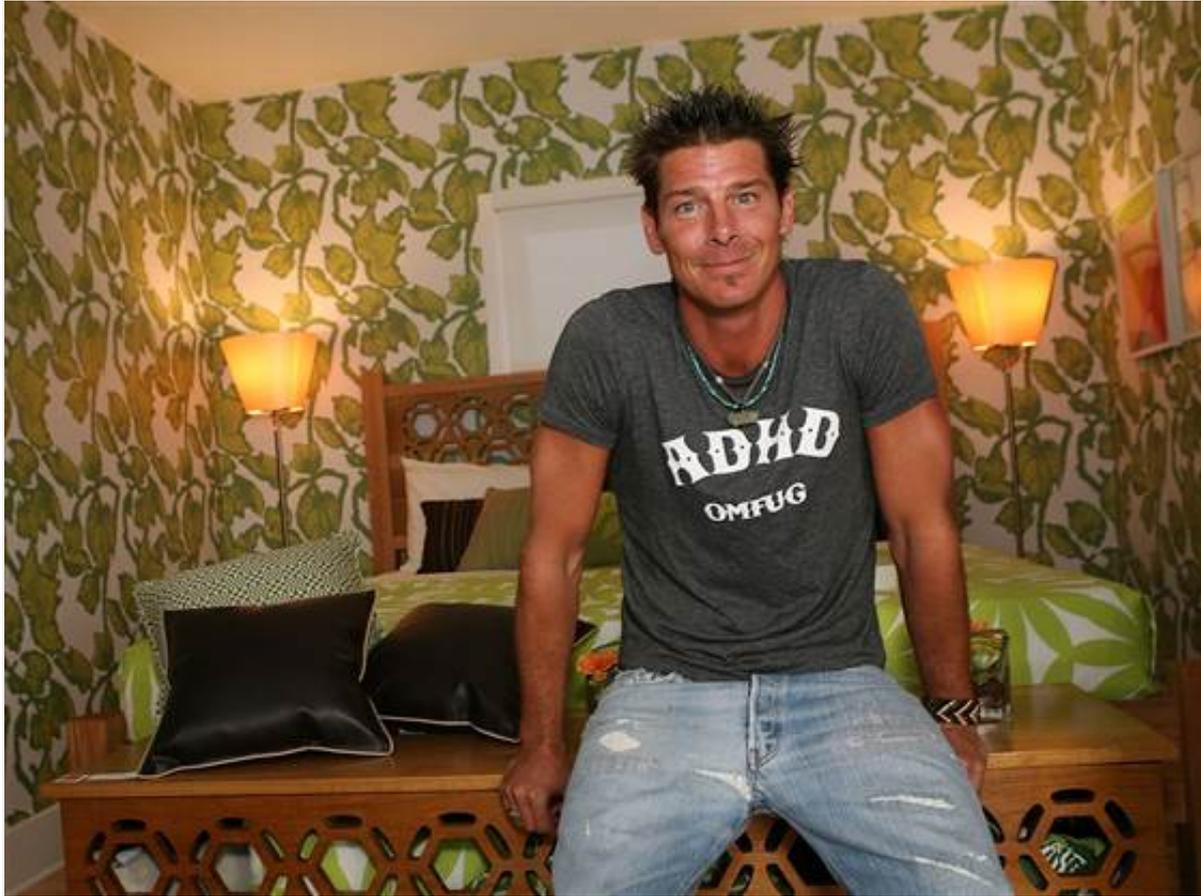


ADHD diagnoses soared amid 20-year drug marketing campaign

Alan Schwarz The New
York Times

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Michael Buckner / Getty Images file

Designer Ty Pennington attends the grand opening of ADHD on Abbot-Kinney on Aug. 15, 2007, in Venice Beach, Calif.

After more than 50 years leading the fight to legitimize attention deficit hyperactivity disorder, Keith Connors could be celebrating.

Severely hyperactive and impulsive children, once shunned as bad seeds, are now recognized as having a real neurological problem. Doctors and parents have largely accepted drugs like Adderall and Concerta to temper the traits of classic A.D.H.D., helping youngsters succeed in school and beyond.

