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## ISSUE



# Is the Use of "Smart" Pills for Cognitive Enhancement Dangerous?

**YES:** Alan Schwarz, from "Drowned in a Stream of Prescriptions," *The New York Times* (February 2, 2013)

**NO:** Joshua Gowin, from "How 'Smart Drugs' Enhance Us," *Psychology Today* (September 29, 2009)

### Learning Outcomes

After reading this issue, you should be able to:

- Discuss the legitimate uses for drugs such as Ritalin and Adderall.
- Understand the addictive qualities of these drugs.
- Understand how people without ADHD are able to acquire prescriptions for the drugs.
- Understand the consequences of abusing these drugs.
- Assess why illicit use of stimulant drugs has increased dramatically over the past 10 years.

### ISSUE SUMMARY

**YES:** Pulitzer Prize-nominated reporter Alan Schwarz maintains that "smart pills" such as Adderall can significantly improve the lives of children and others with ADHD but that too many young adults who do not have the condition fake the symptoms and get prescriptions for the highly addictive and dangerous drugs.

**NO:** Psychologist Joshua Gowin argues that these drugs aren't much different from a cup of coffee and should be treated accordingly.

**M**edication therapy is a major part of treating attention deficit hyperactive disorder (ADHD), a common condition that affects children and adolescents and can continue into adulthood for some. Individuals with ADHD generally have difficulty paying attention, focusing, or concentrating. They seem to be unable to follow directions and are easily bored or frustrated with tasks. They also are likely to continuously move and tend to display impulsive behaviors. Overall, these behaviors are generally common in children without ADHD, but they occur more frequently than usual and are more severe in a child with ADHD.

For the past several decades, multiple types of stimulant drugs have been prescribed to treat the symptoms of ADHD. These medications enable individuals with ADHD to better focus their thoughts and overlook distractions and are effective for the majority of patients who take them.

Stimulant medications used to treat ADHD can have side effects, but these tend to happen early in treatment and are usually mild and short-lived, especially when monitored by a physician. The most common side effects include insomnia, weight loss and decreased appetite, and jitteriness. Occasionally, drugs to treat ADHD

can cause more serious side effects such as an increased risk of cardiovascular problems. They may also exacerbate psychiatric conditions like depression, psychosis, or anxiety. ADHD medications are illegal to take without a prescription as they can produce serious side effects and are potentially addictive.

Despite the potential for addiction, prescription stimulant abuse has dramatically increased over the past decade. About 30 percent of stimulant drug use may be diverted to nonmedical usage. College students and young adults take them with the belief that these medications help with mental abilities including studying, memorizing, and test taking. Most people think of ADHD as a difficulty with controlling thought, hence the belief that ADHD medications help with thought control. Interestingly, evidence suggests that when people are given rote learning tasks such as memorizing items on a list, their performance is improved by ADHD stimulants. These effects are strongest when people learn the items on the list and have to remember them at least a day after learning. This effect does seem to come from the learning process, because the participants do not need to be on the medication during the test in order to see the effect.

Few research studies, however, have studied memory for complex kinds of information that demand genuine in-depth understanding of the material. So it is not possible to determine whether ADHD stimulants are simply assisting with learning the kinds of random items that typically appear on memory tests or whether they would also help with the types of complex knowledge important in high school and college classes.

Another area where ADHD stimulants seem to have impact is with *working memory*, the amount of information that people can hold in their mind at the same time. Many research investigations suggest that these medications have limited or no effect on working memory but a few studies show otherwise. Improvement is most likely to be seen in individuals whose normal working memory capacity is the smallest. While the research is inconclusive on the overall advantages of taking stimulant drugs on cognitive enhancement, the risks are clear. Over time, continued use of ADHD medications can make users less effec-

tive intellectually due to poor mental functioning mostly caused by insomnia, addiction, or malnutrition. Other side effects that can impair performance include paranoia, aggression, and irritability that can accompany these drugs. Individuals taking the drugs prescribed by physicians are regularly monitored for these side effects as well as disturbances in heart rate, sleep, mood, and appetite.

In the YES and NO selections, Pulitzer Prize-nominated reporter Alan Schwarz maintains that “smart pills” such as Adderall can significantly improve the lives of children and others with ADHD but that too many young adults who do not have the condition fake the symptoms and get prescriptions for the highly addictive and dangerous drugs. They take the drugs with the belief that their ability to study, learn, and take tests will be enhanced, though the research is mostly not supportive. Psychologist Joshua Gowin argues that these drugs aren’t much different from a cup of coffee and should be treated accordingly.



# YES

Alan Schwarz

## Drowned in a Stream of Prescriptions

Before his addiction, Richard Fee was a popular college class president and aspiring medical student. "You keep giving Adderall to my son, you're going to kill him," said Rick Fee, Richard's father, to one of his son's doctors.

Virginia Beach—Every morning on her way to work, Kathy Fee holds her breath as she drives past the squat brick building that houses Dominion Psychiatric Associates.

It was there that her son, Richard, visited a doctor and received prescriptions for Adderall, an amphetamine-based medication for attention deficit hyperactivity disorder. It was in the parking lot that she insisted to Richard that he did not have A.D.H.D., not as a child and not now as a 24-year-old college graduate, and that he was getting dangerously addicted to the medication. It was inside the building that her husband, Rick, implored Richard's doctor to stop prescribing him Adderall, warning, "You're going to kill him."

It was where, after becoming violently delusional and spending a week in a psychiatric hospital in 2011, Richard met with his doctor and received prescriptions for 90 more days of Adderall. He hanged himself in his bedroom closet two weeks after they expired.

