Children's Hospital of Richmond at VCU

What is pediatric vasovagal syncope?

Syncope is a transient or temporary loss of consciousness that occurs due to a sudden drop in blood pressure and / or a decrease in heart rate. Vasovagal syncope, also known as neurocardiogenic syncope, simple faint, falling out, loss of consciousness or light headedness, is the most common type of syncope in children. It results when the bodies normal nervous system reacts to certain triggers, leading to a reflex response that causes the heart to slow down, the blood vessels to dilate and the blood pressure decreases.

While these episodes can be alarming and frightening to the patient and bystander, they are generally not a cause for serious concern. Most children with this condition grow out of it as they get older. However, it is still important to understand the causes, recognize the symptoms, and seek appropriate treatment.

Physical triggers are one of the common causes for these syncopal episodes in children. These triggers can include change in position (lying to standing), prolonged standing, blood draws or shots, combing hair, stretching, using the bathroom, laughing or immediately after physical activity.

Recognizing the symptoms of vasovagal syncope is crucial for early intervention and appropriate management. Common symptoms include lightheadedness, dizziness, nausea, giddiness, weakness, fatigue, confusion, racing heart rate, visual changes (blurry vision or loss of vision), feeling of warmth and flushing while being pale and cool to the touch poor concentration, and confusion.

If a child experiences a syncope episode, it is important to ensure their safety and provide immediate care. This may involve helping the child lie down in a safe position to prevent injury, loosening any tight clothing and drinking something.

While most cases of vasovagal syncope in children do not require medical treatment, it is still important to consult with a healthcare professional for proper evaluation and guidance. The healthcare provider may recommend lifestyle modifications, such as increasing fluid and salt intake, and decreasing caffeine intake to help prevent syncope episodes. In some cases, medication or other interventions may be necessary to manage the condition.

The treatment consists of taking oral rehydration solution, reducing stress, practicing meditation, and increasing salt intake in the diet.

Common symptoms:

- Pale skin
- Lightheadedness
- Tunnel vision — field of vision narrows so that you see only what's in front of you
- Nausea
- Feeling warm
- A cold, clammy sweat
- Blurred vision
- Ringing or buzzing in the ears

Environmental triggers

Vasovagal syncope can be triggered by various environmental factors. It is important for parents and caregivers to be aware of these triggers and take necessary precautions to minimize their child's exposure to them.

Prolonged standing is a common trigger for vasovagal syncope. When a child stands for an extended period, blood can pool in the lower extremities, leading to a drop in blood pressure and a subsequent fainting episode. Encouraging children to take breaks and sit down when they feel lightheaded or dizzy can help prevent syncope.

Sudden changes in body position can also trigger vasovagal syncope. For example, quickly standing up from a lying or sitting position can cause a sudden drop in blood pressure, leading to fainting. Teaching children to change positions slowly and gradually can help prevent syncope episodes.

Heat exposure and dehydration can also contribute to the development of vasovagal syncope. When the body becomes overheated or dehydrated, blood vessels can dilate, causing a drop in blood pressure. This can increase the likelihood of fainting. Ensuring that children stay hydrated and avoid excessive heat can help reduce the risk of syncope.

Pain can trigger vasovagal syncope as well. Experiencing pain can activate the body's stress response, leading to changes in blood pressure and heart rate. Managing stress and providing emotional support to children can help minimize the occurrence of syncope.

Lastly, the sight of blood or needles can also trigger vasovagal syncope in some children. This is known as a vasovagal response and is thought to be a protective mechanism. The body's response to the sight of blood or needles is to decrease blood pressure and heart rate, which can result in fainting. Understanding and addressing any fears or anxieties related to blood or medical procedures can help prevent syncope episodes.

In conclusion, pediatric vasovagal syncope can have both biological and environmental causes. Understanding these factors and taking appropriate measures to manage them can help reduce the frequency and severity of syncope episodes in children.

Recognizing the symptoms of pediatric vasovagal syncope

Pediatric vasovagal syncope is a condition that can cause a temporary loss of consciousness in children. It occurs when there is a sudden drop-in heart rate and blood pressure, leading to a decrease in blood flow to the brain. While the symptoms of pediatric vasovagal syncope can vary from child to child, there are some common physical, emotional, and behavioral indicators to look out for.

