A Resource for Clinicians

PER-A  Canadian ADHD Practice Guidelines: CADDRA 2008
PER-B  DSM IV TR Diagnostic Criteria
PER-C  Understanding ADHD in Adults Monograph
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Preface And Acknowledgement

The Canadian Attention Deficit Hyperactivity Disorder Resource Alliance (CADDRA) is a national independent not-for-profit association whose members are drawn from Family Practice, Pediatrics, Psychiatry and Child Psychiatry. We support individuals with Attention Deficit Hyperactivity Disorder (ADHD) and their families.

The Canadian ADHD Practice Guidelines (CAP-G) were constructed to help Canadian physicians diagnose and treat ADHD. The CAP-G Committee is part of CADDRA and is composed of experts selected to represent different specialties from across Canada based on their contributions to treatment, education and research in the area of ADHD.

These guidelines are unique in that they:

a) have been produced by a multidisciplinary team
b) are specific to Canadian practice
c) include the entire lifespan of this disorder
d) speak to diagnosis and treatment in real life conditions of practice

The editors have been careful to identify which facts are evidence-based 4 and which are consensus-based 6. This information is noted in the page margins or in the text. EB data is cited in the literature that is referenced at the end of the guidelines. CB data was produced, as it suggests, by a consensus of the experts within the CAP-G Committee after careful and rigorous consideration of the current facts.

The 2008 CAP-G is the compilation of almost three years of work. The CAP-G Committee acknowledges the tireless efforts of our editorial group headed by Dr. Anne-Claude Bédard, Director of Internal Development at CADDRA, and Heidi Bernhardt, National Director of CADDRA. Also, Dr. Annick Vincent was extremely helpful in the development of the French version of these guidelines. Lastly, we thank Dr. Laurence Jerome and Dr. Sam Chang for acting as external peer reviewers for the contents of these guidelines.

This project represents a unique and important endeavour. The collaboration of different disciplines in a national effort to improve the care of those with ADHD across the lifespan will lead to both cost-effective and realistic delivery of services within the confines of the current health care system. We believe that this will be useful to Canadian clinicians. We also hope that as care for ADHD improves and changes on a global level, this endeavour may be useful to clinicians in other countries who are working to set up better systems of service delivery.

Disclosures

Members of the CADDRA Guidelines Steering Committee wish to make the following disclosures:

Dr. Anne-Claude Bédard: McNeil Pharmaceuticals (USA) (Advisory Board, Speakers Bureau).


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Dr. Umesh Jain: Eli Lilly Canada Inc. (Advisory Board, Research Contract, Speakers Bureau); Janssen-Ortho Inc. (Advisory Board, Research Contract, Speakers Bureau); Purdue Pharma (Research Contract, Speakers Bureau); Shire BioChem Inc. (Advisory Board, Speakers Bureau); GlaxoSmithKline (Research Contract).

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Assessment And Treatment of ADHD Uncomplicated – Adults

General Preamble
ADHD in adults is now well established as a recognized disorder. Genetic studies, imaging studies, clinical treatment trials and prospective follow-up studies have all shown that for about 60% of children with ADHD, there will be continued impairment in adulthood. Nonetheless, there remains a suspicion that adults with ADHD are looking for an excuse for poor coping strategies or trying to find ways of relinquishing their responsibilities. Even among adult psychiatrists there remain concerns regarding the diagnosis and treatment of ADHD in adults. Assessment for ADHD in an adult involves interviewing or using rating scales with collateral informants, a full developmental history, familiarity with the childhood presentation, and understanding of comorbidities with other childhood disorders such as autism, learning disabilities and other disruptive behaviour disorders. Many of these skills are not part of routine adult psychiatry. In addition, adults with ADHD are often comorbid for other disorders including Axis I (e.g., anxiety, depression, substance abuse disorder) and Axis II (e.g., Cluster B personality disorders), which tend to overshadow underlying and pre-existing ADHD [1]. Furthermore, treatment of adults with stimulant medication has also been a concern to adult psychiatrists unfamiliar with these medications and aware of the potential for diversion. As a result, ADHD in adults is currently a shared interest of pediatric, adult, and family physicians. We hope this guideline will create greater comfort and skill in working with this population.

People with this condition have always lived with their symptoms, which they may or may not have insight into and which they may or may not identify as outside the norm. The most common situation for adults to seek out a referral is following diagnosis of their children or someone they know well. With the proliferation of popular texts on the subject and the media attention on the disorder on the internet, many patients now come to their doctors requesting diagnostic assessment for this disorder. The demand for services has overwhelmed existing mental health resources, and may continue to do so, as the most recent National Comorbidity Survey [2] established the prevalence of ADHD in adults as 4.4%. Given that this is a prevalent, impairing and treatable condition, it is likely that the demand for service will continue to rise.

The CADDRA CAP-G Committee recognized that the practicing clinician needs a valid and reliable way to make a diagnosis, initiate treatment and monitor progress. The Committee reviewed the existing guidelines, the clinical literature and Canadian standards and proceeded to produce a document that is largely evidence-based [EB] but with consensus-based [CB] recommendations when necessary.

Many patients come to their doctors with a chief complaint that is not one of the symptoms in the DSM or with a symptom that is common to many disorders. ADHD in adulthood may present with a primary complaint that is an associated symptom such as procrastination, disorganization, lack of motivation, insomnia, rage attacks, and/or labile mood. In this case it is important to remember that while the clinician’s focus is on assessment of ADHD as the primary disorder, the patient’s focus is on the associated complaint. A complication in assessing adults with ADHD is the frequency of comorbidities and the need to conduct effective monitoring within a reasonable period of time and without extraordinary costs. The current recommendations attempt to meet this goal, but we anticipate that this is a work in progress that will undergo revision with time. This guideline will be available through the www.caddra.ca website.

1. CASE IDENTIFICATION

Physicians should have a high index of suspicion of possible ADHD in patients who have a lifelong difficulty of problems with attention, disruptiveness or impulsive behaviour. These difficulties may become apparent during routine care in patients who demonstrate typical forms of impairment. Notable flags might include:

- organizational skill problems (e.g., missed appointments, poor time management, desk that has a mountain of paper, unfinished projects, inability to comply with medication or follow instructions)
- erratic work history (e.g., change jobs frequently, fired due to lateness, forgetting appointments and/or being unprepared for meetings, difficulty delegating tasks, describing employers, employees, or clients as frustrated with them)
- anger control problems (e.g., argumentative behaviour with authority figures, overly controlling as parents, fighting with their child’s teachers, ‘wild-man’ rage episodes)
- patients who are over-talkative, interrupt frequently or inappropriately (e.g., talking loudly on a cell phone in the waiting room, running out to re-park the car, answering the phone during an exam)
- marital problems (e.g., spouse complains he/she doesn’t listen, makes impulsive remarks during arguments, forgets important events like birthdays and anniversaries, past relationship breakdowns)
- parenting problems (e.g., forgets to give child medication routinely, difficulty establishing and maintaining household routines such as bedtime and meals, difficulty getting child to school)
- money management problems (e.g., fails to do taxes, makes frequent overdrafts, runs out of money, buys things ‘on a whim’ they can’t afford)
- substance use or abuse (especially alcohol and marijuana), excessive caffeine consumption
- addictions such as collections, compulsive shopping, sexual avoidance or addiction, overeating, compulsive exercising, gambling
- accidents
- problems with driving (e.g., speeding tickets, serious accidents, license revoked) or, to the extreme, choosing not to drive or driving too slowly in an attempt to compensate for attention problems (please use the Jerome Driving Questionnaire, available online at www.caddra.ca)

Other common presentations that should be followed by screening include:

- a parent whose child(ren) has ADHD and who note they have similar problems
- a college student who requires a diminished course load, is frustrated that it is taking a long time to get through school, or is returning to school and re-experiencing earlier problems
- an individual who was diagnosed in childhood and is still having problems
- a patient whose parent or spouse identifies them as being ‘just like’ information they have been exposed to on ADHD.
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2. SCREENING

✓ Current Symptom Screen

W.H.O. Adult Self Report Scale (ASRS-V1.1, 18 item) [2,3]

If the patient screens negative on this scale they are not likely to have ADHD. If they screen positive the clinician should screen for the other major DSM-IV-TR criteria and exclude other diagnoses that may appear similar to ADHD.

✓ Developmental Screen

Did you have difficulty with these problems before you entered puberty?

The patient must fulfill the diagnostic criterion that states the symptoms must be evident in childhood.

✓ Impairment Screen

Are these symptoms causing difficulty in your life right now?

Patients who have screened positive on the ASRS and describe the problems as long-standing and impairing should receive a full psychiatric assessment for ADHD.

3. HISTORY AND PHYSICAL – EXPANSION OF CURRENT SYMPTOM SCREEN

Practice Point:

The Reluctant Patient: Some patients may not be at the assessment voluntarily. It is important that the clinician try to be as objective as they can be in the assessment, to educate the patient, and to use common sense.

The Impatient Patient: Some patients have come wanting the ‘stamp of approval’ from the clinician and want to get on with the medical treatment. In their minds, the history gathering is considered a waste of time since the diagnosis is confirmed either from their own reading or from a previous assessment. It is still necessary for the clinician to go through the protocol and reiterate the need to consider lifestyle changes, not just medications. It is not unusual for the previous diagnosis to have missed comorbid illnesses.

4. CHILDHOOD HISTORY OF ADHD – EXPANSION OF DEVELOPMENT SCREEN

Adult ADHD Developmental History

One of the diagnostic criteria for ADHD in DSM-IV-TR is that onset is prior to the age of seven. An adult patient may not be able to reliably recollect whether or not he had symptoms as a young child. This DSM-IV-TR criterion has been criticized for other reasons as well [6, 7]. Adults may not have access to collateral sources that can verify their symptoms before the age of seven. The primary school curriculum is largely focused on skill development so that an individual of very high intelligence who is not disruptive may not show impairment until he/she is older. However, a good clinical history should demonstrate that the patient had evidence of similar problems throughout the lifecycle and that these were most prominent in situations that were attention demanding. ADHD is a developmental disorder which does not have an acute onset.

5. IMPAIRMENT – EXPANSION OF THE IMPAIRMENT SCREEN

Weiss Functional Impairment Rating Scale Self-Report (WFIRS-S)

The clinician can obtain a sense of the areas in which the patient has functional impairment by reviewing the WFIRS-S. Items that are circled 2 or 3 can be discussed in more detail while later completing the assessment form to determine the nature of the impairment and how it relates to ADHD symptoms. After working with patients with ADHD, clinicians will see clear patterns of impairment emerging that are consistent with the diagnosis.
6. HISTORY OF PAST PSYCHIATRIC HEALTH AND MEDICATIONS

While the current symptoms, the developmental history and the history of impairment are the critical findings for screening, they are not sufficient to make a diagnosis.

Past Psychiatric History. A careful history of the problem, intervention and response is needed.

• Misinformed therapists in the past may have interpreted ADHD behaviours dynamically, further complicating the problem. This is not unusual in couple therapy where a patient’s undiagnosed ADHD symptoms may be misinterpreted as unconscious hostility or passive-aggressive behaviour.

• A careful past psychiatric history helps to sort out the sequence of onset of symptoms, which may be helpful in differentiating between primary and secondary disorders.

• Review of past problems permits the clinician to assess the patient’s capacity for psychological mindedness and the interpretive framework they use to explain past illness. Depending on which intervention they have received, it is also possible to obtain insight into whether they are likely to respond to problem-solving approaches, interpersonal interventions, cognitive behavioural techniques, behaviour therapy or restructuring of the demands of the environment.

Medication History. Many patients are treatment naïve, but more often than not, the patient has already tried various antidepressants and other psychotropic medications. It is not unusual that the patient may have tried his/her child’s medication to determine whether it will work for him/her.

Practice Point: Get the telephone number(s) of the patient’s pharmacist(s) and get a printout of his/her medication history. Ask the patient to bring pill bottles in, or have the family physician that does the medical exam document the medications. In patients in whom there is any reason to suspect drug abuse or drug seeking behaviour, do a urine drug screen.

Document what medication the patient has taken, the duration of treatment, their response and any side effects, particularly ones that were unexpected or reflective of toxicity. Assess the patient’s level of insight by comparing his/her report to that of the collateral informant. Assess for tolerance to medication by observing dose response over time and impact of drug holidays.

7. FAMILY HISTORY

Background. Evaluation of family background provides the clinician with a sense of the person’s upbringing. Families do not cause ADHD, but ADHD combined with family dysfunction is more disabling and increases impairment and risk.

Practice Point: Be sure the interview is both sensitive to the patient’s culture and non-judgemental.

Family Psychiatric History. This history is significant in a disorder that is 80% heritable [8]. Ask if either a parent, a sibling, or any of their children have had a confirmed history of ADHD, problems learning, tics or Tourette’s syndrome, depression, anxiety, anger problems, difficulty with the law, drug or alcohol problems, psychotic illness, personality problems, suicide or needed to take medication for emotional illness. The patient may speculate on a relative’s illness and personal history relative to potential, variable performance, temper outbursts.

8. SCREENING FOR COMORBID DISORDERS

The Weiss Symptom Screen and T-CAPS can be used as a means to clarify comorbid symptoms. While not diagnostic, they are helpful to the clinician to differentiate associated disorders. Additional rating scales can be used to proceed from the screener (e.g., HAM-D, HAM-A, Y-BOCS).

9. FEEDBACK

Diagnosis

The patient who meets all of the criteria below has ADHD:

1. Meets symptom criteria on the DSM-IV-TR rating scales on self-report and/or collateral report, and clinician interview. Some patients lack insight and do not self-report symptoms but have clear evidence of symptoms on clinical interview. Other patients have excellent insight but their collateral informant does not know them well enough to identify a problem.

2. Has a developmental history consistent with ADHD and childhood symptoms of ADHD.

3. Shows a past and current pattern of functional impairment consistent with ADHD.

4. Has no other Axis I or Axis II disorder that can explain the symptoms.

The following should NOT be used to dismiss a diagnosis of ADHD:

1. The clinician does not observe hyperactivity in the office.

2. The patient reports a great deal of problems with organization, time management, and executive function but is reliable in keeping appointments, filling out forms and paying for treatment.

3. The patient comes in saying they have read about ADHD and think they have this problem.

4. There is no family history.

5. The spouse or parent suggests symptoms of ADHD which the patient dismisses.

6. The patient is well educated or employed in a high level position.

7. The patient is very bright, and early school report cards do not describe problems with attention or behaviour. For some, increased autonomy and challenge lead to evidence of impairment in later years. Other patients may, on further exploration, give a very convincing account of unusual coping strategies such as excess time on homework or increased need for assistance.

8. The patient was clearly hyperactive, impulsive and inattentive when younger but currently only has difficulty with a few residual symptoms. In some, impairment is clinically significant.

9. The patient does not remember or denies symptoms in childhood, and school report cards are not available. Usually a careful developmental history will reveal evidence of the impact of the disorder, even if the patient did not have insight, either at the time or presently, into the symptoms that provoked these consequences.

Some associated features may contribute to confidence in the diagnosis:

1. Typical associated symptoms such as procrastination, oppositional attitudes, difficulty with time, insomnia, reactivity, underachievement relative to potential, variable performance, temper outbursts.

2. Pattern of impairment is consistent with the sorts of impairments known to characterize the disorder such as problems with listening in class, working efficiently, paying bills, completing taxes, driving, smoking, etc.

3. Positive family psychiatric history.

4. Typical comorbidities: These patients may have poor auditory processing, poor written output, poor reading retention, abuse of substances (e.g., marijuana, cocaine, nicotine or caffeine) and mood lability. Typical comorbid problems in childhood include ear infections, enuresis, learning disabilities, ODD, Tourette’s syndrome or tics.
5. The pattern of developmental challenges matches the typical course of ADHD. For example, problems with circle time as a toddler, difficulty with homework in grade three, poor choice of friends in middle school, skipping and acting out in high school, car accidents, impulsive financial decisions in adulthood, attractive to others but trouble keeping friends, self-employed in a high energy job, and being accident prone as a child and adult.

Practice Point: Document all relevant Axis I disorders specifically including the diagnostic code. It is useful to speculate on what the diagnosis would have been as a child, had you seen them, though the diagnosis may be different currently. For example, they may have been ADHD, Predominantly Combined subtype as a child but now only meet the criteria for ADHD, Predominantly Inattentive subtype. It suggests that their core hyperactivity-impulsivity may have been improved, compensated for, or changed in quality so that it is less obvious.

TREATMENT CONSIDERATIONS FOR ADHD UNCOMPPLICATED – ADULTS

ADHD is not unlike other chronic developmental disorders in that treatment needs to be multi-modal and the patient will require support and follow-up over time. Ongoing education regarding strategies for coping, including but not exclusive to medication, permits the patient to obtain developmental and functional gains that would not otherwise have been possible.

A typical sequence of interventions would be:

1. Psychoeducation. The symptoms of ADHD relevant for this patient and the way in which they contribute to functional impairment are reviewed, with discussion of examples of how similar symptoms in the past impacted on capacity to cope with developmental challenges.

2. Medication Trial Efficacy/Safety. A trial of any of the first line medications is initiated with review of improvement in symptoms, management of compliance, observation for any negative psychiatric side effects such as anger or dysphoria, and serial ratings by the patient and collateral informant of improvement. Choice of medication is determined by issues such as the time of day of impairment, tolerance of adverse events (such as insomnia), risk of substance abuse, comorbid disorders, capacity for compliance, cost, urgency of response and patient’s choice upon reviewing the risks and benefits of each medication option.

3. Optimization of Treatment. Symptom reduction will occur with medication intervention but true optimal treatment occurs when the patient’s level of impairment is brought within the normal range and remission of symptoms is achieved if possible. The latter usually requires combining medication with a lifestyle approach.

