

# **ADD Demystified: What You Really Need to Know**

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Almost everyone has heard of ADD/ADHD. Most people have opinions about it; some have very strong, even militant, opinions. It is common to know people with ADD, or to find out that someone you know has ADD. Whether communicated by relieved announcement or decried through hushed whispers, ADD tends to stir emotions and attitudes in those who live with it or around it. This condition — ostensibly a deficiency of attention — draws ironically to itself a remarkable amount of attention, as if to make up for its namesake. There are ADD organizations, ADD pharmaceuticals, laws about ADD, treatments for it, diagnostic guidelines — yet, there little agreement (in the broad consensus) about what ADD is, how to diagnose it, and how to treat it.

Those who take issue with the assertion about consensus are camped in the medical mainstream, where the pharmaceutical monolith has prevailed, along with dogma necessary to justify the prolific drugging of the populace. Despite the comfort in numbers (both acolytes and sales figures), the medical model still embraces a naked emperor with regard to the rigors of identifying a unitary entity called ADD. The reality is that the conglomerate of impairment and marginalized function lumped into the ADD diagnosis has been evident for a very long time, subsumed under different labels and targeted by numerous and sundry attempts to control it, deny it, or minimize its impact.

The problem with defining and identifying ADD is that the brain has little regard for our attempts to classify it. It simply does not follow the rules of publication in the psychiatric manuals. Symptoms, behaviors, and personality patterns “leak” and “creep” across brackets of diagnoses and categories. This recognition is fortuitous; aside from its fidelity with the reality of individual differences and brain functions, the cross migration of symptoms across diagnoses parallels the discovery that treatments designed for one condition are often very effective for others. This holds true for many mental and developmental conditions, as well as for treatment interventions including pharmacological, behavioral, neurocognitive, and energy-based approaches.

ADD doesn't care what you call it. Those afflicted just want to feel better and function better. Fortunately, a model exists for understanding and simplifying ADD in a manner consistent with and true to its essential characteristics. This characterization lends uncanny accuracy and practical utility without compromising medical theories, oversimplifying the diagnosis, or generalizing the disorder to the point of overinclusion. Happily, the model also lends itself to practical solutions for the problems of ADD.

This model is known as the *disregulation model*. The essential common denominator that characterizes all ADD/ADHD and that manifests in such a variety of seemingly disparate symptoms and diagnoses is *disregulation*. This term refers to the uneven, inconsistent, sporadic, or irregular management by the brain and nervous system of the internal housekeeping functions of the body and mind.

*Disregulation* is the touchstone for the relevant and distinguishing characteristics of ADD/ADHD. It is also the fundamental underlying mechanism by which we can control and improve mental functioning and behavior. The core characteristics of ADD/ADHD (underpinned by disregulation), can be relieved and the brain regulated through the vehicle of EEG neurofeedback training.

These characteristics are:

### **1. Disregulation of the arousal system**

Just as the human body has systems for respiration, digestion, circulation, cell rebuilding, etc., it also has a system for managing arousal. Arousal refers to states of excitation and relaxation that are in constant relationship with each other. Think of picking up a cup and then setting it down and letting go. Your muscles must tense to grip the cup, and must relax to release your grip. The nervous system performs similarly with regard to excitation and relaxation. This continuous feedback loop is described technically as the activity of the sympathetic and parasympathetic nervous system. This activity controls states of attention, wakefulness and sleepiness, impulsivity, mood, awareness, and inhibition/disinhibition.

The arousal system manages or regulates a person's appetites, perceptions, and abilities to control, soothe, gear up, and modulate oneself. It may be likened to a biological thermostat that regulates internal housekeeping. When this thermostat malfunctions or works only intermittently, the resulting glitches in the continual and automatic adjustment of arousal functions give rise to symptoms and functional disruptions.

This fluctuation and irregular management of arousal is at the core of ADD, and it results in a variety of behavioral, emotional, and physical symptoms (such as anger, moodiness, difficulty concentrating, anxiety, sleep problems, etc.). It also leads to inconsistencies in performance.

The aspect of arousal regulation is so important that all of ADD revolves around it. Indeed, a more precise term than attention deficit disorder would be arousal disregulation disorder.

Neuroscientists describe brain function in terms of activation. A brain that is calm, alert, and processing functionally is said to be activated. A de-activated brain exerts less differentiation over its electrical activity, its neurotransmission, and, consequently, its self-management and outward responses. A disregulated brain has trouble activating and resting, recognizing and shifting from a de-activated state.

ADD is characterized by disregulation in brain activation, often reflected in the activation management of the EEG. Although the EEG may not typically show morphological abnormalities (marked deviations in the type or structure of the brain waves), the EEGs of ADD people are often less differentiated, less activated, and less responsive to internal and external cues requiring shifts in activation states.

## **2. Poor integration with environmental demands**

A common complaint about ADD children is that they do, in fact, pay attention, but mostly to what interests them. Usually they can sustain attention for prolonged periods when they are engaged in activities of their choice. Perhaps you've heard or echoed the refrain, "It's amazing how he can sit and play video games for hours, but he can't pay attention to his work for more than two minutes!"

