

**Influence of boron supplementation on vertebral and femoral bone mass in rats on strenuous treadmill exercise. A morphometric, densitometric, and histomorphometric study.**

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We studied the effect of boron supplement on experimental osteopenia caused by strenuous exercise in 93- d-old female Wistar rats. A control group of 15 rats was not manipulated. The exercise group of 30 rats was divided into 2 groups of 15 rats each, one that was fed a diet supplemented with 50 mg/kg of boron in the form of  $\text{Na}_2\text{B}_4\text{O}_7$ , and other that, did not receive a boron supplement. The length and weight were determined in the femur and fifth lumbar vertebra and the bone mineral content and density were assessed through densitometry, and trabecular bone volume, trabecular number, trabecular thickness, and trabecular separation with histomorphometry. The femur length and weight, and vertebra weight, and femur and vertebra bone mineral content and density were significantly lower and the trabecular separation was higher in the exercise group than in the others ( $p < 0.005$  in all). The femur weight, bone mineral content and density, trabecular bone volume and trabecular thickness, were significantly higher in the exercise plus boron group ( $p < 0.005$  to  $0.0001$ ). It was concluded that boron preserves bone mass in rats that have been exposed to intense exercise.

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