

# NEUROPSYCHOLOGY TODAY

Monthly Newsletter published by Dr. Danov Neuropsychologist, P.C.  
February 2009 Issue – Adult Neuropsychology: Multiple Sclerosis

## What is Neuropsychology?

Neuropsychology is a medical diagnostic study of the brain functioning. Neuropsychologists are licensed, doctoral level psychologists with an extensive specialized training in the area of brain structure and systems in relation to various cognitive functions.<sup>1</sup>

Neuropsychologists evaluate brain functioning by objectively testing:

- General intellect
- Executive skills (reasoning, planning, etc.)
- Information processing speed and accuracy
- Attention and concentration
- Learning and memory
- Language
- Visuomotor and sensorimotor functioning
- Auditory processing
- Visual spatial processing
- Symptom exaggeration
- Mood and personality<sup>1</sup>

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## Reasons for a Referral to a Neuropsychologist

Physicians, neurosurgeons, neurologists, and therapists refer patients for a neuropsychological exam to assess, differentiate, and monitor neurocognitive symptoms associated with:

- TBI, CVA, TIA, Hypoxia, etc.
- Neurodegenerative (multiple sclerosis, epilepsy, dementia, Alzheimer's, Parkinson's, etc.)
- Viral/ Infectious (encephalitis, Lyme, meningitis, EBV, etc.)
- Psychiatric (schizophrenia, depression, anxiety, etc.)
- Neurotoxic (lead, mercury, etc.)
- Metabolic/endocrine disorders (vitamin deficiency, DM, etc.)<sup>1</sup>



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## Multiple Sclerosis: From Research to Practice

Multiple Sclerosis (MS) is a neurological autoimmune disorder caused by demyelinating plaques in the brain and/or spinal cord <sup>2</sup> (see MRI images on p.3).

MS has been linked to the following symptoms:

1. Physical and sensorimotor (gross and fine motor impairment, bladder/bowel dysfunction, sensori-perceptual impairment, spasticity, numbness and tingling in the extremities, fatigue, pain, etc.)
2. Emotional and personality (depression, irritability, anxiety, mood swings, etc.)
3. Cognitive symptoms (memory and concentration loss, slowed thinking and reaction, word finding problem, slurred speech, confusion, poor impulse control, impaired comprehension, planning, and organization skills, among others).<sup>2</sup>

Typically, three subtypes of MS are described in the medical literature. Relapsing- Remitting type is the most common and

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*("Reasons for a Referral to a Neuropsychologist," continued from page 1)*

Neuropsychological exam also determines symptom exaggeration, extent of brain injury and disability, learning disability, etc. Serial exams allow to track progressive decline or response to treatment, and to differentiate various diagnoses.

### **What is Neuropsychological Evaluation?**

Comprehensive neuropsychological exam takes several hours to complete. Patients undergo an extensive clinical interview, followed by several neurocognitive testing sessions and a final consultation session.

First, during the clinical interview, neuropsychologist discusses with the patients the reason for their referral, chief complaints and symptoms, and records their demographic information, personal and family medical history, and other relevant information.

Then, the patients undergo 3-4 neurocognitive testing sessions lasting 1.5-2 hours each. All tests administered during the neuropsychological exam are non-intrusive and involve such tasks as answering questions and arranging the blocks, as well as various paper-and-pencil exercises.

Next, the neuropsychologist scores the test data, analyses the results, and prepares a report of findings. Lastly, during the final consultation, the neuropsychologist discusses

the results with the patients, recommends treatment, and later provides them with a comprehensive report, which includes background information, behavioral observations, objective test results, diagnosis or diagnostic impressions, and treatment recommendations. The patients are encouraged to ask questions and assume an active role in addressing their cognitive symptoms.

### **Cognitive Rehabilitation Treatment**

In addition to comprehensive neuropsychological exams, neuropsychologists may offer non-pharmacological treatment of neurocognitive deficits. This treatment involves systematic, structured training of identified cognitive deficits, and is referred to as Cognitive Rehabilitation. The goal is to enhance individual's capacity to process, understand, and remember information and to improve functioning in all aspects of personal and professional life.<sup>1,3</sup>

Cognitive rehabilitation may be restorative (focusing on retraining of diminished cognitive skills), compensatory (teaching strategies and techniques to cope with existing cognitive deficits), or a combination of both.<sup>3</sup>

Cognitive rehabilitation is commonly used for the treatment of patients with a history of traumatic brain injury or stroke. It is a relatively new practice in treatment of cognitive impairment in MS population.<sup>2,3</sup>

### **About Dr. Rimma Danov**

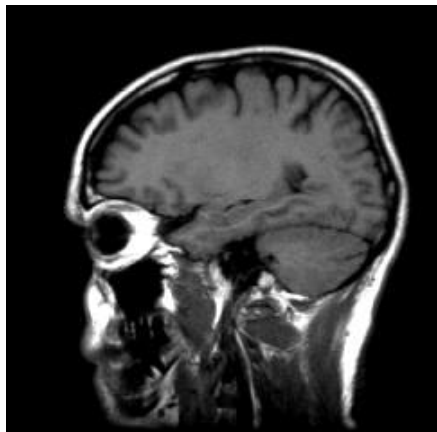
Dr. Rimma Danov received her PhD in clinical psychology from Adelphi University in NY. She completed her internship in clinical psychology and neuropsychology at Harvard Medical School and postdoctoral fellowship in pediatric and adult neuropsychology in a private clinic affiliated with NJ Medical School and the Robert Wood Johnson Medical Center. She is an assistant clinical professor at NYU School of Medicine, Dept. of Neurology, Penn State University, Dept. of Kinesiology, and Adelphi University, Derner Institute. In the past, she worked as a neuropsychologist for the NJ Devils Hockey Team and was engaged as a co-investigator of TBI in boxers at the NYS Athletic Commission.

