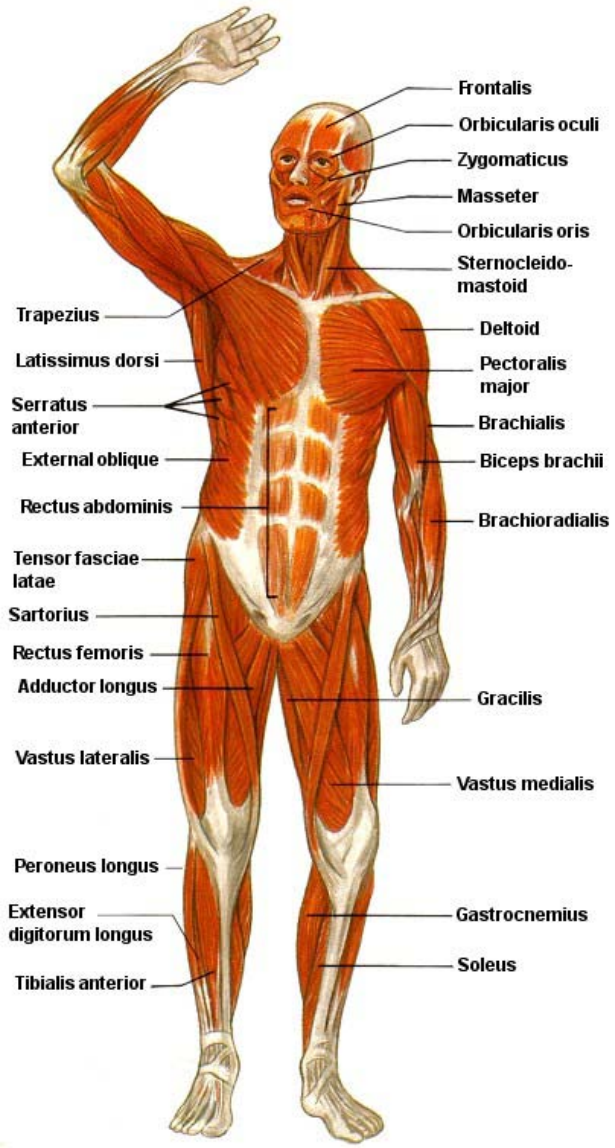
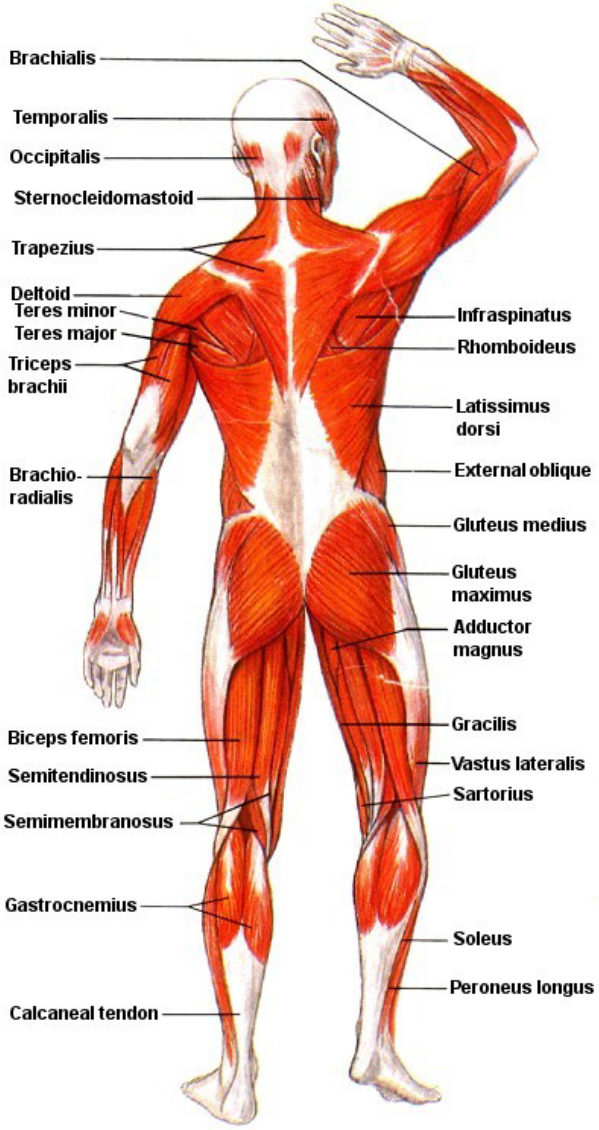


