Visual Impairments

1) **Totally Blind** – can distinguish light & dark but not shapes or less
2) **Partially Sighted** – best correction = 20/200 &/or visual field of 5^0
3) **Partially sighted** – best correction = 20/600 to 20/200 &/or field of vision of 20^0
4) **Legally Blind** – visual acuity of 20/200 or less with correction

Macula is 100x more sensitive to detail than Peripheral vision

Macular Degeneration

Degenerative
Central area blindness/blank spots in central vision
Affects detail vision / blurred vision

Causes:
Age or anytime
Thinning of macular tissue
Abnormal blood vessels - hemorrhage

Therapy:
Surgery can halt degeneration

Amblyopia

Uncorrectable poor vision (not disease related)
Congenital or can develop any time

Symptoms:
Eye Turn
Cloudiness

Tunnel Vision

Vision of 20^o or less in best eye – narrow vision

Causes:
RP
Glaucoma

Dry Eye

Constant tears
Reflex Tears

Causes:
Absent of faulty blinking
Age
Dry environment / contact lenses
Medications
Disease affecting tear glands

Meds:
Eye drops

Albinism

Hereditary, Congenital
Lack of Normal pigment in part or all of the body

Symptoms:
White hair
Fair skin,
light sensitive
Imperfect retina – possible poor vision
Nystamus – oscillation of the eye

Diabetes

Lack of hormone insulin or inability to use insulin

Insulin Dependent

Type 1 – Juvenile onset-produces little or no insulin
Requires daily insulin injections

Non- Insulin Dependent

Type 2 – Adult onset – insufficient insulin
Controlled by diet & exercise
Oral meds:

Affects of Disease:

Poor circulation, vision loss, **hypertension**, weakness, hyperglycemia, possible amputation, possible amputation due to tissue death (necrosis) ****Seizures possible**
Macular degeneration, Diabetic Retinopathy

Corneal Disease

Injury or disorder with cornea
Degenerative vision loss

Causes:
Injury
Disorder in cones
Ulcers causing scaring or perforation of cornea

Therapy:
Corneal transplant – can often restore vision to near normal

Aniridia

Iris fails to fully develop
Large pupil

Symptoms:
Difficulty adapting to different light situations
Inability to control light entering eye

Aphakia

Missing lens

Cataracts

Degenerative
Clouding of the lens –blocks passage of light

Causes:
Congenital, hereditary, age, retinal disease, chemical burns

Symptoms:
Poor or cloudy vision
Cloudy lens / opaque lens
Vision worse in the sunlight

Surgery can correct by removing or replacing the lens

Color Blindness

Cones in retina are missing or damaged

Usually Red & Green, occasionally all colors
Mostly in Males

Causes:
Hereditary
Poison
Retinal Disease
Damage to Optic Nerve
Damage or lack of cones

Congenital Visual Impairment of Eye

Defects of iris, retina, cornea, lens, or optic nerve
Vision loss

Causes:
Hereditary
Disease
Lack of nutrition during pregnancy
Spontaneous chromosome mutation
Congenital

Types:
Glaucoma
Small eyes
Albinism
Tunnel vision
Myopia
Hyperopia
Diplopia
Retinitus Pigmentosa

Diabetes (continued)

Insulin shock symptoms:
Hypoglycemia = low blood sugar – **give sugar**
Pale, moist skin, rapid pulse, headache, confusion, weakness, trembling

Diabetic Shock symptoms:
Hyperglycemia =High blood sugar = shock → coma

Meds:
Antibiotic: Bactrim, Ceclor, Keflex, Penicillin, Tetracycline

Anticonvulsants: Dilantin, Klonopin, Tegretol, Phenobarbitol

Insulin

Diabetic Retinopathy-Non Proliferative

Macula damage
Occurs usually after 10 yrs of diabetes
Degenerative

Symptoms:
Macular damage
Hemorrhage & scarring on retina
Scars contract and detach retina
Blurred / distorted vision
Deep red veil over visual field/ patchy vision
Decreased acuity

Therapy:
Laser surgery

Strabismus

Eye turn – Peripherally or nasally
Imbalance of eye muscles

Causes:
Congenital disease
Trauma

Therapy:
Laser surgery

Glaucoma (continued)

Acute Glaucoma
Pressure builds rapidly in eye
Damage to optic nerve
Rapid vision loss
Increase flow or production of fluids

Those at Risk: Diabetes, myopia, history

Meds:
Eye drops (pills no longer used)
Timalol - beta blocker (#1 drug of choice)
Xalatan, Travatan, Leunegan - prostaglandins
Alphagan - alpha-agonist
(Pilocarpine hardly used)

Therapy: Early diagnosis & treatment, eye drops, Surgery

Astigmatism

Symptoms:
Cornea is oval like a football instead of spherical
Most astigmatic corneas have two curves – a steeper curve and a flatter curve
Occurs along with nearsightedness or farsightedness
Blurred vision (near and distance)
Due to light being focused on more than one point

Therapy:
Glasses / contacts
Surgery to reshape the cornea so it becomes more spherical or uniformly curved
via- astigmatic keratotomy or LASIK

Macular Edema

Fluids collect in macula
Macula is central vision – acuity (for reading)

Causes:
Blood vessels leak
Swelling of the macula
Diabetes
Hypertension

Symptoms:
Blurred vision
Distortion
Cloudiness

Myopia

Nearsightedness

Cause:
Eyeball too long
Too much power in cornea or lens

Therapy:
Corrective glasses

Nystagmus

Oscillation of the eyes
Inability to focus causes rapid eye movement

Causes:
Congenital
Trauma
Neurological disease
Diabetes
MS

Diabetic Retinopathy-Proliferative

Serious due to macular damage
Severity related to duration or stability
Degenerative

Symptoms:
Retinal Detachment
Possible total vision loss
Macular damage
Hemorrhage in retina
Blurred / distorted vision
Deep red veil over visual field/ patchy vision
Decreased acuity

Therapy:
Laser surgery

Optic Atrophy

Optic nerve fibers atrophy

Symptoms:
Poor night vision
Reduced visual acuity
Defective color vision

Glaucoma

Increase pressure→nerve damage→vision loss

Symptoms:
Blurred vision / foggy vision – eventual vision loss

Chronic Glaucoma
> age 40
Diabetes
Myopia
Hereditary
Increase flow or production of fluids = increase in pressure
Gradual vision loss

Optic Nerve Disease

Possible loss of vision
Range from mild to enlarged blind spot

Causes:
Congenital disease
MS – most common
Tumors
Glaucoma
Hypertension – high blood pressure
Diabetes
Nutritional deficiencies
Chemical Poisoning

Retinal Breaks / Detachments

Degenerative
Separation of retina (rods & cones) from back of eye
Fluids through tear and separates from back of eye
Fluids reduce blood flow causing eventual total blindness
Painless

Causes:
Normal degeneration
Trauma
Acute myopia
Uncared for retinal tears

Retinitis Pigmentosa – "RP"

Progressive degeneration of rods & cones of retina (light receptors)
Hereditary -from childhood

Symptoms:
Night blindness-degeneration of light receptors
Both eyes
Vision loss - Progressive to tunnel vision-lose peripheral
1st – ring shaped area of vision loss

Causes:
Abnormal deposits of pigment on retina
Retinal sensors are destroyed
Rods are affected more than cones
black & White vision
Total blindness, cataracts, macular degen. can occur
No treatment