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ADHD in children

Attention deficit hyperactivity disorder (ADHD) is a behavioural condition that can range from mild to severe. There are different types of ADHD, depending on whether inattention (problems with concentrating) or hyperactivity-impulsivity (being too active - difficulty staying focused) is the main issue.

What is ADHD in children?

ADHD is a persistent problem that does not come and go and that cannot be 'switched off' voluntarily. It includes:

- Inattention - difficulty staying focused, being easily distracted and forgetful; **or**
- Hyperactivity-impulsivity - being overactive and problems focusing or controlling urges, as well as being disorganised; **or**
- A combination of both behaviours.

ADHD is a condition that is much talked about but still not very well understood. It can be very difficult to tell the difference between a child with ADHD and a 'naughty' and 'disruptive' child, and so the diagnosis of ADHD needs a thorough assessment by a specialist.

For some children, ADHD can cause severe problems, especially if treatment isn't started early. Early diagnosis is therefore very important. If psychological therapy, and sometimes also medication, is started early then this can greatly improve your child's life and future.

The National Institute for Health and Care Excellence (NICE) guideline published in 2018 and updated in 2022 deals with the diagnosis and management of ADHD in children and adults (see Further Reading). NICE intends this guideline to make a difference by making sure that:

- Everyone is correctly diagnosed – the guideline aims to improve recognition of ADHD by highlighting which groups of people are most likely to have it.
- With the right information and support, people understand their diagnosis and see it as a positive step towards getting help and understanding from others.
- Healthcare professionals listen to people's views about different treatment options and help them get the most from their treatment.
- People have check-ups as often as they need them, whether or not they take medicines for their ADHD, and are offered support to complete their treatment.
- Information is shared with teachers and other healthcare professionals so that people have seamless support – especially during big changes like moving from school to college.

Symptoms of ADHD in children

Children with attention deficit hyperactivity disorder (ADHD) show persistent restlessness, impulsiveness and/or inattention. These features are seen in more than one setting – for example, at school and at home. They are also seen in more than one activity – for example, in schoolwork and in relationships. They occur at a level greater than expected for their age and cause significant disruption to the child's daily life.

The definition of ADHD requires that symptoms:

- Start before 12 years of age.
- Occur in two or more settings such as at home and school.
- Have been present for at least six months.
- Interfere with, or reduce the quality of, social, academic or occupational functioning.
- Are not better explained by another mental disorder.

Types of ADHD in children

Hyperactive-impulsive subtype

Some features of this type of ADHD are that a child may:

- Fidget a lot.
- Run around in inappropriate situations.
- Have difficulty playing quietly.
- Talk excessively.
- Interrupt others.
- Have trouble waiting their turn in games, in conversations and also in queues

Inattention subtype

In this subtype, a child may:

- Have trouble concentrating and paying attention.
- Make careless mistakes and not listen to, or follow through on, instructions.
- Be easily distracted.
- Be forgetful in daily activities and lose essential items such as school books or toys.
- Have trouble organising activities.

Combined subtype

If a child has this subtype, they have features of both of the other subtypes.

Children with ADHD are also more likely than average to have other problems such as [anxiety](#) and [depression](#), conduct disorders and co-ordination difficulties. Some children with ADHD also have reading difficulties and dyslexia.

Note: many children, especially those under the age of 5 years, have problems with attention and always seem restless. This does **not** necessarily mean that they have ADHD.

The symptoms may change as your child gets older. Symptoms often reduce in severity and cause less disruption over time. However, this is not always the case.

How common is ADHD?

Attention deficit hyperactivity disorder (ADHD) is thought to affect about 1 in 20 children in the UK. About three times as many boys as girls are diagnosed with ADHD. However, some experts think that boys are more likely to be referred and get a diagnosis.

That's because, compared with girls, they are hyperactive more often, which is more disruptive to others. A girl with the inattention type of ADHD may be dismissed as a lazy daydreamer. A boy who constantly disrupts the whole class may be harder to miss.

Although ADHD is most often diagnosed in children aged 3–7 years, it may not be recognised until much later in life. Sometimes it's not diagnosed until adulthood.

