

# Attention Deficit Hyperactive Disorder

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ADHD was first described by Dr. Heinrich Hoffman in 1845. A physician who wrote books on medicine and psychiatry.



# Definitions

- Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood disorders and can continue through adolescence and adulthood. Symptoms include difficulty staying focused and paying attention, difficulty controlling behavior, and hyperactivity (over-activity).

# Conti...

- Adult attention-deficit/hyperactivity disorder (ADHD) is a mental health condition exhibited by difficulty maintaining attention, as well as hyperactivity and impulsive behavior. Adult ADHD symptoms can lead to a number of problems, including unstable relationships, poor work or school performance, and low self-esteem.



# DSM-IV Diagnostic Criteria

- Inattention Symptoms (at least 6 symptoms required)
  - Fails to give close attention to details or makes careless mistakes in schoolwork, work, etc.
  - Difficulty sustaining attention
  - Does not seem to listen when spoken to directly
  - Does not follow through on instructions and fails to finish schoolwork, chores, etc.
  - Difficulty organizing tasks and activities
  - Avoids tasks requiring sustained mental effort
  - Loses things necessary for tasks or activities
  - Easily distracted by extraneous stimuli
  - Forgetful in daily activities

# ADHD Diagnostic Criteria (cont.)

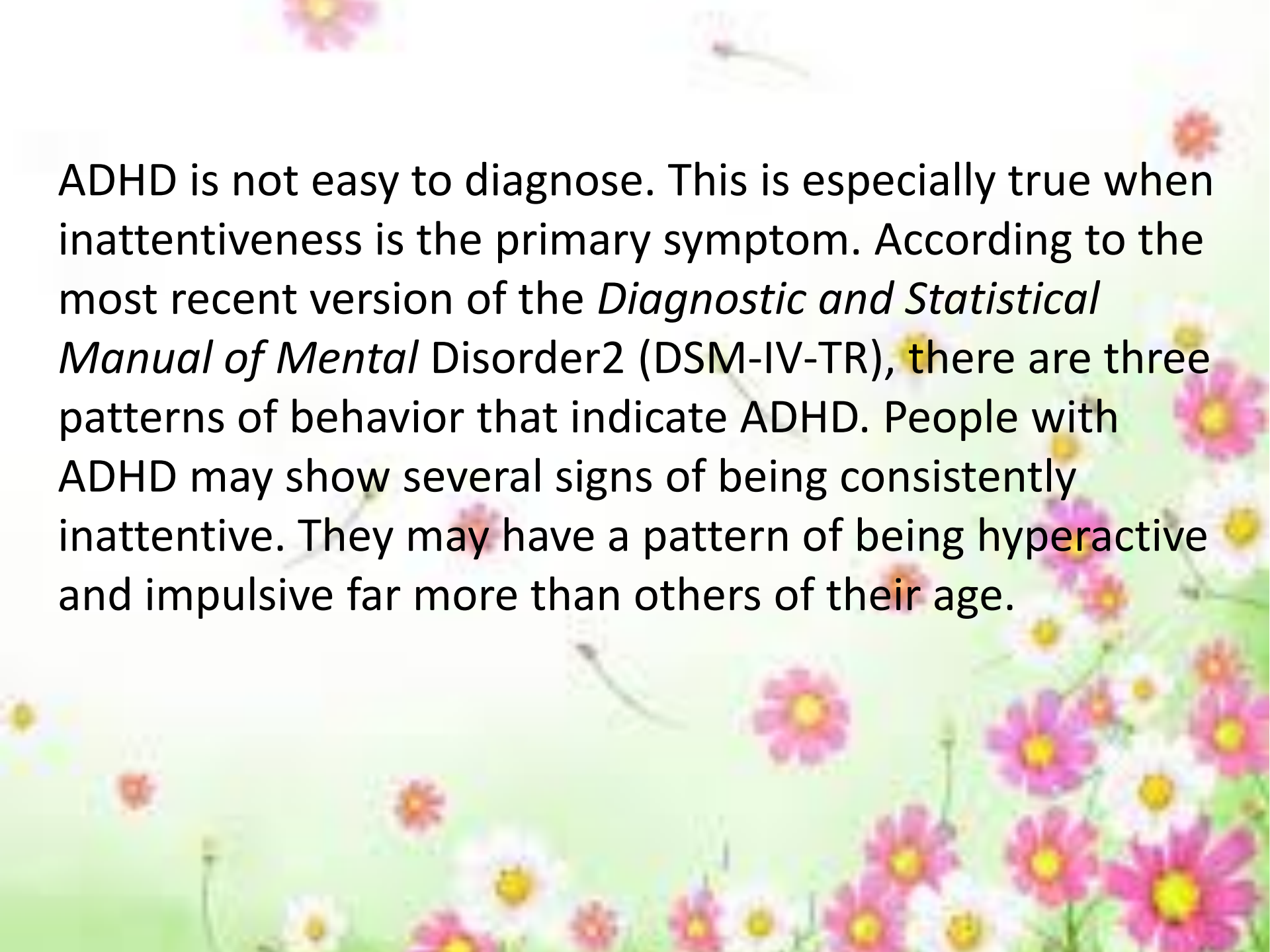
- Hyperactivity-Impulsivity Symptoms (at least 6 symptoms required)
  - Difficulty playing or engaging in activities quietly
  - Always "on the go" or acts as if "driven by a motor"
  - Talks excessively
  - Blurts out answers
  - Difficulty waiting in lines or awaiting turn
  - Interrupts or intrudes on others
  - Runs about or climbs inappropriately
  - Fidgets with hands or feet or squirms in seat
  - Leaves seat in classroom or in other situations in which remaining seated is expected

# ADHD Diagnostic Criteria (cont.)

- Symptoms present before age 7
- Clinically significant **impairment** in social or academic/occupational functioning
- Some symptoms that cause impairment are present in **2 or more settings** (e.g., school/work, home, recreational settings)
- Not due to another disorder (e.g., Autism, Mood Disorder, Anxiety Disorder)

Symptoms of ADHD will appear over the course of many months, often with the symptoms of **impulsiveness and hyperactivity** preceding those of **inattention** that may not emerge for a year or more. Different symptoms may appear in different settings, depending on the demands the situation may pose for the child's self-control. A child who "can't sit still" or is otherwise disruptive will be noticeable in school, but the inattentive daydreamer may be overlooked. The impulsive child who acts before thinking may be considered just a "discipline problem," while the child who is passive or sluggish may be viewed as merely unmotivated. Yet both may have different types of ADHD. All children are sometimes restless, sometimes act without thinking, sometimes daydream the time away. When the child's hyperactivity, distractibility, poor concentration, or impulsivity begin to affect performance in school, social relationships with other children, or behavior at home, ADHD may be suspected. But because the symptoms vary so much across settings,





ADHD is not easy to diagnose. This is especially true when inattentiveness is the primary symptom. According to the most recent version of the *Diagnostic and Statistical Manual of Mental Disorder*<sup>2</sup> (DSM-IV-TR), there are three patterns of behavior that indicate ADHD. People with ADHD may show several signs of being consistently inattentive. They may have a pattern of being hyperactive and impulsive far more than others of their age.

