A Comprehensive Model for Specific Learning Disability Evaluations

COLORADO
Department of Education

Using the *Building Blocks Brain Model* of Development to Understand and Assess Learning Disabilities
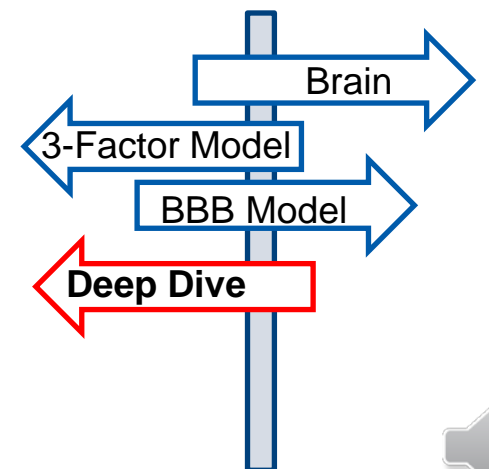
Peter Thompson, Ed.S., Ph.D.

Module 4.2 Guidepost 4

The Building Blocks Brain Model

A DEEPER DIVE: Higher Order Processes

Executive Functions

Brain

3-Factor Model

BBB Model

Deep Dive

Important Note

The information, concepts, and models provided in this presentation are intended to give practitioners a framework when conducting special education evaluations. It is emphasized that <u>nothing in this presentation is meant to be directive or prescriptive.</u> Professionals are free to use some, or all of the information presented, but they <u>are not required</u> to do so in their practice. **Always consult with your special education director for clarity around district policies and expectations for special education evaluations.**
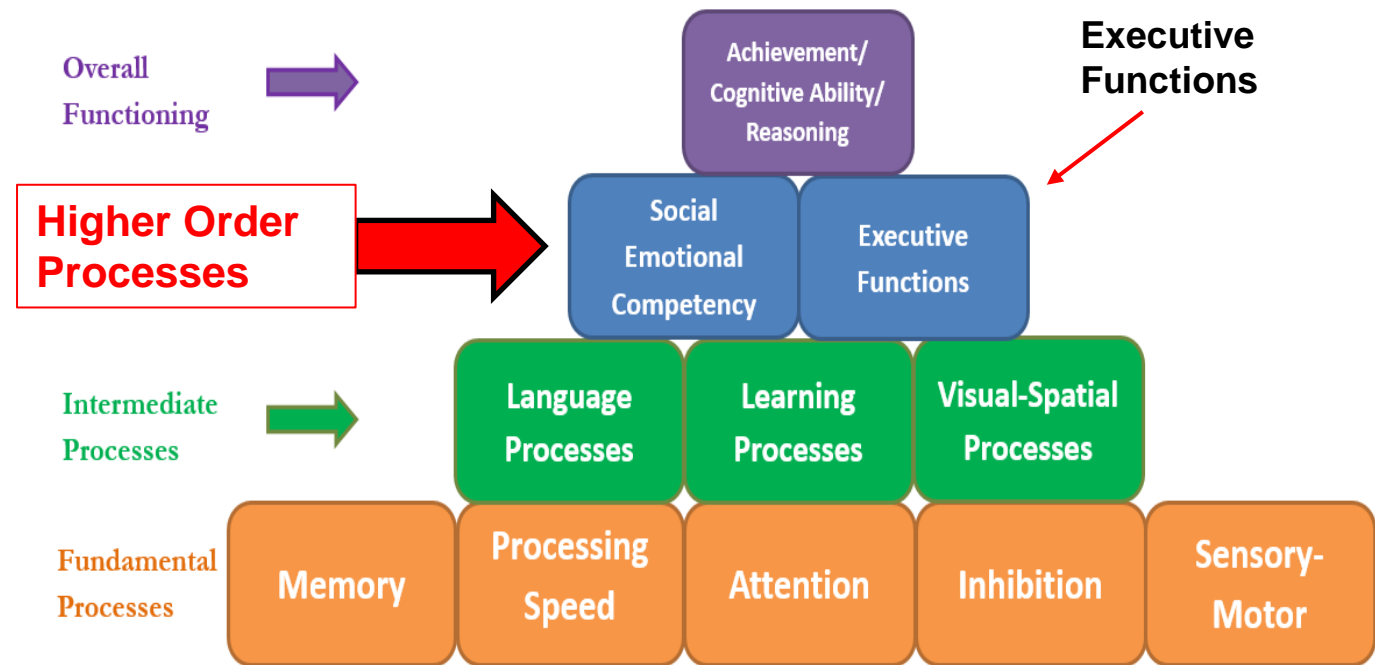
IMPORTANT

Learning Outcomes

- What are the Executive Functions?

