

Patient Information Leaflet How to complete a NASA Lean Test

Why do I need to take this test

It has been found that people with long COVID can experience some symptoms due to problems with their autonomic nervous system. This is an involuntary part of your nervous system which controls important bodily functions, including your blood pressure and heart rate, and makes adjustments to these functions in response to what you are experiencing.

When you change position, (e.g. when moving from lying down to standing up) gravity will affect the way your blood flows and will cause some of it to flow downwards towards your feet. Your autonomic nervous system will normally counteract this and adjust your blood pressure and pulse so that the blood flow around your body, in particular to your brain and heart, can continue at a steady pace.

When your autonomic nervous system fails to respond properly to changes in position, this can cause you to experience symptoms, such as dizziness or a racing heartbeat. This is called orthostatic intolerance.

Some people may have orthostatic intolerance but not experience any symptoms or experience different symptoms that aren't specific to problems with the nervous system.

This test will help your clinicians to understand how well your autonomic nervous system is working and if you would benefit from further investigation.

Your symptoms

There are many symptoms that may be related to the autonomic nervous system not working properly. It is helpful to know if you have been experiencing any of the following specific symptoms for the past 3 months. Please share if these symptoms are affected by your posture particularly if the symptoms are worse when you are more upright and get better when lying/sitting.

PLEASE COMPLETE THE TABLE BELOW INDICATING YOUR ANSWER BY CIRCLING YES/NO/Not sure :

Symptom	Have you had this for 3 months or more?	If YES, can it be worse when upright?	If YES, does this improve when sitting or lying?
Light-headedness / dizziness	Yes / No	Yes / No / Not sure	Yes / No / Not sure
Palpitation ("heart racing")	Yes / No	Yes / No / Not sure	Yes / No / Not sure
Tremor / shaky	Yes / No	Yes / No / Not sure	Yes / No / Not sure
Unusual chest discomfort	Yes / No	Yes / No / Not sure	Yes / No / Not sure
Any comments or other symptoms you experience which are linked with an upright posture?			

Before taking the test

Please ensure that you are well-hydrated and have not consumed alcohol, caffeine, or engaged in vigorous exercise within the 2 hours before the test.

If you are **pregnant** or the **medication you take includes a Beta Blocker (e.g Propranolol, Bisoprolol, Atenolol)** please contact the Long COVID Recovery team (contact details found at the end of this leaflet) for advice before performing the NASA lean test.

Can I take the Test today?

The test may not be suitable if you are feeling particularly unwell today. If you have a temperature, new chest pain, are more breathless than usual, recently had diarrhoea or vomiting or are under the influence of alcohol or drugs, then you will need to delay the test to another day.

If you are unsure if you should take the test or have any questions, please contact the Long COVID Recovery team for advice before taking the test (contact details found at the end of this leaflet).

NASA Lean Test Instructions

Please follow the instructions carefully to ensure that the test is carried out safely and effectively.

What I will need:

- ✓ A flat and comfortable surface to lie on.
- ✓ A flat wall.
- ✓ A blood pressure (BP) monitor. (This will be provided by the Long COVID Recovery service if you do not have your own)
- ✓ A stopwatch or timer.
- ✓ A chair for sitting down before and after the test.
- ✓ A pen and paper to note down your results.
- ✓ A helper (ideally two people) who are themselves fit and well, e.g. a partner or a friend; to operate the BP monitor and to write down your results. They will also assist you if you feel dizzy or unsteady during the test.

How Do I Complete the Test?

The test can sometimes cause you to become dizzy or lightheaded, therefore, **please ONLY carry out the test with someone else present** (e.g. a friend or partner) and **STOP** if you feel unwell or unable to complete the full 10 minutes.

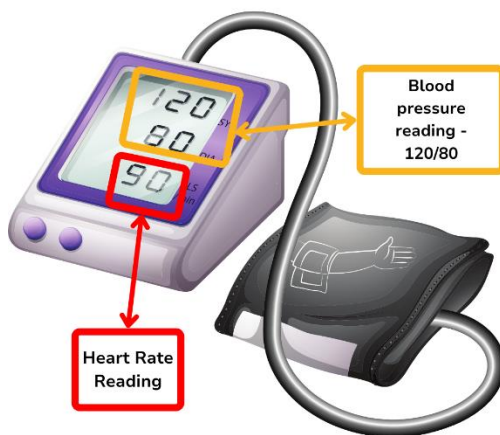
Using the BP machine

The BP monitor will measure your blood pressure and your heart rate.



Wrap the cuff around your upper arm with the tubing pointing downwards.

Switch the machine on and press the start button when you are ready to take a reading.



Your blood pressure result will show as two numbers. In the example it is 120/80 (this is how to record your result in the table below)

Your heart rate will show as one number, in the example it is 90.

The NASA Lean Test



Step 1

Please find somewhere comfortable to lie down face up, on your back. This helps your body to settle before the test



Step 2

Once you are comfortable, **time 5 minutes.**



Step 3

After 5 minutes, **measure your pulse and BP twice**, leaving a couple of minutes in between each reading and record the results in the table below. These are your base line measurements.

N.B: if the two readings are very different, measure your pulse and BP every 5 minutes until you have taken two readings that are relatively close and then record the readings in the table below.



Step 4

Carefully stand up and you can either **stand up right OR lean**, resting your shoulder blades against a wall with your feet together 20-30cm away from the wall.



Step 5

Once you are comfortable standing or leaning against a wall, please measure your **pulse and BP for up to 10 minutes**, recording the readings at **1, 2, 4, 6, 8 and 10 minutes** in the table below.

Please also write down any symptoms you feel during the test.

What Do I Do if I Couldn't Complete the Test?

If you were unable to complete the full 10 minutes, please note down the time you needed to stop the test (even if this is at 0 minutes) and why you were unable to complete it.

Nasa Lean/Stand Results Table

NAME:			
DATE of test:			
DOB:			
LYING DOWN READINGS	Heart Rate	Blood pressure	Any symptoms during test (e.g. dizziness, tremors, palpitations, chest discomfort or any other symptoms)
Lying down 5 minutes (reading A)			
Lying down 5 minutes (reading B)			
STANDING READINGS	Heart Rate	Blood pressure	Symptoms during test (e.g. dizziness, tremors, palpitations, chest discomfort or any other symptoms)
1 minute			
2 minutes			
4 minutes			
6 minutes			
8 minutes			
10 minutes			

Understanding My Results

The Long COVID Recovery team will review your results and will contact you to let you know what your results mean for you and if you need any further investigations or review.

To return your results or if you have any questions, please contact the Long COVID Recovery Team:

Email: nhsh.covidrecovery@nhs.scot

Telephone: 01408 664074

Return Envelope

Feed back

We would be grateful if you would be willing to provide feedback about your experience of completing this test at home and any thoughts or ideas about how this could be improved. Your results will remain anonymous.

You can complete this feedback online by following this link:

<https://forms.office.com/e/qpWu1usJCw>

Or the QR code:



Alternatively, you can complete the paper copy below.

We thank you very much for your time.

Completing the NASA lean test feedback form

1) Please share how much you agree with the following statements in regard to completing the home NASA Lean Test.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
This test is important for me to complete	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The instructions were clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to follow the instructions easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to return my test results easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2) Please share any other thoughts or experiences you had using this leaflet to complete the NASA lean test and any suggested improvements.

End of Questionnaire.

Thank you for your time.