Anterior view



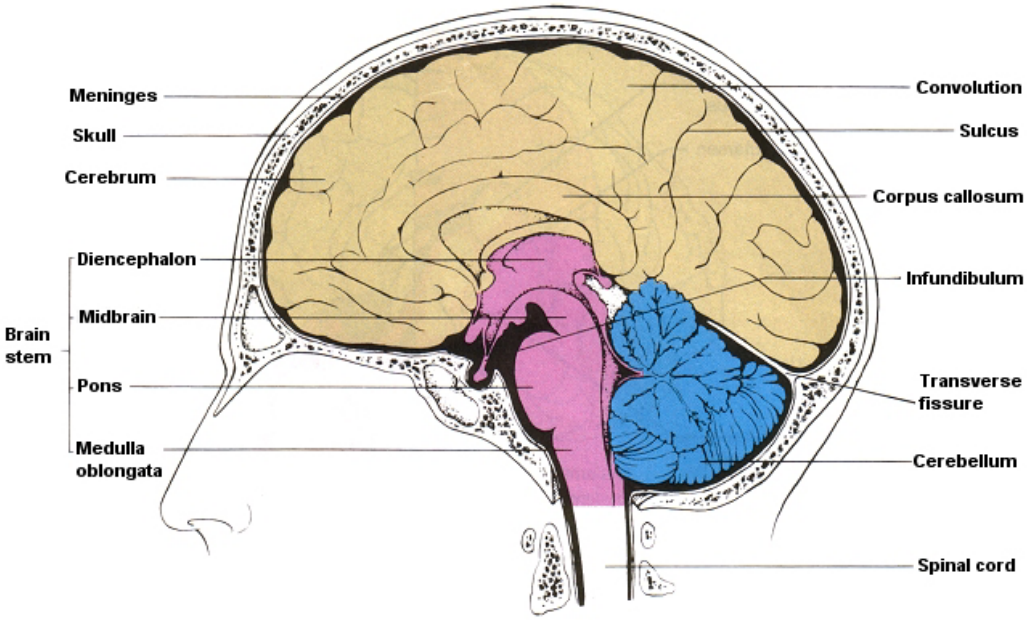
Posterior view

THE NERVOUS SYSTEM

The nervous system is concerned with the integration and control of all bodily functions. It makes it possible for us to be aware of our environment and to respond to changes within that environment.

It consists of the brain, spinal column and nerves. Some of these carry messages from the tissues to the brain and others from the brain to the tissues.

Incoming messages are carried by sensory nerves and the brain is able to interpret such messages in the light of experience. Outgoing messages from the brain are carried by motor nerves and result in movement and activity.



Section through the Brain

The Central Nervous System consists of:

