What Psychologists and Therapists Need To Know About ADHD and Stimulants

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Stimulant drugs like Ritalin damage the brains of growing children and suppress behaviour irespective of diagnosis or any supposed disorder. This paper appeals to counsellors and others to protest about the systematic drugging of children.

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In the United States, non-medical therapists—especially psychologists and counsellors—play a pivotal role in decisions about the appropriateness of prescribing stimulant medication to children. Advocates of stimulant medication frequently try to 'educate' school mental health professionals to make them more enthusiastic about diagnosing Attention Deficit/Hyperactivity Disorder (ADHD) and encouraging medication.

Most recommendations for stimulant drugs in the United States originate from schools. School psychologists and counsellors therefore need a thorough understanding of the mechanism of action of stimulants, as well as their many adverse effects. Until recently, most of the information has been generated by individuals with strong vested interests in what may be called the ADHD/stimulant lobby.

As a psychiatrist, my own research into the mechanism of action and adverse effects of drugs dates back several decades. I first wrote extensively about ADHD and stimulant drugs in *Toxic Psychiatry* (1993) and then again in *Talking Back to Ritalin* (1998). In November 1999 I was invited by the National Institutes of Health (NIH) to be the scientific expert on 'Risks and Mechanism of Action of Stimulant Drugs' at the 'Consensus Development Conference on ADHD and its Treatment' sponsored by the two government agencies. This paper draws on the research presented in my books and at that conference (Breggin, 1999a; b). Drawing largely on double-blind placebo-controlled clinical trials and on animal laboratory research, this paper will focus on the emotional and behavioural effects of dexamphetamine (e.g. Dexedrine, Adderall) and methylphenidate (Ritalin). Emphasis will be placed on two

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relatively ignored areas: the mechanism of action that enforces specific behaviours and adverse drug effects on the central nervous system, mental life, and behaviour of the child. An overview of all adverse reactions will also be provided.

The mechanism of action: effects on animals

Stimulant drugs lend themselves readily to suppressing behaviours that are unwanted in the classroom or highly controlled family situations, and for enforcing obsessive-compulsive behaviours that adults desire in the classroom or the controlled family. Animals, like children, have spontaneous tendencies to move about, to explore, to innovate, to play, to exercise, and to socialize. Dozens of studies have shown that stimulant drugs suppress all of these spontaneous tendencies, sometimes completing inhibiting them (see, for example, Breggin, 1999a; b). In effect, the animals lose their 'vitality' or 'spirit'. They become more docile and manageable.

Animals, like children, resist boring, routine, rote, or meaningless tasks. As documented in dozens of laboratory studies, stimulant drugs enforce these behaviours in animals, producing what is called *stereotypy* or *perseveration* in animal research. In human research it is called obsessive-compulsive or over-focused behaviour. For example, instead of struggling to escape a cage, the animal will sit relatively still carrying on rote, useless behaviours, such as compulsive grooming, chewing on its paws, or staring into the corner. If the drugged animal does move about, it will pace a constricted area in a purposeless manner.

In summary, in animals, stimulant drugs (1) suppress spontaneous and social behaviours, rendering them more submissive and manageable, and (2) they enforce perseveration or obsessive-compulsive over-focusing.

The mechanism of action: emotional and behavioural effects on children

The effects of stimulants on children are identical to those in animals. This is not surprising since the basic biochemical or neurological impact is the same. Similarly, the effects on children are the same regardless of the child's mental state or diagnosis.

Drawing on double-blind studies, Table 1 lists the adverse drug reactions (ADRs) of stimulant drugs that lend themselves to being easily mistaken for improvement in the child. The chart is divided into three categories of stimulant ADRs: (1) Obsessive-compulsive ADRs, such as over-focusing, cognitive perseveration, inflexibility of thinking, and stereotypical activities; (2) social

withdrawal ADRs, such as social withdrawal and isolation, reduced social interactions and responsiveness, and reduced play; and (3) behaviourally suppressive ADRs, such as compliance, reduced curiosity, reduced spontaneity, and behaviours that are subdued, depressed, apathetic, lethargic, and bland. Some studies have shown that most children become sad and unhappy, lethargic, and disinterested in others while taking stimulant drugs.

Stimulants commonly cause obsessive-compulsive behaviours, including over-focusing, that are similar to stereotypy in animals. In one study involving a single small dose of methylphenidate on the day of the experiment, over-focusing in 42% of children was disclosed. Another found that 25% of children on methylphenidate developed obsessive-compulsive ADRs. A thorough study of the subject found that 51% of children taking methylphenidate and dextroamphetamine developed obsessive-compulsive ADRs. Some children exhausted themselves raking leaves or playing the same game over and over again. The authors of these and related studies note that these behaviours are sometimes considered improvements in the classroom.

