

# Adult ADHD: Issues and Answers

CME Newsletter of the Adult ADHD Program,  
Department of Psychiatry, NYU School of Medicine

## Adult ADHD Prescription Volume Doubles

The fastest growing segment of patients with attention-deficit/hyperactivity disorder (ADHD) is not 8- to 12-year-old boys, but women in the throes of career and motherhood, suggests a large prescription review by Medco Health Solutions Inc., a Franklin Lakes, NJ-based pharmaceutical benefit manager (Medco Health Solutions, Inc., 2005). In fact, the number of adults with ADHD taking prescription drugs more than doubled between 2000 and 2004, with growth in adult ADHD drug use outpacing increases in pediatric use by 44% (Medco Health Solutions, Inc., 2005). Spending on adult ADHD prescriptions grew by about 325% during the 2000-2004 period, noted Medco (Medco Health Solutions, Inc., 2005).

The Medco retrospective analysis, which reviewed the prescription data of 2.4 million patients nationwide, shows a significant jump in the number of adult women taking medications to treat ADHD. Among women ages 20 to 44—the years when they are immersed in motherhood and career—the use of ADHD medications has more than doubled (113% increase) over the 4-year analysis period, a growth rate 21% greater than their male counterparts. Furthermore, in 2004, use of ADHD medications among women between the ages of 20 and 64 was equal to that of men in the same age group, a major contrast to data from the pediatric population, in which the use of ADHD medications is twice as high in boys as it is in girls (Medco Health Solutions, Inc., 2005) [see table](#). The fact that more adult women are receiving ADHD treatment is not surprising when one considers that many of them were not diagnosed with ADHD when they were children. Historically, ADHD has often been viewed as a condition of young boys. However, more women are now recognizing their symptoms as adults and are more aware of current treatment options.

Medco Health Solutions, Inc. Research reveals adult diagnosis of ADHD growing faster than children diagnosis [press release]. Available at: [http://www.epilepsy.com/newsfeed/pr\\_1129037421.html](http://www.epilepsy.com/newsfeed/pr_1129037421.html). Accessed February 27, 2006.

## Increase in Number of Patients Using ADHD Medications, by Age Group and Gender, From 2000-2004

Age Group (y)	Males	Females
0-19	+49%	+82%
20-44	+92%	+113%
45-64	+49%	+104%
65+	+6%	+25%

The Medco analysis shows that the growth of ADHD medication use has increased in the last few years, particularly among females.

Medco Health Solutions, Inc. Research reveals adult diagnosis of ADHD growing faster than children diagnosis [press release]. Available at: [http://www.epilepsy.com/newsfeed/pr\\_1129037421.html](http://www.epilepsy.com/newsfeed/pr_1129037421.html). Accessed February 27, 2006.

## Despite findings, undertreatment persists

Even though ADHD prescription volume has increased significantly, the vast majority of adults with ADHD remain undiagnosed, and therefore, untreated. Recent prevalence figures put adult ADHD at about 4% of the population (Kessler, 2005). Of adults who have other outpatient psychiatric conditions, such as depression or substance abuse disorders, approximately 20% have comorbid ADHD. A recent study by Kalbag and Levin shows that 11% to 35% of “substance-abusing” adults also have ADHD, often complicating treatment response (Kalbag & Levin, 2005).

Kessler RC, Adler L, Ames M, et al. The World Health Organization adult ADHD self-report scale (ASRS): a short screening scale for use in the general population. *Psycholo Med*. 2005;35:245-256.

Kalbag AS, Levin FR. Adult ADHD and substance abuse: diagnostic and treatment issues. *Subst Use Misuse*. 2005;40:1955-1981.

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## Statement of Need

Attention-deficit/hyperactivity disorder (ADHD) is the most common neurobehavioral disorder of childhood; incidence ranges from 5% to 10% among school-age children.<sup>1,2</sup> Up to 50% of children with ADHD continue to have ADHD-related problems during their adult years. In addition, many ADHD cases are first diagnosed only after patients have reached adulthood. Adults with ADHD may experience significant functional problems, such as job difficulties, academic underachievement, troublesome relationships with family and peers, and low self-esteem.<sup>3</sup> Diagnosing ADHD in adults can be difficult, and—even when the diagnosis is made—available medications are often not used to treat the disorder,<sup>4</sup> or medication management varies widely across communities and among physicians.<sup>5</sup>

In 2000 and 2001, the American Academy of Pediatrics developed specific guidelines for diagnosing<sup>6</sup> and treating<sup>7</sup> children with ADHD. These guidelines have since been adapted for the diagnosis and treatment of adults with the disorder.

