



Neuropsychological Services in Canada

A position statement of the Canadian Psychological Association (CPA) and the Association Québécoise des Neuropsychologues (AQNP)

In Canada, the services of psychologists and neuropsychologists come at no cost to patients when these services are provided in public institutions like hospitals, schools or correctional facilities. These services may also be funded by government-related bodies such as the Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST) or Workers Compensation Insurance Boards and la Société de l'assurance automobile du Québec (SAAQ) in Quebec.

However, the services of psychologists are not covered by provincial and territorial public health insurance plans when provided outside of publicly funded institutions or health centres. Given that increasing numbers of psychologists work in private rather than public practice, patients either pay for these needed services out of pocket and/or seek reimbursement from third party, private insurance for which they are eligible. Third party insurance typically comes in the form of extended health insurance most often provided to individuals and families through employment.

Feedback from psychologists and patients suggests that there are service issues specific to neuropsychological assessments that can lead to the denial of coverage by a third party insurer. The denial of coverage is most often related to a lack of understanding about how and why a neuropsychological assessment is done.

The aim of this document is to clarify how and why neuropsychological assessments take place and what are the benefits of such assessments. Our ultimate goal is two-fold: to contribute to more informed and systematic decision-making among insurers when it comes to neuropsychological assessment and to help patients receive coverage for a needed and effective health service.



What is Neuropsychology?

Neuropsychology is an applied science that examines the behavioral manifestations of brain function and dysfunction. It falls at the intersection of neuroscience and psychology.

In its official position published in 2001, the National Academy of Neuropsychology defines the clinical neuropsychologist as a *“professional within the field of psychology with special expertise in the applied science of brain-behavior relationships. Clinical neuropsychologists use this knowledge in the assessment, diagnosis, treatment, and/or rehabilitation of patients across the lifespan with neurological, medical, neurodevelopmental and psychiatric conditions, as well as other cognitive and learning disorders. The clinical neuropsychologist uses psychological, neurological, cognitive, behavioral, and physiological principles, techniques and tests to evaluate patients’ neurocognitive, behavioral, and emotional strengths and weaknesses and their relationship to normal and abnormal central nervous system functioning. The clinical neuropsychologist uses this information and information provided by other medical/healthcare providers to identify and diagnose neurobehavioral disorders, and plan and implement intervention strategies. The specialty of clinical neuropsychology is recognized by the American Psychological Association and the Canadian Psychological Association. Clinical neuropsychologists are independent practitioners (healthcare providers) of clinical neuropsychology and psychology”*.ⁱ

In Canada, neuropsychologists must hold a graduate university degree in neuropsychology or in psychology with the mandatory training enabling them to declare neuropsychology as an area of competence when they apply for licensure. In addition, they must fulfill the examination and other practice related requirements of the provincial or territorial regulatory body of psychology in their jurisdiction of practice. In Canada, all accredited programs that train psychologists and neuropsychologists for practice are at the doctoral level.

What is a neuropsychological assessment?

A neuropsychological assessment provides specific information about the presence and nature of deficits related to neurological damage or dysfunction and its associated cognitive, behavioral and psychological problems. Neuropsychological testing typically covers a range of cognitive domains including intelligence, learning, attention, memory, receptive and expressive language, visuo-perceptual abilities, motor functioning, executive functioning (e.g. inhibition, planning), and psychopathology. The aim of a neuropsychological assessment is to provide a diagnosis, a treatment plan, and specific



guidelines regarding return-to-work as well as to establish a baseline against which improvement or deterioration can be compared.

Neuropsychologists perform assessments for the following kinds of disorders:

- Attention-deficit/hyperactivity disorder (ADHD)
- Developmental disorders or significant developmental delays (e.g.: learning disabilities such as Dyslexia, Autism Spectrum Disorders).
- Cognitive dysfunction following acute brain injury due to accident, infection or disease (e.g. traumatic brain injury/concussion, brain tumors, stroke, HIV encephalopathy, hepatic encephalopathy).
- Cognitive disturbance related to neurodegenerative disorders (e.g. dementia such as Alzheimer's disease, Multiple Sclerosis, Parkinson's disease).
- Cognitive dysfunction resulting from neurotoxin exposure (e.g. carbon monoxide, asbestos)
- Cognitive dysfunction related to seizure disorders (e.g., Epilepsy).
- Cognitive dysfunction in mental disorders (e.g. Schizophrenia, depression, Post-traumatic Stress Disorder).

