



Sports Neuropsychology
S o c i e t y

Sports Neuropsychology: Definition, Qualifications, and Training Guidelines

An Official Position of the Sports Neuropsychology Society

Preamble

Clinical neuropsychology has a long history, and clinical neuropsychologists have made substantial contributions to the extensive literature in the evaluation, management, and treatment of traumatic brain injury (TBI), including mild traumatic brain injury (MTBI) or concussion. The application of clinical neuropsychology to the sports domain has resulted in an impressive growth in the use of neuropsychological assessment techniques and practices in the evaluation and management of sports-related brain injury over the past 10-15 years. Consistent with this growth has been the development of a sub-specialty within Neuropsychology called Sports Neuropsychology. This newly developing field integrates the skills, techniques, and assessment approaches of Neuropsychology within the unique context of the sports domain. This document is an initial attempt at defining the role of neuropsychologists within sports, describing the scope of their practice, and outlining the minimum education and training requirements for the competent practice of Sports Neuropsychology.

As outlined in the By-Laws of the Sports Neuropsychology Society, Sports Neuropsychologists are involved in research, clinical practice, or a combination of research and clinical practice. The core education requirements outlined below apply to professionals engaged in either research or clinical practice. Those individuals involved in clinical practice must meet additional clinical training requirements while those involved primarily in research must demonstrate additional

training and expertise in research methods. As per APA's ethical guidelines, Sports Neuropsychologists should only practice in those areas for which they have received appropriate training.

Sports Neuropsychology Defined: *A subspecialty of clinical neuropsychology that applies the science and understanding of brain-behavior relationships to the assessment and treatment of sports-related brain injury. The practice of sports neuropsychology requires education, training, experience, and competence in the primary field of clinical neuropsychology, followed by a secondary specialization through experience and understanding of applying clinical neuropsychology to the unique demands of evaluating and treating brain injury in the sports domain.*

What Do Sports Neuropsychologists Do?

- Assessment
- Intervention/management
- Consultation
- Research
- Consumer Protection and Advocacy
- Professional Development
- Lead or support Interdisciplinary Teams

Core Education and Licensure Guidelines: *The Houston Conference on Specialty Education and Training in Clinical Neuropsychology (1998), the NAN Definition of a Clinical Neuropsychologist (2001), and the APA Division 40 Definition of a Clinical Neuropsychologist (1989) served as the foundation for these educational and licensure guidelines:*

- Doctoral degree in psychology from a regionally accredited university training program.
- Internship in a professional psychology training program, with training in clinical neuropsychology.
- Specialized clinical training (two fulltime years, or the equivalent) in clinical neuropsychology.
- To provide professional services, one must be licensed in the applicable state or province to practice psychology, clinical psychology, or clinical neuropsychology.

Core Neuropsychology Knowledge Base Guidelines: *In addition to the standard core course work required for the doctoral degree in general and clinical psychology, knowledge in the following areas of study is recommended (Houston Conference, 1998):*

- Functional neuroanatomy
- Neuropathology
- Non-neurologic conditions affecting the CNS
- Neuroimaging and other neurodiagnostic techniques
- Psychopharmacology
- Behavioral neurosciences
- Specialized neuropsychological assessment techniques and interpretation of neuropsychological test data
- Formalized training in psychometric theory
- Specialized neuropsychological intervention techniques
- Research design and analysis in neuropsychology
- Professional issues and ethics in neuropsychology
- Physical and psychological manifestations of neuropsychological conditions

Knowledge base and experience in Mild TBI and Concussion Assessment, Intervention, and Education: The major focus of sports neuropsychology has been on concussion assessment, diagnosis, management/intervention, and counseling athletes and their families. Many sports neuropsychologists have become “concussion specialists,” who work independently or as part of interdisciplinary teams, alongside athletic trainers and team healthcare providers in the evaluation and management of sports-related brain injury. A key goal is to enhance the safety of the client/athlete. The following is a non-exhaustive list of the knowledge and experience base specific to Sports Neuropsychology specialization:

- Experience (at least one year) in the identification, management, and treatment of mild TBI/concussion in the sports context.
- Experience in educational outreach to patients and families, community, school, and athletic organizations on the identification, management, and treatment of mild TBI/concussion in the sports context.
- Didactic coursework/training in mild TBI/concussion.
- Sports-related Mild TBI/concussion screening and assessment theory and procedures.
- Symptom rating scales and other procedures (e.g., postural stability, vestibular/oculomotor testing) in concussion assessment.
- Knowledge of extant sports concussion consensus statements and evidence-based professional practice parameters (e.g. Concussion in Sport Group International Consensus Statements, NATA Position Statement, and AAN Evidence-Based Guidelines).

- Typical recovery curves from sports concussion based on age and level of play.
- Latest evidence-based science on the broad range of assessment and management of sports-related brain injury, including long-term sequelae.
- Interaction of premorbid neuropsychological (e.g., LD, ADHD), psychological, and medical conditions with concussions and sports activities, as well as other factors that may complicate recovery.
- Athlete's psychological reactions to injuries.
- Neuropsychological treatment and rehabilitation of injured athletes.
- Understanding of the unique sports culture and the influence of that culture in identification, recovery, and return to play following injury.
- The unique characteristics of personality variables among athletes and the interaction of these variables with the sports culture.
- Knowledge of the pathophysiology, psychological, and cognitive functioning of the developing brain.
- Specialized knowledge and training with special populations where applicable, such as children and adolescents, cross-cultural differences, disability determinations, and aging athletes.

Knowledge base in Mild TBI and Concussion Research: In addition to clinical assessment, diagnosis, management/intervention, and counseling, sports neuropsychologists may engage in research related to the evaluation and management of sports-related brain injury. The following is a non-exhaustive list of the knowledge and experience base requirements specific to Sports Neuropsychology research specialization:

- Didactic coursework/training and applied experience in research methodology and research design.
- Didactic coursework/training and applied experience in univariate and multivariate statistical inference and analyses.
- Knowledge of basic and applied psychometrics, as they apply to reliability and validity.
- Knowledge of analytical techniques as they apply to measurement of clinical change, clinical outcomes, and sensitivity and specificity.

How to Acquire Education, Training, and Experience in Sports Neuropsychology:

- Formal graduate school training in Clinical Neuropsychology and Sports Neuropsychology.
- Attendance at relevant continuing education workshops and seminars through professional organizations (e.g., Sports Neuropsychology Society, National Academy of

Neuropsychology, American Psychological Association, Clinical Neuropsychology Society, Division of Exercise and Sport Psychology, American Academy of Neurology, etc.)

- Mentorship/supervision from an established Sports Neuropsychologist colleague.
- Independent reading of the available literature and research.
- Clinical experience through involvement with sport medicine programs, sport concussion clinics, and organized sports organizations.
- Participation in applied or basic collaborative research.

Ethical Obligations: The Sports Neuropsychology Society has adopted the current version of American Psychological Association's *Ethical Principles of Psychologists and Code of Conduct* as the guiding document for ethical practice in Sports Neuropsychology. Importantly, APA Ethical Standard 2.01, Boundaries of Competence, subsection (c), states "Psychologists planning to provide services, teach, or conduct research involving populations, areas, techniques, or technologies new to them undertake relevant education, training, supervised experience, consultation, or study." Very few neuropsychologists will have acquired the competencies discussed in the paragraphs above as part of their formal graduate training. Availing themselves of specialty education, training experiences, and supervision before offering themselves publicly as Sports Neuropsychologists is consistent with our ethical responsibilities. It is also important to note that APA's ethical principles carry the force of law in many jurisdictions.

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