

Digestion extracorporeal.

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Potential competing interests: No potential competing interests to declare.

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Extracorporeal: this digestion process occurs outside the animal's body, which releases its enzymes onto the food and, after extracorporeal digestion, absorbs the nutrients [1].

Digestion is extracorporeal for spiders, that is, it takes place outside the body. This is because many spiders and scorpions have powerful venoms that paralyze their prey, then inject digestive juices into their bodies and suck out the contents. The digestive tract begins in the mouth, below the chelicerae that act as jaws to grab and tear apart prey. Food passes through the pharynx and esophagus until it reaches a stomach with strong muscles. This musculature helps to pump the food, already partially digested by enzymes, to the large intestine where unused remains accumulate, then follows the path to the anus where the remains will be eliminated (Figure 1) [1-5].

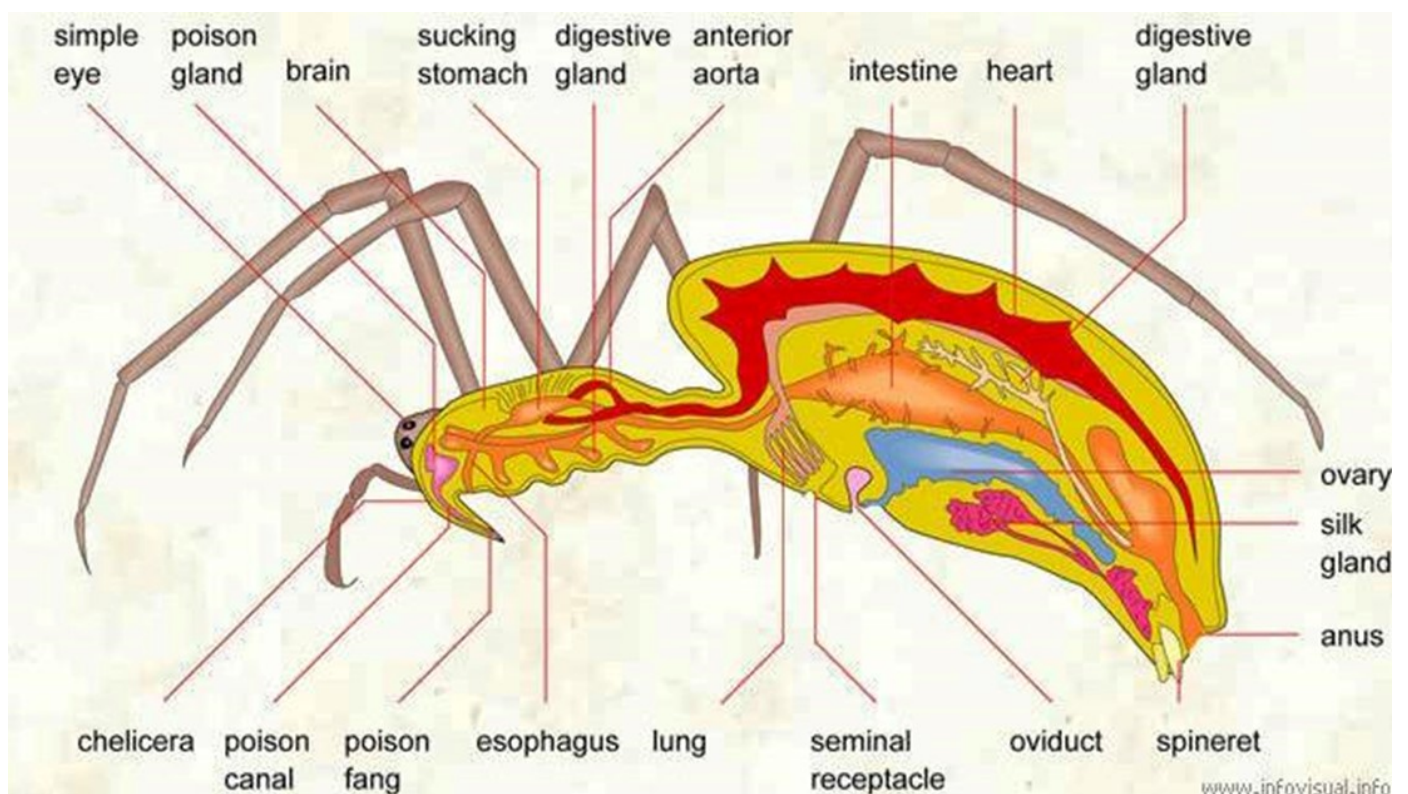


Figure 1. They use their chelicerae to soften their prey or, in the case of spiders with weaker chelicerae, vomit digestive juices onto the food, starting the digestion process outside the body. They then suck up the food puree. The sucking stomach, which is a muscular pump, ensures the unidirectional movement of food and leads to the midgut, or intestine. The intestine culminates in the stercoral sac, (rectum, and the anus). Source: <https://digestivemack.weebly.com/arthropoda.html>.

For example, fungi are made up of hyphae, inside which digestive enzymes are produced that are exocytosed into the surrounding environment. The organic macromolecules in the soil, under the action of enzymes, are transformed into monomers through extracorporeal digestion which are subsequently absorbed into the mushroom, through the hyphal membrane (Figure 2) [1-5].

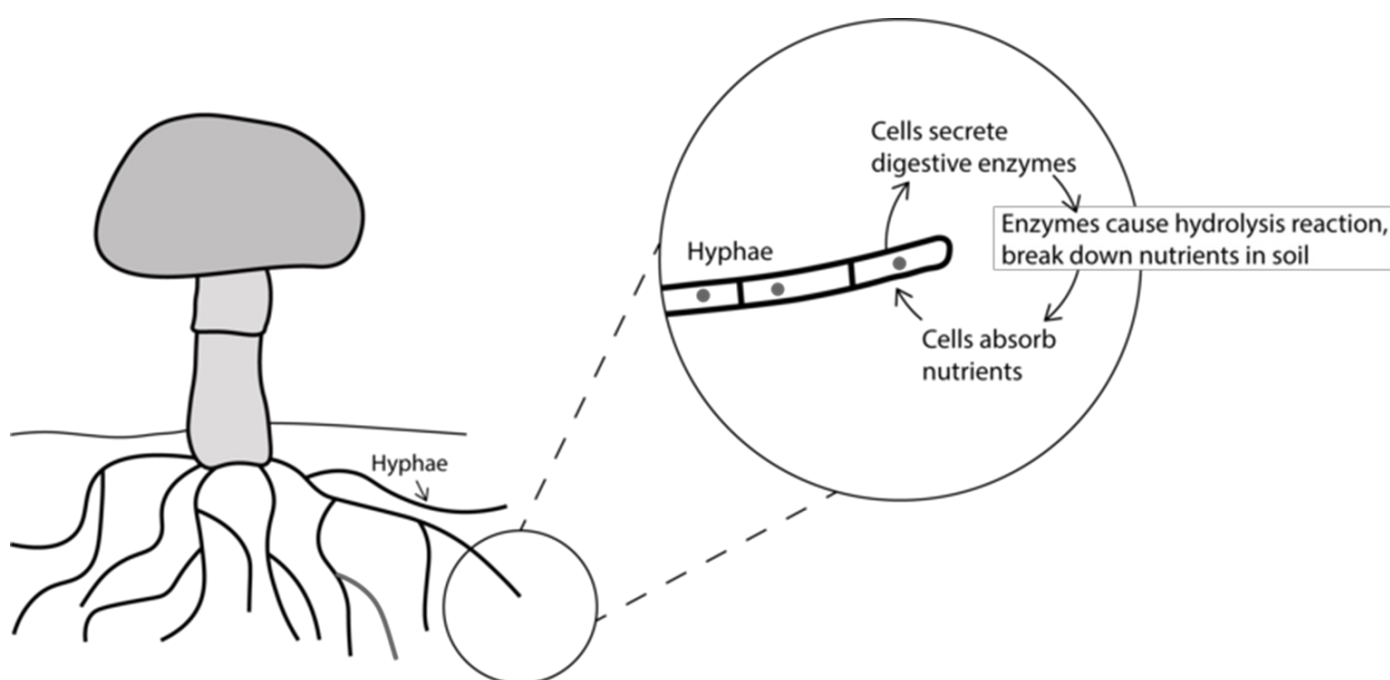


Figure 2. Fungi external digestion. Source: https://commons.wikimedia.org/wiki/File:Fungi_External_Digestion.png.