- The Brain and Cranial Nerves
- The Spinal Cord and Spinal Nerves

The Brain

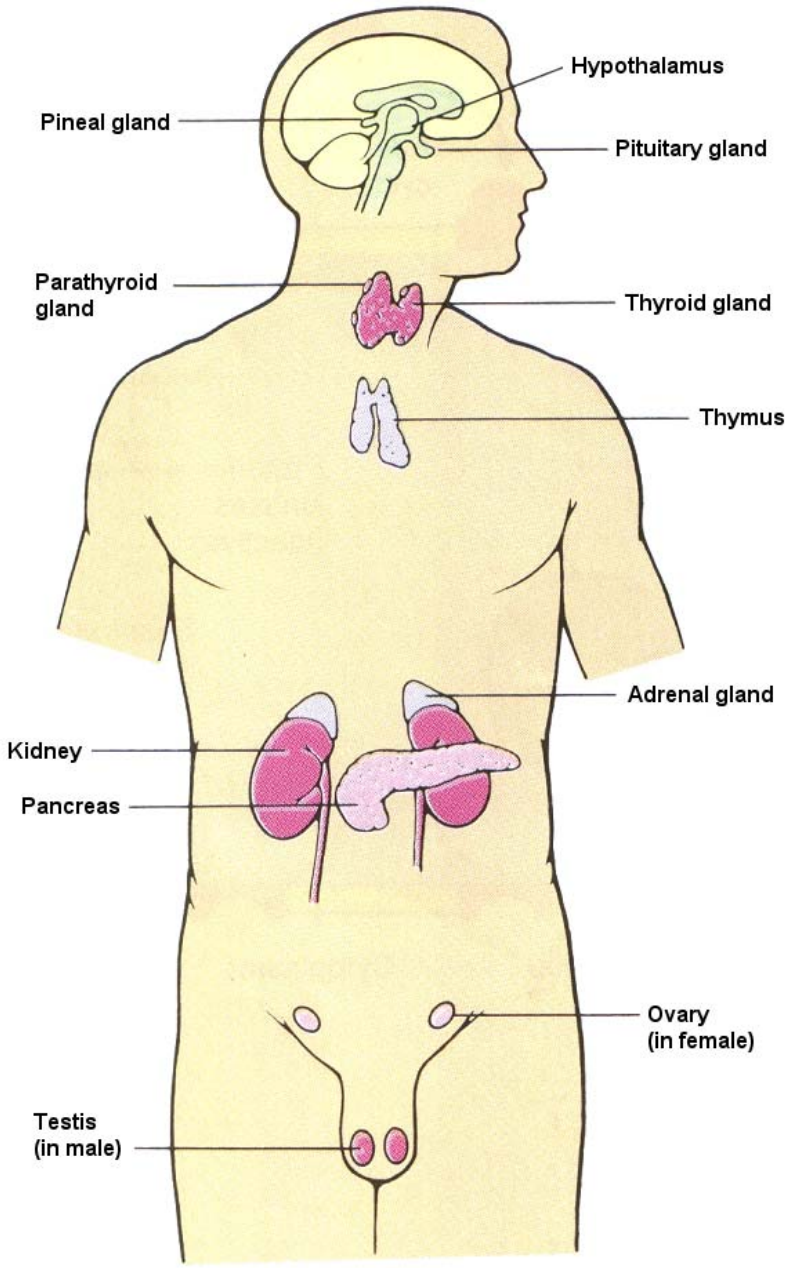
There are three parts to the brain:

- The Cerebrum
- The Cerebellum
- The Brain Stem

THE ENDOCRINE SYSTEM

Endocrine glands are ductless glands, so called because the secretions they make do not leave the glands through ducts, but pass directly into the blood circulating through the substance of the glands.

The active principle of the secretion of an endocrine gland is called Hormone. Some glands produce a single hormone, whereas others produce two or more.



Major Endocrine Glands

The following is a list of endocrine glands:

