

# Hepatic Portal Circulation

The **liver** receives venous blood from the digestive tract, which is oxygen poor but nutrient rich. The liver filters the blood:

- 1) detoxifying alcohol and drugs,
- 2) converting ammonia to usable urea,
- 3) storing fat-soluble vitamins,
- 4) converting glucose to glycogen and storing it.

Phagocytes, called **Kupffer cells**, lining the liver's sinusoids, filter out any remaining bacteria that survived the trip through the stomach.

After percolating through the liver (the hepatic portal system), the blood drains into the hepatic veins and then into the inferior vena cava. It is now back in systemic circulation and on its way back to the heart and lungs.

The blood from the digestive organs is brought to the liver through the **hepatic portal vein**. The hepatic portal vein is only about 3 inches (8 cm) long. It receives blood from the following blood vessels:

- 1) **superior mesenteric vein** - which collects blood from the stomach, small intestine and the ascending and transverse portion of the large intestine.
- 2) **splenic vein** - which collects blood from the spleen, pancreas and part of the stomach.
- 3) **inferior mesenteric vein** - which collects blood from the descending colon, sigmoid colon and the rectum.

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