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ANATOMY

ANA 202(GROSS ANTOMY OF THE THORAX AND ABDOMEN)

1.)

BLOOD SUPPLY OF THE LIVER

In the hepatic portal system, the liver receives a dual blood supply from the hepatic portal vein and hepatic arteries. The hepatic portal vein carries venous blood drained from the spleen, gastrointestinal tract and its associated organs; it supplies approximately 75% of the liver’s blood. The hepatic arteries supply arterial blood to the liver and account for the remainder of its blood flow.

Oxygen is provided from both sources; approximately half of the liver’s oxygen demand is met by the hepatic portal vein, and half is met by the hepatic arteries. Blood flows through the liver tissue and empties into the central vein of each lobule. The central veins coalesce into hepatic veins that collect the blood leaving the liver and bring it to the heart.

WHY THE LIVER RECIEVES MORE BLOOD FROM THE HEPATIC VEIN?

A portal system is a venous structure that enables blood from one set of capillary beds to drain into another set of capillary beds, without first returning this blood to the heart. The majority of capillaries in the body drain directly into the heart, so portal systems are unusual.

The hepatic portal system connects the capillaries of the gastrointestinal tract with the capillaries in the liver. Nutrient-rich blood leaves the gastrointestinal tract and is first brought to the liver for processing before being sent to the heart. Here, carbohydrates and amino acids can be stored or used to make new proteins and carbohydrates. The liver also removes vitamins and cofactors from the blood for storage, as well as filters any toxins that may have been absorbed along with the food. When any of these stored substances are needed, the liver releases them back into circulation through the hepatic veins.

Clinical Anatomy

[Portal hypertension](https://en.wikipedia.org/wiki/Portal_hypertension) is a condition in which the blood pressure of the portal venous system is too high. It is often the result of [cirrhosis](https://en.wikipedia.org/wiki/Cirrhosis) of the liver.

2.)

 Diseases of the liver

1. [Cirrhosis](https://en.wikipedia.org/wiki/Cirrhosis): is the formation of fibrous tissue ([fibrosis](https://en.wikipedia.org/wiki/Fibrosis)) in the place of liver cells that have died due to a variety of causes, including viral hepatitis, alcohol overconsumption, and other forms of liver toxicity. Cirrhosis causes chronic [liver failure](https://en.wikipedia.org/wiki/Liver_failure).
2. Primary [liver cancer](https://en.wikipedia.org/wiki/Liver_cancer):  most commonly manifests as [hepatocellular carcinoma](https://en.wikipedia.org/wiki/Hepatocellular_carcinoma) or [cholangiocarcinoma](https://en.wikipedia.org/wiki/Cholangiocarcinoma%22%20%5Co%20%22Cholangiocarcinoma), rarer forms include [angiosarcoma](https://en.wikipedia.org/wiki/Angiosarcoma%22%20%5Co%20%22Angiosarcoma) and [hemangiosarcoma](https://en.wikipedia.org/wiki/Hemangiosarcoma%22%20%5Co%20%22Hemangiosarcoma) of the liver. (Many liver malignancies are secondary lesions that have metastasized from primary cancers in the gastrointestinal tract and other organs, such as the kidneys, lungs.
3. [Hepatitis](https://en.wikipedia.org/wiki/Hepatitis) (inflammation of the liver): is caused by various viruses ([viral hepatitis](https://en.wikipedia.org/wiki/Viral_hepatitis)) also by some [liver toxins](https://en.wikipedia.org/wiki/Hepatotoxicity) (e.g. [alcoholic hepatitis](https://en.wikipedia.org/wiki/Alcoholic_hepatitis)), autoimmunity ([autoimmune hepatitis](https://en.wikipedia.org/wiki/Autoimmune_hepatitis)) or hereditary conditions.
4. [Alcoholic liver disease](https://en.wikipedia.org/wiki/Alcoholic_liver_disease): is a hepatic manifestation of [alcohol overconsumption](https://en.wikipedia.org/wiki/Alcohol_abuse), including [fatty liver disease](https://en.wikipedia.org/wiki/Fatty_liver), alcoholic hepatitis, and [cirrhosis](https://en.wikipedia.org/wiki/Cirrhosis). Analogous terms such as "drug-induced" or "toxic" liver disease are also used to refer to disorders caused by various drugs.
5. [Fatty liver disease](https://en.wikipedia.org/wiki/Fatty_liver) (hepatic [steatosis](https://en.wikipedia.org/wiki/Steatosis%22%20%5Co%20%22Steatosis)): is a reversible condition where large vacuoles of [triglyceride](https://en.wikipedia.org/wiki/Triglyceride) fat accumulate in liver cell. [Non-alcoholic fatty liver disease](https://en.wikipedia.org/wiki/Non-alcoholic_fatty_liver_disease) is a spectrum of disease associated with obesity and [metabolic syndrome](https://en.wikipedia.org/wiki/Metabolic_syndrome).