A neuropsychological assessment consists of:

1. Initial intake interview: First, the neuropsychologist will meet with the patient and explain the purpose and aim of the assessment. The interview includes collecting information about the patient's psychological, health and developmental history; including the problems the patient identifies him or herself. The interview helps the neuropsychologist determine the nature of the problem, establish hypotheses, correlate the patient's psychological state with the intensity of his or her cognitive symptoms and strategically select tests to attempt to identify underlying deficits and preserved psychological and cognitive abilities.

2. Testing: Test selection is based on the expertise of the practitioner, availability of appropriate normative data, ability of the patient to participate in testing (e.g. quadriplegic patients may not be able to participate in psychomotor testing), and the validity of particular procedures for the specific function being measured. Test selection is very important: if the test used is not psychometrically valid and reliable or if there is no normative data against which to compare a patient's performance, we cannot have as much confidence in the test's ability to accurately measure the patient's functioning. Testing typically includes neurocognitive measures of general intellectual functioning, higher-order executive skills (e.g. planning, organizing, reasoning, problem-solving), attention, memory, learning, language, visuo-perceptual skills, motor skills and sensory skills. At times, neurocognitive measures are supplemented by tests of emotional



functioning, psychopathology, and personality as well as measures of everyday adaptive skills and behavior (e.g. banking or shopping, operating appliances, driving).

3. Additional data collection: The neuropsychologist will collect relevant information from other health professionals when available (e.g. reports of assessments and interventions from hospitals or other medical or health specialists). These can help shed more light on the actual difficulties of the patient as well as his/her past and present functional abilities.

4. Analysis and interpretation of the results: This may be one of the most complex parts of a neuropsychological assessment. After scoring the tests, the neuropsychologist must thoroughly examine all the results in relation to the patient's functioning and history as well as in relation to the performance expected of his or her peers (i.e. the normal population, persons with similar illness or injury). The neuropsychologist must rely on his or her theoretical knowledge and practical training as well as current scientific literature to confirm or reject a diagnosis, examine differential diagnoses, and identify, if present, the diagnosis that encompasses both the patient's subjective problems and the dysfunctions he or she may show on testing.

5. Report writing: Following the interview, data collection, test administration and analysis, and formulation of a psychological and/or neuropsychological diagnosis or diagnoses, the neuropsychologist usually writes a report that details the findings, diagnosis(es), recommendations for further assessment or treatment, as well as the effects of the patient's deficits and strengths on his or her life (e.g. ability to work, study or to lead an autonomous life). This report is usually submitted to the referral source with the consent of the patient. Because the report integrates information from a wide variety of sources, the neuropsychological report often offers an extremely comprehensive view of the patient's condition.

6. Feedback: In addition to reporting back to the referral source, the neuropsychologist often provides feedback directly to the patient. Usually the neuropsychologist discusses the feedback with the patient in person and may also give him or her a copy of the written report. Feedback covers test findings, diagnosis and any recommendations for further assessment or treatment, in addition to addressing any questions that the patient may have about his or her condition or treatment needs. When an assessment is requested for a legal purpose, feedback is limited to the report.

A comprehensive neuropsychological assessment usually takes between 15 and 25 hours to complete, although a psycho-legal assessment can take significantly more time, depending on the complexity of the case. Fee schedules for neuropsychological



services vary across the country but typically range from \$100 to \$200 per hour for a regular assessment and up to \$300 per hour for a complex psycho-legal evaluation. An example of the time taken to complete a neuropsychological assessment is as below. Steps i and iv are done face-to-face with the patient while the remaining steps are indirect contact.

i. The interview to collect information about history of the presenting problem, subjective cognitive complaints, and functional abilities in addition to administration of tests takes typically between 5 and 9 hours. This time can be distributed over the course of one to three sessions, depending on patient characteristics (e.g. age, condition) that affect capacity to give sustain effort and attend to test materials.

ii. The collection and analysis of information from other sources can vary between 1 hour and several hours, depending on each case and its complexity. Data collection from both medical and non medical sources is crucial, especially in psycho-legal evaluations.

iii. Analysis and interpretation of the tests take about 4 hours for a regular assessment, but can take several hours more for a psycho-legal assessment depending on the number of tests administered. Report writing takes typically between 4 and 8 hours for a regular assessment, possibly several hours more for a psycho-legal assessment

iv. Feedback takes between 1 and 2 hours.

