

Advantages of coelom

Coelom in Greek language means a hollow cavity. It is a fluid-filled cavity between alimentary canal and body wall. It is lined on all sides by mesoderm. The peritoneal cavity of abdomen is also a part of coelom and there are similar spaces around our heart and lungs. The structure and mode of development of coelom differs among different group of animals.

Advantages of coelom

Primitive diploblastic and triploblastic animals have developed only one major body cavity called as the digestive tract. This digestive tract gave many limitations on the body size, development and locomotion of the animals. With the increasing body size, the weight of the animal also increases. This increased body mass puts lot of stress on the body organs during locomotion thereby preventing the formation of effective circulatory system. All these reasons paved way for the evolution of animals by the development of additional body cavity called as the coelom.

The advantages of the coelom are as follows:

1. The organs like that of the digestive tract need more space to grow. Coelom allows this extra space for such organs.
2. Some organs like gonads need more space only during the breeding season. Some animals which give birth to young ones need more space only during certain stage of their life. This space is arranged by the coelom.
3. Coelom also allows the formation of well-organized circulatory system with an efficient heart to draw blood from vessels.
4. Coelomic fluid transports materials faster than diffusion. Generally animals fill food or waste products into the coelom. These products are distributed as required.
5. Coelomic fluid generates effective hydrostatic force against which the muscles of the animals act.

Coelom Function

- Coelom works as a shock absorber and protects from any kind of mechanical shock. It gives more flexibility to the body organs to move and protects from any damage on minor bends by cushioning the internal organs
- The coelomic fluid acts as a hydrostatic skeleton, which helps in the locomotion of soft-bodied animals and gives the body a definite shape. Contracting muscles can push against the coelomic fluid because of the fluid pressure.
- The coelomocyte cells, that either float freely in the coelom or attached to the wall, support the immune system. They support the immune system by initiating humoral immune response and phagocytosis
- The coelomic fluid also helps in gaseous transport and transport of nutrients and waste products
- Coelom gives the extra space required by organs to develop and function. E.g. pumping action of the heart, carrying a child in the womb, etc. is possible due to coelom