

Postural Orthostatic Tachycardia Syndrome (POTS) Management

Category: 2 Symptom

What is POTS?

POTS stands for **postural orthostatic tachycardia syndrome**. It is a fast heart rate (tachycardia) that happens when you stand up. POTS is a possible symptom of Long COVID, experienced by about 30% of people with Long COVID.

POTS is defined by a sustained heart rate increase of 30 beats per minute or more, or a heart rate increase above 120 beats per minute at any time within the first 10 minutes of going from lying down to standing.



What are the symptoms of POTS?

Symptoms can include lightheadedness, brain fog, palpitations, breathlessness, and other symptoms when upright. These symptoms typically improve somewhat when lying down.

POTS symptoms can fluctuate over time, change throughout the day, and are often worse in the morning and on days with more Long COVID symptoms.

There is also a great deal of variability in the types of symptoms that are most troubling and how much they impact function from person to person. For example, some people have a lot of blood pooling in their legs



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while others do not. Some people have very mild symptoms and for others the symptoms can be severe and debilitating.

What causes POTS?

POTS is a form of dysautonomia, which is a disorder of autonomic nervous system function that can put different body systems out of balance. Viral infections, like COVID-19, can trigger this condition.

In most patients with POTS, the heart function is completely normal, and the symptoms may be caused by a lower amount of blood in circulation (low blood volume), blood pooling in the blood vessels below the heart (legs and belly), and/or changes in the chemistry of the body (for example, different levels of adrenaline or cortisol).

How to test for POTS at home

You can do a 10-minute standing test to see if you have POTS. Research evidence shows that this test may help diagnose POTS in people with Long COVID (see the Canadian Guidelines for Post-COVID Condition [recommendations](#) for more information).

1. **Lie down flat for at least 5 minutes** (first thing in the morning before getting out of bed works well).
2. **Take your heart rate.** You can use a heart rate monitor if you have one, or you can measure by taking your pulse at your wrist.
3. **Then stand up (at the side of the bed) and measure your heart rate over the course of 10 minutes** (while standing quietly, not moving around). If you have a heart rate monitor you can measure this continuously. You can also measure by taking your pulse at your wrist at the 0, 1, 3, 5, and 10 minute marks while standing.
4. **Note any increased symptoms during the test.** If you feel very symptomatic, including dizziness or feeling faint, please stop the test and lie back down immediately until you feel better. Follow up with a doctor to discuss your symptoms.
5. **Note any significant changes in your heart rate.** If your heart rate went up by 30 beats per minute or more or it went over 120 beats per minute while standing up during the test, take your results to a doctor to review and investigate as appropriate. If you are experiencing symptoms of POTS without meeting this heart rate threshold, you may still benefit from talking to a primary care provider.

Self-management strategies for POTS

Here are some strategies you can try to manage your POTS symptoms. The list below includes strategies most commonly suggested for POTS, and then includes strategies that help address Long COVID symptoms in

general. There is no specific order in which you need to try these strategies, but some people may benefit from (or require) reviewing the strategies with a doctor or other primary care provider (these are indicated in the strategies below).

Drink more water and eat more salt.

Increasing your water and salt intake must be reviewed with your primary care provider (doctor or nurse practitioner) before trying because it will not be safe or appropriate for everyone. If you have a history of high blood pressure or a kidney, heart, or liver condition, you should talk to a doctor before increasing your water and salt intake. Talk to a doctor if you develop leg swelling or gain weight after increasing salt and water intake.

If approved by a primary care provider, aim for 3 litres (10 to 12 cups) of water and 9 to 10 grams of salt per day.

- 1 level teaspoon of salt = approximately 6 grams.
- Take one half of a level teaspoon of salt mixed with water, 3 times a day. Some people find it can be helpful to do this earlier in the day.

Keep in mind that sodium in foods is not the same as salt. For this reason, we recommend following the above approach instead of checking food labels for sodium content.

If you have any concerns about your salt intake, please consult a healthcare provider.

Wear lower body compression garments.

Ideally, compression garments should cover your feet all the way up to above your belly button. The BC Complex Chronic Diseases program recommends 30 to 40 mmHg of pressure and these require a prescription.

It takes energy to put on and take off full-length compression garments, and waist-high compression can be uncomfortable, particularly if you have symptoms of stomach upset. Therefore, some people choose alternate forms of compression that can include a lower amount of prescribed compression, only thigh-high, or are not medical grade. Please speak with your primary care provider to discuss options and determine if these garments are safe and appropriate for you.

If you decide to use compression garments, make sure to clean them regularly according to instructions and to remove them when sleeping or lying down for long periods of time.

Try physical counter-pressure techniques.

These techniques compress your blood vessels by using your muscles instead of garments. Use these when you experience symptoms while sitting or standing. If you feel faint while doing the techniques, the best choice is to lie down or recline with feet elevated (for safety). Here are some examples of these techniques:

- **Leg crossing:** Cross your ankles, push the outsides of your feet together, and gently tense all of your leg muscles.
- **Heel raises:** While sitting or standing, raise both heels and go up on your toes, then back down.
- **Squeeze or tense your buttock or abdominal muscles.**

Avoid long periods of time in the upright position (sitting or standing) if these positions make your symptoms worse.