But Dr. Conners did not feel triumphant this fall as he addressed a group of fellow A.D.H.D. specialists in Washington. He noted that recent data from the Centers for Disease Control and Prevention show that the diagnosis had been made in 15 percent of high school-age children, and that the number of children on medication for the disorder had soared to 3.5 million from **600,000 in 1990**. He questioned the rising rates of diagnosis and called them “**a national disaster** of dangerous proportions.”

“The numbers make it look like an epidemic. Well, it’s not. It’s preposterous,” Dr. Conners, a psychologist and professor emeritus at Duke University, said in a subsequent interview. “This is a concoction to justify the giving out of medication at unprecedented and unjustifiable levels.”

The rise of A.D.H.D. diagnoses and prescriptions for stimulants over the years coincided with a remarkably successful two-decade campaign by pharmaceutical companies to publicize the syndrome and promote the pills to doctors, educators and parents. With the children’s market booming, the industry is now employing similar marketing techniques as it focuses on adult A.D.H.D., which could become even more profitable.

Few dispute that classic A.D.H.D., historically estimated to affect 5 percent of children, is a legitimate disability that impedes success at school, work and personal life. Medication often assuages the severe impulsiveness and inability to concentrate, allowing a person’s underlying drive and intelligence to emerge.



Karsten Moran for The New York Times

"This is a concoction to justify the giving out of medication at unprecedented and unjustifiable

levels," Keith Conners, a psychologist and early advocate for recognition of A.D.H.D., said of the rising rates of diagnosis of the disorder.

But even some of the field's longtime advocates say the zeal to find and treat every A.D.H.D. child has led to too many people with scant symptoms receiving the diagnosis and medication. The disorder is now the second most frequent long-term diagnosis made in children, narrowly trailing asthma, according to a New York Times analysis of C.D.C. data.

Behind that growth has been drug company marketing that has stretched the image of classic A.D.H.D. to include relatively normal behavior like carelessness and impatience, and has often overstated the pills' benefits. Advertising on television and in popular magazines like *People* and *Good Housekeeping* has cast common childhood forgetfulness and poor grades as grounds for medication that, among other benefits, can result in "schoolwork that matches his intelligence" and ease family tension.

A 2002 ad for Adderall showed a mother playing with her son and saying, "Thanks for taking out the garbage."

The Food and Drug Administration has cited every major A.D.H.D. drug — stimulants like Adderall, Concerta, Focalin and Vyvanse, and nonstimulants like Intuniv and Strattera — for false and misleading advertising since 2000, some multiple times.

Sources of information that would seem neutral also delivered messages from the pharmaceutical industry. Doctors paid by drug companies have published research and delivered presentations that encourage physicians to make diagnoses more often that discredit growing concerns about overdiagnosis.

Many doctors have portrayed the medications as benign — "safer than aspirin," some say — even though they can have significant side effects and are regulated in the same class as morphine and oxycodone because of their potential for abuse and addiction. Patient advocacy groups tried to get the government to loosen regulation of stimulants while having sizable portions of their operating budgets covered by pharmaceutical interests.

Companies even try to speak to youngsters directly. Shire — the longtime market leader, with several A.D.H.D. medications including Adderall — recently subsidized 50,000 copies of a comic book that tries to demystify the disorder and uses superheroes to tell children, “Medicines may make it easier to pay attention and control your behavior!”

Profits for the A.D.H.D. drug industry have soared. Sales of stimulant medication in 2012 were nearly \$9 billion, more than five times the \$1.7 billion a decade before, according to the data company IMS Health.

Even Roger Griggs, the pharmaceutical executive who introduced Adderall in 1994, said he strongly opposes marketing stimulants to the general public because of their dangers. He calls them “nuclear bombs,” warranted only under extreme circumstances and when carefully overseen by a physician.

Psychiatric breakdown and suicidal thoughts are the most rare and extreme results of stimulant addiction, but those horror stories are far outnumbered by people who, seeking to study or work longer hours, cannot sleep for days, lose their appetite or hallucinate. More can simply become habituated to the pills and feel they cannot cope without them.

