

**B. A. Part – II
Paper – III
Dietetics
Topic -8
Structure of Liver**

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Liver

The liver is the largest solid organ and the largest gland in the human body. It carries out over 500 essential tasks.

Nestled under the diaphragm, above the stomach and right kidney is the largest visceral organ of the human body – the Liver. It has many different functions and plays many different roles from metabolism to digestion to circulation. Traditional Chinese Medicine compares the liver to a military general. Considering its many functions and overall importance to life this analogy is very fitting.

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Classed as part of the digestive system, the roles of the liver include detoxification, protein synthesis, and the production of chemicals that help digest food.

Fast facts on the liver

The liver is classed as a gland.

This vital organ carries out more than 500 roles in the human body.

It is the only organ that can regenerate.

The liver is the largest solid organ in the body.

Alcohol abuse is one of the major causes of liver problems in the industrialized world.

Regeneration

Because of the importance of the liver and its functions, evolution has ensured that it can regrow

rapidly as long as it is kept healthy. This ability is seen in all vertebrates from fish to humans.

The liver is the only visceral organ that can regenerate.

It can regenerate completely, as long as a minimum of 25 percent of the tissue remains. One of the most impressive aspects of this feat is that the liver can regrow to its previous size and ability without any loss of function during the growth process.

In mice, if two-thirds of the liver is removed, the remaining liver tissue can regrow to its original size within 5 to 7 days. In humans, the process takes slightly longer, but regeneration can still occur in 8 to 15 days – an incredible achievement, given the size and complexity of the organ.

Over the following few weeks, the new liver tissue becomes indistinguishable from the original tissue.

This regeneration is helped by a number of compounds, including growth factors and cytokines. Some of the most important compounds in the process appear to be:

Hepatocyte growth factor

Insulin

Transforming growth factor-alpha

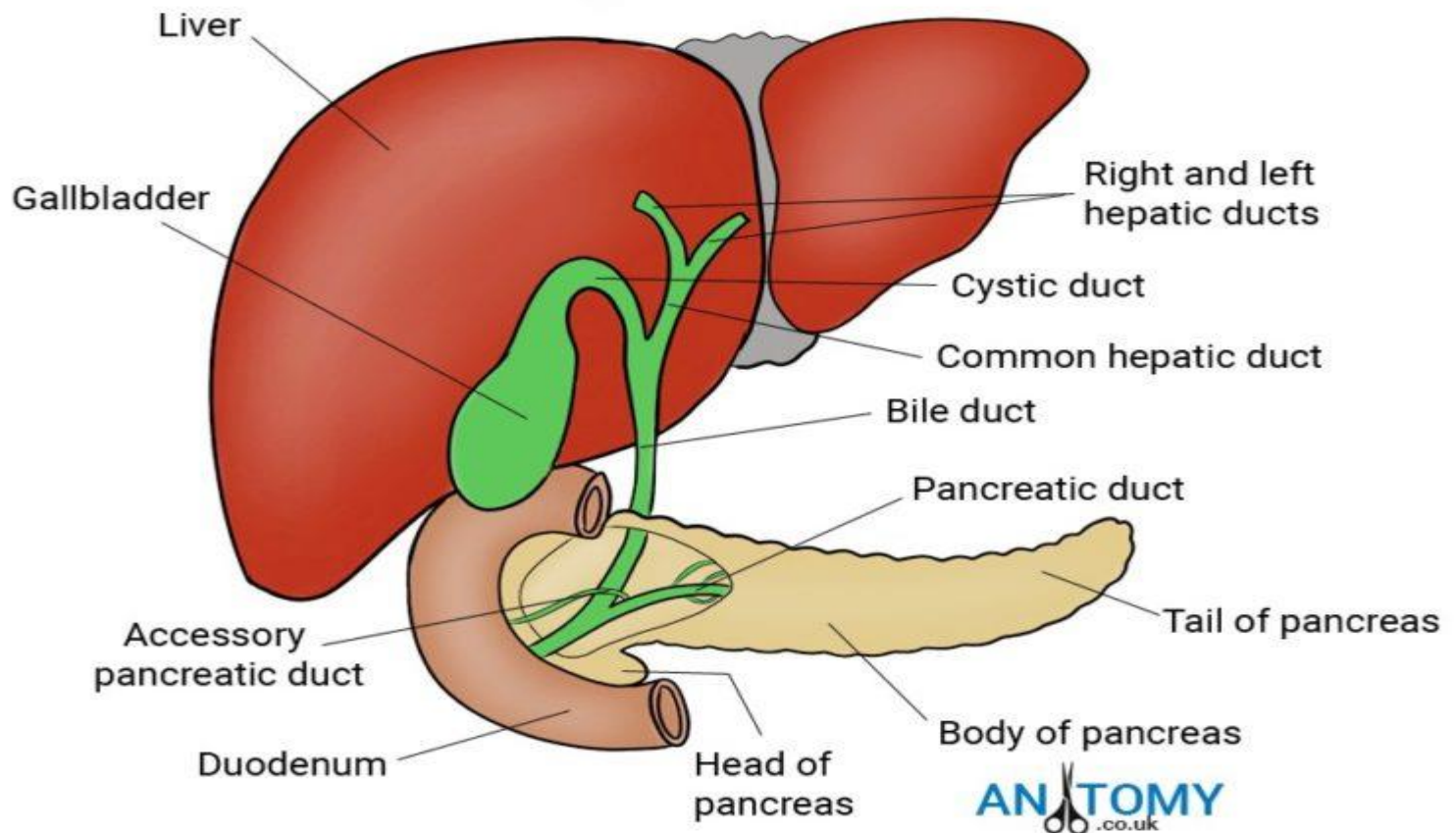
Epidermal growth factor

Interleukin-6

Norepinephrine

Structure Of The Liver

The liver is one of the most versatile and important organs.



Weighing between 3.17 and 3.66 pounds (lb), or between 1.44 and 1.66 kilograms (kg), the liver is reddish-brown with a rubbery texture. It is situated above and to the left of the stomach and below the lungs.

The skin is the only organ heavier and larger than the liver.

The liver is roughly triangular and consists of two lobes: a larger right lobe and a smaller left lobe. The lobes are separated by the falciform ligament, a band of tissue that keeps it anchored to the diaphragm.

A layer of fibrous tissue called Glisson's capsule covers the outside of the liver. This capsule is further covered by the peritoneum, a membrane that forms the lining of the abdominal cavity.

This helps hold the liver in place and protects it from physical damage.

Blood vessels

Unlike most organs, the liver has two major sources of blood. The portal vein brings in nutrient-rich blood from the digestive system, and the hepatic artery carries oxygenated blood from the heart.

The blood vessels divide into small capillaries, with each ending in a lobule. Lobules are the functional units of the liver and consist of millions of cells called hepatocytes.

Blood is removed from the liver through three hepatic veins.