With the growing recognition that many adults have ADHD, and with the advent of new pharmacologic treatments and formulations for managing the disorder, the need for additional education regarding adult ADHD has become clear. This continuing medical education activity focuses on the diagnostic criteria, treatment options, and comorbid conditions associated with adult ADHD.

1. American Academy of Pediatrics, Committee on Quality Improvement, Subcommittee on Attention-Deficit/Hyperactivity Disorder. Clinical practice guideline: diagnosis and evaluation of the child with attention-deficit/hyperactivity disorder. *Pediatrics*. 2000;105:1158-1170.
2. Seashill L, Schwab-Stone M. Epidemiology of ADHD in school-age children. *Child Adolesc Psychiatr Clin North Am*. 2000;9:541-555, vii.
3. Wender PH. Adult manifestations of attention-deficit/hyperactivity disorder. In: Sadock BJ, Sadock VA, eds. *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*. 7th ed. Philadelphia, Pa: Lippincott; Williams & Wilkins; 2000:2688-2692.
4. Jensen PS, Kettler L, Roper MT, et al. Are stimulants over prescribed? Treatment of ADHD in four US communities. *J Am Acad Child Adolesc Psychiatry*. 1999;38:797-804.
5. National Institutes of Health. Consensus Development Conference statement: diagnosis and treatment of attention-deficit/hyperactivity disorder (ADHD). *J Am Acad Child Adolesc Psychiatry*. 2000;39:182-193.
6. American Academy of Pediatrics, Committee on Quality Improvement, Subcommittee on Attention-Deficit/Hyperactivity Disorder. Clinical practice guideline: treatment of the school-aged child with attention-deficit/hyperactivity disorder. *Pediatrics*. 2001;108:1033-1044.

## Learning Objectives

After completing this activity, you should be better able to:

1. Recognize the manifestations of attention-deficit/hyperactivity disorder (ADHD) in adults and the impact of these manifestations on daily functioning
2. Evaluate treatment options—especially use of the new, longer-acting agents—for adult ADHD
3. Explain how to determine the optimal medication dosage for each adult patient with ADHD
4. Identify the common comorbidities of ADHD

## Method of Participation

Read this newsletter, complete the CME Posttest Answer Form and Activity Evaluation Form, and fax or mail the forms to Veritas Institute for Medical Education, Inc., New York University School of Medicine at the address listed. You will receive a certificate by fax or mail. There is no certificate processing fee.

## Intended Audience

This activity was developed for psychiatrists, primary care physicians/internists, neurologists, and psychologists.

## Effective Dates

Released: March 2006

Expires: February 28, 2007

## Accreditation/Designation Statements

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Dr Adler has received honoraria from Veritas Institute for Medical Education, Inc. for his assistance as editor. In addition, he has disclosed the following relevant financial relationships:

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## Use of Brand and Generic Names

Brand names of products for treating attention-deficit/hyperactivity disorder (ADHD) are used throughout this continuing medical education (CME) activity so that participants can distinguish among the many different formulations (duration of action, delivery system) of products with the same generic name.

## Unlabeled Use Disclosure Statement

Participants are advised that this CME activity will contain references to unlabeled/unapproved/investigational uses of drugs to treat ADHD.

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## Why are more adults with ADHD seeking treatment?