4. Behavioural Intervention and Goal Setting. The patient’s original goals are reviewed and additional treatment planning is initiated. This might include short term counseling as described above. It might include problem solving around residual deficits with executive function or activities of daily living. Improved insight into the relationship between ADHD and actual functioning often leads patients to make significant life changes to decrease their stress. For example, a student realized he was not yet ready to cope with college and decided to get a job as a mechanic (something he loved) and to take night courses for a year. A bank teller changed jobs and became a waitress and hairdresser, two positions that she could function in easily. A father realized he found watching his son’s baseball games very boring, which was leading to friction between them. Since they both loved to ski he took on training his son to be a ski instructor.

5. Organizational Technologies. Organizational Technologies. Various hardware and software are available to diminish a patient’s reliance on working memory, compensation for poor hand-writing, and improvement in time management.

These include, but are not exclusively limited to:

- Dragon Naturally Speaking® (voice-recognition software) www.ddwin.com
- Kidspiration® & Inspiration® (learning, communication & organization skills) www.inspiration.com
- Kurzweil 3000® (scanning and reading software) www.kurzweiledu.com
- Word Q® (writing software and word prediction) www.wordq.com
- EZ Keys® (alternative to Word Q+) www.wordsplus.com/website/products/soft/ezkeys.htm
- Write Out Loud® (talking word processor) www.writersblocks.com

For adults who have not learned to type, any common typing program could be utilized to increase typing proficiency. Electronic PDA organizers and combination phones (Palm Pilot®, Blackberry®, etc.) are also very useful in integrating many of the organization tasks and often have the advantage that they can be synchronized with desktop hardware.

Following optimization of all avenues of treatment, most patients should receive regular follow-up by their community physician, who will adjust and maintain optimal medication effect and refer for additional treatments when needed.

ADHD COMPLEX – ADULTS

The most difficult part of an adult ADHD assessment is the differential diagnosis. Consider a second opinion or referral to a specialty ADHD centre if the patient has a clinical history that is complex or if the clinician is contemplating medication treatment beyond those recommended here [1].

ADHD AND COMORBID DISORDERS

ADHD and Learning Disorders: ADHD can occur along with specific problems reading, doing math or with written expression. These can usually be identified by history as having caused problems in school and continue to cause more or less residual difficulty. What is more complex is the differential between a primary attention problem (ADHD-Inattentive subtype) and various processing disorders, executive function problems secondary to organic conditions (e.g., head injury, exposure to toxins, drug abuse), or language deficits. Childhood history should be positive in ADHD. Is the patient inattentive only in the area in which learning deficits present a challenge? Did the problems follow an accident or follow a period of heavy drug use? Is the attention deficit limited only to the verbal or only to visual processing activities? Psychometric testing is helpful in determining whether the patient has a learning disability as well as attention problems. Accommodations are helpful in remediating learning problems in adults. Many children with ADHD have difficulty with written output, and compensate for this in later years by keyboarding. Children who had difficulty with developmental coordination disorder may find forms of exercise such as walking in adulthood that do not require extensive coordination or balance, but may continue to have difficulty with various life skills or with being clumsy.

ADHD and Anxiety Disorders: Anxiety and ADHD are often comorbid. However, there are also anxious patients in whom problems with concentrating, restlessness, and other aspects of dysregulation are caused by anxiety rather than an attention problem. Check for other signs of anxiety and family history of anxiety. Check to see if the patient has symptoms of ADHD not typical for anxiety such as stimulus seeking behaviour, disinhibition, or difficulty with organization and time
management. Determine if symptoms have arisen de novo as a result of new onset anxiety or a particular stressor. Patients with ADHD may avoid social situations because they are afraid of behaving inappropriately, without the fear of being observed that is classic to social anxiety disorder.

Patients with ADHD may have ‘obsessions’ where they hyperfocus on an overvalued hobby or collection, and they may be rigid, without necessarily having OCD. They may also be dependent on others, more for their help than as a function of separation anxiety. ADHD patients may have experienced significant traumas, but do not necessarily suffer from PTSD unless they have the other characteristic features of this disorder. When an anxiety disorder is present along with ADHD it may require treatment in its own right with behavioural and/or medication interventions.

ADHD and Mood Disorders (Dysthymic Disorder and Major Depression): Patients who are depressed have trouble sleeping, eating, concentrating, and they may also be restless and fidgety. However, the differential with ADHD is based on two factors. In a primary depressive disorder, consistent negative mood is the most prominent feature. Poor concentration and anhedonia that follow a drop in mood is qualitatively different from the lifelong deficits in maintaining focus or motivation that are typical in ADHD. Poor concentration in the presence of depression is not associated with deficits in organization, impulsivity, and lifelong difficulty with forced effort and listening even when happy. Patients with primary attention problems often have to deal with failure and may become demoralized, depressed or dysthyemic as a result, and in that case they will present with both disorders. Patients with ADHD may look like they have a mood disorder when they do not. Lack of motivation may mimic anhedonia, chronic difficulty going to sleep and restless sleep may mimic insomnia secondary to depression. ADHD patients typically have dysregulated mood, are reactive and sometimes irritable but it is not typical for ADHD in the absence of a mood disorder to be associated with entrenched, depressed affect. On the contrary, many ADHD individuals maintain reasonable mood despite chronic rejection and difficulties with relationships and life skills. Some patients with ADHD are negative or chronically irritable (‘life is a bore’) in the absence of major vegetative features. The most appropriate designation for the particular attribute would be dysthymia since these symptoms are not included in the diagnostic criteria for ADHD itself. Antidepressants can be helpful.

Bipolar Spectrum Disorder: In most cases of bipolar disorder in children or adolescents, ADHD is comorbid [9]. The risk for the development of bipolar disorder in children with ADHD is higher than that in the general population. Similarly, patients with bipolar disorder should be carefully screened for the possible presence of ADHD as patients with bipolar disorder in late childhood or adolescent onset are highly likely to have a diagnosis in early childhood of ADHD [10]. A patient with ADHD who is currently depressed may be perceived as bipolar by contrast with his or her description of his usual state of high energy. Any patient who experiences a new and acute onset of increased energy, irritability, grandiosity, and decreased need to sleep is, by definition, suffering a hypomanic/manic episode since ADHD is developmental and chronic. Some patients have an early onset form of bipolar disorder characterized by severe mood swings, anger outbursts, irritability, distractability, hyperactivity and impulsive self-destructive behaviour. This complex differential should be referred to an expert as these patients are difficult to help and carry high risk, and research on how best to intervene is limited.

ADHD and Substance Abuse Disorder: Patients with ADHD have a two-fold risk for substance abuse and dependence including daily marijuana use, alcoholism, smoking, and other drugs [11]. On the other hand, it is also true that patients with these substance abuse/dependence problems present with problems with attention, behaviour and self-control that mimic ADHD. For this reason, we do not recommend making a diagnosis of ADHD in the face of current substance abuse or dependence, even when childhood history is positive. The primary diagnosis in this circumstance is the substance problem and diagnosis of ADHD should be deferred until the patient is in recovery. Treatment of ADHD in the presence of patients who use marijuana without dependence or abuse is controversial and the risks and benefits of doing this have not been studied. Those who do treat ADHD in adults who smoke marijuana note that this is extremely common in this population, that no treatment carries risk in itself, and that this may minimize self-medication for the disorder. Those who do not treat ADHD in adults in this circumstance note that it is difficult to assess attention and motivation in someone who has been using marijuana on a regular basis for many years, that drug interactions are unknown, that marijuana may be laced with substances that are more dangerous, and that it makes little sense to use a medication to help a patient focus when they are self-medicating with a substance that impairs attention skills in the long haul.

ADHD and Borderline Personality Disorder (BPD): BPD may occur in either gender. While patients with BPD are often impulsive, labile, and have difficulties with executive function, characteristics which differentiate the two disorders include the presence of rage, emptiness, planned manipulative behaviours, primitive defense mechanisms, deliberate self-destructive actions, abandonment anxiety, and suicide attempts. While patients with BPD may have ADHD, the BPD is the more severe disorder and more likely to impact outcome. Treatment of ADHD in the context of BPD, especially with short-acting stimulants, should be undertaken with caution. Patients with BPD who have clear evidence of ADHD in childhood often expect that treatment of the ADHD in adulthood will resolve the personality issues, and in that circumstance it is important to explain the limitations of treatment of ADHD so that they do not react with rejection sensitivity, feelings of abandonment, rage, or disappointment and devaluation.

ADHD and Antisocial Personality Disorder (ASPD): Some children with ADHD and CD go on to have ASPD after the age of 18, particularly when they show an absence of remorse, compassion and conscience. Since some ASPD patients may be psychopathic and also drug seeking, it is important to screen for cruelty, aggression, problems with the law, and stealing. Treatment of ADHD in the context of ASPD may not lead to significant functional improvement in the patient’s actual well-being but may improve the extent of their impulsivity. Whether or not they are less impulsive, less hyperactive and more focused may or may not improve their functioning if symptomatic improvement is directed to antisocial activities rather than improved interpersonal relationships and life skills.

References
10. Giedd, J.N., Bipolar Spectrum Disorder (Dysthymic Disorder and Major Depression): In most cases of bipolar disorder in children or adolescents, ADHD is comorbid [9]. The risk for the development of bipolar disorder in children with ADHD is higher than that in the general population. Similarly, patients with bipolar disorder should be carefully screened for the possible presence of ADHD as patients with bipolar disorder in late childhood or adolescent onset are highly likely to have a diagnosis in early childhood of ADHD [10]. A patient with ADHD who is currently depressed may be perceived as bipolar by contrast with his or her description of his usual state of high energy. Any patient who experiences a new and acute onset of increased energy, irritability, grandiosity, and decreased need to sleep is, by definition, suffering a hypomanic/manic episode since ADHD is developmental and chronic. Some patients have an early onset form of bipolar disorder characterized by severe mood swings, anger outbursts, irritability, distractability, hyperactivity and impulsive self-destructive behaviour. This complex differential should be referred to an expert as these patients are difficult to help and carry high risk, and research on how best to intervene is limited.
A. Either (1) or (2):

(1) **inattention**: six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

b) often has difficulty sustaining attention in tasks or play activities

c) often does not seem to listen when spoken to directly

d) often does not follow through on instructions and fails to finish school work, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions)

e) often has difficulty organizing tasks and activities

f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)

g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)

h) is often easily distracted by extraneous stimuli

i) is often forgetful in daily activities

(2) **hyperactivity-impulsivity**: six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

**Hyperactivity**

(a) often fidgets with hands or feet or squirms in seat

(b) often leaves seat in classroom or in other situations in which remaining seated is expected

(c) often runs about or climbs excessively in situations in which it is inappropriate

(in adolescents or adults, may be limited to subjective feelings of restlessness)

(d) often has difficulty playing or engaging in leisure activities quietly

(e) is often ‘on the go’ or often acts as if ‘driven by a motor’

(f) often talks excessively

**Impulsivity**

(g) often blurts out answers before questions have been completed

(h) often has difficulty awaiting turn

(i) often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorders, or a Personality Disorder).

**Code based on type:**

- **314.01** Attention-Deficit/Hyperactivity Disorder, Combined Type:
  if both Criteria A1 and A2 are met for the past 6 months

- **314.00** Attention-Deficit/Hyperactivity Disorder, Predominantly Inattentive Type:
  if Criterion A1 is met but Criterion A2 is not met for the past 6 months

- **314.01** Attention-Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type:
  if Criterion A2 is met but Criterion A1 is not met for the past 6 months

Coding note: For individuals (especially adolescents and adults) who currently have symptoms that no longer meet full criteria, ‘In Partial Remission’ should be specified.
Understanding ADHD in Adults
A Guide for Primary Care Providers
by Russell A. Barkley, Ph.D.

Welcome to Understanding ADHD in Adults, a Guide for the Primary Care Provider. I'm Dr. Russell Barkley, and I'm a Clinical Professor of Psychiatry at the Medical University of South Carolina in Charleston. I'm also a Research Professor of Psychiatry at the SUNY Upstate Medical University in Syracuse, New York. Here are my disclosures.

Faculty Disclosure
-btb (Paquette & Tanenbaum, 2009; Zikmund-Fisher, 2007)
-ARMC-ACR-2007; ACR-2005; American Association for the Advancement of Science
-ACR-2004; American Chemical Society
-ACR-2003; American College of Radiology
-ACR-2002; American College of Radiology
-ACR-2001; American College of Radiology
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-ACR-1983; American College of Radiology
-ACR-1982; American College of Radiology
-ACR-1981; American College of Radiology
-ACR-1980; American College of Radiology

Learning Objectives
After completing this module, participants will be able to:
- review the diagnostic criteria for ADHD and modifications that may be needed to extend their use up to the adult age range. I also hope to briefly review the neurological and genetic factors associated with ADHD
- note the psychiatric disorders likely to be comorbid with adult ADHD
- briefly highlight the various major life activities at risk for being impaired in adults with ADHD
- present executive functioning deficits typically associated with adult ADHD

Faculty Disclosure
- bt (Paquette & Tanenbaum, 2009; Zikmund-Fisher, 2007)
- ARMC-ACR-2007; ACR-2005; American Association for the Advancement of Science
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- ACR-1982; American College of Radiology
- ACR-1981; American College of Radiology
- ACR-1980; American College of Radiology

DSM-IV Criteria:
6 of 9 Inattention Symptoms
- fails to give close attention to details
- difficulty sustaining attention
- does not seem to listen
- does not follow through on instructions
- difficulty organizing tasks or activities
- avoids tasks requiring sustained mental effort
- loses things necessary for tasks
- easily distracted
- forgetful in daily activities

DSM-IV - Problems for Adults
- Inattention list needs to be broadened
- Includes executive functioning, specifically working memory
- Symptoms are not developmentally referenced
- Need more appropriate items for adults (see next slide)
- Cutoffs are not developmentally referenced
- May have to adjust threshold downward > 16 yrs. to 6 yrs.
- Age of onset of 7 has no validity (use childhood < 16 yrs)
- Developmental variance undefined (suggest 9th)
- No requirement for corroboration by others
- This is an essential, especially for teens and adults over 30
- Impairment needs to be clarified as to reference group
- More major life activities need to be listed for adults
- Subtyping has no validity – subtypes are contaminated

Additional DSM-IV Criteria
- Developmentally Inappropriate Symptoms
- Childhood Onset (Symptoms - Impairment)
- Unless acquired secondary to neurological injury
- Cross-setting Occurrence of Symptoms
- Significant Impairment in Major Life Activities
- Exclusion of Other Disorders
- Subtyping into Inattentive, Hyperactive, or Combined Types

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PER-C
DSM-IV requires that these symptoms be present before 7 years of age. Research shows that this criteria has no scientific basis, and it will therefore be jettisoned from the upcoming DSM-V criteria in favor of an onset by at least 12 to perhaps 16 years of age. The DSM-IV also does not require corroborative of the symptoms as reported by the patient through someone else who knows them well such as a parent, sibling, spouse, or cohabiting partner. This is a mistake because research indicates that ADHD in adults is often under reported in adults below 30 years of age, and that the younger the individual the more likely is the report to be inaccurate. Therefore, it is useful for the clinician to corroborate what they hear from the patient through someone who knows the patient well, at least for individuals below 30 years of age. I would recommend that this just be standard practice for any age group.

The impairment requirement in DSM-IV needs to be more clearly defined. Currently it does not have an operational definition to tell us what impairment means, and it does not specify who the reference group should be. For instance the courts have decided that under the Americans with Disabilities Act, impairment refers to the normal population, that is, the average person in the population. In order to be impaired an individual must be significantly below the functioning of the average person in the population for impairment to be judged as present. This would be a useful standard to extend into the DSM criteria, but for now the definition of impairment remains relatively vague. Also the DSM includes only three major life activities, home, school, and peer relationships, or in the case of adults work. We know that there are many more major life activities in which adults have to engage and some of these should also be included in the DSM criteria.

Now finally the subtyping offered in the DSM-IV has been shown to have no validity. Indeed, the subtypes are in fact contaminated with each other. For instance we may find that an individual is classified as the hyperactive type in the preschool years. As they get older 90 percent of those individuals will move up to have the combined type of ADHD by entry into school, but then as they grow older and the hyperactivity declines with age they may wind up being reclassified yet again into the inattentive type by adulthood. As a result of these and other problems, it appears the DSM-IV is likely to abandon this approach to subtyping in favor of others that may be scientifically and clinically useful.

Prevalence

Now let me just comment briefly on some demographic factors associated with adult ADHD. We know that the prevalence of the disorder varies as a function of the individual’s sex, their age, their social class, and whether they live in a densely populated urban area, or in a more rural area. Overall it appears that adult ADHD occurs at a rate of about 4.1 percent in the U.S. population, and slightly less than this, at a rate of 3.2 percent, in studies of worldwide prevalence. Now while ADHD in children occurs at a rate of between 3 to 6 times more often in boys than in girls, by adulthood this sex ratio has fallen to somewhat less then 2 to 1 in favor of males to females — the reason for this is unclear. We also need to have more international studies of the demographic factors to make sure that they are universal but so far it appears that ADHD, in fact, is a universally occurring disorder across countries and cultures.

Research has shown that in the United States ADHD is a vastly under-diagnosed and under-treated disorder. For instance only 1 in every 10 adults with ADHD is ever treated for their ADHD, and only 1 in 4 is ever diagnosed and treated for any associated mental disorder. So one of the biggest problems we have in the U.S. is under-diagnosis and under-treatment of adults with ADHD.

