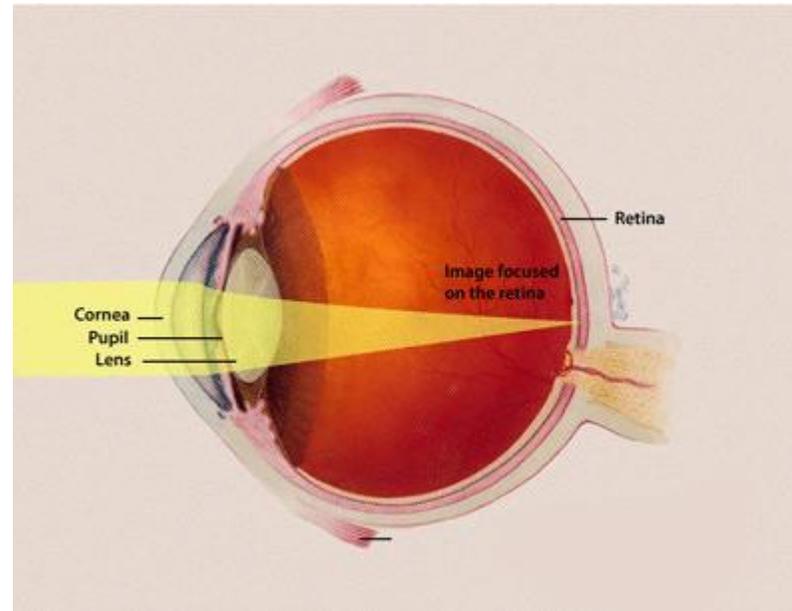


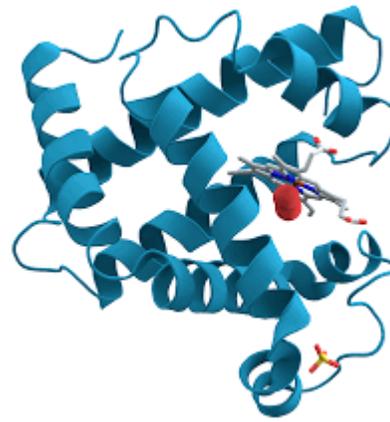
Facts About Retinitis Pigmentosa

What is retinitis pigmentosa?

- ▶ Retinitis pigmentosa (RP) is a group of rare, genetic disorders that involve a breakdown and loss of cells in the retina.
- ▶ Common symptoms include difficulty seeing at night and a loss of side peripheral vision.



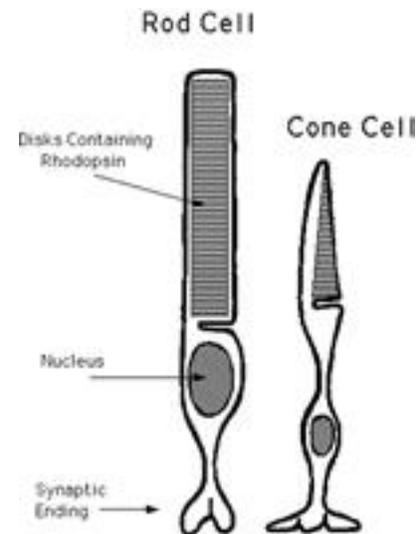
What causes RP?



- ▶ RP is an inherited disorder that results from harmful changes in any one of more than 50 genes.
- ▶ These genes carry the instructions for making proteins that are needed in cells within the retina, called photoreceptors.
- ▶ Some of the changes, or mutations, within genes are so severe that the gene cannot make the required protein or the protein made can be toxic to the cell limiting the cell's function.
- ▶ Overall these mutations are bad for your photoreceptors.

