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# Changing the Culture of Youth Sports

August 2014



# Exploring the Culture of Youth Sports



**1.24 million kids** were seen in emergency rooms for sports injuries in 2013.



That's 3,397 every day



141 every hour

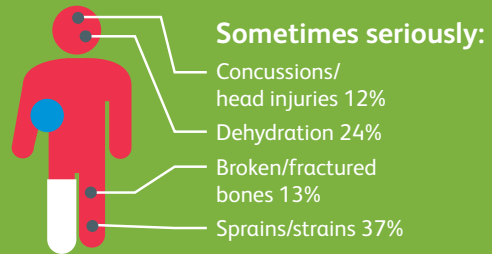


1 every 25 seconds.

Among children ages 19 and under, **13 to 15-year-olds** accounted for the largest number of injuries.



**90% of athletes** said they have been injured while playing a sport.



Many respondents said they **don't do anything** to prevent injuries.

**23%** of coaches

**28%** of athletes

**31%** of parents

54% of athletes said they have **played injured**.

## WE ASKED WHY



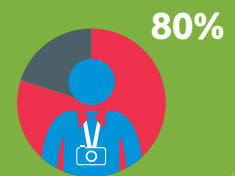
"I was needed and couldn't let the team down."

"I didn't want to be benched."

"It was an important game."

Fewer than half of coaches say they have received **certification** on how to prevent and recognize sport injuries.

80% of parents said they would want their child's coach to be certified in injury prevention.



42% of athletes said they have hidden or **downplayed an injury** during a game so they could keep playing.



62% know someone else who has.



Only 27% of coaches report a player having hidden or downplayed an injury.

More than half of coaches (53%) say they have felt pressure from a parent or player to put an athlete back into a game if a child has been injured.

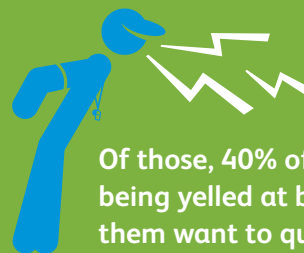


33% of athletes have been injured as the result of **dirty play** from an opponent.



28% of athletes agree that it is normal to commit hard fouls and play rough to "send a message" during a game.

73% of athletes say they have been **yelled at by a coach**.



Of those, 40% of kids said that being yelled at by a coach made them want to quit playing a sport.

## Strategies for Smart Play

- **Set the ground rules at the beginning of the season.** Coaches bring together parents and athletes before the season begins to agree on the team's approach to prevent injuries.
- **Teach athletes ways to prevent injuries.** Proper technique, strength training, warm-up exercises and stretching can go a long way to prevent injuries.
- **Prevent overuse injuries.** Encourage athletes to take time off from playing only one sport to prevent overuse injuries and give them an opportunity to get stronger and develop skills learned in another sport.
- **Encourage athletes to speak up when they're injured.** Remove injured athletes from play.
- **Put an end to dirty play and rule breaking.** Call fouls that could cause injuries.
- **Get certified.** Learn first aid, CPR, AED use and injury prevention skills.

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## Executive Summary

The culture of youth sports has been under close scrutiny recently. Parents and athletes are faced with more questions than ever: Are certain sports unsafe? Will the coach know what to do if an athlete is injured? How does an athlete know when to speak up about an injury? With rule changes and a win-at-any-cost mentality, are sports no longer fun?

To better understand what young athletes, parents and coaches are confronted with in youth sports, Safe Kids Worldwide surveyed 1,000 young athletes, 1,005 coaches and 1,000 parents. Despite greater public awareness about youth sports safety, we still found an alarming gap in what is being done to keep young athletes safe while playing sports.

One in four coaches say they don't take any specific actions to prevent injuries to their players during practice or games. Nine out of 10 athletes say they have been injured playing a sport, and 54 percent say they have played with an injury such as a sprain or even a broken bone.

We found that one-third of athletes say they have been injured as a result of dirty play. Of these, 13 percent say they have had a concussion or head injury, 13 percent have had a broken bone, and 18 percent suffered a sprained ankle. These injuries indicate a greater cultural issue: 28 percent of athletes agree that it's normal to commit hard fouls and play rough to "send a message" during a game.

We also learned more about the pressure that coaches are under—and the impact this has on their teams. Half of coaches say they have felt pressure from a parent or player to put an injured athlete back in the game. Almost three-quarters of athletes say they have been yelled at by a coach during a game or practice. How did being yelled at make athletes feel? *"Embarrassed in front of my friends on the team."* *"I was frustrated and didn't want to play anymore."* *"Small and belittled."*

Fewer than half of coaches say they have received certification on how to prevent and recognize sport injuries. Fewer coaches of community and recreational teams report receiving sports injury certification than coaches of school, intramural and club teams.

Fortunately we know what works to prevent some of the most serious sports injuries. Some examples are conditioning programs to prevent knee injuries, and cross-training and diversification to prevent overuse injuries. Proper technique and early recognition are important to prevent and manage concussions. Staying hydrated and encouraging training and certification for coaches in first aid, CPR, AED use and sports injury prevention are other ways to keep athletes safe.

Playing sports safely isn't about limiting kids—it's about keeping athletes healthy and injury-free so they can keep playing to their greatest potential. Here are five ways that kids, parents and coaches can work together to keep athletes from getting injured.

