Traumatic Brain Injuries in Females

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A traumatic brain injury (TBI) occurs from a strike, jerk, or penetrating object interrupting normal brain functioning. Causes include slip and falls, motor vehicle collisions, sports-related blows, and penetrating injuries. The CDC estimates there will be 1.7 million TBIs this year. These may be mild (concussion), serious (long-term complications) or anywhere between. The most common TBI is the concussion. It happens when the head, or body, rapidly shifts backward and forward, as seen during a motor vehicle collision or sports injury. Concussions are referred to as mild TBI, because they are usually not life-threatening. Nevertheless, these mild TBIs can cause serious problems. Research proposes that frequent concussions are particularly dangerous.

Concussions in football players, high school to professional, have gotten a lot of attention in the media lately. One 2015 study found that concussion diagnoses more than doubled between 2007 and 2014, most notably in children and teenagers. It is not known if this is because of an increased awareness about concussions, or if there were more young people receiving injuries. The researchers tracked over 1,200 athletes from Columbia University between 2000 and 2014. This study included over 800 male, and almost 400 female athletes playing sports believed to present a higher risk of concussions. For males, sports initially included just football but then added wrestling, basketball and soccer. For females, the sports included field hockey, soccer, basketball, softball and lacrosse.

Their study found female athletes more likely to suffer concussions. Steven Broglio, director of the NeuroTrauma Research Laboratory at the University of Michigan states the Columbia University study findings add to other existing evidence that female athletes may be more susceptible to concussions, even as attention has tended to focus on the risk to male football players. Twenty-three percent of females and 17 percent of males had at least one concussion during their college careers during the time of this study, indicating that it is 50 percent more likely for the females to get a concussion than the males.

Researchers observed that it took an average of almost two weeks for the athletes to return to play, although some players took months to recover. The researchers did not study how the athletes were treated for their concussions. Levels of most concussion symptoms reported were similar among the men and women, although forgetfulness was more common for males (44 percent, compared to 31 percent of females). Females were more likely to experience insomnia (42 percent, compared to 29 percent of males).

The legal nurse consultants at Krug Consulting can facilitate the understanding of medical events in legal venues, such as TBIs. Our primary role is to evaluate, analyze, and render informed opinions on the delivery of nursing care, and the resulting outcomes. We will review any case where injury is at question. We can provide current standards of care, and policies and procedures in medical issues.

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National Institute of Child Health and Human Development finds diagnosis of concussion relies heavily on patients' self-reported symptoms. One test in clinical practice is the Glasgow Coma Scale, which measures a person's functioning in three areas:

- Speech, such as whether the person speaks normally, in a way that does not make sense, or does not speak at all
- Eye opening, including whether the person opens his or her eyes only when asked
- Movement, ranging from moving one's arms easily to not moving even in response to painful stimulation

Nurses rate responses and calculate a total score: 13 or higher suggests mild TBI, 9 to 12 moderate TBI, 8 or less severe TBI.

Traumatic Brain Injury

Glasgow Coma Scale

test	score	condition
Eye Opening	4	the patient can open his eyes spontaneously
	3	the patient can open his eyes on verbal command
	2	the patient opens his eyes only in response to painful stimuli
	1	the patient does not open his eyes in response to any stimulus
Best Verbal Response	5	the patient is oriented and can speak coherently
	4	the patient is disoriented but can speak coherently
	3	the patient uses inappropriate words or incoherent language
	2	the patient makes incomprehensible sounds
	1	the patient gives no verbal response at all
Best Motor Response	6	the patient can move his arms and legs in response to verbal commands
	2-5	the patient shows movement in response to a variety of stimuli, including pain
	1	the patient shows no movement in response to stimuli

The results of the three tests are added up to determine the patient's overall condition

Total score	scale
13-15	mild head injury
9-12	moderate head injury
3-8	severe head injury