The story of Richard Fee, an athletic, personable college class president and aspiring medical student, highlights widespread failings in the system through which five million Americans take medication for A.D.H.D., doctors and other experts said.

Medications like Adderall can markedly improve the lives of children and others with the disorder. But the tunnel-like focus the medicines provide has led growing numbers of teenagers and young adults to fake symptoms to obtain steady prescriptions for highly addictive medications that carry serious psychological dangers. These efforts are facilitated by a segment of doctors who skip established diagnostic procedures, renew prescriptions reflexively and spend too little time with patients to accurately monitor side effects.

Richard Fee's experience included it all. Conversations with friends and family members and a review of detailed medical records depict an intelligent and articulate young man lying to doctor after doctor, physicians issuing hasty diagnoses, and psychiatrists continuing to prescribe

medication—even increasing dosages—despite evidence of his growing addiction and psychiatric breakdown.

Very few people who misuse stimulants devolve into psychotic or suicidal addicts. But even one of Richard's own physicians, Dr. Charles Parker, characterized his case as a virtual textbook for ways that A.D.H.D. practices can fail patients, particularly young adults. "We have a significant travesty being done in this country with how the diagnosis is being made and the meds are being administered," said Dr. Parker, a psychiatrist in Virginia Beach. "I think it's an abnegation of trust. The public needs to say this is totally unacceptable and walk out."

Young adults are by far the fastest-growing segment of people taking A.D.H.D. medications. Nearly 14 million monthly prescriptions for the condition were written for Americans ages 20 to 39 in 2011, two and a half times the 5.6 million just four years before, according to the data company I.M.S. Health. While this rise is generally attributed to the maturing of adolescents who have A.D.H.D. into young adults—combined with a greater recognition of adult A.D.H.D. in general—many experts caution that savvy college graduates, freed of parental oversight, can legally and easily obtain stimulant prescriptions from obliging doctors.

"Any step along the way, someone could have helped him—they were just handing out drugs," said Richard's father. Emphasizing that he had no intention of bringing legal action against any of the doctors involved, Mr. Fee said: "People have to know that kids are out there getting these drugs and getting addicted to them. And doctors are helping them do it."

*... when he was in elementary school he fidgeted, daydreamed and got A's. he has been an A-B student until mid college when he became scattered and he wandered while reading He never had to study. Presently without medication, his mind thinks most of the time, he procrastinated, he multitasks not finishing in a timely manner."*

**Dr. Waldo M. Ellison**

Richard Fee initial evaluation  
Feb. 5, 2010

Richard began acting strangely soon after moving back home in late 2009, his parents said. He stayed up for days at a time, went from gregarious to grumpy and back, and scrawled compulsively in notebooks. His father, while trying to add Richard to his health insurance policy, learned that he was taking Vyvanse for A.D.H.D.

Richard explained to him that he had been having trouble concentrating while studying for medical school entrance exams the previous year and that he had seen a doctor and received a diagnosis. His father reacted with surprise. Richard had never shown any A.D.H.D. symptoms his entire life, from nursery school through high school, when he was awarded a full academic scholarship to Greensboro College in North Carolina. Mr. Fee also expressed concerns about the safety of his son's taking daily amphetamines for a condition he might not have.

"The doctor wouldn't give me anything that's bad for me," Mr. Fee recalled his son saying that day. "I'm not buying it on the street corner."

Richard's first experience with A.D.H.D. pills, like so many others', had come in college. Friends said he was a typical undergraduate user—when he needed to finish a paper or cram for exams, one Adderall capsule would jolt him with focus and purpose for six to eight hours, repeat as necessary.

So many fellow students had prescriptions or stashes to share, friends of Richard recalled in interviews, that guessing where he got his was futile. He was popular enough on campus—he was sophomore class president and played first base on the baseball team—that they doubted he even had to pay the typical \$5 or \$10 per pill.

"He would just procrastinate, wait till the last minute and then take a pill to study for tests," said Ryan Sykes, a friend. "It got to the point where he'd say he couldn't get anything done if he didn't have the Adderall."

Various studies have estimated that 8 percent to 35 percent of college students take stimulant pills to enhance school performance. Few students realize that giving or accepting even one Adderall pill from a friend with a prescription is a federal crime. Adderall and its stimulant siblings are classified by the Drug Enforcement Administration as Schedule II drugs, in the same category as cocaine, because of their highly addictive properties.

"It's incredibly nonchalant," Chris Hewitt, a friend of Richard, said of students' attitudes to the drug. "It's: 'Anyone have any Adderall? I want to study tonight,'" said Mr. Hewitt, now an elementary school teacher in Greensboro.

After graduating with honors in 2008 with a degree in biology, Richard planned to apply to medical schools and stayed in Greensboro to study for the entrance exams. He remembered how Adderall had helped him concentrate so well as an undergraduate, friends said, and he made an appointment at the nearby Triad Psychiatric and Counseling Center.

According to records obtained by Richard's parents after his death, a nurse practitioner at Triad detailed his unremarkable medical and psychiatric history before

recording his complaints about "organization, memory, attention to detail." She characterized his speech as "clear," his thought process "goal directed" and his concentration "attentive."

Richard filled out an 18-question survey on which he rated various symptoms on a 0-to-3 scale. His total score of 29 led the nurse practitioner to make a diagnosis of "A.D.H.D., inattentive-type"—a type of A.D.H.D. without hyperactivity. She recommended Vyvanse, 30 milligrams a day, for three weeks.

