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This comment is being submitted in support of Senate Bill 721.

From an early age, Jenna showed so much promise. She was in accelerated classes in elementary school, a A student and even received an award in 5th grade as the "Math athlete of Central Oregon".

Throughout grade school and into her high school years, Jenna was considered by many to be one of the best, if not the best, athlete in any sport she attempted. Her athletic achievements culminated in her being selected to the United States Ski and Snowboard Association and National Softball Team. Her last days on skis were winning Nationals, USSA Skier Cross. Everything was set up for Jenna to have an idyllic life that most children only dream about.

But things began to change for Jenna from an academic standpoint when she entered middle school. Courses that she once breezed through became increasingly difficult…so much so that we eventually had to enroll her at the Sylvan Learning Center for remedial help in reading, writing, speech, and even math. When Jenna eventually went on to college at OSU and began to fail in her coursework, it finally became clear that there was a serious problem.

It was only through the outstanding work by Dr. Chesnutt and his medical team at OHSU, that we finally learned the real cause of Jenna's problem, Traumatic Brain Injury from repeated head injuries from her participation in sports. Because of the efforts of Dr. Chesnutt and his staff, Jenna will fortunately have the promise of a fulfilling, happy life, although she will never again be able to participate in contact sports of any kind.

Jenna has a brain of a 60 year old stoke victim, is at high risk for early onset of Alzheimer's and Dementia and will live forever with the risk of coma or death if she sustains even a minor blow to her head. What takes us 6 hours to accomplish, takes Jenna 15 due to permanent brain damage.

My sincere hope is that each of you gives serious consideration to this important bill before you. If the measures in Senate Bill 721 had been in place throughout Jenna's childhood, she would clearly not have had to experience the many difficulties she has faced.

Athletes, coaches and parents all need to hear this message loud and clear…"Our children's safety should NEVER be compromised when it comes to participation in sports. Winning a game or having a winning season should ALWAYS be secondary to protecting our most precious resource…our children.

If we do nothing, and allow more young athletes to be pushed back out onto the field before it is safe to do so, aren't we in some ways culpable ourselves? How many more stories like Jenna's are we willing to tolerate? We have an historic opportunity to protect our young athletes from the severe consequences of Traumatic Brain Injury. There is NO Downside to passing this legislation. We are simply asking you to act on what is the most basic of parental instincts…"Protecting our children from harm".

Jenna and I and the medical team at OHSU cannot fight this fight alone. We need the backbone and muscle of legislative action to send a strong message that our children and their wellbeing are truly our #1 priority.

Hopefully no family in Oregon will have to experience the angst and sadness and frustration that our family has had to endure. But even if we can protect only one child and his or her parents from the devastating consequences of Traumatic Brain Injury, our efforts and the efforts of this committee will be well worth it.

Sincerely,

Ronda Sneva

Sports Concussion Fact Sheet SB721
Jenna's Law

A concussion is an injury to the brain caused by a blow or jolt to the head. Other terms used for concussion include mild traumatic brain injury or minor head trauma. Immediately following a concussion, a person may feel several types of symptoms affecting their cognitive, physical or emotional functioning. Symptoms can vary from one person to another, and can last for minutes, hours or weeks after a concussion.

How Common are Concussions?

- Each year more than one million children sustain a traumatic brain injury, 80-90 % of which are mild and are due to motor vehicle accidents, falls, and pedestrian accidents.
- The national Centers for Disease Control and Prevention says as many as 3.8 million sports- and recreation-related concussions occur every year. In sports alone, 300,000 concussions in children are estimated to occur each year.
- Concussions can occur in a wide variety of sports, including (but not limited to) **football, hockey, rugby, wrestling, horseback riding, lacrosse, basketball, cheerleading, and soccer.**
- Brain injuries cause more deaths than any other sports injury. In football, brain injury accounts for 65 to 85% of all fatalities.

