

# Issue At A Glance:

## Gun Violence and Children's Health

*With more than 300 mass shootings in the United States so far in 2022 and more than 3000 children dying each year via firearm in the U.S., gun violence leaves detrimental effects on children. This brief will explore the short- and long-term effects of gun violence exposure on children's health.*

### Introduction

On May 24, 2022, at 9:30 am, a teenage boy who recently celebrated his eighteenth birthday by buying a gun invaded a local elementary school. On that day, he injured more than seventeen individuals and fatally shot 18 children and two teachers at Robb Elementary School in Uvalde, Texas.<sup>1</sup>

This tragedy left behind many stories told by the children who survived the harrowing ordeal. Some of these children had to use unconventional methods to survive. For example, one child covered herself with her friend's blood, pretending to be dead. The stories of the surviving children and what they had to go through are shocking to say the least.<sup>1</sup>

Statistics show that about 38,000 individuals die via firearm in the United States each year, and 3,000 of those are children.<sup>2</sup> As of now, there have been more than 300 mass shootings in the United States in 2022 alone.<sup>2</sup>

This brief will explore the issue of gun violence experienced by the children in the United States and its short- and long-term effects on their health.

### Notable Statistics

- 38,000** Individuals die via firearm each year in the United States.<sup>2</sup>
- 3,000** Children die of firearm each year in the United States.<sup>2</sup>
- 275,000** K-12 children have been exposed to gun violence since 1999 in the United States.<sup>2</sup>
- 98%** Of active school shootings are in public schools in the United States.<sup>2</sup>

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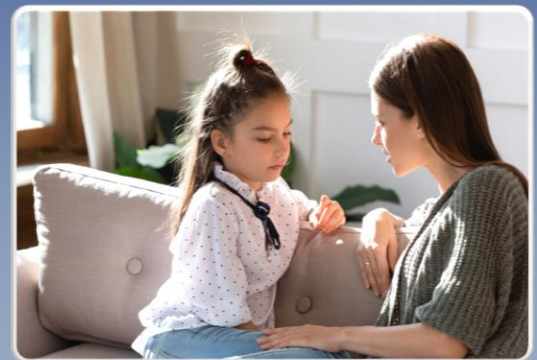
# Children's Exposure to Gun Violence

According to the Centers for Disease Control and Prevention (CDC), gun violence is amongst the top ten leading causes of death for youths in the United States. Youths are affected in two ways: either directly by being involved in a shooting (i.e. getting shot) or indirectly by witnessing gun violence or hearing gunshots in their neighborhoods.<sup>3</sup> Between 2006 and 2016, more children died of firearms than of cancer given that 22,724 children died of firearms compared to 19,125 who died of cancer. Out of the 22,724 children, 62.6% were killed in a homicide, 30.8% committed suicide and 5.1% died by accident. As of 2021, more than 275,000 K-12 students have witnessed some type of gun violence in schools since 1999. Out of all school shootings, 95% were in public schools. Studies show that school shootings continue to be the most deadly.<sup>4</sup>

Research has linked gun violence in schools to three causes: access, possession, and permissiveness. While there is not enough data on access to guns in schools (most data are not available to the public due to long standing federal restriction on gun violence research by the CDC),<sup>5</sup> studies indicate a clear relationship between possession of a gun and the likelihood of being shot.<sup>3</sup> Available CDC data show that the majority of firearms “used in the school shooting come from the perpetrator’s home.”<sup>3</sup> This suggests that a higher rate of gun ownership is correlated with higher rates of school shootings. State laws also play a role. Many studies have shown that the increase in state law permissiveness of firearm leads to higher rates of gun homicides and mass shootings.<sup>3</sup>

## How to Help Children Process School Shootings

Experts advise parents to observe behavioral changes in their children after hearing about or witnessing gun violence. Parents should create a space for their children to talk about and process their feelings. Parents must process their feelings first before talking with children. They are advised to avoid language that stigmatize mental health during these conversations.<sup>6</sup> When outside help is needed, parents or guardians should contact the school and primary care physicians for referral to mental health professionals.<sup>6</sup>



# Health Effects of Gun Violence Exposure

## Short-Term and Biological Effects

Aside from the physical injuries caused by gun violence, children experience various health effects due to exposure to gun violence. There is little research that focuses on the psychological impact of experiencing gun violence on children. Nonetheless, these studies have indicated both direct and indirect exposure to gun violence to be associated with higher reports of post-traumatic symptoms, anger, or aggression.<sup>7</sup>

Findings show that exposure to gun violence is associated with increased acute mental health symptoms for exposed children. This is demonstrated by the increase in mental health related ED visits for children who live in a neighborhood with increased exposure to gun violence.<sup>6</sup> In one study, 54,341 children visited the ED within 60 days of a shooting in the nearby area. Such data suggests that trauma-informed care should be prioritized in areas of high gun violence prevalence.<sup>7</sup>

Children's exposure to gun violence is also linked to changes in biological response, suggesting a biological basis for the negative health outcomes. Studies show that gun violence exposure in youth and adults is linked to lower telomere length. Telomere is a sequence of nucleotides at the end of a DNA. The telomere's main job is to protect the DNA, and it usually gets shorter with age. Shorter

telomere is associated with a higher risk of cardiovascular diseases and infections.<sup>8</sup> In addition to shorter telomeres, studies indicate the existence of neurobiological effects linked to changes in cortisol response in children exposed to gun violence as their cortisol response following a stressful event is shown to be decreased due to chronic exposure to stress.<sup>9</sup> Most studies suggest that the only way to stop these negative biological effects on children is to stop the trigger from being pulled in the first place.<sup>8</sup>

## Long-Term Effects

The long-term effects of gun violence exposure range anywhere from post-traumatic stress disorder (PTSD) to substance abuse.<sup>3</sup> Post-traumatic stress symptoms include agitation, irritability, social isolation, and self-destructive behavior. Not surprisingly, the risk for these symptoms is higher with greater number of exposure. The type of exposure can play a role depending on the child's age. Studies show that for younger children (ages 2-9 years), hearing gunshots is associated with inducing post-traumatic symptoms to the same level as children who experience gun violence directly. This means that the type of threat does not need to be serious to inflict distress on these young children. In contrast, hearing gun fires is not significant for inducing post-traumatic stress on youth aged 10-17 years as it is in younger children.<sup>3</sup>

## Conclusion

Unfortunately, gun violence is prevalent in the United States and has been worsening. Studies link gun ownership and the permissiveness of state laws to higher rates of school shootings. While data is still limited, studies show that children who experience gun violence either directly or indirectly have a higher risk of developing PTSD and abusing substances in the long term. Gun violence exposure has biological effects on children as well, with these effects ranging from a change in the telomere length to changes in cortisol response to stress.

Overall, studies show that micro-level changes in school policies have little influence. Instead, more macro-level changes need to take place. Most studies also suggest that the only way to stop these effects from happening to our children is by stopping the shooting from happening in the first place. In other words, prevention is key. It is time we set aside politics and look at the issue of gun violence for what it is: a public health issue.

## References

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### Did you know?

Almost 50% of mass shootings end up in no death while the vast majority of attacks targeted at high schools were the most deadly.<sup>2</sup>



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