Phone and fax requests to Triad officials for comment were not returned.

Some doctors worry that A.D.H.D. questionnaires, designed to assist and standardize the gathering of a patient's symptoms, are being used as a shortcut to diagnosis. C. Keith Conners, a longtime child psychologist who developed a popular scale similar to the one used with Richard, said in an interview that scales like his "have reinforced this tendency for quick and dirty practice."

Dr. Conners, an emeritus professor of psychiatry and behavioral sciences at Duke University Medical Center, emphasized that a detailed life history must be taken and other sources of information—such as a parent, teacher, or friend—must be pursued to learn the nuances of a patient's difficulties and to rule out other maladies before making a proper diagnosis of A.D.H.D. Other doctors interviewed said they would not prescribe medications on a patient's first visit, specifically to deter the faking of symptoms.

According to his parents, Richard had no psychiatric history, or even suspicion of problems, through college. None of his dozen high school and college acquaintances interviewed for this article said he had ever shown or mentioned behaviors related to A.D.H.D.—certainly not the "losing things" and "difficulty awaiting turn" he reported on the Triad questionnaire—suggesting that he probably faked or at least exaggerated his symptoms to get his diagnosis.

That is neither uncommon nor difficult, said David Berry, a professor and researcher at the University of Kentucky. He is a co-author of a 2010 study that compared two groups of college students—those with diagnoses of A.D.H.D. and others who were asked to fake symptoms—to see whether standard symptom questionnaires could tell them apart. They were indistinguishable.

"With college students," Dr. Berry said in an interview, "it's clear that it doesn't take much information for someone who wants to feign A.D.H.D. to do so."

Richard Fee filled his prescription for Vyvanse within hours at a local Rite Aid. He returned to see the nurse three weeks later and reported excellent concentration: "reading books—read 10!" her notes indicate. She increased his dose to 50 milligrams a day. Three weeks later, after Richard left a message for her asking for the dose to go up to 60, which is on the high end of normal adult doses, she wrote on his chart, "Okay rewrite."

Richard filled that prescription later that afternoon. It was his third month's worth of medication in 43 days.

*"The patient is a 23-year-old Caucasian male who presents for refill of vyvanse—recently started on this while in NC b/c of lack of motivation/loss of drive. Has moved here and wants refill"*

**Dr. Robert M. Woodard**

Notes on Richard Fee  
Nov. 11, 2009

Richard scored too low on the MCAT in 2009 to qualify for a top medical school. Although he had started taking Vyvanse for its jolts of focus and purpose, their side effects began to take hold. His sleep patterns increasingly scrambled and his mood darkening, he moved back in with his parents in Virginia Beach and sought a local physician to renew his prescriptions.

A friend recommended a family physician, Dr. Robert M. Woodard. Dr. Woodard heard Richard describe how well Vyvanse was working for his A.D.H.D., made a diagnosis of "other malaise and fatigue" and renewed his prescription for one month. He suggested that Richard thereafter see a trained psychiatrist at Dominion Psychiatric Associates—only a five-minute walk from the Fees' house.

With eight psychiatrists and almost 20 therapists on staff, Dominion Psychiatric is one of the better-known practices in Virginia Beach, residents said. One of its better-known doctors is Dr. Waldo M. Ellison, a practicing psychiatrist since 1974.

In interviews, some patients and parents of patients of Dr. Ellison's described him as very quick to identify A.D.H.D. and prescribe medication for it. Sandy Paxson of nearby Norfolk said she took her 15-year-old son to see Dr. Ellison for anxiety in 2008; within a few minutes, Mrs. Paxson recalled, Dr. Ellison said her son had A.D.H.D. and prescribed him Adderall.

"My son said: 'I love the way this makes me feel. It helps me focus for school, but it's not getting rid of my anxiety, and that's what I need,'" Mrs. Paxson recalled. "So we went back to Dr. Ellison and told him that it wasn't working properly, what else could he give us, and he basically told me that I was wrong. He basically told me that I was incorrect."

Dr. Ellison met with Richard in his office for the first time on Feb. 5, 2010. He took a medical history, heard Richard's complaints regarding concentration, noted how he was drumming his fingers and made a diagnosis of A.D.H.D. with "moderate symptoms or difficulty functioning." Dominion Psychiatric records of that visit do not mention the use of any A.D.H.D. symptom questionnaire to identify particular areas of difficulty or strategies for treatment.

As the 47-minute session ended, Dr. Ellison prescribed a common starting dose of Adderall: 30 milligrams daily for 21 days. Eight days later, while Richard still had 13 pills remaining, his prescription was renewed for 30 more days at 50 milligrams.

Through the remainder of 2010, in appointments with Dr. Ellison that usually lasted under five minutes, Richard returned for refills of Adderall. Records indicate that he received only what was consistently coded as "pharmacologic management"—the official term for quick appraisals of medication effects—and none of the more conventional talk-based therapy that experts generally consider an important component of A.D.H.D. treatment.

His Adderall prescriptions were always for the fast-acting variety, rather than the extended-release formula that is less prone to abuse.

*"PATIENT DOING WELL WITH THE MEDICATION, IS CALM, FOCUSED AND ON TASK, AND WILL RETURN TO OFFICE IN 3 MONTHS"*

**Dr. Waldo M. Ellison**

Notes on Richard Fee  
Dec. 11, 2010

Regardless of what he might have told his doctor, Richard Fee was anything but well or calm during his first year back home, his father said.