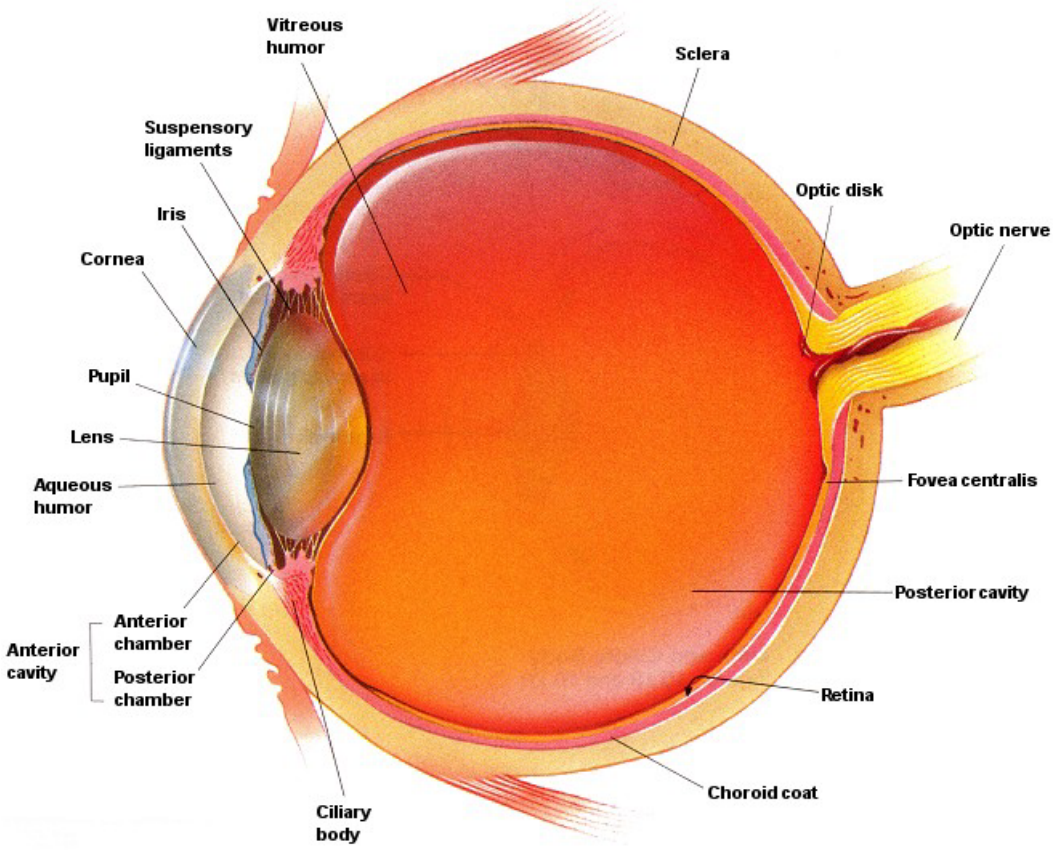
- Pineal
- Pituitary
- Thyroid
- Parathyroid
- Adrenal
- Parts of the Pancreas
- Parts of the Ovaries and Testes

THE SPECIAL SENSES

The special senses are taste, touch, smell, pain, temperature, sight and hearing.

THE EYE (ORGAN OF SIGHT)

The eye receives rays of light reflected from objects stimulating the nerve ending in the eyeball. The optic nerve receives these impulses and carries them to the occipital lobe of the cerebral cortex where they are interpreted. The eye is almost spherical in shape and lies in the cone-shaped orbit of the skull, protected by the eyelids anteriorly and a pad of fat posteriorly. The eyeball is attached to the orbit by six small muscles which move the eye in all directions. Both eyes move simultaneously.



The eye has a jelly like centre covered by three outer coats, namely:

- The Sclera and Cornea
- The Choroid (iris)
- The Retina

Vision

Light rays entering the eyeball pass through the cornea, aqueous humour, the lens and the vitreous humour. These substances bond the rays in order to focus on the retina – the end organ of vision.

The lens is adjustable, allowing the rays to be bent as necessary. Looking at a close object requires bending at a greater angle than looking at a distance. For reading, the lens needs to be thicker therefore the ciliary muscles contract and the lens becomes more convex. Hence the eyes become "tired" and need to be rested between reading, e.g. looking into the distance. This focussing of the eye is called accommodation.

The muscle fibres of the iris are circular and radiating. When the light is bright, the circular fibres contract and the pupil constricts. If the light is poor or dark the radiating muscles contract and the pupils contract to let more light in.

These muscles are controlled by the autonomic nervous system. Sympathetic nerves dilate and the parasympathetic constrict.

THE EAR

This is the organ of hearing. It is constructed in such a way as to catch sound waves passing through the atmosphere and transmit them to the hearing centre in the temporal lobe of the cerebral cortex.