These data in this section, derived from several controlled clinical trials, further confirm the emotional and behavioural suppression caused by stimulant drugs.

More extreme emotional and behavioural effects

Swanson et al. (1992) reviewed 'cognitive toxicity' produced by methylphenidate. They summarize the more extreme effects on children:

> *In some disruptive children, drug-induced compliant behavior may be accompanied by isolated, withdrawn, and overfocused behavior. Some medicated children may seem 'zombie-like' and high doses which make ADHD children more 'somber', 'quiet' and 'still' may produce social isolation by increasing 'time spent alone' and decreasing 'time spent in positive interaction' on the playground.* (Swanson et al., 1992, p.15)

Arnold and Jensen (1995) also comment on the 'zombie' effect caused by stimulants:

> *The amphetamine look, a pinched, somber expression, is harmless in itself but worrisome to parents, who can be reassured. If it becomes too serious, a different stimulant may be more tolerable. The behavioral equivalent, the 'zombie' constriction of affect and spontaneity, may respond to a reduction of dosage, but sometimes necessitates a change of drug.* (p.2307)

The 'zombie' effect is mentioned by a number of other investigators. It is a more extreme manifestation of the supposedly 'therapeutic' effect that make a child more compliant, docile, and easier to manage. When a child seems more compliant in class or seems to attend more readily to boring, rote activities, the child is experiencing an adverse drug reaction. The seeming 'improvement' is an expression of a continuum of drug toxicity with the zombie effect at one extreme. The toxicity is considered 'therapeutic' unless it becomes so extreme that the child seems bizarre or disabled.

Excitatory adverse effects

As already described in detail, routine stimulant doses given to children or adults commonly cause ADRs that seem paradoxical, such as depression, lethargy, and apathy (see Tables 1 and 2). It is uncertain why stimulants at clinical doses so commonly cause these suppressive effects.

Stimulants also cause more classic signs of over-stimulation or excitation, such as anxiety, agitation, aggressivity, and insomnia, as well as manic psychoses and seizures. Often the stimulant ADRs occur in combination with the more suppressive effects, as in a mixture of agitation and depression. Frequently stimulants cause tachycardia and cardiac arrhythmias, and can even weaken heart muscle. The U.S. Food and Drug Administration has received many reports of methylphenidate-induced heart attack.

The overall list of stimulant ADRs is much too extensive for inclusion in this paper. Table 2 draws on several independent sources to present an overview. More detail and further documentation for all of the adverse drug effects mentioned in this paper can be found in my reviews. Many doctors seem unaware of the varied nature of stimulant ADRs. Often they mistake these drug reactions for the surfacing of new psychiatric disorders in the child and mistakenly increase the dose or add further medications, instead of stopping the stimulants.

Gross and irreversible brain dysfunction

In addition to the many serious central nervous system ADRs that are apparent in the child's behaviour, stimulants also cause gross brain function. Methylphenidate, for example, in routine doses causes a 23%-30% drop in blood flow to the brain in volunteers. All stimulants directly disrupt at least three neurotransmitter systems (dopamine, norepinephrine, and serotonin). There is strong evidence that stimulant-induced biochemical changes in the brain can

become irreversible, especially in regard to amphetamine and methamphetamine which can cause permanent neurotransmitter system changes and cell death (for example, Melega et al., 1997a; b). A study by Nasrallah and others (1986) demonstrated that adults can develop atrophy of the brain after being treated with stimulants as children.

Through a combination of anorexia and disruption of growth hormone, stimulants also inhibit growth, including the growth of the brain. Bathing a child's growing brain in toxic chemicals must ultimately impair its development.

Stimulants are highly addictive. The U.S. Drug Enforcement Administration and the International places methylphenidate, amphetamine, and methamphetamine into Schedule II along with cocaine and morphine as the most addictive drugs used in medicine. Recent studies indicate that children who are treated with Ritalin will have a higher rate of stimulant addiction (including cocaine) as young adults (Lambert and Hartsough, in press). The DEA and the International Narcotics Control Board have both issued warnings about the danger of widespread stimulant prescription in North America. The United States uses 90% of the world's methylphenidate.

Typical of addictive drugs, they often cause withdrawal or rebound. Rebound commonly occurs after only one or two doses in normal children, and it can last many hours and even more than a day. During rebound, the child's original ADHD-like symptoms may become worse than before the drug was ever taken, including hypomania and mania. Even when children do not become addicted to stimulants, they often give them away or sell them to friends who abuse them.

