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Bone-Damaging Beverages: Hidden Risks in Your Daily Drink

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Abstract: *Bone health is essential for maintaining structural support, mobility, and mineral homeostasis throughout life. Although genetics, age, and physical activity influence bone strength, dietary habitsespecially beverage consumptionplay a crucial but often overlooked role. Many commonly consumed drinks contain substances that negatively affect calcium balance, bone mineral density (BMD), and overall skeletal integrity. Excessive intake of certain beverages may accelerate bone loss and increase the risk of osteoporosis and fractures, particularly in adolescents, postmenopausal women, and elderly individuals.*

This review highlights five widely consumed beveragescarbonated soft drinks, caffeinated beverages, alcohol, energy drinks, and packaged fruit juicesand explains their potential mechanisms of bone damage. These drinks may interfere with calcium absorption, increase urinary calcium excretion, alter vitamin D metabolism, or promote systemic acidity, all of which compromise bone remodeling. Phosphoric acid, caffeine, alcohol, and high sugar content are identified as key contributors to adverse skeletal effects.

Understanding these hidden risks is important for healthcare professionals, students, and the general population to promote informed dietary choices. The present work aims to create awareness regarding the long-term skeletal consequences of habitual consumption of bone-damaging beverages and emphasizes the need for moderation and healthier alternatives to support optimal bone health.

Keywords: Bone health; Osteoporosis; Calcium metabolism; Caffeine; Carbonated beverages

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