BODY MOVEMENTS

CHAPTER 8

MODULE 3

RECAP

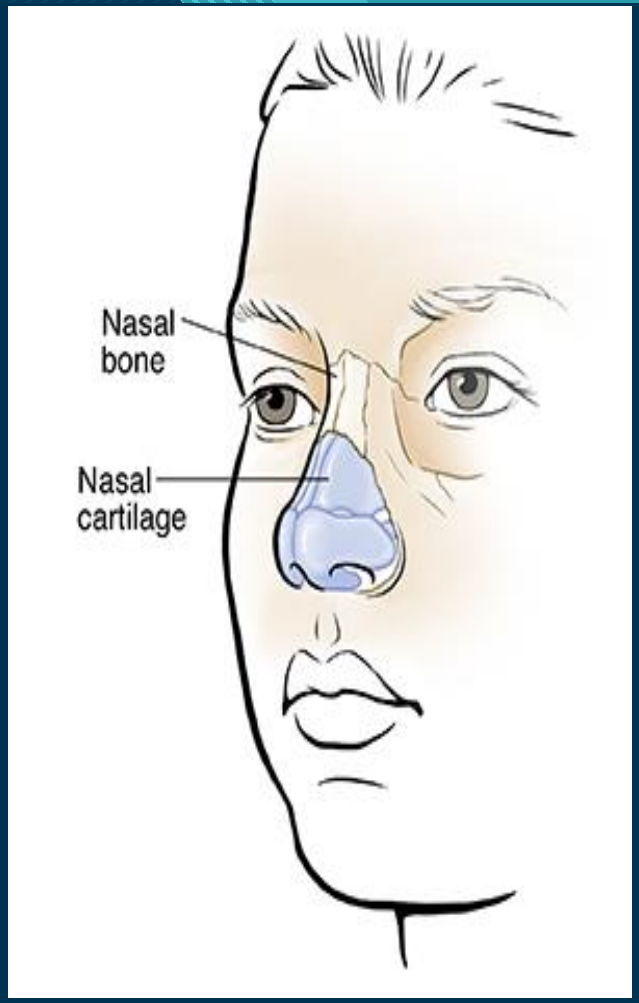
- Locomotion is the main characteristic feature that distinguishes animals from plants
- The system that supports the overall body by providing a definite shape and helps in the movement is known as skeletal system
- The axial skeleton is made of following parts .Skull ,Vertebral column(backbone) and Sternum(breast bone)
- Parts of appendicular skeleton :Girdles and Limbs

CARTILAGE AND MUSCLES

CARTILAGE

- We learnt about bones and joints of our skeleton in the previous modules.
- There are some additional parts of the skeleton that are not as hard as the bones and can be bent. These are called cartilage.
- Cartilage is stiff yet flexible. It acts as a cushion or sponge and absorbs shock at the joints. It is present at joints between bones, the rib cage, the ear, the nose, the elbow, the knee, the ankle etc.

CARTILAGE CONTINUED…



MUSCLES

- Bones can not move on their own. They require the support of muscles for movement. Muscles help the bones to move.
- Muscles undergo contraction and relaxation for bringing about movement.

Try this

- Make a fist with one hand ,bend your arm at the elbow and touch your shoulder with your thumb.You observe a swollen region in the arm. This is muscle.The muscle bulged due to contraction.

