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# Attention-Deficit/Hyperactivity Disorder (ADHD)

## Definition

**Attention-deficit/hyperactivity disorder (ADHD)** is one of the most common childhood disorders and can continue through adolescence and into adulthood. Symptoms include difficulty staying focused and paying attention, difficulty controlling behavior, and hyperactivity (over-activity).

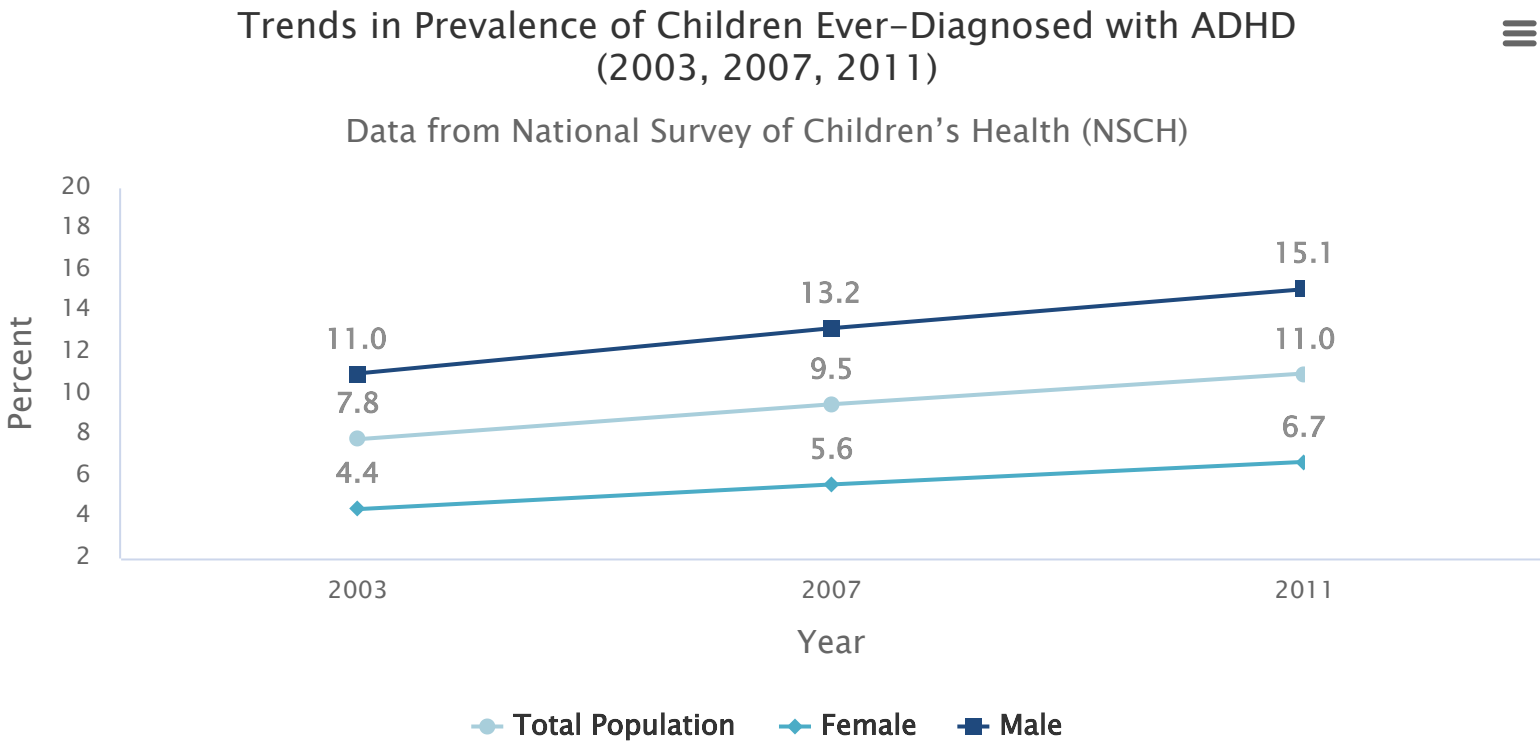
Additional information about ADHD can be found on the [NIMH Health Topics page on Attention-Deficit/Hyperactivity Disorder](#).

## Trends in Prevalence of ADHD Diagnosis Among Children

- Based on parent-report data from National Survey of Children’s Health (NSCH), Figure 1 shows the trends in prevalence of U.S. children aged 4-17 ever diagnosed with ADHD by a health care provider.<sup>1</sup>
  - The prevalence of children ever diagnosed with ADHD increased by 42% between 2003 (7.8%) and 2011 (11.0%).
  - Males had a consistently higher prevalence of ADHD than females from 2003 to 2011.

