 - Out of Focus
 - Nearsighted
 - Farsighted
 - Dirty Lens
 - Cornea cloudy
 - Lens cloudy
 - Bad Camera Film
 - Retinal Disease
 - Bad Connection/
 - Optic Nerve Disease
- The Macula/Bull's Eye

Histoplasmosis

- *Histoplasma capsulatum-*
- *Fungus only able to grow in the Ohio River/Upper Mississippi River Basins*
- *Birds are the primary carrier.*
- *Transmitted to humans from bird feces and contaminated soil, unwashed fruits and vegetables.*
- *Inhaled by humans*
- *The primary infection is the lungs*
- *Spores from the lungs travel to the eyes via the circulatory system*
- *The spores lodge in the tiny capillaries in the choroid*

Treatment:

- None
 - If the central vision is not at risk.
- Laser treatment if central vision is not at risk
- VEGF Injection if central vision is at risk or is involved.

Prevention:

- Wash all vegetables
- Wear a mask when digging or working in the soil

- Wear a mask if working with birds-chickens, pigeons etc.

Cataracts

- The incidence is 100%
- If you live long enough you will have cataracts.
- Some will not get bad enough to require treatment.
- A cataract is the clouding of the crystalline lens.
- Causes-
- UV absorption
- Diet
- Other medical conditions
- Genetics
- Treatment
 - [Surgery](#)
 - Implant-
 - Permanent
 - Bifocals are available
 - Autofocusing Implants are in development
 - Astigmatism implants are available
- Prevention
 - UV Protection
 - Lutein?
 - Don't Smoke, quit smoking
 - Healthy Diet

Diabetic Retinopathy

- The number 1 cause of adult blindness
- The longer someone has diabetes the more risk there is of diabetic retinopathy
- The more volatile the glucose levels are the greater risk there is of diabetic retinopathy.
- Cause:
- High glucose levels cause damage to the tiny blood vessels (capillaries)
 - These can cause microaneurysms

- Serum leakage
- Hemorrhages
- Neovascularization (new, fragile blood vessel growth)
- Treatment
 - Laser
 - VEGF Injection
- Prevention
 - Weight control
 - Healthy Diet
 - Exercise
 - Good glucose control
 - A1C 6-6.5

Macular Degeneration

- Causes
 - Genetics
 - Smoking
 - High fat diet/fried foods
 - UV exposure
 - More Prevalent among Caucasians
- Two Forms
- Dry
 - Accumulation of metabolic debris in the retina.
 - Damage to the light sensing layer of the retina in the area of the macula.

- Causes dim areas of the central vision.
- Gradually causes functional blindness
- Wet
 - Accumulation of metabolic debris causes damage to the layer underneath the retina: the choroid.
 - Vessels from the choroid leak fluid into the macula
 - Causes distortion in the central vision.
 - Eventually this leads to hemorrhaging of the blood vessels into the macula
 - More rapid vision loss than with dry
- Treatment:
 - Dry-
 - Antioxidant Multivitamins-Ocuvite, I Caps, ETC.
 - Caveat-Some people are genetically unable to metabolize the zinc in these preparations. This can cause actual acceleration of the vision loss.
 - In FDA trials-gene therapy
 - Wet-
 - Laser
 - VEGF injections

Glaucoma

- Optic Nerve Damage with corresponding visual field loss due to intraocular pressure which is sufficiently higher than the perfusion pressure of the retinal nerve fibers.
- Intraocular Pressure (IOP)
- Optic Nerve Damage
- Visual Field Loss
- Causes:
 - More prominent among those of African and Hispanic origin.
 - More prevalent with age.
 - Genetics
- Prevention:
 - None?

- Early Diagnosis is critical and often difficult
 - IOP above 21~24
 - IOP difference of 4 or more
 - IOP with greater than normal daily variation
 - Optic nerve changes
 - Optic nerves that are not mirror images

Fuch's Corneal Dystrophy

- More prevalent among women
- Genetic
- Worsens with age
- There is damage to the endothelium
 - Metabolic Debris accumulates in this layer
 - The endothelium controls the fluid level of the cornea
 - When the fluid gets too high the cornea gets cloudy
 - Treatment:
 - Hypertonic Saline drops and ointments
 - Surgery-Corneal Transplant
 - Lamellar-full thickness
 - Posterior Only
 - DSEK
 - DMEK

Stroke

- Cardio-vascular accident may affect every aspect of vision depending on where the infarct occurs.
- Peripheral Vision Loss

- Loss of Eye Muscle Control
- Can Occur Inside the Eye
 - Branch Retinal Vein Occlusion
 - Branch Retinal Artery Occlusion
- Treatment
 - Early diagnosis and treatment greatly enhances the chances of preserving vision
 - VEGF Injections
 - Laser
 - Steroid Injection
- Prevention
 - Cholesterol Control
 - Control Hypertension
 - Healthy Diet
 - Exercise
 - Aspirin