# Subtypes

- **Combined Type**
  - Clinical levels of both inattention and hyperactivity/impulsivity
  - Most common subtype
- **Predominantly Inattentive Subtype**
  - Clinical levels of inattention only
  - Often not identified until middle school
  - Sluggish cognitive tempo
- **Predominantly Hyperactive/Impulsive Subtype**
  - Clinical levels of hyperactivity/impulsivity only
  - More common among very young children prior to school entry

# Prevalence of ADHD

Approximately 3 - 5% in the US

- 1/20 children.
- Boys outnumber girls
- 50% of children dx w/ ADHD show sx's in adulthood.

# Associated Problems

- Peer problems
  - Inattentive symptoms → ignored
  - Hyperactive/impulsive symptoms → actively rejected
  - Not deficient in social reasoning/understanding, but rather the **execution** of appropriate social behavior
- Family dysfunction/parental issues
  - No clear causal relationship between family problems and ADHD
  - Family problems can impact the severity and developmental course/outcomes of ADHD
- Self-esteem
  - Inflated: Positive illusory bias (Hoza)
  - Low self esteem associated with comorbid depression

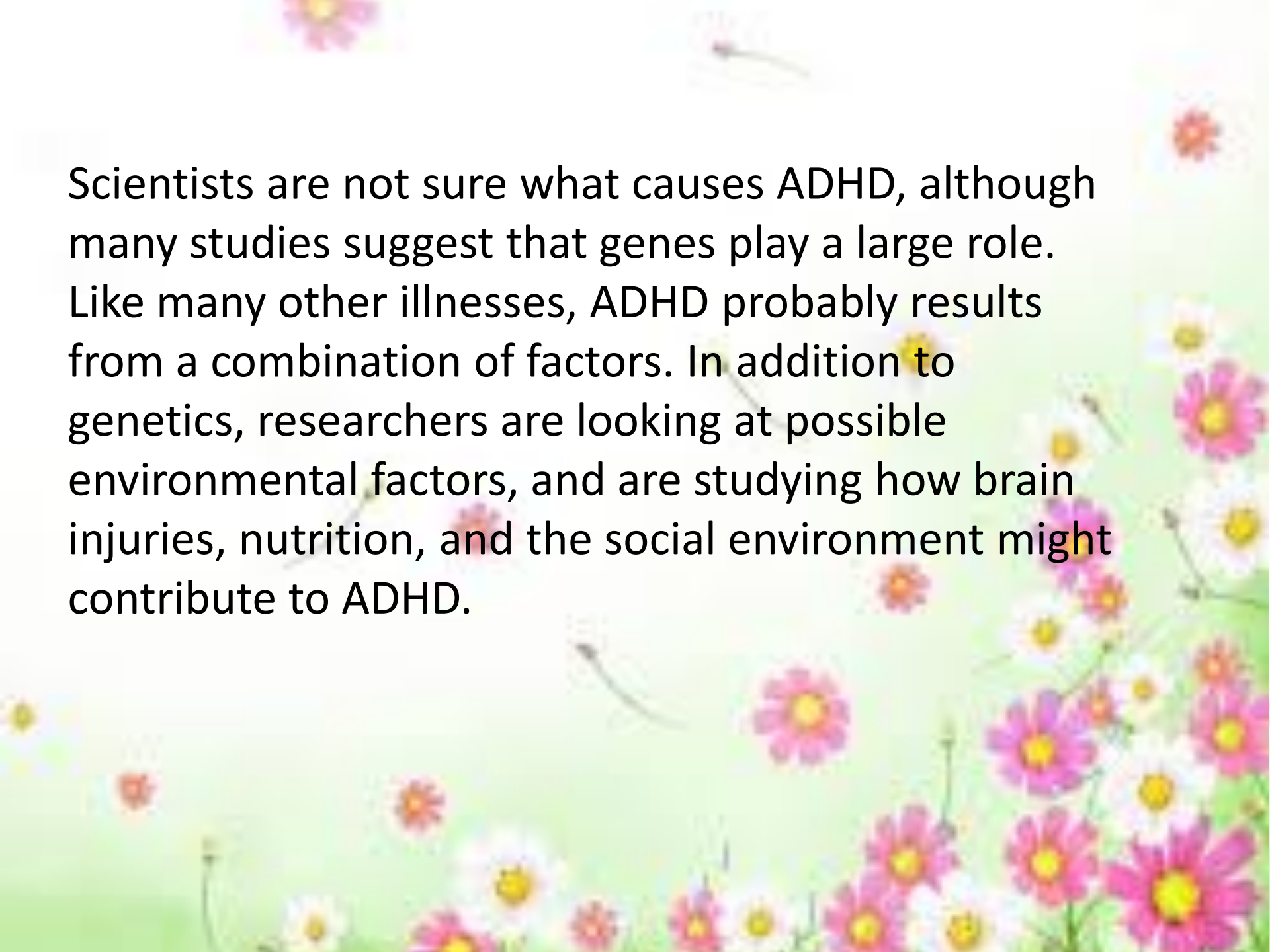


## Developmental Course

- ADHD is persistent across lifespan in most cases
  - Methodological issues impact estimates of persistence
  - ADHD severity, psychiatric comorbidity, and parental psychopathology predict persistence (Biederman et al., 2011)
- Inattention remains stable; hyperactivity declines with age
  - DSM-IV criteria may not capture adolescent/adult manifestations of impulsivity
- Adult outcomes including psychiatric comorbidity
  - When ADHD co-occurs with conduct disorder, chronic criminality and serious substance use can result
  - When ADHD co-occurs with depression, risk of suicide

