Stoning Young America: Overprescribing Harmful Stimulants as a Treatment for Children with ADHD

Thesis Statement: Doctors and patients need to become familiar with the dangers of stimulant medication and the existence of alternative therapies.

I. Stimulants are a common form of ADHD treatment in America.
   A. How do stimulants work?
      1. The paradoxical effect is a myth.
   B. How effective are stimulants in treating ADHD?
      1. MTA study discusses effectiveness of stimulants.
   C. Stimulants have many negative side effects.
      1. Stimulants have many short term side effects.
      2. Stimulants are addictive.
         a. Ritalin is similar to cocaine.
      3. Stimulants stunt growth and development.
      4. Stimulants are cognitively toxic.

III. Stimulants are over prescribed.
   A. Schools encourage the use of stimulants.
   B. Physicians do not know enough about alternative treatments.
   C. Pharmaceutical companies influence doctors and patients.

IV. Music and art therapy are an alternative treatment for ADHD.
   A. What is art therapy?
   B. How effective is art therapy?
C. Art therapy has no physical side effects.

V. Biofeedback is an alternative treatment for ADHD
   A. What is biofeedback?
   B. How effective is biofeedback?
   C. Biofeedback has no harmful side effects.

VI. Diet Changes are an alternative treatment for ADHD
   A. Can diet affect ADHD symptoms?
   B. How effective are diet changes in treating ADHD?

VII. Non-Stimulant Medications are an alternative treatment for ADHD.
   A. What are some options for non-stimulant medication?
   B. How effective is non-stimulant medication?
   C. Non-stimulant medication can have side effects.
Johnny is a typical energetic eight year old. However, Johnny’s teachers complain that Johnny is either
day dreaming or disrupting class, but never paying attention or completing his assignments. His teachers label
him as having ADHD and threaten to transfer him unless he is put on medication. Johnny goes to the doctor,
who does nothing more than asks a few questions and fill out a checklist before writing a prescription for
Ritalin.

This scenario is played out daily all over America. I have experienced similar circumstances. In 9th grade
I began having trouble with inattentiveness, not finishing tasks, and forgetfulness. When I discussed the issue
with my doctor, he simply had my mother and I fill out a symptom checklist. I displayed all of the symptoms on
the list, so my doctor wrote me a prescription for a stimulant medication. The whole process took under and
hour.

ADHD (Attention Deficit Hyperactive Disorder) is the number one behavioral disorder in American
children (Null & Feldman, 2005, p. 75). Symptoms of ADHD include inattention, impulsiveness, hyperactivity,
anxiety, and excessive motor activity (as cited in Schnoll, Burshteyn, & Cea-Arevena, 2003, p. 63). The
American Psychiatric Association, American Academy of Pediatrics, and the Mayo Clinic estimate that 3-12%
of school age youth have ADHD (as cited in Null & Feldman, 2005, p. 75). Psychotropic drugs are the most
common form of treatment for ADHD, primarily psychostimulants such as methylphenidate, better known
Ritalin (as cited in Jackson, 2003, pp. 303-304). Alarmingly, the use of Ritalin has increased 500 percent in the
past decade (U.S. House of Representatives, 2002, p. 2). Every day in America an estimated 4-6 million
children take Ritalin (U.S. House of Representatives, 2002, p. 2). Stimulants are harmful substances, and
experts increasingly agree that they are over prescribed for the treatment of ADHD. However, stimulants are not
the only answer; a vast array of alternative ADHD treatments offers other choices. Doctors and patients must
become familiar with the dangers of stimulant medication and the existence of alternative therapies.

Stimulants as a treatment for ADHD

It seems illogical that stimulants make hyperactive children calm and alert. This phenomenon became
known as the paradoxical effect, and for many years was thought to only occur in those with ADHD (Stein,
2002, p. 21). Stimulants improve alertness by increasing levels of dopamine and norepinephrine in the brain,
improving concentration and behavior in ADHD children. (U.S. House of Representatives, 2002, p. 126). However, the idea that stimulants only have this effect on hyperactive children is false (Stein, 2002, p. 21).

Studies have shown that stimulants effectively treat ADHD. In 1992 the National Institute of Mental Health (NIMH) conducted a clinical study to measure the effectiveness of ADHD treatments (Sandberg, 2002, p. 437). The study, known as the Multimodal Treatment Study of Children with ADHD, or MTA, was the largest clinical trial ever conducted by the NIMH. The MTA’s purpose was to measure the effectiveness of medication and behavioral treatments for ADHD (Brown & Sammons, 2002, p. 139). The results of the study show that subjects who received medication improved much more than those who received behavior therapy alone, and only very slightly less than those who received a combination of both treatments (Sandberg, 2002, p. 454). However, in this study much of the success of stimulant treatment can be attributed to the close monitoring and regulation of dosage by a physician (Sandberg, 2002, p. 456), close attention that is rarely given in “the real world.” According to Volkmar, Hoder, and Cohen, negligent stimulant administration can lead to ineffective and harmful treatment (as cited in Jackson, 2003, pp. 304). When I was prescribed stimulants for ADHD, the doctor’s only advice was to come back in a month or two and to call if I had any problems. My own experience, as well as scientific data, proves that lack of physician involvement greatly compromises the effectiveness and safety of stimulant medications.

