Vitamin status in European adolescents: Contribution of the HELENA study to public health

For the first time, data on micronutrient status are presented using the same methodology in European adolescents, showing important associations with sex, age, physical activity, fitness and BMI. More than 75% of the adolescents had sub-optimal vitamin D, 35% plasma folate, 20% vitamin B6 levels according to adults’ reference values. 71% of the females had RBC folate concentrations below 906 nmol/L, in relationship to folate-dependent Neural Tube Defects. Folate, vit D, E & C presented deficient intake. Socioeconomic status has an influence on vitamin D, B12 and folate concentrations. Sex should be considered when analyzing vitamin C, alfa-tocoferol, vitamin B12, vitamin B6 and tHcy concentrations. Age should be considered when analyzing plasma folate, holo-TC, RBC folate and tHcy in males and beta-carotene, PF, Cbl and tHcy in females. Retinol in both. A relationship between vitamin D concentrations and bone mineral content was observed in physically active adolescents. Regarding cardiorespiratory fitness, retinol and vitamin C were associated in males and beta-carotene and vitamin D in females. Regarding muscular fitness, beta-carotene, retinol and alfa-tocoferol were associated in males and beta-carotene and vitamin D in females. As some vitamin deficiencies have been observed, public health measures should be taken, as an adequate vitamin status is essential for optimal growth and development.

Biography

Marcela González Gross is Full Professor of Sports Nutrition and Exercise Physiology at the Faculty of Physical Activity and Sports Sciences of the Technical University of Madrid. Head of the Research Group on nutrition, exercise and healthy lifestyle (ImFINE). Vice-president of the Spanish Nutrition Society. Manager of Exercise is Medicine-Spain. Founding member of Exernet (Research Network on Physical Activity and Health) and The European Plataform Active Ageing in Sport Member of Center for Biomedical Research Network on pathophysiology of obesity and nutrition (CIBERobn). Deputy coordinator in the HELENA study and responsible for the workpackage on blood biomarkers.