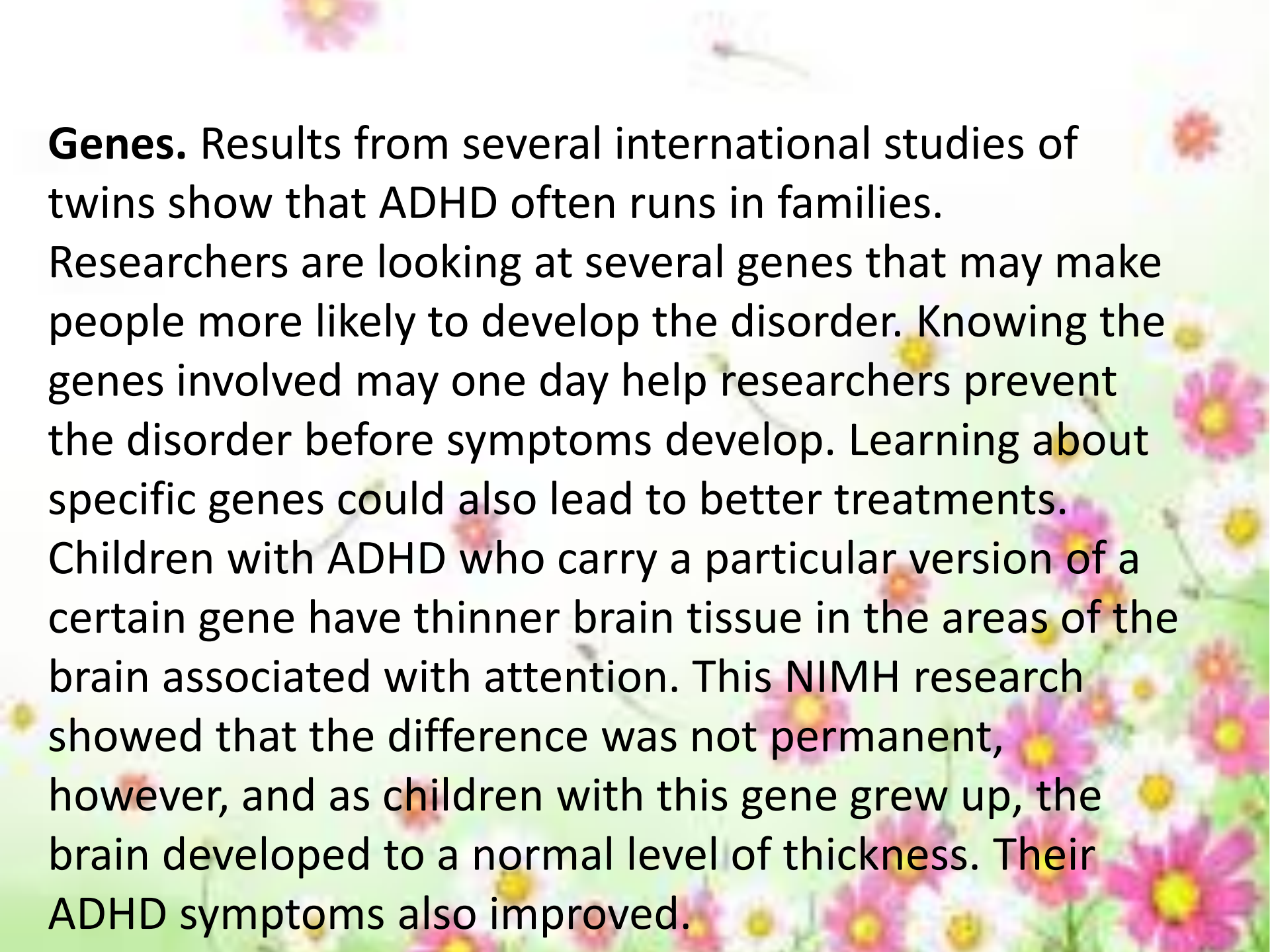
# Etiological Factors





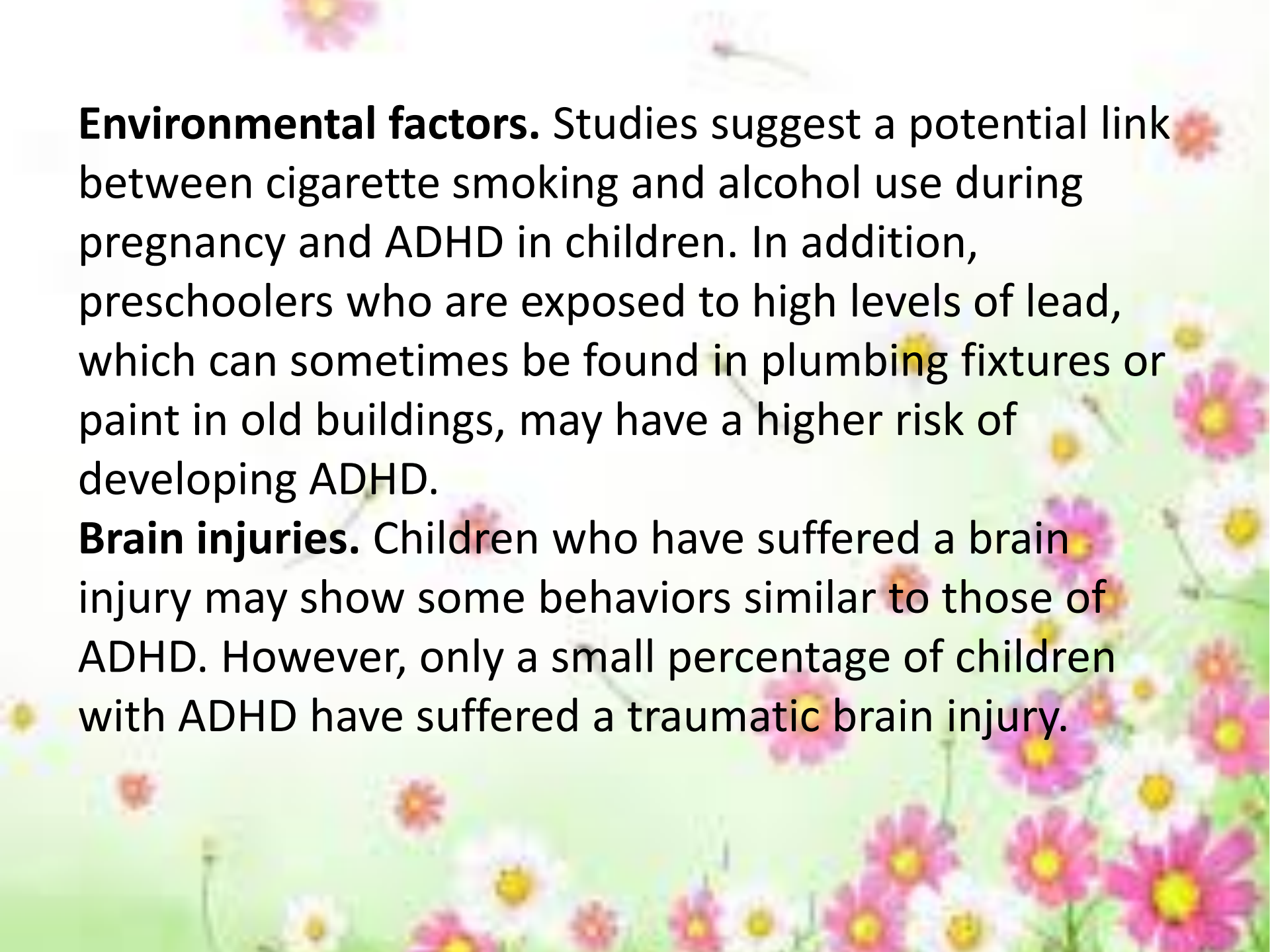
Scientists are not sure what causes ADHD, although many studies suggest that genes play a large role. Like many other illnesses, ADHD probably results from a combination of factors. In addition to genetics, researchers are looking at possible environmental factors, and are studying how brain injuries, nutrition, and the social environment might contribute to ADHD.





