

# ADHD: Past, Present and Future Where Will We Be in 2072?



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## Relevant Disclosure

- Former Editor in Chief, Journal of Attention Disorders
- Co-author of
  - Comprehensive Executive Functioning Inventory-Child and Adult
  - Cognitive Assessment System –2nd Edition
  - Co-author Attention Disorders in Children 1<sup>st</sup> and 2<sup>nd</sup> Editions
  - Co-author Handbook of ADHD in Adults
  - Co-Editor Handbook of Executive Functioning
  - Co-Editor Handbook of Intelligence and Achievement Testing
  - Co-author Raising a Self-Disciplined Child

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Sam obtained his Ph.D. in School Psychology from the University of Utah and is licensed as a Psychologist and Certified School Psychologist in the State of Utah. He is also board certified as a Pediatric Neuropsychologist and listed in the Council for the National Register of Health Service Providers in Psychology. He is a Fellow of the American Psychological Association and the National Academy of Neuropsychology. Sam is an Adjunct Assistant Professor in the Department of Psychiatry at the University of Utah School of Medicine. He has authored, co-edited, or co-authored over 50 clinical and trade publications, three dozen chapters, nearly three dozen peer-reviewed scientific articles, and eight psychological and neuropsychological tests. He is in development for a behavioral assessment tool to evaluate DMDD. His clinical volume about DMDD was just published by Springer. Sam is the former Editor in Chief of the *Journal of Attention Disorders*. Since 1980, he has served as the Clinical Director of the Neurology, Learning, and Behavior Center in Salt Lake City, Utah.

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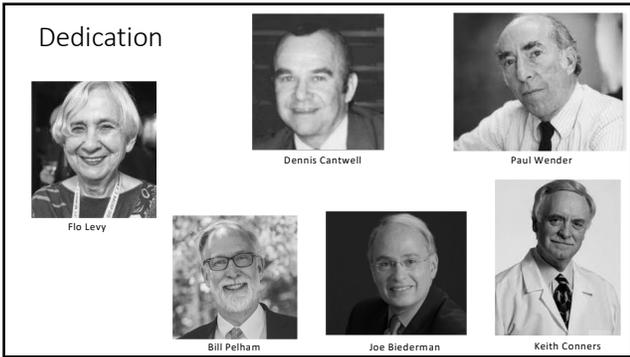
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Goals for This Session

- Review the trends in ADHD diagnosis and treatment.
- Offer an overview from a neuropsychological perspective of ADHD.
- Offer a perspective of ADHD as a primary impairment in the development of self-discipline.
- Discuss child predictors of ADHD outcome in adulthood.
- Offer my view of ADHD in 2072.

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**Diagnosis and Treatment of ADHD in the United States: Update by Gender and Race**

Kathleen A. Fairman, Alyssa M. Peckham, David A. Sclar

First Published February 2, 2017 | Research Article | Find in PubMed | [Check for updates](#)  
<https://doi.org/10.1177/1087054716688534>

- Diagnoses of ADHD increased by 36% in adults and 18% in youth, and diagnosis + drug by 29% in female and 10% in male youths.
- ADHD diagnosis was 77% less likely among Black than White adults but 24% more likely among Black than White youths in 2012-2013. Conduct disorder (CD) in youths multiplied odds of diagnosis + drug by 3.31; interaction of Black race × CD by 3.78.
- Upward trends in ADHD diagnosis and treatment have continued but vary markedly by group.
- Studies of undertreatment/overtreatment are needed.

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**Recent Developments**

- Over a period of about two decades beginning in 1990, substantial upward trends in the rates of diagnosis and treatment for ADHD were observed in nationally representative samples of U.S. physician office visits obtained through the National Ambulatory Medical Care Survey.
- Several important developments have taken place in the last 20 years.
- These include the approval of several new ADHD drugs and formulations.
- The formation of the American Psychiatric Association (APA) *Diagnostic and Statistical Manual of Mental Disorders-5* Task Force in 2007, culminating in the publication of *Diagnostic and Statistical Manual of Mental Disorders (DSM-5; 5th ed.)*
- Updated guidelines, from the American Academy of Pediatrics and from the American Academy of Family Practice in 2012 (adults) and 2014.

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**Recent Developments**

- These changes may have increased the number of cases diagnosed and treated for ADHD in several ways.
- First, the age criteria for diagnosis broadened, both in the *DSM-5* (symptoms no later than age 12 years vs. age 6 years in the *Diagnostic and Statistical Manual of Mental Disorders* and in the AAP guidelines (age 4-18 years in 2011 vs. 6-12 years in 2001).
- Second, the *DSM-5* guidelines require adults and adolescents to display only five ADHD symptoms, rather than the six required for a diagnosis in children.
- Finally, a description of ADHD symptomatology in those aged 17 years or older was added to the *DSM-5* for clarity.