Change your position to include sitting and lying down throughout the day. You may wish to speak with a physical therapist familiar with POTS for guidance on this (see your provincial or territory Resources guide for directories of physiotherapists).

However, you should also **avoid too much bed rest**. Prolonged bed rest can **make POTS symptoms worse** and more difficult to recover. It is a fine balance. You need to gradually increase your body's tolerance to being upright (sitting or standing), but be very careful not to push yourself through symptoms.

Sleep or rest with your head positioned slightly upward as you can tolerate.

If you have a bedframe with four legs, you can place small sturdy blocks (up to 4 to 6 inches) under them at the head of the bed, only so that your head is slightly higher than your feet while sleeping. This helps to slowly train your body to get used to small amounts of gravity.

If tilting the entire bed is not an option, you can also try using pillows or a small bed wedge to prop up your upper body, although this may be somewhat less effective.

Try cooling strategies.

Heat often makes symptoms worse. If you feel too warm, try putting cold towels on your legs, taking cool showers, using ventilation/air conditioner/fans, drinking iced beverages, or sucking on ice cubes. A simple air conditioning hack is to set up a large tray of ice water in front of a fan to give yourself a cool breeze.

Use a shower chair and lukewarm water for showering.

Standing for a long time and heat can both make symptoms worse. It may be best to shower before bed if you find it tiring.

Some people find it helpful to take cooler showers or end the shower with cool water. Some people find it helpful to go back and forth between warm and cold in the shower (for example, 2 minutes warm, 30 seconds cold). Gradually build up to cold water as your body tolerates, and stop if it makes your symptoms worse.

Reorganize your home.

Place items that you use most often between your shoulder and hip height to reduce reaching and bending. Some areas of your home you may consider reorganizing are the kitchen, the bathroom, and the closet.

You may also find it helpful to use long handled aids such as a long handled shoe horn for putting on shoes, long handled loofah for bathing, or a long handled reacher to grab objects if you find that bending down often can trigger your symptoms.

Get up slowly, especially in the morning.

You may wish to use pillows or a wedge to support yourself in a reclined position as you move slowly from lying down to sitting.

Drinking a large glass of water before getting up in the morning may help. You may also wish to drink 1 to 2 glasses of water 5 to 10 minutes before any upright activity.

Eat smaller amounts of food throughout the day.

Symptoms can get worse after large meals. Aim to eat several small meals instead.

Pacing is the most important strategy in Long COVID recovery.

If you have both POTS symptoms and post-exertional malaise, symptoms of POTS will get worse with over-exertion, just as with other Long COVID symptoms such as fatigue, brain fog, etc. Therefore, pacing strategies can help you reduce the severity of POTS symptoms as well.

Exercise

Exercise is an evidence-based management strategy for POTS. **However, in people who experience both post-exertional malaise (PEM) and POTS, exercise must be done extremely cautiously to avoid worsening of**

symptoms. In these cases, it is important to find symptom stability (low to no symptoms over several days or weeks) before very carefully introducing exercise. Please work with an informed doctor or physiotherapist to ensure this type of exercise is right for you (click this [link](#) and select 'Finding Support and Getting Help' button at the bottom of the page for a list of knowledgeable physiotherapists with experience helping people with Long COVID).

Exercises for POTS typically start in a 'horizontal' position. This may include very light swimming or recumbent cycling, or gentle strengthening exercises while lying down. If you also experience post-exertional malaise, it is important that these activities fit within your energy envelope.

When to talk to a doctor or other primary care provider

Please speak with a doctor or nurse practitioner if you think you are experiencing symptoms of POTS. Medications may be used in some cases in addition to these strategies to help treat the symptoms of POTS.

There is some research evidence suggesting that ivabradine, beta-blockers (both medications used to regulate heart rate), pyridostigmine (medication used to help with muscle strength), or midodrine (medication used to help increase blood pressure) can help. Some side effects can include fatigue, drowsiness, and nausea, but research shows these effects to be small. See [Canadian Guideline for Post COVID-19 Condition guidelines for more information about these medications](#). Talk to a doctor for more information and whether medication would work for you.

Where to next?

- Review the CAN-PCC recommendations on [10-minute standing test](#) and [the use of ivabradine, beta-blockers, pyridostigmine or midodrine medication alone or in combination](#)
- You can find a list of knowledgeable physiotherapists under the 'Finding Support and Getting Help' tab in '[Trusted Resources for Patients, Families and Physicians](#)' by Long COVID Web.
- Visit www.POTSUK.org, a non-profit, UK-based website that provides lots of helpful resources for people experiencing POTS.
- Read about [the correlations between POTS and Long COVID](#).
- Visit healthexperiences.ca to learn about [how people with Long COVID have experienced different symptoms](#).