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## Effects of protein restriction on body parameters and bone metabolism in 17 $\beta$ -estradiol treated ovariectomized female Wistar rats

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The adequate ingestion of proteins is determinant to the acquisition and maintenance of bone and muscular mass, especially in post-menopausal women. The objective of this study is to understand the effects of a low protein diet on the metabolism of sexual hormone deficient subjects undergoing or not an estradiol hormone reposition therapy (HRT). Adult female Wistar rats were distributed into control group, ovariectomized and 17 $\beta$ -estradiol treated ovariectomized groups fed with control or an isocaloric low protein diet (6,6% protein). Body weight gain, metabolism rate and total body composition were assessed as well as serum hormone content. The results showed the protein deficiency caused alterations in growth, diminishing the body weight, increasing the final body fat percentage, reducing the muscle and bone mass and also the bone density. The metabolic rate was reduced in low protein groups compared to controls and the levels of growth hormone (GH) and the thyroid stimulating hormone (TSH) were diminished. In addition, the low protein diet had a diabetogenic effect, increasing the glycaemia and decreasing the insulin levels. Although the low protein ovariectomized group was more affected compared to the controls, the combination with HRT showed an improvement on minimizing the damaging effect of the low protein diet compared to the control groups. We concluded that protein restriction has adverse effects on metabolism, leading to a worse condition of the menopause state and that HRT could improve these affected points. Thus, HRT can be effective to improve the status of post-menopausal women but should be associated with a healthy nutritional pattern.

### Biography

Victoria Padula de Quadros has completed her Master of Sciences from University of Campinas, Brazil and she is currently involved in a Masters program in Human Nutrition at the Associazione Biologi Ambientalisti Pugliesi (ABAP), Italy.

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