**ADHD**

Attention-deficit/hyperactivity disorder (ADHD) is a behavior disorder. It is also called attention deficit disorder. It is often first diagnosed in childhood.

Children with ADHD show signs of inattention, hyperactivity, and/or impulsivity in specific ways. These children:

* Are in constant motion
* Squirm and fidget
* Do not seem to listen
* Have trouble playing quietly
* Often talk excessively
* Interrupt or intrude on others
* Are easily distracted
* Do not finish tasks

**3 Types of ADHD in Children**

* **ADHD, combined type.** This is the most common type. A child is impulsive and hyperactive. He or she also has trouble paying attention and is easily distracted.
* **ADHD, impulsive/hyperactive type.** This is the least common type of ADHD. A child is impulsive and hyperactive. But he or she does not have trouble paying attention.
* **ADHD, inattentive and distractible type.** A child with this type is mostly inattentive and easily distracted.
* **Causes**
* The exact cause of ADHD is unknown. But research suggests that it is genetic. It is a brain-based problem. Children with ADHD have low levels of a brain chemical...

(dopamine). Studies show that brain metabolism in children with ADHD is lower in the parts of the brain that control attention, social judgment, and movement.

**Symptoms**

Each child with ADHD may have different symptoms. He or she may have trouble paying attention. A child may also be impulsive and hyperactive. These symptoms most often happen together. But one may happen without the others.

Below are the most common symptoms of ADHD.

**Inattention**

* Has a short attention span for age
* Has a hard time listening to others
* Has a hard time attending to details
* Is easily distracted
* Is forgetful
* Has poor organizational skills for age
* Has poor study skills for age

**Impulsivity**

* Often interrupts others
* Has a hard time waiting for his or her turn in school or social games
* Tends to blurt out answers instead of waiting to be called on
* Takes risks often, and often without thinking before acting

**Hyperactivity**

* Seems to always be in motion; runs or climbs, at times with no clear goal except motion
* Has a hard time staying in a seat even when it is expected
* Fidgets with hands or squirms when in a seat
* Talks a lot
* Has a hard time doing quiet activities
* Loses or forgets things repeatedly and often
* Is not able to stay on task and shifts from one task to another without completing any

These symptoms may look like other health or behaviour problems. Keep in mind that many of these symptoms may happen in children and teens who don’t have ADHD. A key part in diagnosis is that the symptoms must greatly affect how the child functions at home and in school. Make sure your child sees his or her healthcare provider for a diagnosis.

**Diagnosis**

ADHD is a complex condition and is sometimes difficult to diagnose.

There is no single test for ADHD. Doctors diagnose ADHD in children and teens after discussing symptoms at length with the child, parents, and teachers and observing the child's behaviors. The doctor will also gather information about any similar problems that run in the family and consider all possible causes.

To confirm a diagnosis of ADHD or learning differences, a battery of tests may be given to assess a child's neurological and psychological status. The tests should be given by a pediatrician or mental health provider with experience in diagnosing and treating ADHD. The tests include:

* **A medical and social history** of both the child and the family.
* **A physical exam and neurological assessment** that includes screenings of vision, hearing, and verbal and motor skills. More tests may be given if there is a possibility that hyperactivity is related to some other physical problem.
* **An evaluation of intelligence,** aptitude, personality traits, or processing skills. These evaluations are often done with input from the parents and teachers if the child is of school age.
* **A scan, called the Neuropsychiatric EEG-Based Assessment Aid (NEBA) System,** that measures theta and beta brain waves. The theta/beta ratio has been shown to be higher in children and adolescents with ADHD than in children without it.

**Treatment**

The most effective treatment for ADHD is thought to be a combination of medication and psychological and behavioral therapies. Close cooperation among therapists, doctors, teachers, and parents is very important, and team meetings help.

**Stimulants**

Although there is considerable controversy about their possible overuse, stimulants are the most commonly prescribed medications for treating ADHD. Stimulants often decrease hyperactivity and improve concentration. They include amphetamine salt combo (**Adderall, Adderall XR**), dexmethylphenidate (**Focalin, Focalin XR**), dextroamphetamine (**Dexedrine**), lisdexamfetamine (**Vyvanse**), methylphenidate (**Concerta, Daytrana, Metadate, Methylin, Ritalin, Quillichew, Quillivant XR**), and mixed salts of a single-entity amphetamine product (**Mydayis**). The newest formulations allow children to take the medicine only once a day.

