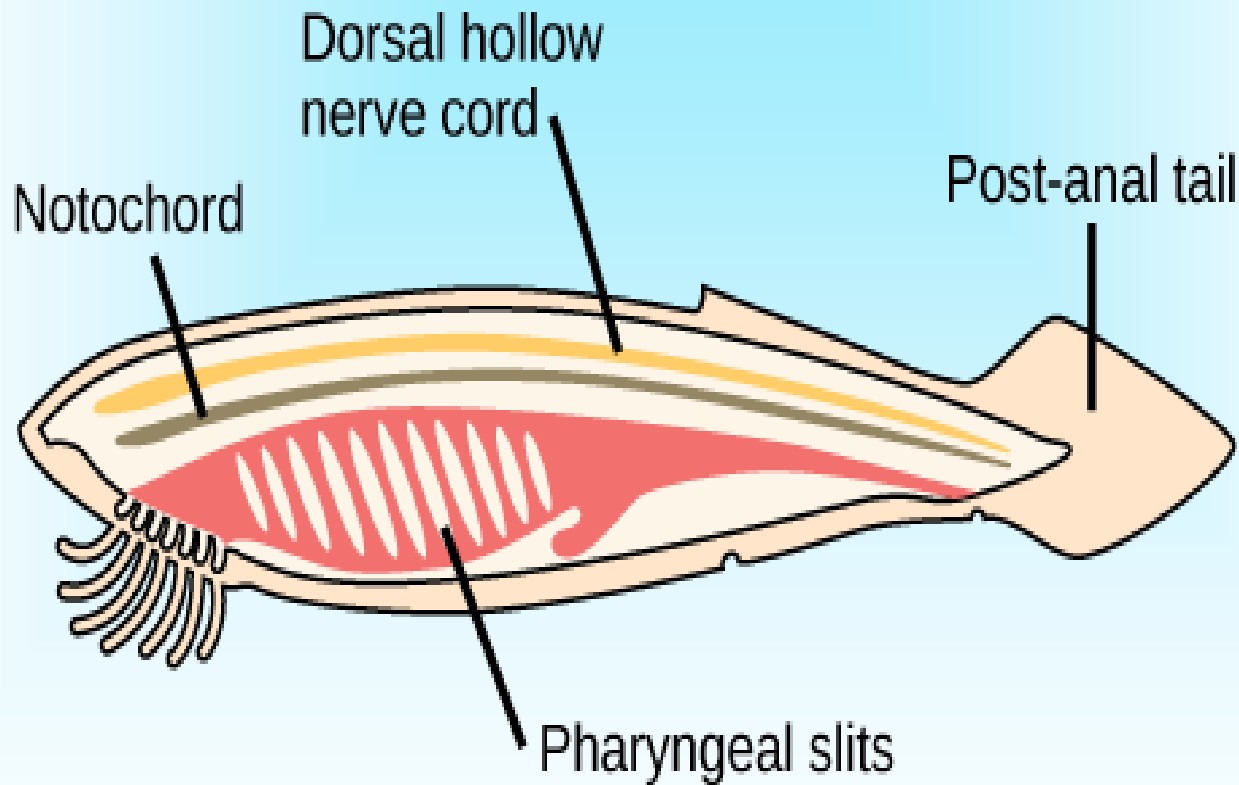


Hemichordates and Chordates

Chordates

- Phylum Chordata
- Fishes, amphibians, reptiles, birds and mammals
- Four key characteristics:
 - 1. Dorsal, hollow nerve cord**
 - 2. A notochord**
 - 3. Pharyngeal pouches**
 - 4. Tail that extends beyond the anus**

