

P109. TOXICOLOGICAL FINDINGS IN BONES

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Poison is a substance that gives harm to cells and living tissues chemically, biochemically or radioactively. Toxicology which is the study of poison, studies the origin, features of the poison, the effects that it has on organisms, treatment against it and its toxic dosages. Poisons do various kinds of harm to systems inside organisms and bones are one of them. Bones are the hardest tissue that makes up the body. While having a supporting role bones are also the calcium storage of the body and there are 206 bones in an adult. There are osteocyte, osteoblast, osteoclast, inter cellular fluid matrix in the bone tissue and composes of 7 different parts. These are periosteum, compact bone, spongy bone, red bone marrow, yellow bone marrow, blood vessels and articular cartilage.

Since prehistoric ages different kind of diseases have been diagnosed by bones. Heavy metals, radioactive elements, halogenes, nonmetals and volatile organic compounds damage the bone in various ways. Lead, cadmium, aluminum, strontium and mercury are heavy metals that cause chronic poisoning that lead to weakness in bones, osteoporosis, osteomalacia, demineralization, spinal deformation, growth retardation, bone tumors and leucemia. Radium, uranium and plutonium that are radioactive elements can cause decalcification and softening in bone, skeleton deformation and bone tumors. Also fluorine a halogene damages the calcium metabolism and causes osteoporosis and osteosclerosis; nonmetal phosphorus degenerates the bottom jaw and bones. While having storage role for some elements, bones are also like a shelter that a lot of toxic substances hold on to and accumulate.