

CALCIUM AS A BOON OR BANE FOR ATHLETE: A REVIEW

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ABSTRACT

Minerals are essential for a wide variety of metabolic and physiologic processes in the human body. Calcium is one of the essential nutrients that is necessary for many functions in human health. About 99 percent of calcium in the body is stored in the skeletal system, while the remaining one percent is present in other cells, such as muscle cells. Although this muscle cell calcium is involved in a variety of physiologic processes associated with energy metabolism and muscle contraction. Exercise increases the reabsorption of calcium from bones and inadequate intake of calcium resulting in hypocalcaemia. Hypocalcaemia is one of the factors causing the decline in leg muscle strength in athletes. Although adequate calcium intake is necessary to promote bone health and prevent osteoporosis, increased physical activity alone does not necessarily demand an increased intake of dietary calcium or other micronutrients. Athletes may lose calcium via sweat, in which case replenishment is advocated either via dietary intake of calcium-rich foods or a commercial calcium supplement. The important message to athletes is to consume a diet adequate in energy, protein, fat, vitamins, minerals, and fluids to support the physical demands and replenish the physiologic losses incurred with physical training. Research has shown that adequate calcium intake can reduce the risk of fractures, osteoporosis, gastrointestinal diseases and kidney stone etc. The purpose of this article is to review the health benefits of calcium and consequences of calcium supplementation on osteoporosis/osteoporotic fractures, cardiovascular events, kidney stones, gastrointestinal diseases, and other important diseases. Furthermore, an effort is made to address the role of dietary or supplemented calcium on several indices of physical performance. In the end, we suggest that calcium supplementation should be prescribed and taken cautiously, accounting for individual's risks and benefits. Clearly, further studies are needed to examine the health effects of calcium supplementation to make any solid recommendations on physical performance of people of different genders, ages and ethnicities.

KEYWORDS: *Osteoporosis, Cardiovascular Diseases, Kidney Stones, Gastrointestinal Diseases, Hypocalcaemia, Bone Formation.*

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