

Neuropsychological Referral: When Is It Indicated?

Guideline developed by Mary Ann Scott, PhD, in collaboration with the ANGELS Team. Last reviewed by Mary Ann Scott, PhD January 18, 2017.

Key Points

- Use a decision process for assessment and referral of a child for neuropsychological evaluation as outlined in the Assessing Need for Neuropsychological Evaluation Algorithm.
- Provide complete information during the referral process.
- Understand that the diagnostic process may be comprehensive.
- Recognize that the referring provider's office will be expected to monitor implementation of the treatment plan. Additional evaluation or management may be required.

Introduction

- Neuropsychological evaluation is an application of science that investigates the influence of impaired brain function and typical brain function on motor, behavioral, cognitive, and emotional function.
 - Has validity equal to and beyond that of medical tests
 - Is the only valid assessment of neurocognitive function (necessary for monitoring the progression of a disease that can lead to neurocognitive changes)
- Neuropsychological evaluation can complement medical evaluation by aiding in diagnosis and improving specificity of recommendations.
- In children with identifiable neurological disorders (eg, seizures, traumatic brain injury), the need for neuropsychological evaluation is evident. However, many children with other disorders, such as attention-deficit hyperactivity disorder or developmental disorders, may benefit from this type of assessment.
- Neuropsychological evaluation can help guide treatment, recommend appropriate educational

strategies and services, and advise techniques for behavioral management.

Purpose

The purpose of neuropsychological evaluation is to

- Enhance understanding of impairments and identify potential emotional disorders impacting function
- Provide a diagnosis
- Establish a baseline before treatment
- Inform decisions involving competency
- Guide treatment toward an improved outcome
- Advise caregivers and health care providers of appropriate expectations
- Measure neurocognitive ability and record changes in
 - Functional skills
 - Motor skills
 - Daily living skills
 - Learning, memory, cognition, and problem solving
 - Attentional skills
 - Behavioral adjustment

Assessment and Referral

Assessing Need for Neuropsychological Evaluation

Indications

Consider neuropsychological evaluation for children who present with cognitive, behavioral, social, or other deficits and have the indications listed in [Table 1](#).

Table 1. Indications for Neuropsychological Evaluation in Children

Medical History

- Prenatal or birth complications, injury, or congenital problems
- Diagnosed illness with a known or suspected deleterious effect on neurocognitive development and/or behavior
- Traumatic injury or medical event

Learning and Developmental History

- Prolonged plateau in learning or development not believed to be environmental
- Possible regression in any area of development or sudden deterioration in neurobehavioral performance