Figure 1

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## Age of Onset

- Based on data from the NSCH, the median age of onset for children with current ADHD was 6 years.<sup>1</sup>
- More severe cases of ADHD in children, as described by parents, were diagnosed earlier.
  - The median age of diagnosis for **severe** ADHD was 4 years.
  - The median age of diagnosis for **moderate** ADHD was 6 years.
  - The median age of diagnosis for **mild** ADHD was 7 years.
- Approximately one-third of children diagnosed with ADHD retain the diagnosis into adulthood.<sup>2</sup>

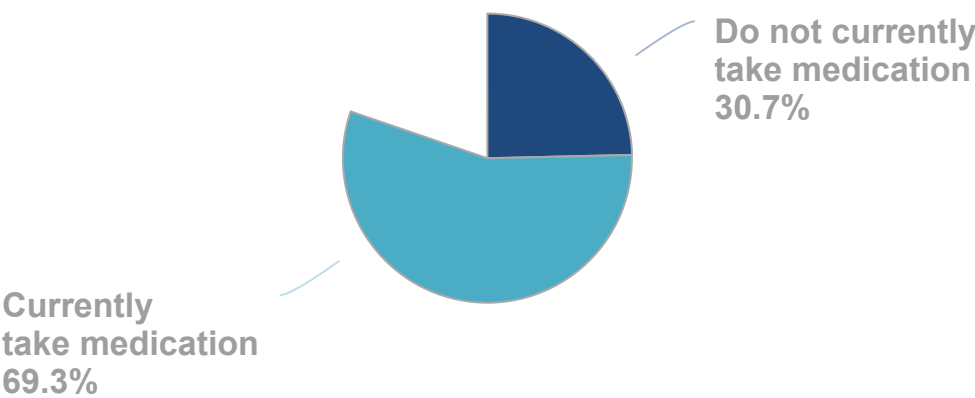
## Treatment for ADHD in Children

- Medication can be used to effectively treat ADHD symptoms of impulsivity, inattention, and hyperactivity, and is the single most effective treatment for reducing ADHD symptoms.<sup>1</sup>
- Figure 2 is based on data from the NSCH and shows medication use among children with ADHD in 2011. An estimated 69.3% of children with a current diagnosis of ADHD received medication for ADHD.
- Medication use increased 4% overall from 2007 to 2011, particularly among male teens.<sup>1</sup>

Figure 2

Medication Use Among Children Currently Diagnosed with ADHD (2011)

Data from National Survey of Children’s Health (NSCH)



