

Calcium Homeostasis Study Guide

Be able to explain why it is important to regulate plasma calcium.

Describe the negative feedback mechanisms that occur when plasma calcium is either elevated or low. (List the three hormones that are involved and their actions at the bone, kidney, and gut - no details about pumps or channels needed.)

Describe the activation of vitamin D3.

Name three types of cells found in the bone and their roles in bone formation and resorption.

Liver Study Guide

List the different roles the liver plays in the body.

Describe the structure of the liver lobule and sinusoid (or draw/label a picture).

Explain the features of the liver that make it the “guardian of the gut”.

Know the general name of the two sets of enzymes used to detoxify chemicals by the liver.

Describe acetaminophen metabolism as an example of liver detoxification.

Understand that continued exposure to a toxin or drug may result in a upregulation of detoxifying enzymes.

Understand that detoxification of drugs and toxins may use one or both enzyme systems.

Understand that “detoxification” of inert substances can actually lead to activation

Describe the different pathways for conversion and interconversion of proteins, glycogen, and triglycerides into energy and into storage forms. (metabolism flowchart)

Describe the role of insulin, cortisol, glucagon, and epinephrine in blood sugar regulation. Give the stimulus for their release, where they are produced, and their affects on the different chemical reactions that are involved in metabolism.

Give the special feature of the liver that allows it to supply glucose to the body while other tissue can't.