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### Recent Developments

- *Large increases in ADHD diagnosis and treatment among adults.* From 1995-1996 to 2007-2008, the number of office visits at which an ADHD diagnosis was made increased from 3.1 to 14.5 per 1,000 U.S. adults (aged 20 years or older).
- *Greater rates of increase in ADHD diagnosis and treatment among female than male children and teens (aged 5 to 18 years).*
- *Lower rates of diagnosis and treatment for non-White than White populations.*

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### What is Attention Deficit Hyperactivity Disorder (ADHD)?

- ADHD appears to primarily involve a difference in the maturation of the the basal ganglia, cerebellum and the frontal lobes of the brain.
- Co-morbidity or co-occurrence of other developmental, emotional and behavioral conditions with ADHD often complicates our understanding of the core problem.
- The primary symptoms of ADHD (excessive impulsive, inattentive and restless behavior) leads to a nearly infinite number of consequences in every aspect of life.




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Current diagnostic criteria specify that ADHD involves difficulties with inattention and/or hyperactivity/impulsivity.

Researchers using statistical analyses have consistently found support for an inattention factor in both children and adults.

Findings have been mixed regarding whether hyperactivity and impulsivity reflect one or two dimensions.

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ADHD appears to be a condition stemming in part from inefficient operation of the brain relative to task and environmental demands leading to poor execution of behavior.

It is not a disease nor illness. It reflects an immaturity in the pace children develop self-control and self-discipline.

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Neither the level of impairment nor the life outcome for those individuals with ADHD is very well predicted by the diagnosis, symptoms or treatments.

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Symptom relief is insufficient to assure good adult outcome for ADHD.

Strengths not weaknesses are the best predictors of what all of our lives will be.

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The Symptoms of ADHD Lead to a Nearly Infinite Number of Consequences

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ADHD acts as a catalyst fueling other developmental and environmental risk factors.

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ADHD is a condition resulting from poor self-discipline, reflecting exaggeration of normal behavior.

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Self-discipline

- The ability to inhibit.
- The ability to delay.
- The ability to separate thought from feeling.
- The ability to separate experience from response.
- The ability to consider an experience and change perspective.
- The ability to consider alternative responses.

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Self-discipline

- The ability to choose a response and act successfully towards a goal.
- The ability to change the response when confronted with new data.
- The ability to negotiate life automatically.
- The ability to track cues.

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Children with poor self-discipline aren't clue-less

They are unfortunately often cue-less!

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Poor Self-discipline is synonymous with. . .

Poor Self-control

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Poor self-discipline leads to

Impulsive behavior

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Conditions under which inattention is observed:

- Repetitive
- Effortful
- Uninteresting
- Not chosen

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Conditions under which problems with consequences are observed:

- Delayed
- Infrequent
- Unpredictable
- Lacking saliency

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### Childhood Predictors of Adult Outcome

- Earlier studies found that co-occurring aggression, conduct problems and severity in ADHD symptoms in childhood predicted persistence of ADHD into adolescence and adulthood.
- Other longitudinal studies have also suggested socio-economic status (SES) as an important predictor for persistence of ADHD symptoms in children and outcome severity in early adolescence. However, this finding has not always been replicated.

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### Childhood Predictors of Adult Outcome

More recent studies focusing on larger cohorts of ADHD participants and a wider range of childhood risk factors reveal that other psychiatric comorbidities, oppositional defiant disorder, anxiety disorder and family factors including maternal psychopathology and psychosocial adversity significantly predicted persistence of ADHD in adolescence and adulthood.

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Childhood Predictors of Adult Outcome

- Moving beyond behavioral and family factors, the predictive values of neurocognitive functions such as working memory, inhibition and response variability in ADHD persistence have been reported in a few studies, although a limited range of cognitive measures and short follow-up intervals were used. Initial evidence in children suggests that cognitive functions in early childhood may predict future ADHD symptoms or diagnosis a few years later.
- General cognitive ability (IQ) in early childhood predicted later ADHD symptoms measured in middle childhood (age 7.5) or in early adolescence (age 14) but this was not replicated in another follow-up study in adolescence (ages 12-18), which found childhood IQ and social class to predict conduct disorder outcomes rather than ADHD scores or diagnosis.

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Childhood Predictors of Adult Outcome

- Overall the findings across these studies have been mixed, perhaps reflecting differences in study design, variables examined and the definitions of ADHD applied.
- Furthermore, none of these studies examined whether cognitive impairments in children with ADHD predicted future ADHD outcome in older adolescents and young adults.
- Further studies are therefore needed to clarify the predictors of persistence and remission of ADHD.

