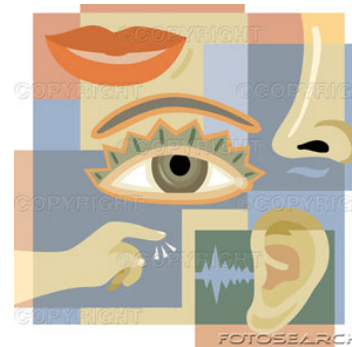


# 35 - The Senses

## Learning objectives

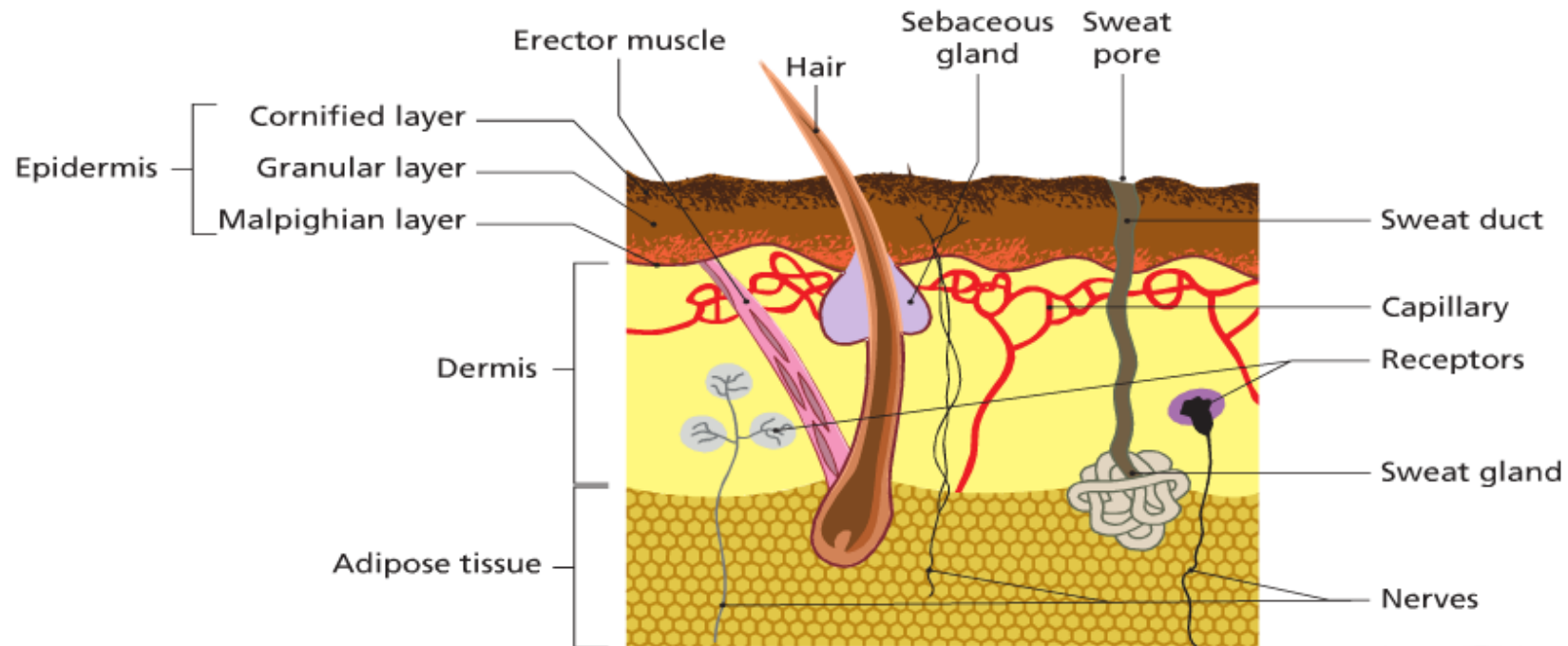
- To describe the senses in relation to the brain
- To describe the structure and function of the eye and the ear
- To describe corrective measures for long and short sight or for a hearing defect.

1. Touch
2. Taste
3. Smell
4. Sight
5. Hearing



# Touch

The skin is the organ of touch and temperature. It has receptors that do the sensing. These are found at different concentrations in various locations around the body.



# Taste

The tongue is the organ of taste.  
Taste buds in the tongue can detect tastes in different parts.



