

In this lesson we're going to discuss how bone remodeling helps to maintain homeostasis in the body. So bone remodeling is the process of recycling calcium to maintain proper levels.

So we need certain levels of calcium in our blood in order for our nervous and muscle systems to be able to function properly. But if we have too much or too little, those systems are not going to be able to function at optimal levels. So in order to maintain proper levels of calcium in the blood, a process called bone remodeling occurs.

So osteoblasts are cells that build new bone. And they're found in the periosteum of bones. And osteoclasts are cells that break down old bone. So both of these types of cells have an important role in bone remodeling. And we'll discuss that a little bit more in just a moment.

So the process of bone remodeling is signaled by hormones. Either the hormone PTH or Calcitonin. So it depends on whether there's too much or too little calcium in the blood. One of those hormones is going to have a role in helping to maintain homeostasis.

And bone remodeling is an example of negative feedback. So negative feedback is when there is a change that is sensed by the body. And that change is then reversed.

So let's take a look at the diagram we have here. And this will help you understand this process a little bit better. So we have a picture of our bone right here.

When calcium levels in the blood are too high, calcium is going to be deposited into the bone. So it's removed from the blood and deposited into the bone. And this is signaled by the hormone Calcitonin. So calcitonin will notice that calcium levels in the blood are too high and will signal osteoblasts to build bone to deposit calcium into the bone.

When calcium levels in the blood are too low, calcium will be removed from the bone and deposited into the blood. So calcium levels in your blood are too low, calcium is taken out of the bone in order to raise those calcium levels in the blood. And this is signaled by the hormone PTH and is done by the osteoclast. So the osteoclast will help to break down that bone in order to remove some of the calcium to deposit it into your blood.

So this lesson has been an overview on homeostasis and bone remodeling.