

# Attention-deficit hyperactivity disorder in adults: a guide for the general practitioner

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## Abstract

Attention-deficit hyperactivity disorder (ADHD) has an estimated prevalence of 3.5% in adults. Knowledge regarding the diagnosis and treatment of this condition remains limited amongst general practitioners. The clinical presentation is highly variable, and the manifestations of the characteristic symptoms of inattention, hyperactivity and impulsivity are different in adults. Furthermore, there is a high incidence of comorbidity. At present, no definitive criteria are available for making the diagnosis. Several rating scales are available, but the diagnosis is essentially a clinical one, and can often only be made with the help of a psychiatrist. Essential features include the presence of ADHD in childhood and significant functional impairment as an adult. Core ADHD symptoms do not always form part of the presenting clinical picture, and awareness of some of the more common initial complaints is important. Stimulants have been shown to be an effective treatment for this condition in both children and adults. ADHD is a rapidly evolving field, and the optimum tools for diagnosis and treatment are not yet available. A functional knowledge of this condition is essential for the general practitioner.

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## Introduction

The condition known as attention-deficit hyperactivity disorder (ADHD) has long been shrouded in controversy and debate. Issues surrounding this condition include perceptions regarding over- or underdiagnosis, the long-term effects of stimulant medication, and the validity of the diagnosis per se. It is not surprising that when the claim was made that this condition could, and in fact, often did persist into adulthood, there was much scepticism. Despite the overwhelming data to suggest that more than 60% of childhood cases of ADHD remain at least partially affected as adults,<sup>1</sup> much scepticism remains. This is exacerbated by the inherent difficulty in the diagnosis of this condition and the lack of definitive criteria. Furthermore, the condition has significant comorbidity, often occurring in the presence of an affective disorder or a history of substance abuse.<sup>2,3</sup> Whatever the difficulties and controversies, the evidence clearly shows that ADHD is prevalent in adults, leads to significant functional impairment<sup>4</sup> and can be effectively treated.<sup>5</sup> In light of these facts, it follows that a functional understanding of ADHD in adults is essential for a general practitioner. This article aims to provide such understanding.

## Epidemiology

Results from the World Health Organization (WHO) World Mental Health Survey suggest a prevalence of 3.5% for ADHD amongst adults.<sup>6</sup> A further two studies in the United States had similar findings, with a prevalence of 2.9% in a sample of 966 adults and 4.4% in a sample of 3 199 adults.<sup>7,8</sup> ADHD is, therefore, a common condition in adults, although at present very few cases receive treatment. Current evidence furthermore suggests that the condition is more common in white males, especially those who were previously married and those who are unemployed.

## Pathophysiology

There is significant evidence supporting a neurobiological basis of ADHD in both children and adults. The main abnormalities described come from single photon emission computed tomography (SPECT) studies, which indicate increased striatal dopamine transporter levels responsive to therapy with methylphenidate. Decreased brain glucose metabolism in the basal ganglia was found in a separate study using positron emission tomography (PET) scans. However, the most conclusive evidence has been provided by twin studies, with a significantly higher concordance amongst monozygotic twins when compared to dizygotic twins of ADHD patients. Thus, the condition has moved far

beyond the point of conjecture and is well supported by objective neurobiological studies.<sup>9</sup>

### Clinical features

The common symptoms of ADHD in adults can, as in children, be divided into symptoms of inattention, hyperactivity and impulsivity. Inattention most often manifests as a failure to give attention to detail, difficulty sustaining attention, the appearance of not listening when spoken to, difficulty in following instructions, a habit of losing things easily and forgetfulness in daily activities. Hyperactive symptoms include fidgeting, leaving one's seat in situations where being seated is normal, frequent wandering, difficulty engaging in leisure activities quietly, and excessive talking. Impulsivity may manifest as difficulty waiting in turn, a habit of interrupting others and blurting out answers before a question is completed. Inattentive symptoms are more common in adults than symptoms of hyperactivity or impulsivity.<sup>3</sup> Table I illustrates the way in which these symptoms may manifest in adults compared to children, and is adapted from the work of Weiss.<sup>9</sup>

Table I: A comparison of the symptoms of ADHD in children and adults

ADHD in Children	
<b>Hyperactivity</b>	Excessive talking Fidgeting and wriggling Runs about and climbs Can't play quietly
<b>Inattention</b>	Struggles with homework Doesn't listen Forgets things Loses things Easily distracted
<b>Impulsivity</b>	Blurts out answers Doesn't wait in turn Interrupts others
ADHD in Adults	
<b>Hyperactivity</b>	Excessive talking Feels restless Chooses "active" career Can't enjoy quiet leisure
<b>Inattention</b>	Can't focus on reading Inability to organise Poor time management Struggles to prioritise Loses things Easily distracted Inefficient
<b>Impulsivity</b>	Irritable Blurts out rude thoughts Changes job impulsively Reckless driving Impulsive sexual behaviour

