

Moderate to vigorous physical activity important in early weeks of pregnancy

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Researchers at the University of Granada (UGR) have analyzed for the first time the link between sedentary time vs. objectively measured physical activity levels and systemic concentrations of glycemic, lipid, and inflammatory markers among pregnant women

Pregnancy is a critical stage characterized by complex changes in endocrine and immunometabolic levels, during which the woman's physiology is modulated to sustain her health and that of the baby. However, a malfunction in these mechanisms during the early stages of [pregnancy](#) may subsequently lead to complications and adverse consequences for fetal development and the future health of both mother and child.

In view of this issue, in recent years a new field of research has evolved, focusing on the quest for strategies that enable pregnant [women](#) to better regulate and maintain these mechanisms during pregnancy, thus facilitating pregnancies with fewer complications.

Given the proven influence of lifestyle on the intrauterine environment, reducing the [time](#) spent by the mother on sedentary behaviors and increasing her physical activity levels may constitute alternative–complementary tools for controlling and regulating these immunometabolic responses and therefore promoting healthier pregnancies. However, only a few studies have been conducted to date dealing with women during the early stages of pregnancy, and the results are ambiguous. Furthermore, this issue has never been explored in pregnant women with no severe metabolic disruptions.

Researchers from the University of Granada (UGR) have recently published a study in the *Scandinavian Journal of Medicine and Science in Sports*, in which they analyze for the first time the link between sedentary time vs. objectively measured physical activity levels and systemic concentrations of glycemic, lipid, and inflammatory markers among women in the early stages of pregnancy (n= 50 pregnant women; 33 years of age; body mass index 24.2kg/m²; gestational stage 17 weeks). This study is part of the GESTAFIT ("Gestation and Fitness") project, which was carried out at the UGR during the period 2015–2018.

The authors of this study observed that higher levels of physical activity at a moderate–vigorous intensity and complying with the specific physical activity recommendations for this population during the first weeks of pregnancy were associated with lower concentrations of interleukin 1 β and interferon- γ and higher levels of interleukin 8. That is, physical activity was linked to physiological markers related to inflammation, angiogenesis, metabolic regulation, and so on. However, the researchers did not identify any relationship between [sedentary time](#) or physical activity levels and glycemic and lipid markers.

They concluded that spending more time conducting physical activity of moderate–vigorous

intensity may help modulate these immunometabolic responses during the early stages of pregnancy in 'healthy' pregnant women. Given the importance of maintaining an adequate balance of these mechanisms to promote more successful pregnancies, the results of the present study could be relevant to the clinical setting.

Pedro Acosta-Manzano and Francisco M. Acosta, the main authors of the study, explain: "If future intervention studies confirm these results in larger samples of pregnant women, different healthcare institutions might consider implementing strategies aimed at increasing physical activity levels (mainly of moderate–vigorous intensity) as a complementary tool to control the balance between these immunometabolic responses in [pregnant women](#) with no severe metabolic disruptions."

More information: Pedro Acosta-Manzano et al. Association of sedentary time and physical activity levels with immunometabolic markers in early pregnancy: The GESTAFIT project, *Scandinavian Journal of Medicine & Science in Sports* (2019). [DOI: 10.1111/sms.13547](https://doi.org/10.1111/sms.13547)

Provided by University of Granada

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