



Healthcare Science Spotlight RESPIRATORY PHYSIOLOGY



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Hi! Our names are Laura and Carly and we are trainee respiratory physiologists! Many patients who are referred for breathing tests wonder what they involve and may feel anxious about attending because they aren't sure what to expect. We are here to give an overview of our department so patients can arrive feeling prepared, relaxed and ready to give it a go!



What is Respiratory Physiology?

Respiratory Physiology is a specialism of **Healthcare Science** that focuses on how the **breathing system** works. Respiratory Physiology departments are located within the hospital and provide a service for a **range of patients** who have been referred by other healthcare professionals.

Here, we perform **lung function tests** using **specialist equipment** to look at how well your lungs are working and help **identify any problems**.

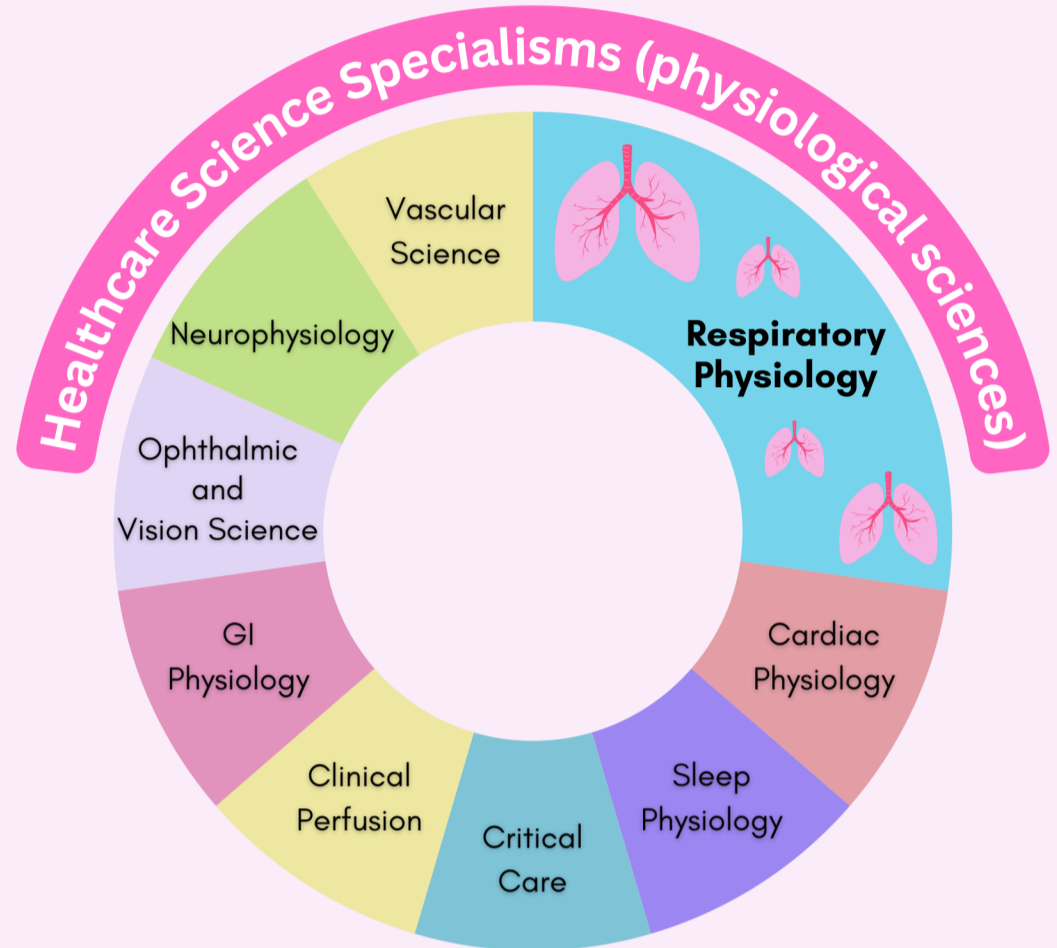
Why might I need breathing tests?

You will be referred for breathing tests depending on the symptoms you are experiencing or the treatment you require.

Common symptoms include:

- Breathlessness
- Recurrent chest infections
- Persistent cough
- Wheeze

You may perform more than one test depending on your **risk factors** and **symptoms**. Risk factors can include smoking (including vapes/e-cigarettes), a family history of respiratory conditions and occupational exposure.



How do we contribute to patient care?

