

# How to Undertake and Interpret an Active Stand Test (AST)



Australian POTS Foundation – Clinical Resource

## Purpose

The Active Stand Test (AST) is a first-line, non-invasive tool used to assess heart rate and blood pressure responses to standing. It plays a key role in the evaluation of Postural Orthostatic Tachycardia Syndrome (POTS).

## Pre-Test Preparation

- Perform the test in the morning when symptoms are often more pronounced
- Ask the patient to avoid:
  - Caffeine, nicotine and alcohol for at least 24 hours
  - Heavy meals, ideally fasted or >2 hours post-meal
  - Heart rate-blunting medications (e.g. beta blockers), if safe to pause
- Request loose, comfortable clothing
- Remove shoes and socks to observe skin colour

## Required Equipment

- Pulse oximeter for continuous heart rate monitoring
- Automated BP monitor, with manual backup available in case of hypotension
- Examination bed or table, ideally height-adjustable

## Step-by-Step Testing Protocol

1. Ensure the patient is lying supine at rest for at least 5 minutes
2. Record baseline BP and heart rate at the 5-minute mark
3. Instruct the patient to stand in one smooth movement
4. Position the patient with the bed behind them for safety in case of syncope
5. The patient must not move their feet, and should limit talking and fidgeting
6. Record BP and heart rate every minute for 10 minutes
7. Ask the patient to report any of the following:
  - a. Dizziness or light-headedness
  - b. Visual disturbance
  - c. Nausea
  - d. Headache
8. Observe for:
  - a. Tremor
  - b. Sweating
  - c. Dependent acrocyanosis (purple, red or blue discolouration in the feet/lower limbs after standing)

more overleaf →

# How to Undertake and Interpret an Active Stand Test (AST) cont'd

Diagnostic Criteria Summary Table

CONDITION	HEART RATE	BLOOD PRESSURE	OTHER FEATURES
POTS	Sustained rise of >30 bpm (>40 bpm in adolescents) within 10 minutes of standing or absolute HR >120 bpm	No drop >20 mmHg systolic or >10 mmHg diastolic within 3 minutes	Chronic, unexplained symptoms >3 months
ORTHOSTATIC HYPOTENSION (OH)	No HR criteria	Sustained drop of >20 mmHg systolic or >10 mmHg diastolic within first 3 minutes	May cause dizziness, fatigue, or syncope
VASOVAGAL SYNCOPE (VVS)	May include sudden bradycardia	Sudden drop in BP often associated with fainting	Often triggered by stress or standing
INAPPROPRIATE SINUS TACHYCARDIA (IST)	Resting supine HR > 100 bpm	Normal BP	Persistent tachycardia, often not position-related

## Interpreting Results

- Use the resting HR as a baseline
  - If supine HR <60 bpm, calculate the rise from 60 bpm
    - Example: Baseline HR 55 → standing HR 85 → 25 bpm increase
- Diagnosis of POTS requires a sustained heart rate rise over at least two consecutive readings
- Late-onset hypotension in the presence of tachycardia is consistent with POTS
- Sudden bradycardia with hypotension is more consistent with Vasovagal Syncope (VVS) and should prompt cardiology referral
- If baseline supine HR is ~100 bpm, consider evaluation for Inappropriate Sinus Tachycardia (IST)

**A negative result does not exclude POTS—repeat testing or passive tilt may be appropriate in persistent symptomatic patients**

## Adjunctive Tools

- Use the Malmo POTS Symptom Score to support clinical decision-making. A score  $\geq 42$  strongly suggests POTS, even with a borderline AST result.

## Safety and Recovery

- Syncope is not common in POTS but if syncope occurs, lie the patient flat and elevate legs
- Once stable, offer 500 mL water or oral rehydration solution to support recovery

To find out more about POTS visit:

  
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