

# Pay Attention: ADHD Through the Lifespan

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## Week 1: The Basics

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## Background

- Why ADHD is important
  - Most common neurobehavioral disorder of childhood
  - Immediate and lifelong impacts on development
- Why ADHD is controversial
  - Challenges of diagnosis – changes in terminology
  - Fears of over-diagnosis and of over-medication of children
- How knowledge of ADHD is evolving
  - From case descriptions to case studies to clinical trials
  - From observations of behavior to advances in neuroscience
- What is ADHD?

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## Diagnostic Criteria

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## DSM-IV Criteria for ADHD

1. Core symptoms\*:
  - Inattention
  - Hyperactivity and Impulsivity
2. Chronicity of ADHD symptoms
3. Pervasiveness of ADHD symptoms
4. Impairment caused by ADHD symptoms

\* to a degree that is maladaptive and inconsistent with developmental level

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## DSM-IV Diagnostic Criteria

- A 1. Six or more of the following symptoms of inattention have persisted for at least six 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 activity
  - c) Often does not seem to listen when spoken to directly
  - d) Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)

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## DSM-IV Diagnostic Criteria

### *Inattention (cont.)*

- 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

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## DSM-IV Diagnostic Criteria

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

- 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

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## DSM-IV Diagnostic Criteria

### *Hyperactivity (cont.)*

- 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)

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## DSM-IV Diagnostic Criteria

- B. Some hyperactive-impulsive or inattentive symptoms must have been present before age 7 years
- C. Some impairment from the symptoms is present in at least two settings (e.g. at school [or work] and at home)
- D. There must be clear evidence of interference with developmentally appropriate social, academic or occupational functioning
- E. The disturbance does not occur exclusively during the course of other serious mental disorders (e.g. pervasive developmental disorder/autism, schizophrenia, other psychotic disorder)

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## DSM-IV Diagnostic Criteria

- **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

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## Mid-Lecture Quiz

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## Strengths of DSM-IV Criteria

- Uses rigorous and empirically derived criteria
- Committee of experts developed the criteria
- Literature review of ADHD conducted
- Existing rating scales were reviewed & studied
- Field trial conducted (4-16 year old subjects)
  - Diagnostic cutoff points based on reliability and ability to discriminate ADHD from non-ADHD
- Impairment criterion given greater emphasis

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## Weaknesses of DSM-IV Criteria

- Age of onset criterion may not be justified
- Diagnostic *item sets* may not be appropriate for different developmental periods
- Diagnostic *thresholds* may not apply to older age groups (>16 years)
- No gender distinction in diagnostic thresholds
- No lower age limit defined (<4 years)
- “Developmental inappropriateness” is neither clearly stipulated nor quantified

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## Controversies of DSM-IV Criteria

- Heterogeneity of subtypes is problematic
  - ADHD, PI Type: differences in symptoms and life course
  - ADHD, PHI Type: often confused with other disorders
- Setting (school, home) and source of information (teacher, parent) are confounded
  - People behave differently in different contexts
  - Raters have different criteria for judging behavior
- Low correlation between parent and teacher ratings (0.30 – 0.50) leads to disagreements and confusion

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## Controversies of DSM-IV Criteria

- What is the relative importance of Inattention in determining the diagnosis ADHD?
  - Attention is not a unitary construct
  - Inattention is often difficult to detect and measure
  - Inattention may be due to factors other than ADHD and can be seen in other disorders
- What is the relative importance of Hyperactivity vs. Impulsivity in determining the diagnosis of ADHD?
  - Hyperactivity symptoms outnumber Impulsivity symptoms in criteria
  - The overlap between these symptoms and those seen in other disorders (e.g. oppositional defiant disorder) can lead to misdiagnosis

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## ADHD Potential Changes in DSM 5

- Age of onset – will be increased to age 12
- Intent: Leave core 18 A criteria unchanged, but contextualized and illustrated to fit lifespan
- Impulsivity poorly covered – Adding up to 4 new criteria being considered
- # of criteria needed for adolescents/adults likely to be revised – data suggest 2-3 from all 3 dimensions would be best – compromise is 4 from 2 dimensions – concern that prevalence will increase dramatically
- ASD exclusion is being removed...

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End of Lecture Quiz

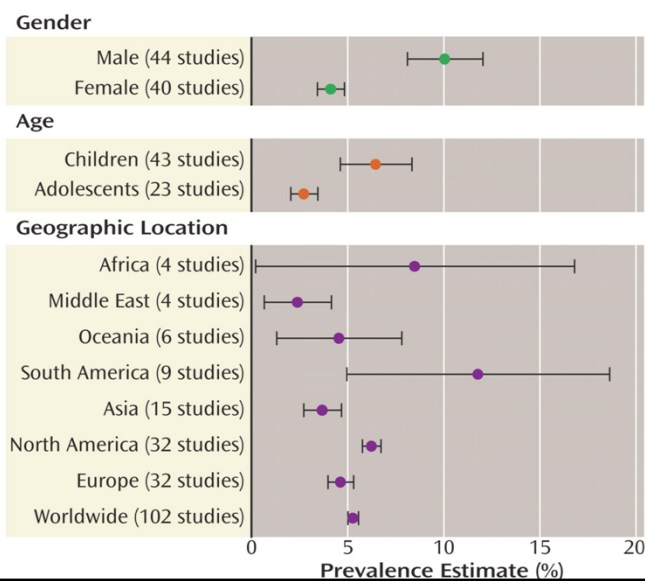
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# Prevalence, epidemiology

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## Worldwide Prevalence of ADHD

*Am J Psychiatry.* 2007;164(6):942-948.