What causes ADHD in children?

The cause of attention deficit hyperactivity disorder (ADHD) is not known. It is thought that there may be minor changes in parts of the brain which control impulses and concentration.

Although there is no known main cause for ADHD, several different factors are thought to increase the risk of a child developing ADHD. These factors are thought to include:

Genetics

Genes are passed on to a child from each parent. Our genes determine how our body functions, what we look like and sometimes what diseases we will get. Some studies have shown that certain genes are related to ADHD. A child may therefore be more likely to have ADHD if there is another family member such as mother, father, brother or sister with ADHD.

Antenatal problems

If a mother drinks alcohol, smokes or takes heroin while she is pregnant, this may increase the risk of her child developing ADHD.

Obstetric problems

This means problems that occur when a baby is born, such as a difficult labour causing lack of oxygen to the brain. Babies with very low birth weight have an increased risk of developing ADHD.

Severe deprivation

If a child is severely neglected early in life, this may increase their risk of developing ADHD.

One or more of these factors may apply to a person with ADHD. However, although any of these factors may increase the risk of ADHD, many children with ADHD may not have any obvious factors to explain why they have ADHD.

Factors in a child's upbringing, such as watching a lot of TV or DVDs, or family stress, do not *cause* ADHD. However, these factors may make the behaviour of a child with ADHD worse. Diet may also be a factor for some children with ADHD.

How is ADHD diagnosed?

Many children go through naughty or disruptive phases. There's a big difference between children with attention deficit hyperactivity disorder (ADHD) and children who are just being 'badly behaved'.

Children without ADHD who are 'behaving badly' for whatever reason - eg, tiredness, hunger, lack of routine - can sit still, wait their turn or concentrate, if their needs are met, or they have an incentive. Children with ADHD may desperately want to be 'good' but they just can't help themselves so find this much harder and may not be able to do it at all, despite their best efforts and intentions.

There is no simple test to diagnose ADHD. If your child's teacher or doctor suspects that your child may have ADHD, it is likely your child will be referred to a specialist. The specialist will be able to confirm the diagnosis by doing an assessment. This specialist may be a children's doctor (a specialist paediatrician), a child psychiatrist, a member of your local Child and Adolescent Mental Health Service, or an adult psychiatrist. The type of specialist depends on the age of your child and also the availability of services in your local area.

The assessment may involve a discussion with you and your child as well as a physical examination. The specialist may ask for a report from the school and may even want to observe your child doing certain tasks. You and your child may also see a nurse or other healthcare professionals for further testing and assessment.

There are a few aims of this assessment. These include:

- To confirm whether your child definitely has ADHD.
- To make sure that there are no other reasons that explain your child's behaviour. For example, a hearing difficulty, [epilepsy](#) or a thyroid problem.
- To identify any other problems your child may have. For example, anxiety, low self-esteem or a learning difficulty.

For a doctor to make a firm diagnosis of ADHD, there are strict criteria that need to be fulfilled. For example, the symptoms of inattention and/or hyperactivity and impulsivity need to be present for at least six months. They also need to be causing problems in your child's life as well as being different from what would be expected for their age.

They also must have started to occur before the age of 7 years, and be present in more than one setting – for example, at home and at school. In addition, other causes for your child's symptoms may need to be ruled out – for example, depression or anxiety.

How to treat ADHD in children

The treatment will depend on how severe your child's condition is as well as the age of your child. Treatment should involve a team of professionals, experienced and trained in attention deficit hyperactivity disorder (ADHD).

Non-medicine treatments for ADHD

If your child has mild-to-moderate ADHD, the first step is usually for you and your child to be referred to a parent-training programme. It is important to recognise that this does not mean you are bad parents: children with ADHD need different rules and guidance from their parents to other children.

Sometimes your child will also be referred to a group treatment programme aimed at improving behaviour. Family therapy may also be helpful. The parent programme may include such things as:

- Learning skills to manage and reduce problem behaviour.
- Learning more effective ways to communicate with your child.
- Helping you to understand your child's emotions and behaviours.

