



PEDIATRIC NEUROPSYCHOLOGY

XIAONING (SHINING) SUN, M.S.

PH.D. CANDIDATE

DEVELOPMENTAL AND CLINICAL PSYCHOLOGY

UNIVERSITY OF OREGON

DOCTORAL INTERN

PSYCHOLOGICAL & NEUROPSYCHOLOGICAL TESTING

NYSTROM & ASSOCIATES, LTD.

NEW BRIGHTON, MN

OUTLINE

- What is peds neuro?
 - Peds neuro vs. adult neuro
- Why needing a peds neuro eval?
 - School eval vs. neuro eval
- Case example



WHAT IS PEDS NEURO?



PEDIATRIC NEUROPSYCHOLOGY

- A sub-specialty within the field of clinical neuropsychology that studies the relationship between brain health and behavior in children.

PEDIATRIC NEUROPSYCHOLOGY

- Comparing to adult neuropsychology
 - Intricacy of monitoring and predicting developmental course and maturation
 - Consideration of the course of disease or disability on a developmental spectrum
- Coursework:
 - Child Development
 - Cognitive Development
 - Developmental neuroscience/neuroanatomy
 - Developmental psychopathology

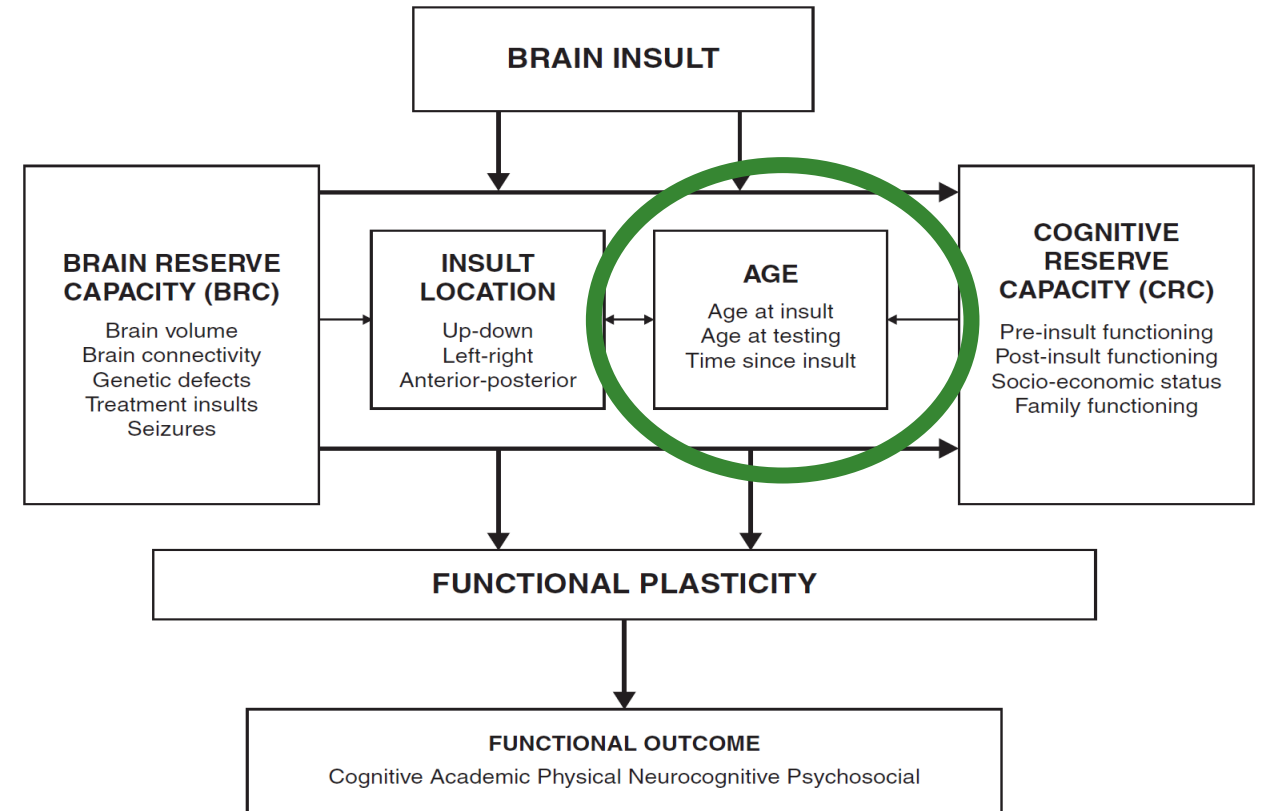
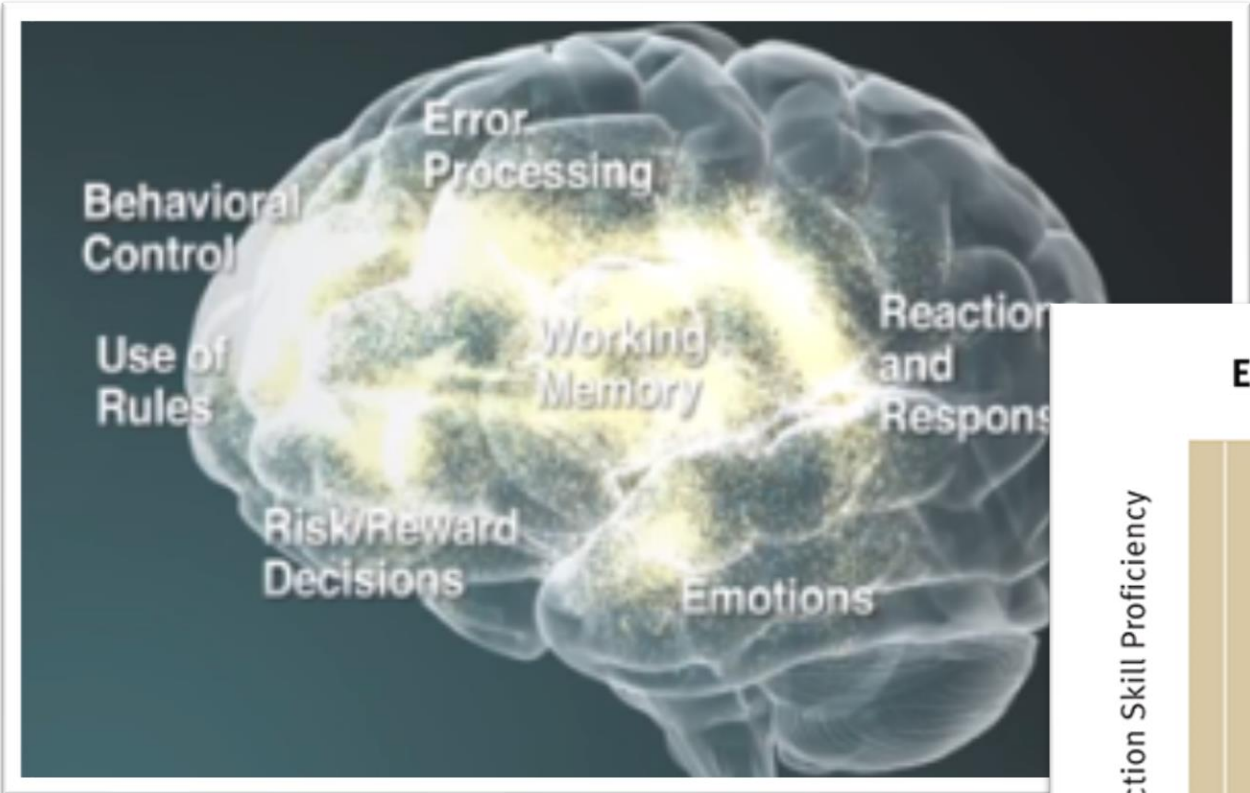
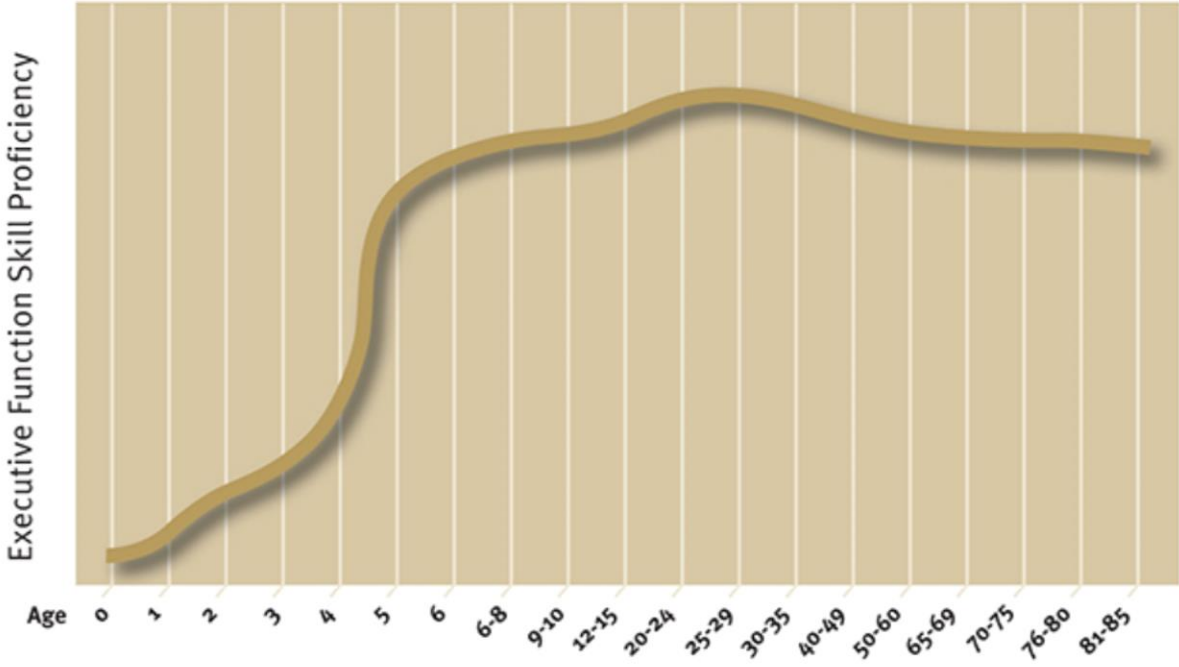