# Smell

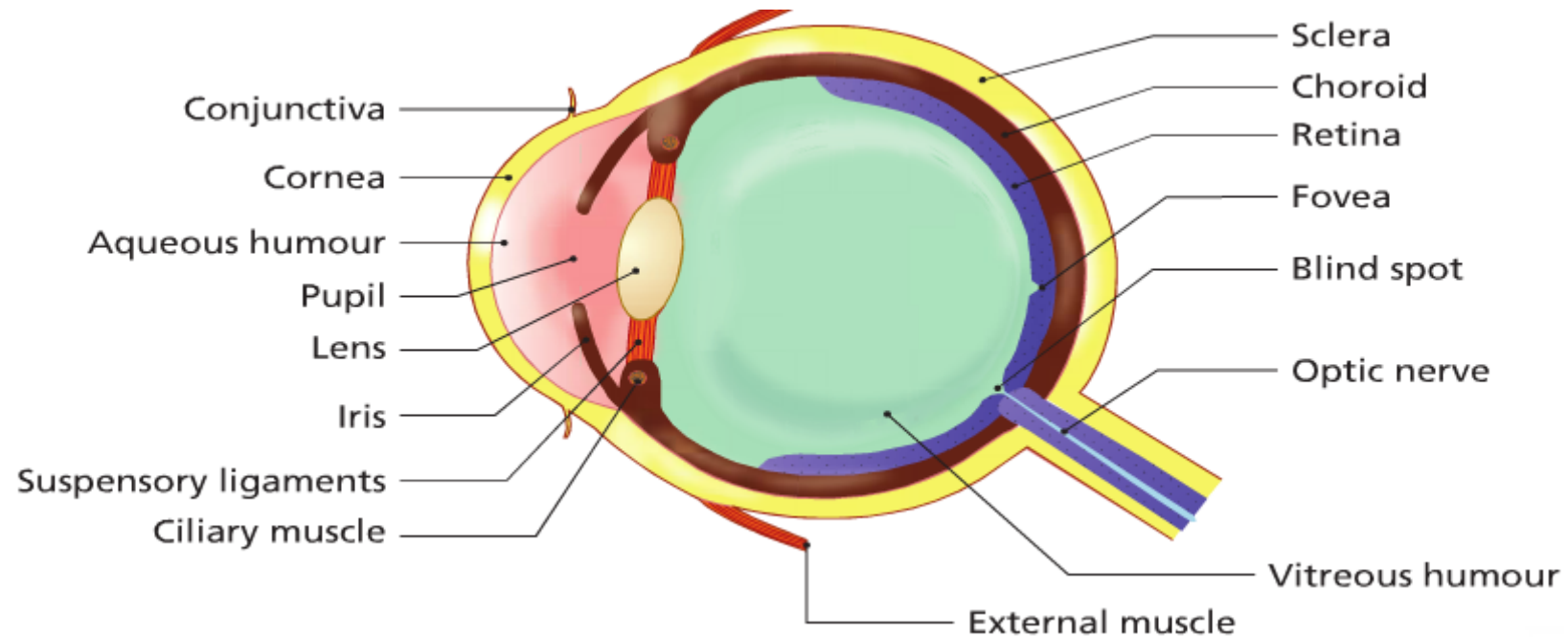
The nose is the organ of smell.  
Olfactory neurons in the nose detect many different smells.



A dog's sense of smell is  
10,000 times better than ours.