Disregulation of arousal predisposes people to become drawn to (possibly fixated or "stuck" on) highly stimulating, novel, and even risky activities because the activity stimulates their brain and makes them feel involved, even more normal. (This is also why stimulant medications work to make people pay better attention.) When the nervous system is underaroused, substances or activities that boost arousal become desirable, and may become addictive.

People with ADD have atypically inconsistent performance. This is due to fluctuations in arousal management. By contrast, what is notable is their consistently better performance on tasks they select and on time schedules that suit them. Realistically, most of us are more interested and involved in activities we prefer. The difference with ADD folks is that their performances on tasks they choose is markedly better than on those delegated to them. This selective attention factor (so entwined with arousal) also reflects in the difficulty ADD individuals have with schedules, deadlines, timeliness, and conformity. People with ADD tend to function at much higher levels when they choose what they will do and when they will do it. Schedules, specifications, and demands imposed from the environment (even routine cues like bed time and waking time) can present huge problems in handling daily life.

Parents and teachers often notice that ADD children have trouble transitioning or shifting from one activity to another. This, too, is a manifestation of disregulation — taking cues from the environment and integrating its demands requires fluidity of arousal. The brain has to shift gears and modify brainwaves — something usually quite difficult for the ADD person.

## **3. Perceptual focus problems**

A hallmark of ADD is distractibility, the faltering of attention and its ready disruption by random stimuli unrelated to the intended focus. Many ADD people are overly sensitive to sounds and other stimuli that intrude in their consciousness and vie for their attention.

Whether or not distractibility is an overt problem, the disregulation that underlies it invariably causes perceptual differences that throw the ADD person off track. Thus, novel stimuli or unique components elicit selective attention. While this can result in refreshing creativity and original perspectives, it frequently leads the ADD person to focus on unconventional, less relevant, and less productive aspects of a situation or problem. This leads to greater peripheral activity and reduced goal attainment.

Disregulation sponsors idiosyncrasies in perception that make less important details seem salient. It promotes a perceptual style that predisposes the ADD individual to attend to the urgent rather than the important. It can cloud judgment and boost impulsivity. Perceptual anomalies can also color information processing and make it more arduous and inefficient.

Perceptual distortions are much more likely when you study postage stamps from across the room, or you watch a movie with your nose pressed to the big screen. Though these may seem like metaphorical exaggerations, they typify the perceptual idiosyncrasies to which the ADD mind is prone.

We refer to this phenomenon as the “zoom lens malfunction.” On a video camera, the zoom apparatus allows you to zoom in for detail and zoom out for the bigger picture. Our brains have to do this, too. Otherwise, we lose perspective, overfocus, miss important details, miss social and nonverbal cues, and leave ourselves at risk. Get the picture? Most ADD people struggle mightily with the zoom lens function.

#### **4. Stressed brain syndrome**

A very familiar scenario is repeated routinely for those with ADD: The person applies himself to a task... and gets stuck! Some people freeze up, some become frustrated or angry, some give up easily, some redouble their efforts. The effect is ironically similar: The harder the person tries, the more his brain stresses and the less efficient his performance becomes. (This has been documented repeatedly by medical imaging studies of the ADD brain under challenge conditions.)

This is indeed a defining characteristic of ADD. However, since the average person can't see this relationship, its repeated occurrence often brands the ADD person as lazy. This is both tragic and inaccurate. The reality is that normal brain function depends upon the intermittent recurrence of the resting response within a period of exertion or challenge. Because the ADD brain has not learned to rest when challenged, it goes into overdrive and stalls or freezes. People who recognize this episode sometimes term it “brain lock.” Most ADD people simply experience the discomfort, restlessness, and shame of not measuring up to the challenge. Then, the avoidance or release mechanisms kick in, and the task gets abandoned while the person gets criticized.

#### **5. Compromised flexibility**

Flexibility involves the ability to change set or perspective, to view things from different vantage points, to shift gears when necessary, to vary one's repertoire. It is essentially “the ability to drive at the speed appropriate for the conditions.”

By definition, flexibility involves making adjustments; and making adjustments presupposes a functional frame of reference, and adequate monitoring and evaluation. Disregulation throws a

monkeywrench into these works. When the gearshift gets jammed, it's hard to make timely adjustments. This is the situation that poorly regulated ADD people face every day.

One tool and one speed will only carry you so far in a world with plentiful variation, complexity, changing circumstances, and demands. Compromised flexibility is a liability that the ADD person can ill-afford, but usually has.

In dealing with ADD, it is vital to correct the disregulated condition. When the brain becomes organized and self-regulated, symptoms from seemingly disparate origins ameliorate. Behavior improves, concentration and focus increase, sleep normalizes, and moods become more even.

What a marvelous testimony to the innate flexibility and plasticity of the human brain! These inherent capabilities can be activated through brainwave training, known as EEG biofeedback or neurofeedback.

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