- What are the "Look-Fors" for students that have executive functioning difficulties?

- How to properly assess for executive function deficits.

What Are _Executive Functions?_

- **Umbrella term that includes several traits necessary for success in various domains of life**

- **Parts of EF are present at younger ages, but more evolved at the Higher Order Level**

- **Core trait is "control"**

Building Blocks of Brain Development©

Overall Functioning → Achievement/ Cognitive Ability/ Reasoning

Higher Order Processes → Social Emotional Competency | Executive Functions

Executive Functions

Intermediate Processes → Language Processes | Learning Processes | Visual-Spatial Processes

Fundamental Processes → Memory | Processing Speed | Attention | Inhibition | Sensory-Motor

The Hierarchy of Neurocognitive Functioning © - created by Peter Thompson, Ph.D. 2013, adapted from the works of Miller 2007; Reitan and Wolfson 2004; Hale and Fiorello 2004.

The Building Blocks of Brain Development © – further adapted by the CO Brain Injury Steering Committee, 2016.

# Higher Order Processes: Exec Functions

- Multiple EF traits associated with the frontal cortex

- Rich, deep interconnections with other <u>brain regions, which integrates, controls, and supervises</u>

- Experts disagree on a unifying definition, but most agree it is related to self-control, which impacts social competency, academic success, and related to other disorders.
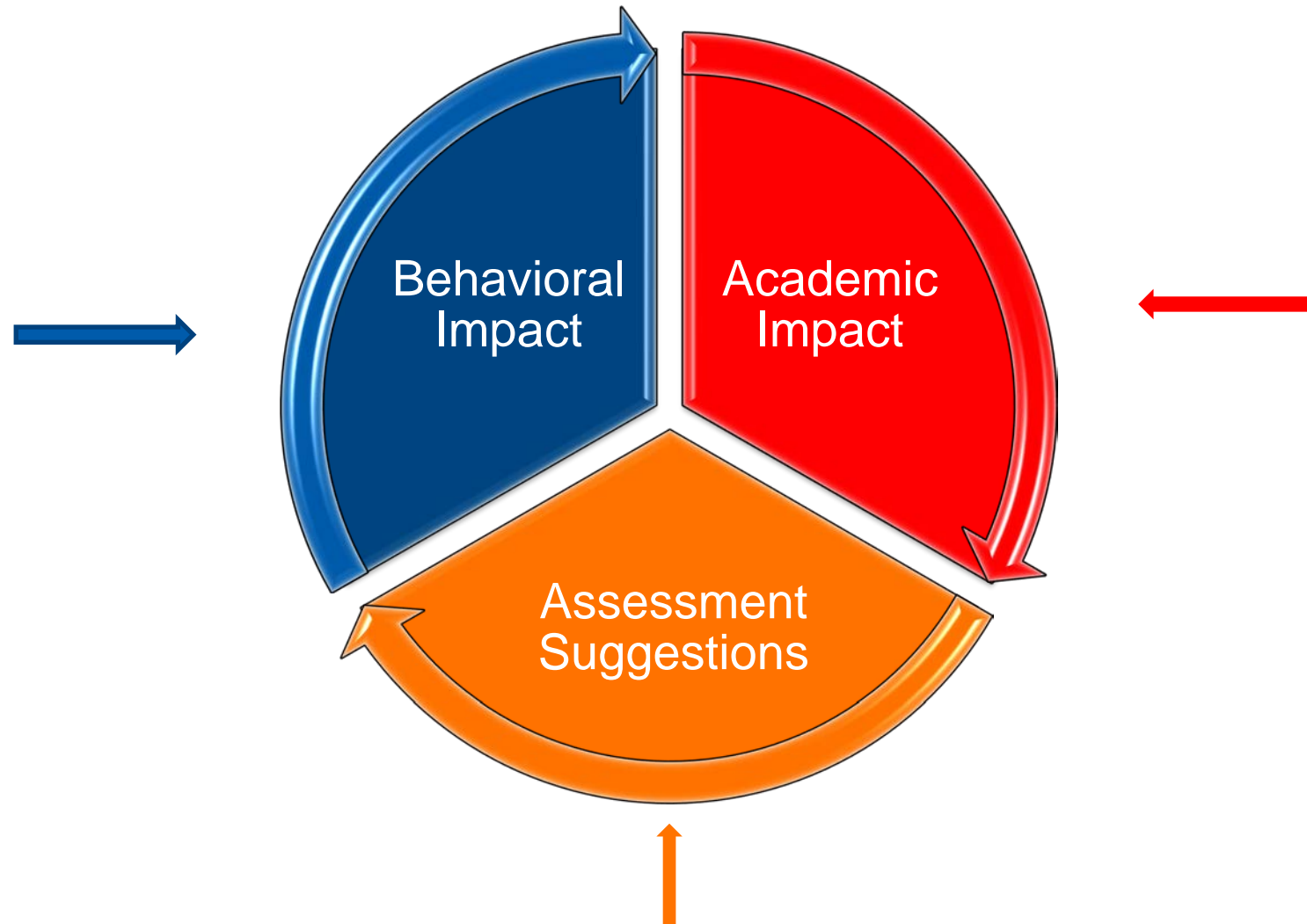
Executive Functions

