

The Neuropsychological Evaluation



Child and Adolescent
Psychological Services, PLLC

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About Your Presenter...



- 2005 Ph.D. Clinical Psychology- Fairleigh Dickinson University
- 2004-2007 Yale Child Study Center pre-doctoral internship, post-doctoral fellowship and faculty
- 2007- Present working in private practice settings conducting neuropsychological evaluations of children, adolescents and young adults
- 2017- opened Child and Adolescent Psychological Services, PLLC

About Your Presenter...



Objective



- Learn the background and current applications of neuropsychological testing
- Understand the “who, what, where, when and why” someone might benefit from testing
- Review some of the specific domains assessed during a neuropsych eval
- Learn how information gleaned from the evaluation can lead to specific interventions for the child

Neuropsychological Testing: A little (very little) history...



- The field of Neuropsychology was originally developed as a means for understanding the structural components of the brain.
- Prior to developing the technology we have now to see inside the brain, neuropsychologists used hypothesis testing and case studies to study brain-injured patients' behaviors and make determinations about what brain structures were involved in which behaviors (e.g., language center, emotions, frontal cortex, etc.).

Neuropsychological Testing: A little (very little) history...

Functional Areas of the Brain¹

Motor Area

- control of voluntary muscles

Sensory Area

- skin sensations (temperature, pressure, pain)

Frontal Lobe

- movement
- problem solving
- concentrating, thinking
- behaviour, personality, mood