Two reasons: Most patients do not necessarily outgrow ADHD. Many adolescents who are taking ADHD agents continue to take them as they leave their teen years and enter the workforce. Studies have shown that adults who have ADHD are more productive when their condition is controlled with medication (Wilens et al, 2002), and many young professionals are taking advantage of the available medications. The majority of these adults prefer long-acting medications, so that their symptoms can be controlled throughout the day (Biederman et al, 2005; Adler et al, 2005). Second, adult ADHD is becoming a more recognizable condition in the adult population, with some 8 million Americans over age 18 affected (Kessler et al, in press). As more information about ADHD is being targeted at the adult population, a greater number of people are seeking treatment. Adult patients suffer an average of \$10,000 a year in lost income, adding up to an astonishing \$77 billion lost annual income on the national level, said Joseph Biederman, MD, at the 2005 annual meeting of the American Psychiatric Association in Atlanta, Georgia (Biederman & Faraone, 2005). The higher the job level, the greater the hit: professionals with postgraduate degrees lose nearly \$40,000 a year (Biederman & Faraone, 2005). Thus, we can look forward to more adults recognizing their symptoms as possibly ADHD-related as this condition comes out of the closet and into the doctor's office.

Wilens TE, Spencer TJ, Biederman J. A review of the pharmacotherapy of adults with attention-deficit/hyperactivity disorder. *J Atten Disord*. 2002;5:189-202.

Biederman J, Spencer T, Surman C, et al. A randomized, placebo-controlled trial of OROS methylphenidate in adults with attention-deficit/hyperactivity disorder. Presented at: 158<sup>th</sup> Annual Meeting of the American Psychiatric Association; May 21-26, 2005; Atlanta, Ga. Poster NR 775.

Adler L, McGough J, Muniz R, et al. Long-term efficacy of extended-release dexamethylphenidate in adult ADHD. Presented at: 158<sup>th</sup> Annual Meeting of the American Psychiatric Association; May 21-26, 2005; Atlanta, Ga. Poster NR 493.

Kessler R, Adler L, Barkley R, et al. The prevalence and correlates of adult ADHD in the United States: Results from the National Comorbidity Survey Replication. *Am J Psychiatry*. In press.

Biederman J, Faraone SV. Economic impact of adult ADHD. Presented at: 158<sup>th</sup> Annual Meeting of the American Psychiatric Association; May 21-26, 2005; Atlanta, Ga. Poster 289.

## Case Report

### Bond trader, 38, diagnosed with adult ADHD following his own son's diagnosis

The patient is a 38-year-old bond trader whose 7-year-old son had been diagnosed recently with ADHD, combined subtype. Throughout his son's evaluation, the patient noticed that he had many of the same symptoms of inattentiveness and restlessness as his son did, both now and going back into his own childhood. Considered at work to be someone who sees the "big picture," he often left the more mundane routine tasks to his assistant,

which caused some friction at work. By not attending to the details of his job, he often made miscalculations, which also eroded his relationship with a number of his clients.

### Patient symptoms

Throughout this patient's own evaluation, a number of symptoms of ADHD were revealed. These included:

- Trouble prioritizing responsibilities—he would often perform the more interesting task, rather than the most pressing one
- Time management problems—running late or forgetting appointments and obligations
- Procrastination—leaving things to the last minute until they reach the crisis point
- Careless mistakes and not checking his work
- Inattention during conversations or when reading
- Misplacing items he needs and spending a great deal of time looking for them
- Fidgeting and a need to move about, to the point that his wife often reminds him to try to sit still
- Trouble relaxing at the end of the day
- Complaints at work and home about his talking too much and interrupting others when speaking

This patient, who recently received a long-expected promotion, felt that the issues at work had become more prominent with his increased managerial, planning, and organizational responsibilities in terms of not only managing himself, but also a small department of employees.

As a child and now as an adult, he felt a high energy level and used physical sports to release some of this energy. He described long-standing issues with feelings of anxiety and worry, which he felt were difficult to control and led to feelings of shortness of breath and tachycardia at times, but without panic anxiety. There was no significant history of substance abuse disorder, depression, mania or other comorbid mental health disorder. He had no active medical problems, other than a recent shoulder injury caused by overtraining, which prevented him from the cycling and jogging that he needed to expend his high level of energy.

### Assessment

ADHD combined sub-type, generalized anxiety disorder (GAD). Symptoms increased with promotion at work and his inability to exercise.