Major E.F. Traits
- **Attention**
- **Flexibility**
- **Behavior Control**
- **Emotional Control**
- **Initiation**
- **Planning**
- **Organization**
- **Working Memory**
- **Self-Monitoring**

Frontal Lobe-Executive Function
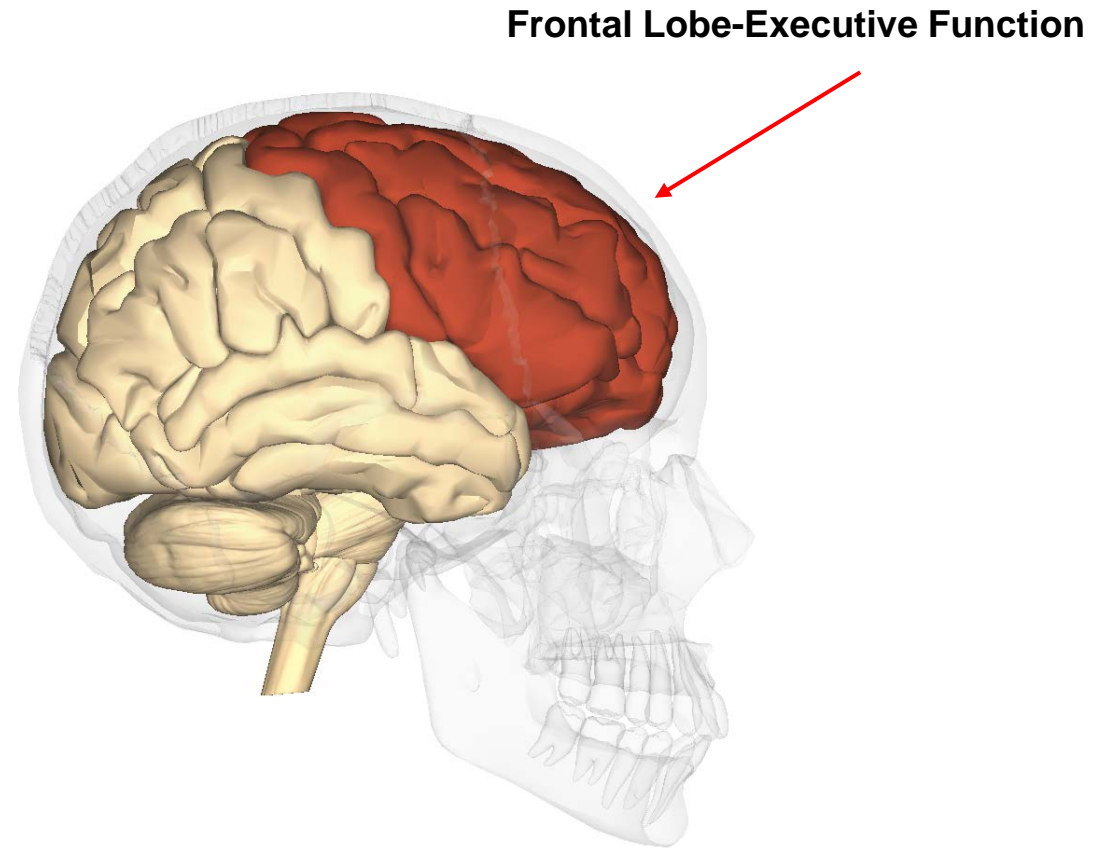
Executive Functons: 3 key Aspects to Consider