Broca's Area

- speech control

Temporal Lobe

- hearing
- language
- memory

Brain Stem

- consciousness
- breathing
- heart rate

Parietal Lobe

- sensations
- language
- perception
- body awareness
- attention

Occipital Lobe

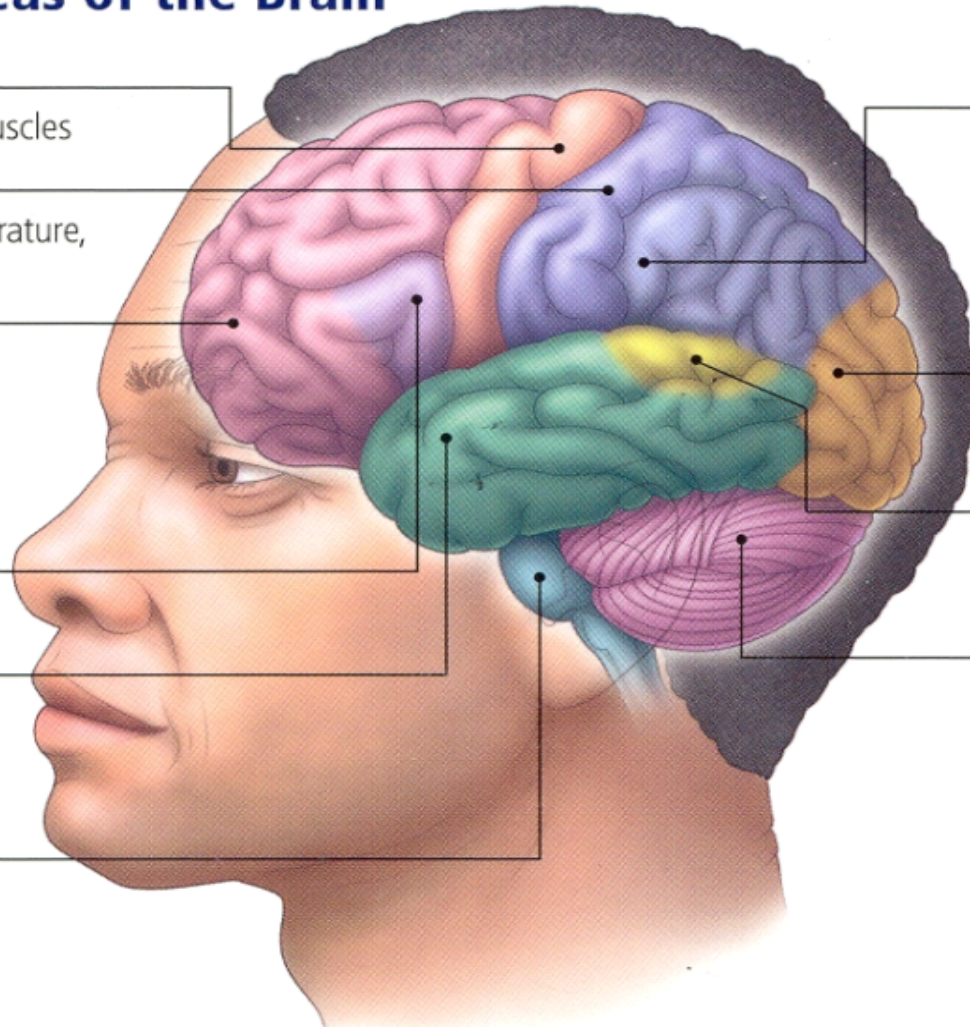
- vision
- perception

Wernicke's Area

- language comprehension

Cerebellum

- posture
- balance
- coordination of movement



Neuropsychological Testing: Today



- Hospital-based settings: Acute populations
 - neuropsychologists still use testing, often in combination with brain imaging to understand the impacts of brain injuries.
- Outpatient settings: Private practice, hospital, clinics
 - neuropsychological testing to more thoroughly understand **brain-behavior relationships**- We look for **patterns** of scores and findings...
 - create a profile of cognitive, academic and social-emotional strengths and challenges
 - delineate diagnoses
 - generate **targeted interventions** across settings

Neurodevelopmental Challenges/Disorders According to the DSM-5

- Intellectual Disability
- Communication Disorders
- Autism Spectrum Disorders
- Attention Deficit/Hyperactivity Disorder (ADHD)
- Specific Learning Disorder (reading, writing, math)
- Motor Disorders (e.g., tics, stereotypic movement)
- “Other” Neurodevelopmental Disorders (e.g., those associated with early exposures, genetics, etc.).

Additional Challenges categorized in the DSM-5



- Anxiety Disorders
- Depressive Disorders
- Obsessive Compulsive and Related Disorders
- Trauma and Stressor-Related Disorders

Terminology & Nuances in the Field



Q: What is the difference between a neurodevelopmental evaluation and a neuropsychological evaluation?

A. Neurodevelopmental Evaluations are conducted with infants, toddlers and preschool age children. Assess cognitive abilities, language functioning, social development, motor development, adaptive functioning and play skills. Neuropsychological Evaluations cover these areas and more (also memory, executive functioning, attention regulation), and are conducted with school-age children, adolescents and adults. The purpose is to better understand the connections between the brain and behaviors.

Terminology & Nuances in the Field



Q: What is the difference between a psychological evaluation and a neuropsychological evaluation?

- A. Psychological Testing might include an IQ test and some social/emotional testing. It does not typically cover academic testing or testing for attention, memory, and executive functioning.

Terminology & Nuances in the Field



Q: What is the difference between a clinical psychologist who conducts neuropsychological evaluations and a board certified neuropsychologist?

A. The majority of professionals in this area are licensed clinical psychologists who are highly trained in conducting neuropsychological evaluations. You do not have to be “board certified” to call yourself a “neuropsychologist” in Massachusetts.

Terminology & Nuances in the Field



Q: What is the difference between a clinical psychologist who conducts neuropsychological evaluations and a board certified neuropsychologist?

A. An ABPP (American Board of Professional Psychology) certified neuropsychologist has undergone additional coursework, training and testing beyond that which is required for the PhD or PsyD in Clinical Psychology. Generally, this training is in hospital-based settings with more acute populations.



When to consider neuropsychological testing

Why and When To Consider a Neuropsych. Eval



- **Academic Concerns**
- **Social/Emotional Concerns**
- **Behavioral Concerns**
- **Developmental Concerns**
- **Miscellaneous**

Why and When?



