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ONE HUNDRED FOURTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE
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May 4, 2016

Mr. Bob Gardner
Executive Director
The National Federation of State High School Associations
P.O. Box 690
Indianapolis, IN 46206

Dear Mr. Gardner:

At a House Energy and Commerce Committee roundtable in March, the National Football League (NFL) acknowledged for the first time that there is a link between football and degenerative brain disorders. As the NFL recognizes the risks posed by concussive and subconcussive hits that are inherent to the game of football, we are writing to understand how the National Federation of State High School Associations (NFHS) plans to prevent and mitigate the risks of degenerative brain disorders for your student-athletes.

There is significant scientific evidence to support a link between concussive and subconcussive hits and brain damage. Repetitive hits to the head—even in the absence of the clinical signs of concussion—can have cumulative, long-term effects on brain function and physiology.[1] Researchers have found that athletes who had no observable symptoms of concussion but who nevertheless sustained repeated impacts to the head performed worse than their non-athlete peers on memory tests, displayed altered brain function on fMRI scans, and showed evidence of altered brain chemistry.[2]

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[1] *Expert Consensus Document: Mind The Gaps—Advancing Research Into Short-Term and Long-Term Neuropsychological Outcomes of Youth Sports-Related Concussions*, Nature (Apr. 2015).

[2] Thomas M. Talavage et al., *Functionally-Detected Cognitive Impairment in High School Football Players Without Clinically-Diagnosed Concussion*, Journal of Neurotrauma (2013); Nicola Marchi et al., *Consequences of Repeated Blood-Brain Barrier Disruption in Football Players*, PLOS One (Mar. 6, 2013); Inga K. Koerte, et al., *White Matter Integrity in the Brains of Professional Soccer Players Without a Symptomatic Concussion*, JAMA (Nov. 2012).

Researchers have also discovered pathologic and clinical evidence of long-term neurological effects—including the development of degenerative diseases like amyotrophic lateral sclerosis (ALS) and chronic traumatic encephalopathy (CTE)—related to collision sports like football.[3] Boston University (BU) researchers have found CTE in the brains of 90 out of 94 NFL players, in 45 out of 55 college players, and in 26 out of 65 high school players who donated their brains to the BU Brain Bank.[4] Additionally, new research suggests a link between participation in amateur contact sports during youth and the development of CTE.[5] Researchers at the Mayo Clinic recently found that close to one-third of the brains donated to the Mayo Clinic Brain Bank of young males who participated in contact sports during youth had CTE.[6] Notably, the Mayo Clinic study found zero instances of CTE in the brains of 198 individuals who had no history of playing contact sports, and neuropathologists studying CTE have similarly never found the disease in brains that were not subjected to repetitive head trauma.[7]

The statement by Jeff Miller, Senior Vice President of Health and Safety for the NFL, at the Committee's March 14 roundtable acknowledging that there is a link between football and degenerative brain disease represents a significant change in the League's policy.[8] Commissioner Goodell has confirmed that Miller's statement is consistent with the NFL's position.[9] We look forward to seeing how this new approach manifests in increased safety, education, and awareness for professional athletes, coaches, and the public.

Accordingly, we look to NFHS to understand what rule or policy changes you are considering to address the risks posed by both concussive and subconcussive hits. While changes at the professional level are important, football organizations across all levels, as appropriate, should consider rule changes and educational outreach to ensure the safety of all

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[3] Ann C. McKee et al., *TDP-43 Proteinopathy and Motor Neuron Disease in Chronic Traumatic Encephalopathy*, Journal of Neuropathology and Experimental Neurology (Sept. 2010); Daniel H. Daneshvar et al., *Long Term Consequences: Effects on Normal Development Profile after Concussion*, Physical Medicine & Rehabilitation Clinic of N. America (Nov. 2011).

[4] *Id.*

[5] *Evidence Suggests Amateur Contact Sports Increase Risk of Degenerative Disorder*, Mayo Clinic News Network (Dec. 2, 2015) (online at newsnetwork.mayoclinic.org/discussion/mayo-clinic-cte-fl-release/); *Brain Damage Study Shows Student-Athletes May Risk Same Injuries as NFL Players*, Bloomberg Business (Dec. 1, 2015) (online at www.bloomberg.com/news/articles/2015-12-01/brain-damage-found-in-one-third-of-former-student-athletes).

[6] *Id.*

[7] *Id.*

[8] Committee on Energy and Commerce, *Roundtable on Evaluating the State of Concussion Research and Implications for Public Health*, 114th Cong. (Mar. 14, 2016).

[9] *Roger Goodell Calls C.T.E. Link to Football Consistent With N.F.L.'s Position*, New York Times (Mar. 23, 2016).

athletes and their developing brains. Additionally, we need to ensure that parents have accurate, up-to-date information necessary to make informed decisions about their children's participation in football and other contact sports.