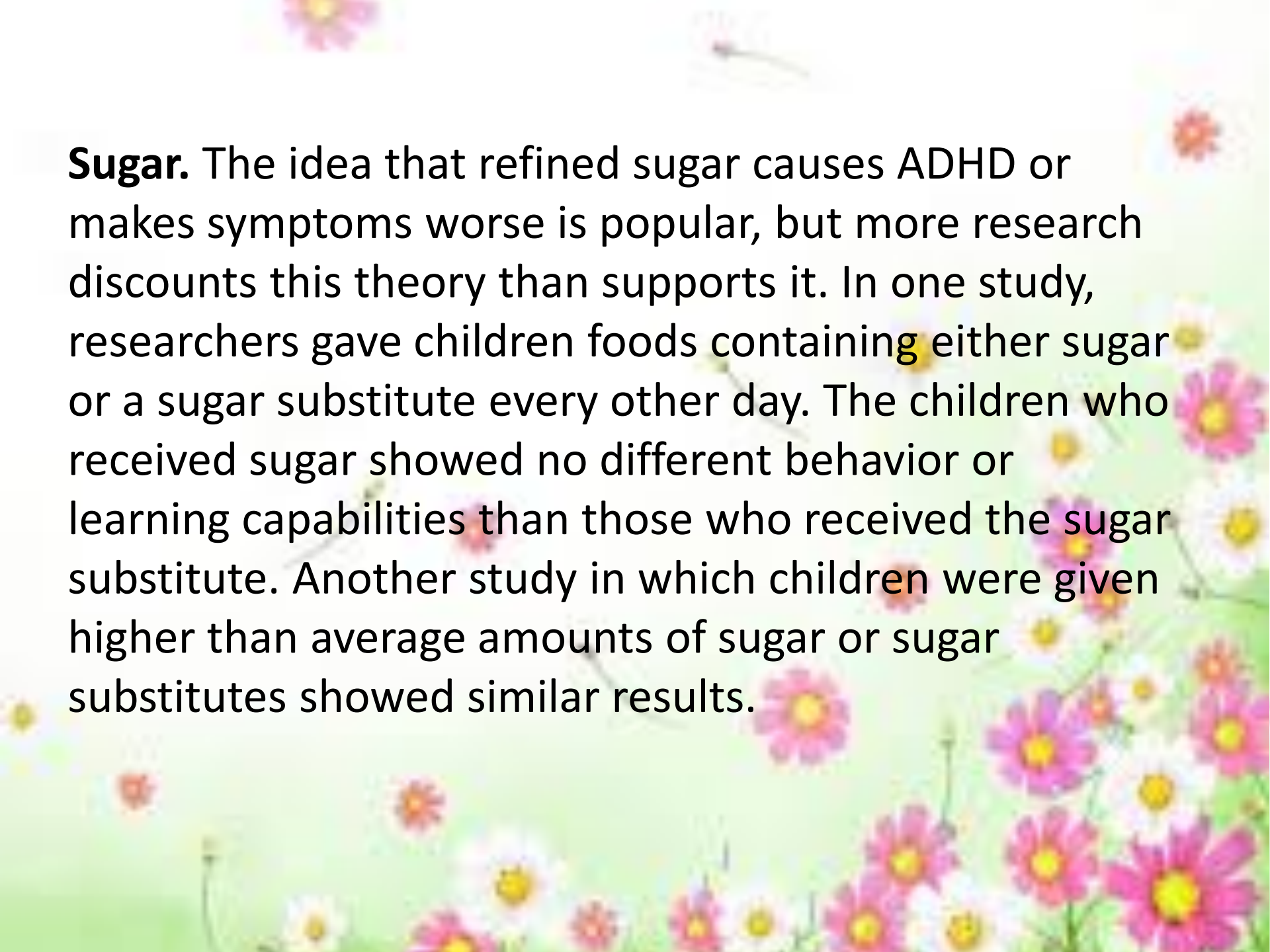
**Genes.** Results from several international studies of twins show that ADHD often runs in families. Researchers are looking at several genes that may make people more likely to develop the disorder. Knowing the genes involved may one day help researchers prevent the disorder before symptoms develop. Learning about specific genes could also lead to better treatments. Children with ADHD who carry a particular version of a certain gene have thinner brain tissue in the areas of the brain associated with attention. This NIMH research showed that the difference was not permanent, however, and as children with this gene grew up, the brain developed to a normal level of thickness. Their ADHD symptoms also improved.






**Environmental factors.** Studies suggest a potential link between cigarette smoking and alcohol use during pregnancy and ADHD in children. In addition, preschoolers who are exposed to high levels of lead, which can sometimes be found in plumbing fixtures or paint in old buildings, may have a higher risk of developing ADHD.

**Brain injuries.** Children who have suffered a brain injury may show some behaviors similar to those of ADHD. However, only a small percentage of children with ADHD have suffered a traumatic brain injury.