Neuro-Imaging Findings

**Small Brain Variations**

- Orbital-Frontal Cortex (primarily right side)
- Basal Ganglia (mainly striatum & globus pallidus)
- Cerebellum (central vermis area, more on right side)
- Anterior cingulate cortex
- Corpus callosum (primarily anterior splenium)
- Thalamus

**Neuro-Imaging Findings**

Research indicates that ADHD is a highly biologically influenced disorder. Most of the research has focused on neurology and on genetic factors.

Neuroimaging studies, both using structural and functional MRI have routinely indicated that there are at least five brain regions associated with this disorder. The first of these is the orbital-frontal cortex, particularly the dorsal-lateral cortex on the right side of the brain. The second area is the basal ganglia to which the dorsal-lateral cortex projects. Both of these regions are between 4 and 10 percent smaller in people with ADHD compared to the general population. But there are other regions in the brain that appear to be smaller as well. For instance we know that the cerebellum particularly on the right central area known as the vermis is so much smaller in ADHD individuals as is the anterior cingulate which occurs at the midline in the prefrontal cortex. The anterior cingulate is the gateway for the frontal cortex to regulate the amygdalas specifically, and the limbic system or emotional brain more generally which may help to account for some of the emotional findings that we see in adults with ADHD. The corpus callosum is also somewhat smaller particularly in the frontal area of the brain. Finally, a recent study suggests that the thalamus may also be smaller but this is just one study and needs to be replicated. Overall there is clear and convincing evidence that brain development is delayed in individuals with ADHD, that these areas are about 4 to 10 percent smaller, and that they are anywhere from 10 to 20 percent or more less active than they should be.

Research also shows that these areas directly correlate with the degree of ADHD symptoms expressed in the individual. Now we’ve believed that these areas of the brain may be smaller because of genetic factors that build and operate these parts of the brain.

**Heredity – Family Studies**

- Family Aggregation of Disorder:
  - 25-35% of siblings
  - 78-92% of identical twins
  - 15-20% of mothers
  - 25-30% of fathers
  - If parent is ADHD, 20-54% of offspring (odds b+)

**Heredity – Twin Studies**

- Heritability (Genetic contribution)
  - 57-67% of individual differences (Mean 60%)
  - (95% CI using DSM criteria)
  - Shared Environment (common to all siblings)
  - 0% (Not significant in any study to date)
  - Unique Environment (events that happen only to one person in a family)
  - 15-20% of individual differences
  - (but includes unreliability of measure used to assess ADHD)

**Heredity – Twin Studies**

Now other evidence for the genetic transmission of the disorder comes from twin studies, which show that the vast majority of individual differences in the human population in ADHD symptoms are under genetic influence. Studies show anywhere from 75 to as high as 94 to 95 percent genetic contribution, that is heritability to these traits, averaging about 75 to 80 percent. This makes ADHD one of the most genetically influenced psychological traits yet discovered in psychological research. The genetic contribution to ADHD is higher than that to personality, to mood disorders, and even to intelligence.
These studies also indicate that there is minimal contribution of the family or rearing environment known as the shared environment in twin studies. On the other hand there does appear to be a small but significant contribution to variation in these traits from unique events that happen to the individual that are not shared by other individuals in their family. These may be exposures to attribution, to toxins such as the mother smoking during her pregnancy, to the rate of infections she may have experienced, to prematurity, to lead poisoning, and so on. So there does appear to be a small but significant contribution of the environment particularly the biological environment to the expression of ADHD traits.

**Molecular Genetics**

- Genetic scans of ADHD probands and families indicate approximately 20-25 sites that are associated with the transmission of ADHD in families.
- At least 7 genes have been reliably identified as risk genes for ADHD (DRD4, DAT1, DBH, CDH1, SNAP25, etc.)
- Most genes contribute to GABAergic regulation (sensitivity, neupeptide, production) but may also affect norepinephrine systems.
- Several studies implicate genes contributing to variation in ADHD drug responding and sensitivity to behavior modification.

Now given the high heritability of ADHD of smoking and becoming dependent on nicotine. Its not clear whether this is the result of self medication because nicotine does appear to produce a modest positive benefit in managing ADHD symptoms. But nevertheless ADHD alone is a risk factor for excessive use of alcohol, nicotine, and marijuana. If conduct disorder is present with ADHD then there is an increased risk for the use of illegal substances as well such as cocaine, crack, and illegal use of prescription drugs.

Now my own studies along with those of the Pittsburgh Longitudinal Study show that individuals with ADHD, when they become sexually active do not have more sexual disorders. What they do have is a much greater incidence of risky sexual activity. They spend less time in their relationships with other individuals, they may start having sexual intercourse earlier than others, but most importantly they are less likely to use contraception. Now as a consequence of this we have documented a tenfold increase in the risk for teen pregnancies in individuals. On average 38 percent of the people I have followed to adulthood in my Milwaukee study had a baby before they were 19 years of age. This rate was even higher among women with ADHD than it was men fathoming ADHD children. But nevertheless despite these sex differences overall there is an incredibly increased risk for teen pregnancy and also for sexually transmitted diseases.

Research indicates that individuals with ADHD are accident-prone. We’ve known this about child ADHD, but research now documents that this extends up into the adolescent and adult years of the ADHD patient particularly when it comes to driving. Other studies document the adverse effects of ADHD in the workplace. We know that people with ADHD not only have more accidents on the job, they’re more likely to file for worker’s compensation claims. They also have more time off the job, often unexcused, and even when they’re working they often require more supervision in order to accomplish the amount of work that other people can do with much less supervision. Overall there is an adverse effect of ADHD in the workplace.

Studies by myself, and Kevin Murphy have documented that ADHD has an adverse affect on financial management, such as increase use of impulse buying with credit cards, poor payment of utility bills, and poor payment of debts. We also find a greater likelihood of having a poor credit rating by adulthood.

Our studies of adults show that ADHD interferes with the health and lifestyle of the individual by adulthood. Where there is a greater likelihood that the individual is not only smoking and drinking, they’re likely to be exercising less, engaging in self-improvement less, and engaging in risky behaviors that would lead to increased Cardiovascular Disease and possibly cancer. All of this suggests though it does not prove that ADHD may also be associated with a reduced life expectancy.

**Psychiatric Comorbidity**

Now I’ve mentioned the increase risk that adults with ADHD have for comorbid psychiatric disorders and you’ll see a few of these on the next two slides. There is an increased risk for mood disorders, particularly for Dysthymia and Major Depression, and also for Anxiety Disorders, which my own Longitudinal Study indicated the risk increases with age. By age 30 more than a third of the adults with ADHD have developed an anxiety disorder along with their ADHD. Now the link of ADHD to Bipolar Disorder is controversial, but my own take on the literature is this represents a one-way comorbidity in which ADHD does not predispose to a risk for Bipolar Disorder. But if an individual is going to develop Bipolar Disorder there is an incredible risk for an association with ADHD and that risk increases the earlier the onset of the Bipolar Diagnosis. For instance if the onset is in childhood there is a comorbidity at 80 to 90 percent but if the onset is in childhood below age 12, 80 to 97 percent of those children who develop Bipolar Disorder are likely to have ADHD as a comorbidity.

We have known for years that ADHD is associated with learning disabilities with nearly half of children with ADHD, and up to 25 to 35 percent of adults with ADHD also having comorbid learning problems extending into their adult years.

### Psychiatric Comorbidity

- Seasonal affective disorder (14% vs. 3%)
- Dysthymia (19-37%)
- Major Depression (16-55%)
- Anxiety Disorders (20-55%)
- No greater prevalence of OCD (1-4%)
- Bipolar Disorder (0-15%)
- Learning Disabilities (0-35%)

### Psychiatric Comorbidity

- Executive function difficulties
- Attention problems
- Memory problems
- Learning disabilities
- ADHD
- Autism spectrum disorder
- Oppositional defiant disorder
- Conduct disorder
- Mood disorders
- Anxiety disorders
- Substance use disorders
More on Comorbidity

- Any Substance Use/Abuse Disorders
  - ADHD is associated with increased risk of substance use and abuse
  - Opioids (5-10x vs. non-ADHD), 7% control
  - Alcohol Use (11.4 vs. 4.3%); Abuse (18 vs. 8 vs. 5%)
  - ADHD, Tobacco, and Marijuana use more frequently
  - Self-regulation, executive function, emotional/motivational, planning, problem-solving, and self-monitoring
  - Suicide attempt is more common in those with ADHD

- Personality Disorders
  - Antisocial Personality Disorder (APD)
  - Borderline Personality Disorder
  - Narcissistic Personality Disorder

- Other Disorders
  - Anxiety
  - Depression
  - Mood Disorders

- ADHD and ADHD Comorbidity

ADHD, most commonly these are deficits in inhibition, particularly in nonverbal working memory. There are also documented deficits in verbal working memory, in emotion regulation, particularly self-regulation, as well as in the ability to plan and problem solve toward goals, which is the very definition of executive functioning.

If testing were done on an adult with ADHD, research indicates that only about 1/3 to 1/2 of them would fall in the impaired range on executive function tests or test batteries. On the other hand, if one uses rating scales of executive functioning such as my own Deficits on Executive Functioning Scale or the Behavior Rating Inventory of Executive Functioning, then the rate of impairment is 89 to 98 percent of adults with ADHD fall in the impaired range on these rating scales. Thus these rating scales may actually be a better method of assessing executive function deficits in adults with ADHD than many traditional neuropsychological tests. Certainly all of this has shown that the executive function deficits associated with adult ADHD are likely to be predictive of many areas of impairment in major life activity.

Conclusions

- ADHD in adults is a relatively prevalent disorder
- The symptoms of ADHD in adults are not identical to those seen in children—defective executive functioning and poor self-regulation are more prominent in adults as are deficits in EF in daily life.
- These deficits are predictive of various domains of impairment in major life activities
- ADHD deficits interact with comorbid disorders and personality traits that may further impair or enhance functioning in major life activities
- Medical health domains, such as sleep, drug use, sexual activity, and medication, are more affected in adults with ADHD than in childhood

Thank you very much.

Impact on Executive Functioning

- Executive functioning refers to those neurocognitive processes needed to organize behavior across time and sustain problem-solving toward future goals
- Meta-analysis shows evidence that at least 5 executive functions are deficient in ADHD
  - Inhibitory, verbal working memory, verbal working memory, emotion/motivation self-regulation, planning, problem-solving
  - Research using rating scales also shows that 80-90% of adult ADHD cases are impaired in all executive functions used in major life activities
  - Self-management to time, self-organization, problem-solving, self-discipline, self-motivation, and self-regulation of emotion

Conclusions

To conclude this presentation, I hope that I have shown you that ADHD in adults is a relatively prevalent disorder; that the symptoms of adult ADHD are somewhat different than we see in childhood. In particular, we find that adult ADHD is more likely to impair executive functioning, time management, planning, and problem-solving, emotional self-regulation, and in general the ability of the individual to plan and organize their life over time than is the case in children.

We know that these executive deficits along with the traditional ADHD symptoms are likely to be predictive of impairment in nearly all major life activities that have been studied to date such as work, education, family relationships, driving, financial management, antisocial activity, and so on.
Assessment of Adult ADHD: A Guide for Primary Care Providers

by Kevin Murphy, PhD

Transcript from webcast from Adults with ADHD: Making Exam Room Decisions

Welcome to Assessment of Adult ADHD: A Guide for Primary Care Providers

My name is Dr. Kevin Murphy and I am the Director of the Adult ADHD Clinic of Central Massachusetts, former Chief of the Adult ADHD Clinic at UMass Medical Center, and now Associate Research Professor at SUNY Upstate Medical Center.

Faculty Disclosure

- Shire Pharmaceuticals (Speakers Bureau)
- Guilford Press (Book Royalties)

Learning Objectives

After completing this module, participants will be able to:

- identify and properly assess adult patients with ADHD
- identify assessment tools that will assist you in conducting a credible ADHD evaluation in adults

Case Vignette

Karen is a 20 year old college sophomore who reports current problems with concentration, easy distractibility, impulsivity, forgetfulness, restlessness, fidgeting, and disorganization. She is having trouble studying, paying attention in lectures, sustaining her effort in motivation and getting her work done. Her symptoms are causing her great frustration, poor grades, and a feeling that she is not working up to her potential. She is concerned that she may have ADHD and is seeking your help to determine if she has it and how she can treat it.

An Adult ADHD Assessment should be designed to answer four fundamental questions:

1. Is there credible evidence that the patient experienced ADHD symptoms in early childhood, and that at least by the middle school years, these led to substantial and chronic impairment across settings?

2. Is there credible evidence that ADHD symptoms currently cause significant impairment across settings?

An Adult ADHD Assessment: Four Fundamental Questions

Now an ADHD adult assessment should be designed to answer four fundamental questions.

First, is there credible evidence that the patient experiences adult ADHD sympotms in early childhood and that at least by the middle school years that these symptoms led to substantial and chronic impairment across settings?

Second, is there credible evidence that ADHD symptoms currently cause significant impairment across settings in childhood and adulthood?

Four Fundamental Questions (Cont)

Third, are there explanations other than ADHD that better account for the clinical picture?

Fourth, for patients who do not meet criteria for ADHD is there evidence for the existence of comorbid conditions?

Primary Care Providers Should Suspect ADHD When Patients:

- have organizational skill problems
- have an erratic school and work history
- indicate they have anger control problems
- are overly talkative, interrupt frequently or inappropriately
- have marital problems and/or parenting problems
- have trouble with money management
- have substance use or abuse problems
- have frequent accidents, problems with driving

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### DSM-IV Criteria: 6 of 9 Inattention Symptoms

**Often:**
- fails to give close attention to details
- difficulty sustaining attention
- does not seem to listen
- does not follow through on instructions
- difficulty organizing tasks or activities
- avoids tasks requiring sustained mental effort
- loses things necessary for tasks
- easily distracted
- forgetful in daily activities

### DSM-IV Criteria: 6 of 9 Hyperactive-Impulsive

**Often:**
- fidgets with hands or feet or squirms in seat
- leaves seat in classroom inappropriately
- runs about or climbs excessively
- has difficulty playing quietly
- is "on the go" or "driven by a motor"
- talks excessively
- blurts out answers before questions are completed
- has difficulty awaiting turn
- interrupts or intrudes on others

### Current DSM-IV-TR Diagnostic Criteria for ADHD

Now I am going to briefly review the current DSM-IV criteria for ADHD. The DSM-IV lists the symptoms in two dimensions: the inattentive dimension and hyperactive-impulsive dimension. To meet criteria you must exhibit six or more inattentive symptoms or six or more hyperactive-impulsive symptoms to a degree that is maladaptive and inconsistent with development level.

### What Differentiates ADHD from “normal” symptoms of everyday life?

- Greater number of the 18 symptoms
- Symptoms occur more frequently and with greater severity in ADHD
- Developmental deviance
  - IMPACT is greater and results in chronic and pervasive impairment in major life activities
  - New research has shown deficits in executive functioning (EF) for adults with ADHD

Well here are some guidelines to help you to differentiate ADHD from normal functioning.

Individuals with ADHD report having a greater number of the 18 items that I just mentioned. Symptoms occur more frequently and with greater severity in individuals with true ADHD. There is also development deviance meaning that people are not performing as well as their same age peers along these dimensions. Most importantly the impact of the symptoms is far greater in true ADHD and results in chronic and pervasive impairment in major life activities. This is a very important point because you cannot have a disorder without impairment. So people can have symptoms of ADHD but if they do not produce impairment there is no disorder. We are always looking to determine the impact in terms of what is happening and how these difficulties are affecting people in their major life activities.

In fact new research has shown that deficits in executive functioning found in many adults with ADHD, also helps to differentiate ADHD from normal functioning. We will discuss this issue in more detail.

### Impact of Executive Function Deficits on Adult Functioning

In terms of the impact of executive functioning deficits we find that there is a poor persistence on tasks and people have difficulty sustaining their effort and motivation toward future goals. There is also difficulty planning ahead — proactive planning — and anticipating future consequences. Adults with ADHD tend to live in the here and now.

Other executive deficits include: poor time management where people might be very late, and have difficulty judging or estimating time; poor decision making and organization difficulties.
emotional self control and emotional over reactivity; impulsive decision making; and, general disorganization whether in their personal lives or in the workplace. Adults with ADHD often appear to be quite discombobulated throughout their life.

In unsatisfactory relationships in marriages or co-worker relationships or peer relationships. As I mentioned poor driving outcomes are very common in adult ADHD, poor money management, saving for retirement and impulsive spending pose real problems trouble doing routine tasks of daily life, organizing a household, raising children, parenting, and paying bills show how pervasively this condition affects people in their day to day functioning. So in the assessment you are going to look for clues to help you illicit some of these areas of difficulty that are so common to adults with ADHD.

ADHD Assessment Principles
- Thorough and comprehensive – not mere symptom counts
- Include collateral informants when possible
- Obtain historical records when possible
- Attempt to establish childhood onset, chronicity, severity, and pervasiveness of impairment
- Rule outs

We need to rule out transient situational stressors as an explanation for ADHD-like symptoms. A divorce, a career change, a job change, grief reaction, family or lifestyle changes, people having babies or produce stress and ADHD-like symptoms.

Also we have to rule out medical conditions that may also mimic ADHD symptoms, these include things like: chronic fatigue, thyroid difficulties, diabetes, even menopause, and medication side effects. We also need to rule out other psychiatric disorders as being responsible for the symptoms, not only ruling out but also looking at whether they coexist with the ADHD. Typically these are things like bipolar disorder, substance abuse, depression, anxiety disorders or personality disorders.

More about ruling out, what do we tend to rule out? Well we have to consider if there are better explanations for existing problems before we conclude that someone has ADHD.

