

Deficiency in Bone Marrow: Its Effects on Health and Diagnosis

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DESCRIPTION

The medullary cavities, or the centres of bones, are filled with soft, gelatinous tissue called bone marrow. There are two types of bone marrow: Red bone marrow, also known as myeloid tissue, and Yellow bone marrow, sometimes known as fatty tissue. More than 220 billion new blood cells are produced daily in the bone marrow. The bone marrow contains the majority of the body's blood cells. Almost every components of our blood is created in our bone marrow. Along with white blood cells and platelets, it is in charge to produce billions of red blood cells every day. Additionally, fat that can be converted into energy is stored in the bone marrow.

Red bone marrow consists of a fragile, highly vascular fibrous tissue containing hematopoietic stem cells. These are blood-forming stem cells. All of the red blood cells, platelets, and 60%-70% of the lymphocytes in an adults are created in the red bone marrow. Other lymphocytes develop fully in the lymphatic tissues, such as the thymus, spleen, and lymph nodes, after beginning their lives in red bone marrow. Red bone marrow, along with the liver and spleen, helps the elimination of old red blood cells. Mesenchymal stem cells, also known as marrow stromal cells, are found in yellow bone marrow. They produce bone, cartilage, and fat. The main function of yellow bone marrow is to store fats. It aids in feeding the bone and maintaining the correct environment for the bone to function.

Yellow bone marrow may revert back to red bone marrow under specific circumstances, such as when there has been a severe blood loss or when there is a fever. Common disorders that affect bone marrow: Multiple myeloma: Our body produces

cancerous plasma cells in your bone marrow. Aplastic anemia: Our bone marrow doesn't produce enough blood cells. Polycythemia vera: Our body makes too many red blood cells, which causes your blood to thicken. Common symptoms of bone marrow are bleeding easily, bruising, and fatigue.

Diagnosis to check the health of the bone marrow or blood cells

Bone marrow biopsy: A large needle removes a piece of our bone marrow. The biopsy shows where, how many and the types of cells are present in bone marrow. Bone marrow creates the components of our blood that are need to survive. The bone marrow produces red blood cells, which carry oxygen, platelets, which stop bleeding, and white blood cells, which fight infection. Our body depends on bone marrow, therefore insufficient of it might be fatal.

CONCLUSION

The bone marrow contains the majority of the body's blood cells. Another source of bone marrow stem cells is the blood that circulates in the veins and arteries of all normal people. These stem cells are known as peripheral blood stem cells. Bone marrow failure causes when the bone marrow fail to produce enough healthy blood cells to keep up with the body's needs. Low blood cell production originates from injured or diseased bone marrow. These illnesses weaken the immune system and deprive organs and tissues of the nutrition and oxygen necessary for life. The body's bone marrow cannot make enough healthy blood cells when there is a disease in bone marrow.

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