Blowing through a month's worth of Adderall in a few weeks, Richard stayed up all night reading and scribbling in notebooks, occasionally climbing out of his bedroom window and on to the roof to converse with the moon and stars. When the pills ran out, he would sleep for 48 hours straight and not leave his room for 72. He got so hot during the day that he walked around the house with ice packs around his neck—and in frigid weather, he would cool off by jumping into the 52-degree backyard pool.

As Richard lost a series of jobs and tensions in the house ran higher—particularly when talk turned to his Adderall—Rick and Kathy Fee continued to research the side effects of A.D.H.D. medication. They learned that stimulants are exceptionally successful at mollifying the impulsivity and distractibility that characterize classic A.D.H.D., but that they can cause insomnia, increased blood pressure and elevated body temperature. Food and Drug Administration warnings on packaging also note "high potential for abuse," as well as psychiatric side effects such as aggression, hallucinations and paranoia.

A 2006 study in the journal *Drug and Alcohol Dependence* claimed that about 10 percent of adolescents and young adults who misused A.D.H.D. stimulants became addicted to them. Even proper, doctor-supervised use of the medications can trigger psychotic behavior or suicidal thoughts in about 1 in 400 patients, according to a 2006 study in *The American Journal of Psychiatry*. So while a vast majority of stimulant users will not experience psychosis—and a doctor may never encounter it in decades of careful practice—the sheer volume of prescriptions leads to thousands of cases every year, experts acknowledged.

When Mrs. Fee noticed Richard putting tape over his computer's camera, he told her that people were spying on him. (He put tape on his fingers, too, to avoid leaving fingerprints.) He cut himself out of family pictures, talked to the television and became increasingly violent when agitated.

In late December, Mr. Fee drove to Dominion Psychiatric and asked to see Dr. Ellison, who explained that federal privacy laws forbade any discussion of an adult patient, even with the patient's father. Mr. Fee said he had tried unsuccessfully to detail Richard's bizarre behavior, assuming that Richard had not shared such details with his doctor.

"I can't talk to you," Mr. Fee recalled Dr. Ellison telling him. "I did this one time with another family, sat down and talked with them, and I ended up getting sued. I can't talk with you unless your son comes with you."

Mr. Fee said he had turned to leave but distinctly recalls warning Dr. Ellison, "You keep giving Adderall to my son, you're going to kill him."

Dr. Ellison declined repeated requests for comment on Richard Fee's case. His office records, like those of other doctors involved, were obtained by Mr. Fee under Virginia and federal law, which allow the legal representative of a deceased patient to obtain medical records as if he were the patient himself.

As 2011 began, the Fees persuaded Richard to see a psychologist, Scott W. Sautter, whose records note Richard's delusions, paranoia and "severe and pervasive mental disorder." Dr. Sautter recommended that Adderall either be stopped or be paired with a sleep aid "if not medically contraindicated."

Mr. Fee did not trust his son to share this report with Dr. Ellison, so he drove back to Dominion Psychiatric and, he recalled, was told by a receptionist that he could leave the information with her. Mr. Fee said he had demanded to put it in Dr. Ellison's hands himself and threatened to break down his door in order to do so.

Mr. Fee said that Dr. Ellison had then come out, read the report and, appreciating the gravity of the situation, spoken with him about Richard for 45 minutes. They scheduled an appointment for the entire family.

*"meeting with parents—concern with 'metaphoric' speaking that appears to be outside the realm of appropriated one to one conversation. Richard says he does it on purpose—to me some of it sounds like pre-psychotic thinking."*

**Dr. Waldo M. Ellison**

Notes on Richard Fee  
Feb. 23, 2011

Dr. Ellison stopped Richard Fee's prescription—he wrote "no Adderall for now" on his chart and the next day refused Richard's phone request for more. Instead he prescribed

Abilify and Seroquel, antipsychotics for schizophrenia that do not provide the bursts of focus and purpose that stimulants do. Richard became enraged, his parents recalled. He tried to back up over his father in the Dominion Psychiatric parking lot and threatened to burn the house down. At home, he took a baseball bat from the garage, smashed flower pots and screamed, "You're taking my medicine!"

Richard disappeared for a few weeks. He returned to the house when he learned of his grandmother's death, the Fees said.

The morning after the funeral, Richard walked down Potters Road to what became a nine-minute visit with Dr. Ellison. He left with two prescriptions: one for Abilify, and another for 50 milligrams a day of Adderall.

According to Mr. Fee, Richard later told him that he had lied to Dr. Ellison—he told the doctor he was feeling great, life was back on track and he had found a job in Greensboro that he would lose without Adderall. Dr. Ellison's notes do not say why he agreed to start Adderall again.

Richard's delusions and mood swings only got worse, his parents said. They would lock their bedroom door when they went to sleep because of his unpredictable rages. "We were scared of our own son," Mr. Fee said. Richard would blow through his monthly prescriptions in 10 to 15 days and then go through hideous withdrawals. A friend said that he would occasionally get Richard some extra pills during the worst of it, but that "it wasn't enough because he would take four or five at a time."

One night during an argument, after Richard became particularly threatening and pushed him over a chair, Mr. Fee called the police. They arrested Richard for domestic violence. The episode persuaded Richard to see another local psychiatrist, Dr. Charles Parker.

Mrs. Fee said she attended Richard's initial consultation on June 3 with Dr. Parker's clinician, Renee Strelitz, and emphasized his abuse of Adderall. Richard "kept giving me dirty looks," Mrs. Fee recalled. She said she had later left a detailed message on Ms. Strelitz's voice mail, urging her and Dr. Parker not to prescribe stimulants under any circumstances when Richard came in the next day.

