# NEW JERSEY NEUROPSYCHOLOGICAL SOCIETY NJNS NEWSLETTER

Volume 1, Issue 1



# MILD TRAUMATIC BRAIN INJURY: BACKGROUND OF THE DISORDER AND INTERVENTIONS

# Howard R. Mangel, Ed.D.

Mild traumatic brain injury is a diagnosis that has been subject to some debate and even skepticism over the last 20-25 years. In this article, a review of the diagnostic issues will be presented. This article is a companion to this author's article, "Psychological Interventions with Mild Traumatic Brain Injuries," New Jersey Psychologist, Spring 2006.

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Epidemiological research has indicated that about two million traumatic brain injuries occur every year in auto accidents and other kinds of accidents or traumas (National Institutes of Health, 1999). Of these, the majority of injuries (between 75 and 95 percent) are mild to moderate (NIH, 1999). One new review of the literature (Tiersky, et. al, 2005) indicates that the majority of individuals who sustain a mild TBI "appear to resume normal functioning fairly quickly.' However, Tiersky and colleagues wrote, "a considerable subset, approximately 5% to 15%, report persistent cognitive, emotional, and somatic symptoms lasting well beyond the initial 3-month acute phase." Other studies in the last 15-20 years put the estimate at between 10-30 percent, depending on the study, of individuals who sustain longer lasting changes in cognitive, behavioral/affective and/or physical functioning.

Clinical models and modes of treatment began to emerge in Neuropsychology and Rehabilitation medicine in the 1980's and early 1990's. In the 1980s, as has been noted in a recent retrospective article by Ruff (2005), clinical focus was on more severe TBI. From this emerged improvement of trauma intervention in air evacuation, first of wounded soldiers in the Vietnam War, and subsequently in civilian life. Remarkable improvements in medical diagnosis and treatment of individuals who sustained TBI also allowed more of these patients to survive and begin to recover, at least medically, from their injuries. Ruff comments that increased clinical attention to mild TBI was a primary focus of the second wave of brain injury treatment, in the 1990s.

In this second wave, clinicians began focusing on diagnosing the multiple determinants of mild *Continued on page 8* 

## PRESIDENT'S MESSAGE

#### By William Flock, Psy.D.

As I begin my term of office as your President, I'd first like to express my gratitude for the confidence and trust you have placed in me. I'd like to thank our departing Board members, George Carnevale and Vicky Width, for their dedicated service to NJNS, and also to welcome our incoming Officers and Executive Board members for 2007: our new Past President Joe Marcantuono, President-elect, Anne Farrar-Anton, returning Secretary Joyce Echo and returning Treasurer Vanessa Walsh, as well as our new Board member Joe Conroy, and our returning Board members Beata Boudoin, Howard Mangel, Vincenza Piscitelli, Jacqueline Rondeau, Brad Ross, and Peter Rutan. Jacqueline is also our newsletter editor, and Howard Mangel, our Program Chair.

Our biennial conference will be held at Seton Hall on Friday, April 13<sup>th</sup>. Our speaker will be Dr. Jane Holmes Bernstein, Senior Supervising Neuropsychologist, Neuropsychology Services, Children's Hospital Boston. A fuller description of the conference is contained elsewhere in this

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# NOTES FROM THE EDITOR

#### By Jacqueline Rondeau Psy.D.

I do hope you enjoy the appearance of the Spring issue of the NJNS Newsletter as well as its content. I am grateful to the professionals who shared their special knowledge in this issue on brain injuries. Thanks to Howard Mangel for his informative lead article on Mild TBI and Joseph Conroy for his article on assessment and treatment of sports-related concussions. I am grateful for Amy Gabel's discussion on the rationale of newly revised test instruments. A special thanks to Beata Beaudoin not only for her contribution on the nuances of CPT testing codes but for inviting contributors to this issue. Laura Palmer brings us a review of John DeLuca's edited text on fatigue, a familiar clinical manifestation to neuropsychologists.

Let's look ahead to the Fall 2007 and Spring 2008 issues, as NJNS encourages authors to submit articles, books reviews, or news. All contributions are welcome. Our members have tremendous expertise to offer on many specialties in our field. Please consider submission on the topic of traumatic brain injury and rehabilitation. These are particularly hot topics now as the public is slowly awakening to the silent epidemic of traumatic brain injury sustained by soldiers now returning from Iraq and Afghanistan. I am also looking for contributors to the new "Clinical Corner" in which a case is presented and discussed. I've given guidelines on page 17 for the format. All Submissions for the Fall 2007 newsletter are due no later than September 15. The information and opinions shared by newsletter authors are their own and not necessarily the viewpoint of NJNS.



# BOOK REVIEW Fatigue as a Window to the Brain

Edited by John DeLuca, Ph.D., MIT Press, Cambridge, MA.

#### Reviewed by Laura Palmer, Ph.D.

Fatigue, commonly experienced and poorly understood, remains a factor to be accounted for in neuropsychological functioning. John DeLuca has produced an essential survey on the role of fatigue across a broad range of neuropsychological presentations from those with a clear and convincing physiological etiology, such as TBI and stroke, to the more elusive, such as Chronic Fatigue Syndrome and Depression. Multiple knowledgeable authors contribute informative chapters, exploring and defining fatigue, from synaptic to systemic perspectives. DeLuca presents the challenges with the definition and measurement of fatigue, primarily assessed through subjective appraisal. This presents multiple challenges, not the least of which is poor psychometric rigor. Definition and measurement go hand in hand, nicely illustrated in Christodoulou's chapter on The Assessment and Measurement of Fatigue.