Figure 1.1 The cognitive reserve model
Source: Modified from Dennis et al. (2007)



Executive Function Skills Build Into the Early Adult Years



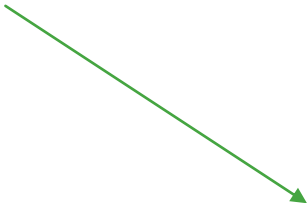
PROCESS OF PEDS NEURO EVAL

- Record and chart review
- Intake – clinical interview
- Testing
- Report preparation
- Feedback

PROCESS OF PEDS NEURO EVAL

- Record and chart review
 - Intake – clinical interview
 - Testing
 - Report preparation
 - Feedback
- 
- Pre- and peri-natal history
 - Temperament
 - Attachment
 - Social history
 - Family dynamic

PROCESS OF PEDS NEURO EVAL

- Record and chart review
 - Intake – clinical interview
 - Testing
 - Report preparation
 - Feedback
- 
- Information from school

PROCESS OF PEDS NEURO EVAL

- Record and chart review
- Intake – clinical interview
- Testing
- Report preparation
- Feedback

Behavioral Observation

- Energy level
- Self-care
- Health
- Physical status
- Psychological status
- Language
- Interests and motivation
- Understanding instruction
- Learning from teaching trials
- Impulsivity
- Concentration
- Distractibility (internal and external)
- Level of persistence
- Response to feedback
 - Corrective feedback
 - Reinforcement
 - Redirection
- Self-monitoring
- Self-talk
- Asking questions