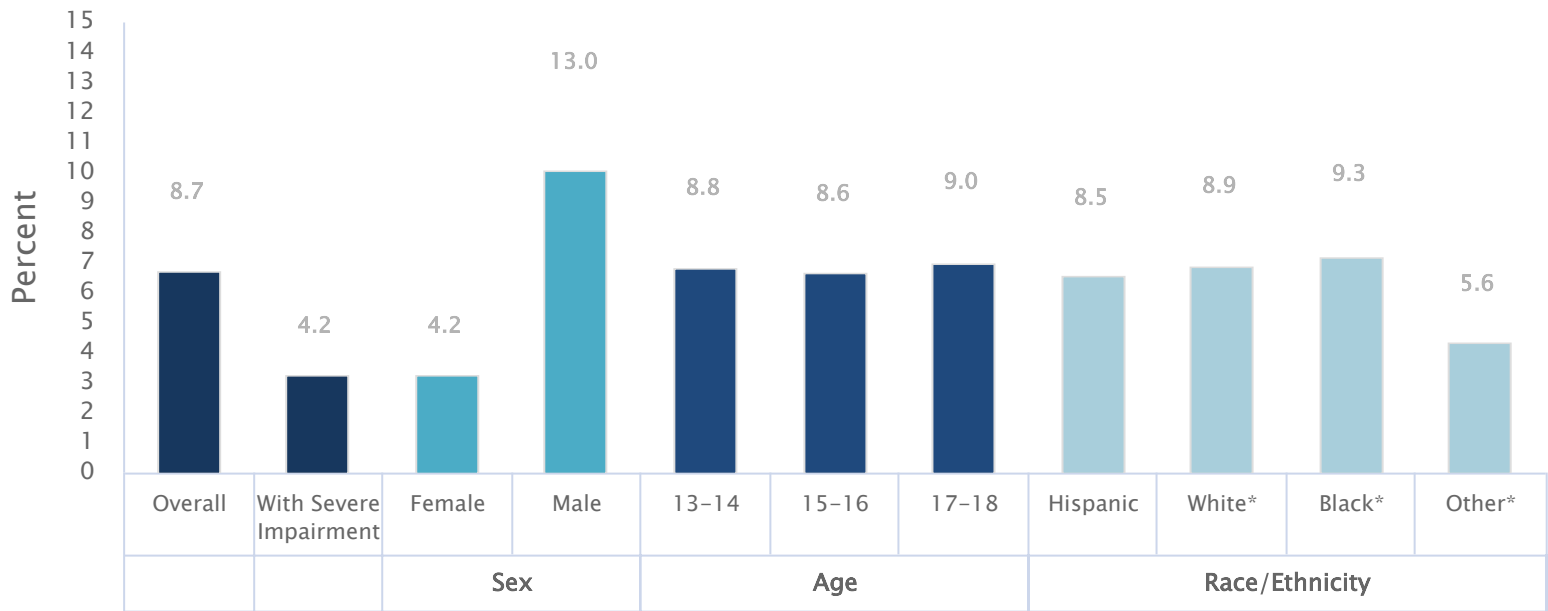
## Prevalence of ADHD Among Adolescents

- Based on diagnostic interview data from National Comorbidity Survey–Adolescent Supplement (NCS-A), Figure 3 shows the lifetime prevalence of ADHD among U.S. adolescents aged 13 to 18 years.<sup>3,4</sup>
  - The lifetime prevalence of ADHD was 8.7%.
  - Nearly half of all cases showed severe impairment (4.2%). Impairment criteria were based on the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).
  - ADHD affected three times as many males (13.0%) as females (4.2%).

Figure 3

Lifetime Prevalence of ADHD Among U.S. Adolescents (2001–2004)

Data from National Comorbidity Survey–Adolescent Supplement (NCS–A)