Components of an ADHD Evaluation
- It’s important for you to understand that a typical evaluation does not require lengthy, structured interviews or a comprehensive neuropsychological testing battery. ADHD assessment does not have to be an onerous difficult process.

We can do this fairly reliably in a relatively quick way. Accurate diagnosis can be obtained by doing a careful, traditional history taking and a records review, combined with the use of symptom rating scales and a clinical interview that focuses on the ADHD diagnostic criteria.

This is the rub of what I want to talk to you about in this segment.
Now there are several structured interviews that can be helpful in your practice. I’m going to mention a couple of them here. We have included some of these in your Adult ADHD Toolkit. The first one is an “Adult ADHD Interview” which is contained in the first reference at the bottom of this slide. This reviews history, domains of impairment, and the presence of common co-morbid conditions. This is a little more lengthy interview than the other two on this slide. You can take a look at that and see if it is appropriate for your practice.

The shorter interviews that are more user friendly to use, are the “Brief Semi-Structured Interview for ADHD in Adults” which is part of your Adult ADHD Toolkit. I encourage you to look at these tools at the end so you can get familiar with them and use them as vehicles to elicit this information that can be very helpful.

There is also Barkley’s “Quick Check for Adult ADHD” which is a new validated 18 question interview that assesses current and childhood ADHD symptoms and areas of impairment.

Self-Report Scales

- **Structured Interviews**
  - An Adult ADHD Interview (reviews history, domains of impairment, and presence of common co-morbid conditions)
  - Brief Semi-Structured Interview for ADHD in Adults
  - Barkley’s Quick Check for Adult ADHD Diagnosis (new validated 18 question interview assessing current and childhood ADHD symptoms and areas of impairment)

Self-Report Scales

Now understand that alone a rating scale is a screening device to determine if a more thorough evaluation is necessary.

- **Self-Report Scales**
  - Alone, a rating scale (RS) is a screening device to determine if a more thorough evaluation is necessary.
  - RS data or symptom counts alone are never sufficient to make a diagnosis of ADHD in adults.
  - But they are very useful in helping to establish the diagnosis when combined with clinical interviews and other data.

Commonly Used Self-Report Scales

- **ADULT ADHD SELF-REPORT SCALE** (ASRS) developed by WHO and includes 18 items corresponding to the DSM-IV–TR criteria for ADHD; a Screener version of 6 select items is known as THE ASRS SCREENER.
- **BARKLEY’S ADULT ADHD QUICK SCREEN**; 13 item validated questionnaire based on recent research assessing current ADHD symptoms and impairments in major life activities.

Commonly Used Self-Report Scales (2)

- **CONNERS ADULT ATTENTION DEFICIT RATING SCALE** (CAARS); 42 item validated scale covering 6 areas of functioning including the DSM-IV-TR ADHD symptoms
- **BROWN ATTENTION DEFICIT DISORDER SCALE** (BADDS); has a self report and a “significant other” report on the same form; measures ADHD symptoms and various executive functioning deficits

Commonly Used Self-Report Scales:

- **ADULT ADHD SELF-REPORT SCALE** (ASRS) developed by WHO and includes 18 items corresponding to the DSM-IV–TR criteria for ADHD; a Screener version of 6 select items is known as THE ASRS SCREENER.
- **BARKLEY’S ADULT ADHD QUICK SCREEN**; 13 item validated questionnaire based on recent research assessing current ADHD symptoms and impairments in major life activities.

DSM-IV Symptoms. The “Brown ADD Scale” provides both a self report and significant other report on the same form, and measures ADHD symptoms and various executive functioning deficits. The Brown is useful, but it is a little more lengthy than the other quick scales mentioned earlier.

- **When To Refer**
  - When patient is presenting with symptoms of a major mental illness, serious mood disorder, substance dependence, or other complex co-morbid psychiatric symptoms
  - When you are confused about the patient’s presentation, unsure about ADHD, and uncomfortable about the idea of prescribing ADHD medication for this person
  - When you suspect drug seeking behavior

- **Internal Experience of Adult ADHD**
  - Intense frustration
  - Demoralization
  - Learned helplessness
  - Trouble finishing tasks
  - Underachievement
  - Feeling chronically misunderstood
  - “I would if I could, but I can’t.”

When To Refer

Now what about when you are seeing patients and you are not sure when to refer a patient to a psychiatrist or to another medical professional. Here are some guidelines along that line. I think when a patient is presenting with symptoms of a major mental illness, a serious mood disorder, clear substance dependence, or some other complex comorbid psychiatric symptoms you might want to refer that person to a psychiatrist. You should consider referring if after trying to do an assessment, you’re very confused about the patient’s presentation, you are unsure about ADHD or you’re uncomfortable about the idea of prescribing a stimulant medication for this person. You would also consider referring out when you suspect the patient is just simply exhibiting drug seeking behavior.

Internal Experience of Adult ADHD

I wanted to mention a little bit more about the internal experience of an adult with ADHD. I want to give you a sense of some things to look for to better understand your patient. There is an intense frustration. They report that “I don’t understand why I am so inefficient, why I mess things up all the time. I feel like I am competent and intelligent, but I can’t seem to get positive outcomes and I don’t know why.” There is a sense of demoralization “No matter how hard I try, no matter what I do, nothing seems to work out.” A lot of times you will see folks with ADHD mentally check out of school – they feel ineffective because they have heard so many negative messages over the course of their lives. Things like, “you’re lazy…you’re unmotivated….you’re irresponsible…you don’t follow through…you don’t do your homework…” After hearing comments like these from parents, teachers, peers, and supervisors, adults with ADHD really develop a sense of demoralization and feeling one down.

One of the important things in treatment is to help instill hope and turn this pattern around. Adults with ADHD have trouble finishing things, following through, staying the course, sustaining their effort and motivation to over time complete tasks. This is very, very frustrating and inexplicable. A lot of times you ask somebody, “Why don’t you just do your homework?” or “Why don’t you just follow through?” or “Why don’t you just do your chores and get them done?” Their answer is, “I don’t know. It’s just harder for me than it is for other people and I don’t get it…” I don’t understand why?” That is the essence of the frustration and the inner turmoil that you see a lot. It all adds up to underachievement. Many children don’t finish high school and adults fail out of college. School is particularly difficult place for them to succeed at and it manifests itself in the workplace as well.

Adults with ADHD often feel chronically misunderstood. People assign labels and attributions about them “you’re lazy.” They know they are not lazy but nobody else seems to get it. When you as a primary care professional get it, and show them that you understand their issues, this forms the basis for the alliance with your patient. This gives you a little of credibility and helps to keep the adult engaged in the treatment process. When folks with ADHD struggle so much, you could almost pair it down to “I would if I could, but I can’t.” It’s important to be on the look out for this kind of theme when you are doing your assessments.
Situational Variability of ADHD Symptoms

Another important point to understand is the situational variability of ADHD symptoms. Many people don’t understand this inconsistency. Adults may function better in one setting versus another. The guidelines here are, if the task is inherently interesting, if it is high stakes, if it is novel, if it is exciting, if it is highly relevant to what they like, they may look quite normal. But when the task is boring, repetitive, low interest or irrelevant to them they have a great deal of difficulty and symptoms become exacerbated. That is why you see a great deal of variability at school and work.

It is important to get spousal reactions. Spouses often feel overburdened at times. They feel they have to be the glue that keeps things together. They have to be on top of things because their ADHD spouse is unreliable. They feel very frustrated in the relationship.

Summary—Key Assessment Points (2)

- ADHD has an onset in early childhood or adolescence, persists into adulthood in most cases, and causes chronic and pervasive impairment over time and across situations
- ADHD is not an adult-onset disorder
- Clinicians should always attempt to rule out other reasons for ADHD-like symptoms before concluding ADHD is present

Summary—Key Assessment Points (3)

- A trial of a stimulant medication is not a test for ADHD
- There is no litmus test for ADHD; none of the assessment tools described here should be used as a stand alone diagnostic measure
- Rather, rating scales, interviews with patients and collateral informants, testing, and historical records should be used in combination

Situational Variability of ADHD Symptoms

High stakes, if it is novel, if it is exciting, if it is highly relevant to what they like, they may look quite normal. But when the task is boring, repetitive, low interest or irrelevant to them they have a great deal of difficulty and symptoms become exacerbated. That is why you see a great deal of variability at school and work.

It is important to get spousal reactions. Spouses often feel overburdened at times. They feel they have to be the glue that keeps things together. They have to be on top of things because their ADHD spouse is unreliable. They feel very frustrated in the relationship.

Summary—Key Assessment Points

- ADHD is a legitimate and serious disorder that is associated with significant impairment in multiple life domains including school, work, social relationships, driving, money management, and daily adaptive functioning
- ADHD is associated with significant co-morbidity; most commonly oppositional defiant disorder, conduct disorder, substance abuse, dysthymia, major depression, and anxiety disorders

Summary—Key Assessment Points (3)

A trial of a stimulant medication is not a test for ADHD. And this is not something that should be done as part of an assessment, rather medication should be prescribed after the assessment when you have a good idea that this person does meet criteria for ADHD and a medication is appropriate. Don’t do a trial balloon in the beginning to see if there is a positive reaction. In fact, most people taking a stimulant, whether they have ADHD or not, would respond in a positive manner.

Another thing to remember is that there is no litmus test for ADHD—no neuropsychological test battery, no brain scan that can be used to determine whether ADHD is present or not. The assessment tools described here should be used in combination and not used as a stand alone diagnostic measures.

We need to use the rating scales, interviews with patients and collateral informants, testing, and historical records in combination to help us make the best and most informed judgments about diagnosis.

The Adult ADHD Toolkit can help you very much make more sense out of all this and gives you a blueprint of how to do this effectively.

Case Vignette

Now getting back to the case vignette, I am not going to read it again, but after listening to this presentation your answer here is all the choices are correct EXCEPT prescribing stimulant medication as part of the assessment. I hope this helps you understand ADHD assessment better in this segment.

Thank You
Pharmacotherapy of Adult ADHD and Comorbid Conditions: A Guide for Primary Care Providers

by Lenard A. Adler, MD

Transcript from webcast from Adults with ADHD: Making Exam Room Decisions

Pharmacotherapy of Adult ADHD and Co-Morbid Conditions:
A Guide for Primary Care Providers

Lenard A. Adler MD

Welcome to Pharmacotherapy of Adult ADHD and Comorbid Conditions: A Guide for Primary Care Providers.

I am Dr. Lenard Adler. I am a professor of child and adolescent psychiatry and Director of the Adult ADHD Program at the NYU School of Medicine.

Faculty Disclosure

Here are my disclosures. I have funding from a variety of different sources including the National Institute of Drug Abuse and a number of commercial entities.

Learning Objectives

Our learning objectives are that after completing this module, participants will be able to:

- discuss pathophysiology of ADHD
- discuss safety and efficacy of treating adults with ADHD with stimulant and non-stimulant medications
- identify options for pharmacotherapy in adults with simple ADHD and ADHD plus comorbid psychiatric disorders

Pharmacotherapy in Adults

When we talk about the pharmacotherapy of ADHD in adults the medications break out basically into two classes. They are the stimulant medications: methylphenidate and the amphetamine based compounds and the FDA approved non-stimulant, atomoxetine. Additionally, we will be talking about pharmacotherapy of adults with ADHD and comorbid conditions – that is off label. FDA approval is for the medicines noted above for treating ADHD alone. However, ADHD tends to occur commonly with comorbid disorders and, therefore, discussing the treatment of ADHD with another mental health disorder is quite important.

Stimulant Medications Studied for ADHD

This slide depicts the stimulant medications studied for adult ADHD. We should note that there are four FDA approved medications which are all sustained release versions of the psychostimulants. But let’s review the different medications and how they have been studied.

The immediate release methylphenidate compounds or other preparations that are not oral sustained release include: Ritalin®, Metadate® which is an intermediate acting methylphenidate compound, and Daytrana®, the forms vary with their brand. The duration of action for the immediate release methylphenidate is only three to four hours. It is longer for the intermediate acting Metadate® and Daytrana®. Mixed amphetamine salts in the immediate release form (brand name is known as Adderall®) is a four salt combination known as mixed amphetamine salts comes in a variety of strengths from 5 mg up to 30 mg. The noted duration of effect is anywhere from four to six hours. We will also present data showing improvement in ADHD symptoms in adults with this preparation; however, it is approved for children but not approved for adults with ADHD.

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Oros methylphenidate is Concerta®, and is a methylphenidate preparation. It involves a pill that has a methylphenidate coating. There are two chambers on the inside part of the pill with a membrane barrier and a laser drilled hole with a reservoir of methylphenidate in the bottom. There is a mechanical sustained release preparation whereby the pressure from the gut fluid slowly pushes the methylphenidate out through the membrane. It comes in a variety of different dosage strengths: 18 mg, 27 mg, 36 mg, and 54 mg. The FDA label goes up to 72 mg a day for adults. In fact, the usual starting dose in clinical practice varies from 18 to 30 mg. The duration of action is up to 10 hours and again this is FDA approved for adults with ADHD.

Dexmethylphenidate extended release is Focalin®XR. It is the d-methylphenidate in a sustained release preparation and it is a beaded mechanical sustained release preparation. All methylphenidate compounds, formally as Ritalin®, are d and l preparations and in fact Oros methylphenidate is a combination of a dextro and levo methylphenidate. Here we isolated the d form of methylphenidate and it is in a mechanical sustained release preparation. It comes in a variety of dosage strengths from 5 to 30 mg with the 30 mg strength being a fairly recent addition to the portfolio. The approximate duration of effect is anywhere from 10 to 12 hours. Again, it is FDA approved for adults with ADHD.

Mixed amphetamine salts extended release is Adderall XR®. Again, it is a mechanical sustained release preparation with short and long-acting beads. It has been studied in adult ADHD and is FDA labeled. The dosage strengths vary between 5 mg and 30 mg although the FDA approved label goes to 20 mg, in adults. The approximate duration of effect is again 10 to 12 hours and it is FDA approved.

Lisdexamphetamine dimesylate is Vyvanse®. This is a pro-drug. It has a sustained release preparation. All methylphenidate compounds, formally as Ritalin®, are d and l preparations and in fact Oros methylphenidate is a combination of a dextro and levo methylphenidate. Here we isolated the d form of methylphenidate and it is in a mechanical sustained release preparation. It comes in a variety of dosage strengths from 5 to 30 mg with the 30 mg strength being a fairly recent addition to the portfolio. The approximate duration of effect is anywhere from 10 to 12 hours. Again, it is FDA approved for adults with ADHD.

### Studies of Stimulants in Adult ADHD

Let’s look at some studies of stimulants in adult ADHD. We will actually go through studies that show each of these compounds as mentioned in the prior slide.

### Study of Methylphenidate (MPH®) Use in Adult ADHD

#### DSM-IV ADHD Symptom Checklist

This slide depicts a study done by Tom Spencer using methylphenidate in adult ADHD. It is a comparison between immediate release methylphenidate and a placebo. There are a couple of things to note before we discuss the actual data. The rating scale used here is a DSM-IV ADHD symptom checklist which is quite similar to the ADHD RS. Actually, the symptom threshold you’ll notice is slightly above 20, in part, because the data collected used DSM-III and DSM-III-R and extrapolated out to DSM-IV. Classically, the ADHD RS will have the eighteen symptoms in DSM IV rated zero to three on a severity basis. Looking at the data here you’ll see that the methylphenidate given three times a day will drive down ADHD symptoms below the symptomatic threshold for ADHD. These improvements occur starting at week two and continue all the way out with improvement to week six.

### Study of Mixed Amphetamine Salts in Adult ADHD

These data come from a study of mixed amphetamine salts immediate release in a study of adult ADHD conducted by Tom Spencer. Focus on the first portion of the study, looking again when symptoms are driven below subthreshold for ADHD on an ADHD symptom checklist similar to the ADHD RS. You see the effects of mixed amphetamine salts over placebo starting at week one with significant effects by week two and then driving down below the symptom threshold by week three. So, even though neither immediate release methylphenidate nor immediate release mixed amphetamine salts are approved for adults with ADHD — this use would be off-label — we do have data that show they are efficacious. Both of these compounds are approved for use in children.

### Study of Mixed Amphetamine Salts Extended Release in Adult ADHD

This is the registration study looking at mixed amphetamine salts extended release in adults with ADHD. It is a dose ranging, multi-center, double blind study. It is a fairly large study with 248 patients.

The studies we’re going to be showing now have larger samples than the single site studies we showed previously. This study showed that the once daily mixed amphetamine salts was well tolerated and there were significantly lower scores out to twelve hours on the Conners Adult ADHD Rating Scale (CAARS) and the primary outcome showed statistically significant improvement in the ADHD RS. The CAARS is a self-report version which measures similar symptoms to the ADHD RS, but it is slightly different. There was significant improvement in the clinician Global Impression of Severity Rating Scale — CGI scores. Note here, the FDA label on this study is only at 20 mg because the study did not find dose response relationship. Even though subsequent studies have found on severity analysis that patients with more severe ADHD did somewhat better on higher doses, the FDA label on mixed amphetamine salts XR is 20 mg per day.

### ADHD Rating Scale: Mean Total Score at Endpoint (ITT)

What we see looking at in this four week study, compared to placebo you see an average change on the ADHD RS of a decrease of 6.6 points. Then you see improvements across the range of mixed amphetamine salts from 20 to 40 to 60 mg with improvement mean scores going from decrements of 12.6 to 14.4 points.
Study of OROS Methylphenidate in Adult ADHD

This slide depicts a single site study of Oros methylphenidate in adult ADHD published by Joe Biederman from Mass General. Subsequently, there has been a registration study that was published with similar results. The current study looked at changes in the AISR which is a semi-structured scale that matches the eighteen items of the DSM-IV with specific ADHD prompts and probes embedded. But again, it is an 18 item, clinician administered scale showing improvements in Oros methylphenidate starting at week one with significant improvements by week three going all the way out to week six. Oros methylphenidate is FDA approved for adults with ADHD.