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Childhood Predictors of Adult Outcome

- The severity of childhood ADHD symptoms, as reported by parents, is a strong predictor for ADHD outcome at follow up.
- Co-occurring symptoms, such as social and emotional functioning or oppositional behaviors rated by parents, also predicted more severe symptoms and impairment at follow up. However, the predictive value of these co-occurring symptoms became trivial once childhood ADHD symptoms were controlled for, suggesting that the co-occurring problems are related to the severity of ADHD symptoms.

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### Childhood Predictors of Adult Outcome

- Teacher ratings of childhood ADHD symptoms and co-occurring symptoms does not predict parent interview-based ADHD symptoms or diagnosis at follow up.
- The validity of teacher reports in older children or adolescents may also be compromised.
- The stability of ADHD symptoms is also evident from objective actigraph measures of activity level, which are not subject to rater bias effects.

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### My View of the Future of the ADHD Diagnosis

- Inattentive Type will shift to Sluggish Cognitive Tempo.
- The Hyperactive-Impulsive type will be renamed as an Impulse Control Disorder of Childhood.
- A better set of adult symptoms will be used.
- SPECT and other scanning methods will not be used.
- EEG and other quantified measures will not be used.

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### My View of the Future of the ADHD Diagnosis

- An fMRI/FNCI may find a place when sufficient data exists.
- The diagnosis will shift from symptom count thresholds to an algorithm based threshold.
- Parent and Teacher reports based on well validated questionnaires will continue to be the primary path of diagnosis.
- Concepts of efficient self-regulation and executive functioning (strategy behaviors) may find their way into the diagnostic criteria.
- ADHD will continue in the USA as an ADA qualifying condition.

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### Ten Most Important Things to Know

- **1. ADHD is a Neurodevelopmental Disorder**  
ADHD is a brain-based condition, primarily affecting one's ability to sustain attention, regulate impulses, and control behavior. It is not just a behavioral issue, but a neurological one that requires appropriate medical and psychological interventions.
- **2. ADHD Comes in Different Forms**  
ADHD is typically classified into three subtypes:  
  - Inattentive Type:** Difficulty in paying attention, following instructions, and completing tasks.
  - Hyperactive-Impulsive Type:** Fidgeting, restlessness, and impulsive actions.
  - Combined Type:** Features of both inattention and hyperactivity/impulsivity.
- **3. It Can Affect People of All Ages**  
Though ADHD is often diagnosed in childhood, it can persist into adolescence and adulthood. ADHD in adults may present differently, with more challenges related to time management, organization, and impulse control in the workplace or relationships.

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### Ten Most Important Things to Know

- **4. ADHD Can Affect Multiple Areas of Life**  
ADHD impacts various domains of life, including academic performance, work productivity, social relationships, and self-esteem. Awareness and management are key to mitigating these effects.
- **5. It's Often Accompanied by Comorbid Conditions**  
ADHD frequently coexists with other mental health conditions like anxiety, depression, learning disabilities, and oppositional defiant disorder. Treatment should address both ADHD and any co-occurring conditions for optimal results.
- **6. Diagnosis Requires a Comprehensive Assessment**  
ADHD diagnosis involves a thorough evaluation that includes clinical interviews, behavior rating scales, cognitive testing, and input from teachers, family members, or other relevant parties. A proper diagnosis ensures an accurate treatment plan.

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### Ten Most Important Things to Know

- **7. Medication Can Be an Effective Part of Treatment**  
Stimulant medications, like methylphenidate or amphetamines, are commonly prescribed for ADHD and can significantly improve attention and impulse control. However, medication is just one part of a comprehensive treatment plan that may also include behavioral therapy, education, and support systems.
- **8. Behavioral Interventions Are Crucial**  
Cognitive-behavioral therapy (CBT) and behavioral interventions help individuals with ADHD develop coping skills, enhance emotional regulation, and improve organizational abilities. Parental training and family therapy can also support behavior management at home.

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### Ten Most Important Things to Know

- **9. ADHD Requires Lifelong Management**  
While some individuals outgrow certain symptoms of ADHD, others continue to experience challenges into adulthood. With appropriate strategies and interventions, people with ADHD can lead successful and fulfilling lives. Understanding and adapting to ADHD is often a lifelong process.
- **10. Support Systems Make a Difference**  
Having a supportive network of family, teachers, and mental health professionals is critical for people with ADHD. Encouraging open communication, patience, and understanding can reduce frustration and build confidence for the person with ADHD.

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### Questions?



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TEDx: <https://www.youtube.com/watch?v=isfw8JJ-eWM>

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