## Parts of the Eye

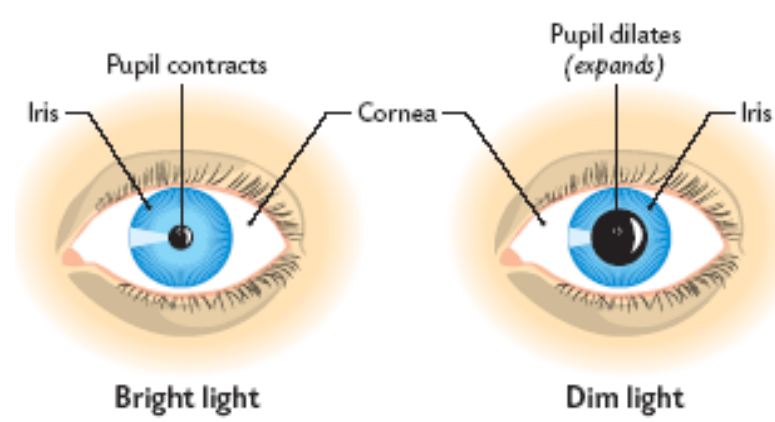


**Cones** - cells in the retina that see in colour

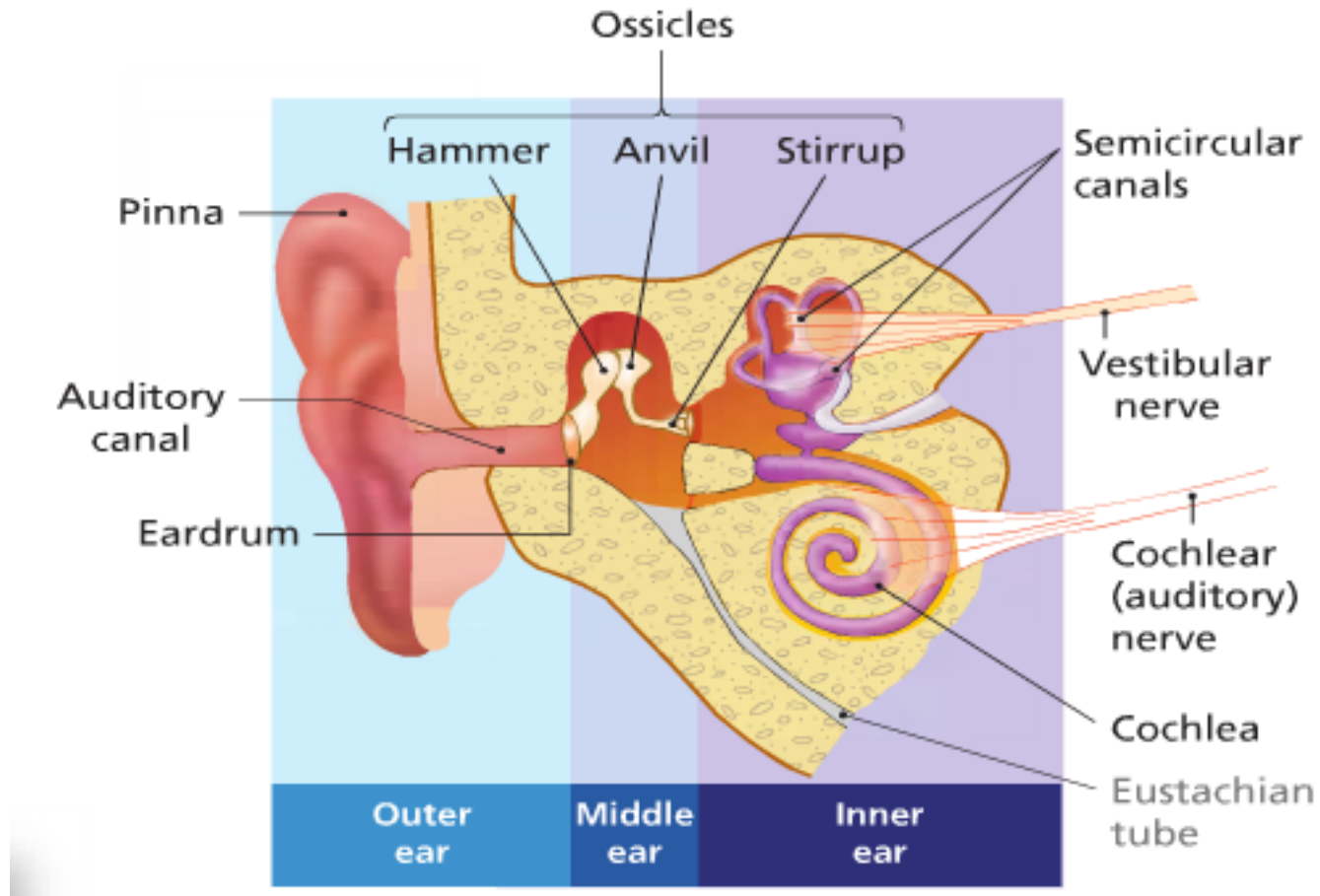
**Rods** - cells in the retina that see in black and white

# Sight

- The conjunctiva - membrane around the eye, for protection
- The sclera - tough, white coat that holds the eye in shape
- The cornea - front part of the sclera. Lets light in and bends and focuses it onto
- The retina - which is light sensitive.
- The fovea - the part of the retina where most of the images are focused
- The blind spot - where the optic nerve leaves the retina, has no rods or cones
- The optic nerve - carries impulses to the brain
- The lens - focuses light onto the retina
- The iris - coloured part of the eye which controls the amount of light let in
- The pupil - is the black circle at the front of the eye, lets light into the eye
- The ciliary muscles - change the shape of the lens (accommodation) to focus
- The aqueous and vitreous humours - keep the eye in shape



# Parts of the Ear



# Hearing

- The pinna collects vibrations
- The auditory canal carries vibrations to the eardrum
- The eardrum carries vibrations to the middle ear
- The 3 small bones or ossicles (called the hammer, anvil and stirrup) amplify (increase) the vibrations and pass them onto the oval window.
- The cochlea converts the vibrations into electrical impulses that are sent to the brain along the auditory nerve.
- The Eustachian tube (is not really part of the ear but connects the middle ear with the pharynx and equalises pressure between the middle and outer ear.

## Hearing Disorder

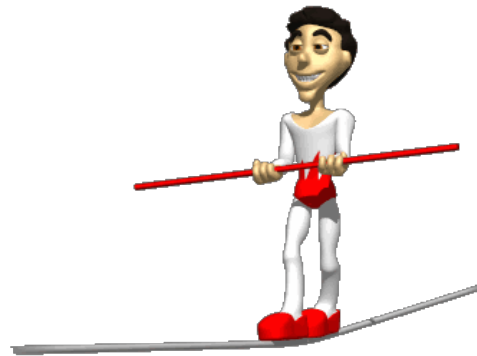
**Glue ear** is a common disorder in young children. A sticky substance builds up in the inner ear causing some deafness.

Correction - this is done by giving decongestants or by a small operation to place tubes (**grommets**) into the ears to keep the ears open.



## The Ear and Balance

The vestibular apparatus controls your balance. There are 3 semi-circular canals that have fluid in them. The fluid moves as we move and tells us where balance is. If the tubes are blocked by infection then the fluid can't move and we lose our balance.





## Julian Beever



**Julian Beever**



## Attachments

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Optical.exe

colour\_illusion.wmv