

Institute at West Virginia University, spoke before members of the House Judiciary Committee at a forum in Houston, Texas with regard to “Head and Other Injuries in Youth, High School, College, and Professional Football.” In his prepared testimony, he explained:

Glenn Pop Warner [1871 – 1954] founded the Pop Warner youth football league in 1929. He still remains one of the greatest football coaches in the history of American football. The single event, which necessitated the use of pads and helmets by football players took place in 1888 when the annual rules convention for the emerging sport of college football passed a rule permitting tackling below the waist.

“Football changed dramatically. Teams no longer arrayed themselves across the entire breadth of the field. Teams bunched themselves around the runner to block for him. The wedge and mass play arrived. Football became, for a time, a savage sport full of fights, brawling, even fatalities.”

In 1912, Pop Warner said: “Playing without helmets gives players more confidence, saves their heads from many hard jolts, and keeps their ears from becoming torn or sore. I do not encourage their use. I have never seen an accident to the head which was serious, but I have many times seen cases when hard bumps on the head so dazed the player receiving them that he lost his memory for a time and had to be removed from the game.”

We have known about concussions and the effects of concussions in football for over a century. Every blow to the head is dangerous. Repeated concussions and sub-concussions both have the capacity to cause permanent brain damage. During practice and during games, a single player can sustain close to one thousand or more hits to the head in only one season without any documented or reported incapacitating concussion. Such repeated blows over several years, no doubt, can result in permanent impairment of brain functioning especially in a child. (Footnotes omitted; emphases added).

134. The scientific evidence on concussions and subsequent brain disease in boxing, football, and other sports has been mounting, but for a long period, the NFL attempted to deny, discredit, and ignore it.

135. The risk of repeated head impacts in certain sports and brain disease has been understood for decades. In 1928, a New Jersey pathologist, Harrison Martland, described the clinical spectrum of abnormalities found in “nearly one half of the fighters who stayed in the game long enough.” Follow-up studies on encephalopathy and repeated head impacts in sport were published in 1952. The risk of second impacts (Second Impact Syndrome) in sport was identified in 1973. It was also clear by the 1970’s that the patterns of neurodegeneration associated with head impacts in boxing also occurred in other sports.

136. From 1931 to 2006, the National Center for Catastrophic Sport Injury Research has reported 1,006 direct and 683 indirect fatalities resulting from participation in all organized football in the United States; the annual number of indirect fatalities has remained near 9.0 per year.

137. A 1994 Ball State University survey found that "players in the 1980s suffered serious injuries and underwent operations at twice the rate of those who played in the 1950s or earlier."

138. A study presented at the American Academy of Neurology’s 52nd Annual Meeting in 2000 and authored principally by Dr. Barry Jordan, Director of the Brain Injury Program at Burke Rehabilitation Hospital in White Plains, New York, surveyed 1,094 former NFL players between the ages of 27 and 86 and found that: (a) more than 61 % had suffered at least one concussion in their careers with 30 % of the players having three or more and 15 % having five or more; (b) 51% had been knocked unconscious more than once; (c) 73 % of those

injured said they were not required to sit on the sidelines after their head trauma; (d) 49 % of the former players had numbness or tingling; 28 % had neck or cervical spine arthritis; 31 % had difficulty with memory; 16 % were unable to dress themselves; and 11 % were unable to feed themselves; and (e) eight suffered from Alzheimer's disease.

139. A 2001 report by Dr. Frederick Mueller that was published in the Journal of Athlete Training reported that a football-related fatality has occurred every year from 1945 through 1999, except for 1990. Head-related deaths accounted for 69 % of football fatalities, cervical spinal injuries for 16.3 %, and other injuries for 14.7 %. High school football produced the greatest number of football head-related deaths. From 1984 through 1999, 69 football head-related injuries resulted in permanent disability.

140. A series of important studies emanated from the University of North Carolina ("UNC") that were attacked by members of the NFL's MTBI Committee.

