

BASEBALL INJURIES

Play Smart
Play Safe!

- In Canada, baseball is *one of the four most popular sports among children*.
- In all, there are 400,000 players in registered leagues and as many as 3 million Canadians who play baseball.
- As a result of the demands of the sport, particularly throwing and sliding, injury is a common occurrence.
- Baseball is the leading cause of sport-related eye injuries in children. One third of eye injuries result from being hit by a pitched ball.
- Baseball is the 3rd greatest contributor to head injury deaths among high school and collegiate athletes.

Who gets injured?

- Pitchers are at greatest risk of developing shoulder and elbow injuries.
- 5-14-year-olds have the highest risk of injury.

What kind of injuries occur?

- Bruises and scrapes are the most common injuries in youth aged 5-14 years, followed by fractures, sprains and cuts.
- The most frequent type of injury are sprains which account for over 30% of both baseball and softball injuries.

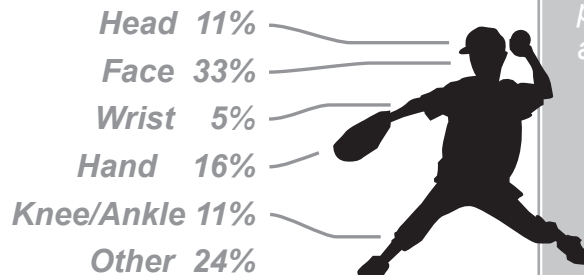
When do injuries occur?

- A greater number of injuries occur during practices rather than games: more time is spent in practice situations.
- Injury risk is higher in game situations as athletes tend to be more aggressive and play harder during games.

What parts of the body are injured?

- Over 86% of head and facial injuries occur while a player is on defense (field players).

Injuries by Anatomic Site, Ages 5-14:



How do injuries occur?

- For non ball-related injuries, over 70% happen during *sliding*.
- While baseball is considered a non-contact sport, half of sliding injuries occur because of two players colliding.
- Contact with other players is often the cause of fractures in youth baseball.

Ball Related Injuries by Activity:

Batting	38%
Pitching	37%
Throwing	25%

“Little League Elbow” is an overuse injury characterized by elbow pain. It can occur to any player position that requires frequent or forceful throwing. Early recognition is VERY important to avoid future ongoing pain, instability and arthritis.

Children aged 5-14 years may be more vulnerable to blunt chest impact (commotio cordis) because their thoraces may be more elastic and more easily compressed.



PREVENTION



Preparation is important

- All players should follow an age appropriate pre-season conditioning program to improve strength, flexibility and endurance.
- Prevention also includes instruction on proper pitching mechanics, gradually increasing throwing intensity and volume, and using age guidelines to limit the number and volume of pitches.

Pitches

- The number of pitches per outing (in organized and controlled settings) should be monitored and controlled.
 - *Recommended: 80-100 pitches per game, 30-40 per practice.*
- Throwing a curveball increases the risk of injury because it places more stress on the forearm. Safe mechanics for throwing the curveball are difficult to master before the age of 13 or 14.
- Pitching technique should be evaluated and corrected.
- Coaches, parents and athletes should be educated on "Little League Elbow".

Pitching Recommendations for Young Baseball Players

Maximum Amount of Pitching

Age	Pitches/Game	Games/Weekly
8-10	52 +/- 15	2 +/- 0.6
11-12	68 +/- 18	2 +/- 0.6
13-14	76 +/- 16	2 +/- 0.4
15-16	91 +/- 16	2 +/- 0.6
17-18	106 +/- 16	2 +/- 0.6

Alternatively, the number of pitches thrown can be moderated by limiting the number of batters faced to one-fifth of the ideal pitch count limit.

Minimum Age for Learning Pitches

Age	Type of pitch
8 +/- 2	Fastball
10 +/- 3	Change-up
14 +/- 2	Curveball
16 +/- 2	Knuckleball, slider

Baseball Equipment and Environment

Recommended:

- Playing fields should be well-maintained and clear of debris and spectators.
- Modifications in hardness and compressibility of softballs and baseballs have been made to reduce impact forces while maintaining performance characteristics. Modified balls are less likely to result in head injury or *commotio cordis* attributable to ball impact.
- It is recommended that batting helmets are equipped with a face guard covering the lower part of the face from the tip of the nose to below the chin.
- Pitchers should always wear a helmet.
- Break-away bases should be used in softball and baseball at all levels of play.
- Breakaway bases have been shown to significantly decrease sliding injuries in baseball and softball by reducing impact forces on the ankle.
- Catchers should always wear a helmet, face mask, throat guard, long-model protector, protective supporter, and shin guards.

What Parents & Athletes Can Do

- Ensure that all equipment is the safest possible, properly fitted and maintained and meets NOCSAE or CSA requirements.
- Use a pitching machine, batting tee, or adult pitcher to prevent injury if players are under 10 years of age.
- Demand that coaches have current certifications to teach proper throwing, pitching and sliding mechanics as well as new strategies to prevent injuries.

Safety experts agree that one third of baseball-related injuries could be eliminated if modified equipment such as reduced-impact balls, safety bases, and face guards were used.

The British Columbia Injury Research and Prevention Unit (BCIRPU) is committed to meeting the challenge of making BC a safe place to live and work by coordinating efforts that will prevent or reduce injuries, their consequences, and costs.

References available upon request

