

Testimony of  
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Before the  
Committee on Education and Labor  
On

***The Impact of Concussions on High School Athletes: The Local Perspective***  
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## **Biography**

Dr. Hayley C. Rintel Queller is a Primary Care Sports Medicine physician for Orthopedic Associates of Long Island, LLC in East Setauket, NY. Dr. Queller has a dual board certification in both Internal Medicine and Pediatrics from Christiana Care Health System in Delaware. After completing her primary care training, she continued her training by completing a fellowship in Primary Care Sports Medicine. Through her training, she had a particular interest in concussion management. She recognized the importance of appropriate education, recognition and treatment of sports related concussions. Dr. Queller recognized a lack of a comprehensive concussion program in the area when she moved to Suffolk County and was determined to initiate a concussion management program targeting high school athletes. In 2010, she, along with her colleagues at Orthopedic Associates of Long Island, LLC, started such a program in many of the local high schools. This program includes baseline neurocognitive testing, post concussion evaluation/treatment and return to play decision making. The goal is to increase the awareness of concussion management and to make return to play as quickly and as safe as possible for the athletes in the community.

## **Testimony**

Good morning Mr. Chairman, members of the committee and fellow speakers. I want to thank you for inviting me to speak to you today about concussion management in the high school athlete. Like the other witnesses testifying today, I have a strong interest in improving concussion awareness and management in the local community. I am honored to have the opportunity to discuss this important issue with you today and look forward to being part of the process as the committee improves the safety of the high school athletes in our area.

Reinforcing what Dr. Gioia stated in previous testimony, a concussion is a functional rather than structural disturbance of the brain after a direct or indirect blow to the head. The developing brain of adolescents is more susceptible to this metabolic disturbance when compared to adults. From a clinical standpoint, a concussion may present with physical, emotional or cognitive disturbance. Unfortunately, these injuries are notoriously missed and under-reported. Early recognition of this injury is paramount to the appropriate treatment and safety of the high school athlete. Without appropriate diagnosis, student-athletes are at risk of significant untoward effects including the fatal "second impact syndrome," as well as, other psychological, emotional and cognitive deficits in the future. There is data to support, however, that once the student-athlete has fully recovered from a concussion, that the concussed patient will have no permanent sequelae.

The fact that we are all gathered here today proves to me that we are all in agreement that it is essential to establish a gold standard for the management of concussions in the high school athlete. My colleagues at Orthopedic Associates of Long Island, LLC and I have drafted a concussion management protocol that we feel is comprehensive and safe for our high school athletes. This program includes community-wide education, baseline neurocognitive testing, prompt recognition, conservative treatment, and safe return to play of the concussed athlete.

We feel that the most important aspect of concussion management is in the education of the community (athletes, parents, coaches, school nurses, referees, teachers, etc). This education must include the recognition of signs and symptoms of concussion, as well as, the importance of treatment and the potential long-term sequelae should the injury be inappropriately treated. Getting out of the "warrior" mentality of the past is essential. Instead of being encouraged to hide their symptoms, athletes should feel comfortable and encouraged to report their symptoms. Initially, this goal can be achieved using prepared materials by the CDC ("Heads Up Concussion in High School Sports" and "Know Your Concussion ABCs"). My colleagues and I have lectured at local high schools and hospitals with excellent response. We would specifically like to target local physicians as these are the practitioners that are sought to treat these patients and make return to play decisions. The local physicians must all be on the same page when it comes to concussion management so as to have

consistency in treatment and safe return to play. There are vast educational opportunities for these practitioners to learn the most up to date information on concussion management.

As a next step, we have been involved in baseline computerized neurocognitive testing of athletes in 4 high schools. Over recent years, this testing has become an objective tool that can be used to identify a concussion, monitor improvement and help get student-athletes back onto the field in a safe manner. My goal is to have baseline testing for all contact and collision sports for the high schools in Suffolk County. Until baseline testing is available for all athletes, however, normative data can be used to help in return to play decisions.

Another key component of concussion management is proper initial treatment of the head injury. At the high school level, if there is any suspicion of a head injury, the student athlete should be removed from play; **WHEN IN DOUBT, SIT THEM OUT**. The student-athlete should be kept out of play and should not be allowed to return until evaluated by medical personnel knowledgeable in the management of concussions. This “clearance” should come from a medical professional who has continuing education in concussion management. It is important to recognize that the athlete should be re-evaluated 48-72 hours after their injury as symptoms often develop in the initial post-concussive days.

Once diagnosed with a concussion, the treatment should include physical and cognitive rest. I think we can agree that the student-athlete should be restricted from any physical exertion until they are symptom-free. Additionally, these student-athletes should be restricted from any cognitive activities that may exacerbate their symptoms. This may include keeping the student-athlete out of school according to their symptoms. As for physical exertion, they are brought through a 5 step return to activity starting with light aerobic activity, followed by sports-specific exercise, non-contact drills, full contact practice and finally, full competition. Until the student athlete is 1) symptom-free at rest, 2) symptom-free with exertion (both physical and cognitive) and 3) have a “normal” neurocognitive examination, we do not allow these athletes to return to play. In collision sports and in those athletes that have prolonged symptoms, performing neurocognitive testing after physical exertion to ensure deficits do not return with activity may be beneficial.

In summary, it is absolutely essential that there be a comprehensive concussion program established in all high schools, as well as, all youth sports. Without such a program, we are putting our youth at risk of experiencing long-lasting emotional, psychological and academic deficits. To ensure that such programs are created, the first step is community-wide education. Injury prevention, early identification and appropriate management are the principal components to ensure the safe return of our high school athletes back to their sports activities. Thank you for your support on this extremely important topic.