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## ADHD in the United States

- ADHD prevalence among 8- to 15-year-olds: **8.7%**<sup>1</sup>
  - Percentage of children with ADHD who have been treated consistently during the past year: **32%**<sup>1</sup>
- ADHD prevalence among 18- to 44-year-olds: **4.4%**<sup>2</sup>
  - Percentage of adults with ADHD who received treatment within the previous 12 months: **11%**<sup>2</sup>

1. Froehlich et al. *Arch Pediatr Adolesc Med.* 2007;161(9):857-864.  
2. Kessler et al. *Am J Psychiatry.* 2006;163:716-723.

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## Prevalence of ADHD: Summary

- 9% of children; 7% of adolescents; 4.5% of adults
- Male-female: 6:1, 3:1, 1:1
- All levels of IQ
- All levels of socioeconomic status
- Family genetic transmission: 0.75
- Inheritance not specific to subtype

CDC, 2008. Gaub M, Carlson CL. *J Am Acad Child Adolesc Psychiatry.* 1997;36(8):1036-1045. Levy F, et al. *J Am Acad Child Adolesc Psychiatry.* 1997;36(6):737-744. Smalley SL<sub>22</sub> et al. *J Am Acad Child Adolesc Psychiatry.* 2000;39(9):1135-1143.

## Mid-Lecture Quiz

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## The Many Faces of ADHD: Case Presentations

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## Case Study: “Tornado Tommy”

6 year old boy in 1<sup>st</sup> grade

### Presenting complaints

- Trouble focusing and sustaining attention (esp. in school)
- Easy distractibility (“always looking around”)
- Restlessness and fidgetiness (“squirmy in his seat”)
- Always “on the go” – never sits still
- Talks incessantly and loudly
- Interrupts others’ conversations
- Can’t wait his turn

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## Case Study: “Spacy Steve”

8 year old boy in 3<sup>rd</sup> grade

### Presenting problems

- Inattention (“Doesn’t listen, always in his own world”)
- Forgetfulness (“Can’t remember what he’s been told”)
- “Dawdles and has trouble getting started on things”
- “Takes forever to get things done”
- Lacks effort in schoolwork and homework
- Poor organizational skills
- “Forgets” to turn in homework assignments

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## Case Study: “Ornery Arnold”

10 year old boy in 5<sup>th</sup> grade

### Presenting problems

- Trouble focusing & sustaining attention (esp. in school)
- Very restless, fidgety in his seat
- Argumentative (“Always says no and challenges rules”)
- Obnoxious (“Gets on other people’s nerves”)
- Dislikes school intensely (“He thinks it’s a waste of time”)
- Resists completing homework (“Procrastinates and puts off getting started until late at night”)

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## Case Study: “Babbling Brooke”

12 year old girl in 7<sup>th</sup> grade

### Presenting problems

- Excessive talking (“Never keeps quiet – a real chatterbox”)
- High energy and fun loving (“Life of the party – sociable”)
- Highly distractible (“Has to see everything that’s going on”)
- Loses things (e.g. eyeglasses, clothes, assignments)
- Very disorganized (“Book bag is a complete mess”)
- Avoids doing her homework

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## Case Study: “Absentminded Anna”

16 year old girl in 11<sup>th</sup> grade

### Presenting complaints

- Trouble focusing and sustaining attention (esp. in school)
- Easy distractibility (“always looking around”)
- Restlessness and fidgetiness (“squirming in her seat”)
- Always “on the go” – never sits still
- Talks incessantly and loudly
- Interrupts others’ conversations
- Can’t wait her turn

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## Case Study: “Dizzy David”

20 year old college junior

### Presenting complaints

- Short attention span (“can’t read more than 5 minutes”)
- Very distractible (“my mind can’t stay on the lecturer”)
- Organizational issues (“trouble getting stuff together”)
- Time management problems (“assignments always late”)
- Makes careless mistakes (e.g. on exams)
- Not motivated to study

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## Case Study: “Boisterous Bill”

30 year old unemployed married man

### Presenting complaints

- “Irresponsibility” at home – doesn’t get things done
- Lack of consideration for others – interrupts, argues
- Trouble keeping jobs
  - Changed jobs 6 times in past 4 years
  - Fired for tardiness, inefficiency, trouble following directions and arguments with his bosses
- Low self self-esteem, feels like a failure
- ADHD symptoms: poor concentration, trouble completing tasks, restlessness

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## Case Study: “Lost Louise”

50 year old married woman

### Presenting complaints

- Always had to work extra hard to get assignments done, but lately, it’s taking even longer to finish things
- Mind wanders at work – “spaces out” during meetings
- Very impatient, can’t wait, gets angry easily
- Can’t remember movies she’s seen, books she’s read or conversations she’s had with important people
- Gets lost easily, poor sense of direction

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## Looking Ahead

- Topic for next week: Causal Factors
- Readings for next week:
  - NIMH ADHD Overview:  
<http://www.nimh.nih.gov/health/publications/attention-deficit-hyperactivity-disorder/index.shtml>
  - CDC Data and Statistics:  
<http://www.cdc.gov/ncbddd/adhd/data.html>

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## End of Lecture Quiz

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