- **Academic Concerns:**

- My child is not progressing as expected.
- Teachers have expressed concerns about academic functioning.
- Teachers don't seem concerned, but homework is laborious and my child seems overwhelmed and stressed beyond what seems normal.

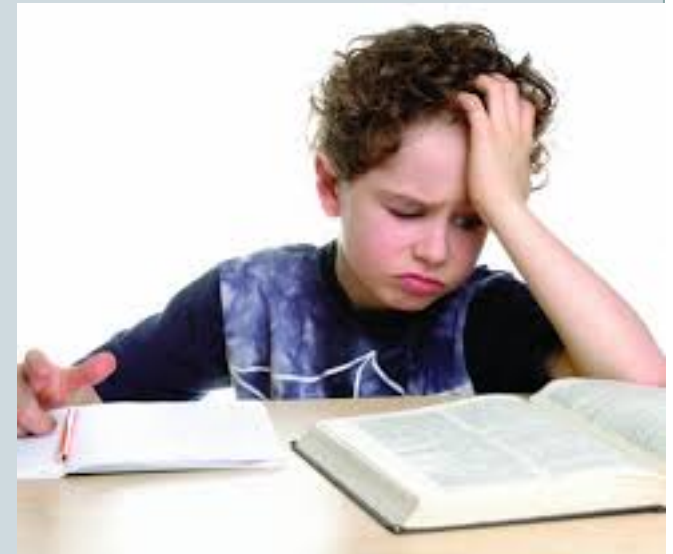


Why and When?



- **Academic Concerns:**

- My child spends much more time on homework/classwork/tests than seems appropriate, based on teacher expectations or what peers report
- Despite strong effort, my child does not seem to be performing as well as would be expected.



Why and When?



- **Social/Emotional Concerns:**

- My child does not seem to be having success with making and keeping friends.
- My child seems to miss social cues or to become overwhelmed in social/group settings
- My child seems out of step with peers



Why and When?



- **Social/Emotional Concerns:**

- My child seems more sad, irritable, angry, anxious or withdrawn than he/she used to be or than seems appropriate for his/her age
- My child is having difficulty regulating his/her emotions and this is interfering with daily living: family life, school life, getting along with peers or participating in typical activities



Why and When?

- **Behavioral Concerns:**
 - Attention regulation
 - Disruptive behaviors
 - Oppositional behaviors
 - Hyperactivity
 - Physical and/or verbal aggression
 - Withdrawal from others
 - Moves excessively slowly through routines

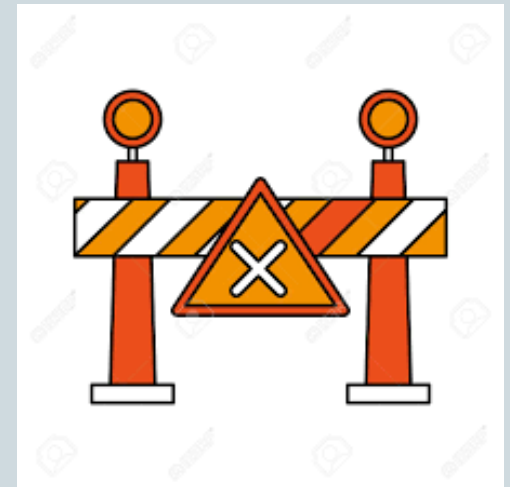


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Why and When?

- **Behavioral Concerns:**

- Interfering significantly with his/her ability to get through daily routines
- Interfering with school/academic functioning
- Interfering with social functioning (making and keeping friends, successful participation in extra-curricular activities)



Why and When?