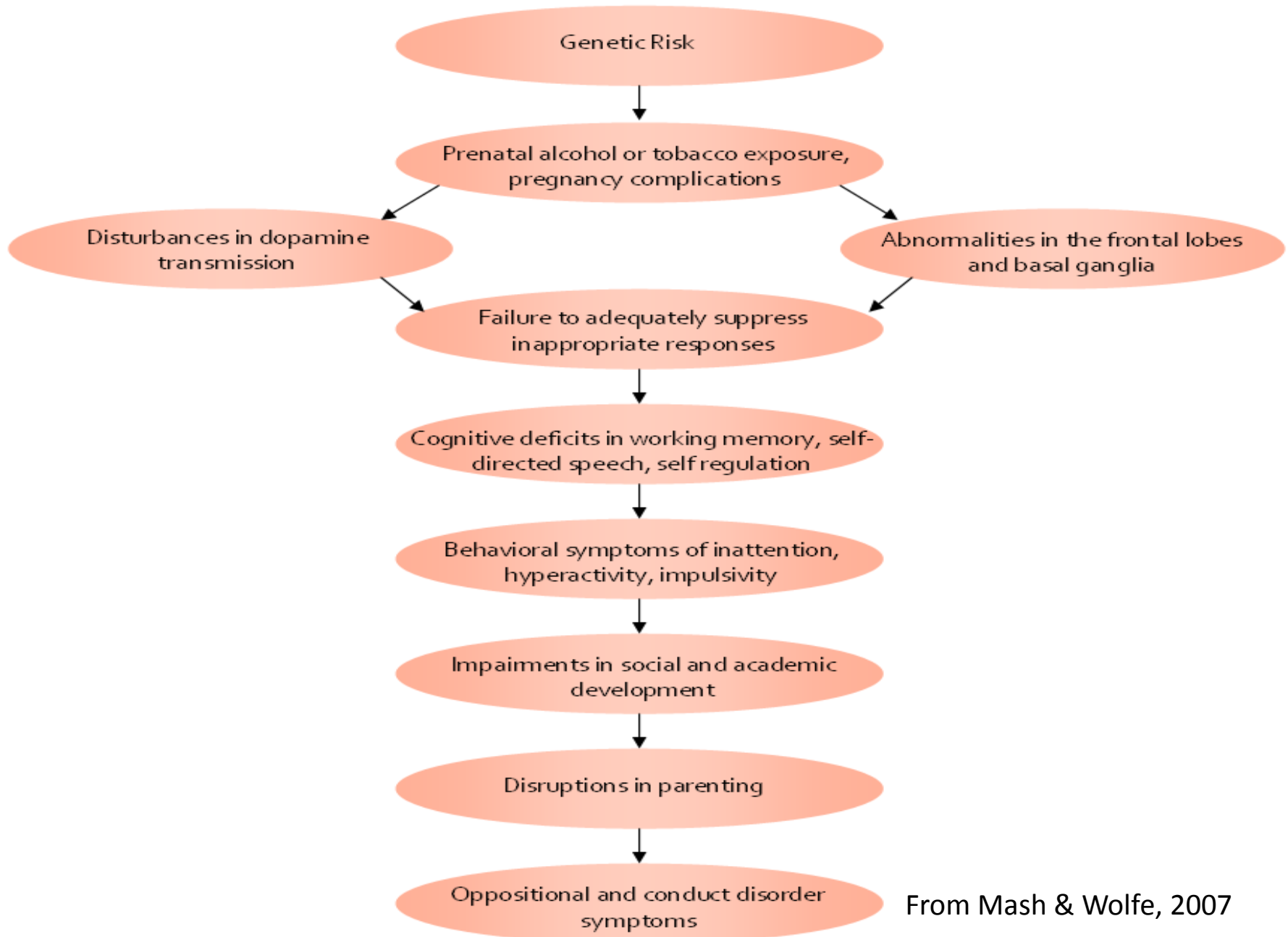


**Sugar.** The idea that refined sugar causes ADHD or makes symptoms worse is popular, but more research discounts this theory than supports it. In one study, researchers gave children foods containing either sugar or a sugar substitute every other day. The children who received sugar showed no different behavior or learning capabilities than those who received the sugar substitute. Another study in which children were given higher than average amounts of sugar or sugar substitutes showed similar results.



**Food additives.** Recent British research indicates a possible link between consumption of certain food additives like artificial colors or preservatives, and an increase in activity. Research is under way to confirm the findings and to learn more about how food additives may affect hyperactivity.

# A Possible Developmental Pathway for ADHD



From Mash & Wolfe, 2007

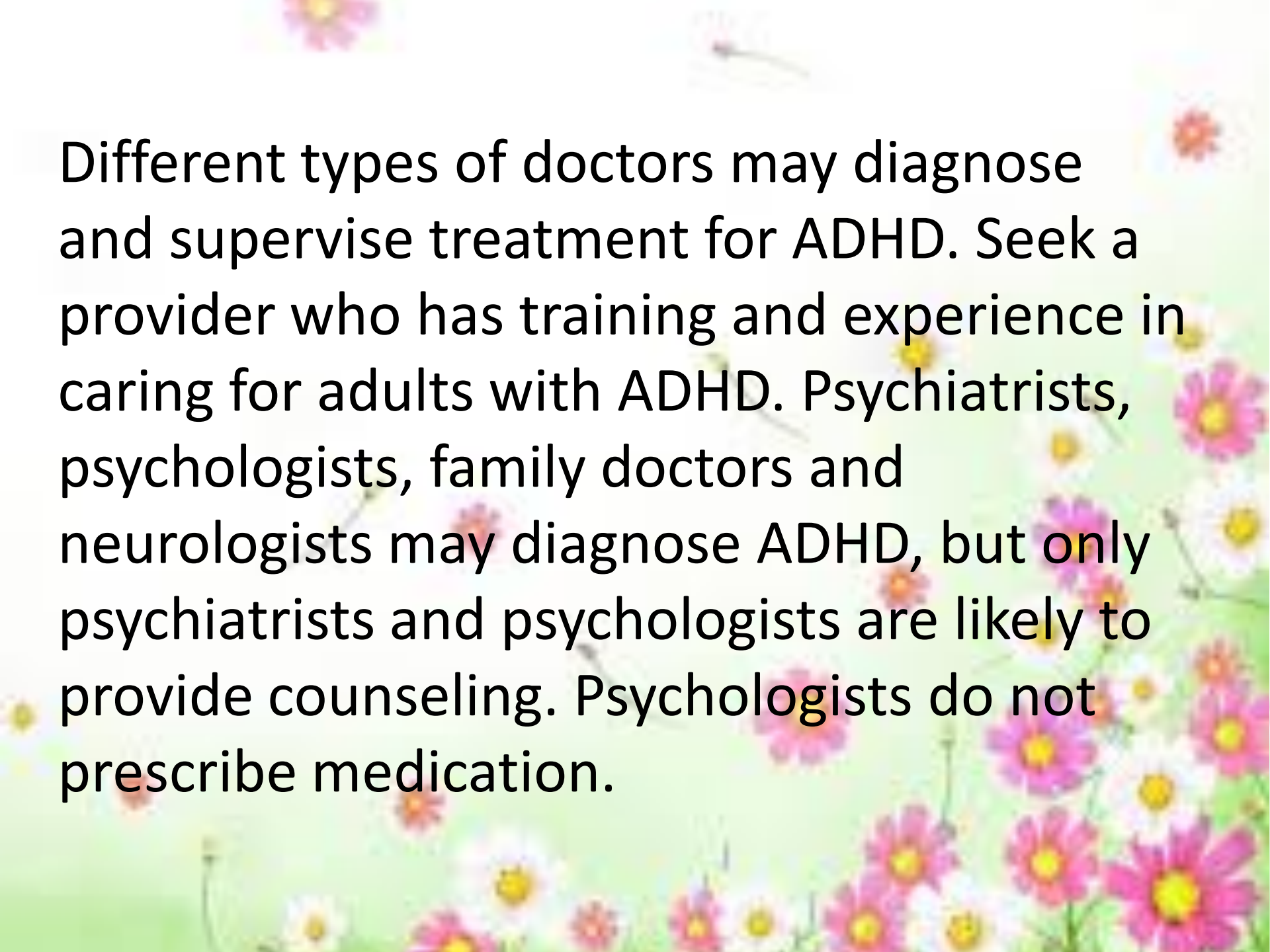


# ADHD Can Be Mistaken for Other Problems

- Parents and teachers can miss the fact that children with symptoms of inattention have the disorder because they are often quiet and less likely to act out. They may sit quietly, seeming to work, but they are often not paying attention to what they are doing. They may get along well with other children, compared with those with the other subtypes, who tend to have social problems. But children with the inattentive kind of ADHD are not the only ones whose disorders can be missed. For example, adults may think that children with the hyperactive and impulsive subtypes just have emotional or disciplinary problems.