### Treatment

The decision was made to treat ADHD first as it was the most impairing of the conditions. As his son had a good response to methylphenidate, it was decided to initiate a course of sustained-release OROS methylphenidate (Concerta®) to provide symptom relief throughout the day, to improve symptoms both at work and home. The drug was titrated over several months, starting at 18 mg/qam to a dose of 90 mg/qam. The patient noted some residual symptoms at the end of the day, so an afternoon dose of dexamethylphenidate (Focalin®) 2.5 mg was added to his regimen. His total daily dose of methylphenidate was 0.9 mg/kg. The average range is 0.7 mg/kg/d-1.0 mg/kg/d, although some patients respond to lower doses (Spencer, 2005). (NB: OROS methylphenidate [Concerta®] is not FDA-indicated for adult ADHD, but is for child and adolescent ADHD.)

Even with the significant improvement in his ADHD symptoms, the patient reported ongoing issues with anxiety and worry, which were successfully treated with the selective serotonin reuptake inhibitor (SSRI) citalopram (Celexa®) 20 mg/d. After 3 months of treatment, the patient describes increased fulfillment both at work and home, a better relationship with his family, and improved productivity at work.

Spencer T, Biederman J, Wilens T, et al. A large, double-blind, randomized clinical trial of methylphenidate in the treatment of adults with attention-deficit/hyperactivity disorder. *Biol Psychiatry*. 2005;57:456-463.

### Key points of the case study

- 1) Referral after child is diagnosed
- 2) Childhood symptoms more prominent for hyperactivity and impulsivity, which were still present in adulthood, but the inattentive symptoms became more prominent and impairing in adulthood
- 3) Use of long-acting stimulant with need to supplement with short-acting stimulant when duration proved insufficient. This patient benefited from an additional afternoon stimulant dose to control late-day symptoms. This also highlights the need to use adult appropriate doses (adults obviously weigh more than children and using childhood-specific doses results in undertreatment)
- 4) Symptoms increased when coping strategy of regular exercise could not be used and responsibilities of promotion were added. For the latter, the increased cognitive load increased the inattentive symptoms
- 5) Even though GAD was present, ADHD was more impairing and the decision was made to treat the latter first. Generalized anxiety disorder was eventually treated as symptoms persisted

## Ratings by Investigator Show Somewhat Greater Validity Than Self-Rating in Adult ADHD

One of the more widely used instruments for assessing adult ADHD is the Conners' Adult ADHD Rating Scale (CAARS). A recent analysis of 2 double-blind placebo-controlled parallel studies of adult patients with ADHD shows that, while investigator- and self-ratings on the CAARS exhibit strong internal consistency and good inter-rater reliability, baseline CAARS scores have more predictive power for CAARS end point scales when both sets of scores are determined by investigators rather than by patients themselves (Adler et al, 2005). Furthermore, each rater's assessments relate more strongly to other functional and clinical variables that are assessed by the same rater.

In this analysis of 536 volunteer patients who were randomized to 10 weeks of treatment with atomoxetine or placebo, strong evidence was observed for internal consistency of all 5 CAARS scales, both at baseline and at end point, which was evident in both investigator- and self-ratings (Cronbach  $\alpha \geq .74$ ) (Adler et al, 2005). Both sets of raters agreed on efficacy, defined as a 30% reduction in symptoms, in more than 85% of cases on all 5 CAARS indices. CAARS Total Symptoms, Total *DSM-IV* ADHD Symptoms, and Hyperactivity/Impulsivity end point scores were influenced by interactions between their respective baseline scores and rater, indicating that each baseline score was a better predictor of its corresponding end point score when investigators—rather than subjects—provided these ratings. In addition, scores on all the CAARS scales reliably predicted Sheehan Disability Scale, Clinical Global Impression, Hamilton Depression Rating Scale, and Hamilton Anxiety Rating Scale scores at baseline and end point. Self-ratings on the CAARS more strongly related to scores on the Sheehan Disability Scale (a self-rated instrument), while investigator-ratings on the CAARS more strongly related to scores on the Clinical Global Impression (an investigator-rated instrument). The finding of greater predictive power of investigator-rated CAARS baseline scores warrants further study.