# *Behavioral* Impacts (Look-Fors): **Executive Functions**

Look for problems in the specific EF domains:

- Attention –ADHD behaviors are related to EF deficits
- Initiation—does not start chores, tasks independently
- Self-monitoring-makes same mistakes
- Inflexibility-black and white thinking
- Working memory-cannot handle multiple steps
- Organization/planning-disorganized thoughts
- Emotional/behavior control problems

Academic Impacts (Look-Fors): **Executive Functions**

- **Problems with the following traits in the classroom**
  - Initiation—does not independently start tasks
  - Self-monitoring– editing mistakes
  - Flexibility-difficulty with switching classes / subjects
  - Working Memory-reading and math
  - Attention-incomplete work
 - Organ/Planning-missing assignments
  - Control-Emotional/Behavior-problems
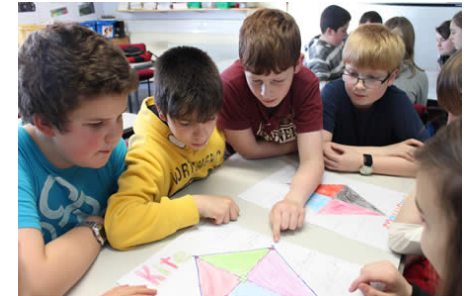
Assessment Suggestions: **Executive Functions**

- ## Use 3-Factor Model for Assessment
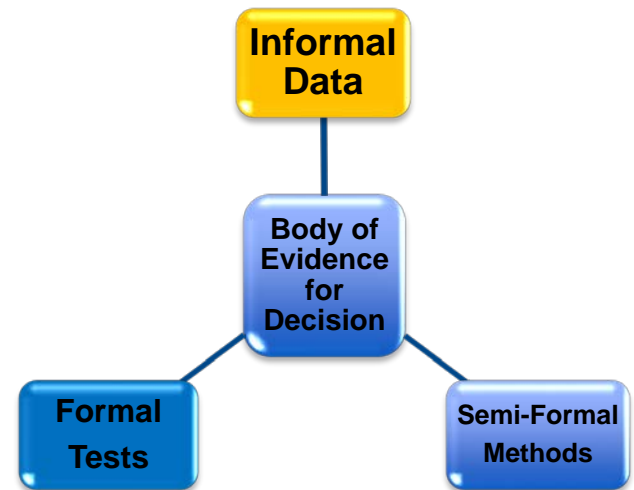 1. Formal
  2. Informal
  3. Semi-Formal
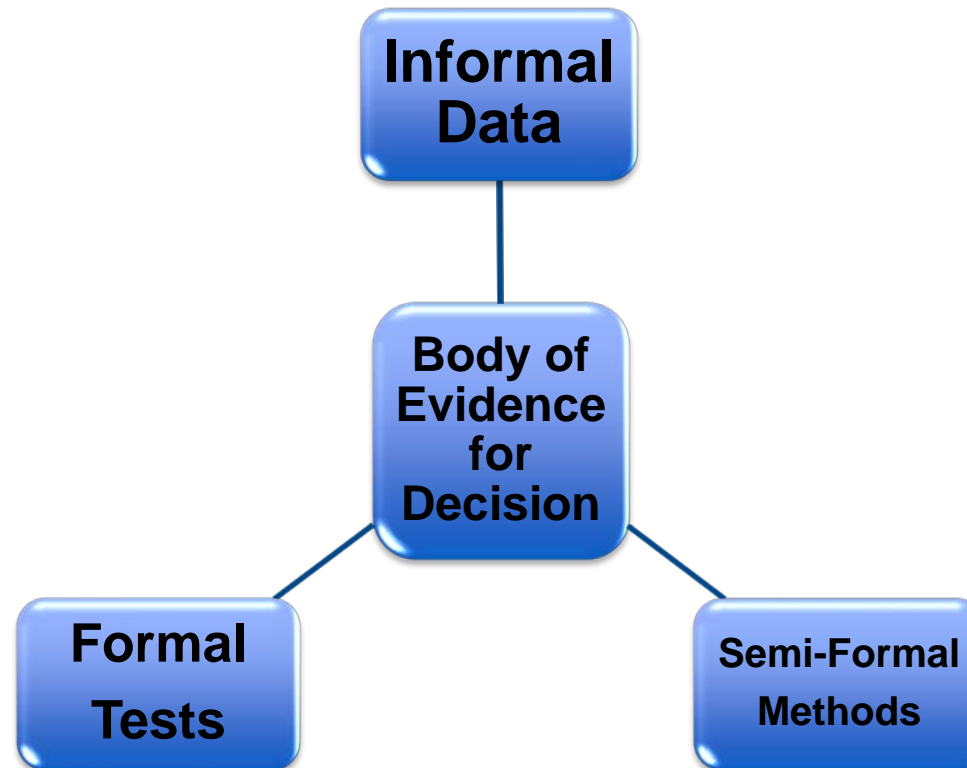
Formal Methods: **Executive Functions**

