

Maximum expiratory flow and handgrip strength predict bone health in children and adolescents [El Flujo espiratorio Máximo y la Fuerza de prensión manual predicen la salud ósea de niños y adolescentes]

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Objectives: To analyze the relationship between manual grasping force (FPM) and Maximum expiratory flow (FEM), and to verify how these parameters together can contribute to bone health in children and adolescents. **Methodology:** A descriptive (correlational) study was carried out. A total of 253 children and adolescents (134 boys and 119 girls) were selected probabilistically. The age range is 6.0 to 15.0 years old. Weight, standing height, sitting height, right forearm length, right biepicondylar femur diameter, right and left FPM, and peak FEM were evaluated. Bone mineral density (BMD) and bone mineral content (CMD) were calculated by means of anthropometric regression equations. **Results:** Positive correlations were observed between FPM and FEM in both sexes ($R^2_{\text{adjust}} = 30$ to 37%). FPM individually explains BMD and CMD by 58% to 69%, while FEM by 35% to 42%. Both variables together (right and left FPM + FEM) explain BMD and CMD by 67% to 68%. **Conclusion:** Positive correlations were observed between FPM and FEM in schoolchildren of both sexes. Both variables are determinant to predict children's and adolescents' bone health. These results suggest that both parameters can serve as indicators of functional aptitude to identify bone fragility among children and adolescents. Copyright © 2020 Federación Española de Asociaciones de Docentes de Educación Física (FEADEF).

Bone health

Children

Manual grasping strength

Maximum expiratory flow