Tom Casola, the Shire vice president who oversees the A.D.H.D. division, said in an interview that the company aims to provide effective treatment for those with the disorder, and that ultimately doctors were responsible for proper evaluations and prescriptions. He added that he understood some of the concerns voiced by the Food and Drug Administration and others about aggressive ads, and said that materials that run afoul of guidelines are replaced.

“Shire — and I think the vast majority of pharmaceutical companies — intend to market in a way that’s responsible and in a way that is compliant with the regulations,” Mr. Casola said. “Again, I like to think we come at it from a higher order. We are dealing with patients’ health.”

A spokesman for Janssen Pharmaceuticals, which makes Concerta, said in an email, “Over the years, we worked with clinicians, parents and advocacy groups to help educate health care practitioners and caregivers about diagnosis and treatment of A.D.H.D., including safe and effective use of medication.”

Now targeting adults, Shire and two patient advocacy groups have recruited celebrities like the Maroon 5 musician [Adam Levine for their marketing campaign](#), “It’s Your A.D.H.D. – Own It.” Online quizzes sponsored by drug companies are designed to encourage people to pursue treatment. A medical education video sponsored by Shire portrays a physician making a diagnosis of the disorder in an adult in a six-minute conversation, after which the doctor recommends medication.

Like most psychiatric conditions, A.D.H.D. has no definitive test, and most experts in the field agree that its symptoms are open to interpretation by patients, parents and doctors. The [American Psychiatric Association](#), which receives significant financing from drug companies, has gradually loosened the official criteria for the disorder to include common childhood behavior like “makes careless mistakes” or “often has difficulty waiting his or her turn.”

The idea that a pill might ease troubles and tension has proved seductive to worried parents, rushed doctors and others.

“Pharma pushed as far as they could, but you can’t just blame the virus,” said Dr. Lawrence Diller, a behavioral pediatrician in Walnut Creek, Calif. “You have to have a susceptible host for the epidemic to take hold. There’s something they know about us that they utilize and exploit.”

Selling to Doctors

Modern marketing of stimulants began with the name Adderall itself. Mr. Griggs bought a small pharmaceutical company that produced a weight-loss pill named Obetrol. Suspecting that it might treat a relatively unappreciated condition then called attention deficit disorder, and found in about 3 to 5 percent of children, he took “A.D.D.” and fiddled with snappy suffixes. He cast a word with the widest net.

All.

For A.D.D.

A.D.D. for All.

Adderall.

“It was meant to be kind of an inclusive thing,” Mr. Griggs recalled.

Adderall quickly established itself as a competitor of the field’s most popular drug, Ritalin. Shire, realizing the drug’s potential, **bought Mr. Griggs’s company for \$186 million** and spent millions more to market the pill to doctors. After all, patients can buy only what their physicians buy into.

As is typical among pharmaceutical companies, Shire gathered hundreds of doctors at meetings at which a physician paid by the company explained a new drug’s value.

Such a meeting was held for Shire’s long-acting version of Adderall, Adderall XR, in April 2002, and included a presentation that to many critics, exemplifies how questionable A.D.H.D. messages are delivered.

Dr. William W. Dodson, a **psychiatrist from Denver**, stood before 70 doctors at the Ritz-Carlton Hotel and Spa in Pasadena, Calif., and clicked through slides that encouraged them to “educate the patient on the lifelong nature of the disorder and the benefits of lifelong treatment.” But that assertion was not supported by science, as studies then and now have shown that perhaps half of A.D.H.D. children are not impaired as adults, and that little is known about the risks or efficacy of long-term medication use.

The PowerPoint document, obtained by The Times, asserted that stimulants were not “drugs of abuse” because people who overdose “feel nothing” or “feel bad.” Yet these drugs are **classified by the government** among the most abusable substances in medicine, largely because of their effects on concentration and mood. Overdosing can cause severe heart problems and psychotic behavior.

Slides described side effects of Adderall XR as “generally mild,” despite clinical trials showing notable rates of insomnia, significant appetite suppression and mood swings, as well as rare instances of hallucinations. Those side effects increase significantly among patients who take more pills than prescribed.

