SYNCOPE

MultiCare Pulse™ Heart Institute

What is syncope?

Syncope, commonly known as fainting, refers to a sudden loss of consciousness followed by a rapid and complete recovery. If you have symptoms of dizziness or lightheadedness without loss of consciousness, this is often called pre-syncope or near-syncope, but these symptoms may also be due to conditions unrelated to syncope.

In most cases, syncope is not a sign of a life-threatening problem, although some people with syncope have a serious underlying medical condition. Potential for injury is a concern as well especially with the elderly. Because of this concern and the potential for an underlying problem, any person who has a syncopal episode, should seek immediate medical attention.

Causes

To remain conscious, a supply of oxygen-rich blood must be pumped to the brain without interruption. If the brain is deprived of this blood supply, even briefly, loss of consciousness will occur. Several medical conditions can cause syncope:

- ***Vasovagal syncope:*** The heart rate may slow dramatically at the time of the faint, and the blood vessels in the body expand, causing blood to pool in the lower extremities and the bowels, resulting in less blood return to the heart and a low blood pressure. This causes a decrease in blood blow to the brain. Conditions that may trigger vasovagal syncope include physical or psychological stress, dehydration, bleeding or pain. In some cases, no trigger can be identified.
- ***Heart rhythm problems:***

  a) Sinus bradycardia: bradycardia is a slower than normal heart rate. This can decrease the output of blood, thereby reducing the blood supply to the brain by reducing the amount of blood the heart can pump per minute

  b) Sinus node dysfunction: Sometimes there can be an abnormality in the sinus node itself. For syncope to result from this, the heart has to stop for 6-10 seconds. This is known as asystole.

  c) Heart block: Sometimes the part of the conduction system between the atria and the ventricles becomes disrupted preventing flow of the electrical impulse to the ventricles. If this happens the heart rate will be too slow, impairing blood flow to the brain.

  d) Ventricular Tachycardia (VT): Tachycardia is a fast heart rate. VT occurs when the ventricles send out their own rapid electrical impulses, taking over the heart's normal rhythm. The resulting heartbeat is abnormally fast and fails to pump blood out of the heart sufficiently. The heart is beating but does not pump effectively so blood flow to the brain is decreased.

  e) Supraventricular Tachycardia (SVT): This is a rapid heartbeat that originates above the ventricles. This is not commonly associated with syncope but can be if the heart rate is very rapid.

- ***Blockage of blood flow from the heart:*** Any problem with the structure of the heart that interferes with the flow of blood can cause syncope. The two most common causes are hypertrophic cardiomyopathy and aortic stenosis.
- ***Orthostatic hypotension:*** refers to a low blood pressure that occurs when a person stands or sits up. An excessive amount of blood is displaced from the upper to lower part of the body, causing an inadequate amount of blood flow to the brain. Causes include blood or fluid loss, medications, illnesses that affect the nervous system, alcohol, carotid sinus hypersensitivity

Diagnosis:

- Medical history: your doctor will gather as much information about your syncopal episode to gain clues about the cause
- Electrocardiogram (ECG) and heart rhythm monitoring (Holter monitor or event monitor) to identify any abnormal heart rhythms
- Blood pressure monitoring
- Echocardiogram-helps to identify any underlying structural problems
- Tilt table test: Your response to changes in position can help determine the cause of your syncope
- Electrophysiology Study: may be done if you have heart disease or a heart rhythm problem is suspected

Treatment: is based on the underlying cause. The goal is to prevent recurrences

Vasovagal syncope: take precautions to avoid triggers and minimize potential risk of harm. For example, if you feel faint while having blood drawn, lie down during the procedure.

Counter-pressure maneuvers: may stop a vasovagal syncope episode

– Leg crossing while tensing the leg, abdominal and buttock muscles

– Hand gripping: gripping a rubber ball or similar object as hard as possible

– Arm tensing: gripping one hand with the other while moving both arms away from the body

Medications: Syncope caused by heart rhythm problems may be treated with medication. People with orthostatic hypotension may also be prescribed medications such as fludrocortisone, which is used to increase blood volume, or midodrine which constricts the blood vessels.

Pacemakers: A pacemaker is a small device implanted under the skin below the collarbone that helps regulate the heartbeat in patients that have too slow of a heartbeat. They are implanted for patients with syncope caused by sinus bradycardia, sinus node dysfunction and heart block.

Implantable Cardioverter Defibrillator (ICD): An ICD is a device implanted in a similar procedure to a pacemaker but can shock the heart in the event of a life-threatening arrhythmia. An ICD is used for patients that have syncope from ventricular arrhythmias such as ventricular tachycardia.