ImPACT Concussion Test

Bismarck Public Schools is now offering the ImPACT Test for their student-athletes. Read below to find out information about how this can benefit your athlete. More information about the ImPACT Test can be found at http://impacttest.com/about/background

ImPACT (Immediate Post-Concussion Assessment and Cognitive Testing) is the first, most-widely used, and most scientifically validated computerized concussion evaluation system.

Developed in the early 1990's by Drs. Mark Lovell and Joseph Maroon, ImPACT is a 30-minute test that has become a standard tool used in comprehensive clinical management of concussions for athletes of all ages. ImPACT Applications, Inc. was co-founded by Mark Lovell, PhD, Joseph Maroon, MD, and Michael (Micky) Collins, PhD.

Given the inherent difficulties in concussion management, it is important to manage concussions on an individualized basis and to implement baseline testing and/or post-injury neurocognitive testing. This type of concussion assessment can help to objectively evaluate the concussed athlete's post-injury condition and track recovery for safe return to play, thus preventing the cumulative effects of concussion. In fact, neurocognitive testing has recently been called the "cornerstone" of proper concussion management by an international panel of sports medicine experts.

ImPACT can be administered by an athletic trainer, school nurse, athletic director, team coach, team doctor, or anyone trained to administer baseline testing. ImPACT is the most widely used computer-based testing program in the world and is implemented effectively across high school, collegiate, and professional levels of sport participation.

Which Athletes are Recommended for ImPACT Baseline Testing?

The ImPACT Team recommends the evidence-based guidelines below for determining which athletes should be given a baseline test. We recommend that Contact/Collision sport athletes receive a baseline, whereas NORMATIVE DATA can be used for all other injured athletes.

Features
- Measures player symptoms
- Measures verbal and visual memory, processing speed and reaction time
- Reaction time measured to 1/100th of second
- Assists clinicians and athletic trainers in making difficult return-to-play decisions
- Provides reliable baseline test information
- Produces comprehensive report of test results
- Results can be e-mailed or faxed for fast consultation by a neuropsychologist
- Automatically stores data from repeat testing
- Testing is administered online for individuals or groups
- Compatible with PC and MAC

The test battery consists of a near infinite number of alternate forms by randomly varying the stimulus array for each administration. This feature was built in to the program to minimize the "practice effects" that have limited the usefulness of more traditional neurocognitive tests.

ImPACT takes approximately 30 minutes to complete. The program measures multiple aspects of cognitive functioning in athletes, including:
- Attention span
- Working memory
- Sustained and selective attention time
- Response variability
- Non-verbal problem solving
- Reaction time

How The ImPACT Test Works

1: Demographics & Health History
Section 1 of the ImPACT test requires the athlete to input basic demographic information and descriptive information through a series of easy-to-follow instructional screens. The athlete inputs this information via a keyboard and must utilize an external mouse to navigate/select responses on the screen.

Many of the questions can be answered using "pull down" menus in the window. This section asks the athlete to answer questions regarding height, weight, sport, position, concussion history, history of learning disabilities and other important descriptive information.

2: Symptoms and Conditions
This section of the ImPACT test asks questions about the athlete's most recent concussion date, hours slept last night, and current medications. Then the athlete is to rate the current severity of 22 concussion symptoms via a 7-point Likert scale. This Likert scale is currently utilized by the NFL and NHL and has been endorsed by the the Vienna Concussion in Sports (CIS) group.

The concussion symptom scores are displayed in the ImPACT test report along with the symptom total score.

3: Baseline and Post-Injury Neurocognitive Tests
After completing the Demographic and Current Symptoms, the athlete will begin the Neurocognitive Test which is comprised of 6 modules.
1. Word Discrimination evaluates attentional processes and verbal recognition memory utilizing a word discrimination paradigm.
2. Design Memory evaluates attentional processes and visual recognition memory utilizing a design discrimination paradigm.
3. X's and O's measures visual working memory as well as visual processing speed and consists of a visual memory paradigm with a distractor task.
4. Symbol Matching evaluates visual processing speed, learning and memory.
5. Color Match represents a choice reaction time task and also measures impulse control and response inhibition.
6. Three Letter Memory measures working memory and visual-motor response speed.

4: Graphic Display of Data
Five ImPACT test scores are calculated from the neuropsychological tests administered, and each is displayed graphically. See below for a description of each graph.