In addition to the comprehensive review on definition, measurement and the range of clinical presentations of fatigue, DeLuca includes chapters on the rehabilitation and treatment of fatigue, providing more intriguing interventions than just "getting more rest."



In summary, DeLuca's *Fatigue* is an excellent review of what is currently known about the etiology, manifestation and treatment of fatigue in adults. The only shortcoming of the text is the lack of information on the presentation of fatigue in children. However, Dr. DeLuca has been responsive to this feedback and assures the reviewer that this will be addressed in the second edition.

Given the prevalence of the report of fatigue across so many different clinical presentations, this text should be requisite reading for all neuropsychologists.

Laura Palmer is an Associate Professor of Professional Psychology & Family Therapy at Seton Hall University. She has a private practice in Madison, NJ.

# NEW ASSESSMENTS AND THE NEUROPSYCHOLOGIST

#### Amy Dilworth Gabel, Ph.D

Neuropsychologists are faced with difficult budgetary decisions when new assessments are released. Although it may be tempting to retain familiar favorites, there are a number of reasons why adoption of new measures is important. In this brief article, important considerations in updating measures will be discussed.

Test revisions typically address several goals, including: providing updated norms, improving psychometric properties (i.e., extension of floors and ceilings, links to other measures of functioning), and making enhancements regarding other practical issues such as user- and examinee-friendliness, and extension of age range, for example. Measures are also revised to reflect current research in the field that is related to the construct being assessed (i.e., the WISC-IV is based on current research in cognitive neuroscience).

Critical issues relevant to psychometric and measurement principles should drive the adoption of new, well-designed instruments. One of the primary responsibilities of the

# SPORTS CONCUSSION MANAGEMENT AND RETURN TO PLAY: CHALLENGES AND SOLUTIONS

#### By Joseph E. Conroy, PhD

Recent events in professional football have once again put the media spotlight on concussions in athletes. We can agree that appropriate diagnosis and management are necessary, but what represents the "gold standard" with respect to these components of care? This article will review concussion statistics, discuss assessment of concussion utilizing computer-based neurocognitive measures, and describe a return to play protocol.

The statistics on concussion are noteworthy:

- 1 in 10 high school athletes involved in contact sports sustains a concussion each year
- □ 10% of all contact sport athletes sustain concussions yearly
- $\Box$  63% of all concussions occur in football
- □ An athlete who sustains concussion is 4-6 times more likely to sustain a second concussion
- □ "Bell ringers" or mild concussions account for 75% of all concussive injuries
- □ Effects of concussion are cumulative in athletes who return to play prior to complete recovery



It is likely that the estimate of 300,000 sports concussions per year is low and many concussions

likely go unreported. Many coaches and team personnel have limited training in recognizing signs and symptoms of concussion and therefore may not accurately diagnose the injury when it has occurred. Additionally, many players may be reluctant to report concussive symptoms to the athletic trainer or team physician. The classic symptoms of loss of consciousness, confusion, memory loss, and/or balance problems may be present in some athletes with mild concussion, but there may or may not be obvious signs that a concussion has occurred. Symptoms indicative of brain impairment can be quite subtle and may go unnoticed by the athlete, team medical staff, or coaches.

#### Concussion Grading Systems

Aside from underreporting, another significant challenge to management is the current concussion grading systems and the "return-toplay" systems. For example, the Cantu and American Academy of Neurology grading systems rely significantly on loss of consciousness for gradation of concussion. The AAN cites Grade I concussion as characterized by transient confusion, no loss of consciousness, and symptom resolution less than 15 minutes. This focus on loss of consciousness as the primary factor in severity is being challenged in the literature with support for the amnestic component being the more significant predictor of outcome. Consensus opinion suggests that concussion is now defined as any traumatically induced alteration in mental status that may or may not show cognitive deficits, may or may not involve LOC, may show or report any variety of signs and symptoms. In light of the challenges cited above, many clinicians no longer utilize grading systems.

#### Return to Play Systems

The AAN recommendations for return to play are based on the above cited concussion grading system. The AAN recommendation for a Grade I concussion is return to play on the same day. Grade 2 recommendations are to remove athlete from the contest and return in 1 week if asymptomatic on exertion that week. Grade 3 recommendations are to remove from contest

# NJNS BIANNUAL CONFERENCE FRIDAY, APRIL 13<sup>TH</sup>, 2007

The Biannual NJNS conference, *Assessing the Developing Child: the Neurobehavioral Perspective*, will be presented by Dr. Jane Holmes Bernstein. The conference will be held Friday, April 13<sup>th</sup>, 2007 at Seton Hall University in the Duffy Graduate Lounge. Originally from Edinburgh, Dr. Bernstein divides her time between the Neuropsychology Program at the Children's Hospital Boston and the National Child Development Programme in the Republic of Trinidad and Tobago. She is a Fellow of the American Psychological Association, the Massachusetts Psychological Association, and the National Academy of Neuropsychology. She has trained several generations of clinicians and taught locally, nationally, and internationally on the neuropsychological assessment of the developing child. Her publications focus on the nature and practice of pediatric neuropsychology and the use of the Rey-Osterrieth Complex Figure in neuropsychological assessment with children.