- (NEPSY-II): EF scale
- Behavior Assessment System for Children, 3rd (BASC-3)
- Behavior Rating Inventory of Executive Function, 2nd Ed (BRIEF2):
- Comprehensive Executive Function Inventory (CEFI)
- Trail-making (CAS-2)

Informal Data

Body of Evidence for Decision
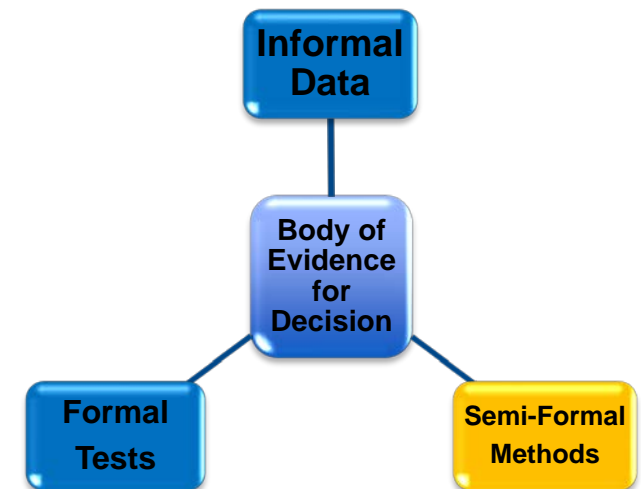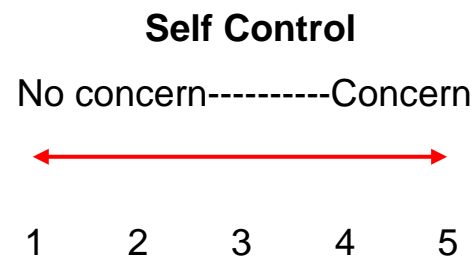
Formal Tests

Semi-Formal Methods
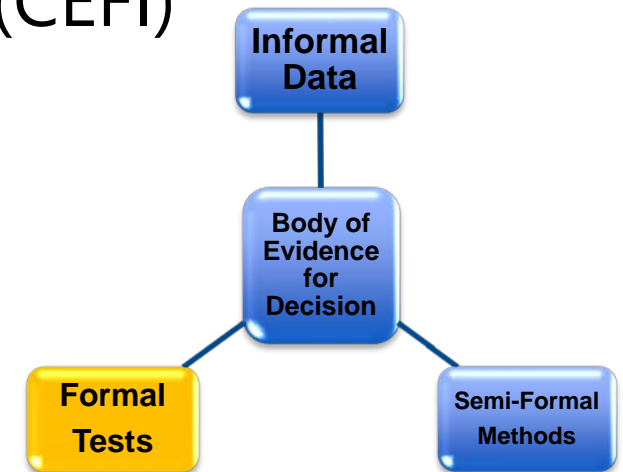
Informal Methods: **Executive Functions**