If your child has more severe ADHD, or when non-medicine treatments have not been helpful, medication is usually recommended.

Medicines for ADHD

The medicines used for ADHD have been used for many years and in many children, with good effect. Medicines are not usually given to children aged under 6 years. Treatment with medicines is provided under the supervision of a specialist in childhood behavioural disorders.

In the UK, either [methylphenidate](#) (or [atomoxetine](#) is usually the initial medicine used for ADHD. Methylphenidate is the most commonly used medicine. [Dexamfetamine](#) or [lisdexamfetamine](#) is used for children who do not respond to these medicines. Guanfacine can also be used if the other medicines are not suitable or are not effective.

How does the methylphenidate work?

Methylphenidate works by increasing the amount of a brain chemical called dopamine in certain parts of the brain. The parts that it works on are responsible for self-control and attention. Increasing the amount of dopamine in these areas of the brain stimulates them to work better. This then helps to focus your child's attention and improve concentration.

The most common side-effects to look out for with methylphenidate are difficulty with sleep ([insomnia](#)), [loss of appetite](#) and weight loss.

How quickly does methylphenidate work?

The short-acting methylphenidate begins working within about 20 minutes and lasts for 3-4 hours. The longer-acting version takes longer to start working but lasts for about 12 hours. It may take several weeks to see the full benefit of the medication.

How long will my child be on medication?

It is common to continue medication for several years. Once children become teenagers, it is recommended to trial off the medication each year. This is to make sure that medication is still necessary.

Are the medicines safe?

Medication is effective at reducing ADHD symptoms, although they have some side-effects. The UK's National Institute for Health and Care Excellence (NICE) states that medication can be used in children aged 5 years or older, if other measures haven't worked. The medicines do not seem to have an addictive potential when used in children.

What about diet in ADHD?

Diet probably does not *cause* ADHD, but a change in diet *may* help in some cases, although not in all cases. It may be that some children are badly affected by certain foods or additives.

Dietary changes for the treatment of ADHD have been widely used for many years. They take the form of:

- Supplements with substances thought to be lacking. For example, supplements of fatty acids such as omega 3 and omega 6; **and/or**
- Cutting out foods thought to be harmful. For example, cutting out foods containing artificial colouring and other additives.

The NICE guideline (see Further Reading below) advises that, if there was a clear link between eating specific foods and behaviour, then the child should be referred to a dietician. Do not try a strict restrictive diet for your child by yourself. If you think that diet may be a factor, it is strongly advised that you ask your GP to refer you to a qualified dietician. A dietician can advise, and make sure that any limited diet contains the full range of nutrients that a growing child requires.

It is also recommended that all children with ADHD should have a balanced diet, good nutrition and regular exercise.

What else is available to help older children or adults with ADHD?

In older children, there may be some benefit from psychological treatments such as [cognitive behavioural therapy \(CBT\)](#) or social skills training. These techniques aim to teach your child more about why they act and react the way that they do. They also give them strategies to use to help them to improve their behaviour and daily functioning.

In adults, medication is recommended as part of a treatment programme, which should also include psychological treatment, advice on behavioural management and assistance with education and employment.

What is the outlook for children with ADHD?

Without treatment, children with attention deficit hyperactivity disorder (ADHD) are up to 100 times more likely to be excluded from school. ADHD is one of the main risk factors for criminal offending during childhood.

One review of research studies found that in people aged 25 years who had been diagnosed as having ADHD as children:

- About 15 in every 100 were still diagnosed as having ADHD.
- About 65 in every 100 had improved (partial remission) but still had symptoms and difficulties because of ADHD.

Children with ADHD are also more likely to have other problems as adults, such as unemployment, relationship difficulties, substance misuse and involvement in crime. But the good news is that early treatment does help to reduce the long-term impact of ADHD.

Further reading

- [Attention deficit hyperactivity disorder: diagnosis and management](#); NICE guideline (March 2018, updated September 2019)
- [Attention deficit hyperactivity disorder](#); NICE CKS, April 2024 (UK access only)

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