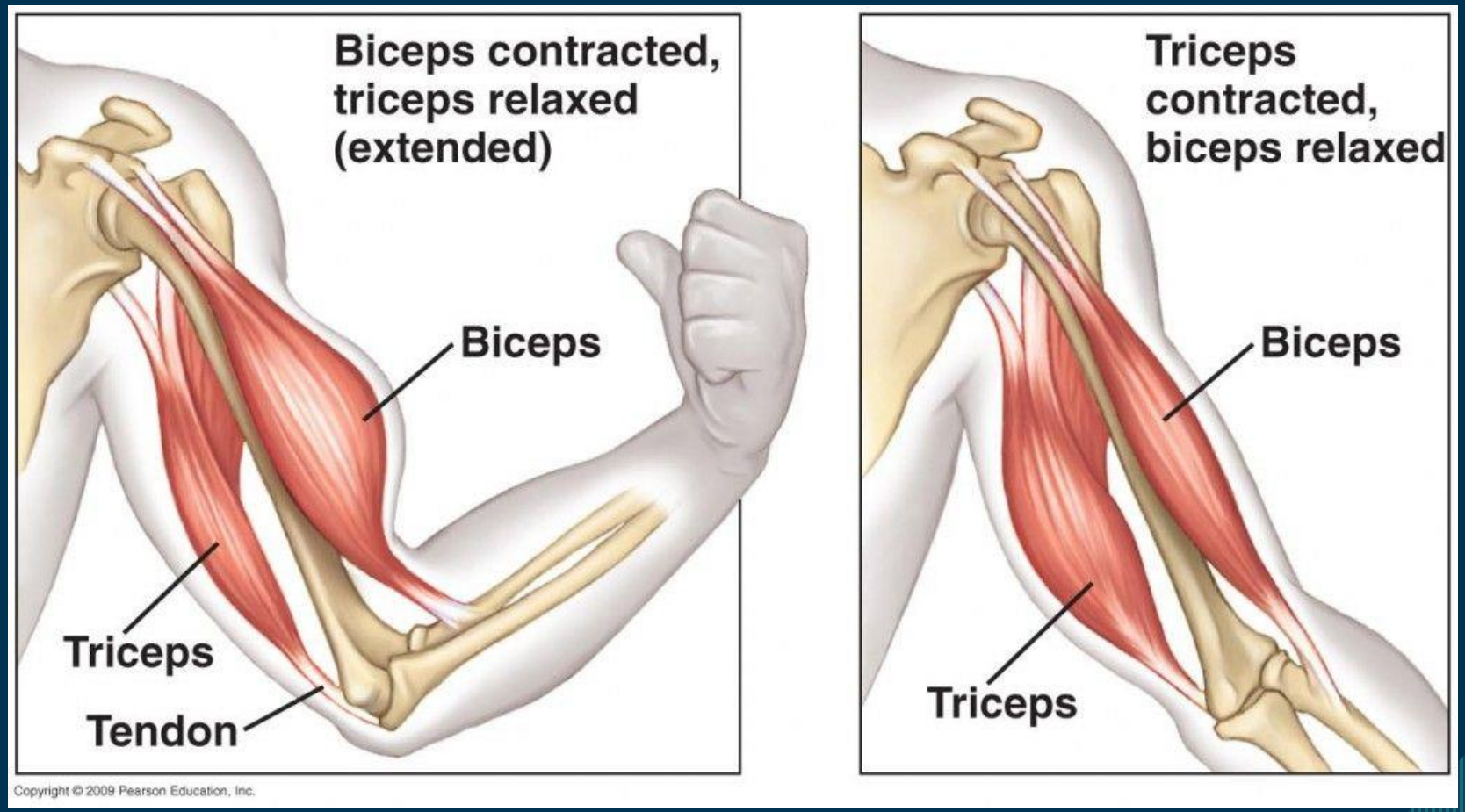
MUSCLES

- When contracted, the muscle becomes shorter, stiffer and thicker. It pulls the bone. A muscle can only pull. It can’t push.
- Mechanism of functioning of muscles

  Muscles work in pairs. When one of them contracts, the bone is pulled in that direction .The other muscle of the pair relaxes.

  To move the bone in the opposite direction, the relaxed muscle contracts to pull the bone towards the original position, while the first relaxes.

