CONDITION

Breath-holding spell

Learn what breath-holding spells look like, why they happen, how they are evaluated, and when a child needs routine or urgent medical care.

WHAT IT IS
Brief involuntary childhood breathing interruption

BODY SYSTEM
Nervous and breathing systems

MAIN SYMPTOMS
Stopped breathing, blue or pale color, limpness, brief unconsciousness

WHAT CAUSES IT
Involuntary reflex

HOW IT IS DIAGNOSED
Event history and physical examination

MAIN TREATMENT
Supportive care and iron deficiency treatment

CAN IT BE CURED?
No, most children eventually outgrow them

IS IT AN EMERGENCY?
Sometimes, if normal breathing does not resume promptly

LONG-TERM OUTLOOK
Most children outgrow spells by age 5 or 6

Overview

A breath-holding spell is a brief, involuntary event in which a child stops breathing, changes color, and may lose consciousness. The spell often follows crying, anger, fear, pain, or a minor injury.

These spells are not deliberate. A child is not choosing to hold their breath, even when an episode begins during a tantrum. The reaction involves an automatic change in breathing, heart rate, or blood flow to the brain.

Breath-holding spells usually begin between about 6 months and 2 years of age. Most children outgrow them by age 5 or 6. A first episode can be frightening because the child may turn blue or pale, become limp, or briefly stiffen. However, a typical short spell does not cause brain damage and is not the same as epilepsy.

There are two main types:

Some children have features of both types. Because fainting, seizures, heart rhythm problems, and other conditions can sometimes look similar, a child should be medically assessed when the diagnosis is uncertain or the events are not typical.

- Cyanotic spells are more common. "Cyanotic" means the skin around the mouth or face looks blue or gray because breathing has briefly stopped. These spells often follow anger, frustration, or crying.
- Pallid spells cause the child to become very pale. They are more likely to follow sudden pain, fear, or surprise and involve a reflex that briefly slows the heart rate.

Symptoms

A cyanotic spell often begins when a child becomes upset and cries. The child breathes out, stops breathing for a short time, and becomes blue around the lips or face. If the spell continues, the child may become limp and briefly lose consciousness.

A pallid spell may happen after a bump, fall, fright, or painful experience. The child may give a short cry or may not cry at all. They then become pale, lose muscle tone, and may faint.

During either type, a child can briefly stiffen or have a few jerking movements. These movements can happen when the brain receives less blood flow for a few seconds. They do not necessarily mean the child has epilepsy.

Typical spells usually:

Some children are briefly sleepy after an episode, especially if it interrupted intense crying. Prolonged drowsiness, confusion, weakness, or unusual behavior is not typical and should be discussed with a clinician.

Features that may point to another cause include episodes during sleep, events without a recognizable trigger, fainting during exercise, prolonged unresponsiveness, or repeated movements that continue after the child's color and breathing return.

- Follow a clear emotional or physical trigger
- Last less than one minute
- End without treatment
- Allow the child to return quickly to normal behavior
- Do not cause prolonged confusion afterward

Causes and risk factors

Breath-holding spells result from an involuntary reflex. The exact sequence differs between cyanotic and pallid spells.

In a cyanotic spell, strong crying changes the child's breathing pattern. After breathing out, the child does not immediately breathe in again. Oxygen levels briefly fall, which can lead to a blue color and loss of consciousness.

In a pallid spell, pain or fright triggers an exaggerated response from the vagus nerve. This nerve helps control the heart. The child's heart rate may slow for a short time, reducing blood flow to the brain and causing paleness and fainting.

Young children's nervous systems are still developing, which may help explain why the spells occur during early childhood and usually disappear with age.

Iron deficiency is associated with breath-holding spells. Iron is needed to make hemoglobin, the protein in red blood cells that carries oxygen. A child may have low iron stores before developing clear anemia, which means a low red blood cell or hemoglobin level. Some children have fewer spells after iron deficiency is treated.

A family history may also be present. Having a relative who experienced breath-holding spells does not mean that a child will necessarily develop them.

Breath-holding spells are not usually caused by poor parenting or behavioral problems. Fatigue, hunger, frustration, or sudden pain may make a trigger more likely, but they are not the underlying medical cause.

Diagnosis

Diagnosis is usually based on a detailed description of the event and a physical examination. A video recorded safely by a caregiver can be helpful because the spell may not occur during the medical visit.

The clinician may ask:

The child's growth, development, heart, nervous system, and general health may be reviewed. If the history is classic and the examination is normal, extensive testing may not be needed.