Adler LA, Faraone SV, Spencer TJ, Michelson D, Reimherr FW, Glatt SJ, Marchant B, Biederman J. The Reliability and Validity of Self- and Investigator-ratings of ADHD in Adults. Presented at: AACAP Annual Meeting; October 18-23, 2005; Toronto, Canada.

## Teens May Respond to Atomoxetine Differently Than Adults

A meta-analysis that assessed the effects of atomoxetine (Strattera®) in both adults and adolescents with ADHD revealed a slightly greater efficacy in symptom control within the teen population (Adler et al, 2005). Data were pooled from 7 double-blind placebo-controlled studies lasting from 6 to 9 weeks, involving 536 adults and 176 adolescents who

met the *DSM-IV* criteria for ADHD. The results of the analysis show that, even though both age groups demonstrated significant improvement in symptoms while taking atomoxetine, overall treatment effect was somewhat lower in adults than for adolescents. That is, 45% of adults responded to drug versus 33% to placebo ( $P = .007$ ), compared with 54% of adolescents who responded to drug versus 34% to placebo ( $P = .016$ ). The difference in efficacy between age groups did not reach statistical significance. Efficacy measures included the Conners' Adult ADHD-RS, Investigator Version for adults, the ADHD-RS, Parent Version for adolescents, and the CGI-Severity for all patients. Tolerability profiles were similar between age groups, although more adults discontinued due to adverse events, an observation that was not considered to be drug-related.

Methodological and dosing differences among studies and symptom differences among age groups may account for some of the differences in efficacy. However, adult ADHD is different from ADHD in childhood, presumably because adults have developed various strategies to deal with attention deficits. While ADHD affects an estimated 3% to 7% of children under the age of 18, approximately 60% of these children will continue to have symptoms of ADHD that persist into adulthood, with the symptoms taking on different forms. For example, hyperactivity may translate into multiple jobs; inattention may turn into poor time management and error-laden paperwork. Atomoxetine is approved for the treatment of ADHD in children and adults, and is the only nonstimulant approved for the treatment of adult ADHD. Its efficacy in adults relative to adolescents and children must continue to be examined.

Adler L, Wilens T, Gao H, Detke H, Levine LR. Do adolescents and adults with ADHD respond differently to atomoxetine? Presented at: 158<sup>th</sup> Annual Meeting of the American Psychiatric Association; May 21-26, 2005; Atlanta, Ga. Abstract NR428.

## Journal Reviews

- 1) McGough JJ, Smalley SL, McCracken JT, Yang M, Del'homme M, Lynn DE, Loo S. Psychiatric comorbidity in adult attention deficit hyperactivity disorder: findings from multiplex families. *Am J Psychiatry*. 2005;162:1621-1627.

A multiplex family is one in which there is more than one child with a disorder, such as ADHD. A genetic study of multiplex families showed that, when a parent has ADHD, he/she experiences significant psychiatric comorbidity throughout his or her lifetime, which may also impact their occupational status. This study of 435 such parents revealed that they were more likely to be unskilled workers and less likely to have a college degree. In terms of psychopathology, 87% had at least one other psychiatric diagnosis and 56% had at least 2 other such disorders. The ADHD in these

parents was also associated with greater disruptive behavior, substance use, and mood and anxiety disorders, and with earlier onset of major depression, dysthymia, oppositional defiant disorder, and conduct disorder. This study underscores the importance of identifying and chronically treating ADHD early in life, as well as going beyond symptomatic anxiety or depressive symptoms in the adult patient, so that all comorbid disorders can be treated.

2) Philipsen A, Feige B, Hesslinger B, et al. Sleep in adults with attention-deficit/hyperactivity disorder: a controlled polysomnographic study including spectral analysis of the sleep EEG. *Sleep*. 2005;28:877-884.

According to a study published in *Sleep*, adults with ADHD sleep longer but report their sleep time as unsatisfying. Until the publication of this study, only 1 case-control polysomnographic study with a small sample size had been performed in adults with ADHD. This new study investigated objective and subjective sleep quality over 2 nights in 20 unmedicated adult patients with ADHD, using an electroencephalogram spectral power analysis. Subjective sleep parameters were obtained via questionnaires. The results showed that adult patients with ADHD demonstrated increased nocturnal activity, as measured by leg movements, although their total sleep time was not impacted. Nonetheless, the more nocturnal activity that was objectively measured, the more patients reported poorer sleep.

