

Injuries Uncommon in Youth Football, Mayo Clinic Study Reports

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ROCHESTER, MINN. -- A Mayo Clinic study of youth football showed that most injuries that occurred were mild, older players appeared to be at a higher risk and that no significant correlation exists between body weight and injury. The study, which appears in the April issue of Mayo Clinic Proceedings, found that the data for athletes grades four through eight indicated that the risk of injury in youth football does not appear greater than the risk associated with other recreational or competitive sports.

"Our analysis showed that youth football injuries are uncommon," said Michael J. Stuart, M.D., a Mayo Clinic orthopedic surgeon and the principal author of the study.

Dr. Stuart and his colleagues studied 915 players aged 9 to 13 years, who participated on 42 football teams in the fall of 1997. Injury incidence, prevalence and severity were calculated for each grade level and player position. Additional analysis examined the number of injuries according to body weight.

A game injury was defined as any football-related ailment that occurred on the field during a game that kept a player out of competition for the remainder of the game, required the attention of a physician, and included all concussion, lacerations, as well as dental, eye and nerve injuries. The researchers found a total of 55 injuries occurred in games during the season — a prevalence of six percent. Incidence of injury expressed as injury per 1,000 player-plays was lowest in the fourth grade (.09 percent), increased for the fifth, sixth and seventh grades (.16 percent, .16 percent, .15 percent respectively) and was highest in the eighth grade (.33 percent).

Most of the injuries were mild and the most common type was a contusion, which occurred in 33 players. Four injuries (fractures involving the ankle growth plate) were such that they prevented players from participating for the rest of the season. No player required hospitalization or surgery.

The study's authors said risk increases with level of play (grade in school) and player age. Older players in the higher grades are more susceptible to football injuries. The risk of injury for an eighth-grade player was four times greater than the risk of injury for a fourth-grade player. Potential contributing factors include increased size, strength, speed and aggressiveness. Analysis of body weight indicated that lighter players were not at increased risk for injury, and in fact heavier players had a slightly higher prevalence of injury. This trend was not statistically significant. Running backs are at greater risk when compared with other football positions, the researchers reported.

Other authors who contributed to the study include: Michael A. Morrey, Ph.D., Aynsley M. Smith, RN, Ph.D., John K. Meis, M.S., all from the Mayo Clinic Sports Medicine Center and Cedric J. Ortiguera, M.D., a Mayo Clinic orthopedic surgeon in Jacksonville, Fla.

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- Organized football among 5 – 15 year-olds has 12 percent fewer injuries per capita than organized soccer in the same age range
- Organized football among 5 – 15 year-olds has 50 percent fewer injuries per capita than bicycle riding in the same age range.
- Organized football among 5 – 15 year-olds has 74 percent fewer injuries per capita than skateboarding in the same age group.
- Injuries in youth football are normally mild, and older players have a higher injury rate than younger players.
- The Institute of Sports Medicine and Athletic Trauma in New York completed an injury survey in 71 towns covering over 5,000 players in 1998. The injury experience of 5,128 boys (8 to 15 years of age, weight 22.5 to 67.5 kg [50 to 150 lb]) participating in youth football revealed an overall rate of significant injury of 5%, with 61% classified as moderate and 38.9% as major injuries. That's about 1.33 per team per year. No catastrophic injuries occurred, and it was rare for a permanent disability to result from any injury.

Study Shows Youth Football Injuries Uncommon

As involvement in football, both organized and recreational, continues to grow, knowing the benefits and safety issues that surround the sport of football is very important.

According to the [Sporting Goods Manufacturers Association \(SGMA\)](#), in 2002, 18.7 million boys, girls, and adults participated in touch and tackle football. This number reflects the ever-increasing popularity of playing football, most likely a result of the benefits it provides. Numerous studies show that participating in sports improves an individual's fitness, coordination, self-discipline, sense of accomplishment, teamwork, and overall wellbeing.

The wellbeing of players is at the forefront of youth football programs across America. An April 2002 [Mayo Clinic study](#) showed that "the risk of injury in youth football does not appear greater than other recreational or competitive sports. . . youth football injuries are uncommon."

Yet, with any physical activity, there is the risk of injury. In fact, more children are hurt riding bikes than playing contact sports such as football. Due to the inevitable risk of injury, it is important for both coaches and parents to be aware of current health and safety issues.

"Many adults volunteer to coach not realizing they are also volunteering to handle any injuries that might occur," said Marshall Steele, orthopedic surgeon and author of [Sideline Help](#). "A basic knowledge of what could be life or limb threatening, as well as how to evaluate who can and cannot return to play is essential."

Steele also notes that prevention is a key factor. "Heat stroke and heat exhaustion are preventable," said Steele. "Heat emergencies usually occur under conditions of extreme heat and humidity, so overweight, unconditioned, or overdressed players are at high risk, especially during preseason training. Coaches must allow players frequent water breaks."

Football promotes the wellbeing of players through its finely detailed safety practices, rules, and regulations. Evidence of the direct results of football's strict guidelines is displayed in an analysis of athletic injuries conducted by

the U.S. Consumer Product Safety Commission, which revealed that 5-15 year olds playing organized football had 12 percent fewer injuries per capita than 5-15 year olds playing soccer.

Pop Warner sets high safety standards for players and coaches. "We group players according to their age and weight, in order to avoid mismatches," said Jon Butler, executive director. "Different divisions are designed so that the weight difference and age difference are no greater than 35 pounds and 3 years respectively."

Another important safety precaution is proper equipment. Ensuring that all players have high quality helmets, padding, and other gear when on the playing field is a top priority that will greatly minimize the risk of injury. For additional information, see [Football Equipment](#).

Over the years, youth football leagues have adjusted the rules of the game to prevent injuries. The fact that most injuries are easily predictable, and thus preventable, should make the issue of injury non-problematic. However, the most significant problems involving injury arise when players do not notify coaches or adults that they have been injured. Re-injury is also a common problem when both players and coaches do not allow proper time for injuries to heal. These problems are easily avoidable through instructing players to report injuries and afterwards insisting on the resolution of injuries before a return to participation.

As the sport of football continues to grow, the goal is not to be satisfied that youth football is no riskier than other sports, rather it is to continue to make it safer. Once this has been accomplished, the sport of football can share its success with other competitive sports.