When will Baseball Start Using Their Heads on Helmet Safety?

Joe Swanson, M.S.
Graduate Student
North Dakota State University
Fargo, ND

Joe Duetsch, Ph.D.
Associate Professor
Physical Education Pedagogy
North Dakota State University
Fargo, ND

Abstract
The need for head protection in all sports has become a frontline issue with concussion studies showing brain damage issues in many sports, but in baseball the traditionalist views have kept the concerns at bay. Only until traumatic brain damage or death occurs is it discussed on a national level. This article discusses the subject of helmet protection in high school baseball and the need for helmets on defensive players in the field. With other sports like football, hockey, cricket, skiing and snowboarding, and lacrosse all mandating helmet use, the number of documented cases of head injuries in baseball continues to rise despite technology getting more advanced every day. This article puts forth the argument for defensive players and base coaches to have mandatory helmet use while in the field. It documents examples of injuries in baseball, as well as the arguments and rule differences from organizations such as the National Collegiate Athletic Association (NCAA), the National Federation of High Schools (NFHS), the American Legion Baseball program and Major League Baseball (MLB) regarding safety and helmet use. It also discusses changes made at all the different levels to promote safety, but also points out how there is no consistency between groups and the different levels of the sport of baseball.
Helmet Safety

**Introduction**

Since the late 1800’s, spring has been a season ushered in by the sounds of balls being snapped around an infield and the crack of the bat echoing into the March air. Young boys talking about their favorite players and the smell of popcorn and cracker jacks battling with the aroma of hot dogs and hot pretzels fills the air as we wait for our home town team to take the field.

Many summer days are spent with those expectations in mind, but there is another side of baseball we are not aware of; the deadly side. Since the early documentation of deaths in game related fatalities including on-field players, spectators, employees, umpires and fans outside of the stadium, over 800 documented cases have been found. Causes of death include being hit by a pitch, heart attacks, getting hit with bats and falling from the upper deck trying to catch a foul ball. The two main causes are being hit by a batted ball and lightning (Jefferson & Weeks 2009). Now obviously we cannot control lightning much beyond stopping games and having lightning meters on hand, but batted balls have become a major concern. Much of the focus has been put on the bat industry and the balls. Bat testing has jumped to the forefront of the equipment world. But what about taking precautions with our players not only batting and catching, but in the field?

**History of Helmets**

Historically in baseball, specifically in Major League Baseball (MLB), helmets were not utilized on a regular basis. It wasn’t until 1971 that MLB made it mandatory that all hitters wear helmets. Even at that time, there were no earflaps on them. It wasn’t until 1983 that batting helmets were by rule required to have at least one earlap on it, and it had to be the ear facing the
pitcher (Street, 2006). Coaches were never considered to be a player on the field, so no regulations were ever cited for them. It wasn’t until the death of Coach Mike Coolbaugh on July 24, 2007 in a minor league game that things changed. Coach Coolbaugh was struck with a line drive while coaching 3rd base and killed (ESPN news services, 2007). Major league baseball instigated a mandatory helmet requirement for all on field coaches in 2008.

Legion baseball across the United States has required all coaches on field to wear a helmet since 2013. Rule 1 – Section K – Part 3 states “Base coaches are required to wear a standard batting helmet, with or without earflaps (safety rule: ejection for non-compliance after one warning). Batters are required to wear a standard batting helmet with earflaps.” (American Legion Americanism Commission, 2014).

The National Federation of High Schools has not acted on this. “We talked about it and gathered feedback,” said Elliot Hopkins, the Baseball Rules Editor for the National Federation of State High School Associations. “We looked at the injury that prompted Major League Baseball to enact their rule and it was to an area of the body that a helmet doesn’t protect. We think coaches are far enough back (from the hitters). If a coach thinks it is necessary, then they are welcome to wear a helmet” (Nokes, 2008). There have been some rule changes at the individual state level requiring helmets for coaches. For example, Maryland has made it mandatory for all adult coaches to wear helmets when on the baseball playing field, but not at the national level.

