

Attention deficit hyperactivity disorder in adults: common in primary care, misdiagnosed, and impairing, but highly responsive to treatment

Attention deficit hyperactivity disorder (ADHD) is a common (2.5% of adults) and highly genetic condition that adversely affects individuals across the lifespan.¹ GPs will be familiar with the *consequences* of ADHD (for example, substance misuse, mood instability, divorce, obesity, teenage pregnancy, road traffic accidents, criminality, and underachievement). However, ADHD may be overlooked as the *underlying* problem, despite the potential for treatment to change lives dramatically.

Many adults were not diagnosed as children despite sometimes having features of ADHD in childhood; females suffer ADHD more than previously understood, and high-functioning adults may still be severely impaired. In adults, ADHD may present more subtly: patients may concentrate during a consultation and the core features of ADHD may be hidden behind (or mistaken for) a more familiar comorbidity (for example, mood disorder).

Despite the known severe impairments and negative consequences of ADHD, there may be inadequate service provision. However, this must not be misinterpreted as treatment futility; treatment is very effective both in reducing symptoms of ADHD and improving function.

CLINICAL FEATURES OF ADHD

Box 1 lists the DSM-5 diagnostic features of ADHD.¹ In adults, however, internal restlessness and an inability to 'switch off' are more common than visible physical hyperactivity other than fidgeting. Attention is dysregulated rather than deficient: patients can focus on topics of interest to them, often with initial enthusiasm. For example, a new hobby or subject may result in hours of internet research or participation, sometimes at the cost of time spent on other responsibilities. This may not be long before the novelty of this new subject wears off. They therefore often find it difficult to sustain interest and attention, with consequent failure to complete tasks (which are otherwise within the patient's

abilities). Mundane or uninteresting tasks cause procrastination, until the pressure of a deadline forces (often sub-optimal) completion at the 'last minute'. This can be a recurrent problem, sufficient to result in disciplinary action at work, for example. The inability to *consistently* engage and sustain attention *on demand* (despite having the necessary ability) is frustrating for the patient. This inconsistency is often perceived as wilful non-engagement (with typical comments in school reports such as '*must try harder... can do it if and when they want to*'). Patients feel unreliable, disorganised, and underachieve, with consequent loss of self-esteem.

Adults often experience persistent mood instability, irritation, anger, impatience, and relationship failure. They can be thrill-seekers, partaking in risky activities including substance misuse. They often mismanage finances. ADHD is more prevalent in populations where such behaviours are common (for example, approximately 26% of prisoners have ADHD).²

COMORBIDITY

The high frequency ($\leq 80\%$) of comorbid psychiatric conditions² may make diagnosis difficult, especially for practitioners who lack understanding of ADHD in adulthood. The practitioner may focus on a more familiar disorder (such as anxiety) and miss the ADHD, or ADHD can be mistaken for another diagnosis (for example, mood instability and overspending can be mistaken for bipolar disorder). Having three or more psychiatric disorders is associated with a 10-fold increase of the chance of having ADHD.² Neurodevelopmental disorders often co-segregate (many of those with autism or dyslexia have ADHD and vice versa) so it is important to screen in these populations. Clinicians should be particularly alert to the possibility of ADHD in patients with 'treatment-resistant' depression or anxiety; 'atypical', 'treatment-resistant', or 'rapid cycling' bipolar disorder or cyclothymia; three or more psychiatric disorders; and those who misuse

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Box 1. Diagnostic features of ADHD (DSM-5)¹

Inattentive symptoms are where the patient <i>often</i> :	<ul style="list-style-type: none">• fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities• has trouble holding attention on tasks or play activities• does not seem to listen when spoken to directly• does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (for example, loses focus or is sidetracked)• has trouble organising tasks and activities• avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework)• loses things necessary for tasks and activities (for example, school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).• is easily distracted• is forgetful in daily activities
Symptoms of hyperactivity/impulsivity are where the patient <i>often</i> :	<ul style="list-style-type: none">• fidgets or taps with hands or feet, or squirms in seat• leaves seat in situations when remaining seated is expected• feels restless• is unable to engage in leisure activities quietly.• is 'on the go' or acting 'as if driven by a motor'• talks excessively• blurts out an answer before a question has been completed• has difficulty waiting their turn• interrupts or intrudes on others

In adults, diagnosis requires five symptoms (six for children) of either inattention or hyperactivity/impulsivity (or both for the diagnosis of 'combined type' ADHD). Impairment must be at least moderate and present in more than one domain (domestic, social, academic, or occupational), and the onset of 'several' symptoms (but not necessarily impairment) should precede age 12 years

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including rates of road accidents, educational attainment, criminality including violent reoffending, substance misuse, injuries, STDs, and other outcomes (Supplementary Box S1).⁴

National Institute for Health and Care Excellence (NICE) guidance recommends methylphenidate and lisdexamfetamine as first-line treatments.⁵ A network meta-analysis⁶ suggested that amphetamine-based drugs have superior efficacy and tolerability in adults. In the UK lisdexamfetamine is now a common first choice *and* is licensed for both adults and children, whereas many preparations of methylphenidate are used off-licence in adults. Generic versions of modified-release methylphenidate may be more cost-effective, but their time-release profiles are not identical and may be a problem when switching brands. Concern about longer-term tolerance is unfounded. Atomoxetine is a non-stimulant: doses build up slowly (at least 12 weeks for full benefit). Other medications (for example, bupropion, guanfacine, and clonidine) are limited to tertiary care.

NICE recommends 6-monthly (and after dose changes) monitoring of blood pressure, pulse, and weight, plus an annual review. ECG is unnecessary without clinical concerns.⁵ Following dose stabilisation, prescribing can continue in primary care under shared-care agreements.

Non-pharmacological treatments may be used alongside first-line medication (for example, psychology, education, and lifestyle interventions).

FUTURE OF SERVICES FOR ADHD

NICE guidelines suggest that a 'specialist psychiatrist ... or other appropriately qualified healthcare professional with training and expertise' [this is not defined] undertakes diagnosis and initial treatment.⁵ If we are to manage so many affected patients, primary care must be involved, with adequate resources. Arguably, *managing* ADHD is no more risky than, say, managing methadone therapy, and no more complex than many other problems faced by GPs. Improving services for ADHD demands a partnership between commissioners, specialists, and primary care, which should include GPs with Extended Roles. Training for interested practitioners is available from the UK Adult ADHD Network (www.ukaan.org).

Provenance

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Competing interests

Drs Cubbin and Leaver are members of the

alcohol or substances; commit criminal offences; have a label of personality disorder with mood instability, persistent irritability, or are easily angered; are disorganised (missing appointments) and frequently change jobs or relationships; and have a personal or family history of neurodevelopmental disorders (including autism or dyslexia).

Some comorbidities may significantly improve after treating the ADHD, including reduced offending.

SCREENING

The World Health Organization's Adult Self-Report Scale (ASRS version 1.1) is a free screening tool using six questions. In a general population, it has sensitivity 68.7% and specificity 99.5% (total classification accuracy 97.9%) for ADHD.³ Some services demand informant childhood rating scales as part of referrals. This may obstruct appropriate referrals because DSM-5 adult diagnostic criteria require 'some symptoms' but not impairment by aged 12 years, and informants' recall of symptoms can be unreliable.

TREATMENT

ADHD medications are extremely effective, well tolerated, generally safe, and most have very low potential for abuse (unlike some other psychotropic medications). Medication reduces ADHD symptoms, associated mood changes, and suicidality. Importantly, treatment measurably improves function