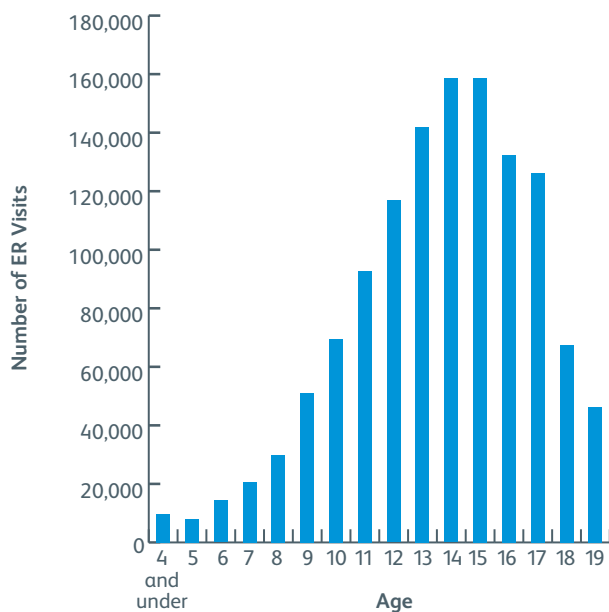
- **Set the ground rules at the beginning of the season.** Coaches bring together parents and athletes before the season begins to agree on the team's approach to prevent injuries.
- **Teach athletes ways to prevent injuries.** Proper technique, strength training, warm-up exercises and stretching can go a long way to prevent injuries.
- **Prevent overuse injuries.** Encourage athletes to take time off from playing only one sport to prevent overuse injuries and give them an opportunity to get stronger and develop skills learned in another sport.
- **Encourage athletes to speak up when they're injured.** Remove injured athletes from play.
- **Put an end to dirty play and rule breaking.** Call fouls that could cause injuries.
- **Get certified.** Learn first aid, CPR, AED use and injury prevention skills.

By embracing these strategies, we can make sure that playing sports—and scoring the goal, making the basket, or winning the game—continues to be one of the best parts of being a kid.

## Sports Injuries in Children: Not Just Bumps and Bruises

In 2013, there were an estimated 1.24 million emergency department visits for injuries related to 14 commonly-played sports in children 19 and under.<sup>1</sup> Younger children suffered fewer injuries than older children. However, the greatest numbers of injuries were seen in children ages 13 to 15 (Figure 1).<sup>1</sup> These teens accounted for 37 percent of emergency department visits related to sports injuries.

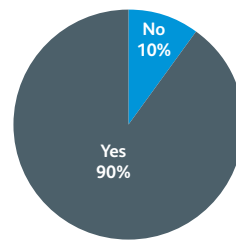
**Figure 1: 13- to 15-year-olds make up 37 percent of sports-related ER visits among children.**



To better understand what is leading to such large numbers of sports injuries in children, Safe Kids Worldwide surveyed three groups: 1,000 athletes in the 7th through 10th grades; 1,005 coaches of athletes this age; and 1,000 parents with kids who play sports in the 1st through 10th grades.

Nine out of 10 kids say that they have been injured while playing a sport (Figure 2). Many are the types of injuries that require medical attention. One in eight—12 percent—say they have had a concussion or head injury, and even more report having a headache (28 percent) or dizziness (24 percent) after playing a sport, both possible symptoms of a concussion or dehydration. One in four say they have been dehydrated. Thirteen percent have had a broken bone, and 4 percent have had a torn ligament. Thirty-three percent of athletes say they have had a sprained ankle.

**Figure 2: 90 percent of young athletes say they have suffered an injury while playing a sport.**

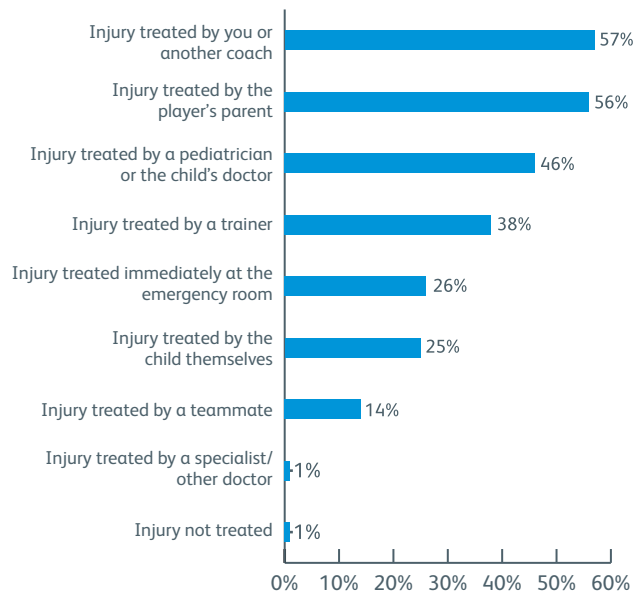


Among those that say they have been injured:

Cuts/scrapes 49%	Dizziness 26%	Bone bruises 9%
Bruises 48%	Dehydration 24%	Shin splints 9%
Sprains/strains 37%	Broken/fractured bones 13%	Overuse injury 8%
Joint soreness 36%	Concussions/head injuries 12%	Faintness 6%
Sprained ankles 33%		Tendonitis 5%
Headaches 28%		Torn ligament (ACL injury) 4%

The majority of coaches—84 percent—have had a sports injury on their team. Among coaches who have experienced an injury on their team, 57 percent say they or another coach have treated an athlete's injury (Figure 3).

**Figure 3: 57 percent of coaches who have had an injured player on their team say that a coach has treated an injured player.**





# Playing Injured to Stay in the Game

When kids were asked what the worst part of being injured was, aside from the pain or discomfort, 49 percent said it was being out of the game and not being able to play. The fear of missing out on a game or practice is a significant factor for kids hiding injuries—42 percent of athletes said they have hidden or downplayed an injury during a game so they could keep playing, and 62 percent know someone else who has hidden or downplayed an injury during a game so they could keep playing.

