

## Attention Deficit Hyperactivity Disorder

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Attention deficit hyperactivity disorder (ADHD) is a common condition that mainly affects behaviour. It is usually diagnosed in children but can affect adults. Symptoms include persistent restlessness, impulsiveness and/or inattention. The diagnosis is made after a detailed assessment. Treatment includes parent training programmes and sometimes medication. Diet may be a factor and may be worth considering.

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### What is attention deficit hyperactivity disorder?

Attention deficit hyperactivity disorder (ADHD) is also known as attention deficit disorder (ADD) and hyperkinetic disorder. It is a fairly common condition that mainly affects a child's behaviour. There may also be problems with the child's intellectual, social and psychological development as a result of the behaviour.

### What are the symptoms of attention deficit hyperactivity disorder?

Children with 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.

There are three subtypes of ADHD:

- **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 and may talk excessively. They may interrupt others and 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, may make careless mistakes, may not listen or follow through on instructions and may be easily distracted. They may also be forgetful in daily activities, lose essential items such as school books or toys, and 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 five, are inattentive and restless. This does **not** necessarily mean that they have ADHD.

### What causes attention deficit hyperactivity disorder?

The cause of ADHD is not known. It is thought that there may be subtle changes in parts of the brain which control impulses and concentration. Although the main cause of ADHD is not known, various factors are thought to increase the risk of a child developing ADHD. These 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 birthweight 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.

Factors in a child's upbringing such as poor parenting, watching a lot of TV or DVDs, family stress, etc, do not *cause* ADHD. However, such factors may make the behaviour of a child with ADHD worse. Diet may be a factor (discussed further later).

## How common is attention deficit hyperactivity disorder?

ADHD affects around 5 in 100 school-aged children in the UK. It is around three times more common in boys than in girls. Although ADHD is usually diagnosed in children aged 3-7 years, it may not be recognised until much later in life. Sometimes it is not diagnosed until adulthood.

## How is attention deficit hyperactivity disorder diagnosed?

There is no simple test to diagnose ADHD. If your child's teacher or doctor suspect that your child may have ADHD, it is likely that your child will be referred to a specialist who will be able to confirm the diagnosis by doing an assessment, and start any treatment. This specialist may be a specialist paediatrician (children's doctor), 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 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 seven, 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.

## What are the treatment options?

The treatments recommended depend on how severe the condition is as well as the age of your child. Ideally, treatment should involve a team of professionals, experienced and trained in ADHD. The team may include a doctor, teacher, nurse, social worker, occupational therapist, mental healthcare professional or psychologist. Treatments include drug and non-drug treatments.

## Non-drug treatments for attention deficit hyperactivity disorder

Generally, for preschool children or for older children with mild-to-moderate ADHD, the first step is usually for you (parent or guardian) to be referred to a parent training programme. Sometimes your child will also be referred for a group treatment programme aimed at improving behaviour. 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.

Your child's schoolteacher may be invited to be involved in the treatment process. They may be able to use certain techniques in the classroom to help your child learn and function better. Family therapy may also be helpful.

In more severe ADHD, or where the above treatments have not succeeded, medication is usually recommended.

## Drug treatments for attention deficit hyperactivity disorder

There are three main drugs licensed for the treatment of ADHD in the UK. Methylphenidate (trade name of Ritalin®) is the most commonly used drug. Atomoxetine and dexamfetamine are other drugs that may also be used. Drug treatments are not usually given to children aged under six years. Drug treatment is done under the supervision of a specialist in childhood behavioural disorders.

### How effective is drug treatment?

The drugs used for ADHD have been used for many years and in many children with good effect. A number of studies have shown that drug treatment with or without intensive behavioural training programmes is more effective than behavioural training programmes alone.

### How does the methylphenidate work?

Methylphenidate is a type of stimulant drug. It 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.

### How do I give methylphenidate to my child?

Usually, your child will start on a low dose such as 5 mg three times a day and will be carefully monitored for side-effects. This dose is often increased gradually, usually over 4-6 weeks, to a maximum of 20 mg three times daily according to how well it is working and whether side-effects occur. The most common side-effects to look out for with methylphenidate are insomnia (difficulty with sleep), loss of appetite and weight loss.

Once the total daily dose has been determined, it may be possible for your child to switch to a once-daily long-acting version of methylphenidate.

When your child is on medication, they should be reviewed regularly to check that the dose is working and that there are minimal side-effects. Your child will also have their height, weight, pulse and blood pressure measured at regular intervals.

It is good for this review to include feedback from those who are in regular contact with your child, such as teachers, family members and other carers.