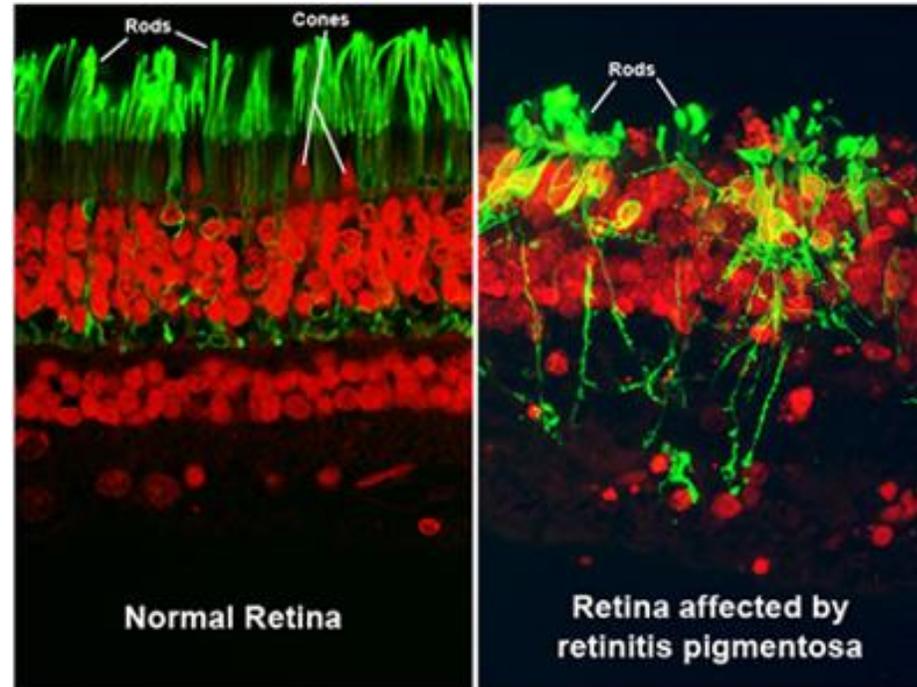
What are photoreceptors?

- ▶ They are cells in the retina.
- ▶ They absorb and convert light into electrical signals, which are then processed into the images we see.
- ▶ There are two types of photoreceptors, called rods and cones. They were named after their shapes.



How does RP affect vision?

- ▶ Early on during RP the rods are more severely affected than cones.
- ▶ The rods eventually diminish because of death which causes night blindness.
- ▶ The loss of rods make cones then susceptible to death which hinders vision even more.
- ▶ When the cones die off in RP people develop tunnel vision as they lose all or most of their visual field.



Explain the words

▶ **Homozygous** - Having 2 of the same forms of a gene.

i.e. $+/+$ or having blue eyes genes from both your parents.

▶ **Heterozygous** - If a person is heterozygous they have 2 different forms of a gene one from their mother and one from their father.

i.e. $+/-$ or one blue eye gene and one brown eye gene.

▶ **Agonist** - A drug in which involves a response in a cell.

E.g. **heroin, oxycodone and methadone.**

▶ **Antagonist** - A drug which does not involve a response in a cell.

E.g. Naltrexone and naloxone. Used to treat respiratory depression caused by opioids.

The following are examples of other common sight problems.

Diabetic Retinopathy



Normal vision



Same scene as viewed by a person with diabetic retinopathy

Age-Related Macular Degeneration (AMD)



Normal vision

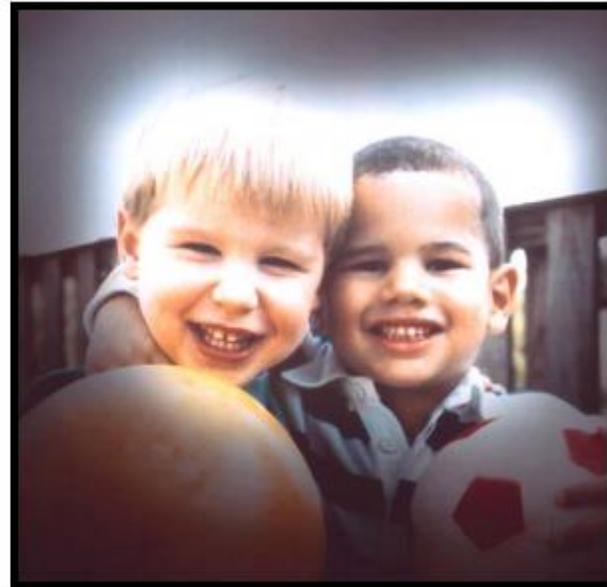


Same scene as viewed by a person with AMD

Glaucoma



Normal vision



Same scene as viewed by a person with glaucoma