More than half of athletes—54 percent—say they have played injured, and 70 percent of athletes who played injured had told a coach or parent they were injured. The most common injuries that athletes played with were sprains (27 percent), general pain (21 percent) and bruises (14 percent). Athletes also reported playing with some serious injuries: 7 percent said they had played with a broken bone or dislocation (Table 1). The top reasons athletes gave for playing injured were that it wasn't that bad (18 percent), they were needed and couldn't let the team down (13 percent), and they didn't want to be benched (12 percent).

Table 1: What was the injury that you played with?

Injury	Percentage of Athletes
Sprain/twisting	27%
Pain/soreness	21%
Bruise	14%
Broken bone or dislocation	7%
Unspecified injury involving a body part such as knee, arms, foot, etc.	6%
Strain/pulled muscle	6%
Cut	4%
Scrape/scratch	4%

Have you ever played with an injury before? What was the injury and why did you keep playing?

“Concussion. I didn’t want to tell anyone.”

“I had a sprained ankle and I was told to work through it.”

“Fractured bone. I wanted to keep playing.”

“Sprained foot—kept playing because I didn’t want to get yelled at in front of everyone or get kicked off the team.”

“I was hit in the mouth with someone’s elbow and my front teeth were loose and bleeding. I kept practicing after taking a short break because I don’t let that hold me back from making progress.”

“I had a sprain and I never get to play so I did not tell the coach, and I was afraid he would yell at me and bench me for the rest of the season.”



## Brie's Story



In one moment Brie Boothby's life changed forever. On September 10, 2013, Brie was playing in a high school field hockey game when she

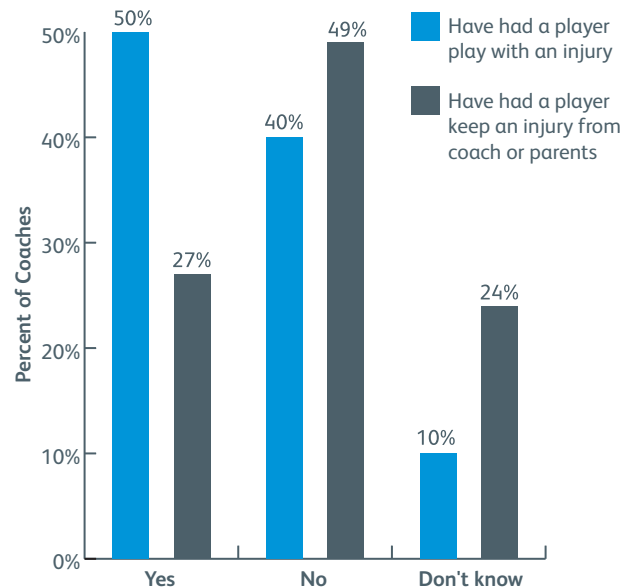
got hit in the head with a hockey stick and blacked out. After a few minutes on the sideline, she went back onto the field. "There was no reason to go back into the game after a head injury like that," says Brie.

A week later Brie forgot how to spell her name. She suffered a severe concussion that is still dominating her life a year later. Instead of being a normal high school teen, she deals with the side effects of a traumatic brain injury, like an aversion to bright lights and loud sounds and an inability to focus, which affects her grades. Instead of going to the movies she goes to physical therapy. Sleepovers have been replaced by doctors' appointments. And she sits on the bench instead of playing the sport she loves. Doctors tell her she can't ever play a contact sport again because of her concussion.

"I've learned to take it one day at a time," says Brie. To help adjust, Brie started a support group with a few other teens who have also suffered from concussions. "By sharing my story, I hope I can help other athletes cope and know that they're not alone."

Coaches are aware of their players playing while injured, and even hiding injuries. Half of coaches say they have had a player play with an injury, and 27 percent say they have had players keep an injury hidden from coaches and parents (Figure 4). More intramural coaches (41 percent), club coaches (35 percent) and school coaches (34 percent) know of a player keeping an injury hidden than recreational coaches (28 percent).

**Figure 4: Half of coaches have had a player play injured, and 27 percent have had a player hide an injury.**



More than half of coaches (53 percent) say they have felt pressure from a parent or player to put an athlete back into a game if a child has been injured. Intramural coaches more often report being pressured by parents (53 percent) than school coaches (45 percent) or recreational coaches (42 percent).





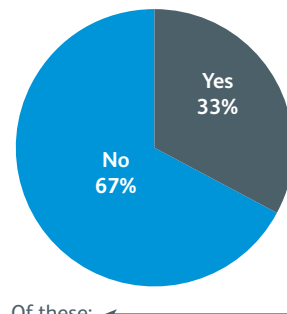




## Dirty Play

One way that athletes report being injured is by foul or dirty play from an opponent—one-third of athletes report being injured this way (Figure 5). Eighteen percent report having had a sprained ankle as a result of foul or dirty play, 13 percent had a concussion or head injury and 13 percent had a broken or fractured bone. Alarming, almost one-third of athletes (28 percent) agreed that it is normal to commit hard fouls and play rough to “send a message” during a game.

