

The National Institute of Mental Health: <https://www.nimh.nih.gov/health/publications/pandas>

PANS and PANDAS: Questions and Answers

Remove from Print

[En español](#)

What are PANS and PANDAS?

Pediatric Acute-onset Neuropsychiatric Syndrome (PANS) and Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS) are conditions that are characterized by a sudden and severe onset of obsessive-compulsive disorder (OCD) or restrictive eating disorder in children before puberty. PANS and PANDAS are also often associated with noticeable changes in mood, behavior, and sensory and motor function in children.

PANS may be triggered by various infections, immune system issues, or environmental factors. PANDAS is a subtype of PANS and is specifically associated with an infection from streptococcal (strep) bacteria—such as strep throat or scarlet fever.

For both conditions, the symptoms are usually intense, occur quickly and unexpectedly, and may come and go over time. They can include:

- Compulsions (repetitive behaviors a person feels the urge to do)
- Obsessions (uncontrollable and recurring thoughts)
- Motor and vocal tics
- Moodiness, anxiety, or unusual concern about separating from family

What causes PANS and PANDAS?

Researchers don't know the exact causes of PANS. One theory is that it is triggered by an immune response that leads to inflammation in the brain. Infections other than strep, immune system disruptions, or environmental factors may cause this reaction. When the immune system mistakenly attacks healthy brain tissue, it can lead to sudden and severe symptoms, such as obsessive-compulsive behaviors, tics, anxiety, and mood changes.

PANDAS is a specific type of PANS that is believed to be caused by a strep infection. When the immune system fights the infection, it may mistakenly attack healthy areas of the body—including the brain—which can lead to the sudden development of OCD, tics, and other symptoms of PANDAS. Researchers are still looking for the specific antibody that may cause PANDAS.

How common are PANS and PANDAS?

The exact prevalences of PANS and PANDAS are unknown, but these conditions are considered rare.

Could an adult develop PANS or PANDAS?

PANS and PANDAS typically first appear in childhood, from age 3 to puberty. It's unlikely, though possible, that an adult could develop one of these conditions. While adolescents and adults could develop a similar immune-related form of OCD, this possibility has not been thoroughly studied.

What are the symptoms of PANS and PANDAS?

PANS and PANDAS share many of the same symptoms. Children with PANS or PANDAS may experience:

- Sudden and severe onset of OCD or tic disorder
- Changes to eating, such as refusing to eat or showing highly selective eating patterns
- Changes in motor skills, such as changes in handwriting
- Joint pains

- Mood changes, such as irritability, sadness, or a tendency to laugh or cry unexpectedly and inappropriately
- Sudden onset of nighttime bed-wetting, frequent daytime urination, or both
- Sudden onset of separation anxiety
- Hyperactivity, inattention, or fidgeting
- Trouble sleeping

PANS and PANDAS are episodic disorders, meaning that symptoms may disappear for extended periods and then reappear. For example, if a child with PANDAS gets another strep infection, their symptoms may worsen. Symptoms may get increasingly severe with multiple recurrences.

How do PANS and PANDAS differ from typical OCD?

Many children with typical OCD or tics develop obsessions and compulsions over time—it may take weeks, months, or even years before OCD-like symptoms become noticeable to others.

In contrast, children with PANS or PANDAS have a very sudden onset or worsening of symptoms—with symptoms usually reaching full intensity in a few days after onset— followed by a slow, gradual improvement.

Learn more about [OCD](#).

How are PANS and PANDAS diagnosed?

Diagnosing PANS or PANDAS can be challenging. The causes of PANS are unclear and varied, and health care providers must rule out many other conditions first. Because infections, anxiety, and tic disorders are common in children, and no lab tests can confirm PANS or PANDAS, diagnosis often requires a thorough evaluation. If your child has symptoms, talk to a health care provider.

PANS is diagnosed by a health care provider using the following criteria:

- Sudden onset of OCD or severely restricted food intake
- Sudden onset of at least two other neuropsychiatric symptoms:
 - Anxiety
 - Mood changes or depression
 - Irritability, aggression, or severe oppositional behaviors
 - Loss of skills or abilities, such as loss of age-appropriate language
 - Sudden drop in school performance
 - Unusual movement or sensory issues
 - Problems with sleep, frequent urination, or bedwetting
- Symptoms are not better explained by a known medical condition

PANDAS is diagnosed by a health care provider using the following criteria:

- Presence of OCD, a tic disorder, or both
- Symptoms begin in childhood (i.e., age 3 to puberty)
- Episodic symptom severity (symptoms may disappear then reappear and increase in severity)
- History of a strep infection, such as a positive throat culture for strep or scarlet fever, within 3 months of symptom onset
- Physical hyperactivity or unusual, jerky movements that are outside the child’s control
- Sudden onset or worsening of symptoms

If symptoms have lasted over a week, a health care provider may order blood tests to see if the child has had a strep infection.