With all of the discussion and rules on helmet safety, one thing has not been addressed at any level. What about the players? Defensive players such as third basemen, first basemen and pitchers are constantly exposed to hard line drives and short hops, but no one addresses the issue if a defensive player should wear head protection. From 1867 – 2007, 15 pitchers, 17 catchers, 35 position players, and four base runners were killed by batted balls (Jefferson & Weeks 2009).

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Helmet Safety

Since baseball began, only one MLB defensive player ever wore a helmet in the field. Jon Olerud, who played 17 seasons in the majors, wore a helmet offensively and defensively in the field due to a brain aneurysm he suffered in 1989 while attending Washington State University.

Catchers are required to wear standard helmets at the college and professional level, while at the high school level, the full face, hockey goalie style helmet, is mandatory. No defensive position player besides the catcher has helmet and or head wear required for any safety reason. Helmet safety has been overseen greatly over the last 20 years. The National Standards for Athletic Coaches (NSAC) includes a standard addressing the need for protective equipment that is “in good condition, fits properly, and is worn as prescribed by the manufacturer and to ensure that equipment and facilities meet required standards.” The National Operating Committee on Standards for Athletic Equipment (NOCSAE) also is in place to ensure that equipment meets safety guidelines for that particular sport (Shimon, 2002). NOCSAE is also endorsed by the National Federation of High Schools and all helmets – football, hockey, lacrosse, baseball – are required to have a “Meets NOCSAE Standards” sticker on the back showing the helmet has passed inspection and is certified to be considered legal equipment.

As we look to ensure that the equipment we use is up to standards and ruled safe for use, the one issue that remains unresolved is deciding WHO wears the helmet, not how well it works. With the National Federation of High Schools (NFHS), there is a long process of suggested changes which involves collecting and presenting information that justifies the rule change (usually at the National Convention) and then finally a vote needed to pass the rule change or
Helmet Safety

adaptation. To change a rule of this magnitude, the largest battle is not the common sense safety aspect of the rule change, but in the breaking of the traditionalists who feel the game is “good as is”. They feel that rules should stay the same as when they were players, and that there is no need for rule adaptations or changes, even when technology calls for them. In the MLB, it took the death of a coach to bring the topic to the limelight, even though hundreds of cases have been documented (Jefferson & Weeks 2009). Will it take a high school player to be killed on television or during a state or national tournament to start the conversation?

Types of Injuries Sustained

When looking at the documented cases that involve the head, there are three main types of injuries that are cited on the baseball playing field: (1) batted balls that strike a player in the head; (2) bats that strike players in the head either on the back swing, a bat that slips out of a players hand, or a broken wood bat that enters the playing field; or (3) thrown balls either from a team mate or a pitched ball (Jefferson & Weeks 2009). With the simple task of players wearing helmets in the field, many of these cases may not have been fatalities.

As technology changes, so does the game. Bats can now generate so much power that bat companies are under a new standard or Bat-Ball Coefficient of Restitution (BBCORE) rating that was tested by the NCAA (NCAA, 2009). This new BBCOR rating was instituted on January 1, 2011. But as the equipment technology changes for higher performance, the changes we see on the field of play within the athlete are not. The human body has limits, unlike technology. Just like hockey was originally played without helmets or masks, including the goalies, they now have mandatory helmet rules. USA Hockey and the NFHS instigated a mandatory helmet for all coaches at practice rule. The USA Hockey coaching guidelines state, “All ice hockey coaches and instructors of registered USA Hockey Youth 18 & Under and below, high school,
girls’/women’s 19 & under and below, and disabled programs must properly wear an approved ice hockey helmet during all on-ice sessions, including practices, controlled scrimmages and all Coating Education Program clinics and/or workshops” (USA Hockey, 2013). In other sports, such as cricket, helmets of the same style enforced by MLB are worn.