**Figure 5: One-third of athletes have been injured as the result of foul or dirty play from an opponent.**

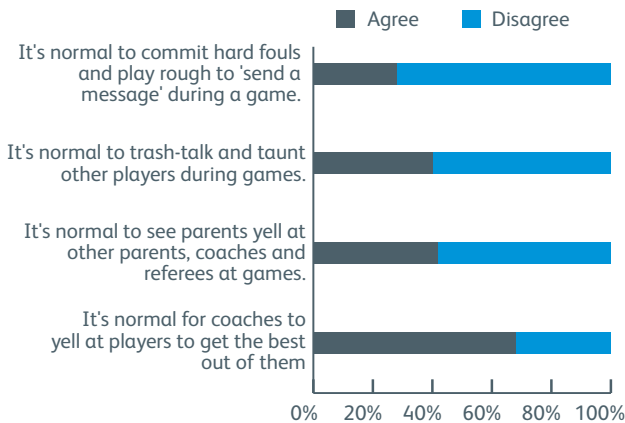


Of these: ←

- 27% cuts or scrapes
- 19% strains or sprains
- 18% sprained ankles
- 13% concussions/head injuries
- 13% broken/fractured bones

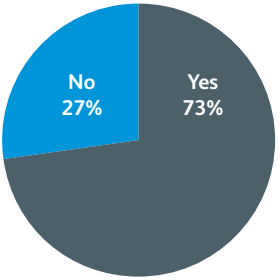
We also learned that many athletes consider it normal to yell at others and be yelled at while playing sports. Two out of five athletes (41 percent) report having yelled at a teammate during a game or practice. Sixty-eight percent of athletes agreed that it's normal for coaches to yell at players to get the best out of them; 42 percent agreed it's normal to see parents yell at other parents, coaches and referees at games (Figure 6).

**Figure 6: Many athletes think it's normal to yell, trash-talk and even commit fouls to "send a message."**



Almost three-quarters of athletes say they have been yelled at by a coach (73 percent) (Figure 7). While some said it made them feel motivated (36 percent), others say they felt embarrassed (14 percent), angry (14 percent), sad (13 percent), and even felt like a loser (9 percent). Two in five athletes say that being yelled at by a coach has made them think about quitting a sport. Coaches clearly play a critical role in both the players' safety as well as their interest in playing the game.

**Figure 7: 73 percent of athletes have been yelled at by a coach. Of these, 40 percent said being yelled at by a coach has made them want to quit playing the sport.**



**Has your coach ever yelled at you during a game or practice? How did it make you feel?**

"Embarrassed in front of my friends on the team."

"I was frustrated and didn't want to play anymore."

"Wasn't all that bad. I probably had it coming."

"Small and belittled."

"Like I was doing something wrong or not good enough."

"Embarrassed and angry. But he is always yelling at everyone."

"A little angry. It made me want to yell back."



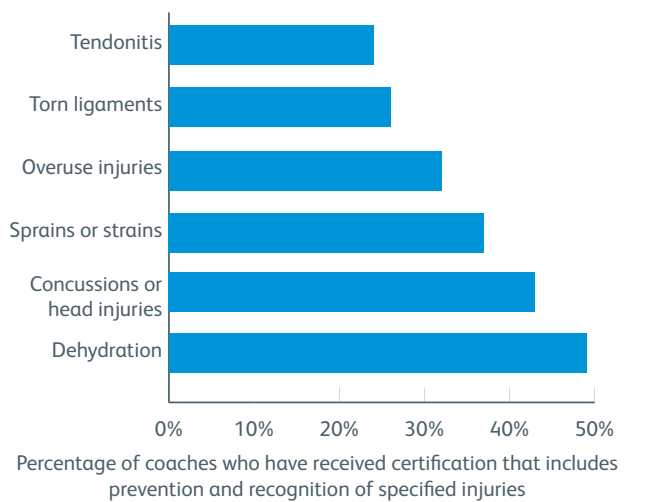


# Training Coaches: Can We Do More?

Parents are confident in their coach's knowledge about preventing sports injuries: 94 percent of parents said their child's coach was very or fairly knowledgeable about preventing sports injuries, compared to 89 percent of athletes and 89 percent of coaches. In contrast, only 5 percent of parents said their child's coach was not knowledgeable, compared to 11 percent of coaches and 11 percent of athletes.

However, fewer than half of coaches say they have received certification on how to prevent and recognize sport injuries. For example, 43 percent of coaches say they have received certification to prevent and recognize concussions, 32 percent have received training on overuse injuries, and 26 percent have received training on torn ligaments (Figure 8).

**Figure 8: Most coaches haven't received injury prevention certification.**



Coaches' certification varies depending on where they coach. More school coaches (38 percent), intramural coaches (40 percent) and club coaches (40 percent) than recreational coaches (33 percent) report having received certification that includes the prevention and recognition of overuse injuries (Table 2).

Nearly nine in 10 coaches—84 percent—say they are very or somewhat likely to get certified in injury prevention. Eighty percent of parents said they would want their child's coach to be certified in injury prevention.

While injury prevention certification programs vary by sport and certifying body, one place that coaches and parents can start is by completing a course in CPR (cardiopulmonary resuscitation) and AED (automated external defibrillator) use. While rare, the incidence of sudden cardiac arrest is greater in young athletes than among nonathletes.<sup>3</sup> The American Heart Association offers Heartsaver® CPR AED and the American Red Cross provides training and certification in first aid, CPR and AED use. In our survey, we found that only 52 percent of coaches said their team has an AED where they practice and play games; 37 percent said there wasn't an AED, and 11 percent didn't know. Of coaches who said there was an AED, 86 percent had received training on how to use it.

