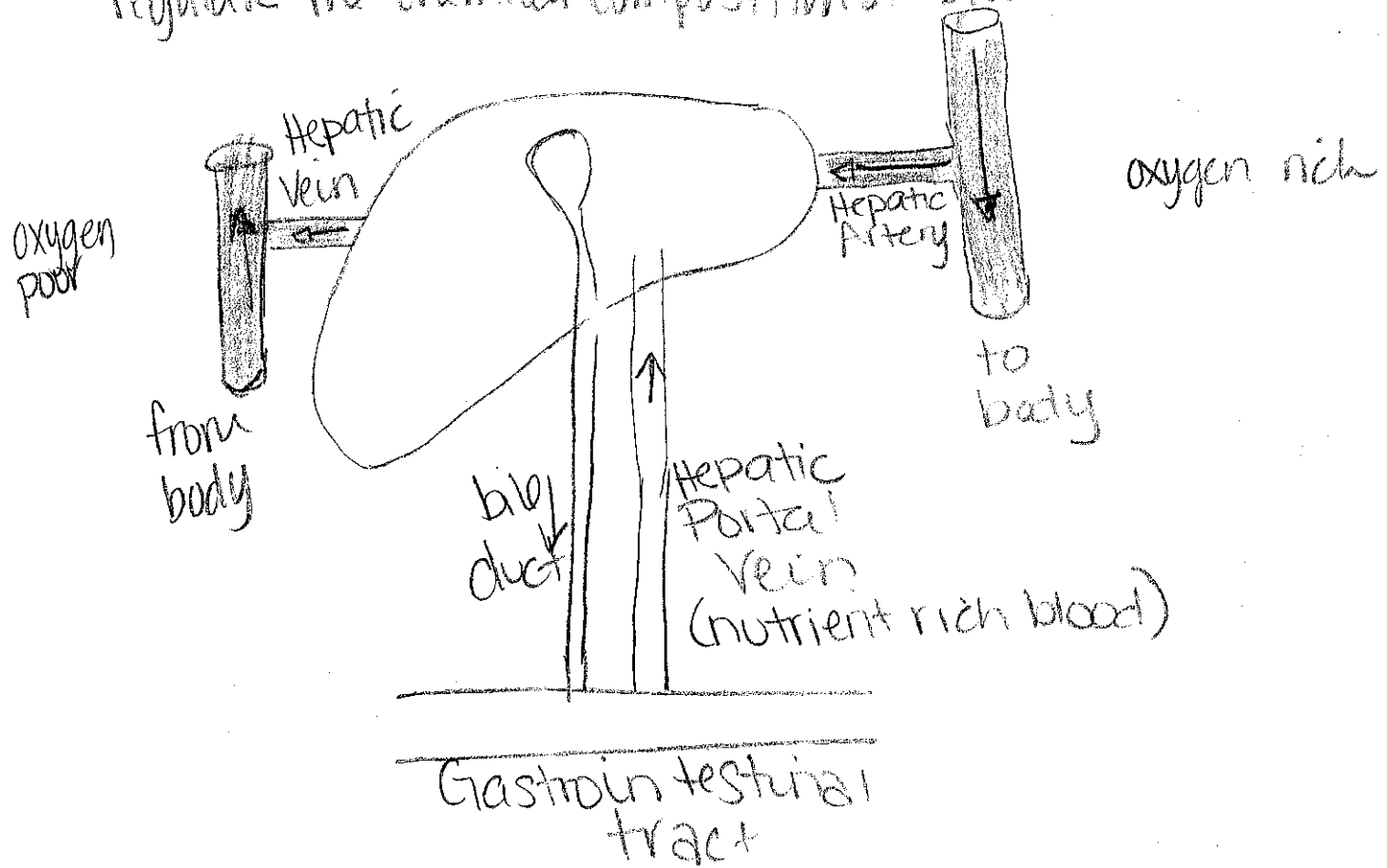


Functions of the liver

- located below the diaphragm that functions to regulate the chemical composition of blood

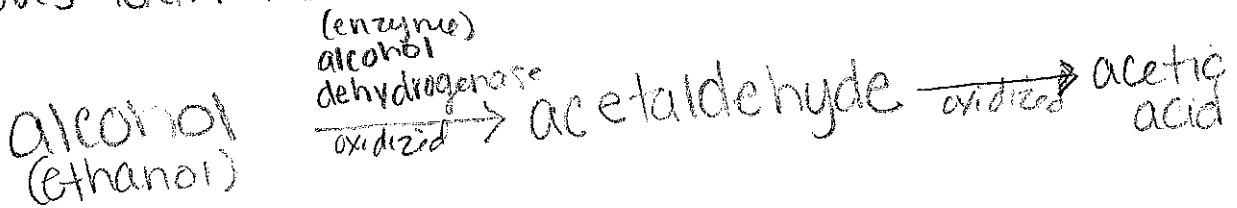


- receives oxygenated blood via the hepatic artery
- receives nutrient rich blood from the gut via portal vein
- oxygenated blood is transported from liver via hepatic vein.

Roles of liver

1) Detoxification

- removes toxin from the blood + detoxifies them.