Physical symptoms

The physical symptoms of pediatric vasovagal syncope can be alarming for both the child experiencing them and their caregivers. Dizziness and lightheadedness are often the first signs that something is not right. A child may feel as if the room is spinning or that they are about to faint. Nausea is another common symptom, which can be accompanied by a feeling of uneasiness in the stomach.

One noticeable physical indicator of pediatric vasovagal syncope is pallor, or paleness of the skin. The child's face may become noticeably pale, and their lips may lose their usual color. Sweating is also a common symptom, as the body tries to regulate its temperature during the episode. It is not uncommon for a child to have cold and clammy skin during an episode of syncope.

Another physical symptom to watch out for is a slow pulse. The child's heart rate may decrease significantly during an episode, which can be detected by checking their pulse. Prior to losing consciousness, a child may also experience warning signs such as blurred vision, tunnel vision, or a sudden feeling of warmth throughout their body.

The diagnostic process for pediatric vasovagal syncope

Physical examinations and tests

Following the medical history evaluation, a healthcare provider will perform a physical examination to rule out any underlying medical conditions that may be causing the syncope. This examination may include a review of vital signs, a neurological and cardiac assessment, and various tests such as an electrocardiogram (ECG). These tests help evaluate the heart's electrical activity and providing valuable insights into the potential causes of syncope.

During the physical examination, the healthcare provider will carefully assess the child's blood pressure, heart rate, and respiratory rate. They will also examine the child's skin for any signs of dehydration or other abnormalities. A neurological assessment may involve testing the child's reflexes, coordination, and sensory responses to ensure there are no underlying neurological issues contributing to the syncope.

The electrocardiogram (ECG) is a non-invasive test that records the electrical activity of the heart. It can help detect any irregularities in the heart's rhythm or conduction system that may be causing the syncope episodes

Treatment options for pediatric vasovagal syncope

While there is currently no cure for pediatric vasovagal syncope, there are various treatment options available to help manage the condition and prevent future episodes. It is important to note that the effectiveness of these treatments can vary from child to child, and a healthcare provider will need to determine the most appropriate course of action based on the individual's specific circumstances. In addition, your provider is "on your team." How you or your child react to these changes can very from day to day and it is very important that you maintain contact with your provider if symptoms worsen.

Lifestyle changes and home remedies

In many cases, lifestyle modifications and home remedies can significantly reduce the frequency and severity of pediatric vasovagal syncope episodes. These may include maintaining good hydration by drinking plenty of fluids, avoiding triggers whenever possible, practicing stress-reduction techniques, ensuring regular and balanced meals, and getting enough sleep. It is advisable for parents to educate themselves and their child about triggers and implement strategies to mitigate their impact.

For example, encouraging the child to drink water throughout the day can help prevent dehydration, which is a common trigger for vasovagal syncope. Additionally, identifying specific triggers, such as standing for long periods or exposure to heat, and taking steps to avoid or minimize these situations can be helpful. This may involve making adjustments to the child's daily routine or environment, such as using a fan or air conditioning to keep the temperature cool.

Furthermore, teaching the child stress-reduction techniques, such as deep breathing exercises or mindfulness practices, can assist in managing anxiety and reducing the likelihood of syncope episodes. Creating a calm and supportive environment at home can also contribute to the overall well-being of the child and help them cope with the challenges associated with vasovagal syncope.

Treatment plan:

Anytime you experience the symptoms, this is a signal from your body that you are about to have an episode. If you feel these symptoms, the best cure is for you to lay down and elevate your feet if possible. Stay in this position until your symptoms have completely resolved. Try and drink a glass of water prior to getting up. If you stand up too quickly, your symptoms will recur and my be worse.

You should try and avoid situation where you know your symptoms are worse. If they occur with sudden changes in position, from laying to standing, then sit up slowly, have a stress ball in your hand, swing your legs over the side of the bed, drink some water and eat something healthy and salty.

Mainting hydration is the most important part of treatment. Increasing your non-caffeinated fluid intake to 8–10, 12 oz glasses of water spaced throughout the day can eliminate many symptoms. In addition, we recommend increasing the amount of healthy salt in you diet is also helpful.

Please feel free to call or message us through MyChart if you have any questions or concerns.