- Observations in various settings and times
- Records review (Discipline or office referrals)
- Parent, teacher and student interviews
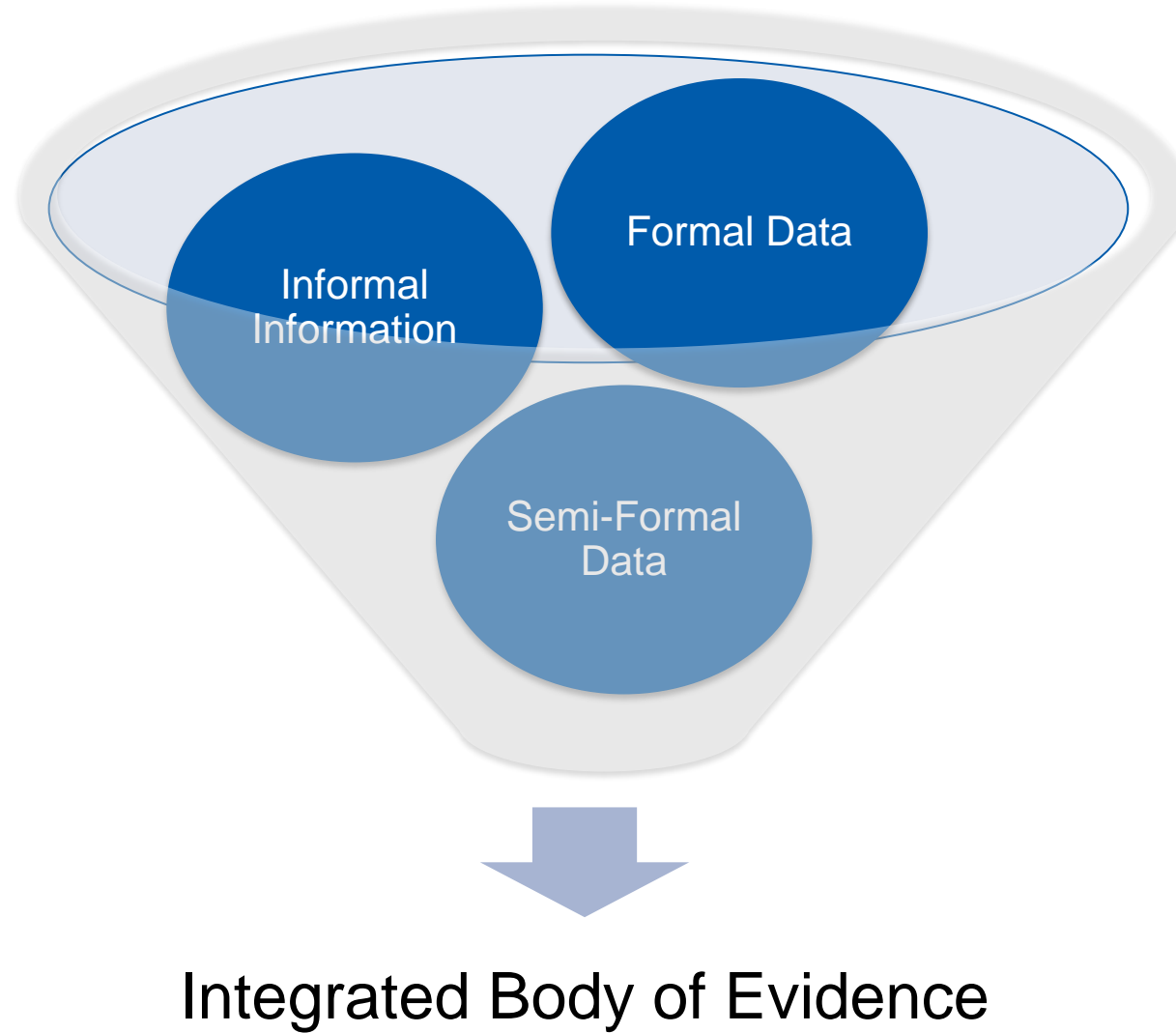- Developmental history is important
- Look for ADHD symptoms

Informal Data

Body of Evidence for Decision

Formal Tests

Semi-Formal Methods

Semi-Formal Methods: **Executive Functions**

- NEF (CDE)
- Commercially Available Executive Function Rating Scales
- Self-Created

Self Control

No concern----------Concern

1   2   3   4   5

Informal Data

Body of Evidence for Decision

Formal Tests

Semi-Formal Methods

Evaluating Executive Functioning

Integrated Body of Evidence

Summary: Higher Order Level: Executive Functioning

- *Executive Functioning* is a broad umbrella term that encompasses many traits. Major traits include, Attention, Initiation, E/B control, Organization, Planning, Flexibility, Self-Monitoring, and Working Memory.   Core of EF related to "control."

- EF is associated with frontal lobe dysfunction. Students that struggle with executive functions have deficits in the traits noted in the previous bullet point. ADHD signs and symptoms have a large overlap with EF deficits.

- Semi-Formal measures of executive functioning is a quick way to ascertain information about a student's EF abilities.

End of Module 4.2
Executive Functioning

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