

EDITORIAL

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ATTENTION DEFICIT DISORDERS (ADD) BIOGENIC ASPECTS

Attention deficit disorder (ADD) is a widespread affliction that we are just beginning to understand. It afflicts between three million and four million children in the United States, and probably a larger number of adults. It is considered the most common pediatric disorder. It is a compulsive disorder, usually genetic in origin, that results from imbalances of neurotransmitters, the messengers that communicate between the neurons in the brain. It strikes in childhood, and continues into adulthood. Its effects can be eased by treatment and counseling.

Symptoms

People with ADD suffer from overload; that is, they have a heightened awareness of incoming stimuli, particularly sight, sound, and touch. They are so bombarded by the normal stimuli in their environment they cannot filter out the background "noise" and concentrate on the task before them.

They have trouble focusing on a problem or task. With a short attention span, they forget appointments, forget to pay bills, miss deadlines, have frequent legal difficulties because they do not take care of problems as they arise. Always in a hurry, they have trouble settling on a goal or objective.

ADD people tend to be disorganized. Children have messy rooms; adults have cluttered desks; daily activities tend to be chaotic. At all ages they have trouble making plans, and even more trouble in carrying out plans in an orderly fashion.

Because of their inability to focus,

ADD people have trouble completing what they start. They leave tasks unfinished, plans unrealized. Attics and basements are likely to be filled with partly completed sewing projects, woodworking projects, repairs; notebooks and desk drawers are likely to be cluttered with unfinished letters, outlines and project plans.

ADD has nothing to do with intelligence; many people with the disorder are highly intelligent. But they tend to be underachievers because they can't concentrate or sustain interest. As a result, family, friends, and co-workers become impatient and expect them to fail.

ADD people have trouble adapting to change. Their life is so full of tumult, even a minor additional change in their routine can be upsetting. A parent goes away on a trip, a new teacher takes over a class, the family moves to a new city, a pet dies--any such change can create a crisis for a person with ADD.

Add people live under such stress they can't tolerate frustration, and when they are frustrated they are likely to become angry. The anger tends to come suddenly and explosively--slamming doors, harsh words--a tantrum. Children get into fights, adults blow up and lose jobs and alienate friends. Afterwards they are sorry, but the damage is done.

With their high level of frustration, ADD people are impatient. They hate to wait in line, and delays of any kind make them frantic. Whatever is going on--a trip, a movie, a class, a discussion--they want it to go quickly and be finished.

The tendency toward impatience

makes ADD people impulsive. As children they leap into action without thinking the consequences. As adults, they drive too fast, use power tools carelessly, and plunge into activities without thinking of the consequences. The result is they often hurt themselves or others.

ADD people have trouble with their orientation to time and space. They may have to stop and think which is their right hand and which is their left; they may have difficulty following a set of instructions, or reading a map, or telling time.

Many ADD people are hyperactive. As babies or children they are constantly on the move, squirming and twisting, and getting into everything. As adults, they are restless, easily bored, rebellious when asked to follow a routine, always on the move.

If you draw back and look at these symptoms together, a picture emerge: an individual suffering from overload, trying to adjust to a world that is too bright, too loud, too abrasive, too rapidly changing for comfort.

Etiology

What are the causes? The immediate cause is that ADD people are afflicted with a defective filtering system; in other words, their brain does not block out irrelevant stimuli. They are aware of every sound, every object, every touch, and they all merge in a disorganized, unbearable bedlam. Non-essential stimuli get the same attention as those essential to work or relating to other people.

At a deeper level, it is a problem of communication among neurons. Neurotransmitters in ADD people may be in short supply. It's the ones that inhibit messages are deficient (i.e. GABA), too many signals get through and create confusion.

At a still deeper level, the problem

lies in the genes that lay down the blueprint for manufacturing neurotransmitters. It has been conjectured that people with ADD may have a defective gene that makes it difficult for neurons to respond to dopamine, the neurotransmitter that is involved in feelings of pleasure and the regulation of attention. In one study, 49% of ADHD children carried A1 allele of the D2 dopamine receptor gene.

Another difference in ADD people is that they have abnormal brain wave patterns. Their Beta waves--brain waves associated with concentration are low, and their Theta waves--associated with relaxation are high. It is not surprising, therefore, that activities associated with Beta waves--watchful anticipation, problem solving-- are difficult for ADD people to sustain. They like activities that permit them to staying a Theta state with a minimum of outside stimulation. Moreover, in hyperactive adult probands, an 8% reduction of brain oxygenation was observed.

But ADD people can learn to cope. They can avoid situations that generate stress; avoid crowds and noisy environments; give themselves plenty of time and avoid tight deadlines; avoid rapid changes in environment.

Co-Morbid Polysubstance Abuse

The most destructive coping strategy is self-medication with alcohol or drugs. Such substances give the illusion that they are making life easier and more pleasant, for the symptoms seem to disappear. But the addiction quickly takes over, and life becomes a nightmare. Then, when they withdraw from the alcohol or drug, the ADD problems return in full force. It is well-documented that children diagnosed with both ADHD and comorbid conduct disorder have a 5.5 times

greater risk for later onset of alcohol/drug abuse than the normal population.

