

# Unseen Consequences: Analysis of Fracture Locations in Pediatric Patients with Gunshot Wounds: A National Study of 15,151 Pediatric Gunshot Victims

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**INTRODUCTION:** Pediatric fractures resulting from gunshot wounds (GSWs) represent a significant public health concern in the United States. Understanding the distribution and characteristics of these fractures is crucial for improving prevention and treatment strategies. This study aimed to analyze the proportion of specific fracture locations in pediatric patients with GSWs.

**METHODS:** This descriptive study utilized data from a national database in the United States, covering the years 2003 to 2023. A total of 15,151 pediatric patients with GSWs were included in the analysis. Demographic information and fracture locations were examined to identify trends and patterns in this population.

**RESULTS:** The mean age of the patients was 13.32 years (SD = 4.11), with males comprising 78.44% of the cohort. Racial distribution included 45.05% Black, 30.62% White, 15.59% of unknown race, 15.57% Hispanic, and 0.79% Asian. The majority of GSWs were caused by unspecified firearms and guns (92.71%), followed by handguns (3.76%) and rifles, shotguns, and larger firearms (2.44%). Fracture distribution among the patients was as follows: skull and facial bones (4.78%, SE = 0.33), cervical vertebra and neck (1.22%, SE = 0.17), ribs, sternum, and thoracic spine (4.85%, SE = 0.33), shoulder and upper arm (3.63%, SE = 0.29), forearm (2.45%, SE = 0.24), lumbar spine and pelvis (3.91%, SE = 0.30), wrist and hand (4.26%, SE = 0.31), femur (4.29%, SE = 0.31), lower leg (5.09%, SE = 0.34), and foot and toe (3.09%, SE = 0.27).

## DISCUSSION AND CONCLUSION:

The findings highlight the prevalence of fractures in specific body parts, with the lower leg and rib fractures being the most common. These results underscore the need for targeted prevention strategies and tailored clinical interventions to address the unique challenges posed by pediatric GSW-related fractures.

Characteristics	N or Mean	SD or %
Age	13.32	4.11
Male	11885	78.44%
Black	6825	45.05%
White	4639	30.62%
Female	2474	16.33%
Unknown Race	2362	15.59%
Hispanic	2359	15.57%
Asian	119	0.79%
Unspecified firearms and guns	14046	92.71%
Handgun	570	3.76%
Rifle, shotgun and larger firearm	370	2.44%

Body Part	Percentage (SE)
Skull and facial bones	4.78% (0.33)
Cervical vertebra and neck	1.22% (0.17)
Rib(s), sternum, and thoracic spine	4.85% (0.33)
Shoulder and upper arm	3.63% (0.29)
Forearm	2.45% (0.24)
Lumbar spine and pelvis	3.91% (0.30)
Wrist and hand level	4.26% (0.31)
Femur	4.29% (0.31)
Lower leg	5.09% (0.34)
Foot and toe	3.09% (0.27)