Dr. Parker met with Richard alone. The doctor noted depression, anxiety and suicidal ideas. He wrote "no meds" with a box around it—an indication, he explained later, that he was aware of the parents' concerns regarding A.D.H.D. stimulants.

Dr. Parker wrote three 30-day prescriptions: Clonidine (a sleep aid), Venlafaxine (an antidepressant) and Adderall, 60 milligrams a day.

In an interview last November, Dr. Parker said he did not recall the details of Richard's case but reviewed his notes and tried to recreate his mind-set during that appointment. He said he must have trusted Richard's assertions that medication was not an issue, and must have figured that his parents were just philosophically anti-medication. Dr. Parker recalled that he had been reassured

by Richard's intelligent discussions of the ins and outs of stimulants and his desire to pursue medicine himself.

"He was smart and he was quick and he had A's and B's and wanted to go to medical school—and he had all the department of a guy that had the potential to do that," Dr. Parker said. "He didn't seem like he was a drug person at all, but rather a person that was misunderstood, really desirous of becoming a physician. He was very slick and smooth. He convinced me there was a benefit."

Mrs. Fee was outraged. Over the next several days, she recalled, she repeatedly spoke with Ms. Strelitz over the phone to detail Richard's continued abuse of the medication (she found nine pills gone after 48 hours) and hand-delivered Dr. Sautter's appraisal of his recent psychosis. Dr. Parker confirmed that he had received this information.

Richard next saw Dr. Parker on June 27. Mrs. Fee drove him to the clinic and waited in the parking lot. Soon afterward, Richard returned and asked to head to the pharmacy to fill a prescription. Dr. Parker had raised his Adderall to 80 milligrams a day.

Dr. Parker recalled that the appointment had been a 15-minute "med check" that left little time for careful assessment of any Adderall addiction. Once again, Dr. Parker said, he must have believed Richard's assertions that he needed additional medicine more than the family's pleas that it be stopped.

"He was pitching me very well—I was asking him very specific questions, and he was very good at telling me the answers in a very specific way," Dr. Parker recalled. He added later, "I do feel partially responsible for what happened to this kid."

*"Paranoid and psychotic . . . thinking that the computer is spying on him. He has also been receiving messages from stars at night and he is unable to be talked to in a reasonable fashion . . . The patient denies any mental health problems . . . fairly high risk for suicide."*

**Dr. John Riedler**

Admission note for Richard Fee  
Virginia Beach Psychiatric Center  
July 8, 2011

The 911 operator answered the call and heard a young man screaming on the other end. His parents would not give him his pills. With the man's language scattered and increasingly threatening, the police were sent to the home of Rick and Kathy Fee.

The Fees told officers that Richard was addicted to Adderall, and that after he had received his most recent prescription, they allowed him to fill it through his mother's insurance plan on the condition that they hold it and dispense it appropriately. Richard was now demanding his next day's pills early.

Richard denied his addiction and threats. So the police, noting that Richard was an adult, instructed the Fees to give him the bottle. They said they would comply only if he left the house for good. Officers escorted Richard off the property.

A few hours later Richard called his parents, threatening to stab himself in the head with a knife. The police found him and took him to the Virginia Beach Psychiatric Center.

Described as "paranoid and psychotic" by the admitting physician, Dr. John Riedler, Richard spent one week in the hospital denying that he had any psychiatric or addiction issues. He was placed on two medications: Seroquel and the antidepressant Wellbutrin, no stimulants. In his discharge report, Dr. Riedler noted that Richard had stabilized but remained severely depressed and dependent on both amphetamines and marijuana, which he would smoke in part to counter the buzz of Adderall and the depression from withdrawal.

(Marijuana is known to increase the risk for schizophrenia, psychosis and memory problems, but Richard had smoked pot in high school and college with no such effects, several friends recalled. If that was the case, "in all likelihood the stimulants were the primary issue here," said Dr. Wesley Boyd, a psychiatrist at Children's Hospital Boston and Cambridge Health Alliance who specializes in adolescent substance abuse.)

Unwelcome at home after his discharge from the psychiatric hospital, Richard stayed in cheap motels for a few weeks. His Adderall prescription from Dr. Parker expired on July 26, leaving him eligible for a renewal. He phoned the office of Dr. Ellison, who had not seen him in four months.

*"moved out of the house—doesn't feel paranoid or delusional. Hasn't been on meds for a while—working with a friend wiring houses for 3 months—doesn't feel he needs the abilify or seroquel for sleep."*

**Dr. Waldo M. Ellison**

Notes on Richard Fee  
July 25, 2011

The 2:15 p.m. appointment went better than Richard could have hoped. He told Dr. Ellison that the pre-psychotic and metaphoric thinking back in March had receded, and that all that remained was his A.D.H.D. He said nothing of his visits to Dr. Parker, his recent prescriptions or his week in the psychiatric hospital.

At 2:21 p.m., according to Dr. Ellison's records, he prescribed Richard 30 days' worth of Adderall at 50 milligrams a day. He also gave him prescriptions postdated for Aug. 23 and Sept. 21, presumably to allow him to get pills into late October without the need for followup appointments. (Virginia state law forbids the

dispensation of 90 days of a controlled substance at one time, but does allow doctors to write two 30-day prescriptions in advance.)

Virginia is one of 43 states with a formal Prescription Drug Monitoring Program, an online database that lets doctors check a patient's one-year prescription history, partly to see if he or she is getting medication elsewhere. Although pharmacies are required to enter all prescriptions for controlled substances into the system, Virginia law does not require doctors to consult it.