**Table 2: Have you received any certification that includes prevention and recognition of any of the following injuries?**

	School Coach	Intra-mural Coach	Recreational Coach	Club Coach
Yes – Torn ligament, such as an ACL injury	32%	32%	26%	34%
Yes – Sprains or strains	40%	39%	39%	44%
Yes – Dehydration	54%	54%	51%	57%
Yes – Concussions or head injuries	47%	46%	46%	49%
Yes – Broken or fractured bones	46%	47%	37%	48%
Yes – An overuse injury, such as swimmer's shoulder, runner's knee, pitcher's elbow or tennis elbow	38%	40%	33%	40%







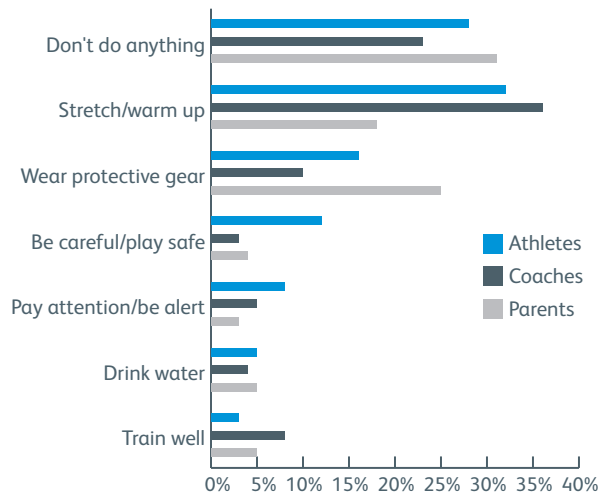
The majority of coaches in the survey were volunteer coaches — for example, 83 percent of basketball coaches who responded to the survey were volunteers.



## Tackling Sports Injuries

Athletes, parents and coaches were asked what, if anything, they do to prevent sports injuries. They could write in anything they do to prevent injuries, and were provided with the option to select “I don’t do anything to prevent injuries.” We found that about one in four athletes and coaches responded that they don’t do anything to prevent injuries (Figure 9). Intramural coaches were more likely to say they don’t do anything to prevent injuries (31 percent) than school coaches (24 percent) or recreational coaches (21 percent).

**Figure 9: One in four athletes, parents and coaches don’t do anything to prevent sports injuries.**



“What parents often don’t seem to realize is that if a child’s body is overworked at an early age, he or she might not be able to stay in that sport long enough to make it to high school varsity, let alone to the elite level they so desperately desire.”

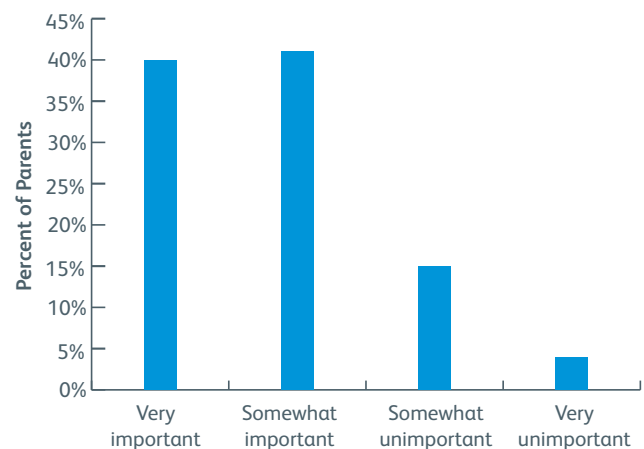
– from *Any Given Monday*  
Dr. James R. Andrews

## OVERUSE INJURIES

### Cross-training and conditioning

An overuse injury can happen when a joint, bone, muscle, ligament or tendon is repetitively used without enough rest, leaving it prone to injury.<sup>4</sup> Certain overuse injuries, such as some kinds of stress fractures and injuries to the growth plates of developing bones, can result in extended recovery periods, time away from sports, and even limit a child’s ability to play sports in the future.<sup>4</sup> Children may be at greater risk for these injuries because their bones and joints are still developing.<sup>3</sup> One study from Boston Children’s Hospital found that girls suffered more overuse injuries in proportion to other sports injuries than boys.<sup>5</sup> Researchers found that boys who played high-overuse sports such as tennis, swimming, and track and field were 10 times more likely and girls 3.6 times more likely to suffer an overuse injury compared to those who didn’t play high-overuse sports.<sup>5</sup> Taking time off from playing any one sport during the year by cross-training and diversifying the sports played is an important strategy to prevent overuse injuries, as athletes who specialize at an early age may be more likely to be injured.<sup>4</sup> There is a need for greater awareness about the importance of time off; in our survey, almost one in five parents say that taking a break between playing any one sport during the year was “somewhat unimportant” or “very unimportant” (Figure 10). To prevent overuse injuries, limit repetitive movements like pitching; one way to do this is through using technology, like the Throw Like a Pro app that helps to keep track of pitch counts. Finally, there is evidence that preseason conditioning programs can reduce injury in young athletes.<sup>4</sup>

**Figure 10: Almost one in five parents think it’s not important for kids to take a break between playing any one sport during the year.**



## CONCUSSIONS

### Early recognition and prevention

Concussions in youth sports are receiving more attention than ever. Concussions are a type of brain injury that result from a hit to the head, neck, face or another part of the body that results in force transmitting to the head.<sup>6</sup> After a concussion, there is decreased blood flow to the brain, and it's hypothesized that the lack of blood flow means that the body can't meet the brain's energy demands following the head injury, resulting in the symptoms of a concussion.<sup>7</sup> Symptoms of a concussion can include headaches, trouble with balance, irritability, and trouble concentrating and remembering.<sup>7</sup>

One challenge in treating concussions is that it can be difficult to recognize that a player has a concussion, and instead often relies on players telling a coach or trainer that they have symptoms. In a survey of male and female college athletes, 20 percent said they thought they had had a concussion in the past 12 months while playing their sport, and of those, 78 percent didn't seek medical attention during the game or practice. The top reason they gave for not reporting their concussion was they didn't think it was serious and thought they could keep playing without doing any harm to themselves.<sup>8</sup> It's important that athletes, coaches and parents recognize the signs and symptoms of a concussion, and to see a health care professional if an athlete is suspected of having a concussion.<sup>9</sup>

There are ways to prevent concussions by adopting policy changes to protect athletes from moves that put them at the greatest risk of a head injury.