Carnivorous echinoderms have extracorporeal digestion. Sea stars project their stomachs with digestive enzymes for food while still in the external environment. Contact with enzymes digests the food, which is then taken into the star's body to complete digestion (Figure 3) [1-5].

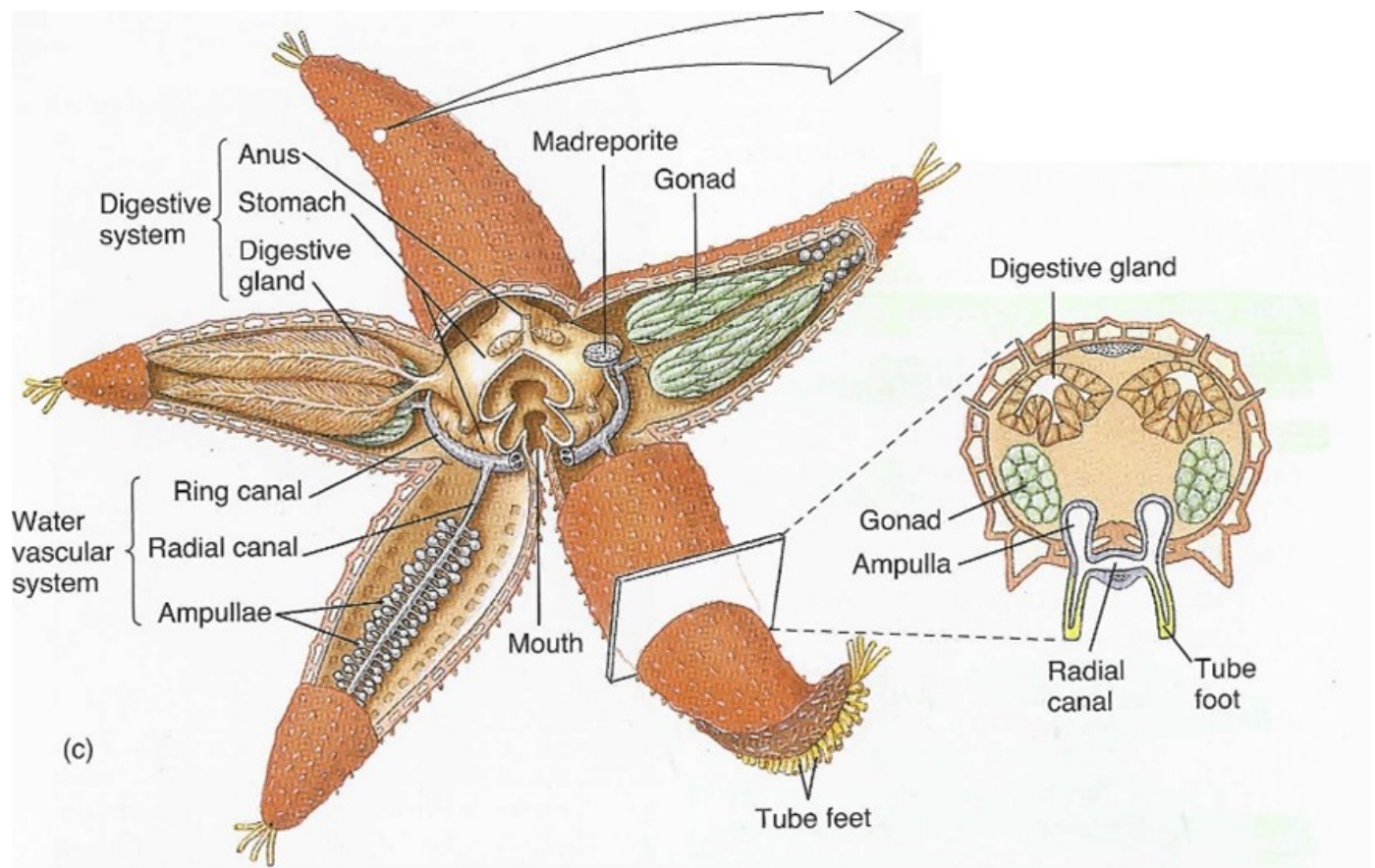


Figure 3. Diagram of the internal structure of a sea star showing the water vascular system and digestive system.

Source: Picture from Marine Biology by P. Castro.

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