

Racial discrimination among teens linked to unhealthy stress hormone levels

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Scientists already know that the stress caused by racial discrimination is related to a host of chronic health conditions, but less is known about which types of discrimination are most harmful.

To answer that question, researchers at the University of Michigan School of Kinesiology surveyed 100 adolescents aged 13-19, who had

obesity or who were overweight, about their [experiences](#) with institutional, peer, educational and cumulative [discrimination](#).

They measured their salivary [cortisol](#) five times a day over three days, and found that teens who experienced peer discrimination—[racial discrimination](#) from other teens—had unhealthy levels of the so-called [stress](#) hormone cortisol circulating in their bodies throughout the day. Disruptions in cortisol patterns can lead to unhealthy cortisol levels in the body, which is connected to many chronic health conditions.

"While it wasn't the most frequently experienced type of discrimination, it did have the greatest impact," said Rebecca Hasson, associate professor of movement science and director of the Childhood Disparities Research Laboratory. "When you think about it, that makes a lot of sense because at that age peers are probably the most important relationships."

When is cortisol unhealthy?

Some stress is good, and our bodies need it, Hasson said. In healthy people, cortisol is highest in the morning, which helps us feel alert and awake. Cortisol falls gradually as the day wears on, and this slope is called the diurnal pattern. But stressors can disrupt that pattern and blunt that slope, so cortisol is lower in the morning but doesn't fall as much throughout the day.

"That's when it becomes harmful," Hasson said, and that's what happened to the teens who reported more peer discrimination. "We know this can lead to increased rates of obesity, Type 2 [diabetes risk](#), anxiety and depression, almost any sort of chronic disease you can think of is negatively impacted by unhealthy cortisol patterns."

Discrimination harmed all children

The study found that racial discrimination was harmful to both Black and white teens.

"The key difference is African American or Black children experience it more frequently," Hasson said. "A really important point is that racial discrimination is harmful to everyone. We need to strive towards acknowledging everyone's humanity. Is there a way in which we, as kinesiology, can harness the power of physical activity to ignite that change?"

Other findings include:

- Overall, 69% of participants reported exposure to at least one type of racial discrimination (34% experienced one type, 16% experienced two types and 19% experienced three types).
- 57% of Black adolescents reported institutional racial discrimination compared to 27% of white teens, and nearly three times as much perceived stress due to that exposure.
- Black teens reported roughly twice the [perceived stress](#) from cumulative and educational discrimination than white adolescents.
- Baseline awakening [cortisol levels](#) were significantly lower in Black adolescents compared to white adolescents.

Hasson's lab has developed a series of home and classroom physical activity programs called Interrupting Prolonged sitting with Activity (InPACT), to provide children with activity breaks throughout the day. Researchers hope exercise is one way to help combat the negative health effects of stress and racial discrimination, and foster the positive peer relationships that discourage racism.

"The goal isn't just to buffer the effects of discrimination, but to develop policies and programs to eliminate it," Hasson said.

The study appears online in *Psychosomatic Medicine*.

More information: Jonel E. Emlaw et al, Racial discrimination and hypothalamic-pituitary-adrenal axis dysregulation in adolescents with overweight and obesity: does context matter?, *Psychosomatic Medicine* (2023). [DOI: 10.1097/PSY.0000000000001235](https://doi.org/10.1097/PSY.0000000000001235)

Provided by University of Michigan

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