

# The Impact of Violent Crime on Sleep and Stress

## OVERVIEW

The United States registered nearly 1.25 million violent crimes in 2016. Strong evidence indicates that children exposed to violence in and around their neighborhoods suffer academically, but the mechanisms that explain how such crimes get “under the skin” are poorly understood. **Jennifer Heissel** (SESP PhD 17), who is on the faculty of the Naval Postgraduate School and a former IPR graduate research assistant, IPR developmental psychobiologist **Emma Adam**, and their colleagues studied sleep and the stress hormone cortisol in adolescents exposed to violent crimes in their communities. They found that adolescents’ sleep and cortisol patterns were disrupted the night and day following nearby violence, and that more violent crimes led to more serious disruptions. Disruption of both sleep and cortisol have been linked to poorer academic performance.

## FINDINGS

**Following nearby crimes that involved homicide and criminal sexual assault, young people went to bed later and slept less.** After a violent crime in their neighborhood that was between one-third and half a mile away from where they slept, local youths went to bed 26–38 minutes later on average. **Their cortisol levels skyrocketed the mornings after a local, violent crime.** A higher cortisol awakening response (CAR), a surge in cortisol levels measured shortly after waking up, suggests that their bodies anticipated more stress the day following a crime. The average CAR on the day following violence rose 111 percent compared with days not preceded by violence. Following nearby homicides, youth went to bed nearly two hours later, and their sleep decreased by 1.14 hours. A criminal sexual assault in their neighborhood increased how



long it took youth to fall asleep—or sleep latency—by 29 minutes and decreased how long they slept overall by more than an hour. Robbery had no effect on sleep or cortisol levels.

## METHODOLOGY

The researchers tracked the sleep and cortisol, a stress hormone, of 82 youth in a large Midwestern city. The 11–18 year olds attended public schools that were racially, ethnically, and socioeconomically diverse. Police reports of all reported violent crimes during the study were matched to the students’ home addresses. The students filled out daily diaries over four days, wore activity-tracking watches that measured sleep, and provided three saliva samples a day for cortisol testing. For each youth, researchers compared the students’ sleep on the nights following a violent crime with their sleep on nights when no violent crimes were committed nearby, and did the same comparison for their cortisol levels the night of the crime and the following day.

## POLICY TAKEAWAYS

- The closer teens were to the crime scene (half a mile, or around four blocks, or less), the larger the effect on their sleep, possibly due to increased tension in the household, more communication about the crimes, or even directly overhearing them (gunfire, shouting, or increased police activity, for example). The impact on teens should remind policymakers that violent crime has serious effects beyond the immediate victims.
- Wake times did not vary significantly following a violent crime: Teens might get less sleep overall since school start times do not change. This study provides further evidence for the advantages of later school start times; students would have longer to sleep and to recover following exposure to a violent crime. Alternatively, excused absences could be considered for students exposed to nearby crime.

# How Exposure to Crime Affects Sleep and Cortisol

Adolescents went to sleep later on nights when a violent crime was committed nearby, resulting in fewer total hours of sleep. Additionally, their cortisol awakening response (CAR) more than doubles, indicating the biological pathway through which exposure to violence affects stress. Cortisol is a stress hormone.



## FACTS AND FIGURES

- The 67 percent of teens in the sample who experienced a nearby violent crime went to bed between 26 and 38 minutes later than usual.
- Following a neighborhood homicide, the youths' bedtime was 1.8 hours later. After a criminal sexual assault in their neighborhood, it took youth 29 minutes longer to fall asleep. In both cases, they slept more than an hour less than usual.
- Their cortisol awakening response (CAR) increased 111 percent the day after exposure to nearby violent crime.

## REFERENCES

Heissel, J. A., P. T. Sharkey, G. Torrats-Espinosa, K. Grant, and E. K. Adam. 2017. Violence and vigilance: The acute effects of community violent crime on sleep and cortisol. *Child Development* doi:10.1111/cdev.12889.



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