The conference will present a comprehensive, developmentally responsive process of neuropsychological evaluation. People seek clinical help when something in their life is "wrong." Thus, the primary goal of any clinician is to *make a difference* for the client. This means that the outcome of an effective clinical assessment is not a diagnosis *per se*, but a coherent management plan that takes into account the experience, goals, and values of the "whole child." Such an assessment cannot be based on traditional test-based analyses of children's behavior but requires an understanding of brain-behavior relationships. These must be examined in the context in which the brain "acts" and the behavior occurs, and—where children are concerned—must incorporate in the clinical analysis developmental change as children mature.

Dr Bernstein will present the *brain-context-development* approach to the assessment of the child, highlighting the way in which this perspective informs the assessment design/methodology, the collection of relevant information, the diagnostic formulation, and the development of the comprehensive management plan. Specific implications for designing intervention strategies and communicating findings with parents and professionals will be discussed. Clinical case materials will be examined to highlight the relevant principles.

Specifically, participants will review how brain knowledge is applied to the evaluation of children's behavioral functioning. Additionally, Dr. Bernstein will address the importance and impact of contextual variables on evaluation and management. The role of development in the clinical analysis of children's behavior will be illustrated. Dr. Bernstein will discuss the necessary integration of quantitative and qualitative data in understanding children's behavior from a neurobehavioral perspective. She will also cover the process of coming to a diagnostic formulation and the respective roles of feedback (interpretive) session and report in communicating findings and promoting the child's ongoing progress.

Dr. Bernstein always delivers a brilliant and accessible coverage of material and is truly gifted in articulating a comprehensive, developmentally informed approach to pediatric neuropsychological evaluation.

For additional information or to register, contact Dr. Laura Palmer, at 973 761 9449 or <u>palmerla@shu.edu</u>, or complete the registration form attached to this newsletter. The conference brochure and registration form are also available at the NJNS website.

http://www.njneuropsychologicalsociety.org/NJNS\_Conf07.pdf

The New Jersey Neuropsychological Society endorses the consensus of opinion regarding the definition and features of concussion also known as mild traumatic brain injury as outlined in the **Concussion in Sports Consensus Statement** issued by the Brain Injury Association of New Jersey

CONCUSSION IN SPORTS CONSENSUS STATEMENT Definition and features

A concussion is a mild traumatic brain injury (MTBI), induced by mechanical forces that immediately disrupt the normal functioning of the brain.

When playing sports, if there is any doubt that a player might have sustained a concussion, the player should be removed from the game or practice. Never participate in physical activity if *any* sign or symptom of MTBI is present.

All concussions should be evaluated by knowledgeable health professionals to measure severity, monitor progress over time, and properly manage the injury. Resolution of clinical and cognitive symptoms often occurs spontaneously, typically following a sequential course.

The mechanical trauma that causes a concussion may be either a direct blow to the head, face, and neck or an indirect blow elsewhere on the body that transmits an "impulsive" force to the head.

Concussion symptoms usually appear immediately, although they can present later, and affect a wide array of mental functions. A stunned, confused state is a hallmark of MTBI. Loss of consciousness may also occur; however, most concussions do NOT involve loss of consciousness. Memory loss, dizziness, emotional instability, disturbances of equilibrium, vision, and cognitive functions, as well as headache, nausea and vomiting are common.

#### Symptoms

Concussion results in immediate chemical changes within the nerve cells of the brain, which usually return to normal over several days or weeks. Neuroimaging studies typically show grossly normal anatomic structures.

A concussion may have widely varied clinical consequences (from mild to severe); like all injuries. However, it is imperative that the injured body part be afforded adequate time to heal. Resting the brain must not only involve ceasing physical activity for a period of time, but also should include a break from challenging cognitive activity as well.

Concussions are not simply "a blow to the head"; as brain injuries, concussions must always be taken seriously.

March 2005, Revised July 2005

# Concussion in Sports Committee

Barbara Geiger-Parker, Chair Brain Injury Association of New Jersey, Inc.

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**Jill Brooks, PhD** Head to Head Consultants, PA

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Joanna Boyd Caroline Leipf Jill Schulman Brain Injury Association of New Jersey, Inc.

Glenn McCreesh President

The Brain Injury Association of New Jersey (BIANJ)--a chartered state affiliate of the Brain Injury Association of America—is a statewide membership organization dedicated to providing education, outreach, prevention, advocacy, and support services to all persons affected by brain injury and to the general public. This definition of concussion has been developed by a BIANJ committee of professionals (see sidebar) as part of an on-going effort to bring together a statewide partnership on concussion awareness and prevention in youth sports. Website www.sportsconcussion.com



# UPDATE ON CPT CODES FOR USE IN ASSESSMENT

#### Beata Beaudoin, Ph.D.

For better or worse, changing Current Procedural Terminology (CPT) codes are upon us and rules are being updated faster than nearly anyone can keep up. This update is meant to be a snapshot in time, as of late October 2006, and reflects only the current understanding of those working at the forefront of the battle for better reimbursement for psychologists and neuropsychologists. Specifically, Dr. Antonio Puente has been diligently working as APA's representative to the AMA CPT panel and Dr. James Georgoulakis has been APA's representative to the Relative Value Units (RVU) committee. The Practice Advocacy Committee (PAIC) of National Academy of Neuropsychology (NAN) under Dr. Ted Peck has also taken a leading role in supporting the interest of neuropsychologists with financial and instrumental assistance. There are numerous other psychologists, neuropsychologists, and attorneys involved in this advocacy practice.