My child has had strep throat before and has tics, OCD, or both. Does that mean they have PANDAS?

No. Many children have OCD, tics, or both, and it is common for grade-school students to have two or three strep throat infections each year.

For a child to have PANDAS, there needs to be a sudden onset or worsening of OCD, tics, or both, *and* a strep infection. If a child is found to have strep around the time of episodes of OCD, tics, or both, then they may have PANDAS.

What if my child’s health care provider is unfamiliar with PANS or PANDAS?

Contact the [International OCD Foundation](#) or the [PANDAS Physicians Network](#) to find a health care provider who may be knowledgeable about PANS and PANDAS.

NIMH is a research funding agency and cannot provide medical advice or provider referrals. If you need medical advice or a second opinion, please consult your health care provider. Resources on this page are provided for informational purposes only. The list is not comprehensive and does not constitute an endorsement by NIMH.

What are the treatment options for children with PANS or PANDAS?

Treatment for PANS or PANDAS focuses on addressing the underlying cause, managing symptoms, and supporting the immune system. Children and their families can work with their health care provider to develop a comprehensive treatment plan.

The best treatment for sudden episodes of PANDAS is to treat the strep infection with antibiotics. Health care providers will order a throat culture to see if strep bacteria are present. If the throat culture is positive, antibiotics are usually prescribed to treat the strep infection and reduce PANDAS symptoms.

Children with PANS or PANDAS may benefit from cognitive behavioral therapy, selective serotonin reuptake inhibitor (SSRI) medication, or both to help manage OCD, anxiety, tics, or eating issues.

It’s important to work closely with a health care provider to manage PANS or PANDAS. If symptoms worsen, treatment adjustments may be necessary. Children and their families should consult with a health care provider before stopping or changing any medication.

What is the outlook for someone diagnosed with PANS or PANDAS?

The outlook for PANS or PANDAS varies depending on the severity of symptoms, the underlying cause, and how quickly treatment is started after symptoms begin. Some children recover fully, especially with early intervention, while others may experience recurring episodes or chronic symptoms.

Can PANS and PANDAS be treated with intravenous administration of immunoglobulins?

Research suggests that intravenous administration of immunoglobulins (IVIG) and similar treatments may improve the symptoms of PANS and PANDAS. However, these treatments can cause side effects including nausea, vomiting, headaches, and dizziness. There is also a risk of infection with IVIG and similar treatment.

Because of side effects and risks, health care providers only consider IVIG treatment for children with severe PANS or PANDAS.

Can antibiotics be used to treat PANS and PANDAS or prevent future symptoms?

Researchers at NIMH have been investigating the use of antibiotics to prevent PANDAS. However, there isn’t enough evidence to recommend the long-term use of antibiotics.

How can I find help?

If you have concerns about your or your child’s health, start by talking to a primary care provider. They can help determine the next steps and, if needed, refer you to a qualified mental health professional, such as a psychologist, psychiatrist, or clinical social worker, who can provide additional support. Find [tips for talking with a health care provider](#) about your mental health.

What are clinical trials and why are they important?

Clinical trials are research studies that look at ways to prevent, detect, or treat diseases and conditions. These studies help show whether a treatment is safe and effective in people. Some people join clinical trials to help doctors and researchers learn more about a disease and improve health care. Other people, such as those with health conditions, join to try treatments that aren't widely available.

NIMH supports clinical trials across the United States. Talk to a health care provider about clinical trials and whether one is right for you. Learn more about [participating in clinical trials](#).

For more information

Learn more about [mental health disorders and topics](#). For information about various health topics, visit the [National Library of Medicine's MedlinePlus](#) resource.

Reprints

The information in this publication is in the public domain and may be reused or copied without permission. However, you may not reuse or copy images. Please [cite the National Institute of Mental Health](#) as the source. [Read our copyright policy](#) to learn more about our guidelines for reusing NIMH content.

U.S. Department of Health and Human Services

National Institutes of Health

Revised 2025