Open Label Study of Dexmethylphenidate Extended Release in Adult ADHD

This is an open label extension study of dexmethylphenidate XR in patients that come out of a double blind study. The dose range here was 20 to 40 mg per day. On the ADHD RS what you see are patients coming out of treatment with placebo had a decrease over 10 points on the ADHD RS, and those who had come out of the dexmethylphenidate XR group had an improvement of 8.4%. The drug obviously worked. Similarly they have data from the controlled phase of this study that shows significant effects of dexmethylphenidate XR over placebo. This was a longer study that looked at open label treatment as compared to the double blind study. Dexmethylphenidate XR is FDA approved in ADHD with adults.

Lisdexamfetamine Dimesylate Chemistry

Lisdexamfetamine dime-sylate is a prodrug that is therapeutically inactive until it is converted to active d-amphetamine in the body. Lisdexamfetamine dimesylate consists of dextro-amphetamine (d-amphetamine) bonded to an amino acid lysine. It is a chemical sustained release mechanism whereby, once it is absorbed into the bloodstream, it is too large to cross into the brain, the body recognizes it as actually a protein and proteases actually cleave it apart leaving the lysine, which is the amino acid and then the d-amphetamine. This gives you the sustained release mechanism that is fairly long, up to twelve hours. Once the d-amphetamine is in the blood it can obviously cross the blood brain barrier into the brain.

Lisdexamfetamine Dimesylate in Adult ADHD

This shows the study design in the registration study of lisdexamfetamine in adult ADHD. It was a double blind, placebo controlled, randomized, parallel group, 4-week study with sustained-release (in adults aged 18 to 55 years with primary diagnosis of ADHD by DSM-IV-TR criteria from 18 to 55 years of age and were diagnosed by DSM-IV criteria. What you see is there is a placebo group, a 30 mg cohort, and a group that starts at 30 and moves up to 50, and then a group that starts at 30 then to 50 and then 70mg in this four week study.

ADHD-RS Total Scores: ITT Population

Here are the results of the LDX Study. What you see are significant improvements in all dosage strengths: 30, 50 and 70mg of lisdexamfetamine vs placebo. The magnitude of changes are fairly large, varying between mean scores on the ADHD RS of 16.2 to 18.6 points across the dosage strength of lisdexamfetamine.

Side Effects in Stimulant Studies

What are the side effects of stimulants? The side effects are fairly similar across the entire class. Common things that are seen are listed here. Most of these can be managed by dose adjustment and time on medication.

Prescribing Information FDA Approved Stimulants for Adult ADHD

Here is some prescribing information for the four FDA labeled compounds previously reviewed: Oros methylphenidate, dexmethyl-phenidate XR, mixed amphetamine salts XR, and lisdexamfetamine dimesylate. These medications come in a variety of dosage strengths which are noted here.
Starting dose on Oros methylphenidate can be 18 to 36 mg a day, up to 72 mg with an approximate duration up to 10 hours. Dexmethylphenidate XR usual starting dose is about 10 mg, recommended maximal dose in the studies was 20 mg and there's a 30 mg tablet though that is approved. The duration of effect is 10 to 12 hours. Mixed amphetamine salts XR general starting dose noted was 20 mg although most clinicians think will start at somewhat of a lower dose so probably 10 mg a day. The FDA label in the studies actually list 20 mg, but it is actually higher in kids which is why the package insert will actually note up 30 mg a day and the approximate duration of effect is 10 to 12 hours. Finally, dosages for lisdexamfetamine generally starting at 30 mg once in the morning up to 70 mg with a duration of 12 to 13 hours.

### Studies of FDA Approved Non-Stimulant Medication for ADHD in Adults

There is one FDA approved non-stimulant in adult ADHD called atomoxetine hydrochloride or Strattera®. It comes in a variety of dosage strengths varying between 10 and 100 mg a day. The FDA label does go up to 100 mg per day. Duration of effect can be up to 24 hours, but is dosed on a qd or bid basis, and it is approved for adults with ADHD.

### Study of Atomoxetine in Adult ADHD

- FDA-approved noradrenergic agent
- Two combined multicentre, randomized, placebo-controlled studies
- Pivotal trials for FDA approval
- N = 280 + 256 = 536 adults
- Target dosage to 120 mg/day
- Mean dose circa 92 mg/day
- 10 wk study duration

### Efficacy of Atomoxetine in Adults with ADHD

Study results show significant improvement starting by week two with ongoing improvement to week ten based on the CAARS ADHD score. These are the 18 symptoms on the CAARS, which are extracted to match the DSM-IV symp-toms and you see improvement going from a little less then 32 down to about 23 over the course of treatment. One thing to note is that atomoxetine's effect, because it is a reuptake inhibitor, is somewhat slower although it shows significant effects at week two. You do notice this ongoing improvement going out to week ten and because it's a reuptake inhibitor it does take two to three weeks each time the dose is titrated to get the maximal effect.

### Prescribing Information

**FDA Approved Non-Stimulant for Adult ADHD**

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Form</th>
<th>Recommended Start Dose</th>
<th>Recommended Maximum Daily Dose</th>
<th>Approximate Duration of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>atomoxetine</td>
<td>10 mg, 18 mg, 25 mg, 40 mg, 60 mg, 80 mg, 100 mg</td>
<td>Start with 40 mg</td>
<td>Maximum recommended daily dose is 100 mg</td>
<td>24 hours</td>
</tr>
</tbody>
</table>

**Pharmacotherapy of Adult ADHD and Coexisting Psychiatric Disorders**

So now we're going to talk about the pharmacotherapy of adult ADHD with coexisting psychiatric disorders—comorbidities. It's important to know that this is off label use of ADHD compounds. There really isn't anywhere near as much of an evidence base here, but let's review the data we do have available.

### Side Effects of Atomoxetine

<table>
<thead>
<tr>
<th>Side Effect</th>
<th>Atomoxetine (%)</th>
<th>Placebo (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry mouth</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>Insomnia</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>Nausea</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Decreased appetite</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Decreased libido</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Erectile difficulty</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Dizziness</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Increased BP (systolic diastolic): 1-3 mm Hg</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td>Increased HR (beats per minute)</td>
<td>*</td>
<td>5</td>
</tr>
</tbody>
</table>

All significant versus placebo

---

While there are similarities in the side effects there are some differences between those seen in psychostimu-lants. We talked about dry mouth and insomnia. The nausea tends to be an early effect and taking the medication with food will diminish this problem. Sometimes ginger can actually help that nausea and that's a nice clinical pearl. While decreased appetite can be observed, it is sometimes transient and can be improved if it is taken with food. One thing that you see sometimes with atomoxetine that you don't see as much with psychostimulants are decreased libido and erectile issues. It's important to talk to your patients about that. A delay in the urinary stream is also something that you can see with atomoxetine which is not seen with psychostimulants. Dizziness can occur. The blood pressure changes were similar to those noted with psychostimulants.

I should note that in the post-marketing surveillance there have been a couple other warnings put on atomoxetine. There is a warning for an allergic type hepatitis that tends to occur in a million times. There's no way to screen for this. If patients develop this, they'll become jaundiced and complain of flu like symptoms. Certainly it is important to discuss that with them. It's a rare side effect and in the cases that have been observed, stopping medication has been effective in relieving there effects. Additionally, it is important to note that atomoxetine carries a warning on it for suicidal thinking in children, but not in the full adult population.
Pharmacotherapy of ADHD and Major Depression

- 1 double-blind study of desipramine
- 1 placebo-controlled trial of paroxetine vs. dextroamphetamine
- 1 open-label trial of venlafaxine +/- stimulants
- 1 open-label trial of sertraline or fluoxetine + stimulants

The common comorbidities in adult ADHD include Major Depression, Bipolar Disorder, Dysthymia, Anxiety Disorders, Substance Use Disorders, and Learning Disabilities. It’s important to keep this in mind, if you have a patient with ADHD and Major Depression. Since Major Depression can be life threatening in terms of its suicidality and the ADHD is more lifelong, many clinicians will choose to treat the Major Depression first and then treat the ADHD second.

Pharmacotherapy of ADHD and Bipolar Disorder

- 1 open-label trial of bupropion

Pharmacotherapy of ADHD and Bipolar Disorder

In terms of the studies of pharmacotherapy of ADHD and Bipolar Disorder, there was only one study of bupropion by Tim Wilens, which found improvement in the ADHD symptoms and the worsening of the Bipolar Disorder. Actually the STEP study, the large scale multi-site NIH supported study actually found that bupropion induced lower switch rates in Bipolar Disorder. Even though it’s an antidepressant bupropion is the most commonly used medication for treating Bipolar Depression. In this study it was effective in treating the ADHD and apparently did not worsen the Bipolar Disorder.

Pharmacotherapy of ADHD and Social Anxiety Disorder

- Controlled trial of atomoxetine — 40-100 mg/day (n=224) vs. placebo (n=218) for 14 weeks
- Significant improvement of ADHD and social anxiety symptoms on atomoxetine

Pharmacotherapy of ADHD and Social Anxiety Disorder

There was one study that we reported investigating the pharmacotherapy of adult ADHD with comorbid social anxiety disorder. This is a controlled study of atomoxetine in dose ranges of 40 to 100 mg a day vs. placebo. In this large study of 218 adults, we actually found significant improvement in the ADHD and also the social anxiety symptoms. The ADHD was rated by our standard measures of the 18 symptoms and the Liebowitz Scale was used for measuring the improvement on social anxiety disorder.

Summary of Pharmacotherapy for Treating Adult ADHD

- There are five drugs approved by the FDA to treat adult ADHD. Four are long-acting stimulants and one is a long-acting non-stimulant.
- Research has shown these drugs to have long-term safety and efficacy in the treatment of adult ADHD.
- Adults with complicated ADHD (ADHD plus comorbid conditions) such as Major Depression, Bipolar Disorder, Anxiety, Executive Function Deficits, and Substance Use Disorder can also be treated with a combination therapy.

Pharmacotherapy of ADHD and Executive Function Deficits

Executive functioning refers to those neurocognitive processes needed to organize behavior across time and sustain problem-solving toward future goals.

- Effects of Stimulant on Neurocognitive Tests
- Examined effects on executive function among a group of traditional adults (15-25 years)
- Atomoxetine Treatment of Executive Function Deficits
- Examined effects on executive function during a month trial of atomoxetine in Brown Adult Attention Deficit/Hyperactivity Disorder
- Meta-Analysis of Improvement in all measures of executive functioning

Other ways that we talk about pharmacotherapy and co-existing condition is Executive Function Deficits. Executive functioning refers to those neurocognitive processes that are needed to organize behavior across time and sustain problem solving for future goals. There are two ways to look at this, one by measuring the effects of neuropsychological tests and another by looking at improvement on clinical measures of executive function deficits. The first study on neuropsychological tests was conducted by Biederman, while the second was done by Tom Brown. Of note is that the Biederman study did find improvement in a number of neuropsychological measures and that the executive function subset on the Brown scale did show improvement with atomoxetine.

Summary of Pharmacotherapy for Treating Adult ADHD

To summarize what we know about the pharmacotherapy of treating adult ADHD, there are five FDA approved medications for treating adults with ADHD. Four of these are long-acting stimulants which include Oros® methylphenidate, dexamphetamine XR, mixed amphetamine salts XR, lisdexamfetamine; and, there is one nonstimulant, atomoxetine hydrochloride. Research has shown that these drugs have a good safety profile and are efficacious in the treatment of adult ADHD. The treatment of adults with more complicated ADHD, meaning ADHD with a comorbid condition including Major Depression, Bipolar Disorder, Anxiety Disorder, or Executive Function Deficits, and substance use disorders can be treated with a combination therapy or single use therapy, but the evidence basis here is much smaller than the evidence we have in terms of treating adults with ADHD without comorbidity. And additionally, the use of these ADHD medications in this population with comorbidity is off label. Thank you very much.
Maintenance and Follow-up Care for Adults with ADHD: A Guide for Primary Care Providers

by Anthony L Rostain, MD, MA

Transcript from webcast from Adults with ADHD: Making Exam Room Decisions

Hi. I’m Dr. Anthony Rostain, Professor of Psychiatry and Pediatrics at the University of Pennsylvania School of Medicine, and Director of the Adult ADHD Treatment and Research Program.

Facility Disclosures
Here are my faculty disclosures.

Learning Objectives
After completing this module you will be able to discuss strategies for follow-up care of the adults with ADHD including how to:
- monitor clinical outcomes and adverse effects
- titrate medications to achieve optimal improvement
- improve patient adherence
- address common misconceptions about medications

Multi-Modal Treatment Approach for Adult ADHD
- Psycho-education
- Patient Self-Education re: ADHD (e.g. books, videos, DVDs, online resources)
- Environmental restructuring
- Coaching (life skills, organization, time management)
- Problem-focused Support Groups
- Medications
- Cognitive Behavioral Therapy / Supportive Psychotherapy / Insight-oriented Therapy
- Couples / Family Therapy (as needed)
- Social Skills Groups
- Vocational Counseling

Role of the Primary Care Provider in Management of Adult ADHD
- Provide ongoing patient education, support and encouragement
- Identify target objectives for intervention
- Manage medications
  - Selection of initial and subsequent agents
  - Document clinical response
  - Monitor side effects
- Refer patient for psychosocial treatment
- Maintain long term contact

Role of the Primary Care Provider in Management of Adult ADHD
Now I want to talk about the role of the primary care provider in the management of adult ADHD, because I believe you have a very critical role to play. First of all providing ongoing patient education and support and encouragement is really vital here because many of our patients are very demoralized and confused about what can help them. You can play a very important role in getting the patients started in treatment. Another important role is to identify the target objectives for intervention. What specifically does the patient really want to see improve. Once you identify those target goals, select the right medication, document what is going on with that medication, monitor side effects and if necessary change the medication approach as the case may be. It is also important to refer the patient for psychosocial treatment. Above and beyond all else, it is essential that you maintain long term contact because this is going to be one the most important facets of successful treatment outcome.

FDA Approved ADHD Medications for Adults
- Oros Methylphenidate (Concerta®)
- Mixed amphetamine salts (Adderall XR®)
- Dextimethylphenidate (Focalin XR®)
- Lisdexametamine Dimesylate (Vyvanse®)
- Atomoxetine (Strattera®)

You should be familiar with these different medications and when you select one of them, you should be able to inform your patient what the expected results will be and also what some of the problems they might encounter.

Guidelines for Medication Management of Adult ADHD
- Identify target symptoms – strive for remission
- Select appropriate treatment response measures
- Obtain data from multiple sources (e.g. spouse)
- Monitor side effects closely
- Titrate upwards until target response is achieved and/or side effects are causing concern
- Check for treatment adherence
- Switch or add other agents as indicated

Guidelines for Medication Management of Adult ADHD
Now we are not going to recommend a specific medication from that list— you have plenty to choose from. But whatever medication you are starting with, what you really need to do is strive for remission, meaning striving to remove as many of the target symptoms of ADHD as possible. A slight improvement might not make enough difference in a patient’s life. It is also important to select appropriate treatment response measures. And again these are included in the Adult ADHD Toolkit. It is also important to get information from multiple sources for example if a patient is married from their spouse; or if they are a young adult living at home maybe from their parents. You need to monitor side effects closely.
and you need to titrate the medication upward in a consistent way until you achieve either target symptoms remission or intolerable side effects that might lead you to have to switch medication. Another important facet of medication management is checking for treatment adherence, which we will discuss in a little more detail later. As I have mentioned before you may need to switch agents or combine agents as the case may be.

Sources of Outcome Data for Adult ADHD Pharmacotherapy

- Clinical Interview: Patient reports
- Standardized Self-Report Measures
  - Conners’ Adult ADHD Rating Scale (CAARS)
  - Brown Attention Deficit Disorder Scale (BADDS)
  - Barkley Symptom Rating Scale
  - Adult ADHD Self-Report Scale
- Medication Response Log (individualized)
- Corroborative information

Now what are some useful tools to monitor the outcomes of pharmacotherapy? Well to begin with a patient interview— that is where it all begins. This does not have to be a long interview—five to ten minutes just finding out how the patient is doing. What they think of the medication, what effects they think they are seeing, if they are helping them and what side effects are occurring. Then there are some standardize self-report measures, again many of these are included in your Adult ADHD Toolkit. Included in here would be: Conners’ ADHD Rating Scale; the Brown ADHD Scale; the Barkley Symptom Rating Scale; and the Adult ADHD Self Report Scale (ASRS), again all of these scales quantify the symptoms and allow you to see change over time with medication management.

Ratings Scales for Adults

- Adult ADHD Rating Scale with Adult Prompts
- ADHD Rating Scale-IV
- Adult ADHD Self Report Scale: 18 item
- Adult ADHD Self Report Screener: 6 items
- Brown ADHD Rating Scale for Adults
- Wonder Utah Rating Scale

Diagnostic Scales

- Adult ADHD Clinical Diagnostic Scale (ACID)
- Barkley Current Symptom Scale
- Conners’ Adult ADHD Rating Scale

Now it is also helpful to have patients fill out their own individualized medication response log. This is something they can keep with them and bring to each visit and you can track them on a day to day basis rather than just on an episodic basis. What are the patients seeing when they are trying different dosages of the medication? How is it helping their concentration, task completion and what other side effects they might be encountering? Again let me emphasize that it is very helpful to get corroborative information in whatever form is most efficient and effective for your practice.

