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ECR 2024 / C-17732

Comparing Bone Density and Body Mass in male adolescents: A contrast between Soccer Players and Swimmers

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Purpose

The regular practice of physical activity has clear beneficial effects on health, however a large part of the Portuguese population is sedentary, and it is extremely important to raise awareness about it at an early stage of life, so that the benefits of a regular practice of physical activity continues throughout adult life and reduces the risk of comorbidities of the musculoskeletal system, associated with aging, such as Cauley osteoporosis. The effects of physical activity on BMD are substantially related to mechanical load, although...

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Methods and materials

Sample: The sample consists of 76 male football (n=40) and swimming (n=36) subjects, with a chronological age between 12 and 16 years old. The following inclusion criteria were considered: (i) male sex; (ii) chronological age less than 16 years old; (iii) practicing sport for at least three years. Regarding the exclusion criteria, the following were considered: (i) previous fractures of long bones or any surgery that leads to immobilization for a period longer than 6 months; (ii) congenital pathologies, diabetes, among others; (iii) have performed...

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Results

Soccer players (n=40) exhibit higher BMC for the whole body ($1528,4 \pm 108,3$ vs. $1404,1 \pm 50,3$) than swimmers (n=36) and for all specific regions of the body, except the upper limbs where swimmers exhibit higher BMC ($195,7 \pm 35,2$ vs. $191,8 \pm 36,7$). Soccer players have higher body mass ($53,0 \pm 11,7$ vs. $44,2 \pm 9,6$) and Body Mass Index Percentile for age ($61,6 \pm 24,9$ vs. $42,5 \pm 27,2$). Whole-body DXA show higher fat-free mass for soccer players ($40,2 \pm 6,7$ vs. $35,5 \pm \dots$)

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Conclusion

Physical activity seems to promote and benefit bone mass gains during growth for specific regions of the skeleton. Soccer has greater impact on specific regions of the pelvis and swimming on the upper limbs. Efforts should be made to encourage modification of all risk factors for osteoporosis early on life such as government policies to promote sports practice.

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Personal information and conflict of interest

J. Pinheiro: Nothing to disclose L. P. V. P. V. Ribeiro: Nothing to disclose M. Silva: Nothing to disclose

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Fig 1: Sample description

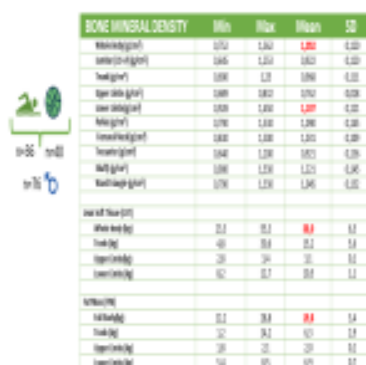


Fig 2: Body Composition for the samples including lean soft tissue and fat tissue



Fig 3: Sample analysis between soccer players and swimmers