Did You Know:

- A concussion is the most common type of brain injury sustained in sports.
- Most concussions do NOT involve loss of consciousness.
- You can sustain a concussion even if you do NOT hit your head. An indirect blow elsewhere on the body can transmit an "impulsive" force to the head and cause a concussion to the brain.
- Multiple concussions can have cumulative and long lasting life changes.
- Concussions typically do NOT appear in neuroimaging studies such as MRI or CAT Scans.
- During 2001-2005, children and youth ages 5-18 years accounted for 2.4 million sports-related emergency department (ED) visits annually, of which 6% (135,000) involved a concussion.
- Among children and youth ages 5-18 years, the **five leading sports or recreational activities**, which account for concussions, include **bicycling, football, basketball, playground activities, and soccer.**

Recovery from Concussion

Recovery from concussion can be different for every person. Symptoms can last from only a few minutes to days or weeks after the concussion. Long-standing symptoms can interfere with a child or adolescent's performance at school, or limit their participation in activities at home or in the community. Therefore, it is important to systematically evaluate and monitor any ongoing symptoms.

Football

- Football injuries associated with the brain occur at a rate of one in every 3.5 games.
- Football is responsible for more than 250,000 head injuries in the United States. In any given season 20% of all high school players sustain brain injuries and at least two will die.
- Football players with brain injuries are six times more likely to sustain new injuries.

Snow Sports

The high profile skiing deaths of Sonny Bono and Michael Kennedy in 1998, and actress Natasha Richardson in 2009, lead to awareness and reports on the need to wear helmets and receive immediate medical attention in snow sports.

- 68,761 reports of head injuries sustained while skiing or snowboarding presented to ER's from 2004-2010
- Males have the highest rates at 68.8 % of total reported head injuries, snowboarders (57.9 %), and young riders between the ages of 11-17 (47.7 %) most likely to be injured.

Too many kids are returning to the playing field too soon after a concussion.

- **62 % of organized sports-related injuries occur during practices** [1] (Journal of Athletic Training).
- **41% of concussed athletes returned to play too soon**, if an athlete's concussion symptoms, such as dizziness or nausea, last longer than 15 minutes, he should be benched until he's been symptom-free for a week. (American Academy of Neurology guidelines).
- **Girls have a higher incidence of concussion than boys** - In some sports played by both sexes, girls actually run a higher risk of getting hurt.
- ***High school Soccer:*** female athletes suffered almost 40% more concussions than males (female players suffer some 29,000 concussions annually, males have 21,000).
- ***High school basketball:*** female concussions were nearly 240% higher (girls got 13,000 concussions playing basketball, boys 4,000).
- ***In girls' volleyball and boys' basketball and baseball,*** more than half of concussed players returned to play too soon (Journal of Athletic Training).

Mandatory Annual Coach & Referee Training on Sports Concussion

- Currently youth sports coaches are required to have annual training to spot child abuse, but not for sports concussion
- Provide annual training through online and community resources such as Center for Disease Control (CDC), BIAOR, local hospitals and other non-profits
- Remove a child from play if they have concussion symptoms for at least 8 day-they cannot return to play without a medical professional's release
- Parents and students over 12 read and sign form on the signs & symptoms of concussion

SB 721 - Jenna's Law

SB 721 expands the provisions of a 2009 bill called "Max's Law" that requires public school coaches and referees to protect student athletes from brain injury. SB 721 adds coaches and referees for club and recreational teams to those who must get yearly training on concussions and who must keep athletes who have signs of concussion out of competition for a day and get them medical screening.

Jenna Sneva, a former champion ski racer, after suffering repeated concussions as a skier, softball player and soccer player, was diagnosed with permanent brain damage. She recalled that when ski training, crashing was considered a sign of hard effort. If her coaches had recognized the symptoms of concussion, she could have been spared serious injury. "We need to protect the kids from suffering from the extreme pain that I did," she said. Her mother, Ronda Sneva, states that Jenna "might have a gold medal, but she has the brain of a 60-year-old stroke victim."

Why are girls hurt more than boys

Of course, many girls suck it up too, but there are anatomical reasons that explain why they are more likely to have a concussion diagnosed. For starters, look to the neck. Bigger, stronger neck muscles can balance the head during impact and lower the chances of the brain's being jolted in a collision. According to a study that will be published in the Journal of Biomechanics, the circumference of men's necks is 20% larger than that of women's necks. Further, resistance tests showed that men's necks are 50% stronger than those of women. Another new biomechanical study shows that during adolescence, boys develop significantly stronger necks than girls do. "More-developed necks allow boys to better absorb a blow to the head," says Dr. Joseph Maroon, a neurosurgeon and consultant to the Sports Concussion Program at the University of Pittsburgh Medical Center.