Another slide warned that later in life, children with A.D.H.D. faced “job failure or underemployment,” “fatal car wrecks,” “criminal involvement,” “unwanted pregnancy” and venereal diseases, but did not mention that studies had not assessed whether stimulants decreased those risks.

Dr. Conners of Duke, in the audience that day, said the message was typical for such gatherings sponsored by pharmaceutical companies: Their drugs were harmless, and any traces of A.D.H.D. symptoms (which can be caused by a number of issues, including lack of sleep and family discord) should be treated with stimulant medication.

In an interview last month, Dr. Dodson said he makes a new diagnosis in about 300 patients a year and, because he disagrees with studies showing that many A.D.H.D. children are not impaired as adults, always recommends their taking stimulants for the rest of their lives.

He said that concern about abuse and side effects is “incredibly overblown,” and that his longtime work for drug companies does not influence his opinions. He said he received about \$2,000 for the 2002 talk for Shire. He earned \$45,500 in speaking fees from pharmaceutical companies in 2010 to 2011, according to [ProPublica](#), which tracks such payments.

“If people want help, my job is to make sure they get it,” Dr. Dodson said. Regarding people concerned about prescribing physicians being paid by drug companies, he added: “They like a good conspiracy theory. I don’t let it slow me down.”

Many of the scientific studies cited by drug company speakers involved [Dr. Joseph Biederman](#), a prominent child psychiatrist at Harvard University and Massachusetts General Hospital. In 2008, a [Senate investigation](#) revealed that Dr. Biederman’s research on many psychiatric conditions had been substantially financed by drug companies, including Shire. Those companies also paid him \$1.6 million in speaking and consulting fees. He has denied that the payments influenced his research.

Dr. Conners called Dr. Biederman “unequivocally the most published psychopharmacology maven for A.D.H.D.,” one who is well known for embracing stimulants and dismissing detractors. Findings from Dr. Biederman’s dozens of studies on the disorder and specific brands of stimulants have filled the posters and pamphlets of pharmaceutical companies that financed the work.

Those findings typically delivered three messages: The disorder was underdiagnosed; stimulants were effective and safe; and unmedicated A.D.H.D. led to significant risks

for academic failure, drug dependence, car accidents and brushes with the law.

Dr. Biederman was frequently quoted about the benefits of stimulants in interviews and company news releases. In 2006, for example, he told Reuters Health, “If a child is brilliant but is doing just O.K. in school, that child may need treatment, which would result in their performing brilliantly at school.”

This year, Dr. Biederman told the medical newsletter [Medscape](#) regarding medication for those with A.D.H.D., “Don’t leave home without it.”

Dr. Biederman did not respond to requests for an interview.

Most of Dr. Biederman’s critics said that they believed his primary motivation was always to help children with legitimate A.D.H.D. and that risks of untreated A.D.H.D. can be significant. What concerned them was how Dr. Biederman’s high-profile and unwavering promotion of stimulants armed drug companies with the published science needed to create powerful advertisements — many of which cast medications as benign solutions to childhood behavior falling far short of legitimate A.D.H.D.

“He gave them credibility,” said Richard M. Scheffler, a professor of health economics and public policy at the University of California, Berkeley, who has written extensively on stimulants. “He didn’t have a balance. He became totally convinced that it’s a good thing and can be more widely used.”

Building a Message

Drug companies used the research of Dr. Biederman and others to create compelling messages for doctors. “Adderall XR Improves Academic Performance,” an ad in a psychiatry journal declared in 2003, leveraging two Biederman studies financed by Shire. A Concerta ad barely mentioned A.D.H.D., but said the medication would “allow your patients to experience life’s successes every day.”

Some studies had shown that stimulant medication helped some elementary school children with carefully evaluated A.D.H.D. to improve scores in reading and math tests, primarily by helping them concentrate. The concern, some doctors said, is that long-term, wider academic benefits have not been proved — and that ads suggesting they have can tempt doctors, perhaps subconsciously, to prescribe drugs with risks to

healthy children merely to improve their grades or self-esteem.

