

Working in the Field of Concussion

By Ken Gilstein, Ph.D.

I have been most fortunate to be able to work in the field of sports-related concussions (Mild Traumatic Brain Injury). Until recently, research in this field has mostly been outdated. Advances in technology, such as the laptop, MRI and PET scans, has changed our understanding drastically. For example, we are discovering that younger athletes, whose brains are still developing, are more vulnerable to the effects of concussions and experience more intense symptoms, which take longer to heal.

Until about eight years ago, it was thought that after a blow to the head, you had a concussion only if you lost consciousness, or that something was seen on a CTscan. We have found out that this is not true. To have a concussion after a head injury, you need to experience only ONE of the following: 1) Loss of consciousness; 2) Post traumatic amnesia [memory loss for incidents before (retrograde) or after (anterograde) the injury]; 3) Change in mentation (feeling dizzy, dazed, confused, or disoriented); or 4) focal neurological deficit.

Even more recently, instruments have been developed that have allowed for group administration to establish baselines and re-administer post-concussion, then evaluate changes in cognitive abilities. ImPACT (Immediate Post-concussion Assessment and Cognitive Testing) is one such computer-based neuropsychological evaluation that usually takes no more than 30 minutes. Extensive research can now also be done on various topics concerning causes of concussions, recovery rates, and best ways to manage concussions to prevent Second Impact Syndrome. SIS is the result of a second concussion occurring while the brain is still healing from an earlier concussion. It involves loss of cerebrovascular autoregulation, leading to malignant brain swelling, permanent brain injury and, in rare cases, death.

The field is not only a very exciting one, but the people who are involved are extremely collegial, looking to share and collaborate as much as possible. I am currently involved with an international consortium of neuropsychologists, neurosurgeons, and other health providers who are doing research and clinical work in this field. For the last year and a half, I have been collaborating with the Sports Concussion Clinic from the University of Pittsburgh Medical Center, which is the preeminent place for research and evaluations on sports concussions. My own research on concussions in children 11 to 14 is allowing me to collaborate with neuroscientists from the University of Pittsburgh Medical Center, the University of British Columbia, St. Joseph's College, and Robert Wood Johnson University Medical Group in New Jersey. I have spoken at several colleges in Connecticut. I have also been invited to present my research in Hong Kong this May, at the 1st International Conference on Neuropsychology, and in Berlin, Germany this July, at the annual International Neuropsychology Society's conference.

The field is constantly expanding, and we are looking for more people who are interested in learning about Mild Traumatic Brain Injury and concussions. Believe me, it is a very exciting and rewarding field for anyone who is willing to invest some time and effort.

Dr. Gilstein currently practices neuropsychology in Guilford and Middletown.