The inherent tragedy here is that the ADD person is genetically at risk of developing an addiction. The same neurochemical imbalance in their brain that produces ADD also produces a predisposition to impulsive, addictive, compulsive behaviors, and therefore should not be administered a cocaine-like surrogate such as Ritalin™.

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A Treatment Model

Many chiropractors have had much

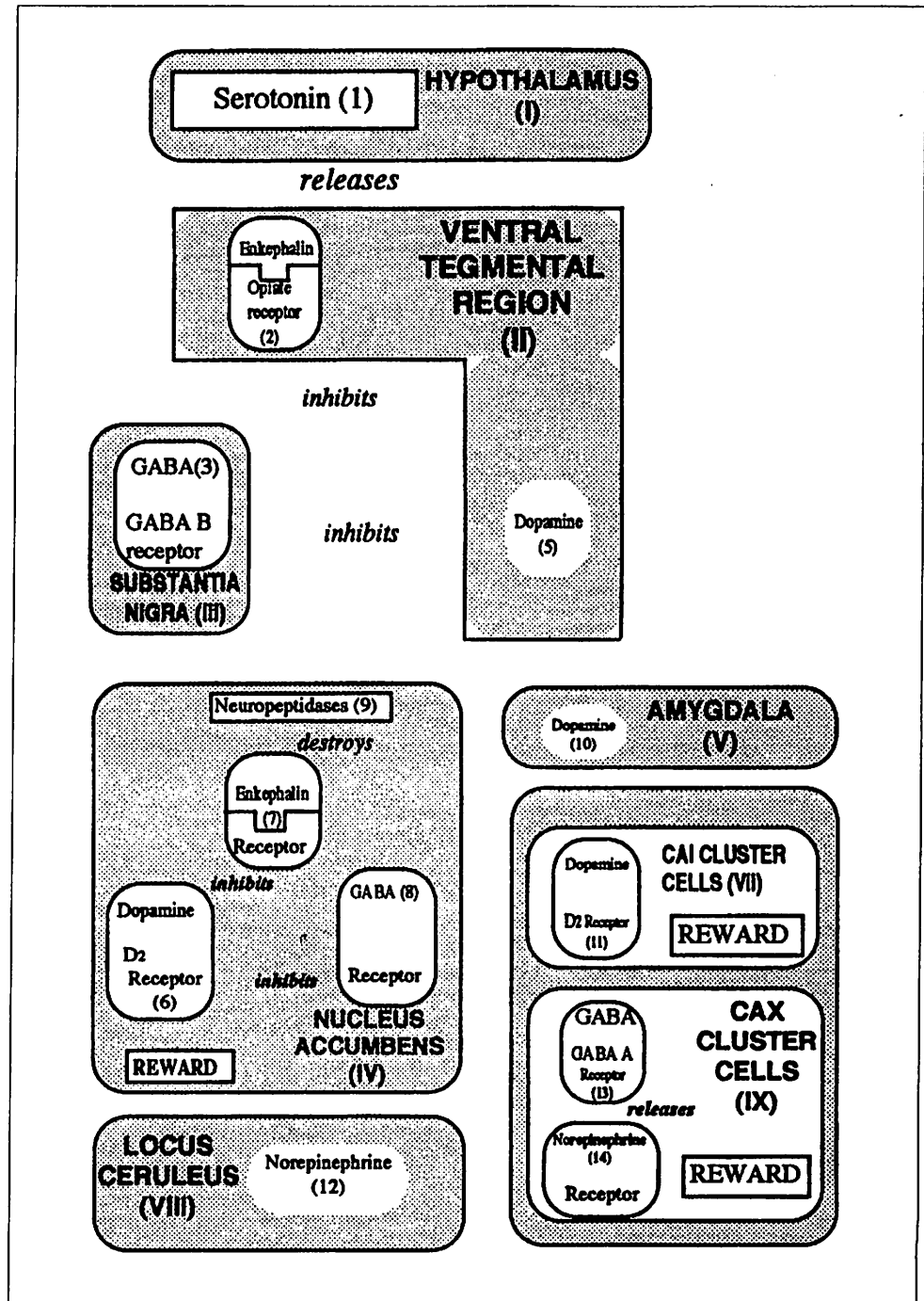


Figure 1. Mesolimbic system's brain reward cascade of neurotransmitter mechanisms.

anecdotal success with ADHD patients that have received subluxation based chiropractic.

Present research is beginning to reveal the model for the mechanism of how subluxation based chiropractic works.

Let's take a closer look at the pleasure center of the brain. A state of well being is manifest when the mesolimbic system's brain reward cascade (Figure 1) of neurotransmitter mechanisms is expressed without interference. The vertebral motor units are in intimate relationship with the brain reward cascade mechanism by virtue of the nociceptive reflex from vertebrae to limbic system. This may explain our recent finding that only vertebrates have opiate receptors and our supposition that only vertebrates experience a state of well being. Ergo, if a subluxation is manifest, interference in our ability to experience or our potential to fulfill a state of well being exists.

As our present research continues to unfold, information will be revealed that will allow us to understand why subluxation based chiropractic affords us the ability to feel better about ourselves, develop our greater potentials and allow our bodies and mind to be near perfect.

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