“There are decades of research into how advertising influences doctors’ prescribing practices,” said Dr. Aaron Kesselheim of Brigham and Women’s Hospital in Boston, who specializes in pharmaceutical ethics. “Even though they’ll tell you that they’re giving patients unbiased, evidence-based information, in fact they’re more likely to tell you what the drug company told them, whether it’s the benefits of the drugs or the risks of those drugs.”

Drug company advertising also meant good business for medical journals – the same journals that published papers supporting the use of the drugs. The most prominent publication in the field, [**The Journal of the American Academy of Child & Adolescent Psychiatry**](#), went from no ads for A.D.H.D. medications from 1990 to 1993 to about 100 pages per year a decade later. Almost every full-page color ad was for an A.D.H.D. drug.

As is legal and common in pharmaceutical marketing, stimulants’ possible side effects like insomnia, irritability and psychotic episodes were printed in small type and dominated by other messages. One Adderall XR brochure included the recording of a man’s voice reassuring doctors: “Amphetamines have been used medically for nearly 70 years. That’s a legacy of safety you can count on.” He did not mention any side effects.

Drug companies used sales representatives to promote the drugs in person. Brian Lutz, a Shire salesman for Adderall XR from 2004 to 2009, said he met with 75 psychiatrists in his Oakland, Calif., territory at least every two weeks — about 30 to 40 times apiece annually — to show them posters and pamphlets that highlighted the medicine’s benefits for grades and behavior.

If a psychiatrist asked about issues like side effects or abuse, Mr. Lutz said, they were played down. He said he was told to acknowledge risks matter-of-factly for legal reasons, but to refer only to the small print in the package insert or offer Shire’s phone number for more information.

“It was never like, ‘This is a serious side effect, you need to watch out for it,’ ” Mr. Lutz recalled. “You wanted to give them more information because we’re talking about kids here, you know? But it was all very positive.”

A Shire spokeswoman said the company would not comment on any specific employee and added, “Shire sales representatives are trained to deliver fair and balanced presentations that include information regarding the safety of our products.”

Mr. Lutz, now pursuing a master’s degree and hoping to work in mental health, recalled his Shire work with ambivalence. He never lied or was told to lie, he said. He said he still would recommend Adderall XR and similar stimulants for A.D.H.D. children and adults.

What he regrets, he said, “is how we sold these pills like they were cars, when we knew they weren’t just cars.”

Selling to Parents

In September 2005, over a cover that heralded Kirstie Alley’s waistline and Matt Damon’s engagement, subscribers to People magazine saw a wraparound advertisement for Adderall XR. A mother hugged her smiling child holding a sheet of paper with a “B+” written on it.

“Finally!” she said. “Schoolwork that matches his intelligence.”

When federal guidelines were loosened in the late 1990s to allow the marketing of controlled substances like stimulants directly to the public, pharmaceutical companies began targeting perhaps the most impressionable consumers of all: parents, specifically mothers.

A magazine ad for Concerta had a grateful mother saying, “Better test scores at school, more chores done at home, an independence I try to encourage, a smile I can always count on.” A 2009 ad for Intuniv, Shire’s nonstimulant treatment for A.D.H.D., showed a child in a monster suit taking off his hairy mask to reveal his adorable smiling self. “There’s a great kid in there,” the text read.

“There’s no way in God’s green earth we would ever promote” a controlled substance like Adderall directly to consumers, Mr. Griggs said as he was shown several advertisements. “You’re talking about a product that’s having a major impact on brain chemistry. Parents are very susceptible to this type of stuff.”

The Food and Drug Administration has repeatedly instructed drug companies to withdraw such ads for being false and misleading, or exaggerating the effects of the medication. Many studies, often sponsored by pharmaceutical companies, have determined that untreated A.D.H.D. was associated with later-life problems. But no science determined that stimulant treatment has the overarching benefits suggested in those ads, the F.D.A. has pointed out in numerous warning letters to manufacturers since 2000.

Shire agreed last February to pay \$57.5 million in fines to resolve allegations of improper sales and advertising of several drugs, including Vyvanse, Adderall XR and Daytrana, a patch that delivers stimulant medication through the skin. Mr. Casola of Shire declined to comment on the settlement because it was not fully resolved.