The historical context of these changes are very important to understand. The CPT system has existed since 1966 when the AMA established it and is under license of the Center for Medicare and Medicaid Services (CMS). The Medicare rules set the overall national model and then local medical review usually follows suit. Neuropsychologists were only granted a seat at

the CPT table relatively recently. Reimbursement comes from three revenue sources: work expense, practice expense, and overhead, with the main revenue stream being practice expense. As neuropsychologists, we have been paid for our practice expense, although we have always had a technical work value of 0. In the most recent five year review of the Medicare schedule, Congress ordered the setting of realistic and empiricallybased practice expenses consistent with work values assigned. Given that neuropsychologists did not have a work value, we were at risk for losing this avenue of reimbursement. This left us only with work expense and overhead costs, which might have driven down our per hour reimbursement to \$30 - \$40. Therefore, our national organizations were forced to take action in an advocacy role. The outcome was eight new testing codes in one year with an increase of up to 68% in RVU's and thus an increase in potential income.

There are three main sets of new codes which have been in use since 1/1/06. The psychological testing codes (96101-96103) and neuropsychological testing codes (96118-96120) address billing for evaluations done by professionals, technicians and computers. Notably, professionals first need to do a diagnostic interview, which may be billed as 90801 but this may only be listed as one unit once per bout of illness. The third testing code is the Neurobehavioral Status Exam (96116) that addresses billing for interview-based assessment of patients with neurological disorders including record review or interpretation time.

In addition to these new codes, there is the additional option for neuropsychologists to use Health and Behavior Assessment and Management Codes for individuals, groups, and families (96150-96155) that deal with the psychological assessment and management of individuals with medical disorders (such as

#### Mild Traumatic Brain Injury continued from page 1

TBI, understanding the trends in recovery and developing models of intervention. In his seminal work on mild traumatic brain injury, Thomas Kay delineated a distinction between mild or minor head injury and mild traumatic brain injury. He wrote, "Minor head injury refers to an injury to the head, face and neck area with symptoms caused by damage to the skull, scalp, soft tissues or peripheral nerves, but where there is not necessarily injury to the brain" (emphasis added). He continued, "MTBI refers to a minor head injury in which there is also damage to the brain, or at least disruption of brain function, as evidenced by alteration of consciousness at the time of injury." Kay's other distinctions were that "symptoms of either may be transient or permanent . . ." and that "individuals differ in response to initial symptoms." Most importantly, he was among the first clinical researchers to directly state that "primary deficits after MTBI lead to a shaken sense of self," and that a "psychological overlay accumulates when primary deficits are undiagnosed." Kay's other key assumptions were that "personality and environmental factors interact with primary deficits to determine functional disability." The patient's "functional outcome after minor head injury" is a product of the dynamic interaction of the following: the actual injury to the brain, the persistence of symptoms from the head injury, the patient's personality style, the adequacy and nature of his family and social support systems, job and home requirements, age, overall health/medical factors, his legal status (vis a vis the injury's origin), and the adequacy of clinical (medical) response to the injury (Kay, 1993).

#### Diagnosis

In 1993, a consensus incorporating prior approaches was reached regarding the diagnostic criteria for mild TBI. The definition (see below) was published by the Mild Traumatic Brain Injury Committee of the Head Injury Interdisciplinary Special Interest Group of the American Congress of Rehabilitation Medicine (J Head Trauma Rehabil 1993: 8(3): 86-87).

A patient with mild traumatic brain injury is a person who has had a traumatically induced physiological disruption of brain function, as manifested by **at least** one of the following:

- □ any period of loss of consciousness
- □ any loss of memory for events immediately before or after the accident.
- □ any alteration in mental state at the time of the accident (e.g., feeling dazed, disoriented or confused);
- □ focal neurological deficit(s) that may or may not be transient.

But where the severity of the injury does not exceed the following:

- □ loss of consciousness or approximately 30 minutes or less
- □ after 30 minutes, an initial Glasgow Coma Scale (GCS) of 13-15
- □ posttraumatic amnesia (PTA) not greater than 24 hours.

Since this definition, refinements have been suggested, including a set of criteria proposed in DSM-IV (1994), which, among other things, proposed that a post concussion disorder should only be diagnosed at or after three months post-onset. Other terms have become more commonplace, including Post Concussion Syndrome (PCS, or, as Ruff and others, 2005, suggest, Post Concussional disorder, or PCD). Criteria became more standardized in terms of when and how to begin diagnostics. For example, Kay (1995)

#### Mild Traumatic Brain Injury continued from page 8

stated that "neuropsychological evaluation is warranted if it can be established that the person suffered a concussion . . . or if there are focal signs of cortical contusion in the absence of altered consciousness, and when the patient complains of subjective cognitive symptoms, or [when] cognitive changes are noted by others." Kay and Cicerone recommended consultation and education within the three month period following injury. Full neuropsychological testing should be completed if symptoms persist for at least three months and involve "reduced cognitive functioning and inability to resume normal activities . . ." (Cicerone, 1995). Also, MTBI became more familiar to the public when it became known that such injuries slowed or ended careers of numerous athletes at all levels (including high school and youth sports) in hockey, football and other sports. Such attention has greatly raised awareness of concussive disorders and spurred development of preventive as well as diagnostic interventions to potentially reduce the number and severity of these injuries.



For additional useful information about mild TBI, please look at, among others, the Spring 2006 special section of the *New Jersey Psychologist* on this topic, edited by Carol Friedman, Ph.D.