The way girls play may also make a difference. Kevin Guskiewicz, director of the Sports Medicine Research Laboratory at the University of North Carolina, has found that female athletes are more likely than male athletes to land on the floor or field with their knees locked. The less flexible their knees, the worse their balance. The worse their balance, the more likely they'll hit the ground or another player.

Why is playing sports with concussion symptoms so risky?

During a concussion, arteries constrict, slowing blood flow to the brain. At the same time, calcium floods the energy-producing portions of brain cells. That calcium plays a mean defense, blocking oxygen- and glucose-rich blood from replenishing neurons' energy supply. Brain cells get sluggish, and a concussed athlete who can't focus or suffers from slower reaction times is left more susceptible to a slew of other injuries, including another concussion. A second blow to the head could lead to more arterial constriction and more calcium infusions. "Concussion produces an energy crisis in the brain," says David Hovda, director of the Brain Injury Research Center at UCLA's David Geffen School of Medicine. "A second concussion will cause such an energy demand that it will overwhelm the survival capability of the brain."

That's why caution should be the name of the game. Robert Cantu, a neurosurgeon and concussion expert, insists that even after a mild first-time concussion, athletes must be free of all symptoms for at least a week, both at rest and during exertion, before returning to the field. Cantu's mantra: "When in doubt, sit them out."

CONCUSSION

- 50% of "second impact syndrome" incidents – brain injury caused from a premature return to activity after suffering initial injury (concussion) – result in death. [2]
- Female high school soccer athletes suffer almost 40% more concussions than males (29,000 annually).[3]
- Female high school basketball players suffer 240% more concussions than males (13,000).[3]
- Concussion rates more than doubled among students age 8–19 participating in sports like basketball, soccer and football between 1997 and 2007, even as participation in those sports declined.[4]
- The concussion rate was highest for ice hockey, at 10 per 10,000 participants for 7- to 11-year-olds and 29 per 10,000 participants for 12- to 17-year-olds.[4]
- Football accounted for the second highest concussion rate, at 8 per 10,000 for 7- to 11-year-olds and 27 per 10,000 for12- to 17-year-olds.[4]
- ***Youth sports are getting extremely competitive, and kids, in general, are getting bigger; so you end up with 8-year-olds in 13-year-old bodies but with the maturity still of 8-year-olds.***[4]

1 Rachel J, Yard E, Comstock R. *An Epidemiologic Comparison of High School Sports Injuries Sustained in Practice and Competition.* J Athl Train. 2008;43(2):197–204.
2 Cantu RC. Second impact syndrome: immediate management. Phys Sportsmed. 1992;20(9):14–17
3 Covassin T, Swanik C. Sex Differences and the Incidence of Concussions Among Collegiate Athletes. J Athl Train. 2003;38(3):238–244.
4 Bakhos L, Lockhart G, Myers R. Emergency Department Visits for Concussion in Young Child Athletes. Pediatrics. 2010;126(3):e550–6.

Signs and Symptoms

Parents may not be familiar with concussion symptoms. Contrary to popular belief, the child does not have to lose consciousness to sustain a concussion. In fact, the majority of children do not lose consciousness. A child or teenager suspected of having a concussion should be carefully assessed for any of the following symptoms listed below.

Cognitive Symptoms	Physical Symptoms	Emotional Symptoms
Poor attention/Concentration	Headaches	Nervousness/Anxiety
Problems remembering	Vacant stare	Sad
Difficulty following conversation	Appears dazed or stunned	Irritability
Answers questions slowly	Dizziness	Personality changes
Asks same question repeatedly	Clumsiness/Balance problems	Plays less
Mentally foggy	Fuzzy/Blurry vision	
	Sleeps more or less than usual	
	Appears fatigued, tired or sleepy	
	Vomiting/Nausea	

Concussion Evaluation

Appropriate evaluation and management are the keys to a safe outcome. The symptoms of a concussion can cause problems when the child returns to school, home or community activities. The concussion evaluation assesses possible cognitive, emotional or physical symptoms to assist in planning during recovery. During an evaluation, a child is given tests of attention, memory and speed. Test results are used to determine any needed interventions, as well as plan for return to school, sports, and other physical activities.