Stimulants commonly cause tics and other abnormal movements, and sometimes these become irreversible. Often the tics occur along with obsessive-compulsive symptoms. Too often, drug-induced ADRs lead mistakenly to the prescription of other psychiatric drugs rather than to the termination of the stimulant.

ADHD and the rationalization stimulant effectiveness

The concept of ADHD was developed to rationalize a pre-existing motivation within medicine and psychology to use stimulant drugs to control the behaviour of children. From the beginning, the focus was on classroom settings in which one-to-one attention is not available. ADHD as a diagnosis evolved as a convenient list of various behaviours that tend to disrupt a classroom and to require additional or special attention from teachers or other adults. Almost any behaviour that tries a teacher's ability or patience, or drains a teacher's energy and attention, has been put into the diagnosis.

A simple reminder about the official criterion for ADHD in the *Diagnostic and Statistical Manual of Mental Disorders, IV* published by the American Psychiatric Association in 1994. The list focuses on behaviours that interfere with an orderly, quiet, controlled classroom. The first criterion under *hyperactivity* is 'often fidgets with hands or feet or squirms in seat' and the second is 'often leaves seat in classroom or in other situations in which remaining seating is expected'. The first criterion under *impulsivity* is 'often blurts out answers before questions have been completed' and the second is 'often has difficulty awaiting turn'. Under *inattention* the first criterion is 'often fails to give close attention to details or makes careless mistakes in schoolwork, work, and other activities'. None of the ADHD criteria are relevant to how the child feels. Mental and emotional symptoms, such as anxiety or depression, are not included.

All of the behaviours in the ADHD diagnosis are commonly displayed by children in groups where they are frustrated, anxious, bored, or receive too little attention. Individually, each of the behaviours represents normal developmental stages. Of course, the behaviours can become exaggerated. A child can become extremely hyperactive, impulsive, or inattentive. These behaviours, even when extreme, do not constitute a syndrome—a consistent pattern of symptoms related to a specific cause.

In *Talking Back to Ritalin* I have catalogued dozens of 'causes' for ADHD-like behaviour. Most commonly it is the expression of a normal child who is bored, frustrated, frightened, angry, or emotionally injured, undisciplined, lonely, too far behind in class, too far ahead of the class, or otherwise in need of special attention that is not being provided. More rarely, the child may be suffering from a genuine physical disorder, such as a head injury or thyroid disorder, that requires special medical attention rather than stimulant medication.

ADHD as conflict

ADHD-like behaviours in a child almost always indicate a *conflict* between the child and adults in the child's life, especially adult expectations for submissive, conforming, or compliant behaviour. But instead of being used as a signal for the need for conflict resolution, the diagnosis is used as a justification for drugging the diagnosed member of the conflict, the powerless child.

With more concern for the child, the very same behaviours in any child could be used to focus attention on the need for change in the behaviour of the adults in the conflict. The seemingly exaggerated hyperactivity, impulsivity, or lack of attentiveness in the child can and should become a signal for the adults in the child's life to find, identify, and respond to the child's genuine needs for

rational discipline, unconditional love, play, exercise, and engaging education. An effective teacher, parent, or coach would do exactly that. Signs of hyperactivity, impulsivity and inattention in a youngster are used to indicate the need for greater, more focused attention to the child.

Stimulant drugs, as we have seen, flatten the child's behavioural signal system. The child literally becomes *neurologically unable* to express feelings of boredom, frustration, distress, or discomfort by displaying hyperactivity, impulsivity, or inattention. Adults can then feel justified in teaching the class or managing the group without attending to the child's individual and often varied needs.

Evidence for effectiveness

Reviews by stimulant drug advocates routinely demonstrate that stimulants have no positive long-term effects whatsoever on any aspect of a child's behaviour. Short-term (a few weeks or months) they can suppress behaviour, but they do not improve academic performance or learning. Based on the most extensive review in the literature, Swanson (1993, p.44) concluded:

- *Long-term beneficial effects have not been verified by research.*
- *Short-term effects of stimulants should not be considered a permanent solution to chronic ADD symptoms.*
- *Stimulant medication may improve learning in some cases but impair learning in others.*
- *In practice, prescribed doses of stimulants may be too high for optimal effects on learning [to be achieved] and the length of action of most stimulants is viewed as too short to affect academic achievement.*

Swanson (1993, p.46) also summarized:

> No large effects on skills or higher order processes: *Teachers and parents should not expect significantly improved reading or athletic skills, positive social skills, or learning of new concepts.*
>
> No improvement in long-term adjustment: *Teachers and parents should not expect long-term improvement in academic achievement or reduced antisocial behaviour.*

Swanson (1993) defined 'short-term' as 7-18 weeks.

