



Executive Function and Processing Speed

Executive function skills allow one to control impulses and emotions, be flexible, plan and organize. These cognitive skills are not only crucial for learning but play an important role in day-to-day behavior. Children who struggle with executive function may have great difficulty in behaving appropriately in classrooms, at home and in other settings. Executive function skills are the ‘CEO. of the brain and among other skills pertains to mental regulation and work efficiency. It helps one:

- Plan
- Organize
- Initiate
- Sequence
- Monitor
- Inhibit impulsivity
- Develop efficient strategies

Deficits in executive function can manifest as:

- Inconsistent performance
- Failure to turn in completed work
- Disorganization - at school and at home
- Problems with homework completion
- Impulsivity – Social and Academic
- Problems with time management
- Poor problem solving skills
- Poor self-regulation
- Poor inhibitory control
- Poor planning
- Poor self-monitoring

If a child responds excessively to everything, good or bad and is impulsive and prone to temper tantrums while not responding well to change and seems to not be able to control his emotions there may be executive functioning most closely related to social and emotional growth, including impulse control, emotional control, flexibility and self-monitoring. Executive skill delays are directly associated with emotional and behavioral challenges. Executive function deficits are very common in children with learning disabilities and ADHD. In ADHD – Inattentive Type there are weaknesses in initiation, planning, organization, working memory and self-monitoring and with ADHD – Hyperactive-Impulsive Type there are weaknesses related to inhibition, shifting and emotional control

Children lacking in impulse control have a diminished ability to regulate their speech and behavior. They find it difficult to stop and think. They have not learned to ask themselves: What is happening here? When this happened to me before, what did I do? If I say this or do that, will I help the situation or make it worse? Children who struggle with impulse control often have difficulty following rules and directions and sitting still in class. They may seem to talk incessantly and interrupt others. A child who struggles with emotional control may have a low threshold for frustration. He may overreact to obstacles that would not affect other children. Without a strong capacity for emotional control, your child's overreactions may rapidly escalate, leading to rage, tears, or withdrawal.

Children who show patterns of difficulty characteristic of so-called "externalizing" disorders (that is, disorders that are characterized by disruptive, "acting out" behaviour). "cognitive behavioural interventions," which help children to think about their behaviour in new ways and also provide training in specific skills or strategies. For example, children might first be encouraged to recognize that they have difficulty controlling themselves in certain types of situation (for example, when they are told to do something that they don't want to do). Then they might be taught how to "stop and think" in these situations before responding impulsively. They might also be trained to work through their frustrations in a systematic way using self-talk (for example, "Remember, if I clean up my toys now then I'll be able to go out and play later...").

How does low processing speed connect with deficits in executive function? First, what is processing speed?

- Ability to perform automatic tasks quickly
- Measurement of perceptual speed
- Speed of semantic processing
- Sustained attention under pressure
- Speed and efficiency of information processing

Why is processing speed important?

- Speed and efficiency may be very basic components of information processing
- Academic tasks are hierarchal so speed matters
- Time constraints exacerbate problems – particularly timely task completion and accuracy

Deficits in executive functions and processing speed can impact:

- Disorganization
Slow speed of processing
- Inaccurate or inconsistent performance
- Self-monitoring
- Careless errors
- Splintered skills
- Inefficient strategies