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Physical fitness, adiposity, and diets as surrogate measures of bone health in schoolchildren: A biochemical and cross-sectional survey analysis

By

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Abstract

Objective: This study aims to investigate the associations between adiposity, muscular fitness (MF), diets, sun exposure, and physical activity profiles as surrogate measures with bone health status in a sample of schoolchildren aged 8-18 years old.

Methods: A total of 250 Egyptian schoolchildren aged (8-18) years were randomly invited to participate in this cross-sectional survey analyses. Calcaneal broadband ultrasound attenuation (c-BUA), bone mineral density (BMD), and bone formation markers (T-Ca, s-BAP, Osteocalcin) were measured as markers of bone health. Adiposity profile, MF, physical activity (PA), sun exposure, Ca and vitamin D dietary intake as related co factors of bone health were measured by using pre validated questionnaires and standard analytical techniques.

Results: A total of 85 % (n=213) of the study population showed normal bone health, and 14.8 % (n=37) with abnormal bone health, most of them are girls (67.6%), they are classified according to BMD and c-BUA z-scores into osteopenia (9.6%) and osteoporosis (5.2%).

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