While it is not uncommon for some of the test administration to be done by a psychometrist working under the neuropsychologist's employment and supervision, the interview, test interpretation and analysis, report writing and feedback is done by the neuropsychologist. The relationship between a psychometrist and neuropsychologist is not unlike the relationship between a dentist and his dental assistant or hygienist. While the psychometrist may administer tests, he or she does not interpret the results or diagnose a patient's condition. The Canadian Psychological Association (CPA) has a position statement on the role and scope of a psychometrist which is appended to this document.

Uses of neuropsychological assessments for patients, families, employers and insurers

- Neuropsychological assessments can play a key role in identifying the behavioral sequelae following brain injury or illness. Even when neuroimaging techniques can accurately locate lesions within the brain, they cannot tell us much about how the lesion may affect a particular person. When it comes to quality of life and outcome for an individual, what matters is how the identified lesion impacts functioning. A



neuropsychological assessment expressly addresses the nature of function and dysfunction resulting from brain injury or illness. In addition, many neurological disorders can produce cognitive dysfunction as well as result in structural changes within the brain that are invisible to even the most advanced high-resolution scanners (e.g. early stage Alzheimer's, many cases of epilepsy or infections of the brain, many subtypes of traumatic brain injury).

- Neuropsychological assessment can identify cognitive dysfunction even when underlying disorders may not be related to clearly-defined brain lesions (e.g. learning disorders, ADHD, neurotoxic exposure, mild traumatic brain injury).
- Neuropsychological assessment can help in determining prognoses by establishing benchmarks against which re-assessments can provide an objective measure of improvement or deterioration.
- In the case of progressive diseases, neuropsychological testing can help establish an early diagnosis which gives the patient and family members more time to plan and the opportunity to make more informed decisions.
- Neuropsychological testing can provide many patients with a comprehensive and detailed understanding of their condition in terms of their everyday functioning and even avert the need for further and potentially unnecessary and costly assessments or treatments.
- Neuropsychological assessment can provide useful information about adaptive functioning. This includes such things as whether a patient can return to work or school, manage banking or shopping, understand and sign legal documents, or drive a car. Neuropsychological reports usually include detailed recommendations that can help the patient optimize and improve daily functioning and manage chronic or progressive disease. Neuropsychologists will often contact other professionals or members of the patient's circle of care in order to coordinate implementation of these recommendations.
- During the feedback session, neuropsychologists often provide basic counseling and psychological support, especially for more vulnerable patients and their families or caregivers. Follow-up sessions can also be provided to further help the patient and his or her caregivers in managing the patient's condition.



- With a more precise diagnosis of a cognitive condition, the patient may more readily access publicly insured health or social services. This reduces out of pocket costs for the patient as well as the costs of coverage by third party insurers.

Recommendation to insurers and employers who sponsor extended health insurance plans.

Some third party insurance plans enforce session caps on psychological services. The CPA and AQNP advocate that public or private insurance coverage for psychological services be sufficient to provide a clinically meaningful amount of service. This means that the coverage must enable the patient to access a psychological assessment and/or the number of treatment sessions proven effective for mental disorders. As mentioned, assessments, particularly neuropsychological assessments can take typically take up to 25 hours of work, consolidated into a few sessions of several hours in length each.

Most private insurance plans have limits of annual coverage for psychological services. However, some also impose daily caps for services. For example, they may cover only one hour of service per treatment day. While a daily cap accommodates most psychological treatment which is typically done in one hour sessions, once or more per week, these kinds of daily caps are not fairly applied to assessment. Many tests of cognition and personality are not validly or reliably administered in only one hour sessions. Further, if a neuropsychological assessment was conducted only in one hour sessions, the assessment could take up to 25 days – not an outcome manageable for either the psychologist or patient.

The Canadian Psychological Association (CPA) and Association Québécoise des Neuropsychologues (AQNP) are recommending that insurers revisit the requirements of the plans they offer so that the patients whose health needs they serve will be fairly compensated for neuropsychological assessments. We recommend that daily caps for services not be applied to assessment and instead the patient be permitted to access the entirety of their annual coverage to help offset the costs of completing a needed assessment.

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¹ <https://www.nanonline.org/docs/PAIC/PDFs/NANPositionDefNeuro.pdf>