

Executive Dysfunctions the Sleepy Secretary of

by Susan D. Rich, MD, MPH

As a child psychiatrist, parents often ask me to interpret reports of highly qualified, multiple-degreeed neuropsychologists. I have been challenged to accurately demystify complex results in ways that appropriately predict prognosis for bright children with executive functioning issues and ADHD, without demoralizing them or making them feel their child is disabled. The past several years have taught me to simplify the language in terms that are optimistic, goal-directed, and functionally relevant to my patients. This "Cliff Notes interpretation" of neuropsychological testing enables an abbreviated explanation tailored to the patient yet appropriate for private practice psychiatry settings. The approach is based on a premise that these conditions fall within a broad spectrum of normal human brain function, much like the idea of multiple intelligences within the classroom. The goal is to explain the differences in brain function without pathologizing the problem or stigmatizing the person. To preface this discussion, it is not written in formal "medical-ease" but instead to help create a scaffolding for discussions about diagnosis, treatment planning, and progress. – SDR

NEUROPSYCHOLOGISTS DESCRIBE EXECUTIVE FUNCTIONS (EFs) as initiation, attention, working memory, organization, processing speed, filtering information, and a variety of many other highly technical terms. Metaphorically, the EFs represent the "secretary" or "executive assistant" to the brain's "chief executive officer" or true intellect. (For younger children, the "school secretary" and "principal" may be described instead.) Breaking it down for patients and their families, the analogy of a secretary versus CEO depicts differences between the EFs and the general intelligence. Vitally important to support the "boss" of the brain—representing abilities in higher level problem solving, critical thinking, abstract reasoning, judging, understanding consequences, and predicting outcomes—the EFs cannot replace the general intellect.

In this scenario, secretarial functions include filing, organizing the office, scheduling appointments, sorting the mail, and other tasks that make the CEO's job a lot easier. Secretaries remember who just called on the phone long enough (i.e., working memory) to direct the call to the correct person in an ancillary department (i.e., processing) and to screen both visitors and callers (or extraneous noises, voices, information, thoughts) from reaching the CEO when s/he is busy. A good secretary is an efficient note-taker (uses shorthand in order to capture important information) and an acceptable editor (corrects typos and punctuation errors, dots the i's and crosses the t's). Although s/he may not grasp the ramifications of a multibillion dollar project, s/he is adept at looking at the details of a contract without being overwhelmed by the minutia.

A wonderfully gifted secretary is productive even when multitasking—while covering the phone line and front desk, s/he types a dictation or creates a memo. S/he is able to prioritize the work on her desk in order to know what must get done ASAP and what can wait until after lunch or tomorrow. Secretaries make to-do lists and follow them until completion, not too proud to make coffee if it puts the boss in a better mood in the morning, and show up on time, willing to work, and motivated to get any job done. S/he finds value in the work for the sake of having a job, is not too egotistical to make her boss look good, and understands that hard work and perseverance are the keys to success in overcoming challenges. Responsible for housekeeping functions of the brain, a fabulously poised secretary often makes the boss look efficient, organized, productive, task-oriented and on time—in turn, improving the boss's performance.

The sleepy secretary

When children (or adults) have executive functioning issues, the part of the brain in an area of the prefrontal cortex (just behind the eyebrows and forehead) is hypoactive or "sleepy." Using this analogy, a person with ADHD and/or executive functioning issues has a "sleepy secretary"—one that was out partying most of the night and came into work with little sleep and no coffee. Kids with "high engines" or hyperactivity are innately wired to rouse their sleepy secretary by movement (foot tapping, fidgeting, doodling, wiggling, standing up, or otherwise being in perpetual motion). This allows them to stay more alert and attentive despite the drowsy secretary. Impulsivity is the child's way of being an active participant in a discussion, classroom, family event, social activity, or other occasion while not fully connected to the "rhythm" of the other people they are around. They tend to blurt out answers, butt into conversations, ask inappropriate or off-topic questions, and jump into a situation before thinking about the consequences. Kids with



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and ADHD

sleepy secretaries are often difficult to awaken in the morning, leading to power struggles with their parents due to being late to school and grumpy at home.