141. A 2000 UNC study found that in the period between 1977 and 1998, an annual average of 13 athletes had suffered catastrophic injuries (primarily permanent paralysis) as the direct result of participation in football. The study also found that between 1977 and 1998, 200 football players received a permanent cervical cord injury, and 66 sustained a permanent cerebral injury." As reported in *Science Daily*:

The study, published in the September-October issue of the American Journal of Sports Medicine, suggests that the brain is more susceptible to injury when it has not had enough time to recover from a first injury. Researchers say the finding is important because concussions can lead to permanent brain damage, vision impairment or even death if not managed properly.

"We believe recurrences are more likely because injured players are returning to practice and to games too quickly after blows to the head," said Dr. Kevin M. Guskiewicz, assistant professor of exercise

and sport science at UNC-CH and study leader. "Many clinicians are not following the medical guidelines that players should be symptom-free for several days before returning." (Emphases added).

142. A 2003 study partially authored by the aforementioned Dr, Kevin Guskiewicz ("Guskiewicz") of UNC analyzed data from almost 2,500 retired NFL players and found that 263 of the retired players suffered from depression. The study found that having three or four concussions meant twice the risk of depression as never-concussed players and five or more concussions meant a nearly threefold risk.

143. In November of 2003, Guskiewicz was scheduled to appear on HBO's "Inside the NFL" to discuss his research. Pellman, who was also going to be on the show, called Guskiewicz. "I had never spoken with him before, and he attacked me from the get-go," Guskiewicz said. "He questioned whether it was in my best interest to do the show. He was a bull in a china shop." **On the program, Pellman said unequivocally, "[w]hen I look at that study, I don't believe it." (Emphases added).**

144. In 2005, Guskiewicz did a follow-up to his 2003 study and found that retired NFL players who sustained three or more concussions had a fivefold greater likelihood of suffering Mild Cognitive Impairment ("MCI") than retired NFL players who had no history of concussions. Guskiewicz based his conclusions on a survey of over 2,550 former NFL players. **Dr. Mark Lovell ("Lovell") of the NFL's MTBI Committee asserted that Guskiewicz's study lacked "scientific rigor" and that one couldn't tell anything from a survey.**

145. **"Pellman's committee has repeatedly questioned and disagreed with the findings of researchers who didn't come from their own injury group," said Julian Bailes, Chairman of Neurosurgery at West Virginia University.**

146. The MTBI Committee decided to respond to these types of studies by presenting **biased research** derived from its ongoing survey of retired NFL players. ESPN The Magazine described what happened:

In October 2003, Pellman and members of his committee published the first of a long-running series on concussions in *Neurosurgery*, a scholarly journal edited by Mike Apuzzo, the New York Giants' neurosurgical consultant. The committee's earliest studies used crash test dummies to reenact helmet blows. Later, the group decided to explore the ill effects of multiple concussions, and Pellman charged one of its members, Mark Lovell, head of the University of Pittsburgh Medical Center's Sports Medicine Concussion Program, to oversee the collection and analysis of leaguewide data. Pellman chose Lovell because he had conducted neuropsychological tests for the Steelers as early as 1993. And in 1995, Lovell began to run the NFL's neuropsychology program, which encouraged teams to gather data to help decide when to return players to games.

Using the information they would obtain, Pellman, Lovell and the committee planned to look at baseline results and identify a normal range of scores for uninjured NFL players. Then, comparing postinjury scores to baseline data would show the effects of concussions. Comparing data from players with multiple concussions to that of all injured players would show whether concussive effects changed as injuries accumulated.

A lot was riding on the analysis. The committee had never imposed recommendations on team medical staffs. **But this was the first study ever to analyze the brain function of NFL athletes. If it showed that concussions were significantly impairing players, the league might be forced to institute new rules for evaluating and treating head injuries.** Pellman and Lovell both say they invited all teams to participate in the research (Lovell says 11 teams elected to join the study) and tried to collect as many results as they could. As Lovell puts it, "More data is always better." **Several of the doctors involved, however, tell a different story.** [William]