BICEPS AND TRICEPS MUSCLES SHOWING MOVEMENT OF ARM



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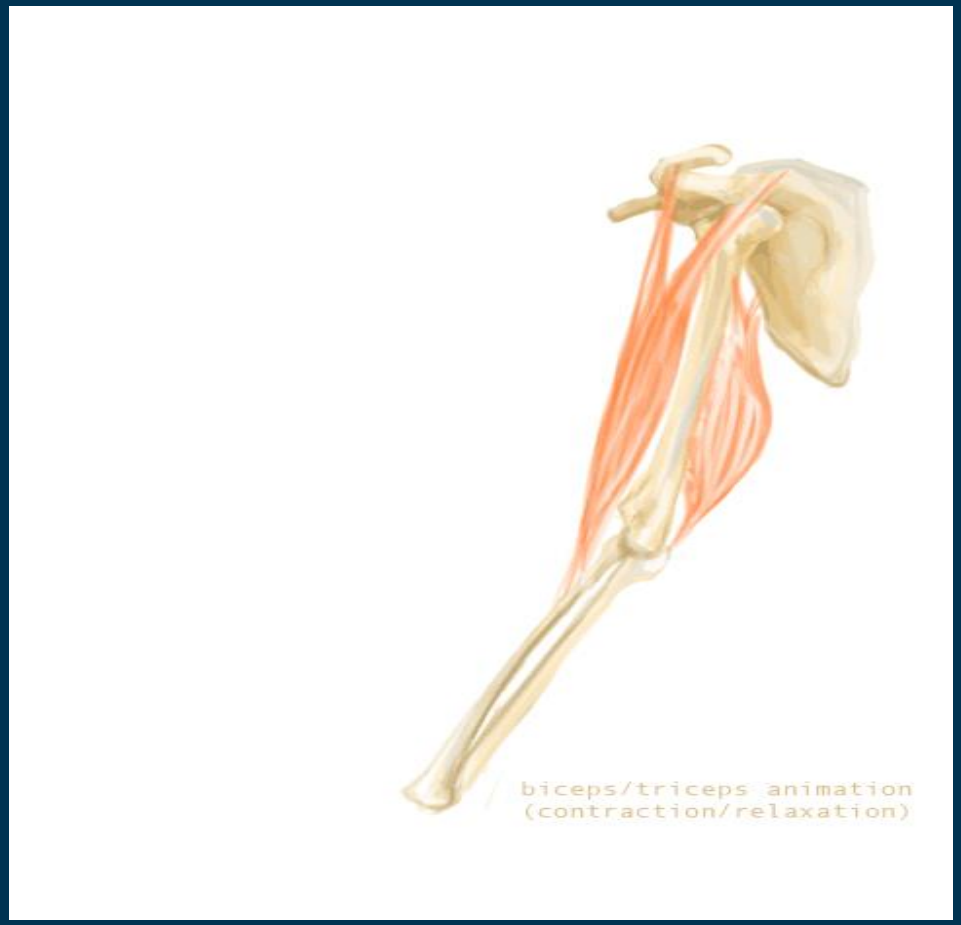


LOCOMOTION / GAIT IN OTHER ANIMALS

LOCOMOTION IN EARTHWORM

- The organisms other than humans do not have well organized skeletal and muscular system. They have simple methods of locomotion or gait.
- Earthworms

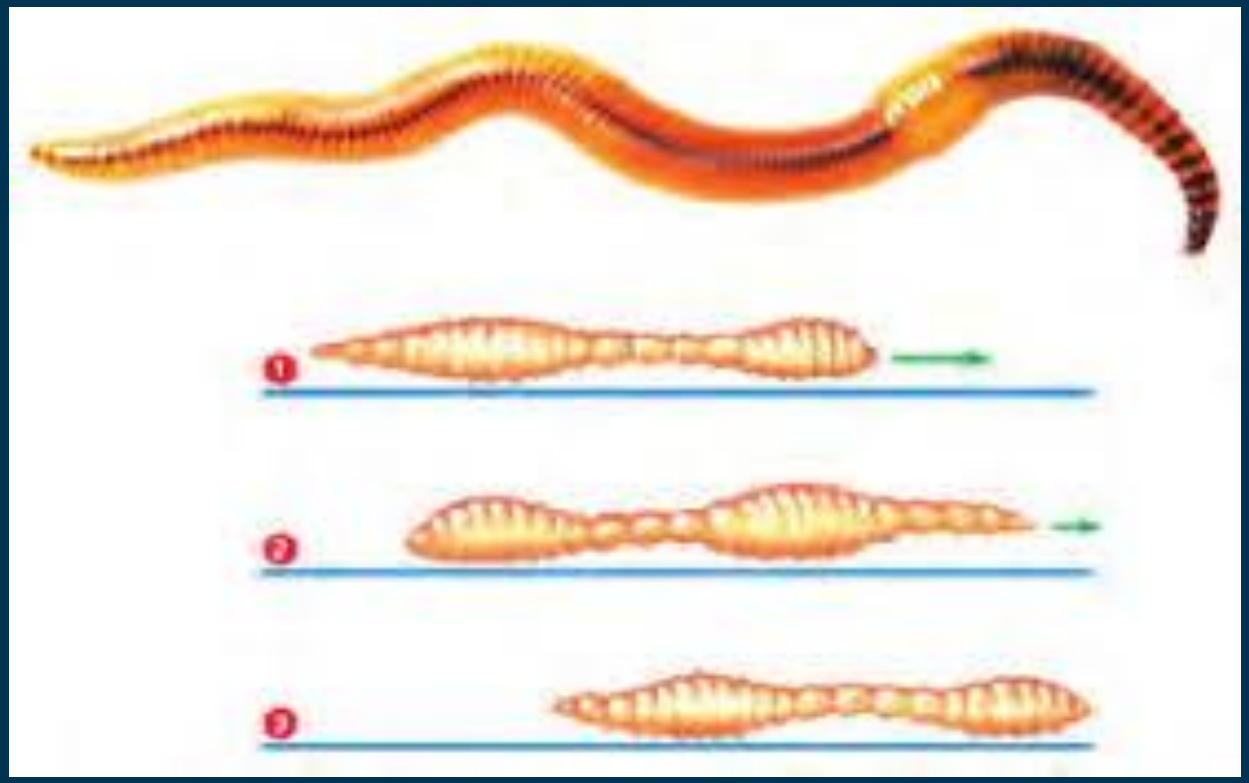
The body if an earthworm is made of many rings joined end to end. An earthworm does not have bones. The under surface of the body has large number of hair like structures called bristles. The bristles are connected with muscles at their base to get a grip on the ground. The muscles can contract and relax.