There are a number of rating scales for adults. I am not going to go through each one of these at the moment, but this list is pretty comprehensive. You can see that they vary from short screeners like the six item ASRS which is in your Adult ADHD Toolkit, longer scales as well, and then there are diagnostic scales that allow you to interview the patient in your office. Once again get comfortable with these, once you start to use them you will see that they don’t take that long to administer and they provide a lot of valuable information to enable you to make treatment decisions.

Medication Response Form

This is an example of the Medication Response Form that I mentioned earlier. You can see the patients keeps track on their own and can bring in and show you how they are doing. It asks the patient on a scale from 1 to 10 how well they think they are doing, etc. And of course you can modify this for other target symptoms. So if impulsivity, or moodiness or irritability are a target for the treatment you can add those and substitute them for the different column heads on the form. This is just a way to get started.

Inadequate Response to Treatment

- Patients should be reassessed to make certain that the diagnosis is accurate; comorbid disorders should be reconsidered and treated as appropriate
- Sometimes a patient with an “inadequate response” has not received appropriate dose adjustment or treatment of side effects
  - Newly diagnosed patients may take 2 to 3 months to be stabilized on medication; physicians should plan and educate their patients accordingly
  - Frequent 20 minute office visits may be needed during titration

Inadequate response to treatment Now if the patient is not responding the first important step is to be sure that you have an accurate diagnosis and that you are not missing something. Another important aspect is to look closely at the possibility of comorbid disorders. So for example, if the patient is highly anxious and taking medication, their anxiety is still very high and their ADHD symptoms are not responding, you might want to focus more on the anxiety before you get somewhere with ADHD. The same is true with treating depression with ADHD. So going back to the basics and looking at the patients profile be sure that there are not other comorbid conditions that need to be treated is a good first step. Another cause of inadequate response, which we see a great deal of, is insufficient dosing. It is really important to realize for some patients, it will take up two to three months to figure out whether or not they are responders. Now you might need frequent office visits. Anywhere from 10 to 20 minutes should be sufficient, but having frequent contact during this time is very helpful to decide whether or not the medication you selected is the right one. It also facilitates adherence.

Adjusting Medication

- Some patients report a need for additional medication at specific times
  - Stimulant dose may be increased when there is a need for increased focus
  - Patients who need evening treatment may benefit from
    - Combination of extended-release and immediate-release stimulant
    - Atomoxetine or a combination of atomoxetine and a daytime stimulant

ADHD Treatment Algorithm

This is a treatment algorithm developed for children and adolescents. We do not have an algorithm for this type yet developed for adults with ADHD, but it gives you an idea of how to approach the different decisions and options you have for treatment outcomes. And this is actually quite similar to what we use at the University of Pennsylvania and other Practitioners across the country. You start with a stimulant and if that stimulant works, great. If it’s not working well, you might try a different stimulant; all the while making sure the patient is going for psychosocial treatments as needed. If the stimulants don’t work you might try buproprion or tricyclic (off label) or you might combine atomoxetine with a stimulant. You might use an alpha-2 agonist (off label). The point I am making with this slide is most of all think through that with each trial of medication you still have other options. There is hope and the patient should be told that there are many different ways to achieve a good outcome to reducing their ADHD symptoms.
stimulant later in the day, in the evening so as to help the individual with their evening activities. Parents will report that they notice their ADHD is getting in their way of spending time with their families in the evening. So you might add short acting stimulant later in the afternoon to help the individual through the evening. Same with an agent like atomoxetine. Atomoxetine helps a great deal, but perhaps during the day the patient is going need a little more focusing you might add a stimulant at that moment to the atomoxetine. So these are examples of ways to optimize the treatment response based on the individuals’ own priorities and their daily schedules.

Comorbid Medical Conditions: Hypertension and ADHD Treatment

- Evaluate blood pressure/pulse prior to initiating ADHD treatment
- Address hypertension before treating ADHD
- Once hypertension is controlled, treat ADHD and monitor blood pressure
- Stimulants have a clinically insignificant effect on blood pressure in treated, normotensive adults

Comorbid Medical Conditions: Heart Disease and ADHD Treatment

- Possible causes for concern
  - History of palpatations or arrhythmia
  - Recent myocardial infarction
  - Sudden episodes, dizziness
- Multiple risk factors, such as smoking, high body mass index, hypertension, metabolic syndrome
- Immediate cardiac medications and address risk factors; patients with ADHD may find it difficult to make necessary lifestyle changes
- Introduce ADHD medication at a slow dose and titrate up slowly
- Monitor symptoms, blood pressure/heart rate regularly
- Longer term effects of ADHD medications on cardiovascular status

Comorbid Medical Conditions: Diabetes and ADHD Treatment

- Studies of stimulants and nonstimulants on blood sugar regulation in diabetes mellitus unclear
- Longer-term studies do not show glucose dysregulation associated with stimulant or nonstimulant treatment in nondiabetic children, adolescents, and adults
- Stimulants and nonstimulants to a lesser extent may cause appetite suppression and reduced binge eating
- ADHD patients may find lifestyle modifications difficult
- Get ADHD stabilized before trying to get tight control of diabetes
- Monitor for symptoms or evidence of glucose dysregulation with ADHD treatment

Managing Common Side Effects: Insomnia

- For stimulant-induced insomnia
  - Melatonin
  - Clonidine
  - Tricyclic antidepressant
  - Trazodone
  - Mirtazapine
  - Antihistamine (acutely)

Managing Common Side Effects: Tics

- Stimulant-exacerbated tics
  - Examine severity of tics
  - Rechallenge to examine if tics are stimulant-induced
  - Switch to atomoxetine, alpha-agonists, or atypical or typical antipsychotics (pimozide FDA approved)
  - Combination therapies
    - Atomoxetine plus stimulant
    - Clonidine plus methylphenidate (3 studies)
  - Physical plus other treatment

Combining Agents

- Stimulants may be combined with atomoxetine when patients do not respond adequately to either medication alone
- Clinical trials have been conducted on the following combination therapies:
  - Methylphenidate
  - Atomoxetine and methylphenidate
  - Clonidine and methylphenidate
  - Desipramine and methylphenidate

Functional Remission

- Particularly with adult patients, medication may result in remission of symptoms, but functional improvement remains
- Patients may still lack organizational skills, social skills, academic and workplace skills; their adaptive behavior remains a problem

Managing Common Side Effects: Psychosocial Treatment

- Patients may benefit from specific training in organizational skills
- Cognitive behavioral therapy has been used to treat ADHD—either alone or in combination with medication

Eating properly, so if the patients does have diabetes, you have to be sure that they are not changing their dietary practices too drastically once you introduce the stimulant. So, again educating the patient and making sure that blood sugar regulation is being followed properly is an important preventative step to avoid hypoglycemia.

Managing Common Side Effects: Insomnia

Occasionally patients will complain of stimulant induced insomnia. This is different then the insomnia that we see in about 40 percent of patients with ADHD. I am talking about the situation where that patient had no problem falling asleep but now that you started treatment they are beginning to complain of difficulties falling asleep. The agents listed here are all quite effective in helping the sleep onset. Melatonin given around dinner time, clonidine can be giving about an hour or two before bedtime, occasionally we will use low dose tricyclic antidepressants or trazodone or mirtazapine and on a short term basis and antihistamines as well. You will notice we don’t tend to use sleep-inducing medications. What we tend to do is give medications that allow the sleep onset to take place normally and to counteract the stimulating effect of the stimulant.

Managing Common Side Effects: Tics

Tics are another side effect that we see sometimes with stimulants. Again it is important to examine carefully whether the tics are disabling and interfering with the patients’ life. If they are minor tics, they be overlooked as they may come and go. If they are causing problems it is important to consider a non-stimulant treatment. Atomoxetine is right up there first on the list. These other agents can also be used—alpha-agonist or atypicals. I find sometimes the combination of atomoxetine with the stimulant allows you to reduce the stimulant dosage and therefore reduce some of the tics that are seen.

Combining Agents

We don’t have a lot of good clinical trials to guide us with the combining of agents. As I mentioned before, as long as you are monitoring carefully, you can safely combine atomoxetine with methylphenidate or clonidine and methylphenidate or desipramine and methylphenidate. I am sure in the coming years we will see other studies. If you are wondering the safety of these medications, it is always helpful to consult with someone in your community who is an expert on ADHD such as a psychiatrist or neurologist for their input.

Psychosocial Treatment

If adaptive problems persist, it is important to refer patients for psychosocial treatment. This can range from anything from organizational skills training and skill building to more intensive work such as cognitive behavioral therapy (CBT). CBT has been shown to be successful both alone and in combination with medication to improve these coping skills.
Organizational Strategies

- Self-help
  - Adding structure and routine to daily activities
- Organizational technologies (PDAs, combination phones) and software (e.g., Outlook) for scheduling
- Setting cell phone alarms as reminders for daily activities

- Coaching
  - Time management
  - Motivational enhancement

Improving Adherence – I

- Develop a strong therapeutic alliance:
  - Physician-patient partnership in problem-solving
  - Close collaboration with patient’s support network
- Follow up regularly
- Adherence improves with assessment and feedback
  - Adjust dose and address side effects
- Discuss problems obtaining medication

Improving Adherence – II

- Use long-acting medications:
  - Adherence improves with dose simplification
  - Adherence rates tend to be better for long-acting medications for ADHD
- One study has shown similar adherence for the long-acting agents ORS methylphenidate, methylphenidate long acting, mixed amphetamine salts extended release, and atomoxetine
  - Encourage therapy and/or coaching
  - Adherence improves with strong social support
  - Adherence improves with repeated education sessions

Lack of Follow-up

- Patients with ADHD may not return for treatment once the immediate crisis has passed
- They may be impulsive or forgetful and may neglect follow-up
- They may not consider their treatateness or impulsivity a medical condition
- Additional problems in their lives compete for attention
- Encourage dialogue to learn about the reasons for lack of ongoing follow up
- Use contracts for patients who are inconsistent with follow-up – do not refill medications unless patients keep to the contract

Misuse of Stimulant Medications

- Abuse
- Misuse
  - Overuse (sleep deprivation, weight loss)
  - Underuse (avoidance, ambivalence)
- Diversion
- Problematic interactions with other medications

Distorted Beliefs About Medications

- It’s a magic pill – it will cure all my problems
- It’s bad to be dependent on medications – I’m like a drug addict
- I’ll do better, it’s not me doing it.
- I don’t do better, it’s the medication’s fault.
- It’s all in the meds, there’s nothing I can do.

Summary

- The primary care provider plays a vital role in the ongoing care of adult patients with ADHD
- Patient care includes providing education, support and encouragement as well as providing target objectives for interventions
- A systematic approach to medication management includes selecting treatment response measures, obtaining data from multiple sources, adjusting dosage, monitoring side effects, and checking for treatment adherence
- It is important to maintain frequent contact and open dialogue in order to maximize treatment outcomes

Summary

- So let me summarize by saying first of all, the primary care provider plays a vital role in the ongoing care of adult patients with ADHD. Secondly, patient care means proving education, support and encouragement as well as providing target objectives for intervention. Thirdly, a systematic approach to medication management includes selecting treatment response measures, obtaining data from multiple sources, dosing adjustment, monitoring side effect, and checking for treatment adherence. Finally, it is vital to maintain frequent contact and to continue an open dialogue in order to maximize treatment outcomes.

Thank you very much.
Hello and welcome to Psychosocial Intervention for ADHD in Adults: Guide for Primary Care Providers. My name is Dr. Russell Ramsay from the University of Pennsylvania.

**Faculty Disclosure**

- Dr. Ramsay has no relevant financial relationships with commercial interest in any amount that would create a potential conflict of interest.

**Learning Objectives**

- After completing this module, participants will be able to:
  - identify psychosocial treatments for adults diagnosed with ADHD
  - make referral suggestions for appropriate psychosocial treatments for adults with ADHD based on their presenting complaints

- Commonly encountered questions
  - "The medications are helping me but I'm still having problems. What else can I do?"
  - "I've tried ADHD medications. Is there something else that can help me with my ADHD?"

What are psychosocial interventions for adult ADHD?  

1. Ramsay (2010). "Psychosocial interventions for ADHD in Adults: A Guide for Primary Care Providers." University of Pennsylvania School of Medicine

What are psychosocial interventions for adult ADHD?  

- Psychosocial interventions include:
  - Psychoeducation
  - Cognitive Behavioral Therapy
  - Educational accommodations
  - Employment accommodations
  - Treatments for relationship difficulties (e.g., couples of family therapy)
  - Financial management

What are psychosocial interventions for adult ADHD?  

- Ongoing coping difficulties despite an otherwise effective medication regimen
- Medical profile (e.g., cardiac) or adverse side effects obviates the use of medications
- Patient refuses medications despite adequate education that addresses concerns

When are psychosocial treatments appropriate for adults with ADHD?  

- Commonly encountered questions
  - "The medications are helping me but I'm still having problems. What else can I do?"
  - "I've tried ADHD medications. Is there something else that can help me with my ADHD?"

What are psychosocial interventions for adult ADHD?  

- Psychoeducation
  - Teach patient and family about ADHD
  - Overview nature, course of ADHD
  - Overview of treatment options and potential effects/side effects
  - Instill hope and optimism

Psychoeducation

Regardless of the psycho-social treatment the first thing to encourage patients to do is to get educated about adult ADHD. You or another provider can teach the patient and the family about ADHD. Provide an overview of what ADHD is, what the symptoms are, and how it is diagnosed. In

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**References**

fact we have included a number of materials to help educate your patient about ADHD in the Adult ADHD Toolkit. Providers of psychosocial treatment will also find these tools helpful. You can also provide your patient with an overview of the various treatment options that we are considering today. And, finally, we hope the psychoeducation instills hope or optimism that there is something else that can be done in addition to medications.

Cognitive Behavioral Therapy (1)

- What is Cognitive Behavioral Therapy (CBT)?
  - Model of psychotherapy emphasizing the role of distorted information processing (i.e., distorted thoughts) on the development and maintenance of depression and anxiety.
  - Focus on the interplay of thoughts, behaviors, and emotions and their influence on current functioning.
  - Strong empirical support as a psychological treatment or adjunct for a variety of psychiatric disorders.

Cognitive Behavioral Therapy (2)

- Cognitive behavioral therapy (CBT) has been modified to address adult ADHD.
  - Structured treatment and training goals.
  - Cognitive-behavioral therapy.
  - Interpersonal therapy.
  - Coping with distractibility.
  - Delivered in either group or individual format.
- Intervention target functional impairments associated with ADHD as well as co-occurring problems.
  - Behavioral (e.g., limited self-efficacy, attentional deficits).
  - Cognitive (e.g., cognitive modulation of limited awareness).
  - Structural management (e.g., frustration, anger, anxiety, depression).

Cognitive Behavioral Therapy (3)

- CBT approaches for adult ADHD target:
  - The development and maintenance of coping skills to address the areas of impairment associated with symptoms of ADHD (e.g., disorganization, time management, procrastination), thereby improving overall well-being.
  - Dysfunctional thought patterns that lead to excessive self-criticism, pessimism, or a maladaptive positive bias, all of which may interfere with motivation and follow-through on the use of coping skills.
  - Co-existing problems that may further interfere with coping with ADHD, such as anxiety, depression, or substance use problems.

Cognitive Behavioral Therapy (4)

- CBT approaches, in both individual and group formats, have produced consistently positive results in several clinical outcome studies of the treatment of adults with ADHD.5,6

Cognitive Behavioral Therapy (5)

- Commonly encountered question:
  - How is cognitive behavioral therapy going to help me? I know what I need to do but just cannot do it.

Cognitive Behavioral Therapy (6)

I know what I need to do but just cannot do it. The patients can be reminded that CBT is not just telling you to do the same thing over and over again. By working with a skilled therapist, adults with ADHD begin to understand why they are having difficulties implementing various coping skills. Again, psychoeducation about ADHD helps adults develop an understanding of how to cope with day-to-day life.

Education Accommodations

Educational Accommodations (1),2,3

- College students with ADHD may be eligible for academic accommodations.
- Requirements for documentation:
  - Recent psychoeducational evaluation performed by qualified professional.
  - Documented signs of significant impairment that interferes with learning in an otherwise qualified student.

Educational Accommodations (2)

- A diagnosis of ADHD alone is not sufficient for accommodations; there must be evidence of impairment that affects learning.
- Common academic accommodations for ADHD include:
  - Extended time on exams
  - Alternative exam format
  - Testing in reduced distraction rooms
  - Access to lecture materials/class prior to class
  - Note-taking service
  - Course substitution (e.g., foreign language)
  - Text in audio format
  - Reduced course load, extended graduation time line

Educational Accommodations (3)

- Students with ADHD may benefit from specialized learning support or “academic coaching.”
- Learning support services help ADHD students:
  - Develop and implement effective learning strategies
  - Use coping skills to address time management and organization problems that may affect academics.
  - Use assistive technologies (e.g., consistent use of organizational features of cell phone, computer, PDA, voice-activated software for writing, etc.)

Education Accommodations (4)

In addition to these in-class and academic accommodations, academic coaching or specialized learning support is emerging as a potentially very helpful psycho-social treatment for college students with ADHD. Learning support services at school can help ADHD students...
Educational Accommodations (4) 1
- There is promising pilot research that academic coaching is helpful for college students with ADHD.
- Common features of programs studied:
  - Identification of ADHD and coping skill deficits
  - Specialized support that targets
  - Individualized learning support related to course content
  - Use of coping skills emphasizing implementation of study skills, organization, and time management strategies
  - Independent use of coping skills and positive alliance with the authority figures

Employment Accommodations (3) 1
- Employment accommodations include:
  - Computer software (e.g., voice-activated software)
  - Books and manuals in audio format
  - Dictation service
  - Frequent meetings with boss to track project tasks
  - Break down large projects into individual tasks
  - Modification of job demands
  - Quiet work space
  - Written reminders of task assignments

Employment Accommodations (4) 1
- Commonly encountered question:
  - "Should I tell my employer that I have ADHD?"
  - During interview process?
  - After being hired?