He added that the company's current promotional materials emphasize how its medications provide "symptom control" rather than turn monsters into children who take out the garbage. He pointed to a Shire [brochure](#) and web page that more candidly than ever discuss side effects and the dangers of sharing medication with others.

However, many critics said that the most questionable advertising helped build a market that is now virtually self-sustaining. Drug companies also communicated with parents through sources who appeared independent, from support groups to teachers.

The primary A.D.H.D. patient advocacy group, [Children and Adults with Attention-Deficit/Hyperactivity Disorder](#), or Chadd, was founded in 1987 to gain greater respect for the condition and its treatment with Ritalin, the primary drug available at the time. Start-up funding was provided by Ciba-Geigy Pharmaceuticals, Ritalin's primary manufacturer. Further drug company support helped create public service announcements and pamphlets, some of which tried to dispel concerns about Ritalin; one Chadd "fact sheet" conflicted with 60 years of science in claiming, "Psychostimulant drugs are not addictive."

A 1995 [documentary](#) on PBS detailed how Chadd did not disclose its relationship with drug companies to either the Drug Enforcement Administration, which it was then lobbying to ease government regulation of stimulants, or the Department of

Education, with which it collaborated on an A.D.H.D. educational video.

Chadd subsequently became more open in disclosing its backers. The program for its 2000 annual convention, for example, thanked by name its 11 primary sponsors, all drug companies. According to Chadd records, Shire paid the group a total of \$3 million from 2006 to 2009 to have Chadd's bimonthly magazine, Attention, distributed to doctors' offices nationwide.

Chadd records show that the group has historically received about \$1 million a year, one-third of its annual revenue, from pharmaceutical company grants and advertising. Regarding his company's support, Mr. Casola said, "I think it is fair to call it a marketing expense, but it's an arm's-length relationship."

"We don't control what they do," he said. "We do support them. We do support broadly what they are trying to do in the marketplace — in society maybe is a better way to say it."

Advocates Answer

The chief executive of Chadd, Ruth Hughes, said in an interview that most disease-awareness groups receive similar pharmaceutical support. She said drug companies did not influence the group's positions and activities, and noted that Chadd receives about \$800,000 a year from the C.D.C. as well.

"One pharma company wanted to get Chadd volunteers to work at their booth to sort of get peer counseling, and we said no, won't do that, not going there," Dr. Hughes said, adding, "It would be seen as an endorsement."

A.D.H.D. patient advocates often say that many parents resist having their child evaluated because of the stigma of mental illness and the perceived risks of medication. To combat this, groups have published lists of "Famous People With A.D.H.D." to reassure parents of the good company their children could join with a diagnosis. One, in circulation since the mid-1990s and now posted on the psychcentral.com information portal beside two ads for Strattera, includes Thomas Edison, Abraham Lincoln, Galileo and Socrates.

The idea of unleashing children's potential is attractive to teachers and school

administrators, who can be lured by A.D.H.D. drugs' ability to subdue some of their most rambunctious and underachieving students. Some have provided parents with pamphlets to explain the disorder and the promise of stimulants.

Susan Parry, who raised three boys in a top public school system on Mercer Island, outside Seattle, in the 1990s, said teachers pushed her into having her feisty son Andy evaluated for A.D.H.D. She said one teacher told her that her own twins were thriving on Ritalin.

Mrs. Parry still has the pamphlet given to her by the school psychologist, which states: "Parents should be aware that these medicines do not 'drug' or 'alter' the brain of the child. They make the child 'normal.'" She and her husband, Michael, put Andy on Ritalin. The Parrys later noticed that on the back of the pamphlet, in small type, was the logo of Ciba-Geigy. A school official told them in a letter, which they provided to The Times, that the materials had been given to the district by a Ciba representative.

"They couldn't advertise to the general public yet," said Michael Parry, adding that his son never had A.D.H.D. and after three years was taken off Ritalin because of sleep problems and heart palpitations. "But somebody came up with this idea, which was genius. I definitely felt seduced and enticed. I'd say baited."

Although proper A.D.H.D. diagnoses and medication have helped millions of children lead more productive lives, concerns remain that questionable diagnoses carry unappreciated costs.