Locomotion in earthworm takes place in two stages.

1.First stage – The earthworm first extends the front part of the body, keeping the rear portion fixed to the ground. Then it fixes the front part of the body, and release the rear portion .The rear part of the body is pulled in the forward direction due to contraction of muscles .

2. Second stage – The front part of the body gets fixed to the ground and the rear part of the body extends.

Locomotion in earthworm

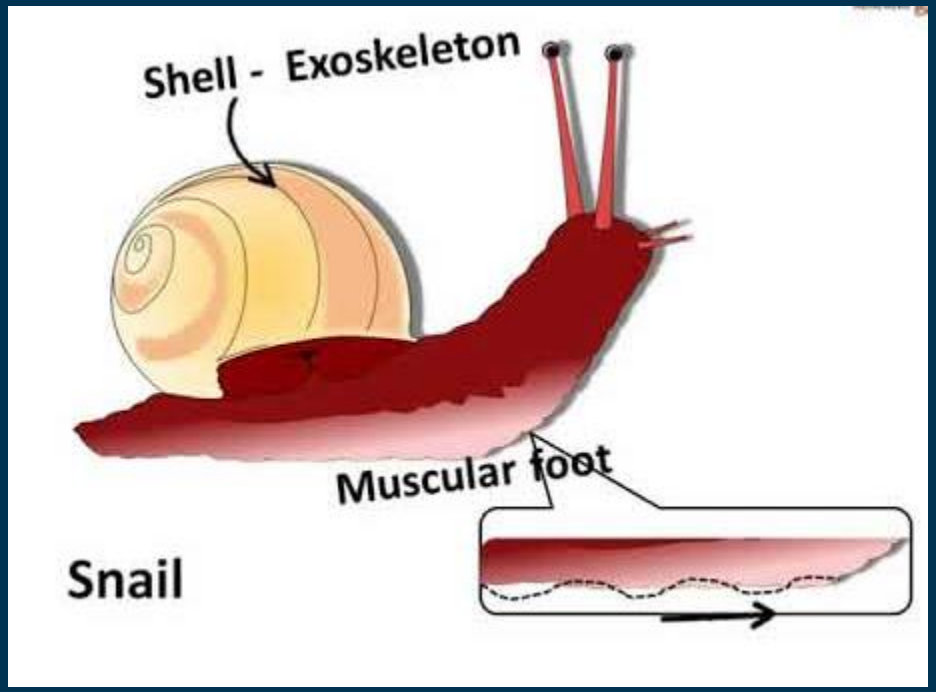


LOCOMOTION IN EARTHWORM

LOCOMOTION IN SNAIL

- Snails have a rounded structure on their back .This is called the shell and it is the outer skeleton of the snail.
- The snail undergoes creeping movement with the help of a strong muscular foot which comes out of the shell.
- This foot is made up of muscles which undergo alternate contraction and relaxation.
- This creates a slow movement where the body is pushed forward.

LOCOMOTION IN SNAIL



LOCOMOTION IN SNAIL

Questions and answers

- What are cartilage? Give examples of places in your body where cartilage are found.
- How do muscles bring about movement?
- How do earthworms move?
- Explain movement in snails.