- **Developmental Concerns**

- Not reaching appropriate milestones in the following areas:
 - ✦ Adaptive functioning (i.e., independence with daily living skills)
 - ✦ Motor skills (i.e., riding a bike, tying shoes, use of utensils, handwriting)
 - ✦ Language skills (speaking, articulation, comprehension)
 - ✦ Socialization
 - ✦ Learning (retention of new concepts and/or new routines)



Why and When? Miscellaneous...



- Failing to progress despite supports (academic, therapeutic or otherwise)
- Re-evaluation
- Condition seems to be worsening
- Need to clarify what we are working on (i.e., diagnosis)
- Looking for specific accommodations (i.e., additional time for standardized tests- SATS, ACTS)
- Looking for updated accommodations (i.e., school is mandated to evaluate every 3 years)



What does a
neuropsychological evaluation
include?

What does a neuropsych. include?



- IQ assessment
- Academic achievement
- Memory testing (visual and verbal)
- Language
- Attention
- Visual-motor integration and planning
- Executive functioning
- Social/emotional

What does a neuropsych. include?



- Information is obtained through a thorough intake interview with a caregiver, face-to-face testing and observation, behavioral/symptom checklists completed by parents and teachers (hopefully) and additional information gleaned from tutors, therapists, psychiatrists, etc.



IQ Testing



The WISC-V is the most widely used measure, though there are other, comparable measures:

-Stanford Binet-5; DAS-II; Woodcock Johnson-IV

WISC-V measures:

- Verbal comprehension and usage
- Nonverbal visual-spatial reasoning
- Fluid Reasoning
- Working Memory
- Processing Speed



Academic Achievement

A variety of measures can be used to assess:

- Single-word decoding, fluency and comprehension
- Written expression
- Math problem solving, numerical operations and fluency
- Spelling
- WIAT-III; KTEA3; WJ-IV
- GORT-5; TOWL-4
- Nelson Denny Reading Test



Language Processing



Some things we can measure:

- Phonological Processing
- Verbal Fluency
- Receptive language processing
- Receptive and expressive vocabulary
- More in-depth assessment of syntax, grammar, word usage, articulation, language organization should be done by **a speech/language pathologist** in a comprehensive speech/language evaluation.



Motor Functioning

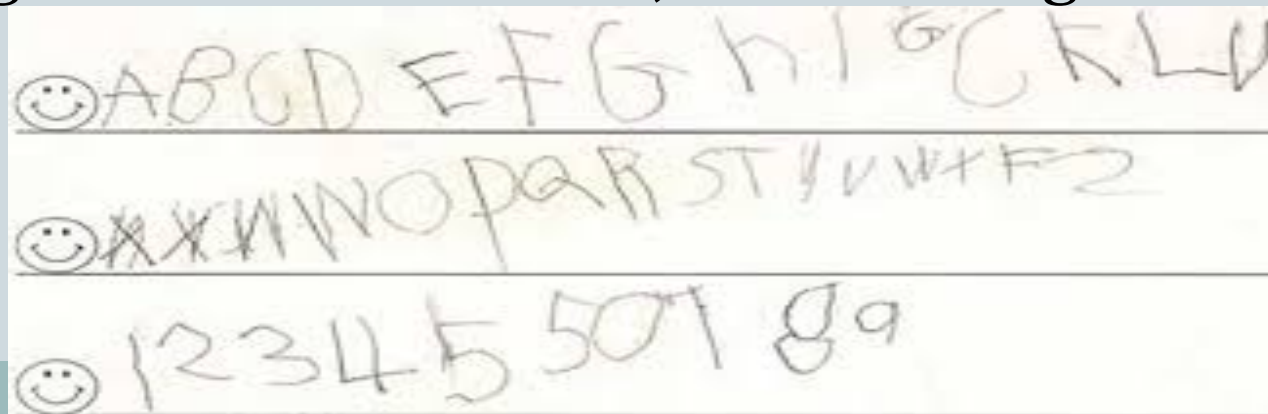


Neurodevelopmental Evaluation in a young child (0-3.5)

- Fine and Gross Motor Functioning (Bayley III)

Neurodevelopmental/Neuropsychological Evaluation ages 3.5 plus:

- Screen for visual-motor coordination, fine motor strength and coordination, handwriting



Motor Functioning



- A more thorough examination of a child's fine motor and/or sensory integration skills should be conducted by an **occupational therapist**. Gross motor functioning is best evaluated by a **physical therapist**.



