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Breath-Holding Spells

ARTICLE

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RESOURCES



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SUMMARY

Breath-holding spells are episodes in which a child cries because he is hurt, frightened, or upset, turns pale or blue, and loses consciousness. The episodes are involuntary which means that the child cannot control them. They can be triggered by pain, fear, or the child becoming upset. The episodes usually last less than one minute. They may look like a seizure, but there are no seizure discharges seen on the electroencephalogram (EEG) recording of the brain, therefore the child does not need to be treated with seizure medication. Although the episodes may be upsetting for other people to watch, they do not harm the child. Breath-holding episodes are common, occurring in 4 to 5% of children. They typically start between 6 to 18 months of age and occur in both boys and girls. The episodes usually stop by the time the child is 7 years old, although many children will cease having episodes by the time they are 4 years

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DESCRIPTION

Breath-holding episodes usually begin in children when they are 6 to 18 months of age, although they can start in the first few weeks of life. It is uncommon to have them start after 2 years of age. Breath-holding spells occur in both boys and girls, but may be slightly more common in girls. The episodes can be triggered by fear, pain, or the child becoming angry or frustrated. The child usually will start to cry and then will make no sound although he will appear to still be crying. This is different from someone who voluntarily holds his breath. When someone voluntarily holds his breath, he will take a big breath and hold it. With breath-holding spells the child cries and is exhaling or breathing out, not inhaling or breathing in. There are two types of breath-holding spells. The episodes are divided by the color change that the child experiences during the event. There are pallid episodes in which the child becomes pale and cyanotic episodes in which the child will turn blue, especially around the lips. The cyanotic episodes are more common than the pallid episodes. In some instances, there are features of both cyanosis and pallor and they are termed mixed episodes. Cyanotic episodes are usually triggered by the child becoming frustrated or angry. The child will typically cry vigorously, but for less than 15 seconds. Then the child becomes silent, stops breathing, and rapidly turns blue. Usually there is loss of consciousness and the child will be limp; often the child will seem to stiffen and arch his back. The child usually recovers in less than one minute. He may gasp and then have a return of regular breathing. He will regain consciousness and return to normal although he may seem to be tired. Rarely will the child still be upset and cry again, triggering another episode. The pallid episodes are often triggered by sudden fright or pain. Falling with a minor injury to the head is frequently the triggering event. For example, a child will be running and fall backwards hitting his head; this can cause an episode. The injury to the head is not what causes the event. It is the unexpected pain that causes the episode. The child may gasp and give a very brief cry. Sometimes the child does not even give a cry, but only opens his mouth like he is going to cry but makes no sound. If the child does cry, it is for a few seconds and then he abruptly stops crying, become pale, loses consciousness, and becomes limp. The child looks like he has fainted. Sometimes he will also appear to turn slightly blue. The child may become sweaty and sometimes may stiffen and have a few body jerks or lose bladder control. These episodes also last less than one minute. The child regains consciousness and will recognize people but can seem sleepy for several hours after an episode.

Table 1

Two types of breath-holding spells	
Pallid: child turns a pale color	Cyanotic: child turns a blue color, especially around the lips
Characteristics include: <ul style="list-style-type: none"> ▪ Triggered by sudden fright or pain or falling with a minor injury to the head ▪ Child may gasp and give a brief cry ▪ Child becomes pale, loses consciousness and becomes limp ▪ Child may become sweaty and may stiffen and have a few body jerks or lose bladder control ▪ Episodes are brief and last less than one minute ▪ Child regains consciousness and will recognize people but can seem sleepy 	Characteristics include: <ul style="list-style-type: none"> ▪ Triggered by becoming frustrated or angry ▪ The child may cry vigorously, usually less than 15 seconds ▪ After crying, the child becomes silent, stops breathing, and rapidly turns blue ▪ The child usually loses consciousness, goes limp, or stiffens and arches his back ▪ Recovery happens in less than one minute ▪ May gasp and return to regular breathing ▪ Regain consciousness and returns to normal ▪ May seem tired ▪ It is rare for the child to be upset and cry again triggering another episode

The stiffening and jerking movements have been called reflex anoxic seizures. These are not epileptic seizures, but are seizure-like movements that result from the child having a decrease in heart rate and blood pressure which in turn decreases blood flow to the brain. When there is not enough blood going to the brain, the deep part of the brain or brainstem triggers the reflexive stiffening and jerking. Breath-holding spells vary in how frequently they occur and may happen several times per day or only once per year. When a child first starts to have episodes they may occur weeks or months apart, but then increase in frequency. The majority of children with breath-holding spells have 1 to 6 episodes per week. Although breath-holding spells are frightening to watch, the child is not harmed by them and they do not cause any brain damage or result in epilepsy. It is extremely rare for a child to die from a breath-holding spell. The few cases of death have mainly been related to an underlying medical condition, such as a heart or lung problem.

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PHYSICAL ABNORMALITIES

Breath-holding spells usually occur in children who are developmentally normal. They do not have abnormalities in their hearts or brains that cause them to have the events.