# Diagnosis

- Parents may first notice that their child loses interest in things sooner than other children, or seems constantly "out of control." Often, teachers notice the symptoms first, when a child has trouble following rules, or frequently "spaces out" in the classroom or on the playground.



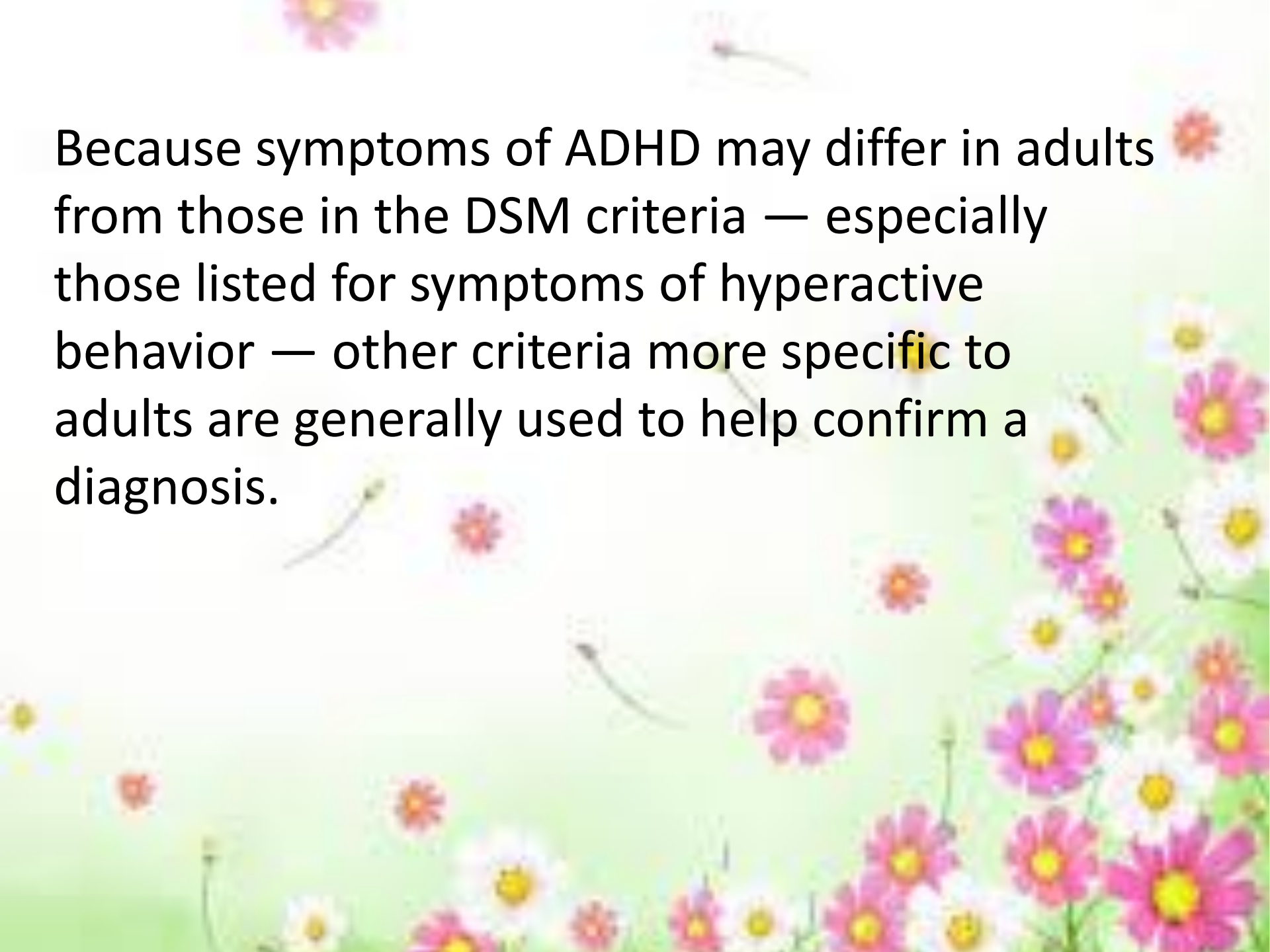
Different types of doctors may diagnose and supervise treatment for ADHD. Seek a provider who has training and experience in caring for adults with ADHD. Psychiatrists, psychologists, family doctors and neurologists may diagnose ADHD, but only psychiatrists and psychologists are likely to provide counseling. Psychologists do not prescribe medication.

## **Diagnosing ADHD in adults**

It can be more challenging to identify ADHD in adults than in children. Signs and symptoms in adults can be hard to spot. No single test can confirm the diagnosis. Your doctor will likely start by doing a physical exam and asking you questions.

