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Calcium Causes Osteoporosis “A New Theory on Calcium and Osteoporosis”

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Osteoporosis is a metabolic bone disease associated with bone remodeling disorder rather than mineralization problem. In most of the cases the mineralization of bone is normal. In osteoporosis bone resorption occurs more than bone formation; loss of bone mass ensues because resorptive activity is maintained at normal levels. In this paper we present a new hypothesis in which calcium cannot prevent osteoporosis, moreover is even cause of osteoporosis. We proved our hypothesis with logical reasoning and referring to the documentation and experimental research findings. Bone is not just made of calcium that we use it to prevent osteoporosis and to guarantee our bone health. But, exclusively bone cells can build and preserve bone. Bone matrix is made and preserved by bone cells, and renewed several times by them throughout life. Along with calcium, other elements such as phosphorus, magnesium, sodium, fluoride also form the mineral part of the bone, although calcium is the major bone mineral. The protein part, which is mainly made of collagen, forms the main bone scaffold and absorbs minerals, including calcium. That is, if the protein matrix is not made, the minerals will not be able to settle in the bone tissue. Excessive calcium intake may lead to abnormal deposition in the bone and disturb the balance of organic and inorganic substances in bone. The molecular arrangement of bone matrix is effected and rheological properties of bone are changed causes it to become more fragile and susceptible to stresses. In addition, excess calcium deposition in cellular spaces, lacunae, and canaliculi can interfere with the oxygen supply and nutrition of bone cells and eventually cause them to die. Also, the cellular connection paths are blocked and the cells lost their coordination with each other and with blood stream. So, the cellular and hormonal regulation of bone formation is disturbed and new bone matrix is not made enough. Afterwards, excessive calcium deposited in bone leads to osteoporosis and bone fracture

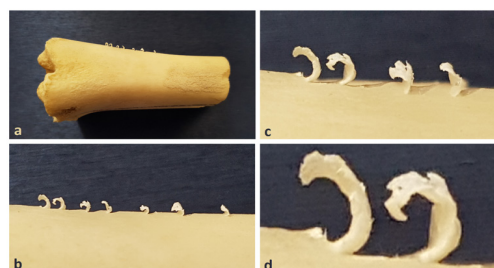


Figure 1: Wavy and curved chips of bone are seen after cutting (with increased magnification from a to d). It is indicated that bone is not brittle contrary to our expectation, despite having 60% minerals in its composition.

Biography

Yahya Shafiei Babil Oliaei is Assistant Professor of Food Hygiene at Department of Food Science and Technology of Islamic Azad University of Khoy Branch, Iran since 2008, and invited Assistant Professor at Department of Food Hygiene, Tabriz Islamic Azad University of Medical Science, since 2016. He has published more than 30 research papers, books, chapters and scientific reports and attended more than 20 scientific conferences. He has won the best researcher of the year award two times. He has contributed to the compilation of “The Oxford Companion to Cheese”, winner of the 2017 James Beard Award. Dr. Shafiei has recently carried out his theoretical studies on calcium and its relationship to osteoporosis. He found that excessive calcium intake threatens our bone health and leads to the osteoporosis. He has proven this claim with plenty of evidence and proof in his challenging book titled “Calcium Causes Osteoporosis” published in 2017.

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