PROCESS OF PEDS NEURO EVAL

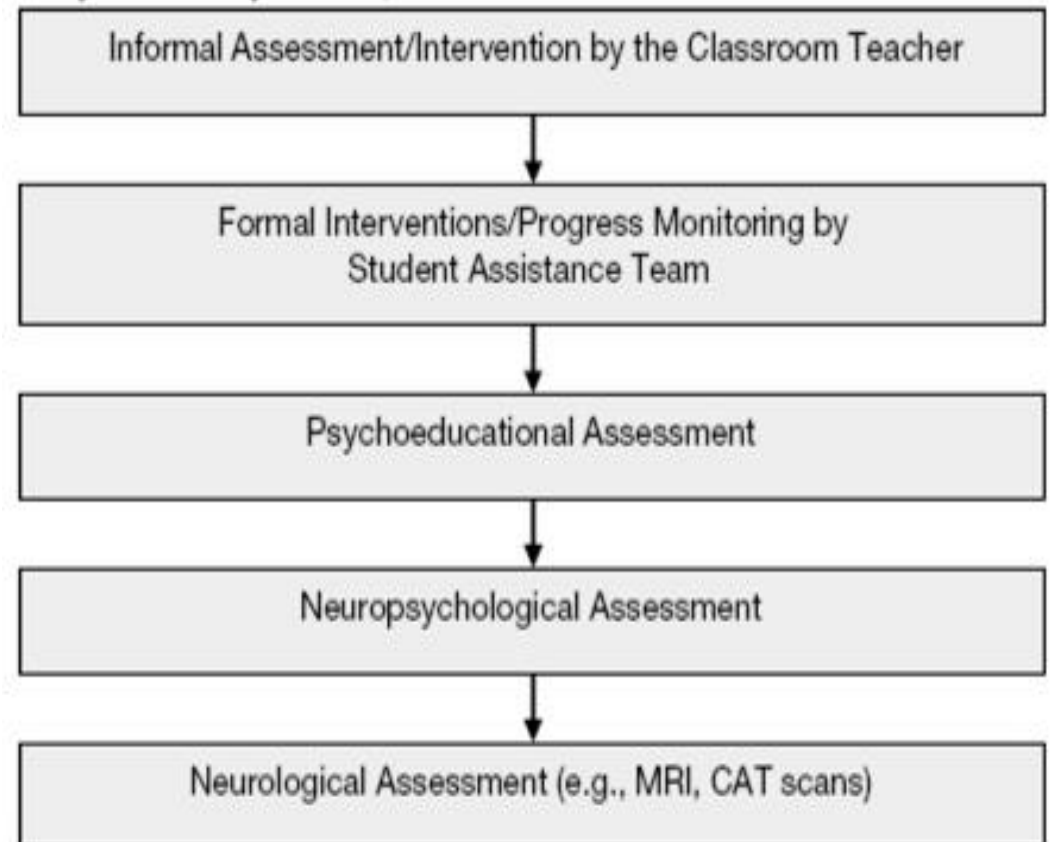
- Record and chart review
- Intake – clinical interview
- Testing
- Report preparation
- Feedback
 - Mostly with parents
 - Language needs to be adjusted if explaining results to child/adolescent
 - May need to communicate with school



WHY NEEDING A PEDS NEURO EVAL?

WHO NEEDS ASSESSMENT:

- If a child has:
 - A neurological disorder
 - A brain injury
 - Other medical problems
 - Prenatal exposure to alcohol, smoking, or certain drugs
 - Neurodevelopmental disorder
 - Learning problems
 - Had an evaluation by a psychologist or the school, but the treatment following that evaluation has not helped





PEDS NEURO EVAL

- Detect the effects of developmental, neurological, and medical problems
- Explain the reasons of a child's difficulties
- Create a profile of a child's strengths and weakness
 - Inform intervention and treatment that draw upon a child's strengths
 - Identify skills and areas to work on
- Obtain a baseline measure or a child's development over time