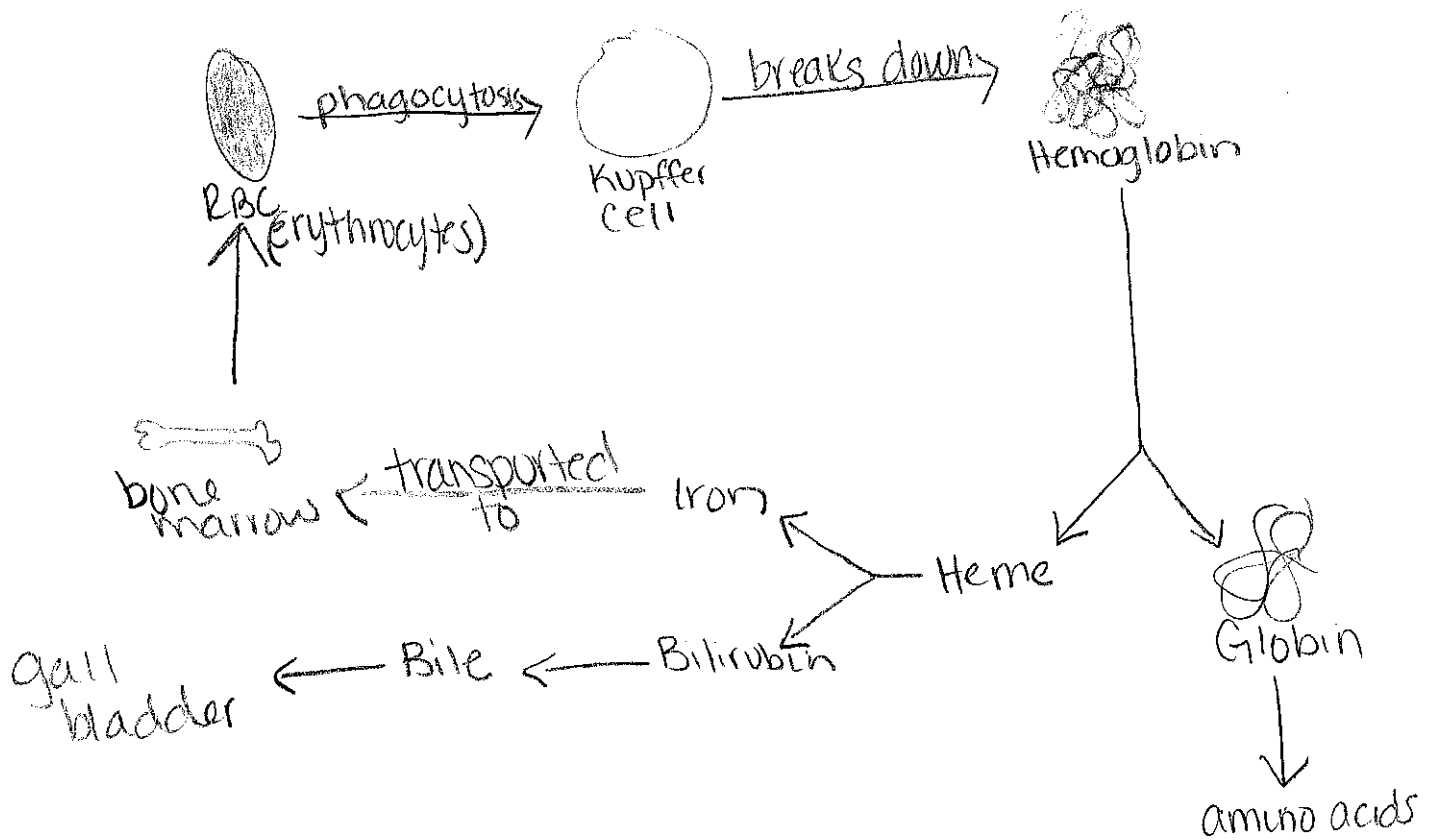


- other substances too

2) Breakdown of RBC

- RBC formed in bone marrow

- Kupffer cells, a phagocyte, takes up "old" RBC + recycles them

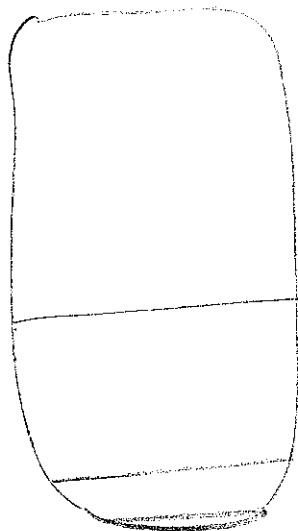


3.) Production of bile salts

- Cholesterol is manufactured in the liver + some from diet.
- Surplus cholesterol is converted into bile salts.

4.) Production of plasma membranes

- The levels of amino acids is also adjusted by the liver cells as the blood passes along the liver sinusoid (type of blood vessel)



60% Albumin

- Major component of osmotic pressure of plasma

35% Globulins

- Antibodies + transport proteins

4% Fibrinogens

- Functions in blood clotting

1% Other

- Various roles

5) Regulation of nutrient levels in the blood

- Glucose, amino acids + short-chain fatty acids reach the liver via the hepatic portal vein
- Some excess nutrients are stored in liver

excess glucose $\xrightarrow{\text{stored as}}$ glycogen
 $\xleftarrow{\text{converted back}}$

also stored
Iron
Vitamin A
Vitamin D

6) Nutrients in excess are stored

6)

- Jaundice - develops yellowish skin + eyes
- high presence of bile pigment (bilirubin)

The liver & Alcohol

- Cirrhosis - chronic inflammation, cells \rightarrow fibrous or adipose
- Obesity
- Gastritis - alcohol irritates the stomach mucosa
- Malnutrition - suppresses appetite
- dementia - destroys neurons
- weakens heart muscle