INATTENTION AND IMPULSIVITY

Please note: This guidance is based on the work of the World Health Organization (www.who.int) and may be updated annually. Check "Feedback & Updates" periodically.

Children may suffer from inattention and impulsivity for a variety of reasons and to various degrees. Attention-deficit/hyperactivity disorder (ADHD) occurs in about 8% of children and youth,[1] who experience significant impairment in their functioning as a result of their symptoms. As part of their disability, individuals with ADHD frequently have deficits in social skills, impairing their abilities to function well in school and social settings.[2] ADHD can result in significant consequences. Follow-up studies have found that children with ADHD, particularly those untreated, are at greater risk for school failure, underemployment, difficulty with legal authorities, substance abuse, and the consequences of risky behaviors including motor vehicle crashes and sexually transmitted infections.[3] Because of the prevalence and clinical significance of ADHD and the effectiveness of primary care interventions, the American Academy of Pediatrics recommends that pediatric primary care clinicians achieve competence in the care of children and adolescents with ADHD.[4]

Screening Results Suggesting Inattention and Impulsivity

Pediatric Symptom Checklist (PSC)-35: Total score ≥24 for children 5 years and younger; ≥28 for those 6 to 16 years; and ≥30 for those 17 years and older AND further discussion of items related to attention and impulse control confirms a concern in that area.

PSC-17: Attention subscale is ≥7 AND further discussion of items related to attention and impulse control confirms a concern in that area.

Strengths and Difficulties Questionnaire (SDQ): Total symptom score of >19; hyperactivity scale score of 7 to 10 (see instructions at www.sdqinfo.com/ScoreSheets/e2.pdf); impact scale (back of form) score ≥2 indicates some degree of impairment; AND further discussion of items related to attention and impulse control confirms a concern in that area.

Symptoms and Clinical Findings Suggesting Inattention and Impulsivity

Parental concerns or history suggest

- Excitability, impatience, angry outbursts (greater than peers)
- Wandering attention (greater than peers)
- Difficulties with behavior at home and in the classroom
- Academic difficulties
- Parents and teachers presuming diagnosis of ADHD or seeking diagnosis of ADHD

Conditions That May Mimic or Co-occur With Inattention and Impulsivity

Differentiate From Normal Behavior
All children may be inattentive or impulsive at times, but for some children, inattention and impulsivity limit their adaptability to normal peer and family situations and interfere with learning. Inattention and impulsivity are typical characteristics of preschool children, but extremes of these behaviors warrant further evaluation (eg, getting expelled from child care because of behavior). Boisterousness or dreaminess can be normal behavior patterns in older children. Children with limited social experiences and those whose environment is relatively less structured may appear impulsive and inattentive compared with their peers, especially when entering highly structured situations such as a classroom or organized group activities.

Hearing or vision problems. All children who appear inattentive should be screened for sensory deficits.

Sleep deprivation. Sleep problems can cause inattention and irritability. ADHD may contribute to difficulty sleeping.

ADHD. Diagnosis requires that child have 6 of 9 features of inattention—careless with detail; fails to sustain attention; appears not to listen; does not finish instructed tasks; poor self-organization; avoids tasks requiring sustained mental effort; loses things; easily distracted; and seems forgetful. Diagnosis also requires that child have 6 of 9 features of hyperactivity or impulsivity—fidgets; leaves seat when should be seated; runs or climbs excessively and inappropriately; noisy in play; persistent motor activity unmodified by social context (but this is seen less in teens); blurts out answers before question completed; fails to wait turn; interrupts others' conversation or games; and talks excessively. Further features necessary to make this diagnosis include

- These things happen in at least 2 types of situation (eg, home and school).
- The problems are recognized by or before age 7 years.
- The problem causes significant distress or impaired functioning.
- The problem is not better explained by another psychiatric disorder.

Learning problems or disabilities. If symptoms of inattention and impulsivity are associated with problems of school performance, the child may be experiencing learning difficulties. See Learning Difficulties guidance to explore this possibility.

Developmental problems. Children with overall intellectual or social limitations may appear less able to control their impulses and to focus and maintain their attention than their age-mates.

Language impairment or disorder. Children with language impairment may be frustrated and inattentive.

Depression. May co-occur with ADHD. Marked sleep disturbance, disturbed appetite, low mood, or tearfulness could indicate that a child is depressed as well as having attention difficulties. See Depression guidance.