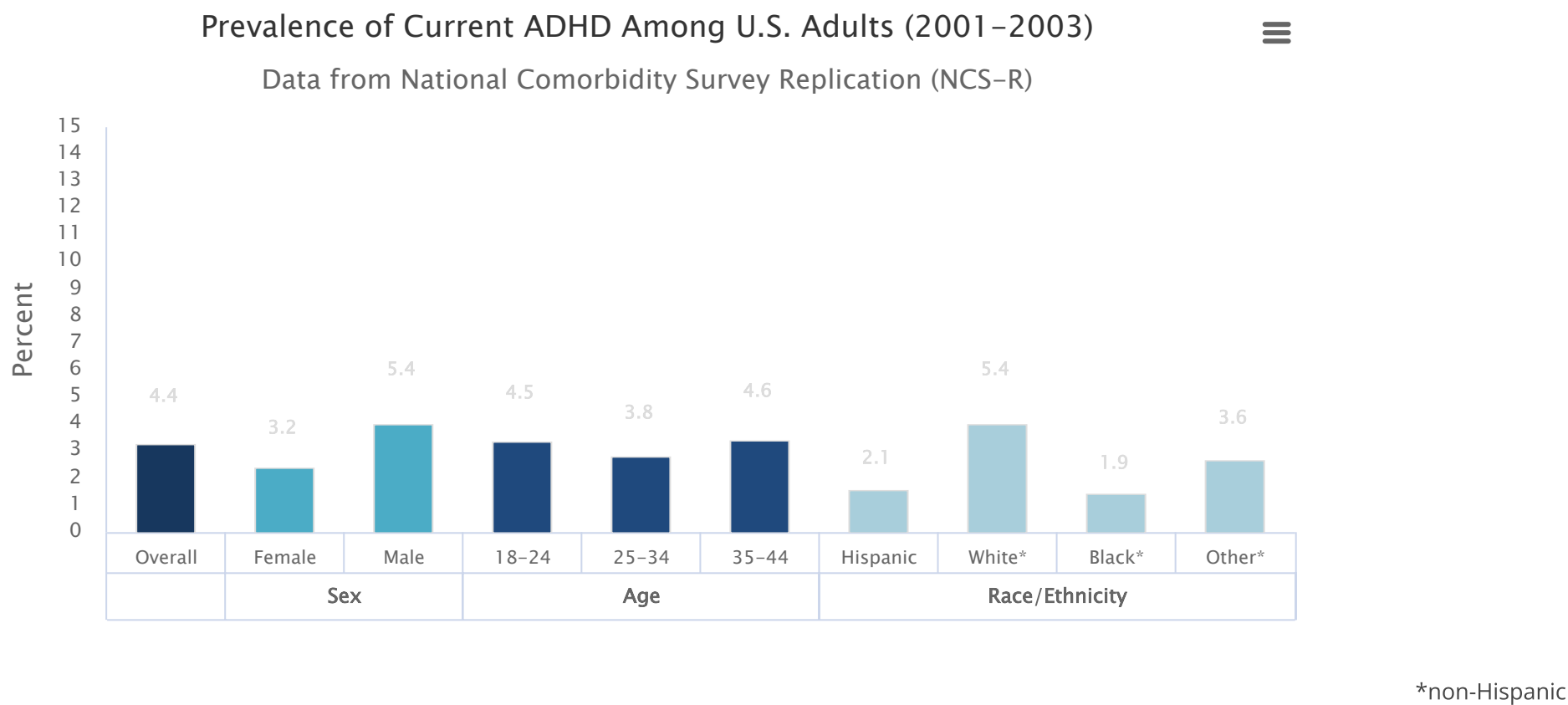


\*non-Hispanic

## Prevalence of ADHD Among Adults

- Based on diagnostic interview data from the National Comorbidity Survey Replication (NCS-R), Figure 4 shows the estimated prevalence of adults aged 18 to 44 years with a current diagnosis of ADHD.<sup>5</sup>
  - The overall prevalence of current adult ADHD is 4.4%.
  - Prevalence was higher for males (5.4%) versus females (3.2%).
  - The non-Hispanic white group (5.4%) had a higher prevalence than all other race/ethnicity groups.
- The estimated lifetime prevalence of ADHD in U.S. adults aged 18 to 44 years was 8.1%.<sup>6</sup>

Figure 4



## Data Sources

### References

- Visser SN, Danielson ML, Bitsko RH, Holbrook JR, Kogan MD, Ghandour RM, Perou R, Blumberg SJ. Trends in the parent-report of health care provider-diagnosed and medicated attention-deficit/hyperactivity disorder: United States, 2003-2011. *J Am Acad Child Adolesc Psychiatry*. 2014 Jan;53(1):34-46.e2. [PMID: 24342384](#)
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- NCS-A Lifetime and 12M prevalence estimates. 2005; <https://www.hcp.med.harvard.edu/ncs/>
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- Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005 Jun;62(6):593-602. [PMID: 15939837](#)

### Statistical Methods and Measurement Caveats

This webpage presents data from three sources.

#### National Survey of Children’s Health (NSCH)

- The CDC’s NSCH is a national cross-sectional telephone survey of children’s physical and mental health, conducted in 2003, 2007,

the direction and sponsorship of the Maternal and Child Health Bureau, Health Resources and Services Administration (HRSA). The survey provides parent-reported data for children/adolescents with ADHD aged 4 to 17 years. Between February 2011 and June 2012, 95,677 interviews were completed. Landline and cell-phone interview completion rates were 54.1% and 41.2% respectively, with a 23.0% overall response rate.

- For more information, see [PMID: 24342384](#) and [CDC’s NSCH FAQ page](#).

### National Comorbidity Survey Adolescent Supplement (NCS-A)

Diagnostic Assessment and Population:

- The NCS-A was carried out under a cooperative agreement sponsored by NIMH to meet a request from Congress to provide national data on the prevalence and correlates of mental disorders among U.S. youth. The NCS-A was a nationally representative, face-to-face survey of 10,123 adolescents aged 13 to 18 years in the continental United States. ADHD was assessed in a subsample of 8,470 adolescents. The survey was based on a dual-frame design that included 904 adolescent residents of the households that participated in the adult U.S. National Comorbidity Survey Replication and 9,244 adolescent students selected from a nationally representative sample of 320 schools. The survey was fielded between February 2001 and January 2004. DSM-IV mental disorders were assessed using a modified version of the fully structured World Health Organization Composite International Diagnostic Interview.

Survey Non-response:

- The overall adolescent non-response rate was 24.4%. This is made up of non-response rates of 14.1% in the household sample, 18.2% in the un-blinded school sample, and 77.7% in the blinded school sample. Non-response was largely due to refusal (21.3%), which in the household and un-blinded school samples came largely from parents rather than adolescents (72.3% and 81.0%, respectively). The refusals in the blinded school sample, in comparison, came almost entirely (98.1%) from parents failing to return the signed consent postcard.
- For more information, see [PMID: 19507169](#).

### National Comorbidity Survey Replication (NCS-R)

Diagnostic Assessment and Population:

- The NCS-R is a nationally representative, face-to-face, household survey conducted between February 2001 and April 2003 with a response rate of 70.9%. DSM-IV mental disorders were assessed using a modified version of the fully structured World Health Organization Composite International Diagnostic Interview (WMH-CIDI), a fully structured lay-administered diagnostic interview that generates both International Classification of Diseases, 10<sup>th</sup> Revision, and DSM-IV diagnoses. The DSM-IV criteria were used here. Participants for the main interview totaled 9,282 English-speaking, non-institutionalized, civilian respondents. ADHD was assessed for a subsample of 3,199 respondents aged 18 to 44 years. The NCS-R was led by Harvard University.

Survey Non-response:

- In 2001-2002, non-response was 29.1% of primary respondents and 19.6% of secondary respondents.
- Reasons for non-response to interviewing include: refusal to participate (7.3% of primary, 6.3% of secondary); respondent was reluctant- too busy but did not refuse (17.7% of primary, 11.6% of secondary); circumstantial, such as intellectual developmental disability or overseas work assignment (2.0% of primary, 1.7% of secondary); and household units that were never contacted (2.0%).
- For more information, see [PMID: 15297905](#).

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