The Dangers of Stimulant Medication

Despite their effectiveness, stimulants are very dangerous. It is estimated that 10 to 30% of patients cannot tolerate or do not benefit from stimulant medication (Banashewski, Roessner, Dittmann, Santosh, & Rothenberger, 2004, p. 102). Stimulants cause numerous short term physical side effects, including high blood pressure, stomach problems, tics, drowsiness, and loss of appetite (as cited in Stein, 2002, p. 23). Studies have also associated methylphenidate (Ritalin) with insomnia, dizziness, headache and even seizures (as cited in Null & Feldman, 2005, p. 80). Short term psychological side effects can include moodiness, agitation (as cited in Stein, 2002, p. 23), nervousness, anorexia, and in severe cases hallucinations and psychosis (as cited in Null & Feldman, 2005, p. 80). In a study conducted with preschoolers, subjects suffered major side effects such as severe social withdrawal, greatly increased crying, and a marked rise in irritability (Null & Feldman, 2005, pp.
While I received stimulant I experienced many side effects, including insomnia, headache, shakiness, and nervousness. The short term side effects of stimulants are often as disruptive and damaging as the symptoms they are meant to treat.

Experts are also concerned with stimulant treatment’s immediate effect on learning and behavior. According to Stein, although stimulants can improve simple learning mechanisms, they hamper more complex cognitive processes, a phenomenon known as cognitive toxicity (2002, p. 24). For example, a child taking Ritalin may be able to complete an addition work sheet quickly and accurately, but would have more difficulty analyzing a short story or applying a scientific theory. This phenomenon is caused by stimulants’ impediment of the basal ganglia in the brain, which hinders higher brain functions, and can cause obsession and compulsion (Null & Feldman, 2005, p. 81). One study found that 42 percent of children taking stimulants experience over-focusing and obsession (as cited in Null & Feldman, 2005, p. 81).

In addition to numerous short term side effects, stimulants are suspected to cause long-term damage. For example, a study conducted with 34 bipolar adolescents found that those who had been placed on stimulants as children suffered an earlier onset of bipolar disorder (Null & Feldman, 2005, p. 81). Stimulants are also suspected to stunt growth and development in children by stopping the body’s production of growth hormones, which can cause children to lag behind their peers in development of height, head size, and even brain size (Stein, 2002, p. 23). More startling is the fact that stimulants can cause lasting changes in the brain. Animal studies have discovered that methylphenidate hinders gene expression in brain cells (as cited in Null & Feldman, 2005, p. 79).

The most alarming long term effect of stimulants is the possibility of addiction. In his *Ritalin Is Not the Answer Action Guide* (2002), Dr. David Stein relates the story of Kyle Jones. Kyle began taking Ritalin after school officials bullied his mother into putting him on drugs for ADHD. Kyle became addicted to Ritalin and eventually other illegal drugs. He ended up serving time in jail and eventually died of an overdose. According to Stein, “Maybe if Kyle had never been started on emotion- and mindaltering drugs, his addiction could have been avoided. But the system did start him, and his addiction did result…We’re playing Russian roulette with those children’s lives” (p. 23).
The Federal Government classifies stimulants like Ritalin as Schedule II drugs (Stein, 2002, p. 20). Schedule II drugs have a very high potential for abuse that can lead to severe psychological and physical dependence (U.S. House of Representatives, 2002, p. 2), making them the most dangerous drugs allowed for medical use (as cited in U.S. House of Representatives, 2002, p. 22). Despite the classification, doctors casually prescribe Ritalin to millions of American children. Furthermore, according to the Journal of the American Medical Association, Ritalin is even more potent than cocaine (as cited in U.S. House of Representatives, 2002, p. 3), and is so similar to cocaine that cocaine addiction clinics use it in replacement therapy (as cited in Rush & Baker, 2001, p. 59). A study conducted at University of California Berkeley also found that children who receive stimulants are 2 to 3 times more likely to become addicted to tobacco or cocaine later in life (U.S. House of Representatives, 2002, pp. 57-58). It is disturbing that so many children are casually treated with drugs that have such a high potential for addiction.