Exposure to adverse childhood experiences (ACE). Children who have experienced or witnessed trauma, violence, a natural disaster, separation from a parent, parental divorce or separation, parental substance use, neglect, or physical, emotional, or sexual abuse are at high risk of developing emotional difficulties such as adjustment disorder or post-traumatic stress disorder (PTSD). Some symptoms of PTSD may resemble symptoms of ADHD, eg, hypervigilance may mimic hyperactivity, or dissociation may mimic inattention. These children may also manifest other forms of anxiety. Inquiring about previous trauma in a confidential setting is important. See Anxiety guidance.

Anxiety. Anxious children may experience difficulty concentrating. See Anxiety guidance.

Bereavement. The vast majority of children will experience the death of a family member or friend sometime in their childhood. Other losses may also trigger grief responses—separation or divorce of parents, relocation, change of school, deployment of a parent in military service, breakup with a girlfriend or boyfriend, or remarriage of parent. Such losses are traumatic. They may result in such symptoms as sadness, anxiety, difficulty concentrating, poor impulse control, or academic decline immediately following the loss and, in some instances, more persistently. See also Depression guidance and the discussion of PTSD in Anxiety guidance.

Physical illness. Medical issues that can mimic or provoke symptoms of inattention and impulsivity include thyroid disease, hypoglycemia, hyperglycemia, side effects of medications (eg, bronchodilators), and endocrine tumors (eg, rarely pheochromocytoma).

Substance use. Children with symptoms of inattention and impulsivity may self-medicate with alcohol, nicotine, or other drugs. Conversely, children using substances may manifest inattention, impulsivity, and deteriorating school performance.

Conduct or oppositional disorders. See Disruptive Behavior and Aggression guidance to differentiate these symptoms from problems of inattention and impulsivity and ADHD.

Tourette syndrome. Children with repetitive movements (tics) should be identified. In children with Tourette syndrome, ADHD symptoms may precede onset of tics. Stimulant medication may worsen tics. It is important to tailor treatment to the child's most pressing symptoms before deciding the risks and benefits of using stimulants in children with both problems.

Tools for Further Assessment of Inattention and Impulsivity

Vanderbilt ADHD Rating Scale (teacher and parent scales): This tool is appropriate for children 6 to 12 years of age.

Evidence-Based and Evidence-Informed Interventions for Inattention and Impulsivity (as of April 2010)

Updates are available at www.aap.org/mentalhealth.

Psychosocial Interventions for Attention and Hyperactivity Behaviors[5]

- **Level 1 (best support):** behavior therapy and medication, self-verbalization
- **Level 2 (good support):** biofeedback, contingency management, education, parent management training (alone, with problem solving, or with teacher psychoeducation), physical exercise, relaxation and physical exercise, social skills and medication, working memory training

US Food and Drug Administration–Approved Psychopharmacologic Interventions (as of April 2010)

For up-to-date information about Food and Drug Administration (FDA)-approved interventions, go to www.fda.gov.

- **ADHD:** stimulants, atomoxetine, guanfacine. There are data that indicate superior efficacy of stimulants versus other pharmacologic and psychosocial interventions and some data suggesting that stimulant medication plus behavior therapy is superior to stimulant therapy alone for some populations.[6–8]

Selected Informational Links

- American Academy of Pediatrics Children's Mental Health in Primary Care Web site (www.aap.org/mentalhealth)
- American Academy of Child & Adolescent Psychiatry Web site (www.aacap.org)
- American Academy of Pediatrics guidelines for ADHD (in press)
- US FDA Web site (www.fda.gov)

Plan of Care for Children With Inattention and Impulsivity

Engage child and family in care.

> **Engaging Children and Families in Mental Health Care: A Process for Pediatric Primary Care Clinicians***
> Reinforce strengths of child and family. Follow the mnemonic HELP to
>
> - ❑ Build trust and optimism.
> - ❑ Reach agreement on incremental next steps and, ultimately, therapeutic goals.
> - ❑ Develop plan of care (see the following clinical guidance).
> - ❑ Collaboratively determine role of primary care clinician, eg, provide intervention(s); provide initial intervention while awaiting family's readiness for or access to specialty care; coordinate with specialist(s), child care, school, or agencies; monitor progress; encourage child and family's positive view of treatment.
>
> **Without engagement, most families will not seek or persist in care. Process may require multiple primary care visits.*

Encourage healthy habits.

