

# Stress hormones spike as the temperature rises

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Credit: Nik Shuliahin, CC0

A new study in medical students finds that summer, not winter, is the season when people are most likely to have higher levels of circulating stress hormones. These non-intuitive findings contradict traditional concepts of the taxing physical toll of winter and the relaxed ease of summer. Researchers will present their findings today at the American Physiological Society (APS) annual meeting at Experimental Biology 2018 in San Diego.

Cortisol—often referred to as the "stress hormone" because it is released into the bloodstream during stressful situations—helps regulate the body's levels of sugar, salt and fluids. The hormone helps reduce inflammation and is essential for maintaining overall health. Cortisol levels are typically highest in the morning and gradually drop throughout the day. Levels are lower in the evening to maintain healthy sleeping patterns. Illness, lack of sleep and certain medications can affect cortisol levels more than normal daily fluctuations. Researchers from Poznan University of Medical Sciences in Poland have now discovered seasonal patterns in the cortisol levels of [medical students](#).

The research team studied a group of female medical students on two separate days in the winter and for two days again in the summer. The researchers took saliva samples every two hours during each testing period—a full 24-hour cycle—to measure levels of cortisol and markers of inflammation. The volunteers completed a lifestyle questionnaire during each testing session about their sleep schedule, type of diet they followed and [physical activity levels](#).

Previous studies on the seasonal variability of cortisol have shown inconsistent findings—possibly because participants were tested in their own homes and not in a uniform setting. In the current study, however, the research team found [cortisol levels](#) to be higher on the summer testing dates. Inflammation levels did not change significantly between seasons.

**More information:** Dominika Kanikowska, of Poznan University of Medical Sciences, will present the poster "Daily and seasonal rhythms of interleukin 6 and cortisol levels in saliva and some lifestyle habits of medical students in Poland" on Wednesday, April 25, in the Sails Pavilion of the San Diego Convention Center.

Provided by American Physiological Society

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