However, the core symptoms of ADHD as described above do not always form part of the initial clinical presentation. A patient may present with a history of anxiety, alcohol abuse, labile mood and learning difficulty, and this should prompt further investigation to look for symptoms suggesting ADHD as a possible cause. Other symptoms not included in the DSM-IV definition of ADHD that commonly occur in adults include low self-esteem, low frustration tolerance, restlessness and a habit of procrastination. These symptoms must also be considered if a diagnosis of ADHD is suspected. Table II contains a list of some of these additional symptoms which may form part of the presenting complaint.<sup>3</sup>

Table II: Additional symptoms in adults

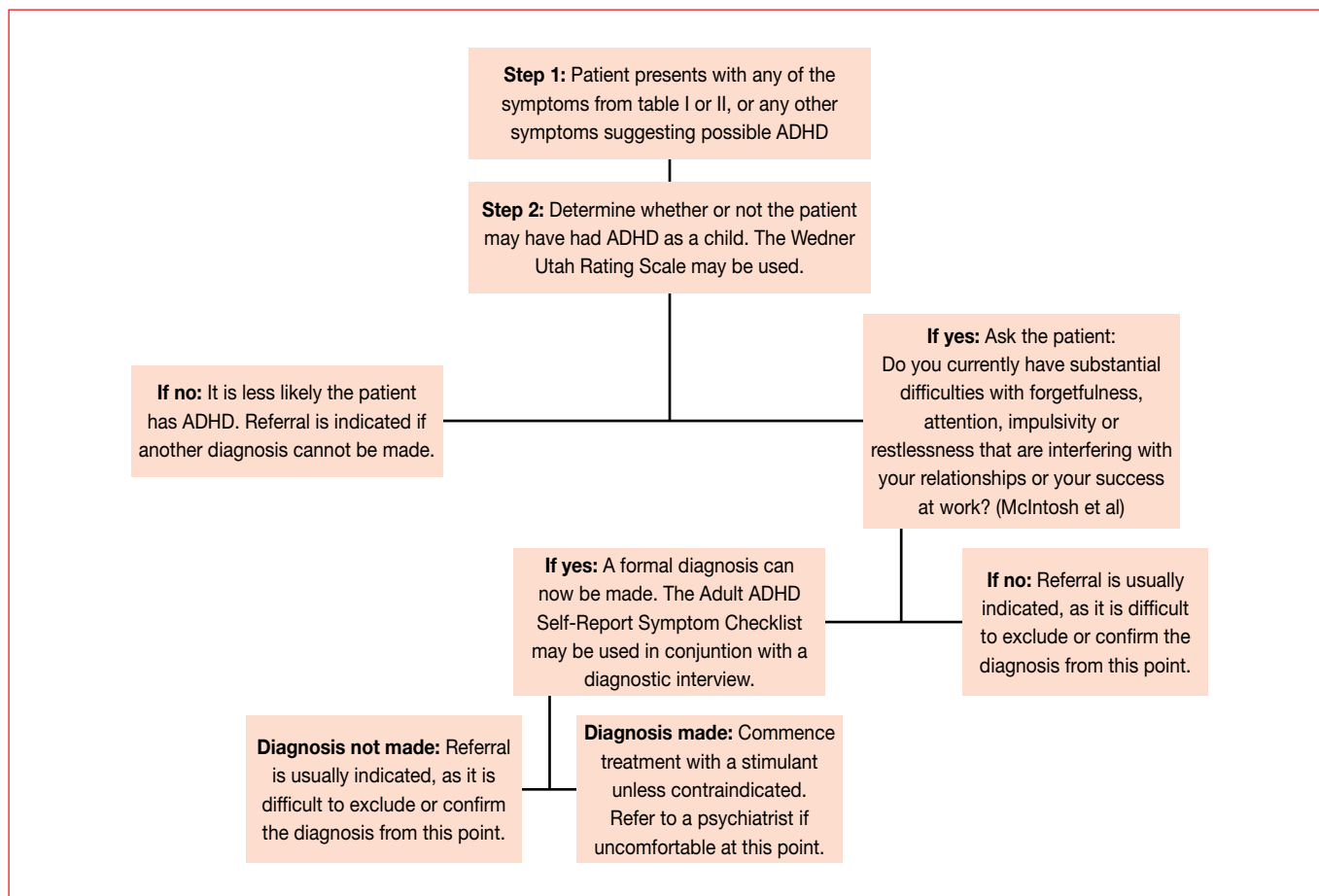
<ul style="list-style-type: none"> <li>• Labile mood</li> <li>• Low self-esteem</li> <li>• Low frustration tolerance</li> <li>• Procrastination</li> </ul>
<p><b>May complain of:</b></p> <ul style="list-style-type: none"> <li>• Difficulty succeeding at work</li> <li>• Struggling at university</li> <li>• The need to work far harder than peers despite equal intelligence</li> <li>• Relationship problems</li> <li>• Having been seen by multiple mental health professionals</li> <li>• Unsuccessfully treated for depression</li> </ul>