Regular exercise and outdoor play are beneficial to all children and may be particularly helpful to children with ADHD. These children may also benefit from participation in structured sports activities, which offer exercise as well as the opportunity to build social skills such as taking turns, following rules, and handling success and disappointment. Also important are a balanced diet, regular sleep habits, limiting exposure to over-stimulating media, special time with parents, praise for good behavior, and reinforcement of child's strengths.

Reduce stress: consider the environment

(eg, family social history, parental depression screening, results of any family assessment tools administered, reports from child care or school).

- Guide parents in providing a safe, structured environment.
- Be aware of sources of stress on family members—if they have problems with mood or irritability, this will make it harder to moderate the child's behavior.
- Coach parents in working constructively with child's school.
    - Obtain consent for the primary care clinician to exchange information with the child's teacher.
    - Establish constructive three-way (parent, teacher, pediatrician) communication with the school.
    - Ask if testing has been requested and taken place to detect special educational needs.
    - Monitor academic progress.
    - Classroom strategies that can help include
        - Have the child sit at the front of the class.
        - If possible, engage the child's actions in learning, eg, having the child go to the blackboard to write answers to questions.
        - Give extra time to stay organized (eg, write down assignments, make sure that all needed materials are taken home or gathered for a project, have the child repeat back what he or she is to do).
        - Break longer assignments into shorter pieces.
        - Coordinate reports of behavior with home—consider a daily report card of behavior and subsequent rewards or consequences.

Acknowledge and reinforce protective factors, eg, good relationships with at least one parent or important adult, pro-social peers, concerned or caring family, help-seeking, connection to positive organization(s).

Offer initial intervention(s).

Guide parents in managing the child's behavior.
Evidence-informed techniques include the following:

- **Tangible rewards:** Rewards or privileges contingent on performance of routine tasks (eg, TV or computer time contingent on attaining realistic goal)
- **Parent praise:** Conscious effort for parent to identify and comment on positive aspects of child's behavior (eg, compliment child, especially when desired action is spontaneous)
- **Parent monitoring:** Use of some systematic means to rate the child's burden of specific ADHD symptoms and overall social, emotional, and academic function (eg, use of Vanderbilt scales or a customized checklist on a weekly basis, often with simultaneous teacher ratings)
- **Time-out:** Avoiding reinforcement of undesired behavior through arguing or allowing the behavior to continue (eg, child is required to sit without attention or activity for a brief period as a consequence for an undesired behavior)
- **Commands/limit setting:** Use of clear, simple commands that ideally give child a warning of impending expected behavior, an opportunity to perform it, a warning of consequences for nonperformance, and a consistent consequence (eg, "You can do one more puzzle and then we have to go…now it's time to go…if you don't put the puzzle away now, you can't chose the music we listen to in the car.")

If there are battles over homework, offer guidelines.

√ Homework Guidelines for Parents

❑ Establish a routine (not waiting until evening to get started).

❑ Identify another student your child can call to clarify homework assignments.

❑ Limit distractions (eg, TV, phone).

❑ Assist child in dividing assignments into small, manageable segments (especially important for long-range assignments and large projects).

❑ Assist child in getting started (read directions together, watch child complete first items).

❑ Monitor without taking over.

❑ Praise good effort and completion of tasks.

❑ Do not insist on perfection.

❑ Offer incentives ("When you've finished, we can…").

❑ Help your child study for tests.

❑ Do not force your child to spend excessive time on homework; write a note to the teacher if your child put forth good effort but was not able to complete it.

❑ If your child fails to turn in completed work, develop a system with teacher to collect it on arrival.

❑ If you are unable to provide homework supervision and assistance, or if homework battles are adversely affecting your relationship with your child, ask teacher for help finding a tutor.

If child meets diagnostic criteria for ADHD, consider specific therapy.
Although psychosocial treatment is helpful, stimulants are the mainstay of effective treatment for children who meet diagnostic criteria for ADHD. Sources for medication planning include www.myguidelinescenter.com and www.aap.org/moc/adhd05/index.cfm.

Offer child and parents resources to educate and assist them with self-management.