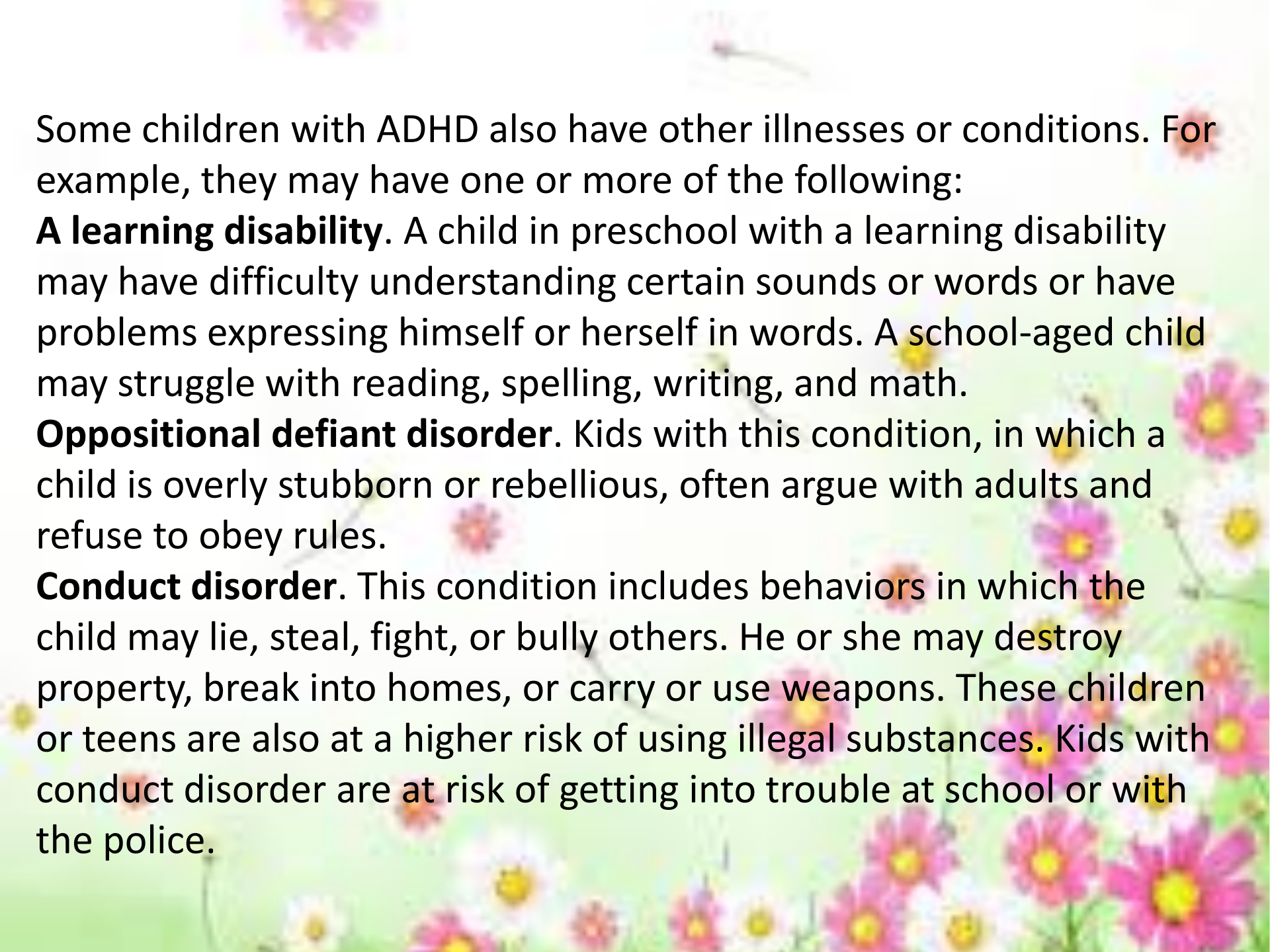


Because symptoms of ADHD may differ in adults from those in the DSM criteria — especially those listed for symptoms of hyperactive behavior — other criteria more specific to adults are generally used to help confirm a diagnosis.



# Comorbidity





Some children with ADHD also have other illnesses or conditions. For example, they may have one or more of the following:

**A learning disability.** A child in preschool with a learning disability may have difficulty understanding certain sounds or words or have problems expressing himself or herself in words. A school-aged child may struggle with reading, spelling, writing, and math.

**Oppositional defiant disorder.** Kids with this condition, in which a child is overly stubborn or rebellious, often argue with adults and refuse to obey rules.

**Conduct disorder.** This condition includes behaviors in which the child may lie, steal, fight, or bully others. He or she may destroy property, break into homes, or carry or use weapons. These children or teens are also at a higher risk of using illegal substances. Kids with conduct disorder are at risk of getting into trouble at school or with the police.



**Anxiety and depression.** Treating ADHD may help to decrease anxiety or some forms of depression.

**Bipolar disorder.** Some children with ADHD may also have this condition in which extreme mood swings go from mania (an extremely high elevated mood) to depression in short periods of time.

**Tourette syndrome.** Very few children have this brain disorder, but among those who do, many also have ADHD. Some people with Tourette syndrome have nervous tics and repetitive mannerisms, such as eye blinks, facial twitches, or grimacing. Others clear their throats, snort, or sniff frequently, or bark out words inappropriately. These behaviors can be controlled with medication.

ADHD also may coexist with a sleep disorder, bed-wetting, substance abuse, or other disorders or illnesses.

Recognizing ADHD symptoms and seeking help early will lead to better outcomes for both affected children and their families.




# Treatment

- Current treatments typically involve medication, psychological counseling or both. A combination of therapy and medication is often the most effective treatment.
- **Medications**
- Stimulants (psychostimulants) are the most commonly prescribed medications for ADHD, but other drugs may be prescribed.

## **Psychotherapy**

Different types of psychotherapy are used for ADHD. Behavioral therapy aims to help a child change his or her behavior. It might involve practical assistance, such as help organizing tasks or completing schoolwork, or working through emotionally difficult events. Behavioral therapy also teaches a child how to monitor his or her own behavior. Learning to give oneself praise or rewards for acting in a desired way, such as controlling anger or thinking before acting, is another goal of behavioral therapy. Parents and teachers also can give positive or negative feedback for certain behaviors. In addition, clear rules, chore lists, and other structured routines can help a child control his or her behavior.



Counseling for adult ADHD can be beneficial and generally includes psychological counseling (psychotherapy) and education about the disorder. Psychotherapy may help you:

