

Lessons from the Gridiron: The impact of concussions – Research takes some 'pop' out of Pop Warner Football

By George Griffin

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Pop Warner Football -- the umbrella organization that oversees many kids' tackle football teams across the nation -- issued new rules on Thursday, concerned about the health effects of hard hits on young athletes' brains.

Practice sessions will now limit the amount of contact to one-third of the total practice session, including scrimmages and full-speed drills. The league also is banning full-speed, head-on blocking and tackling drills where players begin at more than three yards apart. At further distances, the force can be greater.

Dr. Stefan Duma, who runs the biomedical engineering program at Virginia Tech, was one of the first scientists to take a detailed look at youth football when he placed high-tech sensors in the helmets of 6- to 8-year-olds.

Duma's 2011 study of youth players used accelerometers to track the force moving the brain with each hard hit and revealed some helmet-to-helmet impacts registering as high as 50 to 100 on a G-force scale. Duma compared this to his work with athletes on the Virginia Tech team. A severe collision in college football registered 80 Gs in his research.

"I'm not really concerned about the 10-to-20 Gs range," Duma said. "I think people see that in their everyday life. But when you start to get into the 30, 40, you start to think that maybe these add up over time. When you are talking about acute injury, now you are talking the 80-, 90- and 100-G range."

In March, journalist Stone Phillips reported for the NewsHour about Duma's work with the Auburn Eagles youth football team. Duma followed the Eagles for a complete season in 2011, practices and eight games, and he was surprised to see how many impacts the average 6- to 8-year-old player endured; 107 impacts in a season, with most coming during practices. Pop Warner cited Duma's work, specifically in making the changes to their guidelines.

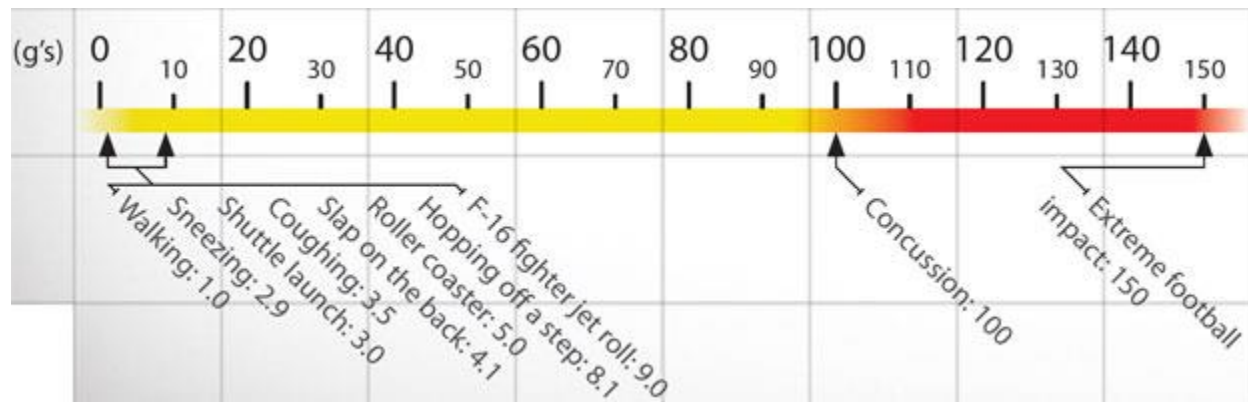
Professional football has been under more scrutiny in recent years as more and more scientific evidence links a career of hard hits to lasting brain damage that has now been identified in posthumous studies of the brains of former players. That led the NFL to change rules and enhance penalties for hits to the head and alter the return to game time for players who might have suffered a concussion.

Additionally, the NFL is being sued by more than 2,000 former players who claim the league intentionally hid information it had about the risk to player from repeated trauma to the head.

The NewsHour has aired several reports on traumatic head injury's impacts and the science surrounding it, including a story about the late Baltimore Colt John Mackey.

Last year, New York Times reporter John Branch put together a series about brain injury in a legendary NHL hockey enforcer, Derek Boogaard, who committed suicide in May 2011.

G Forces in Professional Football



Source: Sports Illustrated