**ABA DORCAS MANGWO**

**18/MHS07/001**

**PHARMACOLOGY**

**ANA202**

**QUESTION:**

1. why do we have the portal vein or the liver receiving more blood from the vein than it receives from the artery?

2. discuss five (5) disease conditions of the liver

**ANSWER:**

While there may be some variations between individuals, the hepatic portal vein is usually formed by the convergence of the [superior mesenteric vein](https://www.kenhub.com/en/library/anatomy/superior-mesenteric-vein) and the [splenic vein](https://www.kenhub.com/en/library/anatomy/splenic-vein), referred to as the **splenic-mesenteric confluence**.

In some individuals, the hepatic portal vein also directly joins with the [inferior mesenteric vein](https://www.kenhub.com/en/library/anatomy/inferior-mesenteric-vein). Even less common, but also possible anastomoses are the cystic and gastric veins.

### **Course**

The liver receives blood from two sources: the hepatic portal vein (70%), and the [hepatic arteries](https://www.kenhub.com/en/library/anatomy/blood-supply-and-innervation-of-the-liver) (30%). The hepatic portal vein receives blood specifically from the [stomach](https://www.kenhub.com/en/library/anatomy/the-stomach), [intestines](https://www.kenhub.com/en/library/anatomy/the-small-intestine), pancreas, and spleen, and carries it into the liver through the porta hepatis. The **porta hepatis** serves as the point of entry for the hepatic portal vein and the [proper hepatic artery](https://www.kenhub.com/en/library/anatomy/proper-hepatic-artery), and is the point of exit for the bile passages.

However, before reaching the liver, the portal vein bisects into the **left** and **right**, with each side further dividing from venous branches into portal venules. These **portal venule**branches run alongside hepatic arterioles in the spaces between the liver lobules, and these two vessels, along with a common bile duct, form the hepatic **portal triad**. These vessels all empty eventually into the **hepatic sinusoids** to supply blood to the liver, which also means that there is an unusual mixing of venous and arterial blood in the sinusoids.

Following processing of the blood by the hepatocytes (chief functional cells of the liver), the blood collects in the **central vein** at the core of the lobule. Blood from these central veins will ultimately converge in the right and left [hepatic veins](https://www.kenhub.com/en/library/anatomy/hepatic-veins), which exit the superior surface of the liver and empty into the [inferior vena cava](https://www.kenhub.com/en/library/anatomy/inferior-vena-cava) to be distributed to the rest of the body.

**Function**

The **hepatic portal system** is so named since it connects capillaries of the intestines and other digestive organs to modified capillaries (hepatic sinusoids) of the liver. As intestinal blood is nutrient-rich for a few hours post-prandial (after a meal), the hepatic portal system will be able to **claim available nutrients** before blood is distributed to the rest of the body.

Additionally, the hepatic portal system plays a key role in **cleansing the blood** of the bacteria and toxins that are picked up by the blood while it is being perfused through the intestines.

Other than the previously mentioned hepatic and related veins, the principal associated intestinal veins are the inferior mesenteric vein, superior mesenteric vein, and the splenic vein (which converges with the pancreatic veins before it meets the inferior mesenteric vein, and ultimately meets the superior mesenteric vein). The left and right **gastric veins**, which form an arc along the lesser curvature of the stomach, also empty into the hepatic portal vein. Broadly, the hepatocytes that process the blood play a large role in protein synthesis, carbohydrate metabolism, lipid metabolism, and detoxification.

**Top of Form**

**Bottom of Form**

# **LIVER DISEASES2.**

Your liver does a lot of things that keep you healthy. It turns nutrients into chemicals your body needs. It filters out poisons. It helps turn food into energy. So when your [liver](https://www.webmd.com/digestive-disorders/picture-of-the-liver) doesn’t work well, that can affect your whole body.

Different things can cause serious liver conditions. You’ll want to know about the top causes.

## **INFECTIONS**

Sometimes, the problem is that you have an infection that inflames your liver. Viral hepatitis is the most common cause, including:

* [**Hepatitis A**](https://www.webmd.com/hepatitis/digestive-diseases-hepatitis-a)**.**Most people get it by eating or drinking something that’s tainted by fecal matter. You might not have any symptoms. It usually goes away by itself within 6 months without any long-term harm.
* [**Hepatitis B**](https://www.webmd.com/hepatitis/digestive-diseases-hepatitis-b). You get it from somebody else, such as through unprotected sex or taking drugs with shared needles. If it lasts longer than 6 months, it makes you more likely to get liver cancer or other diseases.
* [**Hepatitis C**](https://www.webmd.com/hepatitis/digestive-diseases-hepatitis-c)comes from infected blood that gets into your blood. You might get it if you take drugs with shared needles or in connection with HIV. If you’re a health-care worker, you might get it from an infected needle that accidentally sticks you. Symptoms may not show up for many years. For reasons that aren’t quite clear, baby boomers are at risk for hepatitis C and should be tested for it.

## **IMMUNE SYSTEM PROBLEMS**

Your [immune system](https://www.webmd.com/cold-and-flu/immune-system-function) fights off invaders including bacteria and viruses. But it might go wrong and attack one or more parts of your body, such as your liver.

