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Our Heads Hurt Too

The Silent Concussion Crisis in Girls’ Soccer

“The ringing in my ears, the feeling as if I’m on a boat rocking on a rough sea, total darkness, pounding headache, and just the immense pressure I felt in my head and face. The periods of blindness became longer and there were times I’d even vomit from the pain and dizziness. All from the simple act of heading a soccer ball.”

With the recent culmination of football season with the college football national championship and the Superbowl, concussions are a hot topic in the media.  All season fans watched advertisements for safer helmets which allegedly possessed a new technology to reduce concussion risk. And while the NFL has made huge strides in trying to make their game safer, the reality is that three-hundred twenty grown men play in the NFL.  There are 2.3 million youth soccer players in the United States alone. According to US Youth Soccer, the governing body, there are fifty-five state affiliated soccer programs in the United States.  Within all fifty states, there are over ten million clubs. The gap between the number of girls and boys playing at the youth level is the smallest it has ever been.  With the growing number of girls playing youth soccer, it is time for coaches to understand the profound differences that soccer and concussions pose to boys and girls and tailor their coaching methods accordingly.

Biological Differences That Put Girls at a Higher Risk of Concussion and Poor Outcomes

The University of Pittsburgh Medical Center, the leading experts in concussion research and treatment, has proven that there are certain risk factors that can prolong recovery from a concussion, thus making that concussion more severe.  The risk factors include history of prior concussions that were not treated appropriately, motion sickness, lazy eye, learning disabilities, personal or familial history of migraines, being female, and adolescence.  Eighty-five percent of migraine sufferers are female, without a history of concussions. Migraines also become more severe during puberty and reproductive years. Taking into account the migraine statistics and risk factors for concussions, it can be concluded that girls between the ages of twelve and sixteen, on average are most at risk of having a prolonged concussion recovery.  Another biological difference between males and females is neck strength. The muscles in the neck can help absorb shock waves that occur from impact. The stronger the neck muscles, the more shock waves are absorbed. Males have significantly stronger necks than females due to their ability to produce testosterone. When a sixteen-year-old boy goes to head the ball, large amounts of the force he takes will be absorbed by the neck muscles.  When a sixteen-year-old girl goes to head the ball, the brain is more at risk of being exposed to the exorbitant G-forces produced.  The G-forces generated from heading a ball are, on average, fifty g to one-hundred g.  This is equal to the forces generated by the average NFL tackle. As the level of play improves, a person may experience one-hundred fifty g to one-hundred sixty g when they head a soccer ball.  The implications of this are severe and can lead to problems. In the short term, blood vessels are damaged in the brain when it experiences that much force. If you bruise your knee, it will be sore for a few days.  When you damage a blood vessel in your brain, you do not have the pain receptors to feel pain, which makes this all more dangerous.

Social Factors

Concussions are an invisible injury.  When a person breaks their wrist, they have a cast that shows that they have a real injury.  You cannot put a cast on a concussion. Concussion symptoms are also much more elusive than a broken bone.  When you break a bone, you have pain in that area. With concussions, a person may feel “not right”, a person may not be able to describe how they feel, a person may not be able to recall the event that caused the concussion.  Many times, concussion symptoms can take twenty-four to forty-eight hours to appear. Usually a person who displays obvious symptoms such as loss of consciousness, vomiting, inability to walk in a straight line, etc., will have a better prognosis because they will be pulled from the game or practice.  Boys who continue to play in the same game as receiving a concussion, on average, recover twenty-two days slower than boys who came out immediately. In girls, that number increases to twenty-nine days. Girls are five to seven times more likely to play through concussion symptoms than boys are. This trend can be correlated to the gender stereotypes surrounding females.  Females have often been labeled as hysterical, as liars, as attention seeking. Many doctors are dismissive of female patients. If a female athlete comes out due to a concussion, there is a good chance she will be told to get over herself. If a female athlete does not come out of the game, she could be shamed by a doctor for not coming out of the game immediately. This mind game puts the most at-risk group at an even higher risk for poor outcomes after concussions.

Changing the Game

Girls and boys cannot usually be coached the same way.  Boys are usually much more self-centered and egotistical.  Many times, girls lack self-confidence. Boys also tend to watch more professional soccer than girls do, although that is slowly changing.  Besides the subtle differences in how a coach must address their players, there are biological differences that must be accounted for. Girls are at a much higher risk for ACL tears so their practices should begin with strengthening exercises to strengthen the glutes, quads, and hips.  Girls are also at much higher risk for concussions. No youth athlete should spend three hours heading having a ball punted at their heads at practice.  As previously noted, this is more damaging in girls than in boys. The risk of injury must be factored into any algorithm a coach uses to determine what their team will be doing at practice.  The rate of girls being forced into retirement from concussions is much higher than that of boys. Coaches are the first line of defense when it comes to player safety. In order to protect the futures of our youth female athletes, we must take into account the biological differences and social stereotypes that surround girl’s and women’s sports.

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