CAUSATION

Breath-holding spells are caused by sudden fright, injury, or emotional upset. Even though some breath-holding spells are triggered by the child becoming angry, this does not mean breath-holding spells represent a behavior problem. They are not controlled by the child. The emotional upset triggers a reflexive response in the child which changes breathing, heart rate, and blood pressure causing the child to lose consciousness. There have been many studies that have documented biologic changes that occur with the episode, proving the episodes are not a behavior problem. The child does not think, "I am going to hold my breath and pass out." The pain or frustration causes the heart rate and

blood pressure to change and triggers the loss of consciousness. Anemia, or a low blood count, may cause a child who has breath-holding spells to have more frequent episodes, but anemia is not the cause for the episodes. Most children with breath-holding spells are otherwise healthy. Genetic factors seem to play a role in a child having breath-holding spells. Sometimes other family members, parents, or brothers and sisters may have had breath-holding episodes or fainting episodes.

LABORATORY INVESTIGATIONS

Most of the time the child's doctor will not need to order any tests to make the diagnosis of breath-holding. The diagnosis is made by the description of the episodes. The doctor will want to know the preceding events and what the child did during the episode. If an episode can be recorded on video for the doctor to review, this often can be helpful in making the diagnosis. Timing the event is also helpful since the episodes may seem to last much longer than they actually do. Neuroimaging studies, such as computer tomography (CT) and magnetic resonance imaging (MRI) of the head, are normal in children with breath-holding spells and are not necessary. An electroencephalography (EEG) is usually also not needed. Although the child may look like he has had a seizure, when EEG's have been done in children during the episodes no seizure discharges are seen. If the child has an episode of shaking that lasts for more than two minutes, an EEG may be ordered because the child may be having a seizure triggered by the breath-holding spells. This is very rare and most of the jerks that can be witnessed with breath-holding are not seizures. The doctor may order a blood test to check for anemia since treating anemia may reduce the frequency of breath-holding spells. An electrocardiogram (EKG) may be ordered if the symptoms are not consistent with a typical breath-holding episode.

Timing the event is also helpful since the episodes may seem to last much longer than they actually do.

THERAPEUTIC INTERVENTION

There is no treatment intervention that is needed when a child is having a breath-holding spell. The natural tendency is to pick the child up, but holding the child upright may actually prolong the event. Just as with fainting, keeping the head down restores blood flow to the brain. The child should be left lying down and placed on his side. CPR does not need to be performed because the child will start to breath and respond within a minute. In the very rare event that the child does not breath after 3 minutes, then CPR should be started. Treating with seizure medication does not prevent a child from having breath-holding spells. The medications also have potential side effects; therefore they should not be given in a child with breath-holding spells. Other medications have been studied for treatment of breath-holding spells, but they are rarely prescribed by physicians. Medications are not often used because breath-holding is usually not considered serious and do not justify giving a child daily medication. The medication that is used most frequently to decrease breath-holding spells is iron. A physician may prescribe iron even if the child does not have anemia since it may still decrease the episode frequency. Although anger and frustration can sometimes precipitate breath-holding spells, parents should not alter customary discipline for fear of precipitating an episode. The episodes are not behavioral, but if the child learns that when he starts crying

he gets his way, he may develop behavior problems. If the caregivers give excessive attention to the child after a breath-holding spell, this may reinforce the behaviors that led to the episode. **It can be stressful to be the parent of a child with breath-holding spells.** Working with a professional therapist or counselor may help with learning parenting techniques and dealing with the stress of the child's breath-holding episodes.

PROGNOSIS

Breath-holding spells are not harmful and do not result in brain damage. They do not affect the child's development or have any long-term effect on his life. They can be frightening for the family to observe and they may alter the way the family disciplines the child. Although the child is not having the breath-holding spells due to a behavior problem, the child can develop a behavior problem if the family starts to alter their customary discipline to try to keep the child from becoming upset and having breath-holding episodes. Breath-holding spells generally start to decrease in frequency by the second year of life. By 4 years of age, 50% of children will no longer have episodes. Almost all children will have stopped having episodes by 7 to 8 years of age. Some children who have had breath-holding episodes will have fainting episodes later in life.

PREVENTION

Since breath-holding episodes are triggered by pain or frustration, it is difficult to prevent them in children who are susceptible to them since all children experience pain and frustration. If the parents try to keep the child from becoming frustrated, the child begins to realize that when he wants something and he starts to cry, his parents will quickly yield to his desires in their attempt to prevent the episodes. Since the episodes do not result in any long-term problems, parents should try to minimize the attention they give to the episodes to keep the child from developing behavior problems.

CARETAKER AUGMENTATION

Most parents and caretakers can learn to easily handle the episodes by talking to their pediatrician. The caretaker may also benefit by working with a therapist if the breath-holding episodes are creating stress and difficulty with parenting the child. The therapist can help the parents cope with the stress and also teach them discipline techniques. There are online support groups for caretakers of children with breath-holding spells. The family pediatrician may also be able to put a family who would like some support in contact with another family experienced with breath-holding spells who has agreed to provide help.

GLOSSARY/DEFINITIONS

Anoxic – Condition characterized by having a decreased amount of oxygen in the organs and tissues.

Brainstem – Area at the base of the brain that has the control centers for vital body functions, such as swallowing, breathing, heartbeat, and blood pressure.

CT – Abbreviation for computed tomography. This is a specialized study that uses x-rays to study the deep structures of the body.

Cyanotic – Bluish or purplish discoloration of the skin due to deficient oxygen in the blood.

EEG – Abbreviation for electroencephalogram. This is a study to measure the electrical activity of the brain. It can help diagnosis seizures.

MRI – Abbreviation for magnetic resonance imaging. This is a test that uses a magnetic field and pulses of radio wave energy to make pictures of organs and structures inside the body.

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