

Worksheet for lecture 17

- Draw a simple cross section of the human eye. Label the cornea, iris, pupil, lens, ciliary body, anterior chamber, posterior chamber, vitreous chamber, retina, choroid, sclera, fovea and optic nerve. Add an arrow to your drawing indicating the structures through which light passes before reaching the retina.
- Draw a simple diagram of a cross section of the retina showing the pigment epithelium and the three nuclear layers in the neural retina. Label these layers on the right side of the drawing. On the left side, list the main cell types with nuclei in each of the nuclear layers. Add labels on the right side for the photoreceptor apparatus (inner and outer segments), outer plexiform layer, inner plexiform layer and optic fiber layer. Either add to this drawing or make a new diagram showing the main circuitry of the retina. Show the synapses made by each major type of retinal neuron.
- Make a very simple sketch showing the origin of axons from the nasal and temporal sides of the two eyes, their course through the optic nerve and their decussation pattern at the chiasm.
- Draw a simple diagram of the medial surface of an adult human brain. Show in schematic form at least four of the major sites in which retinal axons synapse in the brain. Label these sites and list a major function of each.
- Draw a simple diagram of the lateral surface of an adult human brain. Color in the small amount of V1 cortex visible in this view. Color in the approximate region of secondary and tertiary visual cortex. Draw arrows indicating the flow of visual information into parietal and temporal cortex. Label both these pathways. Indicate the main type of visual information carried by each.