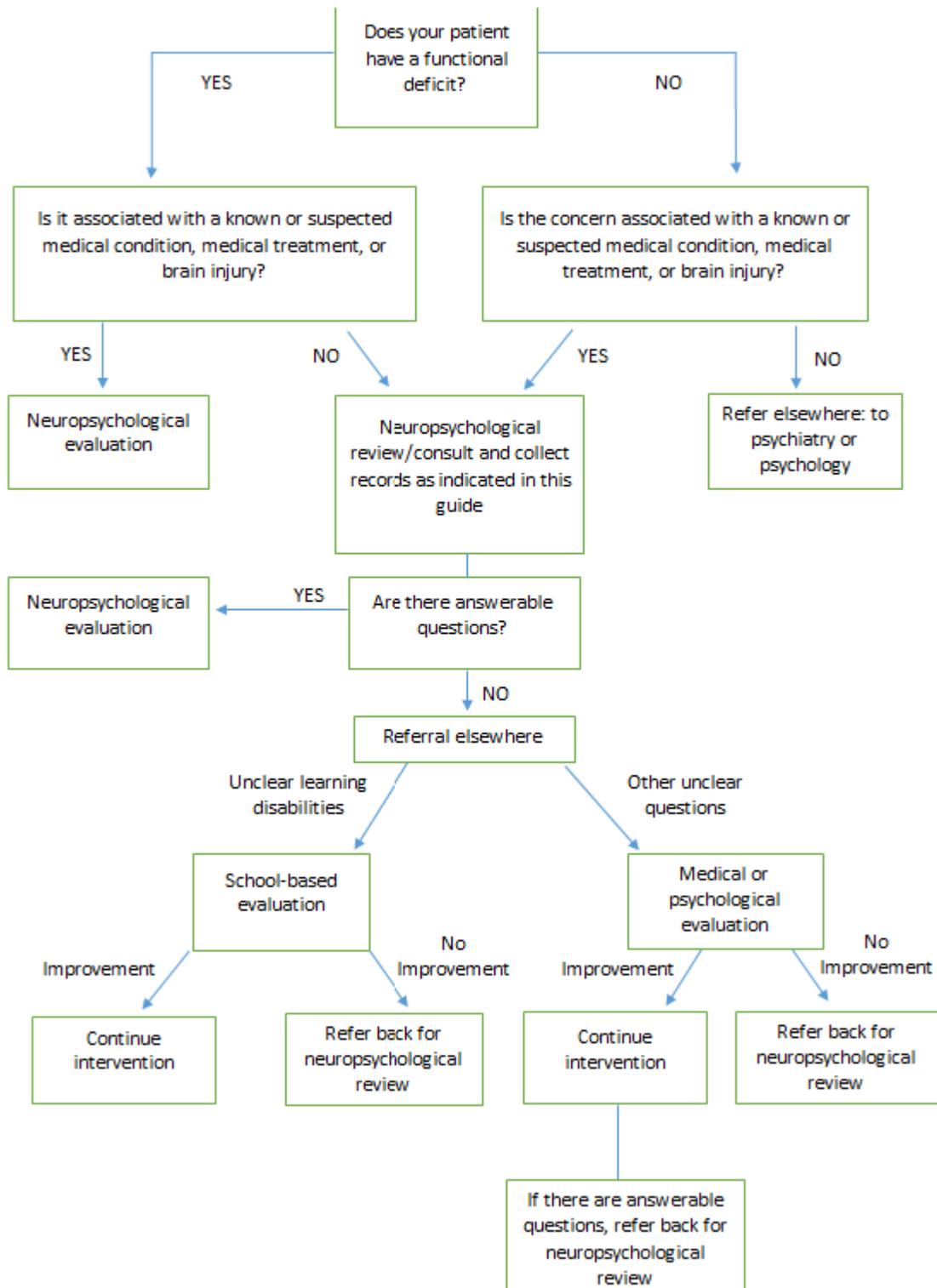
Algorithm

Use this algorithm to help guide your decision for referral.

Figure 1. Assessing need for neuropsychological evaluation algorithm.

To view a larger image on your device, please click or touch the image.

Figure 1. Assessing Need for Neuropsychological Evaluation Algorithm.



Referral

Referral Components

Include the following information when referring a child for neuropsychological evaluation:

- Clearly state the referral question.
 - Avoid generalized referral questions (eg, “behavior problem”)
 - Provide a detailed description, such as the following:
 - The child’s parents report disruptive behavior in the classroom, including kicking, biting other children, and throwing objects. This behavior has increased since the child’s traumatic brain injury. Do you think the behavior is a result of the injury? If so, please conduct necessary evaluation and guide management planning.
- Relay any parental concerns and if they prompted the referral.
- Indicate concerns that specified medical conditions are impacting development or behavior and any change in function or behavior.
- Outline concerns regarding developmental history and/or performance.
- Provide descriptions of behavior observed in the office if relevant to the referral.
- Specify if the referral is due to poor response to previous or ongoing interventions.
- Indicate if there is simply uncertainty regarding the treatment for existing developmental, cognitive, or behavioral problems not felt to be environmental.

If you are unsure that a neuropsychological evaluation is appropriate...

Never hesitate to request a consultation by a neuropsychologist for a child who has a Table 1 risk factor and presents with a cognitive, behavioral, social, or other problem. Provide questions for consideration and request a review.

Referral Process

Referrals generally go through a neuropsychological review process, which consists of the following:

- Benefits are checked as appropriate and a description provided to the family.
- A Patient Information Packet is collected to determine that the family accepts the referral and will release key records.
- Alternative care is recommended as appropriate.
- The child must be determined capable of meaningful participation in the testing.
- When English is the second language, language barriers and appropriate norms must have identified solutions to avoid compromising test validity.

Barriers

The following are barriers to obtaining neuropsychological evaluations:

- Evaluations are costly, averaging from \$2,000 to \$3,000.
- Coverage may be within the medical plan or by behavioral health. Behavioral health coverage dramatically reduces out-of-pocket costs.
- Educational questions are not well covered by insurance or Part B Medicaid.
- Waiting lists can be long for chronic or longstanding developmental problems.

- Priority is given to those awaiting evaluation prior to treatment or with an acute change in function.
- Identifying qualified child neuropsychological providers within your geographic area may be difficult.
 - Ask percentage of practice: Children 2-5 and 6-18; and percent time spent doing assessment. The Arkansas State Board of Examiner's for Psychologists reviews credentials and must approve a provider to perform neuropsychological assessment. Private practice often have a general scope and don't see children 5 and under. Check with our State Licensing Board.
- Obtaining essential records can be time consuming and difficult yet sometimes essential to the recommendation for further evaluation. (See [necessary records](#).)

Diagnostic Process

The diagnosis process involves consideration of the child's medical, behavioral, social, educational, and cognitive developmental information. The neuropsychologist will need access to necessary records during the diagnostic process.

