

## **Attention Deficit Hyperactivity disorder (ADHD)/ Attention deficit disorder (ADD)**

ADHD is a neuro-developmental disorder that presents with developmentally inappropriate inattention, impulsivity and hyperactivity to the extent that it causes functional impairment. ADHD is a common reason for referral to community paediatrics and is estimated to be present in 3-9% of school age children in the UK <sup>(1)</sup>. It is 3 times more common in males than females <sup>(3)</sup>. Symptoms cannot be explained by another diagnosis (eg. Anxiety, depression). The symptoms of ADHD are present before the age of 12 years old. ADHD symptoms must be pervasive (present through 2 different settings eg. School, home or social). ADHD can have a detrimental effect on a child's learning, relationships and participation in day-to-day activities. Difficulties associated with ADHD often last into adult hood.

### **The DSM-5 diagnostic criteria for ADHD <sup>(3)</sup>**

#### **Inattention:** six or more symptoms

- ❖ Often fails to give close attention to details or makes careless mistakes
- ❖ Often has trouble holding attention on tasks or play activities.
- ❖ Often does not seem to listen when spoken to directly.
- ❖ Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (eg, loses focus, becomes sidetracked).
- ❖ Often has trouble organising tasks and activities.
- ❖ Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time
- ❖ Often loses things necessary for tasks and activities
- ❖ Is often easily distracted
- ❖ Is often forgetful in daily activities.

#### **Hyperactivity and impulsivity:** six or more symptoms

- ❖ Often fidgets with or taps hands or feet, or squirms in seat.
- ❖ Often leaves seat in situations when remaining seated is expected.
- ❖ Often runs about or climbs in situations where it is not appropriate
- ❖ Often unable to play or take part in leisure activities quietly.
- ❖ Is often 'on the go' acting as if 'driven by a motor'.
- ❖ Often talks excessively.
- ❖ Often blurts out an answer before a question has been completed.
- ❖ Often has trouble waiting his/her turn.
- ❖ Often interrupts or intrudes on others

Three kinds of ADHD can occur: **Combined, Predominantly inattentive or Predominantly hyperactive-impulsive.**

### **Aetiology**

Twin studies show that ADHD is highly heritable, there are also a number of other risk factors including environmental risk factors, low birth weight and preterm delivery, maternal smoking or alcohol exposure during pregnancy, epilepsy, acquired brain injury, lead exposure, iron deficiency, being a looked after child, maternal mental health problems and substance misuse.

### **Co-morbidities?**

There is an association between ADHD and other conditions and difficulties;

- **Conduct disorder**
- **Autism**

Emily Tudor  
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- **Learning disability**
- **Sleep difficulties:** Sleep difficulties are reported in 50-80% of children and young people with ADHD  
(2). Sleep difficulties will also worsen the symptoms of ADHD.

## **How is ADHD diagnosed?**

- ❖ Full medical, psychiatric and behavioural history (parent and child/young person) including Adverse childhood events (ACE)
- ❖ Observation in clinic
- ❖ School observation/feedback
- ❖ Other additional forms of assessment are available in some areas.
  - ❖ Qb testing
- ❖ Questionnaires can be useful adjuncts, such as; Vanderbilt and Connors

## **How to manage ADHD?**

- ❖ General
  - ❖ Give young people and families information about national and local support services and websites.
  - ❖ Advice structured routine and consistent behavioural strategies.
  - ❖ Encourage a healthy lifestyle and regular exercise
- ❖ Behavioural/ Psychosocial (school and home)
  - ❖ Parent education and courses if available
  - ❖ School should make reasonable adjustments and environmental modifications
- ❖ Medications
  - ❖ Stimulant or non-stimulant

## **Medications**

Before starting medications a set of baseline observations should be completed including; Heart rate, blood pressure, Height, weight, cardiac examination, ECG if any risk of QTc prolongation and refer to cardiology if any personal or family risk of cardiac disease including if any family member with a history of sudden death under 40 years of age.

Medications are only licensed for children 6 years and over.

Medications for ADHD are split into stimulant and non-stimulant.

Examples of stimulant medication:

- Methylphenidate (Short acting= Methylphenidate, Long acting = Medikinet XL [First line], Equasym XL, Concerta XL)
- Dexamfetamine (Elvanse)

Examples of non-stimulant medications: Atomoxetine (Strattera), Guanfacine (Intuniv)

Side effects include appetite suppression, poor growth, cardiovascular, sleep difficulties, change in behaviour and suicidal ideation. Regular follow up including monitoring of height, weight, heart rate and blood pressure is required.

## **References:**

Emily Tudor  
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1. National institute for Health and Care Excellence Guideline NG87. *Attention Deficit Hyperactivity Disorder: diagnosis and management*. Published March 2018, <https://www.nice.org.uk/guidance/ng87>
2. Hobson S, Davie M, Farquhar M. Fifteen-minute consultation: Managing sleep problems in children and young people with ADHD. Archives of Disease in Childhood - Education and Practice 2019;104:292-297.
3. Childhood attention-deficit/ hyperactivity disorder. BMJ 2015;350:h2168: [Childhood attention-deficit/hyperactivity disorder | The BMJ](#)