To assist our inquiry, please provide a briefing with responses to the following questions by May 25, 2016:

1. In October 2014, the NFHS finalized its recommendations for minimizing the risk of concussions and head impact exposure in contact sports; member state associations subsequently adopted the recommendations for the 2015 high school season.[10] The recommendations were designed to "limit overall exposure to multiple blows to the head and body (*head impact exposure*) and minimize concussion risk."[11] The recommendations do not specifically reference subconcussive hits and the risks posed by these injuries. As referenced above, subconcussive hits, even in the absence of a concussion diagnosis, have been linked to decreased cognitive functioning and changes in brain chemistry.

    a. What is the NFHS doing to address the risks of subconcussive hits to student-athletes, particularly football players?

    b. What is the NFHS doing to ensure that student-athletes, particularly football players, are aware of the risks of subconcussive hits and the linkages between repetitive head trauma and CTE?

2. In its 2014 recommendations, NFHS recommended that full-contact be allowed in no more than two to three practices per week. The recommendations do note that more full-contact time may be necessary in pre-season practices, but recommends that only one session per day should include full contact.[12] It is our understanding that these guidelines are not binding, and they allow flexibility for state associations to implement them as appropriate.

    a. What is the NFHS doing to monitor state associations' implementation of these guidelines? How many state associations have adopted the guidelines limiting full-contact practices?

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[10] National Federation of State High School Associations, *Recommendations and Guidelines for Minimizing Head Impact Exposure and Concussion Risk in Football* (Oct. 2014); *NFHS concussion course reaches 2 million mark*, High School OT (Aug. 5, 2015).

[11] National Federation of State High School Associations, *Recommendations and Guidelines for Minimizing Head Impact Exposure and Concussion Risk in Football* (Oct. 2014).

[12] *Id.*

b. Is the NFHS considering further reducing the number of full-contact practices per week during the regular season? Is the NFHS considering further reducing the number of full-contact practices during the pre-season?

c. Is the NFHS considering incorporating these guidelines into the football rule book, in light of the growing body of scientific evidence on the dangers of subconcussive hits and the linkages between repetitive head trauma and CTE?

3. In 2010, NFHS partnered with the CDC to develop its "Concussion in Sports" course designed to "educate coaches, officials, parents and students on the importance of proper concussion recognition and management in high school sports."[13] Over two million high school student-athletes had taken the course before the 2015 high school season.[14] While it is important to educate on the danger of concussions, it is also important that student-athletes, their parents, and coaches understand the risks posed by subconcussive hits as well.

   a. Who is required to participate in the "Concussion in Sports" course? How is participation in and completion of the course monitored?

   b. Is the course having a demonstrable effect on how concussions are handled at the high school level? For example, is the NFHS tracking the effectiveness of the course in preventing, identifying, and treating concussions for high school athletes?

   c. The course outline exclusively discusses concussions and the appropriate response if an individual is suspected of having experienced a concussion. How does the course address subconcussive hits and the actions student-athletes, parents, and coaches should take to prevent or mitigate their effects?

   d. How has the course been updated since 2010 to reflect the body of emerging science on both concussive and subconcussive hits in recent years?

4. The recent Mayo Clinic study recently found that close to one-third of the brains donated to the Mayo Clinic Brain Bank of young males who participated in contact sports during youth had CTE.[15] It is important that high school athletes and their parents understand these potential health consequences of repetitive head trauma inherent to contact sports.

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[13] National Federation of State High School Associations, *Concussion in Sports* (accessed Mar. 24, 2016) (online at nfhslearn.com/courses/61037/concussion-in-sports).

[14] *More than 2 million high school athletes have taken concussion awareness course*, The Arizona Republic (Oct. 3, 2015).

[15] *Evidence Suggests Amateur Contact Sports Increase Risk of Degenerative Disorder*, Mayo Clinic News Network (Dec. 2, 2015) (online at http://newsnetwork.mayoclinic.org/discussion/mayo-clinic-cte-fl-release/).

a. In light of the results of the Mayo Clinic study, how does the NFHS plan to communicate to student-athletes and their parents about the brain damage that may result from football and similar contact sports?

b. How does the NFHS coordinate with youth sports leagues to ensure that the parents of youth and young adult athletes receive consistent messages about ways to prevent and mitigate the risks of contact sports?

Your assistance in this matter is greatly appreciated. If you have any questions, please contact Una Lee or Elizabeth Letter of the minority committee staff at (202) 225-3641.

Sincerely,

Frank Pallone, Jr.
Ranking Member

Gene Green
Ranking Member
Subcommittee on Health

Diana DeGette
Ranking Member
Subcommittee on Oversight and Investigations

Jan Schakowsky
Ranking Member
Subcommittee on Commerce, Manufacturing, and Trade