SCHOOL

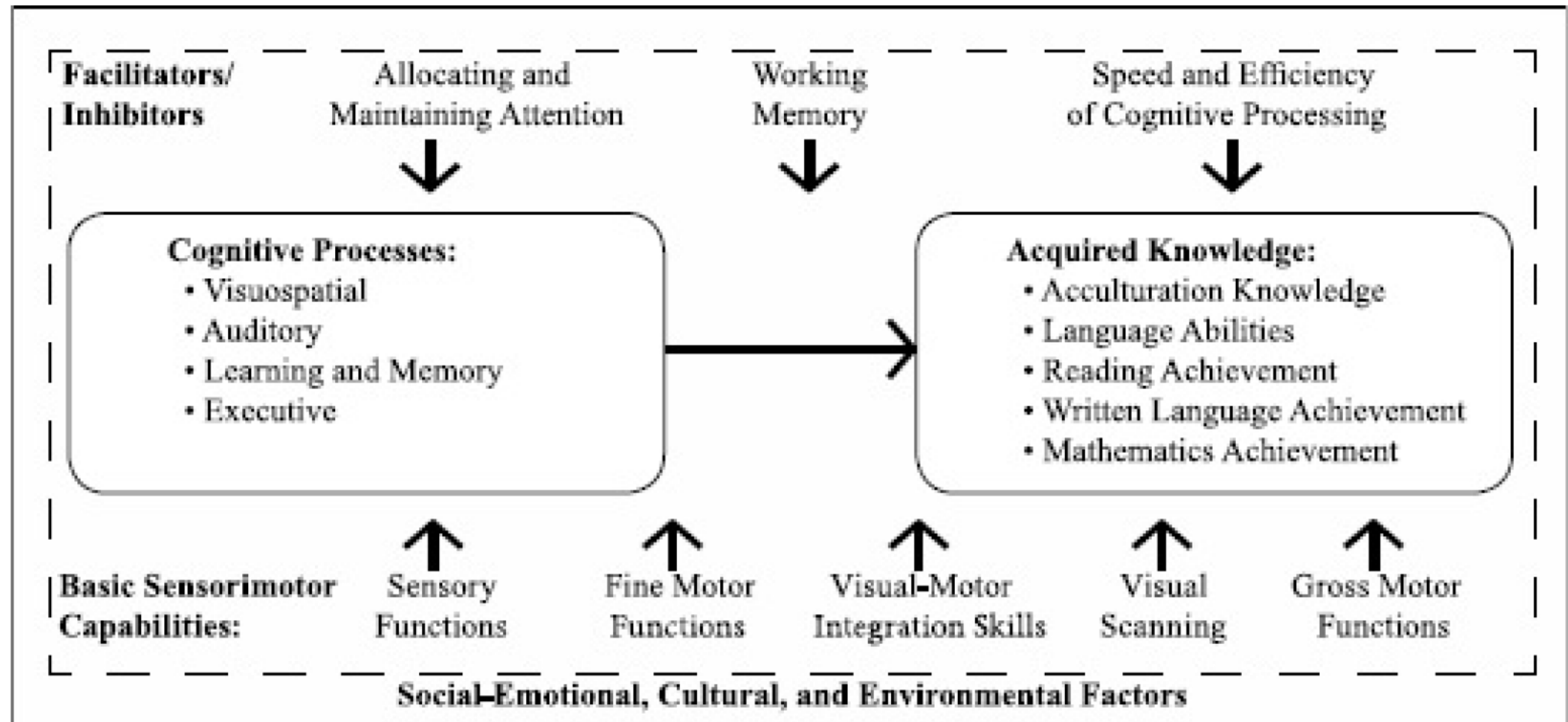
VS.

NEURO EVAL

- The IF question
- Determine qualification for services
- Not for diagnosis

- The WHY question

Figure 5.5 Integrated SNP/CHC Model





DOMAINS



DOMAINS

- Global intellectual functioning
 - Intelligence or IQ is a multifaceted concept of one's general mental capability, and reflects the ability to comprehend, adapt to, and interact with the environment.
- Attention and Concentration
 - Selective or focused attention, divided attention, sustained attention, alternating attention/mental shifting



DOMAINS

- Executive Function
 - Executive functioning is defined as higher order processes relating to an individual's ability to reason, plan, organize, and monitor and adjust decision-making in order to participate in goal-directed behavior. This domain also includes the ability to have insight, be self-aware, and adjust one's thinking and behaviors when called for by the environment or task at hand. Finally, executive functions involve the ability of one to accept and utilize feedback, both from the environment and others, and demonstrate judgment with regard to behaviors and decisions.
 - Working memory, inhibition, cognitive flexibility, planning, organizing, monitoring, etc.



DOMAINS

- Learning and Memory
 - The area of learning and memory involves the ability to encode new information, store information in a relational memory system, and retrieve the information in an effective and efficient manner. This set of skills is generally measured by both verbal/auditory and spatial/visual means.



DOMAINS

- Speech and Language
 - The speech and language domain measures one's ability to both receive and express thoughts through various forms of symbolic means. Receptive language is defined as one's ability to comprehend the spoken language, while expressive language is one's ability to communicate via spoken and written language.
- Visuospatial/Visuoconstructional Abilities
 - This domain measures one's ability to receive, interpret, and apply meaning to visual information, both in constructional and spatial situations.



DOMAINS

- Motor and Sensory-Perceptual Skills
 - Motor performance is the ability to perform physical fine motor tasks involving the two sides of the body. Fine motor skills are used daily in tasks such as writing and picking up small objects.
 - Bayley-III, Grooved Pegboard, Finger Tapping



CASE EXAMPLE



THANK YOU!