Howard R. Mangel, Ed.D. has a private practice in Somerville, NJ and is a Neuropsychologist at St. Lawrence Rehabilitation Center, Lawrenceville, NJ. He may be contacted with any questions at <u>drhmangel@gmail.com</u>.

#### CALENDAR OF EVENTS

March is Brain Injury Awareness Month!

**April 13** NJNS Biannual Conference, Assessing the Developing Child: the Neurobehavioral Perspective presented by Dr. Jane Holmes Bernstein to be held at Seton Hall University.

May 5 NJNS Board Members Retreat

**September 10** NJNS Meeting will be held at Children's Specialized Hospital 150 New Providence Rd., Mountainside. Topic to be Announced

**November 5** Joint meeting of NJNS and NJPA at Seton Hall University, 400 South Orange Ave., South Orange. Dr. Howard Mangel will be presenting on how to build and maintain a private practice in Neuropsychology

The NJNS **Board Meetings** are conducted from 6:00 to 7:00pm bi-monthly. Following the meeting of the Board, members and guests are welcome to attend a social half hour. **Presentations** are scheduled to begin at 7:30pm, lasting about one hour followed by a half-hour for a question and answer session.

#### President's Message continued from page 2

newsletter. Please save the date for this important conference.

Your Executive Board will also be holding a retreat on May 3 to evaluate where NJNS currently is as an organization, and to evaluate what directions to go in the future.

One issue that I'd like to mention concerns the Brain Injury Association of New Jersey's Statement on the definition and features of a concussion. Your Board has recently endorsed this statement, joining a number of other healthcare organizations whose members render care and/or other services to brain-injured persons. The Statement is published elsewhere in this newsletter. BIANJ has developed this

#### New Assessments continued from page 3

neuropsychologist, is to accurately and efficiently describe the cognitive strengths and weaknesses of clients, as these skills impact daily life activities. Unless practitioners are equipped to use updated measures, they run the risk of providing faulty information to clients. When norm-referenced test information is provided to clients, it is imperative that practitioners use measures that have been standardized according to rigorous criteria. Not only do these criteria refer to the size of the normative sample, but also, to the representativness of these samples. Stratified samples that accurately reflect the composition of current society with respect to key demographic characteristics such as race/ethnicity, SES, and gender, for example, are necessary for adequate comparisons to be made. Comparisons (i.e., norm-referenced scores) are rendered ineffective when the norm-group does not represent an accurate sample of current society.

With tests of cognitive function such as the Wechsler Scales, updated norming is also required to account for the Flynn Effect. It has been welldocumented in the literature (Flynn, 1984; 1987; 1999) that cognitive ability scores increase by approximately 3 points every 10 years. There are a number of hypotheses about why the scores tend to increase, including better access to educational and medical services, for example. APA testing guidelines and ethics pertaining to assessment lead to the suggestion that clinicians adopt revised instruments within 8-12 months of their release.

The Delis-Kaplan Executive Functioning System (DKEFS) (Kaplan, Delis, Kramer, 2001) is an excellent example from the field of neuropsychology of the benefit of using new or updated measures. Not only was the DKEFS one of the first neuropsychological instruments to provide continuous normative information on a stratified, representative sample, it contains other unique features. Although it includes many subtests familiar to examiners (i.e. Color-Word Identification, Trail-Making, etc.), when the



authors developed this test, they made modifications to these tasks to better assess performance at the ceiling and at the floor of the scale. Consequently, those individuals that may experience less significant difficulties with executive functioning may take more challenging items, while those that have more serious impairments are able to complete easier items. In addition, familiar tasks have been modified, often including several performance conditions to permit the calculation of comparison scores to distinguish between executive functioning weaknesses and visual scanning difficulties, for example. The availability of these contrast scores permits a much finer analysis of why a client experiences difficulty with a particular task.

The WISC-IV Integrated (2004) also offers a variety of enhancements, reflecting developments in the area of cognitive neuroscience. In addition to the importance of verbal and non-verbal problem-solving, the literature base reflects the impact of working memory and processing speed in learning (deJong, P.F., 1998), particularly for those students with neurologically based disorders. This instrument replaces the WISC-III (1991) and WISC-III PI (1999). The Integrated is composed of 10 core subtests and 5 supplementary subtests. A selection of sixteen additional process subtests, may be administered following the core and supplemental subtests, to assess underlying cognitive processes contributing to a student's performance. As with previous editions, the process subtests do not replace the core or supplemental subtests in

#### New Assessments continued from page 10

determining the Full Scale score. Rather, they are used in comparison to confirm or disconfirm hypotheses regarding cognitive functioning and processing style or preferences.

Due to the greater impact of working memory and processing speed on the WISC-IV FSIQ, as compared to the WISC-III FSIQ, many clinicians have noted lower WISC-IV Full Scale IQ scores in referred populations with neurologically based disorders such as Specific Learning Disabilities and Traumatic Brain Injury. Consequently, the Index scores represent a clinically useful tool in the identification and treatment of students with neurologically based disorders. The clinical validity studies reported in the test manual support these observations. The advantage of using appropriate process subtests included on the Integrated, is to refine intervention and accommodation suggestions. For those practitioners that may have used the WISC-III PI, this may sound familiar. However, to combat some of the practical implementation issues (such as separate manuals, and record forms, etc.) as in the WISC-III PI, the Integrated permits examiners to use 1 record form and 1 manual. which greatly simplifies the test administration process. For practitioners already using the core and supplemental WISC-IV subtests, an upgrade to include the processing subtests is available.