### Diagnosis

The DSM-IV criteria for the diagnosis of ADHD are not sufficiently sensitive for making a diagnosis in adults. Various rating scales exist which can aid in the diagnosis, however it is important to remember that this is first and foremost a clinical diagnosis. Of central importance is the diagnosis of ADHD having occurred in childhood.<sup>10</sup> For this component of the diagnosis various rating scales may indeed be useful, the Wender Utah Rating Scale (WURS) being perhaps the best choice.<sup>11</sup> Developmental history consistent with ADHD may be reported, with problems such as enuresis, school failure, suspensions or learning problems being present. Collateral history from a parent may be required to confirm diagnosis.

Deciding whether or not a patient has sufficient adult symptoms may be difficult, and there is little consensus as to an exact cut-off point for the number of symptoms which should be present. The Adult ADHD Self-Report Scale (ASRS-v1.1) can be completed by the patient either during the consultation, in the waiting room, or at home, and can help guide the diagnosis. An important feature is that these symptoms must be of a chronic nature and associated with severe functional impairment. Thus, it is important that the clinician takes a very detailed history in order to detect as many symptoms as possible and determine to what degree they affect the patient.<sup>10</sup> Figure 1 is a diagnostic algorithm adapted from one developed by McIntosh et al.<sup>12</sup>

Figure 1: A suggested diagnostic algorithm



### Differential diagnosis and comorbid disorders

A diagnosis of ADHD is complicated by the frequency of comorbid psychopathology. Mood disorders, affective disorders and substance abuse disorders occur commonly in conjunction with ADHD in adults. It is sometimes difficult to determine whether or not these symptoms are due to ADHD itself or true comorbid illnesses. If the symptoms are reported as being of a chronic nature it would point to a diagnosis of ADHD as the cause. However, this is often difficult to determine, and in the absence of a clear diagnosis referral to a psychiatrist is best. ADHD and bipolar disorder share many common features, and represent a possible diagnostic difficulty. Important distinguishing features are that bipolar patients tend to experience symptoms in discrete, manic episodes, whereas the symptoms of ADHD are of a more chronic nature. The precise symptoms are also different, as outlined in Table III.

If a diagnosis of ADHD is suspected it is also important to rule out a general medical condition as being a possible cause for the symptoms. Thyroid abnormalities, vitamin B12 deficiency, head injury, seizure disorder and even a brain tumour may be the cause of the symptoms. These causes should be considered particularly in the presence

Table III: A comparison of different symptoms in ADHD and bipolar disorder

ADHD vs Bipolar Disorder	
<b>ADHD</b> <ul style="list-style-type: none"> <li>• Begins in childhood</li> <li>• Chronic</li> <li>• Associated with low self-esteem</li> <li>• No hyperreligiosity</li> <li>• No sexual disinhibition</li> <li>• Rapid mood swings</li> </ul>	<b>Bipolar</b> <ul style="list-style-type: none"> <li>• Can begin in adulthood</li> <li>• Discrete episodes</li> <li>• Grandiosity</li> <li>• Hyperreligiosity</li> <li>• Sexual disinhibition</li> <li>• Less frequent mood shifts</li> </ul>

of a recent onset of symptoms, poor memory and brief attention span.<sup>13</sup>

### Treatment

This is perhaps the greatest reason for the controversy surrounding ADHD. Concern has been expressed about the research and marketing of stimulant medication, and the influence drug companies have on this process. Methylphenidate (Ritalin) has been described as a “performance enhancer”, and certainly the marketing approach of certain drug companies has done little to dispel this myth.<sup>14</sup> Nevertheless, it is the belief of the authors that evidence-based treatment of ADHD in adults is possible

and important in instances where it will help prevent serious morbidity.

