



ADHD and Executive Function Deficits

It is important to have an understanding of ADHD to insure that you recognize the potential impact of the disorder. ADHD is the current term for a specific developmental disorder seen in children and adults that is comprised of deficits in: “behavioral inhibition, sustained attention and resistance to distraction, and the regulation of one’s activity level to the demands of a situation” (Barkley, 2018). Just like autism spectrum disorder, individuals with ADHD may exhibit different levels of symptomology; for example, they may be considered to be mildly, moderately or severely affected by the disorder. According to CHADD, the national association for Children and Adults with Attention Deficit (2018) the major characteristics of ADHD include:

- **Impaired response inhibition or the capacity to delay gratification** – this often manifests as an individual’s inability to stop and think before acting; to wait for one’s turn while playing, talking or waiting in line; to work for longer-term rewards; and inhibiting immediate reaction to an event.
- **Excessive task-irrelevant activity** – this manifests as fidgeting, movement of feet, body rocking and tapping in older children and appears as running, climbing and other gross motor activity in younger children.
- **Poor sustained attention** – this manifests as difficulty with “stick-to-it-ness”. It is difficult to sustain tasks that may be protracted, repetitive or tedious. If it’s uninteresting to the individual, they will quickly become bored, thus seeking other activity to gain reinforcement (see point 1).

Other deficits often include:

- **Impaired working memory** – this refers to the ability of the individual to hold information in mind that will be used to guide their action – it is needed to remember to do things in the near future. Individuals with ADHD with impaired working memory are often described as acting without hindsight or foresight.
- **Delayed development of Internal Language and Rule Following** – self talk and internalized language that individuals use to moderate their behaviour is often impaired. This skill is used in self-reflection, self-regulation and contemplation. This manifests as difficulty following through on their own plans, rules and to do lists and at the extreme to act with legal and moral principles in mind. Academically it appears as in difficulties with reading comprehension, especially of complex, uninteresting or extended reading assignments.
- **Difficulties with regulation of emotions, motivation and arousal** – this manifests as public manifestations of the emotions they are feeling in the moment that others would



inhibit – it is difficult to internalize their response. This manifests as being quick tempered and easily frustrated. With regards to motivation, it is difficult to remain on task with things that do not lead to immediate reward, stimulation or interest. They may appear unable to stay alert in situations that require them to initiate work that is uninteresting to them.

- **Greater than normal variability in task or work performance** – it is typical for those with ADHD to have significant variability in the performance of their work. Variability may occur with regards to accuracy and speed with the individual able to work quickly and accurately at some periods of time and at others, the task is performed poorly.
- **Reinforcement and ADHD:**
 - It should also be noted that when working with clients with ADHD, that reinforcers will need to be changed more frequently due to the quicker rate that these clients get bored with the reinforcer. In addition, according to Barkley (2015), students with ADHD are up to 30% less interested in reinforcers than other children, meaning a student with ADHD may want to engage with a toy; however, when access to that toy/activity is contingent on doing other things, then the student with ADHD will discount the value of the reinforcer by 30% - finding powerful reinforcers is critical.
- Executive function behaviours include:
 - Ability to demonstrate situational awareness and the expectations for that situation
 - Predict possible outcomes and recall past experiences
 - Generate a plan to achieve that outcome (even if it's a novel event)
 - Initiate appropriate actions and or responses to achieve this outcome
 - Monitor in an ongoing manner the success or failure of one's behaviour (planned vs. actual)
 - Modify performance based on self monitoring and situational awareness or expected and unexpected outcomes.
 - Shift flexibly between activities
- This YouTube video provides a 3 minute overview of EF challenges and how to recognize them: <https://www.youtube.com/watch?v=piVZL9uwJLg>.

NOTE: There is a movement within some ADHD researchers (including Barkley) to have ADHD renamed as an Executive Function Developmental Delay.

*** Best course of treatment is a combination of medication and behavioural therapy