

# Physical activity affects body composition in sex-specific way

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Children doing physical activity. Credit: "Soccer" by Michael Newman, CC BY-NC-ND 2.0

Researchers from the Paleophysiology and Paleoecology groups at the Centro Nacional de Investigación sobre la Evolución Humana (CENIEH) have just published in paper in the *American Journal of Human Biology*, which shows that for a given level of physical activity, boys accumulate less body fat than girls.

The objective of the study was to understand how the energy dedicated to physical activity affects somatic investment, that is, the expenditure invested in the body, whether for growth or to be stored in different tissues (such as fat or muscle), for boys and girls aged from six to 10.

It was performed by analyzing the levels of physical activity and body composition in a total of 415 children from the Portuguese region of Coimbra. The data were compiled by members of the Human Biology, Health and Society Group attached to the Research Center for Anthropology and Health (CIAS), at the University of Coimbra, co-authors of the study.

"While the active girls increased their [body fat](#) just as much as sedentary ones did, among the active boys, physical activity did cushion this rise in body fat, in comparison with the more sedentary boys. These conclusions were drawn after discounting other [socioeconomic factors](#) which could affect that increase," say Ana Mateos and Jesús Rodríguez, the respective leaders of the Paleophysiology and Ecology of Hominins Group, and the Paleoecology of Mammals Group, at the CENIEH.

From an evolutionary point of view, this result could be explained by the different strategies the two sexes adopt in reproduction, according to Guillermo Zorrilla, lead author of the study: "Girls, despite physical activity, accumulate the fat necessary for the proper regulation of the hormonal and reproductive system. Nevertheless, boys' physiology is less affected by the reduction of body fat through [physical activity](#), and they obtain other benefits by practicing it."

**More information:** Guillermo Zorrilla-Revilla et al, Sex-specific differences in somatic investment and strategies of physical activity among Portuguese schoolchildren, *American Journal of Human Biology* (2021). [DOI: 10.1002/ajhb.23626](https://doi.org/10.1002/ajhb.23626)

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