Stimulants have shown less consistent success rates in adults as opposed to children. However, it has been argued that this is due to difficulty in treating comorbidities and methodological inconsistency, rather than an actual decreased efficacy.<sup>11</sup> Certainly, enough evidence is available to justify a trial of therapy. A range of medications is available, the choice of which depends on a number of factors. Firstly, it is important to treat any comorbid pathology appropriately. Bipolar disorder must be excluded as stimulants can precipitate mania. Stimulants would then be the typical first choice of therapy, with methylphenidate (Ritalin®) an option of proven efficacy.

In patients who cannot receive stimulants, owing perhaps to a drug addiction, second-line medications include atomoxetine (Strattera®), as well as the antidepressants venlafaxine (Effexor®) and bupropion (Wellbutrin®).<sup>15,16</sup> Their efficacy in adults is not as well documented as for the stimulants, and at present they should only be used when there is a specific indication. Indications include drug intolerance, history of stimulant abuse and a lack of response to stimulant medication.

## Conclusion

The aim of this review has been to give the general practitioner a functional knowledge regarding ADHD in adults. We hope it will result in greater awareness of this condition, as well as an appreciation of the complexity of the diagnosis. It is important to recognise that this is, like much of psychiatry, a rapidly evolving field, and that the optimum tools for diagnosis and treatment are not yet at our disposal. The publication of the DSM-V in the near future will hopefully go some way towards rectifying this problem. Despite the difficulties, it is important that every general practitioner is able to at least recognise patients that may have this condition, although the help of a psychiatrist may eventually be required in order to make the diagnosis.

## References

- Spencer T, Biderman J, Wilens T. Adults with attention-deficit/hyperactivity disorder: a controversial diagnosis. *Journal of Clinical Psychiatry* 1998;59:59–68.
- Shaffer D. Attention deficit hyperactivity disorder in adults. *American Journal of Psychiatry* 1994;151:633–638.
- Asherson P. Clinical assessment and treatment of attention deficit hyperactivity disorder in adults. *Future Drugs*, 2005.
- Kessler RC, Lane M, Stang PE, Van Brunt DL. The prevalence and workplace costs of adult attention deficit hyperactivity disorder in a large manufacturing firm. *Psychol Med* 2008;39:1–11.
- Tcheremissine OV, Salazar JO. Pharmacotherapy of adult attention deficit/hyperactivity disorder: review of evidence-based practices and future directions. *Expert Opinions in Pharmacotherapy* 2008;8:299–310.
- De Graaf R, Kessler RC, Fayyad J, et al. The prevalence and effects of Adult Attention-Deficit/hyperactivity Disorder (ADHD) on the performance of workers: Results from the WHO World Mental Health Survey Initiative. *Occupational and Environmental Medicine* 2008;65:835–842.
- Biederman J. What Is the Prevalence of Adult ADHD? Results of a Population Screen of 966 Adults. *Journal of Attention Disorders* 2005;9:384–391.
- Kessler RC, Adler L, Barkley R, Biederman J, Conners CK, Demler O. The Prevalence and Correlates of Adult ADHD in the United States: Results From the National Comorbidity Survey Replication. *Am J Psychiatry* 2006;163:716–723.
- Faraone SV, Biederman J. Neurobiology of attention-deficit hyperactivity disorder. *Biological Psychiatry*. 1998;44: 951–958.
- Weiss M. Advances in the Treatment of Adult ADHD – Landmark Findings in Nonstimulant Therapy. *Therapeutic Focus* 2003.
- Ward M, Wender P, Reimherr F. The Wender Utah Rating Scale: An aid in the retrospective diagnosis of attention deficit hyperactivity disorder. *American Journal of Psychiatry* 1993;150:885–890.
- McIntosh D, Kutcher S, Binder C, Levitt A, Fallu A, Rosebluth M. Adult ADHD and comorbid depression: A consensus derived diagnostic algorithm. *Neuropsychiatric Disease and Treatment* 2009;5:137–150.
- Elliot Hal. Attention Deficit Hyperactivity Disorder in Adults: A guide for the Primary Care physician. *Southern Medical Journal* 2002;95:736–742.
- Okie S. ADHD in Adults. *The New England Journal of Medicine*, 2006;354:2637–2641.
- Connors CK, Casat CD, Gualtieri CT, et al. Bupropion hydrochloride in attention deficit disorder with hyperactivity. *Journal of the American Academy of Child and Adolescent Psychiatry* 1996;35:1314–1321.
- Findling RL, Schwartz MA, Flannery DJ, Manos MJ. Velafaxine in adults with attention-deficit/hyperactivity disorder: an open clinical trial. *Journal of Clinical Psychiatry* 1996;57:184–189.