Employment Accommodations (5) 1
- Vocational rehabilitation and vocational counseling
  - Indicated in cases of severe, chronic employment problems
  - Targets job finding and job maintenance skills
  - Often provides ongoing support and communication with employer during employment

Employment Accommodations (2) 1, 2
- "ADHD Coaching" is an emerging psychosocial support service that may be helpful in workplace functioning.
- ADHD coaches focus on helping adults with ADHD to develop and implement coping skills that can be used to improve work efficiency.
- ADHD coaching is still defining itself as a field and there is one efficacy study with positive results for adults with ADHD.

Employment Accommodations (2)
Well that's where psychosocial treatment such as ADHD coaching can help. In addition to implementing coping skills on one's own, having access to an ADHD coach, similar to an athletic coach, can be very helpful. Coaches provide reminders or work with the adult with ADHD to set up a plan for workplace challenges. There has only been one outcome study of ADHD coaching for adults that yielded positive results, but anecdotally it is a growing field and many people describe it as being helpful in term of implementing, and most importantly, following through on the use of with coping strategies.

Educational Accommodations (5)
- Commonly encountered question:
  - "Should I disclose my diagnosis to my school?"

Education Accommodations
- Academic coaching also has promising, preliminary research supporting its use. Common features studied so far are accurate identification of ADHD and coping skill deficits, specialized support that targets learning strategies in the classroom, test-taking strategies, and

in the workplace. It really affects virtually all areas of life. Now workers who are otherwise qualified for their job may qualify for similar accommodations as they did as students. However, it can be a little more difficult to disclose your disability in the workplace and people struggle with whether or not to disclose. So people might hold off seeking formal accommodations. However, there are many informal accommodations or coping strategies that workers can implement to improve their productivity. Very often patients will ask, "What else can I do?"
counselors will have ongoing communication with employers helping to engage in root problem solving in regard to any difficulties in the workplace that may emerge.

**Treatments for Relationship Difficulties (1)**
- Adult ADHD may create problems in relationships.3
  - Marriages / committed relationships
  - Parenting
  - Co-workers
  - Friendships
- There have been no outcome studies of marital/couples or family treatments that focus on the role of adult ADHD.4
- It is helpful to find a clinician experienced with adult ADHD.

**Treatments for Relationship Difficulties (2)**
- Common interventions for relationship difficulties involving an adult with ADHD include:5,6
  - Assessment diagnosis and treatment for adult ADHD
  - Communication skills training
  - Increase positive communication
  - Decrease negative communication
  - Problem-solving skills training
  - Cognitive modification of unrealistic expectations
  - Relationship enhancing activities

Therapists may also teach collaborative problem solving skills so that adults learn to identify and work through problems. In addition, problem solving communications, adults may be encouraged to schedule various relationship enhancing activities to foster the positive feelings in relationship in both romantic relationships and parenting relationships.

Other coping skills for managing problem financial behavior draw on some of the other psychosocial interventions include cognitive behavioral therapy to look at thoughts around spending money, institute rules around delays in purchasing, or rules that someone consults with a trusted significant other before making a major purchase.

**Strategies for Financial and Money Management**
- Outsource financial matters
  - Set up electronic systems for finances
  - Paying bills
  - Automatic deposit in retirement plan or savings account
  - Tracking income and spending
  - “Envelopes” before spending (e.g., envelopes)
- Coping skills for financial behaviors
  - CRT for cognitive and emotional issues around money
  - Coping strategies for spending problems (e.g., 24 hour delay)
  - Set up weekly time for budgeting, paying bills, etc.

**Strategies for Financial and Money Management**

**Psychosocial Treatments for Adult ADHD:**
- Summary (1)
  - Useful adjunct to medications
  - Available outcome studies of cognitive behavioral therapy and academic coaching for adult ADHD have provided evidence of their efficacy
  - Can be used in cases in which medication treatment is ineffective or contraindicated
  - Are relevant in various settings (e.g., school, work, social)

**Psychosocial Treatments for Adult ADHD:**
- Summary (2)
  - Psychosocial treatments for adult ADHD may be provided by:
    - Psychologists and other mental health professionals
    - ADHD coaches
    - University disability and learning support specialists
    - Family and couples therapists
    - Vocational rehabilitation counselors

The important take-away message from this session is that there are many helpful treatment options for adults with ADHD. We hope that this session has given you useful information to better treat adults with ADHD. The Adult ADHD Toolkit that accompanies this session also provides materials to help educate your patients.

Thank you very much for your time.

**Treatment Options for Severe Emotional and Functional Comorbidities**

In some cases, patients may come to you with significant difficulties or they come back because they continue to struggle with significant impairments. Patients with significant emotional problems in addition to ADHD (i.e., anxiety, severe depression, anger management problems) may need other psychosocial treatments including cognitive behavioral therapy that target these difficulties. Some adults, with extreme ADHD symptoms, severe impulsivity and self-control difficulties, may need intensive therapeutic interventions. Carefully managed medication, couples therapy, coaching, workplace accommodations and/or vocational counseling may help alleviate the various problems associated with adult ADHD.
Welcome to this component of the Making Exam Room Decisions for Adults with ADHD, a performance improvement activity for primary care providers. I am going to discuss differential diagnosis and co-existing disorders. I am Dr. Richard Rubin. I am the director of a community-based, practice-based clinical study center emphasizing ADHD. Frequently I do primary care consultations and also serve as adjunct associate professor at Dartmouth Medical College.

If ADHD is present, what is the lifetime incidence of coexisting disorders in clinic samples?
- Substance Use/Abuse: 50%
- Anxiety Disorder: 40%
- Major Depression: 35%
- Learning Disability: 20%
- Bipolar I Disorder: 13%

In a national community survey, 50-70% with ADHD had one or more other psychiatric diagnoses. Most adults with ADHD have other co-existing psychiatric conditions.

If other common psychiatric disorders are present, what is the likelihood of coexisting ADHD?

<table>
<thead>
<tr>
<th>PSYCHIATRIC Dx</th>
<th>ADHD PREVALENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression</td>
<td>20%</td>
</tr>
<tr>
<td>Generalized Anxiety</td>
<td>20%</td>
</tr>
<tr>
<td>Substance Use/Abuse</td>
<td>25%</td>
</tr>
</tbody>
</table>

Comorbid rates are higher in clinical rather than community samples because people often present with other problems.

Community Sample Prevalence of DSM-IV Disorders in Adults with and without ADHD

Beginning with this somewhat complex slide, this is very valuable research from the National Comorbidity Study that has helped us recognize how common ADHD is in a wide range of other psychiatric disorders. If you look at each pair of bars you will see that the percent prevalence with ADHD is substantially higher across the board than a single diagnosis of these other disorders. MDD is major depressive disorder, bipolar, generalized anxiety disorder, post traumatic stress disorder, agoraphobia which is also tied closely with social phobia or social anxiety disorder, OCD obsessive compulsive disorder, alcohol abuse and dependence and drug abuse and dependence and substance use disorder (SUD).
Why should primary care providers recognize other disorders coexisting with ADHD? 1, 2

- Your relationship and access may be the patient's best option for care.
- Impairment risks are more severe.
- Medication tolerability, safety, and response varies.
- Treatment may need additional modalities (i.e., counseling, coaching, accommodations, etc.).

ADHD Comorbidities and Presenting Symptoms 1, 2

<table>
<thead>
<tr>
<th>Psychiatric Disorder</th>
<th>Shared Features</th>
<th>Differential Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major depressive disorder</td>
<td>Poor concentration, attention, and memory difficulty with task completion</td>
<td>Episodic dysphoria or anhedonia, insufficiency of daily interest, low energy, weight gain/loss, or psychomotor retardation</td>
</tr>
<tr>
<td>Bipolar disorder</td>
<td>Hypomanic/mixed with affective and suicidal mood swings</td>
<td>Episodic dysphoria or hypomaniac mood, less need for sleep or hyperactivity, faster-ventilation side effects</td>
</tr>
<tr>
<td>Generalized anxiety disorder</td>
<td>Distress, difficulty concentrating, and memory, mood swings</td>
<td>Exaggerated apprehension and worry, somatic symptoms of anxiety</td>
</tr>
<tr>
<td>Substance abuse or dependence</td>
<td>Difficulties with attention, concentration, and memory, mood swings</td>
<td>Pathological pattern of substance use with social consequences, psychogenic and psychological tolerance of withdrawal</td>
</tr>
<tr>
<td>Personality disorders, particularly borderline and antisocial personality disorder</td>
<td>Impulsivity, affective instability</td>
<td>Arrest history (antecedent personality), repeated self-injurious suicide behavior (borderline personality), chronic relationship disruptions</td>
</tr>
<tr>
<td>M. Asperger's disorder</td>
<td>Social awkwardness, difficulty reading social cues, concrete thinking and perseverative approach</td>
<td>Social awkwardness, difficulty reading social cues, concrete thinking and perseverative approach</td>
</tr>
</tbody>
</table>


Why should primary care providers recognize other disorders coexisting with ADHD? 3

- It may be the challenge for your practice, there are significant reasons why it’s quite valuable for you to recognize coexisting disorders in your patients. First, your relationship with your patient may be the best chance they have for accessing treatment. Second, we also know that impairment risks are more severe with combined disorders than simple ADHD. And third, we also know that your ADHD treatment decisions will be influenced strongly by the presence of coexisting or combined disorders. For example medication treatment decisions, safety, tolerability, or medication response varies depending on which, if any, combined disorders are present. Finally combined disorders increase the need for additional treatment modalities including therapy, counseling, coaching, and workplace accommodations. Treatment plans vary across individual profiles, but better outcomes are more likely when treatments address various aspects of the combined disorders.

ADHD Comorbidities and Presenting Symptoms

Now, this is a valuable slide with a great deal of information. I want to emphasize two major principles. First, many disorders have shared symptoms; thus it is necessary to look at the full range of ADHD symptoms as well as distinguishing features of other disorders before making a diagnosis. The right side of the slide shows the differential features to help rule in and rule out the other disorders that may be a part of a complex patient presentation. For example, patients with both major depression and ADHD may have poor concentration, memory impairment and difficulty completing tasks, but there are clear signs that help us differentiate the two disorders—namely sleep and appetite disturbance, low energy level, and dysphoria or anhedonia.

Second, ADHD and bipolar disorders share common difficulties including hyperactivity, attention difficulties and trouble focusing. Distinguishing features include flight of ideas, decreased need for sleep, and delusional thinking and agitation. Because bipolar disorders are highly heritable, you need to ask about family history to assist your differential diagnosis.

Next, adults with generalized anxiety are worriers. They may worry constantly about many situations, whereas adults with ADHD may be more concerned about performance difficulties they experience due to their ADHD symptoms. Also, make sure you ask about substance use and abuse. Personality disorders and ADHD share common problems including emotional lability and impulsivity, but they may differ in many ways such as the presence of arrest history, suicidal ideation, self-injury, etc. It is important that you ask difficult questions about what other problems, such as childhood conduct disorder that may precede some forms of an adult personality disorder. Finally, ADHD and mild Asperger’s disorder share common difficulties of inattention, but can be distinguished in the social domain—social awkwardness, difficulty reading social cues, distorted thinking and task perseveration. Hopefully this slide will assist you in making these clinical differentiations.

Scales to Screen for Psychiatric Comorbidities

- Hamilton Anxiety Scale
- Hamilton Depression Scale
- Mood Disorder Questionnaire
- CAGE-Adapted to Include Drugs

1. Available at www.mentalhealth.com or in NICE ADHD Toolkit

Medical Differential Diagnosis

During your examination, you want to make sure that medical problems are not mistaken for ADHD. There are a number of medical disorders that should be ruled out including hyper or hypothyroidism as these may look like ADHD or they may be combined with ADHD. You may also want to check for other signs of thyroid disorders in your clinical assessment. Hearing problems may also be common for some. Spouses often report that their spouse with ADHD never listen to them. However, in some rare cases you should test for hearing loss because sensory impairment may create cognitive difficulties that mimic ADHD.

There is also evidence that menopause may cause cognitive problems as a result of changing estrogen and progesterone levels. Women in their forties and fifties may wonder if they have undiagnosed ADHD if and when they experience these difficulties. Amenopause. Simple mental status and/or memory tests like digit span tests, can be done quickly in your office to help identify memory and cognitive difficulties.

Trauma and the sequelae of trauma may appear similar to ADHD. Studies of children who have ADHD, show that trauma exacerbates ADHD symptoms. Developmental history may help you distinguish the effects of trauma. Lastly, individuals with chronic medical illness, including chronic fatigue syndrome, autoimmune disorders, and chronic rheumatoid arthritis may ask about ADHD. They may hear about ADHD and may believe that some of their struggles with thinking, remembering, learning, and functioning may be associated with ADHD. You should investigate these other medical complications.

Medical Differential Diagnosis

- Medication side effects:
  - Cognitive blunting from SSRIs, antidepressants, neuroleptics
  - Discomfort from OTC stimulants, appetite suppressants, herbs
- Controversial, unproven:
  - Low-serum ferritin
  - Subclinical heavy metal toxicity
  - Food allergies

1. Using an ADHD Drug by James Hoekstra, 2005

Various medications may also complicate the presentation of ADHD. SSRIs may down regulate dopamine and some of them, more than others, may effect memory. Anticonvulsants and other neuroleptics have sedative
Assessing Sleep Problems with ADHD

Sleep Disorder signs:
1. Bedtime setting
2. Excessive daytime sleepiness
3. Waking up in the middle of the night
4. Restlessness during sleep
5. Snoring

Sleep Symptom + ADHD (Differential):
- ADHD view:
  - Comorbidity
  - Medication side effects
  - Poor sleep architecture
- Primary Sleep Disorder: Obstructive Sleep Apnea, Restless Legs Syndrome.

Assessing Sleep Problems with ADHD

One topic that has been somewhat confusing is sleep problems that may be combined with ADHD. I borrowed this mnemonic from sleep disorder experts, which helps us organize how to ask patients about their sleep symptoms—"E"—excessive daytime sleepiness; "A"—awakening; "R"—restlessness during sleep; and "S"—snoring. Here are five things to think about: (1) many adults with ADHD have sleep difficulties; (2) comorbid disorders (i.e., anxiety, mood) may affect sleep; (3) certain medicines affect sleep (i.e., stimulants and atomoxetine) or alcohol may interfere with sleep; (4) poor sleep hygiene can be an issue. For example, shift workers, college students, and young people who stay out late, may have disrupted sleep in that the natural quality and benefit of good sleep is lost; and, (5) primary sleep disorders may also occur. I do not think it is common for a sleep disorder to mimic ADHD. It is far more common for adults to have both sleep and ADHD problems.

<table>
<thead>
<tr>
<th>Implications for Treatment Planning for Adults with ADHD and Coexisting Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Safety of medicine choice</td>
</tr>
<tr>
<td>- Comorbidity exacerbation, i.e., anxiety, sleep disorder with stimulants; bipolar with stimulants and atomoxetine; abuse/misuse of stimulants</td>
</tr>
<tr>
<td>• Effectiveness of medicine choice</td>
</tr>
<tr>
<td>- dual dx action, duration, tolerability, adherence</td>
</tr>
<tr>
<td>• Need for other treatment modalities</td>
</tr>
<tr>
<td>- combined medicines, psychosocial interventions (i.e., counseling, job or school accommodations, coaching, cognitive behavioral therapy, etc)</td>
</tr>
</tbody>
</table>

Implications for Treatment Planning for Adults with ADHD and Coexisting Conditions

So how may we apply some of this information for your treatment planning decisions? There are three concepts to think about. Number one, there are safety issues when making medication choices. There are definitely different vulnerabilities and risk factors associated with other medical or psychiatric combined disorders depending on your medication choice. Check package inserts for details of various medicine characteristics and consider the potential for abuse or misuse of stimulants for individuals with substance abuse problems.

Number two, we are learning more about the effects of using certain medications for combined conditions. Some combined disorders respond better with one-medicine verses another. You also want to consider issues of duration (short duration versus long duration medications); issues of individual tolerability; and, issues of adherence. It is important to ascertain whether your patient is willing to take certain medicines so be sure to ask about their preferences. It is very important to establish answers to these questions when developing an effective and ongoing treatment course. And then lastly, other treatment modalities should be considered during your treatment planning. Do you need to make referrals to other professionals (e.g., mental health, vocational, etc)? It will be important to monitor these other treatment modalities during patient follow-up.

Suggested Structure for Patient Visits for Diagnosis, Initial Treatment, and Follow-up Care

Consider 2-3 separate visits — 20 minutes each:
Visit #1
- take initial history, physical exam, distribute rating scales, order lab tests
Visit #2
- review screens, scales, and tests; further clarify history and mental status
- discuss treatment plan, medication, provide patient education materials, referrals, other resources
Visit #3 and after
- follow up, evaluate safety and efficacy of medication, and adjust medication as needed for optimal result

Suggested Structure for Patient Visits for Diagnosis, Initial Treatment, and Follow-up Care

Now we all work in a highly demanding medical world (e.g., managed care constraints, strong patient demands on our time, etc.), so this proposed structure for initial assessment and follow-up care may be useful and effective in primary care settings for your patients with ADHD complaints. During the first visit, gather relevant patient history, conduct a physical exam, distribute an ADHD rating scale, and order any relevant tests you may need. During the second visit look at the results of the rating scale, clarify historical information if needed, look at some of those old school records if available, view collaborative reports, discuss choices regarding the treatment including medication, obtain informed consent regarding medicines, provide patient education materials (see Adult ADHD Toolkit), and consider referrals or other resources. The timing of the third visit for follow-up depends on your patient’s needs. It is important when first prescribing medications to check tolerability and make adjustments for individual dosing to obtain optimal results. This is critical for ensuring treatment quality, increasing treatment compliance, and improving outcomes.