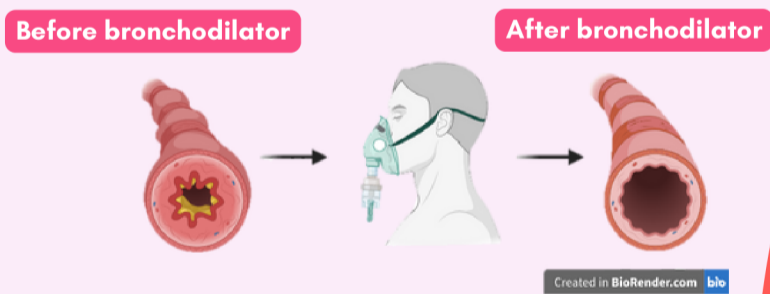


How do we assess lung function?

Spirometry (± Reversibility)

Spirometry is a test that measures the capacity of your lungs and the speed you can push air out of your lungs.

If your spirometry results are lower than predicted, a reversibility test may be performed. This test can see if your airways respond to a bronchodilator medicine, a drug that works to open up your airways as much as possible.



Lung Volumes

The lungs are made up of lots of different volumes. While spirometry is useful for measuring some of these volumes, there are some that it can't directly measure.

Body Plethysmography or Nitrogen Washout are performed in order to measure these volumes. The patient will perform the test they are most comfortable with.

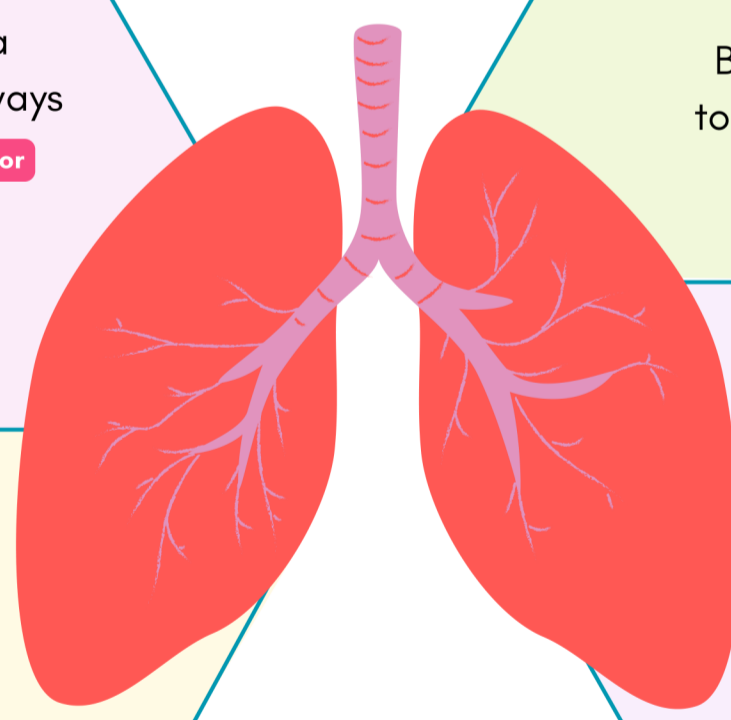
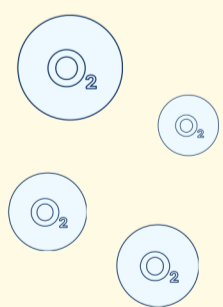
Specialised Tests

There are also a range of specialised tests, such as Fitness to Fly assessments and Cardiopulmonary Exercise Tests (CPET), that are performed in the department.

These tests are carried out by Clinical Scientists and Highly Specialised Respiratory Physiologists.

Gas Transfer Test

The gas transfer test is designed to measure how effectively your lungs are able to give oxygen to the blood, from the air you breathe in.



Bike used to perform exercise tests

What makes our specialism interesting?

The information we collect about the health of your lungs can be useful for lots of reasons. We perform tests for patients from a variety of clinical backgrounds and good teamwork with our patients is essential to ensure high quality results. This allows us to build rapport with people from all walks of life, which is one of the most rewarding parts of working in respiratory physiology.

Some examples of the patients we work with:

- Scottish National Spine Service
- Scottish Liver Transplant Unit
- Post-ICU patients
- Haematology
- Cardiac and Vascular Surgery

Body Plethysmograph ('The Box')

The Box is one of our most important pieces of equipment as it allows us to perform lots of different tests. It can also be adapted to suit individual patient needs.



Specialist Equipment

Spirometer

Spirometers are small, portable machines used to perform spirometry and reversibility tests.

FeNO

A FeNO test is used to help diagnose asthma by detecting inflammation in the airways. If it seems someone has lots of inflammation, they may be given an inhaler to try and help control their symptoms.