One example of changing technique comes from boys' ice hockey. The rates of injury in youth boys' ice hockey divisions that allow body checking are four times greater than in divisions that prohibit body checking.<sup>10</sup> A study of concussions in high school athletes found that the concussion rate in boys' ice hockey was the second-highest of any sport, and it is estimated that the proportion of concussions in ice hockey that result from body checking are between 30 and 70 percent.<sup>10</sup> In a cost-effectiveness analysis comparing leagues of youth ice hockey players in which body checking was allowed in one league but not the other, researchers found that healthcare costs where body checking was allowed were more than 2.5 times greater than where body checking wasn't allowed.<sup>11</sup> If the body checking ban was projected onto the league where it had been permitted, it is estimated that 1,273 injuries would have been avoided and \$213,280 Canadian in healthcare costs would have been saved in that one season alone.<sup>11</sup> In 2014 the American Academy of Pediatrics issued a policy

"I urge a ban on heading in soccer until players reach age fourteen. If it were within my power, heading on every youth soccer field in America would vanish right now."

– from *Concussions and Our Kids*

Dr. Robert Cantu

Chief of Neurosurgery, chairman of the  
Department of Surgery, and director of the  
Service of Sports Medicine at Emerson Hospital

statement on body checking calling for prohibiting body checking in boys' ice hockey in children under the age of 15 years.<sup>10</sup>

Another example of protecting athletes comes from cheerleading. Stunting in cheerleading accounts for 96 percent of concussions and closed head injuries. In particular, pyramid stunts have been linked to between 50 and 66 percent of head/neck injuries in cheerleading.<sup>12</sup> Recommendations and rules such as limiting pyramids to the height of two people and avoiding stunts on hard surfaces can keep kids safer while continuing to participate.

Finally, evidence is mounting against the practice of heading the ball in youth soccer. A study of concussions in 11- to 14-year-old girl soccer players found that players reported heading the ball as the event that led to 31 percent of concussions.<sup>13</sup> In a small study of adult soccer players, researchers found that heading the ball was associated with abnormal white matter changes in the brain and poorer performance on memory tests.<sup>14</sup> Former professional soccer players and traumatic brain injury experts are now calling for a change to the rules of youth soccer: no heading the ball until kids are at least 14 years old.<sup>15</sup>

While no policy change or technique will eliminate the risk of concussions entirely, we can start by addressing practices that put kids at the greatest risk of concussions and head injuries.

## ACL INJURIES

### Conditioning and strength training exercises

Part of proper technique includes strengthening exercises that can prevent serious injuries including anterior cruciate ligament (ACL) injuries. ACL injuries are on the rise, with physicians seeing an increase in ACL injuries over the last decade.<sup>16</sup> This may be because of more kids participating in sports at younger ages; more cases being diagnosed as a result of more awareness; and medical imaging being used more often.<sup>16</sup> Girls may be at increased risk of ACL injuries; girls have been found to have higher rates of ACL injuries than boys in sports such as soccer, basketball and baseball/softball.<sup>17</sup> A study of middle-school girls who played basketball, soccer and volleyball found that the most commonly injured body part was the knee, which accounted for 74 percent of injuries.<sup>18</sup> Serious long-term consequences can result from ACL injuries: following reconstruction surgery for an ACL injury, more than half of patients show signs of irreversible osteoarthritis within 10 years.<sup>17</sup> In the short-term, treatment of an ACL injury can result in costs between \$17,000 and \$25,000, and can require months of rehabilitation and significant time away from playing sports.<sup>16</sup> Fortunately, exercises exist that can prevent ACL injuries; training programs have been found to reduce ACL injury rates in girl athletes.<sup>17 19</sup> These exercises work to teach movement patterns that lessen the chance of injury during sudden movements in sports like pivoting or landing, and have been found to be most effective in high-school girl athletes.<sup>16</sup> Safe Kids developed a video with USA Womens Soccer player Ali Krieger to demonstrate seven exercises to prevent knee injuries. The video can be found at [safekids.org](http://safekids.org). Other effective programs include Sportsmetrics, Prevent Injury and Enhance Performance, and Knee Injury Prevention.<sup>19</sup>



USA Womens Soccer player Ali Krieger works with Randy Rocha, Team USA Trainer

## National Council on Youth Sports Safety

Responding to the national challenge on sports safety, especially concussions, there are many new partners involved in the effort to keep our kids safe on fields and courts, and the National Council on Youth Sports Safety is one of the most exciting. It was formed by Dr. David Satcher, who served as U.S. Surgeon General from 1998 to 2001 in partnership with the Satcher Health Leadership Institute at Morehouse School of Medicine and the George Washington University School of Public Health and Health Services. With an advisory council of national experts, including Safe Kids President and CEO Kate Carr and GWU global health expert Dr. Eliot Sorel, NCYSS seeks to change the youth sports game by creating a culture of prevention to reduce the number of injuries sustained by kids playing sports. Using a multidisciplinary approach, the Council will work in the following areas: research and science; public policy; coaching, training and officiating; technology and equipment manufacturing; and community education.

Its first initiative, Protecting Athletes and Sports Safety (PASS), will work specifically on concussion prevention efforts for pre-collegiate athletes. In 2015, PASS will conduct a national tour, holding Community Huddles on Concussion in 11 U.S. cities. Engaging all stakeholders, ranging from parents and their kids to coaches and league officials, will provide the NCYSS with a more comprehensive and diverse set of best practices that will be shared with the public in the spring of 2016.

"We understand the benefits of keeping kids physically active through participation in sports and want to ensure that those benefits outweigh the risks. Bringing together parents and youth athletes, coaches and trainers, and the medical and public health communities, we can mitigate many hazards and shift the culture of youth sports to keep kids in the game."