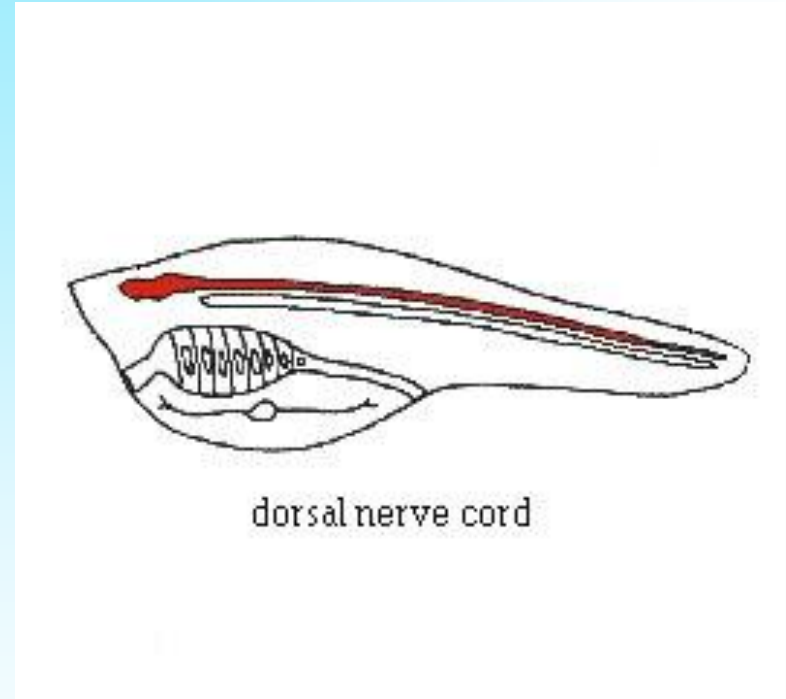
GENERAL FEATURES OF CHORDATES



<https://www.google.com/search?q=CHORDATE+GENERAL+STRUCTURE&tbm=isch&ved>

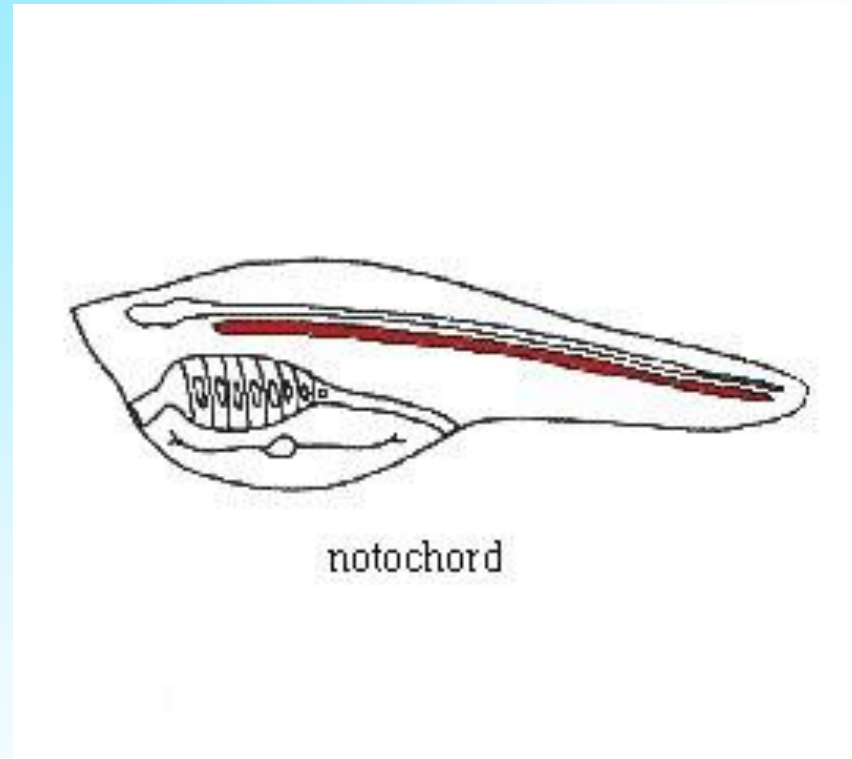
Dorsal, Hollow Nerve Cord

- Nerves branch from this cord at regular intervals
- Nerves connect to internal organs, muscles and sense organs



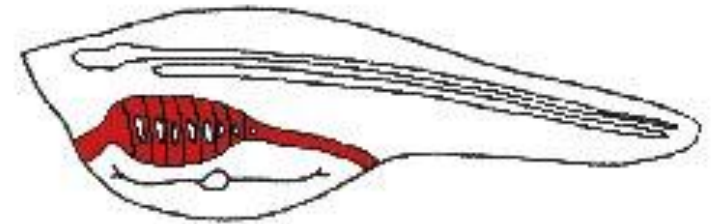
Notochord

- Long support rod
- Runs through the body just below the nerve cord
- Most chordates only have in the embryonic stage



Pharyngeal Pouches

- Paired structures in the throat (pharynx) region
- Fishes and amphibians: slits develop that connect the pharyngeal pouches to the outside of the body
- The slits may then develop into gills that are used for gas exchange



pharyngeal gill slits

Tail

- All chordates have a tail that extends beyond the anus at some point in their lives
- The tail can contain bone and muscles and is used in swimming by many aquatic species



Most Chordates are Vertebrates

- More than 99% of all chordates are in the subphylum Vertebrata
- Vertebrae: individual segments that make up the backbone; encloses and protects the spinal cord
- Backbone is part of an endoskeleton, or internal skeleton

Nonvertebrate Chordates

- The two groups
- Soft-bodied marine organisms
- Have the four key characteristics at some point in their lives

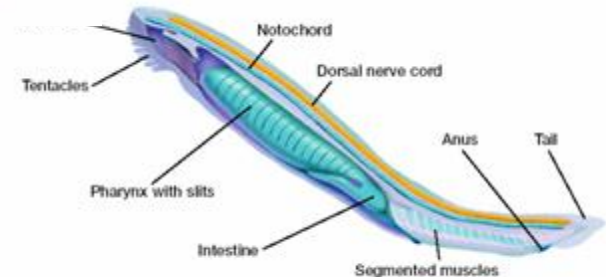
- Tunicates

- Filter feeders



- Lancelets

- Small, fish-like creatures



Classes of vertebrates

- Vertebrates can be classified into five groups based on
 - a) Their skin covering,
 - b) How they reproduce,
 - c) How they maintain body temperature
 - d) The characteristics of their limbs (arms and legs, or their equivalent such as wings or fins).
- These five classes of vertebrates are fish, amphibians, reptiles, birds and mammals

References

- www.smackslide.com