**Over prescribing stimulants**

With all of these harmful effects, why are stimulants like Ritalin so widely used? One answer lies in the school systems of America. Correctly diagnosing children with ADHD requires time, money, and training that most public schools lack (U.S. House of Representatives, 2002, p. 16). Often, when a child misbehaves or fails to complete his work, a medically unqualified teacher or administrator automatically labels the child as ADHD (p. 54). Many schools coerce parents into putting their child on stimulants by threatening to remove the child from the classroom, transfer the child to another school, and even file criminal charges of medical neglect (p. 25). Testifying before the United States House of Representatives in a 2002 hearing, Ms. Patricia Weathers, president of Parents for Label and Drug Free Education, told of her experiences with her son Michael:

Near the end of first grade, the school principal took me into her office and said that, unless I agreed to put Michael on medication, she would find a way to transfer him to a special education center. I felt intimidated, scared, and unsure of what to do as a result of the school’s coercive tactics. At no time was I offered any alternatives to my son’s needs, such as tutoring or standard medical testing. The school’s one and only solution was to have my child drugged.
Weathers continued to testify of how her son was placed on Ritalin and of its severe physical and psychological side effects. When she decided to take her son off the medication the results were astounding: Realizing that I was no longer willing to fall in line and give my child drugs, the school threw him out. For a final blow, they proceeded to call child protective services on my husband and I, charging us with medical neglect for refusing to drug our child. This charge was later ruled unfounded. (U.S. House of Representatives, 2002, pp.24-25)

The problem of teachers diagnosing children is compounded by the fact that no diagnostic test or set definitions or for ADHD exist (U.S. House of Representatives, 2002, p. 48). Often teachers simply send children and their parents to the doctor with a vague checklist of symptoms that almost any energetic child shows (p. 2). It is unjust that teachers and administrators force parents to medicate their children for a disease that cannot be objectively diagnosed.

Considering the lack of set definitions and a diagnostic test, it is not surprising that many physicians know little about ADHD or its treatments. According to Rafalovich (2005), who conducted a study about clinician uncertainty regarding ADHD, “Administering medication for ADHD may be seen by many mental health practitioners as akin to prescribing antibiotics for bacterial infections” (p. 307). Rafalovich even alleges that some clinicians prescribe drugs as a quick fix rather than find the underlying causes of negative behavior (2005, p 314). According to Dr. Mary Ann Block, many cases of misbehavior could be traced to allergies, nutrition problems, or learning disabilities if doctors would simply investigate (U.S. House of Representatives, 2002, p.28).

Pharmaceutical companies often take advantage of the uncertainty surrounding ADHD to exert influence on doctors and patients. Physicians are often influenced by drug companies through ads in medical journals, medical lectures funded and held by drug companies, and research funded by drug companies (U.S. House of Representatives, 2002, p.50). Pharmaceutical companies also place “informational pamphlets” in doctors’ offices. These pamphlets appear to contain useful information about ADHD treatments, but mostly consist of promotional literature (Valenstein, 1998, p. 180). In addition to pamphlets, pharmaceutical companies also produce diagnosis checklists that include broad symptoms almost everyone suffers. My doctor gave my mother
and me one of these checklists to diagnose me with ADHD. I wish that I had realized the obvious motive of the drug company to influence people to diagnose themselves and request medication.

**Alternatives to Stimulant Medication**

Fortunately, ADHD treatments other than stimulants do exist. The most plausible and scientifically supported treatments include art therapy, biofeedback, diet and nutrition considerations, and non-stimulant medications. Doctors and patients need to be more informed about these effective and safe alternatives to stimulant treatment.

**Art and Music Therapy**

Art and music therapy offer a wide variety of treatment types. Music therapy can involve everything from group sessions of music and movement to musical improvisation (Jackson, 2003, p. 306). The idea behind music therapy is the positive effect music has on brain function, information processing, and learning (p. 314). One of the major benefits of art/music therapy is the opportunity it gives the therapist to get a more complete and personal picture of the patient and therefore personalize treatment (as cited in Safran, 2002, p. 38). Art therapy also gives the patient an opportunity to learn their own strengths and weaknesses (p. 19) increase self-esteem, self-expression, and frustration tolerance (Jackson, 2003, p. 319). Finally, the creative group experience teaches children social skills and strategies they can apply to life (Safran, 2002, p. 38).

Music therapy has been found to be a very effective ADHD treatment. Although it is often used in conjunction with medication, a study that interviewed doctors found that music therapy is as effective without medication (Jackson, 2003, p. 316). The study also found that the patients themselves feel that music therapy is more effective than other treatments (Jackson, 2003, p. 315). This is probably due to the pleasure of simply listening to or playing music. Art therapy is also effective because of its flexibility and personal nature (Safran, 2002, p. 192). Several types of ADHD exist, each with its own set of circumstances, and art therapy can be personalized to fit each patient.