Dr. Ellison's notes suggest that he did not check the program before issuing the three prescriptions to Richard, who filled the first within hours.

The next morning, during a scheduled appointment at Dr. Parker's clinic, Ms. Strelitz wrote in her notes: "Richard is progressing. He reported staying off of the Adderall and on no meds currently. Focusing on staying healthy, eating well and exercising."

About a week later, Richard called his father with more good news: a job he had found overseeing storm cleanup crews was going well. He was feeling much better.

But Mr. Fee noticed that the more calm and measured speech that Richard had regained during his hospital stay was gone. He jumped from one subject to the next, sounding anxious and rushed. When the call ended, Mr. Fee recalled, he went straight to his wife.

"Call your insurance company," he said, "and find out if they've filled any prescriptions for Adderall."

*"spoke to father—richard was in VBPC [Virginia Beach Psychiatric Center] and OD on adderall—NO STIMULANTS—HE WAS ALSO SEEING DR. PARKER"*

**Dr. Waldo M. Ellison**

Interoffice e-mail

Aug. 5, 2011

An insurance representative confirmed that Richard had filled a prescription for Adderall on July 25. Mr. Fee confronted Dr. Ellison in the Dominion Psychiatric parking lot.

Mr. Fee told him that Richard had been in the psychiatric hospital, had been suicidal and had been taking Adderall through June and July. Dr. Ellison confirmed that he had written not only another prescription but two others for later in August and September.

"He told me it was normal procedure and not 90 days at one time," Mr. Fee recalled. "I flipped out on him: 'You gave my son 90 days of Adderall? You're going to kill him!'"

Mr. Fee said he and Dr. Ellison had discussed voiding the two outstanding scripts. Mr. Fee said he had been told that it was possible, but that should Richard need emergency medical attention, it could keep him from getting what would otherwise be proper care or medication. Mr. Fee confirmed that with a pharmacist and decided to drive

to Richard's apartment and try to persuade him to rip up the prescriptions.

"I know that you've got these other prescriptions to get pills," Mr. Fee recalled telling Richard. "You're doing so good. You've got a job. You're working. Things with us are better. If you get them filled, I'm worried about what will happen."

"You're right," Mr. Fee said Richard had replied. "I tore them up and threw them away."

Mr. Fee spent two more hours with Richard making relative small talk—increasingly gnawed, he recalled later, by the sense that this was no ordinary conversation. As he looked at Richard he saw two images flickering on top of each other—the boy he had raised to love school and baseball, and the desperate addict he feared that boy had become.

Before he left, Mr. Fee made as loving a demand as he could muster.

"Please. Give them to me," Mr. Fee said.

Richard looked his father dead in the eye.

"I destroyed them," he said. "I don't have them. Don't worry."

*"Richard said that he has stopped Adderall and wants to work on continuing to progress."*

**Renee Strelitz**

Session notes

Sept. 13, 2011

Richard generally filled his prescriptions at a CVS on Laskin Road, less than three miles from his parents' home. But on Aug. 23, he went to a different CVS about 11 miles away, closer to Norfolk and farther from the locations that his father might have called to alert them to the situation. For his Sept. 21 prescription he traveled even farther, into Norfolk, to get his pills.

On Oct. 3, Richard visited Dr. Ellison for an appointment lasting 17 minutes. The doctor prescribed two weeks of Strattera, a medication for A.D.H.D. that contains no amphetamines and, therefore, is neither a controlled substance nor particularly prone to abuse. His records make no mention of the Adderall prescription Richard filled on Sept. 21; they do note, however, "Father says that he is crazy and abusive of the Adderall—has made directives with regard to giving Richard anymore stimulants—bringing up charges—I explained this to Richard."

Prescription records indicate that Richard did not fill the Strattera prescription before returning to Dr. Ellison's office two weeks later to ask for more stimulants.

"Patient took only a few days of Strattera 40 mg—it calmed him but not focusing," the doctor's notes read. "I had told him not to look for much initially—He would like a list of MD who could rx adderall."

Dr. Ellison never saw Richard again. Given his patterns of abuse, friends said, Richard probably took his last Adderall pill in early October. Because he abruptly stopped without the slow and delicate reduction of medication that is recommended to minimize major psychological risks, especially for instant-release stimulants, he crashed harder than ever.

Richard's lifelong friend Ryan Sykes was one of the few people in contact with him during his final weeks. He said that despite Richard's addiction to Adderall and the ease with which it could be obtained on college campuses nearby, he had never pursued it outside the doctors' prescriptions.

"He had it in his mind that because it came from a doctor, it was O.K.," Mr. Sykes recalled.

On Nov. 7, after arriving home from a weekend away, Mrs. Fee heard a message on the family answering machine from Richard, asking his parents to call him. She phoned back at 10 that night and left a message herself.

Not hearing back by the next afternoon, Mrs. Fee checked Richard's cellphone records—he was on her plan—and saw no calls or texts. At 9 p.m. the Fees drove to Richard's apartment in Norfolk to check on him. The lights were on; his car was in the driveway. He did not answer. Beginning to panic, Mr. Fee found the kitchen window ajar and climbed in through it.

He searched the apartment and found nothing amiss.

"He isn't here," Mr. Fee said he had told his wife.

"Oh, thank God," she replied. "Maybe he's walking on the beach or something."

They got ready to leave before Mr. Fee stopped.

"Wait a minute," he said. "I didn't check the closet."

