



# From the Birthplace of Baseball; Acute Injuries and Incidence at an Elite Youth Baseball Tournament Andrew Powers, Sarah Smith, Jennifer Victory, Molly Mooney, Eric Mooney Bassett Medical Center, Cooperstown NY

## Introduction

Youth baseball is a popular activity. Chronic and overuse injuries are well studied but there is little recent research about acute injuries. We interviewed players incurring a baseball related injury presenting to the ED from a local youth baseball camp capturing approximately 240,000 player-hours of exposure.

## Background

Bassett Medical Center is uniquely situated to capture the acute injuries of a large and popular elite youth baseball camp. It is the sole geographically appropriate center for emergency medical care and general and specialty surgical care.

## Methods

Local youth baseball campers that presented to our emergency department with acute baseball related injuries were included in this study. The camp required that campers not turn 13 prior to May 1, 2017. Participations were identified by ED personnel upon registration and research team personnel assisted participants and their guardian with completion of consent and a questionnaire. Basic demographics and information regarding mechanism of injury were collected with the questionnaire including position played at time of injury (batter, baserunner, defensive position). A follow up survey was collected three months after the event to evaluate sequelae. The charts, imaging, questionnaires and three month follow up were reviewed and evaluated.

## Results

There were 5,395 games played during the youth baseball camp season. This is approximately 240,000 player-hours of exposure. There were 52 participants in the study. Five injured players declined to participate. Average age was 12.6 years and participants were predominantly male.

### Hand and Wrist Injuries

- 12 presentations
- 2 fractures of the wrist
- 5 fractures of the hand
- 4 phalanx fractures were caused while sliding into a base.
- Incidence of approximately 0.93 hand fractures per 1000 games played

### Head and Face Injuries

- 8 presentations
- 4 lacerations requiring repair
- 1 nasal fracture
- 1 frontal sinus fracture with brain contusion and possible subdural hemorrhage resulted in transfer to a higher level of care and a 3 day hospitalization. He was placed on a concussion protocol.

### Elbow and Forearm Injuries

- 5 presentations
- 3 fractures
- 1 laceration requiring repair

### Follow Up Data

- 28 participants completed the follow up questionnaire
- 9 pursued further treatment, primarily from orthopedic surgeons
- 16 reported that their injury prevented return to organized sports with an average of 23 days missed

## Conclusion

Our unique location provides an opportunity to investigate a large and well defined population of athletes.

Our data showed injury patterns in the upper extremity and head and face. We demonstrated a known injury pattern that is documented in higher levels of the sport, namely hand fractures in the setting of sliding into base (1,2). There was one injury requiring ICU level care. Just over 30% of injuries prevented return to organized sports. Significant injuries remain rare.

Our injury rate of 0.22 injuries per 1000 player hours is consistent with prior reported injury rates in youth baseball suggesting stability in the incidence of acute baseball injuries (3).

## Limitations

Our research population of an elite youth baseball tournament may not be generalizable to a broader youth baseball population. There were 5 refusals to participate. There is an unknown number of injuries that were not identified. Only 28 of 52 participants completed follow up.

## References

1. Camp CL, Curriero FC, Pollack KM, Mayer SW, Spiker AM, D'Angelo J, Coleman SH. [The Epidemiology and Effect of Sliding Injuries in Major and Minor League Baseball Players](#). Am J Sports Med. 2017 Aug;45(10):2372-2378. PMID: 28499094.
2. Stovak M, Parikh A, Harvey AT. [Baseball and softball sliding injuries: incidence and correlates during one high school league varsity season](#). Clin J Sport Med. 2012 Nov;22(6):501-4. PMID: 22627652.
3. Spinks AB, McClure RJ. [Quantifying the risk of sports injury: a systematic review of activity-specific rates for children under 16 years of age](#). Br J Sports Med. 2007 Sep;41(9):548-57; discussion 557. PMID: PMC2465389.