

## Study conducted on rats suggests that hyperproteic diets can be beneficial for bones

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The image shows the 'AGR-145: Digestive Physiology and Nutrition' Research Group from the University of Granada. Standing fifth from the left is Virginia Aparicio. Elena Nebot appears first on the right.

Research conducted at the University of Granada reveals that soy protein supplements are better than those with whey, since they improve calcium content in bones by as much as seven per cent. This research has been published in the journal *Food & Function*

Researchers at the University of Granada have found, through an experiment conducted on rats, that hyperproteic diets could be beneficial for bones, which would be of great use for groups with bone disease problems, such as the elderly or post-menopausal females.

Their [research](#) has also revealed that vegetal protein—in the case of the present study, [soy protein](#)—is preferable to animal protein (such as [whey protein](#)), since the former increased the level of calcium in bones by as much as seven per cent.

In an article published in the [journal](#) *Food & Function*, these researchers examined the effects of a normoproteic diet and of another hyperproteic one upon rat bones. They used a sample of 140 male Wistar rats, which was divided into four different subgroups, each of which was administered a different diet over the course of 12 weeks.

Two of these groups were fed a normoproteic diet (10% rich), half of them with soy protein, and the other half with whey protein; the other two groups ingested two different types of hyperproteic diets (45% rich) based, respectively, on soy and whey protein.

## **Better bone features**

The results of this experiment demonstrated that rats fed with a hyperproteic diet maintained better [bone](#) properties than those which followed a normoproteic diet, in spite of the fact that they were affected by some acidity markers such as urea in plasma (46% higher) and urinary pH (8% more acid). These apparently negative side effects were neutred in those groups that consumed soy as a protein source, which reduced such acidity.

The group fed with soy protein presented besides a higher amount of total minerals, 7% more calcium in bones and a thicker diaphyseal

cortical area, than those fed with the whey protein [diet](#).

According to Virginia A. Aparicio Garcia Molina and Elena Nebot, researchers from the Physiology Department at the University of Granada and two of the authors of this study, "the impact that the type and the amount of protein which we consume have upon our health is a highly controversial topic within the scientific community, and there is no definitive agreement on certain aspects in this subject'

Hyperproteic diets are very frequent among athletes and persons who are on weight loss diets, but there is still no consensus on the effects that such diets have upon metabolism.

Researchers warn that this is a study conducted upon rats, whose results must still be confirmed in humans. "We would recommend a case by case study supervised by professionals, and approach the subject taking into consideration the advantages and disadvantages presented by hyperproteic diets, besides each individual's personal features."

**More information:** "Effects of the amount and source of dietary protein on bone status in rats," Elena Nebot, Reinhold G. Erben, Jesús M. Porres, Pedro Femia, Daniel Camiletti-Moirón, Pilar Aranda, María López-Jurado and Virginia A. Aparicio, *Food Funct.*, 2014, 5, 716. [DOI: 10.1039/c3fo60525f](https://doi.org/10.1039/c3fo60525f)

Provided by University of Granada

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