The Decision for The Mid-Atlantic Concussion Alliance to Use UPMC Concussion Protocols

At the Mid-Atlantic Concussion Alliance, we have chosen to use the latest University of Pittsburgh Medical Center (UPMC) Concussion Protocols because they are powered by two very important objective tools that not only help diagnose the severity of the concussion, but also follow these objective parameters to full recovery. The first objective tool is the Vestibular Ocular Motor Screen (VOMS) that was researched by the NIH with the input of professors from UPMC, University of Alabama and Massachusetts General Hospital and presented in the American Journal of Sports Medicine in October 2014. The study concluded that combining the three parts of the VOMS; Near Point Convergence, SACCADES and VOR, resulted in a positive prediction rate of 0.89 for identifying this injury. The study also concluded that "The VOMS appears to assess distinct vestibular and ocular motor symptoms, which are unrelated to current clinical balance measures." (1)

The second objective tool that is used by the UPMC Concussion Protocols is a computerized neurocognitive test called the ImPACT test. The results of the repeated ImPACT test combined with a thorough repeated VOMS exam and symptoms history also allows the ability to not only assess the severity of the concussion but to also watch the progress in recovery at each visit resulting from the UPMC rehabilitation protocols, including brain rest, vestibular therapy, ocular therapy and prescription therapy.

There are over 280 Medical Journal Articles since 1998 that provide peer reviewed research that overwhelmingly show the power and reliability of the ImPACT test with over 16 million in the data base providing solid percentiles for comparison of both memory scores and processing speeds. This solid research and ongoing clinical success have led to ImPACT's FDA approval in 2014 for ages 5 –60, and to this date, it is the only FDA approved computerized neurocognitive test available and approved for concussion diagnosis and treatment. (2)

The current international consensus of experts (Zurich consensus statement), (3) views computerized neuropsychological or neurocognitive testing as having clinical value in evaluation for concussion and as an aid in determining when it is safe for an athlete to return to play after a concussion. There are several computerized neurocognitive test programs available for physicians and medical professionals to use including, Immediate Post-Concussion Assessment and Cognitive Testing (ImPACT), XLNT Brain Sport-TM, Computerized Cognitive Assessment Tool (CCAT), Concussion Resolution Index (CRI), Automated Neuropsychological Assessment Metrics (ANAM) system, Concussion Vital

Signs, developed by CNS Vital Signs and Cambridge Brain Sciences (CBS) from Toronto, Canada. Of all these neurocognitive computerized tests, ImPACT has the largest database of 16 million tests taken, with the next highest being CBS with 8 million tests taken in their data base to support comparative percentiles. And among all of these neurocognitive tests being used for concussion, only ImPACT has FDA approval.

Legal acceptance of ImPACT testing results in treating concussion has also been shown in the court system as recently seen on April 10, 2017 in the Commonwealth of Massachusetts; Civil Action NO 1523 SC 2043, Medical Diagnostics and Rehabilitation LLC (plaintiff) vs Allstate Insurance Company (defendant). Regarding the "Order on Plaintiff's Motion for the Admission of ImPACT Concussion Testing After a Motor Vehicle Accident." The judge found in favor of the plaintiff against AllState saying, "I find in favor that the plaintiff has shown that the use of the ImPACT test for purposes of assessing a patient for a possible concussion following a motor vehicle accident has 'general acceptance in the relevant scientific community' and can be properly applied to the facts of this case."(4)

So extensive research and investigation have gone into the Mid-Atlantic Concussion Alliance's decision to utilize the UPMC Concussion Protocol Tools that are powered by NIH proven VOMS exam as well as scientifically validated, FDA approved and legally supported ImPACT computerized neurocognitive testing. The choice of using these UMPC Concussion Protocol Tools is not only validated scientifically, but the clinical success we have directly experienced in over 10,000 MAC Alliance patients in the last 10 years further supports the decision made by the Mid-Atlantic Concussion Alliance.

The application of the UPMC Concussion Rehabilitation Plan has also shown clinical success in both the research and with our MAC Alliance concussion patients. Using the 5 Stage UMPC Concussion Rehabilitation Program and UPMC prescription protocols to resolve the vestibular deficits and symptoms is well supported by the literature in aiding a more efficient and complete recovery. UPMC prescription protocols including the use of Neurontin/gabapentin, safe sleep aids like Ambien, Lunesta and Sonata, antianxiety medication like the SSRI's and other medications recommended by UPMC in specific situations including amantadine, Vyvanse, etc., have been well proven not only in the literature, but also in our clinical application for over a decade. (5)

References:

(1) Anne Mucha, DPT*, Michael W. Collins, PhD†, R.J. Elbin, PhD‡, Joseph M. Furman, MD, PhD§, Cara Troutman-Enseki, DPT*, Ryan M. DeWolf, MS, ATC†, Greg Marchetti, PhD||, and Anthony P. Kontos, PhD: A Brief Vestibular/Ocular Motor Screening (VOMS) Assessment to Evaluate Concussions: **American Journal of Sports Medicine**: 2014 October; 42(10): 2479–2486.

(2) FDA News Release: FDA allows marketing of first-of-kind computerized cognitive tests to help assess cognitive skills after a head injury. https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm517526.htm

(3) McCrory P, et al. Concussion statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012. Br J Sports Med 2013; 47:250-258.

(4) Decision from Civil Action NO 1523 SC 2043: April 10, 2017; Commonwealth of Massachusetts: Medical Diagnostics and Rehabilitation LLC (Plaintiff) vs Allstate Insurance Company (Defendant). In favor of "Motion for the Admission of ImPACT concussion testing after a Motor Vehicle Accident. Referenced Commonwealth vs. Lanigan 419 Mass 15, 26 (1994)

(5) Reddy CC, Collins M, Lovell M., Kontos AP. Efficacy of Amantadine Treatment on Symptoms and Neurocognitive Performance Among Adolescents Following Sports-Related Concussion. Journal of Head Trauma and Rehabilitation, July-Aug. 2013; 28 (4): 260-5.