Daytrana, a methylphenidate-based patch, comes in the form of a skin patch that is applied once a day and worn for about 9 hours. The patch has been known to cause skin irritation and even permanent skin discoloration, so it should be monitored.

A doctor needs to monitor the dosage of the stimulant medication closely, both to determine the most effective level of the drug and to watch for any side effects. Generally, most side effects of stimulants are mild and most side effects of stimulants are mild and may include decreased appetite, stomach aches, sleep problems, headaches, and an increase in anxiety.

However, in rare cases, stimulants can have more serious side effects. For instance, some are linked to a higher risk of heart problems and sudden death in children with preexisting heart disease. They may also worsen psychiatric conditions like depression or anxiety or cause a psychotic reaction in some individuals. Before your kids start taking an ADHD medicine, talk to your doctor about the risks and benefits.

**Non-stimulants**

Atomoxetine (**Strattera**) and clonidine (**Catapres and Kapvay**) are two non-stimulant drugs for ADHD. Another drug similar to clonidine, approved for children aged 6 to 17, is guanfacine (**Intuniv**), which uses the same active ingredient as guanfacine hydrochloride (**Tenex**), a blood pressure medicine that has been used as an ADHD treatment.

Of course, these drugs have their own side effects and risks, and your doctor will want to watch for problems. In 2005, the FDA issued a public health advisory about rare reports of suicidal thinking in children and adolescents taking Strattera.

**Other drugs.**

In some cases, doctors may try prescribing other **antidepressant medications**, such as drugs called SSRIs, bupropion (Wellbutrin), venlafaxine (Effexor), or others.

**Psychological therapy.**

Of the psychological therapies, behavior modification may be the most commonly recommended for children. It can be quite effective, particularly if the therapist helps parents learn techniques to help the child's behavior. It is often combined with specific educational interventions, such as help with learning skills. Psychotherapy, including cognitive behavioral therapy, is a valuable option, particularly if the child has low self-esteem, depression, or anxiety.

**Multimodal Treatment**

Multimodal treatment involves multiple methods of treatment that work together to help a child with ADHD.

The main components of this approach are medications, behavioral therapy, and education.

**Medications and ADHD**

The most commonly prescribed medications for ADHD are stimulants. These include:

* Amphetamine (Adzenys XR-ODT)
* Amphetamine/Dextroamphetamine (Adderall, Adderall XR)
* Dexmethylphenidate (Focalin, Focalin XR)
* Dextroamphetamine (Dexedrine or Dextrostat)
* Lisdexamfetamine (Vyvanse)
* Methylphenidate (Concerta, Daytrana, Metadate, Methylin, Quillivant XR Ritalin)
* **Prevention**
* Though there is no way to prevent ADHD, there are ways to help all children feel and do their best at home and at school.
* **Can good prenatal care help to prevent ADHD?**
* Complications of pregnancy are linked to ADHD. You can increase the chance of your child not having ADHD by staying healthy throughout your pregnancy. A healthy diet and regular doctor visits are important. So is avoiding the use of alcohol and drugs.
* Children whose mothers smoked while they were pregnant are twice as likely to develop ADHD. Some studies suggest a pregnant woman's exposure to lead, as well as lead exposure in early childhood, may be linked to ADHD. Other studies are exploring the possible connection between premature birth and ADHD.
* **Does diet play a role in preventing ADHD?**
* Giving your child a healthy, balanced diet from an early age is good for all children, whether or not they have ADHD.
* Some experts believe that altering a child's diet may reduce hyperactive behavior. Ben Feingold developed a popular diet designed to lessen hyperactivity. It is an elimination diet that targets artificial colorings, flavorings, and preservatives. The medical community hasn't accepted the diet, and some studies have disproved Feingold's theory. Still, many parents who have tried the diet reported an improvement in their child's behavior.
* There is no scientific proof linking ADHD to sugar. Processed sugars and carbohydrates may affect a child's activity level by rapidly raising blood sugar levels. This blood sugar spike may produce an adrenaline rush that could cause a child to become more active, followed by a "crash" in activity and mood as the adrenaline levels fall.
* Parents are often willing to try cutting certain foods from their children's diet if they feel the foods affect behavior negatively. It's usually best to eliminate one food or category at a time so that you can be certain the effect you are seeing can be attributed to the category you are eliminating. Some experts, though, think that behavioral changes may be due to the way the families interact with each other while they're on an elimination diet. The child's behavior may improve—not because of the diet, but as a result of getting more attention from the parents.
* It's important not to go too far. Being too restrictive with your child's diet can lead to nutritional deficiencies. Dietitians and doctors can help you make a healthy eating plan for your children.
* It's important to weigh the risks and benefits of elimination diets, particularly for children who may be experiencing decreased appetite as a side effect of many medications commonly used to treat ADHD.
* **Can structured routine help in preventing ADHD?**

All children, and especially those with ADHD, can benefit from structured routines and clear expectations.