Improve your time management and organizational skills

Learn how to reduce your impulsive behavior

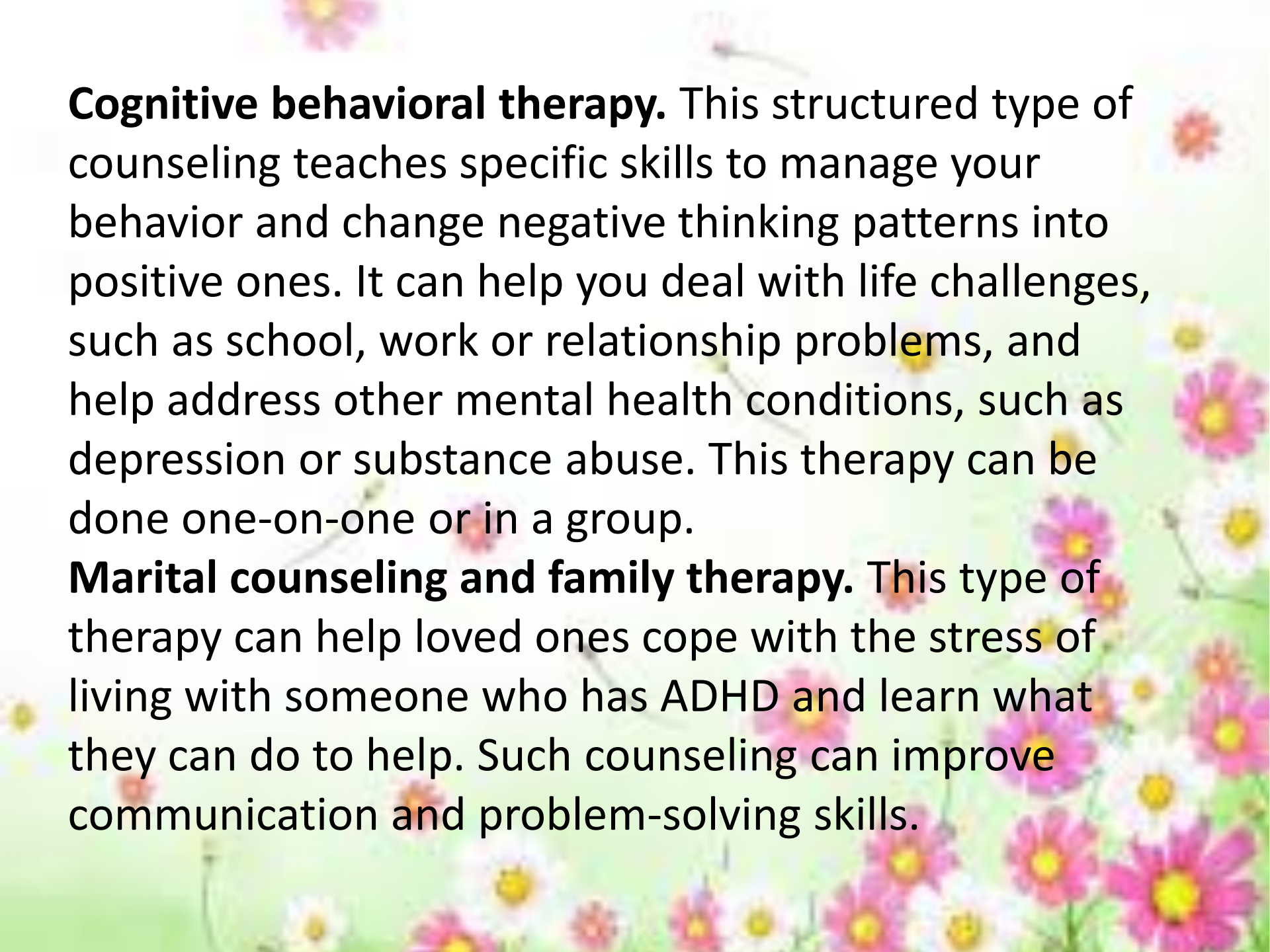
Develop better problem-solving skills

Cope with past academic and social failures

Improve your self-esteem

Learn ways to improve relationships with your family, co-workers and friends

Develop strategies for controlling your temper



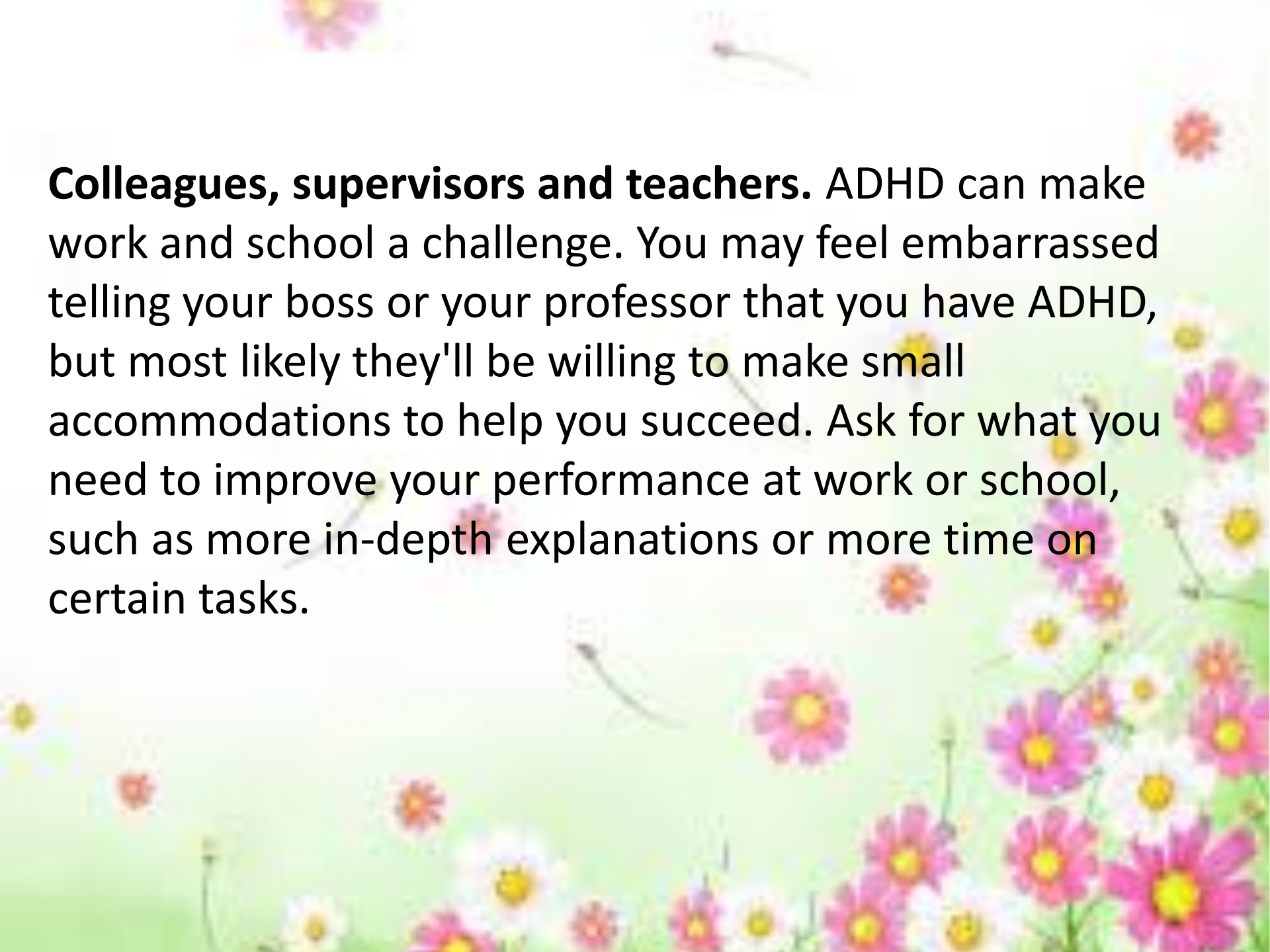
**Cognitive behavioral therapy.** This structured type of counseling teaches specific skills to manage your behavior and change negative thinking patterns into positive ones. It can help you deal with life challenges, such as school, work or relationship problems, and help address other mental health conditions, such as depression or substance abuse. This therapy can be done one-on-one or in a group.

**Marital counseling and family therapy.** This type of therapy can help loved ones cope with the stress of living with someone who has ADHD and learn what they can do to help. Such counseling can improve communication and problem-solving skills.



# Coping and support

- **Support groups.** Support groups allow you to meet other people with ADHD so you can share experiences, information and coping strategies. These groups are available in person in many communities and also online.
- **Social support.** Involve your spouse, close relatives and friends in your ADHD treatment. You may feel reluctant to let people know you have ADHD, but letting others know what's going on can help them understand you better and improve your relationships.



**Colleagues, supervisors and teachers.** ADHD can make work and school a challenge. You may feel embarrassed telling your boss or your professor that you have ADHD, but most likely they'll be willing to make small accommodations to help you succeed. Ask for what you need to improve your performance at work or school, such as more in-depth explanations or more time on certain tasks.

# Famous People with ADHD

