

every movement in the body is one of three types, and locomotion is only the one that changes place

Movement is broader than locomotion

- movement is any change in the position of a part of the body, or of the whole body
- locomotion is specifically movement that changes the animal's location, walking, running, swimming or flying
- every locomotory movement is a movement, but not every movement is locomotory, a beating heart moves without going anywhere

Three types of movement

Amoeboid

by pseudopodia, seen in some WBCs (leucocytes) and in Amoeba, powered by actin and myosin proteins

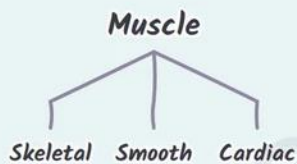
Ciliary

coordinated beating of cilia, moves either fluid over a fixed cell or the cell itself; lines the trachea and the fallopian tube

Muscular

by contraction of muscle, the type behind body locomotion, chewing, breathing movements and pretty much everything visible

Three kinds of muscle *



the three muscle types the body builds. Skeletal is voluntary, smooth and cardiac are involuntary

Skeletal muscle structure

- made of long, cylindrical, unbranched, striated fibres, each fibre a syncytium with many nuclei
- each fibre contains many myofibrils, and each myofibril is a repeating chain of sarcomeres, the actual contractile unit
- a sarcomere alternates thick filaments (myosin) and thin filaments (actin), giving the alternating light and dark bands seen under a microscope

Skeletal vs Cardiac muscle

Skeletal

- **voluntary**, under conscious control
- fibres are unbranched, multinucleate

Cardiac

- **involuntary**, keeps its own rhythm without conscious input
- fibres are branched, joined end to end by intercalated discs

both are striated, so striation alone can't separate them, voluntary control and fibre shape can