— David Satcher, M.D., Ph.D.  
Former U.S. Surgeon General and co-chair, NCYSS



## Helping Coaches Get the Injury Prevention Knowledge They Need

Parents with kids involved in competitive sports activity look to team coaches to prevent their child from sustaining serious injury.<sup>20</sup> Parents believe their kids' coaches are knowledgeable about injury prevention (94 percent) and think coaches need to be certified (80 percent).

Beyond requirements to know first aid basics and how to administer CPR, laws, regulations and association standards are murky on requiring coaches to know how to detect and prevent injuries.

Protocols and training involving concussions are one area where state legislatures are nearly unanimous in requiring some kind of coach education — commonly known as “return to play” laws. But even with the legal requirements, 24 percent of coaches incorrectly said that their state did not have such a law and an additional 33 percent of coaches did not know whether their state had a return to play law. In addition, Safe Kids' research revealed the following:

- Coaches who responded to the survey say they want sports injury prevention training and certification: 84 percent say they would get certified in injury prevention if it were available.
- Only 33 percent of coaches say they are “very knowledgeable” about sports-related injury prevention, while 56 percent consider themselves “fairly knowledgeable.”
- Fewer than half of the coaches say they are certified on how to prevent and recognize sports injuries, and only 26 percent say they were certified on preventing and recognizing torn ligaments such as ACL injuries.
- In research done in 2012 by Safe Kids, coaches told us that while they want more education about injury prevention, the following were barriers to obtaining sufficient education: cost (48 percent); lack of time (46 percent); that there's no local source (41 percent); and they believed there wasn't training for a particular injury in sports they coach (24 percent).<sup>ii</sup>

Between practice and games, kids who play competitive sports may spend more real time with coaches than they do with teachers, other school personnel or even their parents.<sup>21</sup> But state laws do not require coaches to be certified for injury prevention, while at the same time the law requires certification and continuing education

for numerous professionals and individuals who have contact with children, especially when safety is involved. While states have been almost unanimous in passing some form of return to play laws, only three state laws — Connecticut,<sup>22</sup> Pennsylvania<sup>23</sup> and Oklahoma<sup>24</sup> — provide sanctions for failure to comply. Thus, it is not surprising that coaches say they are ill-informed about the laws. Safe Kids believes that competitive school sports programs — as well as non-school related sports — should have a team of informed professionals who understand injury identification and prevention. Safe Kids supports state legislation requiring school coaches to be certified.

The best practice standards for coach certification would include:

- Requiring all school coaches to be certified about injury identification and prevention in the most common injuries sustained in sports including injuries related, but not limited, to concussions, ligaments, as well as the implications of dehydration, heat illness, overuse, failing to warmup and lack of cross-training.<sup>25</sup>
- A requirement that the courses are in person or online with verification measures to ensure compliance.
- Continuing education and recertification at least every two years.
- Coverage to include children younger than high school.
- Coverage of non-school related team sports such as Pop Warner football and post t-ball softball.
- State funding to implement the school-related program and create the educational content for coaches.

Another critical player in a youth sports program is an athletic trainer. Trainers are required to receive thorough education that includes health and medical issues relating to sports. Most states require them to be certified. An educated and informed coach is no replacement for an athletic trainer. According to a joint study between the National Athletic Trainers' Association and the Korey Stringer Institute, only 39 percent of high schools have full-time access to an athletic trainer.<sup>26</sup> Only Hawaii requires public schools to employ athletic trainers. School districts should not use coach certification as a way to justify not providing funds for athletic trainers.

## Other Legislative Action

The momentum of legislative activity on sports safety is remarkable. In efforts to make kids safer, legislatures have passed or are considering laws in the following public policy areas:

- **Limits on Tackling.** States are passing laws requiring limits on tackling, including California<sup>27</sup> and Connecticut.<sup>28</sup>
- **Return to Learn.** Following a concussion the brain needs time to gradually return to the full range of cognitive activity. For this reason, Nebraska<sup>29</sup>, Virginia<sup>30</sup> and Massachusetts<sup>31</sup> have passed laws requiring school districts to have in place a protocol for gradually returning a student athlete to academics. Rhode Island expanded coverage of its return to play law to cover teacher and school nurse continuing education.<sup>32</sup>
- **Beyond Schools Sports.** Virginia extended its return to play law to non-school sports played on school property.<sup>33</sup>
- **Covering Grade and Middle Schools.** New Hampshire applies its return to play law to grades 4-12.<sup>34</sup>
- **On-Field Health Care Provider.** Vermont now requires a home team to have a health care provider.<sup>35</sup>

Safe Kids acknowledges and encourages this intense leadership on the part of legislators. Rather than waiting for legislation, communities may take some of these best practices to school boards.



## Safe Sports Think Tank

In November 2013, the Andrews Institute, Alzheimer's Drug Discovery Foundation and Safe Kids Worldwide hosted the Safe Sports Think Tank to bring together researchers from the country's top universities and hospitals to explore the relationship between sports-related concussions in children and long-term cognitive outcomes. Studies of adult athletes have suggested a link between repetitive head impacts and developing cognitive conditions such as Alzheimer's disease and Parkinson's disease later in life.<sup>36</sup> However, we don't yet know how repetitive concussions in childhood may affect people decades later. We also don't know how to determine which children are at greatest risk for a concussion, but there are biomarkers that hold promise. One example is the apolipoprotein E (APOE) gene; having two copies of the e4 variant (APOE4) may result in greater risk of a poor outcome following a concussion in adults<sup>37</sup> and is also an important biomarker for Alzheimer's disease.<sup>38</sup>

While more research is needed, the APOE gene holds exciting promise in the field of sports medicine. "Determining the role of APOE testing in sports medicine to help identify those at greatest biological risk is critically important today," says Howard Fillit, MD, Founding Executive Director and Chief Science Office of the Alzheimer's Drug Discovery Foundation. "And developing new drugs that can mitigate the impact of concussion in people with APOE4 may help to reduce the burden of concussion in the future."