The burnt-out boss

A complication to the sleepy secretary is the sleepy boss. For kids who aren't getting good sleep, their CEO or whole brain also comes to work sleepy—they stayed too late at the same office party their secretary closed down the night before. It turns out that many kids with ADHD don't sleep well because their brains secrete melatonin later in the evening than those without ADHD symptoms. In these cases, adrenaline then kicks in around the time they should be going to bed to hyper-arouse and re-energize the "low engine," overriding the effects of melatonin even when it is finally released. Not only is the secretary going to be less alert and less productive, but the boss will also be functioning at a minimal level of productivity. S/he will be unable to compensate for the sleepy secretary if s/he too is less awake and alert. Chronic sleep deprivation in these kids may seem a lot like going to work or school with a hangover or after a blackout the night before.

The burnt-out secretary

Most often, I see bright young women with EF issues and/or ADHD in my practice beginning in late middle school to high school or college who are burnt out, sleep deprived, and depressed from working their CEO into exhaustion. In these cases, the young women are eager to please, academically driven, and motivated to excel. Their anxiety propels them toward perfectionism, and their intellect is able to compensate somewhat for the hypoaroused prefrontal cortex. Since the secretary is less efficient and not doing her job promptly and on time, the CEO then steps in to answer the phone, schedule meetings, type memos and file the paperwork. These are all tasks the CEO can do but that make his or her job more difficult, slowing down productivity and decreasing optimal functioning.

Ultimately, chronic sleep deprivation results from the CEO forcing them both to burn the midnight oil in order to make up for inefficiency and procrastination earlier in the day. On the other hand, even the most talented, self-motivated secretary cannot do the CEO's job—making huge business decisions, consolidating massive amounts of information, recognizing the bigger picture, and creating strategies for improving the company's assets. The other caveat is that, within a single person's brain, there is no way to fire one's secretary any more than a CEO would fire his mother if she worked for him. So, the highly intelligent person with faulty EFs begins to recognize trouble when the expectations and academic demands of school begin to exceed the CEO's ability to do his/her job plus the secretary's. Very often, this occurs in late middle school to high school or the first few years of college.

The medicated secretary

Medication serves to artificially arouse the hypoactive prefrontal cortex by acting like a cup of coffee for the sleepy secretary. Children



who experience side effects from medications as well as those with ADHD and anxiety, depression, or other co-occurring disorders are referred to child psychiatrists. Many parents of children with garden-variety ADHD and mild executive functioning issues never consider taking their child to a child psychiatrist. Their children are treated by a pediatrician, often with stimulant medication. They may not be identified until middle school or high school, when it becomes harder to secure a 504 plan for academic accommodations. For some, stimulant medications may exacerbate underlying anxiety disorders, leading to obsessions, compulsions, crying episodes, poor frustration tolerance, and motor or vocal tics. Stimulants can also trigger changes in mood, irritability, sleep problems, poor appetite, and lethargy. Psychotic episodes are infrequently triggered by rapidly increasing the dose of a stimulant or restarting at a previously therapeutic dose after months off a stimulant medication.

The meditating secretary

Meditation and medication have a lot more in common even than one may think at first glance. Often I remark that they only have one letter different. Mindfulness as a goal of meditation is the act of letting go of all extraneous thought except what the teacher's voice is saying, what one is reading, or the conversation one is having with a friend. In order to actively connect to the moment, one can focus on one's breath while letting go of all thoughts. In this analogy, a person is taught to fill his or her head with air like a balloon while breathing in deeply through the nose, collect all thoughts/worries/discomfort within the breath, then breathe out through the mouth—imagining letting all the thoughts/worries/discomforts expel with the breath. The person is taught to actively notice the thoughts/worries/discomfort but to let go of them gently with each breath.

Over time, this method of meditation can improve focus, concentration, attention, efficiency, productivity, and performance. It is a technique used by highly trained athletes to "get in the zone," by actors and politicians to overcome stage fright, by patients with high blood pressure and heart disease to lower their stress levels, and by yogis and

magicians to control their autonomic functions in order to accomplish miraculous, death-defying feats. Children with ADHD and EF issues, as well as anxiety and other emotional issues, can train themselves to meditate in order to keep their secretaries focused, alert, actively engaged in learning, and slow down their engine long enough to think twice about what they want to say in class or the answer they want to choose on a test. It is a way in which we as humans can tune into our own unique rhythm that brings us in closer harmony with those around us.