**Biofeedback**

Biofeedback is another alternative treatment for ADHD. Biofeedback uses stimuli to teach the patient about psychophysio locigal processes so they can become aware of how their body and mind work, and control
them (Rojas & Chan, 2005, p. 116). Two types of biofeedback are used for treating ADHD: electromyogram (EMG) and electroencephalogram (Chan, 2002, p. S41). EMG involves recognizing muscle tension and then learning muscle relaxation as a treatment for hyperactivity (p. S41). Much more commonly used is the EEG form of biofeedback, which involves plotting brain waves that cause hyperactivity and inattention and then learning to normalize them (as cited in Rojas & Chan, 2005, p. 116). ADHD children have been found to produce more theta waves, which have been linked with inattention and hyperactivity, and fewer beta waves, associated with alertness (Chan, 2002, p. S41). The wave measurements are used to find what causes increased theta waves, and then patients learn to create more beta waves (p. S41). Studies have found biofeedback is generally effective, though a study comparing the effectiveness of biofeedback versus that of Ritalin was inconclusive (Fuchs, Birbaumer, Lutzenberger, Gruzelier, & Kaiser, 2003, p. 10). The drawback of biofeedback is that it requires multiple sessions to be effective, which can place a major time and cost burden on patients (Rojas & Chan, 2005, p. 117), but unlike stimulant medication, biofeedback has no side effects (as cited in Monastra et al., 2005, p. 110). Biofeedback is a promising alternative treatment for ADHD with much room for further research and development.

**Diet and Nutrition**

Three main diets have also developed as possible treatments for ADHD: the Feingold diet, the oligoantigenic diet, and the sugar restriction diet (Rojas & Chan, 2005, p. 117). The controversial Feingold diet is based on a hypothesis that food additives like artificial flavors and colors cause behavioral problems (as cited in Rojas & Chan, 2005, p. 121). Studies on this topic have had mixed results, but some have shown that the diet is only effective for only a small group of children who happen to have food sensitivities and ADHD (as cited in Chan, 2002, p. S41). The oligoantigenic diet is based on the idea that ADHD symptoms stem from allergies to food antigens found in everything from wheat to chocolate (Rojas & Chan, 2005, p. 121). However, this diet is controversial and very restrictive, and therefore rarely implemented (p. 121). Finally, the sugar restriction diet is based on the common conception that sugar causes hyperactivity disorders (pp. 122-123). However, although glucose disorders can lead to hyperactivity, the sugar restriction diet has little scientific backing and is substantially founded on popular opinion (Chan, 2002, p. S41).
Evidence shows that nutrition can play a role in ADHD. Studies have shown that food/additive allergies, heavy metal toxicity, low protein/high carbohydrate diets, as well as B-vitamin and fatty or amino acid deficiencies can all cause ADHD symptoms (as cited in Null & Feldman, 2005, p. 84). Studies have also demonstrated that magnesium deficiencies can cause ADHD symptoms, and that Vitamin B-6 supplements can be more effective than Ritalin (U.S. House of Representatives, 2002, p. 28). Furthermore, one study pitted stimulants against dietary supplements including vitamins, minerals, and fatty and amino acids. The results showed that dietary supplements can be as effective as stimulants in treating ADHD (as cited in Null & Feldman, 2005, p. 84). Nutrition should not be overlooked as an alternative ADHD treatment.

**Non-stimulant medication**

One of the most promising alternative ADHD treatments is non-stimulant medication. Atomoxetine (Strattera) is the only FDA approved non-stimulant medication for the treatment of ADHD (Banashewski et al., 2004, p. 103). Atomoxetine’s effectiveness is comparable to that of stimulants like Ritalin, though no head to head studies have been conducted yet (p. 104). More importantly, studies have shown that atomoxetine has only mild side effects, and has no major safety issues (p. 104). Other drugs that can be used for ADHD treatment include TCAs, buproprion, and alpha-2 agonists such as clonidine and guanfacine (Safer & Zito, 1999, p.240). These drugs are more effective when used in treating ADHD comorbidities such as insomnia and depression, but also tend to have more severe side effects (Banashewski et al., 2004, pp. 106-108). The major benefit in all these medications is absence of risk for abuse and addiction (p. 104-108). These medications offer an effective alternative for those who cannot or will not take stimulants for ADHD.

**Conclusion**

Although stimulant medication is an effective treatment for ADHD, its risks often outweigh its benefits. Despite the serious side effects and danger of addiction, stimulants like Ritalin are carelessly prescribed as a magic cure for ADHD. Many safer, more natural treatments for ADHD exist, but widespread ignorance concerning ADHD and its treatments, along with pressure from schools, worsen the epidemic of over prescribing stimulants to children. To end this alarming trend, doctors and patients need to become more aware of the dangers of stimulants and the numerous alternative treatments.
References


Chan, E. (2002). The role of complementary and alternative medicine in attention-deficit hyperactivity disorder [Electronic Version]. Developmental and Behavioral Pediatrics, 23(1S), S37-S45.