* [**Autoimmune hepatitis**](https://www.webmd.com/hepatitis/autoimmune-hepatitis)inflames your liver. It can lead to other disorders and even liver failure. It strikes girls and women more often than boys or men.
* [**Primary biliary cholangitis**](https://www.webmd.com/digestive-disorders/primary-biliary-cirrhosis)attacks tiny tubes in your liver called bile ducts. They carry bile, a chemical that helps you digest food. When the ducts are injured, the bile backs up inside your liver and scars it. Women come down with this more often than men.
* [**Primary sclerosing cholangitis**](https://www.webmd.com/digestive-disorders/primary-sclerosing-cholangitis-facts)scars your bile ducts, and it can eventually block them. The bile builds up inside your liver, and that makes it harder for your liver to work. It may lead to liver cancer, and you might someday need a liver transplant. Men are more likely than women to get it

## **CANCER AND TUMORS**

If cancer shows up in your liver, that’s most likely because it has spread from another part of your body, like your lungs, colon, or breasts. But a few cancers can start in the liver.

* [**Liver cancer**](https://www.webmd.com/cancer/understanding-liver-cancer-basic-information)affects women more often than men, and African-Americans more often than whites. Your doctor might call it [hepatocellular carcinoma](https://www.webmd.com/cancer/hepatocellular-carcinoma). It’s more likely if you have [hepatitis](https://www.webmd.com/hepatitis/default.htm) or drink too much.
* [**Bile duct cancer**](https://www.webmd.com/cancer/bile-duct-cancer)strikes the tubes that run from your liver to your small intestine to carry bile, a fluid that helps you digest food. This kind of cancer mainly affects people over age 50, but it’s uncommon.
* **Liver cell adenoma** is a tumor that doesn’t have cancer. It’s uncommon, but women who take birth control pills for a long time are more prone than other people to develop it. There’s a small chance the tumor could eventually turn into cancer.

## **CONDITIONS YOU INHERIT**

Some[inherited liver disorders](https://www.webmd.com/digestive-disorders/inherited-liver-diseases) only happen if they run in your family.

* [**Hemochromatosis**](https://www.webmd.com/a-to-z-guides/what-is-hemochromatosis)makes your body store up too much of the iron from your food. The extra iron builds up in your liver, heart, or other organs. It can lead to life-threatening conditions such as liver diseases, [heart disease](https://www.webmd.com/heart-disease/default.htm), or [diabetes](https://www.webmd.com/diabetes/default.htm).
* **Hyperoxaluria**hits when your urine has too much of a chemical called oxalate. Oxalate is a natural part of your system, and your liver makes a chemical that controls it. If your liver makes too little of that chemical, oxalate builds up. Then it can cause [kidney stones](https://www.webmd.com/kidney-stones/default.htm) and kidney failure. If your kidneys do fail, that can give you **oxalosis**, where the oxalate collects in other organs and causes more trouble.
* **Wilson's disease** makes copper build up in your liver and other organs. Its first symptoms usually show up when you’re between the ages of 6 and 35, most often in your teens. It not only affects your liver, but it can cause nerve and psychiatric problems.
* [**Alpha-1 antitrypsin deficiency**](https://www.webmd.com/lung/copd/alpha-1-antitrypsin-deficiency-rare)involves a chemical that helps your [lungs](https://www.webmd.com/lung/picture-of-the-lungs) resist infections. Your liver makes it. But when your liver gets the recipe wrong, the faulty chemical can build up and cause liver disease.

## **OTHER CAUSES OF LIVER DISEASE**

* [**Alcohol abuse**](https://www.webmd.com/mental-health/addiction/default.htm)can lead to cirrhosis. So can nonalcoholic fatty liver disease and long-term cases of hepatitis B and C.
* **Drug overdoses.** Taking too much acetaminophen or other medications can harm your liver. Make sure you follow the dosing instructions on the label, and be aware that acetaminophen might be in more than one medicine you take.
* **Nonalcoholic**[**fatty liver disease**](https://www.webmd.com/hepatitis/fatty-liver-disease)**(NAFLD)** is when too much fat has built up inside your liver. The extra fat can inflame your liver. One type of NAFLD is nonalcoholic steatohepatitis (NASH). It means you have inflammation and cell damage in your liver, as well as fat. It can scar your liver and lead to other disorders, like cirrhosis.

**DIRE COMPLICATIONS OF LIVER DISEASE INCLUDE:**

* **Acute**[**liver failure**](https://www.webmd.com/digestive-disorders/digestive-diseases-liver-failure)**.**This happens when you don’t have a long-term liver disease but your liver quits working within a very short time -- days or weeks. That may happen because of an overdose of acetaminophen, infections, or because of prescriptions drugs.
* [**Cirrhosis**](https://www.webmd.com/digestive-disorders/cirrhosis-liver)is a buildup of scars in your liver. The more scars replace the healthy parts of your liver, the harder it is for your liver to do its job. Over time, it may not work like it should.