"They were telling me, 'Honey, there's something wrong with your brain and this little pill's going to fix everything,'" said Micaela Kimball, who received the diagnosis in 1997 as a high school freshman in Ithaca, N.Y., and is now a freelance writer in Boston. "It changed my whole self-image, and it took me years to get out from under that."

Today, 1 in 7 children receives a diagnosis of the disorder by the age of 18. As these teenagers graduate into adulthood, drug companies are looking to keep their business.

The New Frontier: Adults

The studio audience roared with excitement two years ago as [Ty Pennington](#), host of “The Revolution” on ABC, demonstrated how having adult A.D.H.D. felt to him. He staged two people struggling to play Ping-Pong with several balls at once while reciting the alphabet backward, as a [crowd clapped](#) and laughed. Then things got serious.

A psychiatrist on the program said that “the prison population is full of people with undiagnosed A.D.H.D.” He told viewers, “Go get this diagnosis” so “you can skyrocket.” He said that stimulant medication was effective and “safer than aspirin.”

No one mentioned that Mr. Pennington had been a paid spokesman for Shire from 2006 to 2008. His Adderall XR video testimonials – the medication “literally changed my life” and “gave me confidence,” he said in a 2008 ad – had drawn an [F.D.A. reprimand](#) for overstating Adderall’s effects while omitting all risks.

Mr. Pennington said through a spokeswoman: “I am not a medical expert. I am a television host.”

Many experts agree that the disorder was dismissed for too long as affecting only children. Estimates of the prevalence of adult A.D.H.D. in the United States -- derived through research often backed by pharmaceutical companies -- have typically ranged from 3 to 5 percent. Given that adults far outnumber children, this suggests that the adult market could be twice as large.

Because many doctors and potential patients did not think adults could have A.D.H.D., drug companies sold the concept of the disorder as much as their medications for it.

“The fastest-growing segment of the market now is the new adults who were never diagnosed,” Angus Russell [told Bloomberg TV](#) in 2011 when he was Shire’s chief executive. Nearly 16 million prescriptions for A.D.H.D. medications were written for people ages 20 to 39 in 2012, close to triple the 5.6 million just five years before, according to IMS Health. No data show how many patients those prescriptions represent, but some experts have estimated two million.

Foreseeing the market back in 2004, Shire sponsored a booklet that according to its cover would “help clinicians recognize and diagnose adults with A.D.H.D.” Its author

was Dr. Dodson, who had delivered the presentation at the Adderall XR launch two years before. Rather than citing the widely accepted estimate of 3 to 5 percent, the booklet offered a much higher figure.

“About 10 percent of adults have A.D.H.D., which means you’re probably already treating patients with A.D.H.D. even though you don’t know it,” the first paragraph ended. But the two studies cited for that 10 percent figure, from [1995](#) and [1996](#), involved only children; no credible national study before or since has estimated an adult prevalence as high as 10 percent.

Dr. Dodson said he used the 10 percent figure because, despite several studies estimating adult rates as far lower, “once a child has A.D.H.D., he does for life. It doesn’t go away with age.”

The booklet later quotes a patient of his named Scarlett reassuring doctors: “If you give me a drink or a drug, I’ll abuse it, but not this medication. I don’t consider it a drug. Drugs get abused. Medication helps people have satisfying lives.”

Shire’s 2008 print [campaign](#) for adult A.D.H.D. portrayed a gloomy future to prospective patients. One ad showed a happy couple’s wedding photo with the bride airbrushed out and “DIVORCED” stamped on it. “The consequences may be serious,” the ad said, citing a [study by Dr. Biederman](#) supported in part by Shire. Although Dr. Biederman’s study showed a higher rate of divorce among adults with the disorder, it did not assess whether stimulant treatment significantly deterred such consequences.

Questionable Quizzes

Adults searching for information on A.D.H.D. encounter websites with short quizzes that can encourage normal people to think they might have it. Many such tests are sponsored by drug companies in ways hidden or easily missed.

“Could you have A.D.H.D.?” beckons [one quiz](#), sponsored by Shire, on the website [everydayhealth.com](#). Six questions ask how often someone has trouble in matters like “getting things in order,” “remembering appointments” or “getting started” on projects.