*"Spoke with Richard's mother, Kathy Fee, today. She reported that Richard took his life last November. Family is devastated and having a difficult time. Offered assistance for family."*

#### **Renee Strelitz**

Last page of Richard Fee file

June 21, 2012

Friends and former baseball teammates flocked to Richard Fee's memorial service in Virginia Beach. Most remembered only the funny and gregarious guy they knew in high school and college; many knew absolutely nothing of his last two years. He left no note explaining his suicide.

At a gathering at the Fees' house afterward, Mr. Fee told them about Richard's addiction to Adderall. Many recalled how they, too, had blithely abused the drug in college—to cram, just as Richard had—and could not help but wonder if they had played the same game of Russian roulette.

"I guarantee you a good number of them had used it for studying—that shock was definitely there in that room," said a Greensboro baseball teammate, Danny Michael, adding that he was among the few who had not. "It's so prevalent and widely used. People had no idea it could be abused to the point of no return."

Almost every one of more than 40 A.D.H.D. experts interviewed for this article said that worst-case scenarios like Richard Fee's can occur with any medication—and that people who do have A.D.H.D., or parents of children with the disorder, should not be dissuaded from considering the proven benefits of stimulant medication when supervised by a responsible physician.

Other experts, however, cautioned that Richard Fee's experience is instructive less in its ending than its evolution—that it underscores aspects of A.D.H.D. treatment that are mishandled every day with countless patients, many of them children.

"You don't have everything that happened with this kid, but his experience is not that unusual," said DeAnsin Parker, a clinical neuropsychologist in New York who specializes in young adults. "Diagnoses are made just this quickly, and medication is filled just this quickly. And the lack of therapy is really sad. Doctors are saying, 'Just take the meds to see if they help,' and if they help, 'You must have A.D.H.D.'"

Dr. Parker added: "Stimulants will help anyone focus better. And a lot of young people like or value that feeling, especially those who are driven and have ambitions. We have to realize that these are potential addicts—drug addicts don't look like they used to."

The Fees decided to go. The event was sponsored by the local chapter of Children and Adults with Attention Deficit Disorder (Chadd), the nation's primary advocacy group for A.D.H.D. patients. They wanted to attend the question-and-answer session afterward with local doctors and community college officials.

The evening opened with the local Chadd coordinator thanking the drug company Shire—the manufacturer of several A.D.H.D. drugs, including Vyvanse and extended-release Adderall—for partly underwriting the event. An hourlong film directed and narrated by two men with A.D.H.D. closed by examining some "myths" about stimulant medications, with several doctors praising their efficacy and safety. One said they were "safer than aspirin," while another added, "It's O.K.—there's nothing that's going to happen."

Sitting in the fourth row, Mr. Fee raised his hand to pose a question to the panel, which was moderated by Jeffrey Katz, a local clinical psychologist and a national board member of Chadd. "What are some of the drawbacks or some of the dangers of a misdiagnosis in somebody," Mr. Fee asked, "and then the subsequent medication that goes along with that?"

Dr. Katz looked straight at the Fees as he answered, "Not much."

Adding that “the medication itself is pretty innocuous,” Dr. Katz continued that someone without A.D.H.D. might feel more awake with stimulants but would not consider it “something that they need.”

“If you misdiagnose it and you give somebody medication, it’s not going to do anything for them,” Dr. Katz concluded. “Why would they continue to take it?”

Mr. Fee slowly sat down, trembling. Mrs. Fee placed her hand on his knee as the panel continued.

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**ALAN SCHWARZ** is a Pulitzer Prize-nominated reporter for *The New York Times*.



Joshua Gowin



## How "Smart Drugs" Enhance Us

If I only had a (better) brain.

**T**he French Revolution was largely conceived in Parisian coffee houses such as Café Procope, where the radical journalist Jean-Paul Marat sipped java during his energetic diatribes and Robespierre's habitual consumption only increased his rebellious fervor. Voltaire reportedly guzzled over ten cups each day. Although they didn't know about caffeine at the time (it wasn't discovered until 1819, 30 years after the French Revolution), they certainly didn't overlook the stimulating effects of consuming a cup of perk. Some coffee-enthusiasts might suggest that imbibing the early-morning helper contributed to the monarchy's demise and the rise of the new Republic.

Our understanding of pharmacology has come a long way since the Reign of Terror. Recently, 'smart drugs' have been touted as a remedy to an array of problems, from bad moods to failing economies. What have we gained with the advent of modern cognitive enhancers?

A cup of coffee is a far cry from the sophisticated stimulants used by many on a daily basis. For example, Adderall and Ritalin, prescribed for the treatment of Attention-Deficit Hyperactivity Disorder (ADHD), work by helping individuals focus their attention without being easily distracted. For a child diagnosed with ADHD, these drugs can greatly improve both behavior and school performance. Adderall, composed of mixed amphetamine salts, and Ritalin, an amphetamine derivative, are also two of the drugs most widely used by healthy adults as purported brain boosters. Surveys at some universities have shown that up to 35% of students have obtained these drugs for use as a study aid, though most of them do not have ADHD (ADHD affects only 3–4% of people). For students without prescriptions, they usually have little trouble acquiring Ritalin or Adderall from friends or schoolmates. Students with prescriptions sometimes even sell their unneeded doses.

Given the dramatic rise in use for studying, ethicists have debated whether cognitive-enhancing drugs are unfair. Those who take them may have an advantage on tests versus students who attempt to study using their wits alone. If taking drugs could provide a cognitive edge, you might expect that these students would outperform their classmates. Some wonder if parents might begin forcing their children to take smart-drugs in order to maintain competitive grades.