Presently, Dr. Danov maintains a full-time private neuropsychology practice where she examines neurocognitive and neurobehavioral functioning of patients 2-90 years of age with various neurological and neuropsychiatric disorders, such as MS, TBI, CVA, Parkinson's, Alzheimer's, dementia, ADHD, PDD, Autism, learning disabilities, seizures, and many others, using state-of-the-art neuropsychological techniques. Dr. Danov also conducts and publishes research in these areas. She is available for medico-legal consultations and testimony.

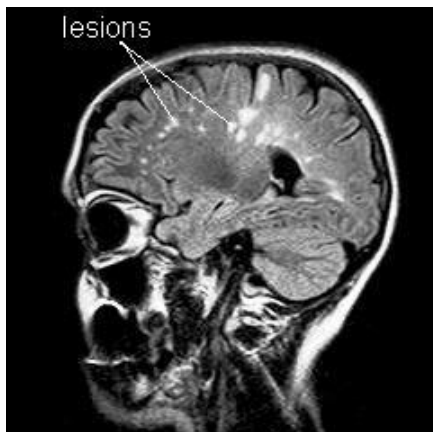
(“Multiple Sclerosis: From Research to Practice,” continued from page 1)

patients’ quality of life and prolong their independent functioning.<sup>2</sup>

She has also conducted and presented at professional national and international conferences research studies focusing on cognitive impairment in MS, neuropathology of pediatric concussion, cognitive deficits in children with Klinefelter syndrome, and studies of cognitive rehabilitation for MS and stroke patients. These projects have enhanced our knowledge and treatment of these disorders and pointed to the effectiveness of individualized cognitive rehabilitation treatment for MS and stroke patients.



Healthy brain



Brain with lesions caused by MS

involves exacerbations of symptoms followed by their remissions.

The Primary Progressive MS subtype is marked by continuous worsening of MS symptoms, while the Secondary Progressive MS course starts with relapsing-remitting characteristics followed by steadily worsening symptoms.<sup>2</sup>

Research shows that the impact of cognitive deficits on the patients’ lives may be more profound than the effects of physical disability, as the patients forget job instructions and important dates, need more time to meet deadlines, cannot focus, struggle to read and retain information, etc. Also, some findings suggest that cognitive symptoms may precede the biomarkers of early MS stages found on MRI scans. For these reasons, early detection, monitoring, and treatment of neurocognitive symptoms in MS is imperative, and may ultimately improve the

### Research Initiatives

Cognitive deficits may cause devastation in patients’ personal and professional lives and diminish their overall well-being. Studying neurocognitive impairment that results from various conditions allows enhancing techniques targeted at early diagnosis, prevention, and treatment of cognitive deficits.<sup>1,3</sup>

In addition to her clinical practice and academic appointments, Dr. Danov is actively involved in research and treatment of neurocognitive symptoms in adults and children. To date, her research team has submitted several research proposals to the National Institutes of Health, National Academy of Neurology, and Parkinson’s Disease Foundation in the areas of cognitive impairment and cognitive rehabilitation in MS and Parkinson’s Disease, and neurocognitive sequelae following pediatric brain injury.

### Works cited:

1. APA, Division 40, Public Interest Advisory Committee (2001). div40.org.
2. National MS Society (2006). About MS, nationalmssociety.org.
3. National Institutes of Health (1988). Rehabilitation of persons with TBI, nlm.nih.gov.

### Image credits:

1. Background image (pp.1 & 4): Jeff Johnson Biological and Medical Visuals.
2. Head image (p.1): Neurohealth Associates, Schaumburg, IL.
3. Healthy brain MRI image (p.3): Max Brown, stock.xchng
4. MRI image of brain with lesions (p.3): courtesy of Joan W.

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**Layout:** Natalia Shtompel, M. A., Research Coordinator

**Next Issues** (March 2009: Pediatric Concussion; April 2009: Cognitive Rehab after Stroke)

**We take the following insurance plans:**

Aetna	HIP
Americhoice	Magnacare
Amerigroup	Medicare
BCBS	MHN
Cigna	Multiplan
Elderplan	No-Fault
Fidelis	Tricare
First Health	UHC/Oxford
HealthNet	Workers' Comp
Health Plus	1199

Case dependent:

Affinity	GHI HMO
Atlantis	Health First

Each insurance carrier determines the medical necessity of every requested neuropsychological exam differently. Our billing staff determines whether the exam will be covered by the insurance before the exam

begins and works very hard to obtain an authorization, if needed. If you have questions about a plan that is not listed here, contact our office to find out whether we can obtain an authorization or have recently joined that plan.

**Languages**

We are very much open to diverse cultures in this practice and value the quality of a bilingual neuropsychological exam performed in the patient's native language. Dr. Danov is a native Russian speaker. Her current clinical staff include native **Russian, Spanish** and **Hebrew** speakers.

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