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Liver Structure and Functions, Hepatocytes Information About

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Abstract: This article discusses the liver, one of the internal organs of living organisms. Liver is one of the most important organs in our body. It helps digest food, synthesizes substances necessary for life, and removes toxins from the body. The liver plays an important role in the digestion of food and the absorption of nutrients from the intestine into the blood, mainly by producing bile. In addition, the liver performs a protective function by neutralizing toxic substances that are formed in the metabolism or entered from the outside. If the liver stops working, it can cause serious problems for the whole body.

Key words: liver hepatocytes, segment, filter, metabolism, hepatitis, fibrosis, cirrhosis, liver cancer.

The liver performs various functions in the body. The liver is considered the largest gland in the body, it takes an active part in digestion, performs the function of purifying the blood, and also detoxifies various drugs. In the 3rd week of the liver embryonic period, the protrusion of the ventral wall of the duodenum arises from the endoderm of the caudal part of the foregut as a liver platform. During the embryonic period, the liver also acts as a blood-forming organ. Full formation of liver tissue continues until 8-10 years of age. The liver is covered from the outside with a fibrous membrane or Glisson's capsule consisting of dense connective tissue, and it is firmly attached to the vesteral sheet of the peritoneum. Fibrous membrane enters the liver with blood vessels and divides it into many parts. The size of liver lobes does not exceed 1.5-2 mm in the form of polygonal prisms, separated from each other by interlobular connective tissue. An increase in interlobular connective tissue in the human liver is a symptom of liver cirrhosis, a serious disease. Liver lobes consist of liver plates and sinusoidal capillaries passing between them. Liver plates are composed of liver hypotocytes. Hepatic hypotocytes are large cells with a polygonal shape, their size is 20-25 μm, and they make up 60% of the liver. Since hypotocytes are in contact with sinusoidal capillaries and bile ducts, they have two different poles. The surface facing the sinusoidal capillaries is the vein or vascular surface, and the surface facing the bile ducts is the biliary surface, and at the same time, the side surfaces are differentiated. There are many microvilli on their surface facing the capillaries and they open into the space of Disse. The hypotocyte nucleus is mostly oval or round in shape and has different sizes. 10-20% of mononuclear cells are diploid, and the rest are tetraploid or polyploid. The liver also contains binucleated cells. Large nuclei are located eccentrically in the nucleus and their number can be up to 4-6. In mammals, especially in humans, there are differences in dark and oozing hepatocytes. Dark hepatocytes are considered active cells, they actively participate in a number of processes, and leaking ones are relatively stable hypotocytes. Hypotocytes, like other cells, have organelles. An example of this is mitochondria located in hypotocytes, and their number is about 2.5 million. They can be uniformly distributed in the cytoplasm, as well as throughout the biliary and vascular

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spaces of hypotocytes. Mitochondria, like the nucleus, are round or oval in shape and are often attached to the walls of the granular endoplasmic reticulum. Hypotocytes also have smooth and granular endoplasmic reticulum. The smooth endoplasmic reticulum is not very well developed, and glycogen is seen in the form of bubbles with a smooth surface in the accumulated part, i.e. at the edges of the cells. After a person eats fatty foods, 3-4 hours, maximum 10-12 hours later, the fats are transferred to the hypotocytes of the liver, and after 24-48 hours, the fats are broken down and absorbed. In diseases such as alcoholism and brain trauma, hypotocyte enlargement is observed as a result of the breakdown of fats.

The liver is one of the most important organs in the body. His duties are many and varied. Examples of them include bile fluid involved in food digestion, the role of a filter that cleans the blood, and the properties of neutralizing various mirages and bacteria. Taking into account that the liver performs various and diverse tasks, not consuming various medicinal preparations, alcohol products, and synthetic products produced in factories and factories, which negatively affect its functioning, prepares a deep foundation for maintaining our health at the best possible level. The liver is functionally connected with many organ systems, and its failure can cause many other organ systems to malfunction and negatively affect our physical condition, leading to a shortening of our lifespan.

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