Post a daily schedule where your child can see it, so they know what to expect. This daily schedule should include specific times for such activities as:

* Waking up
* Eating meals
* Playing
* Doing homework
* Doing chores
* Watching TV
* Taking part in after-school activities
* Going to bed

Once the schedule is set, follow it as closely as possible each day. If there are going to be any disruptions in the schedule, explain them in advance to your child. Though posting a schedule doesn't prevent ADHD, it should help improve your child's ability to stay on task.

For older children, with or without ADHD, having a homework routine in place can make the after-school time more effective. Set aside an area away from distractions for doing homework. Taking small breaks during homework time can also help, especially if your child is hyperactive and has difficulty staying focused.

**How does behavior management help in preventing ADHD?**

Many therapists believe you can impact your child's behavior by using behavior management.

The first step is to foster a positive parent-child relationship. Therapists say this can be done by spending quality time with your child each day -- your child's "special time." During this time, let them pick an activity. Then simply focus on enjoying your child and their interests.

The next step in behavioral management is to use positive reinforcement when your child behaves well. Praise and reward them for it. Your child may behave well more often. Experts encourage parents to notice their child's good behavior at least five times a day and offer simple praise for it.

Keep your expectations reasonable. Base them on what's appropriate for your child's age and focus on only a few tasks at a time. Clearly explain what type of behavior you expect from your child in order to be rewarded. If you think of several appropriate rewards and let your child pick from among them, they may take more ownership in the program. That will make success more likely.

It's important for your child to know what you expect. One way to do that is to look into their eyes when you talk to them. Then make all directions very specific, simple, and concise, and explain them in a calm voice. You can have your child repeat the directions back to you to make sure they understand.

Finally, it is very important that you be consistent. If you don't always reward good behavior, for example, it sends your child mixed messages.

If your child's teacher is using a behavior or reward system at school, try to implement a similar system at home. Many teachers use points, stickers, or color-level systems to reward good behavior.

**Will using negative consequences change behavior?**

The last step in behavioral management is providing negative consequences for bad behavior.

Once again, it is important to explain bad behavior to your child clearly. That way you can make sure they understand what is expected.

Start by explaining what's acceptable and what the reward is for that behavior. Then explain the negative consequences for bad behavior.

Be consistent. Don't be too harsh. Using negative consequences for unacceptable behavior is controversial, and negative consequences should never be cruel, abusive, or a reflection of your own emotions, no matter how frustrated you may feel.

For behavior therapy to work, give children with ADHD frequent reminders of expected behavior and consequences. One way to do this is to write down the rules, consequences, and rewards. Then put them in a place where your child can see them. For younger children, you can draw pictures or print images for a more visual reminder.

Children with ADHD also need frequent feedback about their progress. They may do better with short-term goals rather than long-term ones. Keep changing the reward system so they don't get bored.

**Start Teaching Attention Skills Early**

If you have a preschooler, play games, build with blocks, and do puzzles together. It's good practice for building attention skills. Reading to your child is another good way to teach them how to pay attention. Showing them lots of affection can also help a child calm down and pay attention.

Not everyone agrees, but some experts think that television watching can hinder a child's ability to learn to pay attention. Regardless of whether or not TV causes attention deficiencies, the American Academy of Pediatrics says children younger than 18 months should watch very little TV. The academy also says that between the ages of 2 and 5, they should watch no more than 1 hour a day. Video chatting for toddlers/babies is ok at any age.

**Key points**

* ADHD is a behavior disorder. It is often first diagnosed in childhood.
* There are 3 major types. They are based on a child’s symptoms.
* A child with ADHD may have trouble paying attention. He or she may also be impulsive and hyperactive.
* The cause of ADHD may be genetic. It tends to run in families.
* A healthcare provider diagnoses ADHD after observing a child’s behavior and doing certain tests.
* Treatment often includes medicine. Parents may also get training in behaviour management skills. Your child may also be able to take self-management training at school.