One of the most important pieces of information used in revising test instruments is the voice of the clinician. As project managers design the blueprint of new and revised measures, critical information relevant to how clinicians use various instruments and the type of information they need to gather is reviewed. As required, new subtests or revisions of current subtests are designed to enhance the clinical utility of the information provided by the assessment. On the new Differential Ability Scales – Second Edition (DAS-II), for example, modifications were made to the Early Number Concepts subtest to better assess skills in this area. Specifically, directions and test stimuli were revised to be more developmentally sensitive to the needs of young children. In addition, because many clinicians use the DAS-II as part of an assessment of suspected learning disabilities, a subtest measuring phonological awareness has been added.

The upcoming revision of the WAIS-IV will address some of the skills related to decisionmaking for oneself at the upper ages. Given our aging society, mental capacity is a question often presented to psychologists working within the area of geriatrics. Additionally, the feasibility of a forensic version of some assessments is being investigated. This more expanded assessment would include the types of subtests that specialists working in the area of forensics often require, while still offering a more basic assessment for professionals completing other types of evaluations.

Likewise, as the NEPSY is undergoing revision, we were told by neuropsychologists of the need to have a standardized assessment for adolescents. Consequently, new and revised subtests on the NEPSY-II will be appropriate for 16 year-old students. In addition, subtests are being piloted to provide enhanced clinical utility when used with students suspected of having Autism or Pervasive Developmental Disorder (PDD) spectrum disorders.

As noted in the introduction to this article, it is often difficult for practitioners to decide when or which new/revised assessments to purchase. As described in this article, there are many reasons why a neuropsychologist should maintain a library of current assessment materials. Not to



#### New Assessments continued from page 11

only do APA Guidelines for Assessment and Ethics require the use of current assessment materials, it is also in the best interest of our clients. The use of high-quality, current, assessments helps to ensure that consumers receive fair, accurate, and useful evaluation data.

*Amy Dilworth Gabel, Ph.D. is National Clinical Director for Psych Corp, a brand of Harcourt Assessment.* 

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# MEMBERSHIP INFORMATION

#### **HELP NJNS GROW**

As a member, consider sponsoring one of your colleagues to join NJNS. Interested candidates may join our community of professionals whose goals are:

- □ To provide a network for the formal and informal sharing of ideas
- □ To provide continuing education in neuropsychology
- □ To provide an avenue for collegial communication and collaboration
- □ To facilitate clinical referrals through its memberships
- □ To provide an opportunity for peer review to members

The New Jersey Neuropsychological Society is open to professionals of all disciplines who demonstrate a professional background and interest in the field of neuropsychology. Although membership in NJNS does not connotation any specific competence in neuropsychology, it is expected that all members will display the appropriate regard for the clinical, scientific, and ethical principles involved in the practice of neuropsychology.

Please complete a membership application which can be found at

http://www.njneuropsychologicalsociety.org/m ember.html

Any questions regarding membership can be directed to the Membership Chair at Anne Farrar-Anton, Ph.D. @ 201-315-7652 or via email at <u>afarraranton@aol.com</u>



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and return after asymptomatic 1 week (for brief LOC) or 2 weeks (for prolonged LOC).

To confuse the picture even more, there are 14 published return to play systems, many lacking supportive empirical work. The guidelines assume a standard use for all groups and all playing levels. They do not account for individual variability in symptom presentation, or for differing vulnerabilities to neurologic injury at different ages. Research suggests that youth athletes have differing trajectories of recovery than older athletes and there is some suggestion that female athletes have a differing trajectory of recovery than male athletes. Clinical experience tells us that there is much variability in concussed athletes with respect to symptom presentation and recovery patterns. Such variability precludes the effective use of grading systems that do not acknowledge the variability, and worse, do not adequately consider the neurocognitive sequelae of concussion. Research indicates that many athletes continue to demonstrate cognitive deficits after physical symptoms have resolved. Such cognitive deficits signify that the athlete is not fully recovered and return to play prior to full recovery places them at greater risk for subsequent concussion injury. There is agreement that an athlete should not return to play until brain function returns to normal following injury. This leads to the question of how to effectively measure injury sequelae and monitor recovery.

#### Computerized Assessment

Computerized assessments have proven to be quite sensitive and serve as efficient measures of baseline and post-injury brain function. The use of computers allows for large numbers of athletes to be assessed for baseline functioning. This is both time and cost effective as compared to "paper-pencil" neuropsychological assessment. Available computer programs include: Automated Neuropsychological Assessment Metrics (ANAM), Immediate Post-Concussion Assessment and Cognitive Tests (ImPACT), Concussion Resolution Index (CRI), and CogSport.

#### Assessment and Return to Play

The most effective protocol includes the baseline assessment of athletes. It is, of course, possible to utilize neuropsychological assessment results without an available baseline. However, baseline data make initial assessment and ongoing followup much easier. Baseline data are getting easier to obtain as computerized programs become more sophisticated and the general public becomes increasingly aware of sports concussion as a major health issue.

As an example of increasing utility, the ImPACT software\* can now be accessed via the internet making baseline data easily obtainable. Equally exciting is the prospect of emerging ImPACT software including nominative data so it can be administered to much younger children.

In a best-case scenario, all athletes would have baseline assessments conducted. When an athlete sustains a concussion, we have the expectation that they are appropriately assessed and managed on the field of play by a certified athletic trainer. Subsequently, a physician would make decisions with respect to medical management. The athlete would then be referred to a neuropsychologist for follow-up assessment and interpretation of neuropsychological test data.