The accommodated secretary

Highly intelligent, hard-working kids can adapt and compensate for mild to moderate executive functioning issues by training their secretary to sleep well, show up on time, stay alert, create lists and complete the items, and drill, drill, drill the information into their brains. They learn other important coping skills such as organizational strategies (using color-coded binders and recopied notes, for example), reminders, calendars, phone alarms for appointments, and structure for staying on task. Making one's bed before leaving the house is a way to feel more productive every morning and less distracted when coming home to do schoolwork. Simply put, a bedroom looks much tidier if the bed is made and the clothes are put in a laundry bin. Other ways of organizing include putting shelves in the closet with odds and ends that would otherwise clutter the room—putting papers and mementos in labeled shoeboxes that can be cleaned out and purged periodically.

A child psychiatrist's approach

My approach is to first get the child or adolescent sleeping the adequate number of hours required for his or her age. Most parents are unaware that post-pubescent youngsters still need about nine-and-a-quarter hours of sleep. Children in the tween stages (ages ten to thirteen) need around nine-and-a-half to ten hours. It still baffles me when parents seem confused as to why their elementary to high school aged children have meltdowns, irritability, and two-year-old temper tantrums. They seem shocked to learn that the child getting eight hours or less of

sleep per night is grumpy because he or she isn't sleeping enough—or are napping, which serves to worsen sleep dysregulation.

Normally, I suggest a thirty-day trial of my strategy of getting adequate sleep, unplugging from electronics for two hours consistently after school to focus on homework and studying, and avoiding napping which can further exacerbate the sleep cycle dysregulation. Once children or adolescents are getting an adequate amount of consolidated sleep for their age, they often require less medication, respond better to accommodations, and are more apt to complete their homework in a timely manner.

There is evidence that children encouraged by statements like, "You are really smart, you should be able to do it," perform more poorly on standardized testing than their matched counterparts who are praised for their determination and "stick-to-itiveness." As my grandmother always told me, "There is nothing you can't do if you put your mind to it!" My motto is, "What separates a smart person from a successful student is hard work and perseverance." I encourage my patients to minimize distractions of electronics and social media, discipline themselves to study efficiently (using learned tools and coping strategies), and reframe homework completion as satisfying productivity instead of busywork. I encourage parents of children and adolescents to avoid micromanaging homework in order to foster independent learning in the child, and to praise the child for diligence, fastidiousness (for example, making his/her bed in the morning), and the accomplishment of effort rather than grades.

MOST ANALOGIES AND METAPHORS

come from our own life experiences. Over my childhood, adolescence and young adulthood, I watched my stepmother work her way up from the typing pool to become a purchasing agent and then a buyer for a large manufacturer of yachts. Growing up in the South, my father wanted me to follow in her footsteps as a secretary and was dismayed when I brought home the only B on my report card in typing. He believed I wouldn't get a job with a B in typing. When I countered that the purpose of typing class was to be able to type my own term papers in college, he retorted that college would educate me beyond my intelligence and I would never get married if I went that route. Despite my twenty-eight years of education, each time I jam my photo copier/scanner/printer/fax machine, I'm reminded why I didn't become a secretary. At the same time, I'm glad I learned how to type and developed my own executive functioning skills to help my CEO be efficient and successful! - SDR

Distractions from career goals

My patients often hear me say, "In times of catastrophe, I want as many people with ADHD on my side to solve the problem—they act quickly, run on adrenaline, and think outside the box—all great qualities of emergency response teams and entrepreneurs!" Truth be told, many kids with ADHD in my practice are children of entrepreneurs and emergency room physicians. During discussions of family history, the successful parent with ADHD will frequently admit to having taken medication in the past or currently. Genetically speaking, the apple doesn't fall far from the tree!

Twenty to thirty years ago, it was much easier for the intelligent student to compensate for a "sleepy secretary." There were certainly far fewer distractions—television, cell phones, video games, social media, and other forms of electronics that feed procrastination, loss of productivity, and inefficiency in even the most intelligent adolescents. Smart, hard-working students could more easily overcome EF issues and ADHD by determination and postponing gratification.

The instantaneous gratification of cell phones, video games, instant messaging, texting, video chatting, and other forms of media limits one's drive and motivation for careers requiring years of intensive study. Helping youngsters find their hidden passion, meaning in life, and purpose on the planet is always a goal of my work with patients with EF issues and/or ADHD—to motivate, inspire, encourage, and believe they can reach their realistic goals in life.

In that spirit, the sleepy secretary analogy serves to promote the philosophy that a belief in oneself, working hard, and persevering despite academic adversity diminishes moments of frustration and can help improve one's self-esteem, motivation, and confidence. ●