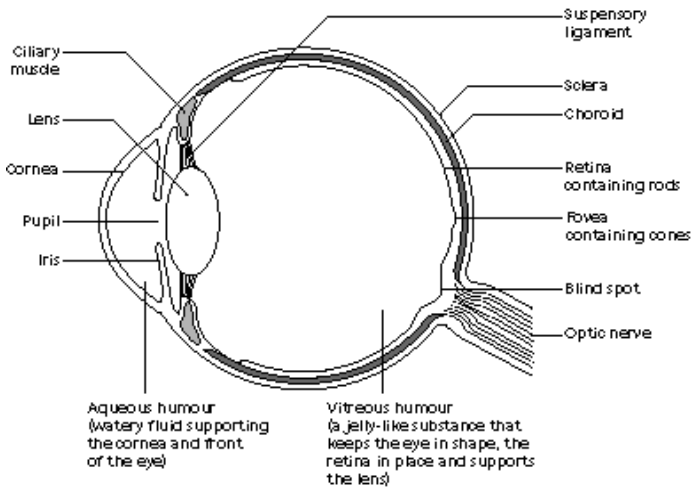
The eye

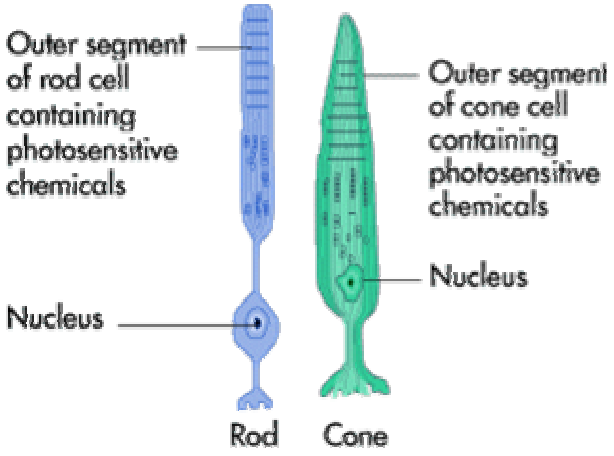


The Sclera	The strong outer layer that hold the eye together. It is soft connective tissue, and the spherical shape of the eye is maintained by the pressure of the liquid inside.
The Choroid	This layer contains the blood vessels that feed every cell of the eye. It also contains the pigmented cells that make the retina appear black.
The Retina	This contains the light-sensitive photoreceptor cells and their associated neurones.
The Cornea	This is a specialised part of the cornea at the front of the eye. It is made of aligned collagen fibres and is transparent and tough.
The Iris	This is made of pigmented cells, which give eye colour, and muscle cells, which control the amount of light entering the eye.
The Lens	This is a transparent, rubbery tissue made of proteins, which crystallise to form a glass-like lens.
The Ciliary body	This supports the lens. It comprises circular muscles and radial elastic fibres called suspensory ligaments. Together theses control the shape of the lens, as described below.
The Humours	These are the names for the fluids inside the eye. The vitreous humour behind the lens is more viscous than the aqueous humour in front of the lens.

The receptor cells: rods and cones

Rods are sensitive to dim light, but provide only black and white vision. The rods are distributed right across the retina.

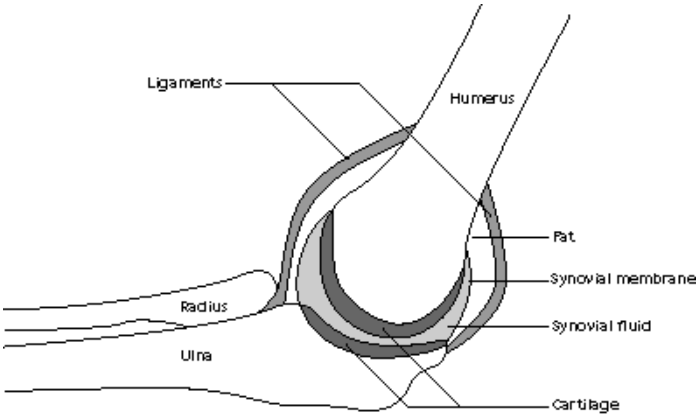
Cones are sensitive only to bright light, and allow colour vision. The cones are concentrated at a point on the retina called the fovea. This is on the principal axis of the incoming light



rays (if you know any physics). It is the point where the focused light will fall.

The retina contains 100 million rods and 7 million cones. The retina is lined with black pigment called **melanin** to lessen the amount of reflection. There are no receptors where the optic nerve leaves the retina; this is your **blind spot**.

The elbow joint



Joints are where two bones meet each other. There are two types: **fibrous** and **synovial** joints.

The diagram shows the human elbow, which is an example of a synovial joint.

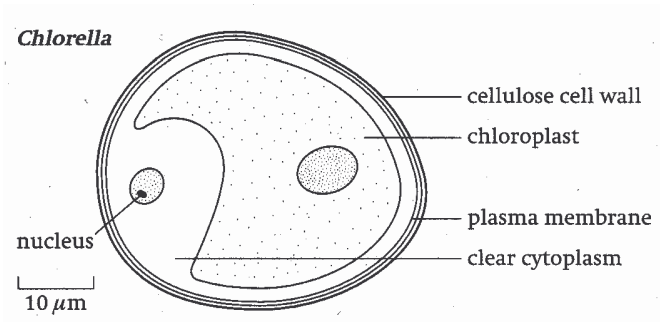
The two bones, the humerus and the ulna, need to move freely so there is no abrasive damage. The cartilage on the end of each bone provides this protection. The bones are held together by strong but elastic structures called **ligaments**. The joint is lubricated by the oily **synovial fluid** which is secreted by the **synovial membrane**.

The elbow is a **hinge joint**: it allows movement in one plane only, up and down, or, if you are holding your arm sideways, left and right.

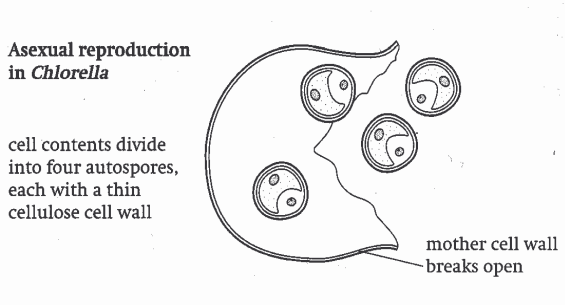
Part of joint	Function
Cartilage	Helps to absorb shock
Synovial fluid	Helps to reduce friction
Synovial membrane	Secretes synovial fluid
Synovial capsule	Keeps synovial fluid in place
Ligament	Joins the bones together
Tendon	Joins muscle to bone allowing movement

Chlorella

Chlorella belongs to the eucaryotic cell category of algae and lives in fresh water as a single celled plant. Its size is about that of a human erythrocyte;i.e.between 2-8 microns in diameter.



Reproduction



Under favorable growth conditions; strong sunlight, pure water and clean air, chlorella multiplies at an incredible rate. The process of reproduction can generally be divided into several steps; growth-ripening-maturity-division. At the division stage, a "mother" cell divides into 4 'daughter' cells.

This complete reproduction cycle can take less than 24 hours.

Single cell protein

This type of biomass is based on protein extracts derived from microorganisms grown in large quantities for either human or animal consumption. The main market for SCP is as protein supplement due to its high protein content containing many essential aminoacids. Its main disadvantage lies in the presence of nucleic acids which in human consumption will give rise to accumulation of uric acid leading to gout.

There are three main commercial reasons for the production of SCP:

1. The rapid growth rate of microorganisms.
2. High feed efficiency.
3. Cheap raw materials.