3) Boonstra AM, Oosterlaan J, Sergeant JA, Buitelaar JK. Executive functioning in adult ADHD: a meta-analytic review. *Psychol Med*. 2005;35:1097-1108.

Executive functioning is the process of bringing together and coordinating information for a purpose, usually decision making. About 30% of adults with ADHD have executive functioning problems (Seidman, 2004). A meta-analytic review of 13 studies that included at least 1 executive functioning measure, compared an adult ADHD group with an adult non-ADHD group (using *DMS-III-R* or *DSM-IV* criteria to diagnose ADHD) and showed that neuropsychological difficulties in adult ADHD may not be confined to executive functioning. Indeed, medium effect sizes were found in both executive (eg, verbal fluency, inhibition, and set shifting) and non-executive (eg, consistency of response, word reading, and color naming) functioning domains. Based on this analysis, the reviewers called for better-designed executive functioning tests and direct comparisons with multiple clinical groups to better define testing specificity.

Seidman LJ, Valera EM, Bush G. Brain function and structure in adults with attention-deficit/hyperactivity disorder. *Psychiatr Clin North Am*. 2004;27:323-347.

4) Knouse LE, Bagwell CL, Barkley RA, Murphy KR. Accuracy of self-evaluation in adults with ADHD: evidence from a driving study. *J Atten Disord*. 2005;8:221-234.

Adults with ADHD may believe that they are safe drivers, even though more objective parameters show otherwise, indicating an association with inaccuracy of self-appraisal. In a study that used both naturalistic driving situations and virtual driving simulators, adults with ADHD had a higher rate of collisions, speeding tickets, and total driving citations in their driving history; reported less use of safe driving behaviors in naturalistic settings; and used fewer safe driving behaviors in the simulator than the community comparison group. Yet, these drivers self-assessed themselves as good drivers. These results identify an important domain of functioning in adults with ADHD and may relate to findings of executive deficits associated with ADHD.

5) Kay GG, Pakkull B, Reeves A, et al. The effect of MAS XR on simulated driving safety in young adults with ADHD. Presented at: 158<sup>th</sup> Annual Meeting of the American Psychiatric Association; May 21-26, 2005; Atlanta, Ga. Abstract NR533.

Young adults with ADHD receive twice the number of traffic violations—particularly for speeding—and have more collisions compared with their non-ADHD peers. In a double-blind placebo-controlled crossover-designed study, Kay and associates reported on the effects of extended-release mixed amphetamine salts (MAS XR [Adderall XR®]) on driving in 15 young adults with ADHD. In a driving simulator, treatment with MAS XR was associated with improved overall driving safety scores, including fewer tickets, less time spent driving at excessive speeds, fewer crashes, improved crash avoidance, fewer incidents of tailgating, longer driving time to collision, and less out-of-driving-lane incidents compared to placebo. Many of these improvements were observed 12 hours postdose.

## View this newsletter online!

We are pleased to also offer this issue of **Adult ADHD: Issues and Answers** online through the Adult ADHD Program at NYU School of Medicine Department of Psychiatry website at:

<http://www.med.nyu.edu/psych/psychiatrist/adultadhdnewsletter.html>

## Posttest

Please select only one answer for each question. Circle the letter corresponding to the correct answer on the answer form on the next page.