The following represent some of the current thinking on return to play. There are a number of absolutes.

- □ First and foremost, if the athlete is presenting with any physical symptoms, they are not recovered and should not return to play.
- □ If the athlete is presenting with symptoms upon or after exertion, they should not return to play.

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- □ If imaging has been done it must be clean before return to play.
- □ No neurological symptoms can be in evidence.

There is also the concern of reported symptoms. Many athletes want to get back in the game and they will underreport symptoms to serve their cause. Experience suggests that education and solid rapport building dramatically decrease underreporting of symptoms.

Particular caution must be utilized in the case of athletes with history of prior concussion. A comprehensive history needs to be taken that includes information regarding management of the previous concussion. Unfortunately, it is not uncommon to find histories of athletes whose previous concussions were poorly managed and characterized by early return to play. These athletes may be at greater risk for subsequent concussion and experience suggests that if they sustained a concussion while not fully recovered, less kinetic energy is necessary to incur subsequent injury.

The suggested protocol for determination of return to play is:

Baseline assessment

- Appropriate sideline assessment and management post-injury
- □ Post-injury neurocognitive assessment
- Coordination of care between certified athletic trainer, primary physician and neuropsychologist
- Management of concussion (restriction of activities, symptom specific interventions and accommodations)
- Serial neurocognitive assessments as deemed appropriate
- □ Aerobic exertion with follow-up assessment

□ Return to play when asymptomatic upon exertion with neurocognitive functions back to baseline

Concussion management and return to play decisions become increasingly complex when dealing with an athlete who has a complex history of previous concussions. The results of assessments can be confounded by compromised baseline data such as histories of ADHD and learning disabilities. While the availability of computerized assessment has served to lull certain individuals into a "cookie-cutter" approach to management, it must be remembered that the neuropsychologist has a critical role in assessment and management of concussion, particularly in complex cases.

What We Know:

- □ No athlete should return to play with symptoms of concussion.
- □ All athletes should be properly evaluated after concussion.-
- $\Box$  Football has greatest risk.
- □ Soccer, wrestling, hockey, lacrosse, girls/boys basketball, cheerleading also carry significant risk.
- □ Proper management of concussion is the best form of prevention.

\*For the purposes of this article, the ImPACT software has been described. This is due to the clinician's familiarity with the software and does not serve as an endorsement. The interested reader should explore all available systems.



#### Sports Concussion continued from page 14

Joseph E. Conroy, PhD is a Diplomate of the American Board of Professional Neuropsychology and the American Board of Pediatric Neuropsychology. Dr. Conroy is a Certified ImPACT Concussion Consultant and New Jersey Certified School Psychologist.

#### Recently Published Articles to Consider:

Recovery from sports concussion in high school and collegiate athletes. (McClincy, Lovell, Collins, Pardini; <u>Brain Injury</u>, 2006:20(1);33-39.

Differential sensitivity of symptoms and neuropsychological testing following sports related concussion. (Lovell, Collins, Bradley, Van Kampen, Moritz, McClincey; <u>British Journal of</u> <u>Sports Medicine</u> 2004;38:654-664.

Return to play following sports-related concussion. (Lovell, Collins, Bradley; <u>Clinics in</u> <u>Sports Medicine</u>, 2004 Jul;23(3):421-41.

Presence of headache at 7 days post-concussion is highly predictive of neurocognitive deficits on ImPACT (Collins, Field, Lovell et al; <u>American</u> <u>Journal of Sports Medicine</u>; May 2003)

High school athletes with a history of  $\geq$ 3 prior concussions are up to 9X more likely to have more severe on-field presentation following subsequent concussion (Collins et al., <u>Neurosurgery</u>, Nov, 2002).

High school athletes with concussion demonstrate more protracted neurocognitive recovery when compared to college athletes (Field, Collins, Lovell et al., <u>Journal of Pediatrics</u> May, 2003).

On-field Amnesia up to 10X more predictive than LOC in predicting outcome (Collins et al., <u>Clinical Journal of Sport Medicine</u>, July 2003)

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## AWARDS CALL FOR PAPERS Research Awards in Neuropsychology

The 2005-2006 NJNS Research Awards in Neuropsychology were presented to CUNY doctoral student, Elizabeth C. Kara, M.A., M.Phil and KMRREC postdoctoral fellow, Juan Carlos Arrango, Ph.D. Ms. Kara's project was on the validity of ADHD behavioral rating scales across ethnic groups and Dr. Arrango's project was on functional outcomes from inpatient rehabilitation after brain injury and how Hispanics fare. Both award winners were granted stipends of \$250 and they presented their papers to the NJNS members.

Please spread the word! During the next academic year (2007-08), the NJNS Awards Committee will be accepting applications. NJNS is searching for applicants who are enrolled graduate students (or recent graduates) engaging in research in neuropsychology on an individual project or with faculty and for applicants who are Postdoctoral fellows in neuropsychology engaged in independent research as PIs.

Our committee members will evaluate submitted proposals, and select projects that will be granted a NJNS stipend for expenses related to research. Guidelines and applications are available at our website:

http://www.njneuropsychologicalsociety.org/aw ard05.pdf

# NJNS Research Awards Committee members:

William Flock, Psy.D.—Current President

Joseph Marcantuono, Ph.D.-Past President

Anne Farrar-Anton, Ph.D.-President Elect

document to facilitate a statewide partnership on concussion awareness and prevention in youth sports. This partnership will be useful in establishing standards of care in cases of sports-related concussion for use by schools, professional sports leagues, and amateur sporting associations.