A blood count and tests of iron stores, such as ferritin, may be considered when iron deficiency is possible or spells are frequent. Ferritin is a protein that reflects the amount of stored iron, although illness or inflammation can affect the result.

An electrocardiogram, or ECG, records the heart's electrical activity. A clinician may

recommend one when pallid spells are frequent, the pattern is unusual, fainting occurs with exercise, or there is concern about a heart rhythm condition such as long QT syndrome.

An electroencephalogram, or EEG, measures electrical activity in the brain. It is not routinely needed for a typical breath-holding spell. It may be considered if the history suggests seizures, such as events without a trigger, prolonged rhythmic movements, or significant confusion afterward.

- What happened immediately before the spell
- Whether the child cried or was startled
- Whether the child became blue or pale
- How long breathing and consciousness were affected
- Whether stiffening or jerking occurred
- How quickly the child returned to normal
- Whether events happen during sleep or physical activity
- Whether there is a family history of seizures, heart rhythm disorders, fainting, or sudden unexplained death

Treatment and management

Most children do not need medicine for breath-holding spells. The main goals are to keep the child safe during an episode, identify treatable iron deficiency, and help caregivers respond consistently.

During a spell, place the child on their side on a flat, safe surface. Move nearby objects away and protect the head from injury. Loosen tight clothing around the neck and watch the child's breathing and color. If possible, note how long the event lasts.

Do not shake the child, put anything in their mouth, or try to force the mouth open. A child cannot swallow their tongue. Avoid splashing water on the face or holding the child upright, because these actions do not stop the reflex and may increase the risk of injury.

Once the spell ends, allow the child to recover. Offer calm reassurance without giving the event excessive attention. This does not mean ignoring the child's needs. It means responding to the spell in a steady way while addressing the original frustration, limit, or injury as appropriate.

Parents and caregivers may be able to reduce some triggers by maintaining regular meals and sleep, giving advance notice before transitions, and using simple choices that fit the child's

age. Normal boundaries should remain consistent. Giving in to every demand because a spell might occur can unintentionally reinforce the behavior that came before the involuntary event.

If testing shows iron deficiency, a clinician may recommend iron treatment and dietary changes. Iron supplements should be kept out of children's reach because an overdose can be dangerous. The appropriate product, amount, and length of treatment depend on the child's age, test results, diet, and medical history.

Evidence suggests iron therapy can reduce spells in some children, including some without clear anemia. A clinician should decide whether testing or treatment is appropriate rather than caregivers starting iron on their own.

Rarely, a child with severe, frequent pallid spells may be referred to a pediatric heart or nervous-system specialist. Additional treatment is considered only when the events are unusually serious or another condition is found.

Complications

Typical breath-holding spells are brief and do not cause brain damage. They do not usually affect intelligence, development, or long-term behavior. Children with typical spells are not considered to have epilepsy, although epilepsy can occur separately in any child.

The main immediate risk is injury from falling. Placing the child flat as soon as a spell begins can reduce this risk.

Frequent spells can be stressful for the child's family and other caregivers. A written plan for relatives, babysitters, and childcare staff can help everyone respond safely and consistently.

Untreated iron deficiency may affect energy, attention, and development even if it is not the only cause of the spells. This is why evaluation for low iron may be useful in some children.

Very prolonged loss of consciousness or a sustained slow heart rate is not typical. Such events need further evaluation rather than being assumed to be an ordinary breath-holding spell.

Follow up

Arrange routine follow-up if this is the child's first suspected breath-holding spell, the episodes are becoming more frequent, or caregivers are unsure whether the pattern is typical. Follow-up is also appropriate if the child has a limited diet, looks unusually pale, has low energy, or has previously had anemia or low iron.

Keep a brief record of the trigger, color change, duration, movements, and recovery. If it can be

done without delaying care or compromising safety, a video may help the clinician understand what happened.

Seek prompt medical advice if spells begin before 6 months of age, first appear after early childhood, occur without crying, pain, or fright, happen during sleep or exercise, or involve a slow or incomplete recovery.

Seek emergency help if the child:

If the child is not breathing normally and is unresponsive, call emergency services and begin age-appropriate cardiopulmonary resuscitation if trained. Emergency dispatchers can provide instructions.

- Does not resume normal breathing promptly
- Remains unresponsive or is difficult to awaken
- Has ongoing or prolonged stiffening or jerking
- Develops persistent breathing difficulty or an abnormal color after the spell
- Is seriously injured during the event
- Collapses during exercise
- Has signs of a severe allergic reaction, choking, poisoning, or another medical emergency

Sources

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