**Causes of Brain Injury**

In the introduction to a study on cricket helmet safety (Stretch, 2000), it is shown that baseball and cricket are very similar in distance thrown from the “pitching” area to the area of the “hitter”, as well as the size and speed of the ball thrown. The distance is 59 feet in cricket compared to 60 1/2 feet in baseball with top speeds of 99 miles per hour thrown. In addition, Cricket has a 5.5 ounce ball as compared to a 5 ounce ball in baseball. The risk of brain injury deals with the impact speed and weight of the ball. The American National Standards Institute and the Snell Memorial Foundation standards for cycling helmets are based on the theory that the brain can be safely exposed to a single deceleration force of 300 g (Beneke, Beneke, Noakes, & Reynolds 1989). Single impacts of 150 g or less cause little or no injury, whereas single impacts of 150-250 g may cause light concussions and temporary amnesia, carrying little risk of long-term brain injury. However, single impacts of 250-300 g cause more severe concussions and prolonged amnesia, but with a low risk of long-term brain injury from single impacts (Stretch, 2000). With Exit Speed Ratio’s of batted balls exceeding 120 miles per hour when using aluminum bats, perhaps the focus should be on the safety of defensive players.

**Dealing with Safety Issues**

Some issues have caused states to look into reducing the chance of injury. The City of New York passed a law outlawing aluminum bats at the high school level, and thus requiring players to use wood. Maryland has made it mandatory that coaches must wear helmets while on
the field and also have gone to wood bats only (Pittman 2008). North Dakota switched to wood bats at the high school level in 2006, after multiple injuries during the season, including three injuries during in the Eastern Dakota Conference Region tournament from batted balls, 2 which required trips to the emergency room.

Conclusion

Since the 1800’s, sports have provided us with the pleasure of competition, the thrill of victory, the overcoming of odds and feel good stories of comebacks and underdogs such as the ‘Miracle on Ice’ experience with the 1980 Olympic hockey team. In all sports, rules have been set in place to keep players safe and the integrity of the game intact while promoting sportsmanship. When technology changes, rules are modified to include the advancements in technology and equipment, but also work to keep the integrity of the game, and maintain the sport at a high level with all of the game’s history intact. So often, as explained, a situation presents itself that causes a reactive change rather than a proactive change, or something else is changed instead of the cause or issue. If the bat hits the ball too hard, we change the ball not the bat. Multiple times different ball changes were made to try and soften the contact, and in the case with metal bats, the BBCOR standard has to finally be created after a player was killed. When football deals with helmet-to-helmet contact they make the helmets more protective, and it is not until concussion studies come out and neck injuries occur and are documented that rules are finally changed outlawing the tackling technique of leading with the head.

There are numerous studies that have been published indicating the effectiveness of present day safety equipment being highly successful in the prevention of injury and death in a wide range of sports including skiing (Haider, Salem, Bilaniuk, & Barraco, 2012), equestrian (Nelson, Rivara, Condie, & Smith 1994), ice hockey (Pelletier, Montelpare, & Stark 1993) and
youth football (Daniel, Rowson, & Duma 2012). Baseball is by no means an exception. The use of this equipment in baseball has shown that it does not hinder speed, strength, or vision to the athlete and that athletes previously discussed (Jon Olerud) have already used it successfully at the highest levels of play. Therefore, the addition of safety equipment for all defensive players in baseball would not hurt the history, integrity, performance or tradition of the sport.

There are studies published showing deaths of baseball players (Jefferson, McFarland and Company, 2009), helmet protection studies (Stretch, 2000), and helmet impact studies (Johnson, 2000). But still with this information in hand, the question is at what point will baseball look at the safety of defensive players rather than just the hitters and catchers, and some base coaches. Are the governing bodies of the game, including MLB, the NCAA, the NFHS and American Legion, really taking a proactive approach to the safety of defensive players or are they waiting for a reactive situation such as the death of a ball player? The safety of the competing athletes should always be the priority in sports, and safety issues that are proven to be effective should implemented. Hopefully, it will not take the death of another student-athlete to create the need for helmet use in the field.
Helmet Safety

References


Helmet Safety