Necessary Records

The neuropsychologist will request and review the following records as needed:

- Primary care records related to the referral question
- Birth records (if obtainable) and records related to medical evaluation and/or treatment
- Records of past educational, psychological, or therapy evaluation and treatment
- Individual education plan
- Outside rating forms (ie. Teacher Rating Form, Symptom Checklist, Social Responsiveness Scale, etc.)

Diagnostic Components

The diagnostic process may include the following components:

- Clinical interview and development of a clear description of the problem
 - *Note:* If the referral question or potential benefit of further evaluation is unclear, a diagnostic interview may be requested to clarify the problem and questions to be answered.
- Careful review all relevant records (eg, medical, educational, psychological, and allied health evaluations and therapies)
- Behavioral observation
- Battery of neuropsychological tests assessing intelligence, memory, executive function, attention, motor function, and processing speed as indicated by the review and initial test results
- Research of recent literature as appropriate
- Synthesis of all information gathered

Management Recommendations

- After the evaluation is completed, the neuropsychologist will compile a report.
 - The report will include a prognosis statement and steps for appropriate follow-up.
 - Follow-up may include further medical, psychiatric, and therapeutic evaluation or

management.

- Findings will be communicated to the parent or caregiver in a face-to-face discussion.
- The written report will go to the referring provider and appropriate school and social service agencies.

Parent or Caregiver

- The neuropsychologist will explain the results and recommendations in a direct visit with the parent or caregiver.
- The parent or caregiver will be advised to discuss recommendations for outside services with the child's health care provider. A referral may be required.
- The parent or caregiver will be notified that the school or early childhood education facility must review the recommendations if requested. However, implementation of the recommendations is not required.
- The neuropsychologist may explain advocacy and special education law. Generally, advice and assistance for assessing benefits and services guaranteed by law is provided.
- A mechanism for follow-up appointments, re-referral, and monitoring improvement will be outlined.
- It will be noted if the family is not comfortable with the recommendations or if family resources will not support them.
- Transitional planning for older teens should be included.

Referring Provider

- The referring provider will receive a copy of the full report.
- Additional medical diagnostics by the referring provider may be requested.
- The referring provider's office will be expected to monitor implementation of the treatment plan before attempting to assess improvement.

School and Social Service Agencies

Recommendations will be made to the school and social service agencies directly.

Resources

[Resource Handout for Parents/Caregivers](#)

Online Resources

General Support Organizations

- [American Association on Intellectual and Developmental Disabilities \(AAIDD\)](#)
- [ARC](#)
- [ARC Arkansas](#)
- [Birth Defect Research for Children](#)
- [National Center on Birth Defects and Developmental Disabilities](#)
- [Office of Special Education Programs \(OSERS\)](#)

Brain/Spinal Cord Injury

- [Brain Injury Association of America](#)

- [Epilepsy Foundation](#)
- [American Stroke Association](#)
- [National Stroke Association](#)

Emotional and Behavioral Disorders

- [American Academy of Child and Adolescent Psychiatry \(AACAP\)](#)
- [National Alliance on Mental Illness \(NAMI\)](#)

Learning Disabilities

- [Learning Disabilities Association of America](#)
- [Learning Disabilities Association of Arkansas](#)
- [National Center for Learning Disabilities](#)

Other Disabilities/Disorders

Attention Deficit or Attention-Deficit/Hyperactivity Disorder

- [Attention Deficit Disorder Association](#)
- [CHADD](#)

Autism

- [National Autism Association](#)
- [Autism Society](#)
- [Autism Speaks](#)
- [Autism Spectrum Disorder](#)

Cerebral Palsy

- [United Cerebral Palsy \(UCP\)](#)
- [UCP of Arkansas](#)

Down Syndrome

- [Arkansas Down Syndrome Association](#)
- [National Association for Down Syndrome](#)

Dyslexia

- [International Dyslexia Association](#)

Multiple Sclerosis

- [Multiple Sclerosis Association of America](#)
- [National Multiple Sclerosis Society](#)

Muscular Dystrophy

- [Muscular Dystrophy Association \(MDA\)](#)

Tourette Syndrome

- [Tourette's Association](#)

Hypothetical Exam Note for Referral

Hypothetical Exam Note for Referral

Child was seen today for a neurology follow-up. Parents report concerns about the child's current school performance. Grades are declining since the child began 4th grade. Seizures have been poorly controlled but are coming under better control with further medication adjustment. Child seems to tolerate the medication without significant adverse effects. Parents are concerned that she is having some memory difficulty. Refer to neuropsychology to assess for cognitive changes in relation to her baseline and determine appropriate intervention and modifications. Child was previously an A/B student. **Referral for neuropsychological testing to assess for a change in function and emotional factors.**

This guideline was developed to improve health care access in Arkansas and to aid health care providers in making decisions about appropriate patient care. The needs of the individual patient, resources available, and limitations unique to the institution or type of practice may warrant variations.

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