

# Dance / USA

## Task Force on Dancer Health

### **Postural Orthostatic Tachycardia Syndrome (POTS)**

Postural Orthostatic Tachycardia Syndrome (POTS) is a condition that affects how a person's body controls blood flow and heart rate. "Postural" has to do with posture, or body position. "Orthostatic" means it happens when you stand up. "Tachycardia" refers to a fast heart rate. Therefore, POTS is a condition where your heart beats too fast when you stand up or change body positions.

Normally when someone stands up, the body adjusts so that blood flows properly to the brain and other parts of the body. In people with POTS, this doesn't happen the right way. Their hearts beat much faster than normal to try to keep up. This can cause them to feel lightheaded, dizzy, shaky, have blurred vision, or faint. They may also feel short of breath, have chest pain, nausea, or a headache. These symptoms are brought on by standing and get better with sitting or lying down. Symptoms may be worse with standing still, during early morning, in hot weather, during illness, and during menstruation for females.

POTS can affect anyone, but is more common in teenagers and young adults, especially females. It is also seen in people who have hypermobility spectrum disorders or hypermobile Ehlers-Danlos syndrome, which is more common in the dancer population.

POTS is diagnosed by a medical doctor, usually specializing in Cardiology, Sports Medicine, or Neurology. There is no single test to diagnose POTS, but doctors will check heart rate and blood pressure when you lie down and then again when you stand up. They are measuring the change in heart rate and monitoring symptoms, as there are certain criteria that must be met.

POTS is first managed with lifestyle changes. This includes increasing both fluid and salt intake. Aside from drinking more water, doctors may recommend electrolyte packets, salt tablets, or sports beverages. Certain positions may be helpful to improve symptoms, such as shifting weight when standing, crossing your legs, or tensing up the muscles in the legs. Compression stockings and/or abdominal binders can be used to help improve blood flow back to the heart. An abdominal binder is easy to put on and take off, so this is something that dancers may find helpful for class, rehearsal, and/or performances. Anxiety symptoms are also common in POTS, and dancers may find mental health counseling helpful in managing their symptoms.

Exercise is very important for managing POTS symptoms. Cardiovascular training and strength training are the two most important types of exercise to assist with managing POTS symptoms.

The muscles in the legs are the largest in the body and create a muscle pump to push blood back up toward the brain. Training these muscles can be extremely effective at minimizing the lightheaded feeling that can occur when going from a lying or sitting position to a standing position. The abdominal and core muscles (abdominals, diaphragm, pelvic floor muscles and spinal stabilizers) are also important muscles to train so they are able to contract and relax efficiently. These also help to control blood flow from the upper to the lower body and can also assist with pumping blood back up toward the brain. The core muscles also assist with balance and help to maintain an upright posture.

When performing strength training exercises, safety is extremely important. Start initially with no resistance, in a position that does not produce symptoms of POTS, and progress slowly. Generally, the progression would be exercises lying down/on the floor, seated exercises, standing exercises, then adding increased weight or resistance. Pilates-based exercises are often a good starting point since many of these can be done on a mat and are focused on the core and lower body muscles.

Cardiovascular training is also important for helping to improve the strength of the circulatory system and improve the body's ability to adapt to changes in blood pressure and heart rate without resulting in symptoms of POTS. Dancers generally require more interval-based cardiovascular training (periods of high intensity followed by periods of lower intensity in the same session), but for dancers with POTS, it is also important to train in a steady state of cardiovascular work. Just like with strength training, it is important to begin in a position that does not produce symptoms. Generally, seated cardiovascular exercise is a good place to start (for example, the recumbent bike), followed by more training in the standing position. Gradual progression is important to prevent extreme fatigue or symptoms during the day or two following training. A generalized recommendation would be to begin with 20 minutes of steady state cardiovascular training at an intensity where you could say one sentence out loud without being out of breath. This could be done 3 days a week as long as no symptoms are produced immediately or in the 24-48 hours following a cardiovascular training session. If there are symptoms or an increase in symptoms following a cardiovascular exercise session, adjustments should be made by either decreasing the time by 2-5 minutes or decreasing the intensity level slightly during the next training session.

When lifestyle changes and exercise are not enough to manage POTS symptoms, sometimes physicians need to add medications. This is individualized and depends on the patient's age, other medical diagnoses, and physical demands.

POTS may cause dancers to feel very tired during or after classes and rehearsals, and require longer recovery periods. Symptoms may get worse with turning or bending forward, such as during barre or during intense choreography. It can be helpful to discuss this diagnosis with dance teachers, artistic staff, etc., and let the team know that dancing is possible! It may be helpful to come early to class or rehearsal to warm up, and modifications may be needed for certain choreography.

Dancers can continue to dance with a POTS diagnosis. Lifestyle changes, physical therapy, and exercise management are key to treatment, and may include medications if symptoms persist. Communication among the dancer (and parent if applicable), healthcare providers, and dance teachers/artistic staff is essential to dancing successfully with POTS.

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*Disclaimer: The information on Postural Orthostatic Tachycardia Syndrome (POTS) contained in this paper is intended to help guide and inform the dancer. It is not meant to take the place of the advice of a medical professional. This information is provided by Dance/USA Task Force on Dancer Health.*

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