A user who splits answers evenly between “rarely” and “sometimes” receives the result “A.D.H.D. Possible.” Five answers of “sometimes” and one “often” tell the user, “A.D.H.D. May Be Likely.”

In a nationwide telephone poll conducted by The Times in early December, 1,106 adults took the quiz. Almost half scored in the range that would have told them A.D.H.D. may be possible or likely.

About 570,000 people took the EverydayHealth test after [a 2011 advertisement](#) starring [Mr. Levine](#) of [Maroon 5](#) sponsored by Shire, Chadd and another advocacy group, according to the website [Medical Marketing & Media](#). A similar test on the website for Concerta prompted L2ThinkTank.com, which assesses pharmaceutical marketing, to award the campaign its top rating, “Genius.”

[John Grohol](#), a Boston-area psychologist who licensed the test to EverydayHealth, said such screening tools do not make a diagnosis; they merely “give you a little push into looking into” whether you have A.D.H.D. Other doctors countered that, given many studies showing that doctors are strongly influenced by their patients’ image of what ails them, such tests invite too many patients and doctors to see the disorder where it is not.

“I think it is misleading,” said [Dr. Tyrone Williams](#), a psychiatrist in Cambridge, Mass. “I do think that there are some people out there who are really suffering and find out that maybe it’s treatable. But these symptoms can be a bazillion things. Sometimes the answers are so simple and they don’t require prescriptions – like ‘How about eight hours of sleep, Mom, because four hours doesn’t cut it?’ And then all their A.D.H.D. symptoms magically disappear.”

Because studies have shown that A.D.H.D. can run in families, drug companies use the children’s market to grow the adult one. A pamphlet published in 2008 by Janssen, Concerta’s manufacturer — headlined “Like Parent, Like Child?” — claimed that “A.D.H.D. is a highly heritable disorder” despite studies showing that the vast majority of parents of A.D.H.D. children do not qualify for a diagnosis themselves.

A current Shire manual for therapists illustrates the genetic issue with a family tree: three grandparents with the disorder, all six of their children with it, and seven of eight grandchildren, too.

Insurance plans, increasingly reluctant to pay for specialists like psychiatrists, are leaving many A.D.H.D. evaluations to primary-care physicians with little to no training in the disorder. If those doctors choose to learn about the diagnostic process, they can turn to web-based continuing-education courses, programs often subsidized by drug companies.

A recent course titled “[Unmasking A.D.H.D. in Adults](#),” on the website Medscape and sponsored by Shire, featured an instructional video of a primary-care physician listening to a college professor detail his work-related sleep problems. After three minutes he described some attention issues he had as a child, then revealed that his son was recently found to have the disorder and was thriving in college on medication.

Six minutes into their encounter, the doctor said: “If you have A.D.H.D., which I believe you do, family members often respond well to similar medications. Would you consider giving that a try?”

The psychiatrist who oversaw the course, [Dr. David Goodman](#) of Johns Hopkins and the Adult Attention Deficit Disorder Center of Maryland, said that he was paid several thousand dollars to oversee the course by Medscape, not Shire directly, and that such income did not influence his decisions with patients. But as he reviewed the video in September, Dr. Goodman reconsidered its message to untrained doctors about how quickly the disorder can be assessed and said, “That was not an acceptable way to evaluate and conclude that the patient has A.D.H.D.”

A Shire spokeswoman declined to comment on the video and the company’s sponsorship of it.

Mr. Casola said Shire remains committed to raising awareness of A.D.H.D. Shire spent \$1 million in the first three quarters of 2013, according to [company documents](#), to support A.D.H.D. conferences to educate doctors. One this autumn found [J. Russell Ramsay, a psychologist at](#) the University of Pennsylvania’s medical school, who also serves as a consultant and speaker for Shire, reading aloud one of his slides to the audience: “A.D.H.D. – It’s Everywhere You Want to Be.”

“We are a commercial organization trying to bring health care treatments to patients,” Mr. Casola said. “I think, on balance, we are helping people.”

*This story "[**The Selling of Attention Deficit Disorder**](#)" first appeared in the *The New York Times**

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