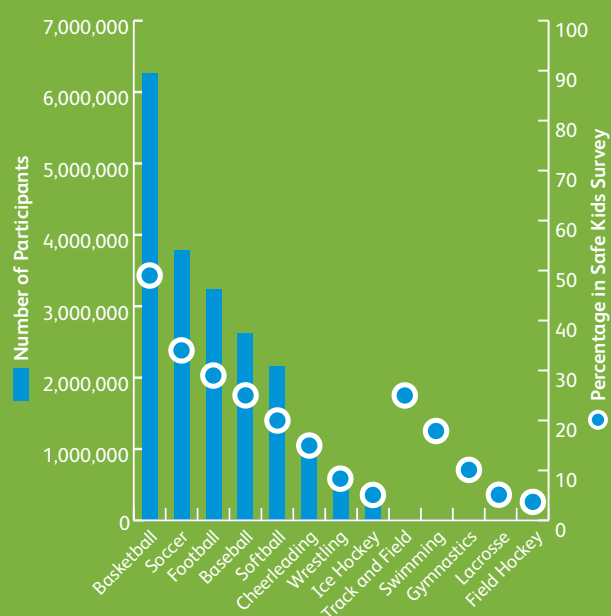
## Sports Safety Tips

- Before playing organized sports, make sure your child receives a pre-participation physical exam, or PPE, by a doctor. This can help rule out any potential medical conditions that may place your young athlete at risk.
- Just in case of an emergency, share contact information (phone numbers, doctor information and allergy information) with your athlete's coaches and save this information in your child's phone, too.
- Make sure there is time set aside before every practice and game for athletes to warm up and stretch properly.
- Kids should start with about 10 minutes of jogging or any light activity, and then stretch all major muscle groups, holding each stretch for 20 to 30 seconds.
- Encourage your athletes to drink fluids (water is the best option) 30 minutes before the activity begins and every 15-20 minutes during activity.
- If you're a coach, mandatory fluid breaks during practice and games are a great idea – don't wait for your athletes to tell you they're thirsty.
- Make sure athletes have the right equipment and are wearing it for both practices and games. The right equipment may include helmets, shin guards, mouth guards, ankle braces, shoes with rubber cleats and sunscreen.
- Encourage players to speak up when they are injured.
- A player with a suspected concussion must be immediately sidelined until evaluated and released by a medical professional. The important thing is to protect players who have had a concussion from getting another one. A good rule of thumb: when in doubt, sit them out.
- Encourage players to take time off from one sport to prevent overuse injuries. It is an opportunity to get stronger and develop skills learned in another sport.
- It's a good idea for coaches to get certified in first aid and CPR and have a stocked first aid kit handy at all practices and games.
- Coaches should consider adding to their sports skills and knowledge with free sports safety training at a Safe Kids Sports Safety Clinic.



The top sports that kids reported playing were basketball (49 percent), soccer (34 percent) and football (29 percent). These proportions reflect the estimated number of participants ages 12 to 17 in each sport in 2011, compiled by the National Sporting Goods Association (Figure A).<sup>2</sup> Kids play on school teams, intramural teams, community/recreational teams, and club/select teams. In every sport, a greater proportion of athletes played on school teams than on other kinds of teams. Popular school teams include track/field (83 percent of track and field athletes), cheerleading (81 percent), football (77 percent), and basketball (77 percent). Intramural teams that kids most frequently play on are lacrosse (29 percent), gymnastics (27 percent), and ice hockey (27 percent). Softball (39 percent), baseball (37 percent), soccer (35 percent) and swimming (35 percent) are popular community and recreational team sports. Finally, gymnastics (43 percent) and ice hockey (38 percent) were the most popular club and select teams.

**Figure A: Patterns in sports played by survey respondents are similar to national participation estimates**



## Methodology

### Survey

The online survey was completed by three individual audiences: pre-teens and teens in 7th to 10th grade (n=1,000); parents of athletes between 1st and 10th grade (n=1,000); and coaches of athletes between 7th and 10th grade (n=1,005). A minimum of n=200 completes was set for each grade in the teenage survey. A quota of n=100 was set for each grade in the parents survey. The survey lasted 15 minutes and was fielded from May 16 - 23, 2014, through the Survey Sampling International panel.

Most online samples are not projectable according to strict sampling theory, which states that in order for a sample to be projectable to a population it must be a random sample of that population. Having said that, online samples, if recruited, managed and selected correctly, can effectively reflect a known universe.

For practical purposes, the margin of error for the total sample size of each survey included in this study (Teenagers, n=1,000; Parents, n=1,000; Coaches, n=1,005) is 3.1 percent at a 95 percent confidence level. This means that if any of the studies were repeated using the same parameters, 19 times out of 20 (or 95 percent of the time) we would expect to get a result within +/- 3.1 percent of the results we have here.

Coaches were asked to identify what kind of league they coach in from the following:

- School team, where kids play teams from other schools
- Intramural team, where kids play other teams in their school
- Community or recreational team, where kids play other teams in their community through a recreation organization
- Select or club team, where kids play other club teams in tournaments and competitive environments
- Other

### Analysis of U.S. CPSC NEISS Data

Cases were included if one of the following 14 sports was listed as either product code 1 or product code 2; the age of the patient was 19 years or younger; and they occurred between January 1, 2013, and December 31, 2013. The sports included were football, basketball, soccer, baseball, softball, volleyball, wrestling, cheerleading, ice hockey, tennis, field hockey, lacrosse, gymnastics, and track and field.

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