

Study finds increase in pediatric eye injuries from nonpowder firearms

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Nonpowder firearms have long been marketed to children and teenagers as toys or "starter" firearms and include BB, pellet, airsoft and paintball guns. A new study conducted by researchers at the Center for Injury Research and Policy of the Abigail Wexner Research Institute at Nationwide Children's Hospital investigated nonpowder firearm injuries treated in U.S. emergency departments (EDs) among children younger than 18 years from 1990 through 2016. It found an overall decrease in the rate of nonpowder firearm injuries during the study period, but an increasing rate of eye injuries related to nonpowder firearms.

The study, published today in *Pediatrics*, found an estimated 364,133 children were treated in U.S. EDs for injuries related to nonpowder firearms during the study period, going from 16,456 injuries in 1990 to 8,585 injuries in 2016. BB guns accounted for 81% of the injuries. While the number of injuries decreased by 48% during the study period, in 2016 there was still a child treated every hour in the U.S.

"While it is good to see that the overall number of injuries from nonpowder firearms is going down, it is important to note that they remain a frequent and important source of preventable and often serious [injury](#) to children," said Gary Smith, MD, DrPH, senior author of the study and director of the Center for Injury Research and Policy at Nationwide Children's. "The severity and increasing rate of eye injury related to nonpowder firearms is especially concerning. One way to help reverse this trend is to make sure that protective eyewear is worn every time nonpowder firearms like BB, pellet, airsoft and paintball guns are used."

Eye injuries accounted for 15% of nonpowder firearm injuries and the number of eye injuries increased by 50% during the study period. These injuries were often serious, with 22% requiring admission to the hospital. The most common eye injury-related diagnoses were corneal abrasion

(35%), hyphema (13%), globe rupture (10%) and foreign body (9%). These injuries can result in serious adverse outcomes, including partial or complete vision loss.

The average age of children with a nonpowder firearm injury was 12 years. Among cases where the type of firearm could be determined, BB guns accounted for 81% of injuries, followed by pellet guns (16%), paintball guns (3%) and airsoft guns (

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