- The fastest growing segment of the population being treated for ADHD is:
  - school-age boys.
  - the fathers of school-age boys.
  - the mothers of school-age boys.
  - psychiatrists.
- Of adults who have other outpatient psychiatric conditions, such as depression or substance abuse disorders, approximately what percentage has comorbid ADHD?
  - 4%
  - 20%
  - 11% to 35%
  - Almost 100%
- Why are more adults using ADHD medications?
  - Increased recognition of the condition
  - Continuation of their ADHD treatment during childhood
  - Employers are mandating that employees get screened for ADHD
  - Both A and B
- Which age group of males shows the largest increase in the use of ADHD agents?
  - 0 to 19 years
  - 20 to 44 years
  - 45 to 64 years
  - 65+ years
- The average total daily dose of methylphenidate is within what range?
  - 0.1 mg/kg/d to 0.5 mg/kg/d
  - 0.2 mg/kg/d to 0.5 mg/kg/d
  - 2 mg/kg/d to 4 mg/kg/d
  - 0.7 mg/kg/d to 1.0 mg/kg/d
- In the case study involving the 38-year-old bond trader, which was NOT a key finding?
  - Childhood ADHD symptoms seen in childhood can persist into adulthood.
  - The use of a long-acting stimulant is usually sufficient to control ADHD symptoms all day.
  - Increased cognitive load can increase inattentive symptoms.
  - ADHD is more impairing than generalized anxiety disorder and, therefore, should be treated first.
- Baseline CAARS scores have more predictive power for CAARS end point scales when both sets of scores are determined by investigators rather than by patients themselves.
  - True
  - False
- A meta-analysis that assessed the effects of atomoxetine in both adults and adolescents with ADHD revealed:
  - better symptom control in adults.
  - better symptom control in adolescents.
  - no difference in efficacy between the patient groups.
  - no demonstrable efficacy in either patient group.
- According to a 2005 study by Philipsen and colleagues, adults with ADHD:
  - sleep longer but report their sleep time as unsatisfying.
  - sleep shorter periods without daytime fatigue.
  - have little or no sleep difficulties.
  - usually have insomnia.
- According to a 2005 study by Knouse and cohorts, adults with ADHD:
  - are good drivers.
  - believe they are good drivers.
  - use extremely safe driving techniques.
  - should not be allowed to drive.

## Adult ADHD: Issues and Answers

Successful completion of the posttest examination (at least 70% correct) and activity evaluation is required to earn .75 AMA PRA Category I Credit™. Statements of credit will be awarded upon successful completion of the posttest and evaluation.

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(Circle the correct answer to each question)

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| 2. A B C D | 7. A B      |
| 3. A B C D | 8. A B C D  |
| 4. A B C D | 9. A B C D  |
| 5. A B C D | 10. A B C D |

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### Activity Evaluation Form

Please circle the appropriate rating in answer to the questions that follow:

- How would you rate the content of this CME activity?  
Poor 1 2 3 4 5 Outstanding
- How relevant was the content of this activity to your practice?  
Not relevant at all 1 2 3 4 5 Very relevant
- To what degree were you able to meet each of the learning objectives of the activity? Please respond to each learning objective listed below:
  - Recognize the manifestations of attention-deficit/hyperactivity disorder (ADHD) in adults and the impact of these manifestations on daily functioning  
Poor 1 2 3 4 5 Outstanding
  - Evaluate treatment options—especially use of the new, longer acting agents—for adult ADHD  
Poor 1 2 3 4 5 Outstanding
  - Explain how to determine the optimal medication dosage for each adult patient with ADHD  
Poor 1 2 3 4 5 Outstanding
  - Identify the common comorbidities of ADHD  
Poor 1 2 3 4 5 Outstanding
- Based on your knowledge and experiences, the level of the activity was:  
Basic Appropriate Complex
- How would you rate the activity overall?  
Poor 1 2 3 4 5 Outstanding
- Do you believe this activity was fair, balanced, and free of commercial bias?
  - Yes No
  - If No, please state the reason:  
\_\_\_\_\_
- How much did this activity enforce your current clinical opinions?  
Not at all 1 2 3 4 5 A lot
  - How much new information did you find in this activity?  
None 1 2 3 4 5 A lot
  - As a result of this activity, will you alter your practice?  
Yes No
  - If Yes, please describe any change(s) you plan to make:  
\_\_\_\_\_
  - How committed are you to making these changes?  
Not at all committed 1 2 3 4 5 Very committed
  - If No, why not? \_\_\_\_\_
- Additional comments about this activity?  
\_\_\_\_\_
- Do you feel future activities on this subject matter are necessary and/or important to your practice?  
Yes No
- Please list any other topics that would be of interest to you for future educational activities.  
\_\_\_\_\_  
\_\_\_\_\_

## Adult ADHD: Issues and Answers

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