Swanson is not alone in his conclusions. Popper and Steingard (1994) state:

> *Stimulants do not produce lasting improvements in aggressivity, conduct disorder,*

> *criminality, education achievement, job functioning, marital relationships, or long-term adjustment.* (p.745)

Richters et al. (1995), from the National Institute of Mental Health (NIMH), conclude: 'the long-term efficacy of stimulant medication has not been demonstrated for any domain of child functioning.' They conclude that there is no evidence for even short-term positive effects on academic performance.

Conclusion

Stimulant drugs have two basic effects on animals and children regardless of their mental status. First, stimulants reduce all spontaneous and social behaviour. This makes the child more docile, submissive, and manageable (compliant). Second, stimulants enforce perseverative, obsessive-compulsive, or over-focused behaviour. This makes the child more easily led or compelled to do rote, boring activities. These twin *toxic* effects are readily misinterpreted as 'improved behaviour' in highly structured or controlled environments where children are given insufficient or inappropriate attention, and where their genuine needs are being ignored. As a result of toxicity, stimulants suppress a child's behaviour in a global fashion that has nothing to do with any diagnosis or disorder.

Stimulant drugs also produce a wide variety of other adverse effects. By causing anorexia and by disrupting growth hormone, they suppress the growth of the body, including brain size and development. They cause severe biochemical imbalances in the developing brain that can become permanent. They often worsen ADHD-like symptoms and can cause psychoses.

The ADHD diagnosis is tailored to justify the use of stimulants for the behavioural control of children in groups. It enumerates behaviours that healthy children often display in structured over-controlled groups in which their individual needs are unmet.

Ultimately, by suppressing emotional and behavioural signals of distress and conflict, stimulants allow adults to ignore the needs of children in favour of creating a controlled environment. Meanwhile, stimulants do not improve academic performance and provide no long-term improvement in *any* aspect of a child's behaviour of life.

Psychologists, counsellors, and therapists should strongly discourage the use of stimulant drugs for treating 'ADHD' and other emotional or behavioural problems that surface in the classroom. Instead, more effort should be made to identify and to address the genuine individual needs of the children in our families and schools whether or not they are signalling their distress or conflict with ADHD-like behaviours.

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Table 1: Summary of Adverse Drug Reactions (ADRs) Caused by Methylphenidate and Amphetamines

Cardio-vascular	Central Nervous System	Gastro- intestinal	Endocrine/ metabolic	Other	Withdrawal and Rebound
Palpitations Tachycardia Hypertension Arrythmias Chest pain Cardiac arrest	Psychosis with hallucinations (skin crawling or visions) psychotic depression and mania Excessive brain stimulation (convulsions) Drowsiness, 'dopey', less alert. Confusion, Insomnia, Agitation, anxiety, irritability, nervousness (Hostility) Dysphoria. Impaired cognitive test performance Dyskinesias, tics, Tourette's Nervous habits (eg. Picking at skin, pulling hair) Stereotypy and compulsions Depression, emotional oversensitivity, easy crying Decreased social interest Zombielike constriction of affect and spontaneity Amphetamine look (pinched, somber expression)	Anorexia, Nausea, Vomiting, Stomach ache, Cramps, Dry mouth. Constipation (abnormal liver function tests) Bad taste, Diarrhoea	Pituitary dysfunction, including growth hormone and prolactin disruption Weight loss Growth suppression Growth retardation Disturbed sexual function	Blurred vision Headache Dizziness Hyper-sensitivity reaction with rash, conjunctivitis, or hives	Insomnia Evening crash Depression Overactivity and irritability Rebound worsening of ADHD-like symptoms

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Table 2: Stimulant Adverse Drug Reactions (ADRs) Potentially Misidentified as 'Therapeutic' or 'Beneficial' for Children Diagnosed with ADHD.

Obsessive Compulsive ADRs	Social Withdrawal ADRs	Behaviourally Suppressive ADRs
Stereotypical activities Obsessive compulsive behaviour Perseverative behaviour Cognitive perseveration Indexibility of thinking Overfocusing or excessive focusing	Social withdrawal and isolation General dampening of social behaviour Reduced social interactions, talking or sociability Decreased responsiveness to parents and other children Increased solitary play Diminished play	Compliance, especially in structured environments Reduced curiosity Sombre Subdued Apathetic; lethargic: 'tired, withdrawn, listless, depressed, dopey, dazed, subdued and inactive' Bland, emotionally flat, affectless Depressed, sad, easy/frequent crying Little or no initiative or spontaneity Diminished curiosity, surprise or pleasure Humourless, not smiling Drowsiness Social inhibition with passive and submissive behaviours

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