### 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 and gives a more stable level of drug in the bloodstream throughout the day. It may take several weeks to see the full benefit of 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.

Sometimes methylphenidate causes unacceptable side-effects or is not effective. In this situation one of the two other drugs mentioned above may be used. Dexamfetamine is another type of stimulant. Atomoxetine is a different type of drug that works on a chemical called noradrenaline in the brain.

There are other drugs that may be used for ADHD but these are usually only recommended if the above drugs are not effective.

### Are the drugs safe?

The use of drugs to treat ADHD is controversial. This is mostly because some people are worried about their effectiveness as well as the possibility of side-effects. Also, there is the possibility of the drugs being misused or abused. However, guidelines from the National Institute for Health and Clinical Excellence (NICE) advise that they are still useful and important in the treatment of severe ADHD and in milder forms when other treatments have not been effective. The benefits of drugs usually outweigh any risks in children with ADHD, aged over six years and in adolescents.

The drugs do not seem to have an addictive potential when used in children. There are reports of the drugs being abused in teenagers and adults. However, it is likely that the risk of substance abuse with street drugs such as cocaine in someone with untreated ADHD is greater than the risk of abuse of the prescribed drugs.

This controversy is largely unfounded because both scientific studies and years of experience have shown that these drugs are generally safe and effective.

## What about diet?

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.

An authoritative guideline on ADHD was published by NICE in 2008. The guideline came to the conclusion that there is no good evidence that dietary changes can help children with ADHD. However, NICE advised that "assessment of ADHD should include asking about foods or drinks that appear to influence their hyperactive behaviour. If there is a clear link, healthcare professionals should advise parents or carers to keep a diary of food and drinks taken and ADHD behaviour. If the diary supports a relationship between specific foods and drinks and behaviour, then referral to a dietitian should be offered."

Since the NICE guideline was issued, some interesting new research has been published. A study (cited at the end) followed 100 children with ADHD over several weeks. The researchers compared a group of children with ADHD who were given a strict restricted diet with those who were not. Of those in the restricted diet group over half showed a marked improvement in their symptoms. Not many foods were included in the restricted diet. The foods allowed consisted of those thought least likely to cause symptoms and allergies, such as rice, turkey, lamb, a few vegetables, pears and water. However, it is thought that if symptoms improved with a strict diet, new foods can then be gradually introduced over time to see which food or foods may trigger worsening symptoms.

This new study is encouraging. However, further research is needed to confirm the findings and to establish the place of dietary changes in the treatment of ADHD.

So, in short, diet probably does not *cause* ADHD, but a change in diet *may* help in some cases, but not in all cases. It may be that some children are negatively affected by certain foods or additives. If you notice that a particular ingredient or food makes your child's symptoms worse, then take a note of it and discuss this further with your doctor or a dietitian. And also, it has to be stressed - 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 dietitian. A dietitian can advise, and make sure that any limited diet contains the full range of nutrients that a growing child requires.

It is, however, recommended that all people with ADHD have at least a normal healthy balanced diet, and also do some regular exercise.

## Is there anything else available for older children or adults?

In older children, there may be some benefit gained from psychological treatment 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 comprehensive treatment programme. This should

also include psychological treatment, advice on behavioural management and assistance with education and employment.

## What is the prognosis (outlook)?

Up to 8 in 10 children with ADHD will continue to experience symptoms into their teenage years. This decreases to about 5 in 10 who continue to have some symptoms into adulthood. With age, the symptoms may alter. For example, a child who was always restless may feel a lot of inner tension as an adult. It is also likely that the symptoms will reduce in severity and cause less disruption over time. As mentioned, treatment can often improve symptoms.

Children with ADHD are more likely than average to have other problems as adults, such as unemployment, relationship difficulties, substance misuse and crime. However, treatment aimed at improving behaviour at an early age aims to reduce the long-term impact of the condition.

## Further help and information

### **ADDISS (Attention Deficit Disorder Information and Support Service)**

PO Box 340, Edgware, Middlesex HA8 9HL  
Tel: 020 8952 2800 Web: <http://www.addiss.co.uk/>

### **Hyperactive Children's Support Group**

Tel: 01243 539966 Web: <http://www.hacsg.org.uk/>  
This group is a leading proponent of a dietary approach to the problem of hyperactivity.

### **Adult Attention Deficit Disorder - UK**

Provides information and support for adults with ADHD.  
Web: <http://www.aadd.org.uk/>

References | [Provide feedback](#)

Original Author: Dr Tim Kenny

Current Version: [Dr Tim Kenny](#)

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