In order to address this issue, The College Life Study began periodically surveying university students a few years ago to better understand how health-related behaviors, including all varieties of drug use, affect school performance and career development. At a recent conference, Amelia Arria, the lead researcher, presented data about the use of Ritalin and Adderall as study drugs. The students who used these drugs more often also tended to skip more classes and smoke more pot. In terms of performance, they tended to have lower GPAs, in the 2.0–3.0 range, not higher ones. It seems, rather than as a tool to get ahead, students used stimulants while cramming to catch up for lost study time. Students earning As were mostly doing so by steady work throughout the semester, without the assistance of modern medicine.

Of course, this finding merits some caveats. Maybe the students using cognitive-enhancers did better than they would have otherwise. Just because most students (without ADHD) who use pharmacological aids don't perform better, some users may see a dramatic improvement. Nonetheless, so far it appears that Ritalin and Adderall offer the greatest assistance to the people they're prescribed to, those diagnosed with ADHD. As for the rest of students, Adderall may not be an unequivocal performance enhancer. The results of this study suggest that if a gap exists, the students who don't take study drugs are edging out those who do.

Arria reminds that evidence has been inconclusive so far about whether the enhancement for studying is real or perceived in healthy adults. In another study, students were given pills labeled either 'Ritalin' or 'placebo' and asked to take a mock SAT examination. The students given pills labeled 'Ritalin' reported feeling greater focus and mental clarity but their scores weren't any better—perhaps because the labels were misleading: both groups actually received a placebo.

A third common cognitive-enhancer, modafinil, first entered the market to help people with narcolepsy stay awake. A great deal of research has since looked at the potential benefits of modafinil for a variety of purposes. In healthy adults who are sleep-deprived, modafinil can improve mood, provide 10–12 hours of wakeful, focused productivity and improve cognition to a similar extent as caffeine, but without the jitteriness—and the effects last longer. After working overnight in the emergency room, doctors who took a single dose of modafinil kept their eyes

open more easily than doctors who didn't take modafinil during morning lectures. However, they were just as weary on the drive home, and they had more difficulty falling asleep once they finally made it to bed. For patients with traumatic brain injury, major depressive disorder or schizophrenia, modafinil had a substantial effect on reducing fatigue, excessive sleepiness and depression, but it did not provide any benefit greater than placebo. For well-rested, healthy adults, the benefits remain controversial. While some studies have demonstrated that well-rested individuals can show modest improvement on memory tasks with modafinil, there may be a ceiling effect. High-functioning, healthy adults with adequate sleep may not receive any noticeable benefit because they are already performing optimally.

What is the difference between cognitive-enhancers like modafinil or Adderall and predecessors like caffeine? The chemical compounds differ, and they have unique mechanisms of action. Pharmaceutical packaging gives them elegance and refinement. Most people believe

they'll work, so they offer at minimum a placebo effect. Even if, at heart, they're simply newer, prettier double-shots of espresso, there may still be some advantages to taking these drugs, such as longer-lasting effects and no jitteriness.

Do these drugs make you smarter? More likely, they allow you to productively use your pre-existing intelligence, even if you didn't get a great night of rest beforehand. After ingesting one of these pills, an average person won't suddenly discover a cure for cancer or write a symphony that would make Beethoven envious. If someone is seeking a miraculous transformation, they're better off booking a room at a Holiday Inn Express or going about it the old-fashioned way-by signing a deal with the devil.

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**JOSHUA GOWIN** is a psychologist and former intern at *Psychology Today*.



## EXPLORING THE ISSUE



### Is the Use of "Smart" Pills for Cognitive Enhancement Dangerous?

#### Critical Thinking and Reflection

1. Why do so many young people fake symptoms in order to acquire "smart drugs"?
2. Describe the side effects of stimulant drugs such as Ritalin and Adderall. What are the effects that appeal to users?
3. What are the legitimate uses for stimulant drugs such as Ritalin and Adderall?

#### Is There Common Ground?

On some elite college campuses, up to 25 percent of students admit to nonmedical use of stimulant drugs. "Smart" drugs are also widely used off campus by business executives and others who wish to gain a competitive edge and to better meet deadlines. The drugs are becoming common and many people believe they have much to offer individuals and society and should be made more available. The benefits of enhancement drugs include increased alertness and focus and improvement in some types of memory. Among those who do not have ADHD, research has shown that stimulants consistently and significantly enhance learning of material recalled days later, an obvious advantage when studying for an exam. The drugs may even positively affect certain types of judgment. Improvements in memory and cognitive control have been reported in multiple studies, mainly using the drug Ritalin.

While the drugs may offer the benefit of cognitive enhancement, there is question as to whether their use is both cheating and drug abuse. Will there be pressure among students to take drugs just to keep up with their peers? One of the biggest concerns, however, is that cognitive enhancement may be wrong not because it is so physically risky or because it creates an unlevelled playing field but because it redefines the nature of human achievement itself. The obvious parallel to performance-enhancing drug use among professional and amateur athletes is often made. While ethicists ponder this, the reality is that there are also health risks since the effects of chronic unregulated doses of stimulant drugs can be

toxic. The drugs can also cause psychosis, actual cognitive deficits, and addiction.

#### Create Central

[www.mhhe.com/createcentral](http://www.mhhe.com/createcentral)

#### Additional Resources

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National Institutes of Mental Health (NIMH). Attention Deficit Hyperactivity Disorder (ADHD)

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