

**Trends in Weightlifting Injuries in Pediatric and Adult Populations: 2013 – 2022**

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**ABSTRACT**

Weightlifting can serve as a valuable exercise method for managing obesity and preparing young individuals for sports, provided it is carried out under the guidance of qualified experts and with proper safety measures in mind. Nevertheless, the persistent worry about the potential for injuries remains a significant factor behind the hesitancy of medical professionals in endorsing weightlifting for pediatric populations. **PURPOSE:** To determine whether there are differences in rates and types of injury associated to weightlifting across different age groups. **METHODS:** Information regarding weight training injuries was collected from the National Electronic Injury Surveillance System of the US Consumer Product Safety Commission during the years 2013 to 2022, comprising a total of 18,359 cases. Participants in the study were classified into age brackets: 6 – 10 years old (elementary school age), 11 – 13 years old (middle school), 14 – 18 years old (high school), 19 – 22 years old (college), and 23 – 39 years old (adults). Injuries were grouped as equipment – related impact injuries that included contusions, crushing, fractures, dislocations, and lacerations versus non-impact – strains and sprains. **RESULTS:** Among different age groups, elementary school-age children exhibited a higher proportion of impact injuries (834 cases per 1000 patients). In contrast, the incidence of these injuries was lower in the older age groups, including middle school (534 cases per 1000 patients), high school (362 cases per 1000 patients), college (257 cases per 1000 patients), and adults (213 cases per 1000 patients). Conversely, the occurrence of non-impact injuries was at its lowest among elementary school-age children (54 cases per 1000 patients) and reached its peak in the older age groups, specifically middle school (235 cases per 1000 patients), high school (339 cases per 1000 patients), college (330 cases per 1000 patients), and adults (375 cases per 1000 patients). **CONCLUSION:** These findings emphasize that children below the middle school age group have a remarkable reduced risk of musculoskeletal sprains and strains but a heightened vulnerability to impact injuries involving the dropping of equipment on body parts. The latter risk might be ameliorated through heightened awareness and appropriate supervision.