

## HEALTH AND WELLNESS

### Executive functioning explained

By Dr. Linda Reinstein

You may have heard “executive functioning” talked about in relation to your child’s learning or behaviour or in relation to the cognitive changes associated with aging and dementia. The fact is, we rely on our executive functioning every day. But what is it, really?

If we think of reasoning abilities and problem-solving skills as our brain’s “natural resources,” executive functioning is our brain’s “resource management team.”

#### Team players

The resource management team is made up of a few key skills:

- Working memory. Your mental blackboard where you hold and manipulate information – mental math, calculating tip, remembering 3 things to do.
- Processing speed and efficiency. Your ability to quickly and accurately track, integrate, and sort through information – finding your lost keys, copy notes from the board.
- Inhibitory controls. These include your ability to regulate your actions and your emotions – thinking before you speak/act, tempering your frustration.
- Attention. Your ability to stay focussed. It also includes being

able to divide, sustain, selective/filter, and alternate attention.

#### Team mandate

The role of this team is execution – to use your natural resources in a productive, efficient, and effective way to get stuff done. Each Player, while responsible for their own job, also needs to be able to work on the team in coordinated and flexible ways.

The resource management team needs to work together to prioritize (tasks, goals, ideas), organize (belonging, ideas, time), and initiate (starting tasks). The team needs to make sure that natural resources are used flexibly to incorporate new information and to ensure that outcomes are monitored and plans adjusted if need be. Finally, the team helps you inhibit – tap the brakes to ensure that you don’t go into autopilot, to stop yourself from acting on your first idea, and to buy you time between action and reaction so that you respond with a level head and not out of frustration, aggravation, or “being triggered.”

#### Team in (mis)action

Consider a day in the life of Maria, a 10-year-old in Grade 5. She wakes up late, gets dressed, grabs her backpack and runs out the door to catch the bus – until she remembers

she forgot to pack her soccer cleats for after-school practice. She runs back into the house for her shoes but misses the bus. Her dad, annoyed that she did not pack her back ahead of time, drives her to school. In class, her teacher asks her a question about last night’s reading assignment but she cannot answer as she forgot to write that in her agenda and did not do the reading. At second nutrition break, she hangs with her friends. She dominates the conversation talking about her favourite video game but does not clue in that her friends have tuned her out as they don’t even play that game. After school, she shows up at soccer practice with her cleats on and ready to run. She gets the ball, runs down the field, and kicks the ball into the goal – the problem is that she hadn’t heard her teammates calling to her that she was going the wrong way. She scored against her own team. Maria arrives home embarrassed and dejected. After setting the table, her brother points out that she forgot the napkins. She loses her cool, screams at him, and runs off in tears. After dinner, Maria sits down to do her homework. She does not know where to start. Instead of starting her book report or math, she searches the ‘net for a topic for her Genius Hour project. By 10 pm, she finally begins her book report when her mother calls to her for the third time that she should be ready for bed. She crawls into bed but can’t fall asleep as she is worrying about her disinterested friends, her disappointed teammates, and her unfinished homework.

Maria’s resource management team clearly let her down today. She had trouble organizing her belongings, managing her time, and remaining on task. She had difficulty initiating tasks, as well as sustaining and shifting her attention. She did not monitor herself or her friends’ reactions to her. She had trouble managing her frustration with her brother and regulating/soothing her emotions in order to sleep.

#### Team development

For most kids, executive functioning develops slowly over time. The reason for this is rooted in the way our brains develop.

The “bullpen” for the resource management team is the brain’s prefrontal cortex, located at the very front of the brain, behind your forehead. This area of the brain continues to grow and develop until someone is about 25 years old. This means that the team is not fully functioning until early adulthood.

To complicate things even more, there are some people for whom there may have been a “bad hire” to the team – weak working memory, slow processing of information, poor inhibitory controls, etc. For others, it may be that, while each individual hire to the team was ok, the team itself does not work well together. Weak executive functioning skills means that as the complexity and/or number of tasks increases, the team is quickly maxed out. This interferes with the team’s optimal functioning to use natural resources to their fullest potential. Think of Maria and her terrible-horrible-no-good day.

#### Team building

While executive function skills develop slowly and are notoriously difficult to change, all is not lost. There are lots of ways to support better executive functioning.

Two psychologists, Drs. Dawson and Guare, developed a series of books called *Smart but Scattered*. Their books are chock full of real-life examples and practical strategies (e.g., how to use checklists/visual schedules for morning routines, self-calming strategies, plans to boost organization and motivation, to name a few). Based on the developmental nature of skills and tasks, the first of the series targets strategies for school-aged children, the second targets strategies for teens, and the third targets strategies for adults.

It comes down to having patience and understanding, teaching strategies and self-advocacy, providing support and, in some cases, accommodations to help the team fulfill its mandate across the lifespan.

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