Memory and Attention



- Visual and auditory memory and attention
- Sustained and selective attention
- Short-term and long-term memory
- Benefit from cues?
- Does repetition help or hurt?
- How does the child organize new information. With effective strategies?
- Benefit from novelty, scaffolding, context?



Executive Functioning

- Measure inhibition skills
- Cognitive flexibility
- Multitasking and sequencing skills
- Can the child work both efficiently AND accurately, or does one need to be sacrificed for the other?
- How does the child's executive functioning skills in a one-on-one, testing setting differ from those reported verbally and via checklists from parents and teachers?



Social-Emotional Functioning

- Clinical Interview
- Projective tasks: Drawings, story telling task, incomplete sentences, Rorschach



Social-Emotional Functioning

- Parent and teacher checklists as well as self-report checklists (when applicable and age-appropriate)
- Glean information regarding how the child perceives the world, manages and perceives relationships, perceives themselves, interprets and copes with emotions, perceives reality
- Strengths/Challenges



Academic Testing: Why do I need this?



- It's important! (And... it's not covered by insurance☹). Even if there are no known current academic concerns, it is always helpful and important to assess the child's academic functioning. A clinician conducting a neuropsychological evaluation can sometimes see things that might be getting missed otherwise.

Academic Testing: Why do I need this?



- In the case of ADHD for example...
- 1 in 4 students with ADHD has other serious learning disabilities in at least one of these areas: oral expression, listening skills, reading comprehension, and math

Should I just have school do the testing?



- Why not just go with the school testing? It's free!

Pros of Private Testing:

- Typically much more comprehensive in both scope and depth across each area assessed (e.g., social/emotional, executive functioning)
- Integration of the information into one picture, versus disjointed assessments
- Diagnostic clarification
- Unbiased viewpoint as applies to recommendations made
- Follow-up and advocacy from an outside professional

Should I just have the school do the testing?



What school might offer that is outside parameters of a standard Neuropsych. Eval:

- OT eval
- Speech/Language Eval
- Functional Behavioral Assessment
- Insight about how the school works and how interventions would look on a more practical level
- Individuals who will be working with the child will be doing the assessment- beneficial for seeing how child works, approaches problems, building rapport

Diagnosis



Methods and means for obtaining a diagnosis : e.g.,
Pediatrician, therapist, neuropsych evaluation.

- Detailed history and observation
- Parent and teacher behavioral checklists
- Parent and teacher interviews conducted by a clinician
- Neuropsychological evaluations:
 - (includes all of the above and much more).

How do I find someone to do the evaluation?



As with anything, there is some variability across clinicians.

Things to consider when choosing who to go to:

- Experience and expertise in the age group and concerns
- After talking on the phone or in person, do I like them?
- Word of mouth- did a friend have a positive experience?
Recommendations from other clinicians, pediatrician, etc.
- Do they cover the areas you want covered? Interact with the school?
Provide detailed recommendations that are practical and applicable at home, at school and elsewhere?
- Finances: Do they accept my insurance? What is the out-of-pocket cost? What is included in the cost?
- Follow Up: Is this person accessible for check-ins? Follow-up? Re-evals? Attendance at IEP meetings, etc.?
- Others...

Long Term Benefit of Private Testing

- Reduce frustration
- Get services on board earlier; more pointed and directed; track progress; accountability
- Point on the trajectory for future testing- to measure progress.



Long Term Benefit of Private Testing



- Rule out other causes of symptoms and/or co-occurring challenges that might be otherwise overlooked (e.g., mood challenges, learning disability, etc.).