Summary

- More than half of adult patients with ADHD will have some co-existing psychiatric disorder
- Screen for other psychiatric/medical disorders for ADHD co-existing or differential diagnosis
- Consider multi-modal treatment options (i.e., medication, psychoeducational interventions, counseling therapies, referral, etc) for patients with complex ADHD
- Be prepared to conduct maintenance treatment, support for adherence, and periodic re-evaluation

Summary

So, in summary it is very common for adults to have a coexisting psychiatric disorder with ADHD. There are numerous tools for screening, assessing, and making diagnostic decisions that can be useful in primary care settings for your patients with ADHD. Adults with complex ADHD have better outcomes when multimodal treatments are initiated. This includes medication combined with psychoeducation, counseling, and other referrals as needed. With complex cases, ADHD medications to reduce core symptoms are generally not enough. Primary care providers are in the best position to provide adults with quality treatment, follow-up, and management of long term ADHD needs. Your relationship with your patient can make a significant difference in their lives.

Thank you.
# FDA APPROVED MEDICATIONS FOR ADULTS WITH ADHD

(listed alphabetically)

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Form</th>
<th>Recommended Dosing</th>
<th>Common Side Effects</th>
<th>Duration of Action*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adderall XR®</td>
<td>5 mg, 10 mg 15 mg, 20 mg, 25 mg, 30 mg</td>
<td>Start with 20 mg/day and titrate at weekly intervals to appropriate efficacy and tolerability. Maximum daily recommended dose is 30 mg/day</td>
<td>Decreased appetite, headache, stomach ache, trouble sleeping, weight loss, dry mouth, nervousness, mood swings, dizziness, fast heart beat</td>
<td>10 – 12 hours</td>
</tr>
<tr>
<td>Concerta®</td>
<td>18 mg, 27 mg 36 mg, 54 mg</td>
<td>Start with 18 mg or 36 mg each morning and increase by 18 mg/day at weekly intervals to appropriate efficacy and tolerability. Maximum recommended daily dose is 72 mg</td>
<td>Decreased appetite, headache, dry mouth, nausea, insomnia, anxiety, dizziness, weight decreased, irritability, and hyperhidrosis</td>
<td>10 – 12 hours</td>
</tr>
<tr>
<td>Focalin XR®</td>
<td>5 mg, 10 mg 15 mg, 20 mg, 30 mg</td>
<td>Start with 10 mg/day and increase by 5 to 10 mg increments</td>
<td>Dry mouth, dyspepsia, , headache and anxiety for adult patients</td>
<td>10 – 12 hours</td>
</tr>
<tr>
<td>Strattera®</td>
<td>10 mg, 18 mg 25 mg, 40 mg 60 mg, 80 mg, 100 mg</td>
<td>Start with 40 mg and increase after a minimum of 3 days to a target total daily dose of approximately 80 mg. either in the morning or as evenly divided doses in the morning and late afternoon/early evening. After 2 to 4 additional weeks, the dose may be increased to a maximum of 100 mg to appropriate efficacy and tolerability</td>
<td>Constipation, dry mouth, nausea, fatigue, decreased appetite, insomnia, erectile dysfunction, urinary hesitation and/or urinary retention and/or dysuria, dysmenorrhea, and hot flush</td>
<td>24 hours</td>
</tr>
<tr>
<td>Vyvanse®</td>
<td>20 mg, 30 mg 40 mg, 50 mg 60 mg, 70 mg</td>
<td>Start with 30 mg once daily in the morning and increase by 10 to 20 mg at approximately weekly intervals to appropriate efficacy and tolerability. Recommended maximum dose 70 mg once daily in the morning</td>
<td>Upper abdominal pain, diarrhea, nausea, fatigue, feeling jittery, irritability, anorexia, decreased appetite, headaches, anxiety, and insomnia</td>
<td>12 – 13 hours</td>
</tr>
</tbody>
</table>

Refer to specific prescribing information published by drug manufacturers for more information particularly with respect to precautions and warnings about the use of these drugs. Stimulant drugs above are classified as Schedule II and have significant potential for abuse or diversion.

The information in this publication is not intended to replace the advice of a physician.

* Duration of action is estimated and may vary from person to person.
Adult Attention-Deficit/Hyperactivity Disorder (ADHD)
Coding Fact Sheet

Consider the following elements when selecting an Evaluation and Management code: type of service, place of service & patient's status

Office (OV) or Other Outpatient Evaluation and Management (E/M) Codes
Evaluation and Management codes consist of three key components: History, Examination and Medical Decision Making. Physicians may report the respective patient visit based on the level of key components or they may report the visit based on time.

<table>
<thead>
<tr>
<th>New Patients</th>
<th>99201/99202/99203/99204/99205</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requires 3 of 3 key components or greater than 50 percent of the visit spent in counseling or coordinating care.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Established Patients</th>
<th>99212/99213/99214/99215</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requires 2 of 3 key components or greater than 50 percent of the visit spent in counseling or coordinating care.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consultations</th>
<th>99241/99242/99243/99244/99245</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requires 3 of 3 key components or greater than 50 percent of the visit spent in counseling or coordinating care.</td>
<td></td>
</tr>
</tbody>
</table>

- Report if another physician or other appropriate source (ie, psychologist) requests an opinion regarding an adult potentially having ADHD.
- Verify each of your payors position on consultation coding
  - As of January 1, 2010, the Centers for Medicaid and Medicare Services no longer pays for consultation codes. As a result, some, but not all, payors followed suit.
- Remember to document the four "R's" of consultations in the patient's chart: Request, Reason, Recommendation, Report

<table>
<thead>
<tr>
<th>Prolonged Services</th>
<th>99354/93555</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient Prolonged Services requiring direct face-to-face patient contact, at least 30 minutes more than the base E/M code.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prolonged Services</th>
<th>99358/9359</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-face-to-face Prolonged Services before and/or after direct (face-to-face) patient care</td>
<td></td>
</tr>
</tbody>
</table>

- Prolonged service codes are to be used when a physician provides prolonged services involving patient contact that is beyond the usual service & in addition to the designated E/M service at any level
- Direct (face-to-face) prolonged services of less than 30 minutes total duration is not separately billable
- Non-face-to-face prolonged services of less than 15 minutes beyond the first hour or less than 15 minutes beyond the final 30 minutes is not separately billable
- The time spent with the patient does not have to be continuous.

<table>
<thead>
<tr>
<th>Category (Elements)</th>
<th>Codes (Minutes)</th>
<th>History</th>
<th>Physical Exam</th>
<th>Decision Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Patient: OV/Outpatient (3 of 3)</td>
<td>99201 (10 min), 99202 (20 min), 99203 (30 min), 99204 (45 min), 99205 (60 min)</td>
<td>Problem Focused, Expanded Problem Focused, Detailed, Comprehensive</td>
<td>Problem Focused, Expanded Problem Focused, Detailed, Comprehensive, Comprehensive</td>
<td>Straightforward, Low, Moderate, Moderate, High</td>
</tr>
<tr>
<td>Established Patient: OV/Outpatient (2 of 3)</td>
<td>99212 (10 min), 99213 (15 min), 99214 (25 min), 99215 (40 min)</td>
<td>Problem Focused, Expanded Problem Focused, Detailed, Comprehensive</td>
<td>Problem Focused, Expanded Problem Focused, Detailed, Comprehensive</td>
<td>Straightforward – Low, Low, Moderate, High</td>
</tr>
<tr>
<td>Consultation: OV/Outpatient (3 of 3)</td>
<td>99241 (15 min), 99242 (30 min), 99243 (40 min), 99244 (60 min), 99245 (80 min)</td>
<td>Problem Focused, Expanded Problem Focused, Detailed, Comprehensive</td>
<td>Problem Focused, Expanded Problem Focused, Detailed, Comprehensive, Comprehensive</td>
<td>Straightforward, Low, Moderate, Moderate, High</td>
</tr>
</tbody>
</table>

1 Refer to your current CPT code book for complete descriptions and guidelines. All coding decisions should be made based on documentation and payer rules.
Medical Team Conferences  99366/99367/99368
Medical team conference with interdisciplinary team of health care professionals, face-to-face with patient and/or family, 30 minutes or more,
• Medical team conferences include face-to-face participation by a minimum of three qualified healthcare professionals from different specialties/disciplines
• No more than one individual from the same specialty may report the service at the same encounter
• Team conference services of less than 30 minutes duration are not separately billable.

Telephone Services  99441/99442/99443
Telephone E/M service provided by the physician to an established patient, parent, or guardian not originating from a related E/M service provided within the previous 7 days nor leading to an E/M service or procedure within the next 24 hours or soonest available appointment;

Central Nervous System Assessments/Tests Codes

96101  Psychological testing, includes psychodiagnostic assessment of emotionality, intellectual abilities, personality and psychopathology (eg, MMPI, Rorschach, WAIS), per hour of the psychologist's or physician's time, both face-to-face time administering tests to the patient and time interpreting these test results and preparing the report

96102  Psychological testing, includes psychodiagnostic assessment of emotionality, intellectual abilities, personality and psychopathology (eg, MMPI and WAIS), with qualified health care professional interpretation and report, administered by technician, per hour of technician time, face-to-face

96103  Psychological testing, includes psychodiagnostic assessment of emotionality, intellectual abilities, personality and psychopathology, eg, MMPI), administered by a computer, with qualified health care professional interpretation and report

96110/96111  Developmental testing (eg, Developmental Screening Test II, Early Language Milestone Screen) with interpretation and report.

96116  Neurobehavioral status exam (clinical assessment of thinking, reasoning and judgment, eg, acquired knowledge, attention, language, memory, planning and problem solving, and visual spatial abilities), per hour of the psychologist's or physician's time, both face-to-face time with the patient and time interpreting test results and preparing the report

Other Psychiatric Services or Procedures Codes

90862  Use to report pharmacologic management, including prescription, use, and review of medication with no more than minimal medical psychotherapy (eg, Ritalin check).

90887  Use to report interpretation or explanation of results of psychiatric, other medical examinations or procedures, or other accumulated data to patient's family/guardian(s), or advising them how to assist patient.

** Time spent (in and out, total) must be documented for all codes chosen based on time. **
ICD-9-CM Codes
International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)

- Do not use "rule out ADHD" as the diagnosis prior to making a definitive diagnosis. Use as many diagnosis codes as apply to document the patient’s complexity and report the patient’s symptoms and/or adverse environmental circumstances.
- Once a definitive ADHD diagnosis is established, report the appropriate definitive diagnosis code(s) as the primary code, plus any other symptoms that the patient is exhibiting as secondary diagnoses.
- Counseling diagnosis codes can be used when the patient is present or when counseling the parent/guardian(s) when the patient is not physically present.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>293.84</td>
<td>Organic anxiety syndrome</td>
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<tr>
<td>300.00</td>
<td>Anxiety state, unspecified</td>
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<tr>
<td>300.01</td>
<td>Panic disorder</td>
</tr>
<tr>
<td>300.02</td>
<td>Generalized anxiety disorder</td>
</tr>
<tr>
<td>300.20</td>
<td>Phobia, unspecified</td>
</tr>
<tr>
<td>300.23</td>
<td>Social phobia</td>
</tr>
<tr>
<td>300.29</td>
<td>Other isolated or simple phobia</td>
</tr>
<tr>
<td>300.4</td>
<td>Neurotic depression</td>
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<tr>
<td>307.0</td>
<td>Stammering and stuttering</td>
</tr>
<tr>
<td>307.9</td>
<td>Other and unspecified special symptoms or syndromes, not elsewhere classified (NEC)</td>
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<tr>
<td>305.3</td>
<td>Acute stress disorder</td>
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<tr>
<td>309.21</td>
<td>Separation anxiety disorder</td>
</tr>
<tr>
<td>309.3</td>
<td>Adjustment reaction; with predominant disturbance of conduct</td>
</tr>
<tr>
<td>312.00</td>
<td>Undersocialized conduct disorder, aggressive type; unspecified</td>
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<tr>
<td>312.30</td>
<td>Impulse control disorder, unspecified</td>
</tr>
<tr>
<td>312.81</td>
<td>Conduct disorder, childhood onset type</td>
</tr>
<tr>
<td>312.82</td>
<td>Conduct disorder, adolescent onset type</td>
</tr>
<tr>
<td>312.9</td>
<td>Unspecified disturbance of conduct</td>
</tr>
<tr>
<td>313.81</td>
<td>Oppositional defiant disorder</td>
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<td>313.83</td>
<td>Academic underachievement disorder</td>
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<tr>
<td>314.00</td>
<td>Attention-deficit disorder, w/o mention of hyperactivity</td>
</tr>
<tr>
<td>314.01</td>
<td>Attention-deficit disorder, with mention of hyperactivity</td>
</tr>
<tr>
<td>314.1</td>
<td>Hyperkinesia with developmental delay</td>
</tr>
<tr>
<td>314.2</td>
<td>Hyperkinetic conduct disorder</td>
</tr>
<tr>
<td>314.8</td>
<td>Other specified manifestations of hyperkinetic syndrome</td>
</tr>
<tr>
<td>314.9</td>
<td>Unspecified hyperkinetic syndrome</td>
</tr>
<tr>
<td>315.00</td>
<td>Reading disorder, unspecified</td>
</tr>
<tr>
<td>315.01</td>
<td>Alexia</td>
</tr>
<tr>
<td>315.02</td>
<td>Developmental dyslexia</td>
</tr>
<tr>
<td>315.09</td>
<td>Specific reading disorder; other</td>
</tr>
<tr>
<td>315.1</td>
<td>Mathematics disorder</td>
</tr>
<tr>
<td>315.2</td>
<td>Other specific learning difficulties</td>
</tr>
<tr>
<td>315.31</td>
<td>Expressive language disorder</td>
</tr>
<tr>
<td>315.32</td>
<td>Mixed receptive-expressive language disorder</td>
</tr>
<tr>
<td>315.39</td>
<td>Developmental speech or language disorder; other</td>
</tr>
<tr>
<td>315.4</td>
<td>Developmental coordination disorder</td>
</tr>
<tr>
<td>315.5</td>
<td>Mixed developmental disorder</td>
</tr>
<tr>
<td>315.8</td>
<td>Other specified delay in development</td>
</tr>
<tr>
<td>315.9</td>
<td>Unspecified delay in development</td>
</tr>
<tr>
<td>315.9</td>
<td>Lack of coordination</td>
</tr>
<tr>
<td>315.81</td>
<td>Interpersonal problems, NEC</td>
</tr>
<tr>
<td>316.2</td>
<td>Bereavement, uncomplicated</td>
</tr>
<tr>
<td>316.89</td>
<td>Other psychological or physical stress, NEC; other</td>
</tr>
<tr>
<td>316.9</td>
<td>Unspecified psychosocial circumstance</td>
</tr>
<tr>
<td>316.49</td>
<td>Other specified counseling</td>
</tr>
<tr>
<td>329.15</td>
<td>Observation for suspected mental</td>
</tr>
<tr>
<td>329.15</td>
<td>Lack of coordination</td>
</tr>
</tbody>
</table>

The following ICD-9-CM codes are used to deal with occasions when circumstances other than a disease or injury are recorded as "diagnoses" or "problems."

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>V40.0</td>
<td>Problems with learning</td>
</tr>
<tr>
<td>V40.1</td>
<td>Problems with communication (including speech)</td>
</tr>
<tr>
<td>V40.2</td>
<td>Anxiety problem</td>
</tr>
<tr>
<td>V40.3</td>
<td>Mental and behavioral problems; other behavioria problems</td>
</tr>
<tr>
<td>V40.9</td>
<td>Unspecified mental or behavioral problem</td>
</tr>
<tr>
<td>V60.0</td>
<td>Lack of housing</td>
</tr>
<tr>
<td>V60.1</td>
<td>Inadequate housing</td>
</tr>
<tr>
<td>V60.2</td>
<td>Inadequate material resources</td>
</tr>
<tr>
<td>V61.20</td>
<td>Counseling for parent-child problem, unspecified</td>
</tr>
<tr>
<td>V61.29</td>
<td>Parent-child problems; other</td>
</tr>
<tr>
<td>V61.49</td>
<td>Health problems with family; other</td>
</tr>
<tr>
<td>V61.8</td>
<td>Health problems within family; other unspecified family circumstances</td>
</tr>
<tr>
<td>V61.9</td>
<td>Health problems within family; unspecified family circumstances</td>
</tr>
<tr>
<td>V62.0</td>
<td>Other psychosocial circumstances; unemployment</td>
</tr>
<tr>
<td>V62.5</td>
<td>Other psychosocial circumstances; legal circumstances</td>
</tr>
<tr>
<td>V62.81</td>
<td>Interpersonal problems, NEC</td>
</tr>
<tr>
<td>V62.82</td>
<td>Bereavement, uncomplicated</td>
</tr>
<tr>
<td>V62.89</td>
<td>Other psychological or physical stress, NEC; other</td>
</tr>
<tr>
<td>V62.9</td>
<td>Unspecified psychosocial circumstance</td>
</tr>
<tr>
<td>V65.49</td>
<td>Other specified counseling</td>
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<tr>
<td>V71.02</td>
<td>Observation for suspected mental</td>
</tr>
</tbody>
</table>