Brochure
Your Child's Mental Health: When to Seek Help and Where to Get Help

Web Sites
Children and Adults with ADHD (www.chadd.org). Accessed April 28, 2010

HealthyChildren.org Web site (www.healthychildren.org). Accessed April 28, 2010

ParentsMedGuide.org (www.parentsmedguide.org). Accessed April 28, 2010

US Department of Health and Human Services, Food and Drug Administration. Medication Guide Web site. Available at: http://www.fda.gov/Drugs/DrugSafety/ucm085729.htm. Accessed April 28, 2010

US Department of Labor Office of Disability Employment Policy (www.disabilityinfo.gov). Accessed April 28, 2010 Parents may need help advocating for adequate evaluation and help in their child's school. The Web site has links to general information about disabilities programs and rights in the United States and on a state-by-state basis.

Monitor child's progress toward therapeutic goals.

Note: It is not uncommon for treatment to be successful for a period and then seem to lose effectiveness.

- See report "Enhancing Pediatric Mental Health Care: Strategies for Preparing a Primary Care Practice" for monitoring methods.
- Child care and school reports can be helpful in monitoring progress.
- Vanderbilt scales (parent and teacher), SDQ (parent, teacher), and PSC can be helpful in monitoring progress with symptoms and functioning.
- Provide contact numbers and resources in case of emergency.

Involve specialist(s) if child does not respond to initial interventions or if indicated by the following clinical circumstances:

- Child is younger than 5 years.
- Child has severe functional impairment.
- Child has severely disruptive behavior or aggression.
- Child has comorbid depression or PTSD, or problems with mood, behavior, and development seem more prominent than difficulties with attention or impulsivity.
- Interventions by primary care clinician have not alleviated symptoms.
- Symptoms are threatening school performance or the achievement of other developmentally important goals, eg, developing and sustaining friendships.
- The child or parent is very distressed by the symptom(s).
- There are co-occurring behavior problems. (The combination of shyness, anxiety, and behavior problems is thought to be particularly risky for future behavior problems of a more serious nature.)
- The child's symptoms were preceded by serious trauma.
- The child has ADHD and contraindications to stimulants or marked side effects with stimulants.
- The child's problems are occurring in the context of other family emotional or behavioral problems that have not been alleviated with primary care interventions.

√ **Primary care tasks may include the following:**
- ❑ Initiating medication or adjusting doses
- ❑ Monitoring response to treatment through use of parent and teacher reports such as Vanderbilt ADHD scales or SDQ
- ❑ Monitoring adverse effects
- ❑ Engaging and encouraging child's positive view of treatment
- ❑ Coordinating care provided by parents, school, medical home, and specialists

Resources for Clinicians

Caring for Children with ADHD: A Resource Toolkit for Clinicians can be viewed by American Academy of Pediatrics members at www.aap.org/moc/adhd05/index.cfm.

Jellinek M, Patel BP, Froehle MC. Attention deficit hyperactivity disorder. In: *Bright Futures in Practice: Mental Health, Volume 1. Practice Guide*. Arlington, VA: National Center for Education in Maternal and Child Health; 2002:203–211

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American Academy of Child & Adolescent Psychiatry Practice Parameters available at www.aacap.org/cs/root/member_information/practice_information/practice_parameters/practice_parameters.

- ADHD (Vol 46, July 2007)
- Stimulant Medications (Vol 41, February 2002 Supplement)

Brown RT, Antonuccio DO, DuPaul GJ, et al. *Childhood Mental Health Disorders: Evidence Base and Contextual Factors for Psychosocial, Psychopharmacological, and Combined Interventions*. Washington, DC: American Psychological Association; 2008

Special issue: evidence-based psychosocial treatments for children and adolescents: a ten year update. *J Clin Child Adolesc Psychol*. 2008;37(1)

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- Huey SJ, Polo AJ. Evidence-based psychosocial treatments for ethnic minority youth. *J Clin Child Adolesc Psychol*. 2008;37(1):262–301

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7. Jensen PS, Hinshaw SP, Kraemer HC, et al. ADHD comorbidity findings from the MTA study: comparing comorbid subgroups. *J Am Acad Child Adol Psychiatry.* 2001;40:147–158
8. Arnold LE, Elliott M, Sachs L, et al. Effects of ethnicity on treatment attendance, stimulant response/dose, and 14-month outcome in ADHD. *J Consult Clin Psychol.* 2003;71:713–727

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