.Please feel free to contact me or any member of the Executive Board with any questions or comments you may have about NJNS or its activities. I intend to be as responsive as possible to members' concerns.

#### CPT Codes continued from page 7

repeated mini-mental status exams). These codes are very robust in their reimbursement potential and have been underutilized by neuropsychologists, which put the codes at risk for being removed by CMS. A final addition, slated to begin on 1/1/07, is a code for functional brain mapping (fMRI 96020) that allows for reimbursement of test selection and administration during non-invasive imaging.

Unfortunately, as with any new system that represents a significant change in how people allocate and earn money, there are significant controversies and discrepancies in the interpretation of the rules. The confusion has been striking. Different limitations in local insurance carriers' systems led to the clarification of certain rules by CMS. The official position of NAN, APA, and the professionals involved has been to give their best interpretation of the rules but clearly communicating that practitioners are ultimately responsible for their own interpretations and decisions. Interpretations range from highly conservative (e.g., APA) to relatively more liberal (e.g., NAN. Local insurance carriers are highly variable in their interpretation and psychologists are advised to check for rules with their local carriers.

There are several controversies at issue. The first controversy surrounds the interpretation of the "tech" testing codes (96102 and 96119). Specifically, the language of the tech code states that only face-to-face time spent by the tech with the patient may be billed, and the code also incorporates the key phrase "with qualified health care professional interpretation and report." The intent of this rule was to allow for a combination of a professional interpretation with tech administration of tests. However, CMS came out with a statement (effective 10/1/06), that the professional and tech codes could not be billed for the same service. Medicare read the phrase as including for report writing, although technically,

it also says "face-to-face;" therefore, CMS was concerned that a co-occurring professional code for interpretation of the same data would constitute double-billing. Most representatives say that modifiers are good, not often "flagged," and therefore, should be used as a possible solution. However, Dr. Puente's interpretation has been that the modified -59 (for 2 procedures on the same day) should be used on both codes to get around the problem; APA has said that -59 can be used, but only on distinct tests administered by the professional, not on the same tests administered by the tech.

A related issue is how best to represent our services. We can submit bills with only the tech face-to-face time, or we can represent our services more accurately in submitting both codes (with the -59 modifier). If we submit both codes, it is possible that we would be more likely to be flagged, or our claims may simply be rejected. On the other side, if we do not represent our services in terms of what we are realistically doing, we undervalue our work, which could persuade the government that this is the new standard of practice. Despite these raging debates, there is agreement that the situation is highly confusing and APA and NAN will be actively working towards a favorable resolution for neuropsychologists that is in line with the standard of practice.

Controversy has surrounded training programs. As students were also classified as "techs," their time could only be billed as actual face-to-face time with patients and excluded report writing, a



skill important for their training. Notably, students may only be classified as techs if they are in a financially-contracted arrangement with the professional. APA's position has been conservative in the interpretation of not permitting billing for these services; in fact, they have stated that if the primary intent of their employment is for training purposes, it is questionable whether bills may be submitted at all. This is grounded in CMS' funding for patient-focused services as disconnected from education funds, which have traditionally been allocated to physicians in training only. Lack of reimbursement for student "techs" would seriously endanger the financial viability of many training programs. However, Dr. Puente recently received clarification from persons at the AMA and the CMS that trainee time is billable under tech provisions and is permitted to include interpretation and report writing time as part of the technical component.

What should professionals do about these matters? Time will likely tell. Some advisors have suggested holding bills, if possible, until clarification is achieved. However, this may take weeks, or up to several months. While it does appear that our policy moves slowly, particularly in negotiations with governmental agencies, our representatives strongly suggest increasing our level of documentation so that if we are audited, our practices will be clear and possibly defensible. This includes data on identity of examiner, medical necessity, status, procedures, results, diagnosis, and disposition, as well as tracking data, including dates of service. Be aware that some carriers prefer bills on each date; others prefer one bill on the last date of service). There is also a movement towards the precise listing of start and stop times for administration and interpretation/report writing now being put into place with physical medicine specialties. It is generally advised that this documentation is necessary and may become mandatory for us in the future. In addition, each CPT code should be linked to its own report, or clearly labeled section

within a larger report. Finally, we must do what we think is right for our practices and training programs, which may be our best educated guess.

Beata Beaudoin, PhD is a Mental Health Clinician II at the University of Medicine & Dentistry of NJ in Newark.

Resources: CPT Assistant softward: contains AMA guidelines for codes AMA stance on CPT codes: <u>www.catalog.amaassn.org/catalog/cpt/issue/search.asp</u> AMA tel: (312) 464-5516 NAN-PAIC: (804) 285-2555 NAN video on CPT codes on the website APA Division 40 Practice Directorate: 800-374-

2723

# CLINICAL CORNER FORMAT

Background on Diagnosis or Difficulty

#### **Case Report**

- Background (subdivisions are acceptable:
  e.g. medical hx, education hx, or whatever
  else is appropriate to the case at hand)
- Measures used for Assessment or Therapy
- Results / Outcome
- Conclusions

General Discussion (if applicable and relevant)

References (APA format)

Please note:

Tables or figures can be included, but are only printed in black and white.

Length is very flexible, but should generally be under approximately 2500 words (not including references and tables or figures).

Jacqueline Rondeau Psy.D. is a Clinical Neuropsychologist at Riverview Medical Center and has a private practice in Montclair, NJ.