

CHRONIC ORTHOSTATIC INTOLERANCE

What is orthostatic intolerance?

Orthostatic intolerance describes several conditions that are worsened by standing. In particular, neutrally mediated hypotension (NMH) and postural tachycardia syndrome (POTS) are two of the most common forms of orthostatic intolerance.

What is neutrally mediated hypotension (NMH)?

NMH is characterized by a significant drop in blood pressure while standing. While most people with this condition do not have abnormal blood pressures, it can be more common in people with low blood pressure, or hypotension. NMH occurs when too little blood is circulated to the heart when standing, which leads to low pressure.

What are symptoms of NMH?

While symptoms may vary, there are a few common symptoms that those with NMH may experience when standing.

- Lightheadedness or a “head rush”
- Dimming of vision and sounds
- Nausea or vomiting
- Fainting
- Chronic fatigue
- Muscle aches
- Mental confusion (difficulty concentrating, remembering or speaking)

What is postural tachycardia syndrome (POTS)?

POTS refers to a significant increase in heart rate while standing. While it's typical for heart rate to increase mildly when standing (about 10 or 15 beats per minute), someone with POTS may experience an exaggerated increase in heart rate. The increase can vary but is typically about 30 beats per minute for adults and 40 beats per minute for adolescents but can also be present in individuals whose heart rate is above 120 beats per minute within 10 minutes of standing.

What are symptoms of POTS?

While symptoms may vary, there are a few common symptoms that those with POTS may experience when standing.

- Fast heart rate
- Palpitations (vigorous or skipped heart beats)
- Lightheadedness
- Intolerance of exercise
- Fatigue
- Visual blurring
- Weakness
- Imbalance
- Headaches
- Shakiness
- Clamminess
- Anxiety
- Shortness of breath
- Mental confusion (difficulty concentrating, remembering or speaking)

Why does standing cause NMH and POTS?

In healthy individuals, the body releases adrenaline when standing to make up for the blood that has gone to the legs, arms and abdomen, since less blood reaches the brain and heart when standing. Those with NMH or POTS may have more blood in the lower extremities when standing, especially when standing for long periods, so excess adrenaline is released; however, blood vessels may not respond to the adrenaline like that of a healthy individual. Because of this, heart rate often increases, and blood pressure can drop in response to the excess adrenaline produced.

NMH and POTS can also occur with prolonged standing, warm environments, immediately after exercise, after emotionally stressful events, after eating and when fluid and salt intake are inadequate.

How are NMH and POTS diagnosed?

The most common ways to diagnose NMH and POTS are standing tests or tilt table tests, where a doctor takes vitals while you are tilted securely on a table. POTS testing usually takes about 10 minutes, but because NMH is common with prolonged standing, testing is longer, usually about 45 minutes.

What causes NMH and POTS?

While it isn't clear exactly what causes NMH and POTS, researchers believe that genetics, environmental factors and illness or physical trauma are common factors affecting diagnosis.

What are treatment options?

Treatment plans for NMH and POTS are highly-specific to the patient, since multiple factors determine diagnosis; however, here are a few of the most common treatment options.

- Avoid conditions that cause symptoms, such as prolonged sitting and standing, warm environments and some medications. Caffeine and alcohol can also bring on symptoms in some patients, so it is sometimes recommended to reduce intake.
- Specific postures and exercises may help restore proper blood flow, though they may need work for everyone. These include standing with legs crossed, squatting, standing with a leg on a chair, bending from the waist, sitting in a knee-to-chest position, sitting in a low chair and leaning forward with hands on knees when sitting. Wearing compression clothing can also help symptoms.
- Treating other conditions that contribute to symptoms is necessary for treatment. These can be conditions such as allergies and asthma, endometriosis, sinusitis, anxiety disorders, depression, migraine headache, infections and food allergies or hypersensitivity.
- Increasing salt and fluid intake can help reduce NMH and POTS symptoms. Drinking enough water and adequate salt consumption will help make sure the blood vessels work properly. At least two liters of fluid are recommended daily.
- Physical therapy and exercise, for those are able, is important to maintaining fitness levels and decrease symptoms. Increasing exercise gradually is key to ensuring that symptoms do not interfere with physical activity. Activities like walking, water jogging, stretching, yoga and Tai Chi are good starting points for introducing exercise into a routine.
- Medication is sometimes needed if previous treatments do not decrease symptoms. The medications typically prescribed are those that improve blood flow, increase kidney functions or adjust the body's response to adrenaline.

While there is no cure for NMH or POTS, with a proper treatment plan, symptoms can be controlled and allow for greater physical activity.

If you have any questions or concerns, please call our office at 615.467.4636.



James N. Johnson, MD, FAAFP, CAQSM

28 White Bridge Pike ■ Suite 207 ■ Nashville, Tennessee 37205 ■ 615.467.4636 ■ www.OurAdvancedSportsMedicine.com
Board-Certified, Family Medicine ■ Board-Certified, Sports Medicine ■ Certified ImPACT Concussion Consultant