Calcium case study

Business

Describe bone physiology and the bone remodeling cycle. Be sure to emphasize the two types of bone tissue and the roles of steamboats and seacoasts.

Bone physiology is the growth and repair of bones. Bone remodeling is part of this cycle. There are two parts of this cycle, bone deposit and bone respiration (Maries & Hone, 2013). Bone deposit marks areas that need repairing by steamboats and bone respiration removes osseous tissue by seacoasts (2013). Question 2 Explain the relationship between calcium and bones.

Calcium is an important part of the body because it is necessary for quite a few different physiological processes which include transmission of nerve impulses, muscle contraction, blood coagulation, secretion by glands and nerve cells, and cell division (2013). Calcium Is also present In more than 99% as bone minerals and Is absorbed from the Intestine under the control of vitamin D metabolites (2013). Question 3 Explain how the body controls calcium levels In the bones and blood. Be sure to describe the roles of parathyroid hormone (PATH) and calculation in detail.

According to Maries & Hone, when blood levels of ionic calcium decline, PATH is released and the PATH level stimulates seacoasts to resort bone, releasing calcium into blood. As blood concentrations of calcium rise, the stimulus for PATH release ends and the PATH reverses its effects and causes blood calcium levels to fall (2013).

If blood calcium levels are low for a long period of time, the bones become so demoralized that they evolve large, punched-out-looking holes and the

bones serve as a storehouse from which ionic calcium Is drawn as needed (2013).

Question 4 Explain specifically how osteoporosis affects the bone matrix and the normal bone remodeling cycle. In osteoporosis, bone respiration outpaces bone deposit and due to this, the bones become very fragile (2013). According to Marble & Hone, the composition of the matrix remains normal but bone mass declines, and the bones become porous and light (2013). Risk Factors Question 5 Discuss what scientists know about the genetics behind osteoporosis. After researching through family histories, there is some evidence to support that some of the predisposition for osteoporosis can be inherited (Eek, Budget & Spangles, 1997).

Estimation of the genetic component to the variance found in bone mineral density ranges from 60% to 90% (1997). Question 6 List as many risk factors for this disease as you can, both controllable and uncontrollable. Risk factors according to Marble and Hone: Age Postmenopausal women 30% of American women between 60 and 80 have osteoporosis nave It Day age BUY 0% of Caucasian women Petite body form Insufficient exercise to stress the bones A diet poor in calcium and protein Abnormal vitamin D receptors Smoking Hormone-related conditions such as hyperthyroidism, low blood levels of thyroid- stimulating hormone, and diabetes mellitus.

Signs and symptoms Question 7 What are the symptoms or telltale signs of osteoporosis? According to Dry. Susan Brown, the signs of osteoporosis are: Receding gums Decreased grip strength Weak and brittle fingernails Cramps,

muscle aches, and bone pain Height loss Low overall fitness (Brown, 2010).

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