



Royal Papworth Hospital
NHS Foundation Trust

Respiratory Physiology Respiratory muscle assessment

A patient's guide

Introduction

The Respiratory Physiology department provides a service to patients from the whole hospital as well as to outpatients.

The department performs various tests that help in the diagnosis and treatment of patients with breathing problems.

Preparing for the visit

Please follow the recommendations set out below before you come for your tests:

- Please continue with any prescribed inhalers or nebulisers, unless instructed not to do so by your doctor or the enclosed appointment letter;
- Avoid smoking on the day of your tests;
- Do not consume alcohol for at least 4 hours before your tests;
- Avoid vigorous exercise for at least 30 minutes before your tests;
- Do not wear tight-fitting clothing which restricts your ability to breathe freely;
- Do not eat a substantial meal for at least 2 hours before your test, although a light meal is acceptable;
- If you take any inhalers or GTN medication, please bring them with you.

Investigations

A respiratory muscle assessment involves performing a selection of simple, non-invasive, lung function tests designed to measure your respiratory muscle function and strength.

These tests may take up to one hour. The results will help your doctor to decide the best course of treatment for you.

Depending on your doctor's referral you may be asked to perform the following tests, described below:

- Spirometry
- Mouth pressures
- Sniff nasal inspiratory pressures

Your tests will be carried out by a Clinical Physiologist.

Please do not worry about performing the tests as you will be shown what to do. You will be asked to repeat the measurements several times; however, you are able to rest between attempts.

Spirometry

For this test you will be sitting comfortably, upright in a chair in front of a device with a mouthpiece.

Whilst wearing nose clips you will be asked to perform two different types of exhalation.

First, you will be asked to breathe in fully, seal your lips around the mouthpiece then blow out slowly and steadily as long as possible until your lungs are empty. Then you will be asked to breathe in fully, seal your lips around the mouthpiece then blow out as hard and as fast as you can.

If you are able to, we will then ask you to lie down on a couch, completely flat on your back.

This is only for a very short period of time.

In this position you will be asked to take a deep breath in, then blow out slowly and steadily as long as you can into a mouthpiece.

Mouth pressures

For this test you will be sitting comfortably, upright, in a chair.

Your mouth pressures will be measured using a small pressure meter attached to a mouthpiece.

The pressure will be measured when you blow out (expire) and breathe in (inspire) maximally. You will wear a nose clip for this test.

Sniff nasal inspiratory pressure

For this test you will be sitting comfortably, upright, in a chair.

Your sniff pressure will be measured using a small pressure meter.

You will be asked to place a small bung just inside one nostril and then perform a vigorous sniff.

This is repeated several times in both nostrils.

Risks

The tests are not painful but can feel a little uncomfortable if you feel short of breath. To get the very best results the tests require a lot of effort.

Some patients report feeling light-headed and tired, however please be reassured that you will be given time to rest and recover.

Blowing out hard can increase the pressure in your chest, abdomen, eyes and head. Therefore, it may not be appropriate to perform the tests if you have recently experienced any of the following:

- Pneumothorax (collapsed lung)
- Heart attack
- Unstable angina
- Stroke
- Surgery (chest, abdominal, eyes)
- Aneurysm
- Blood clot in your lung
- Coughing up blood

If you are unsure, please contact the department and we can ask your doctor.

Any questions

If you have any questions about the tests or the department, please do not hesitate to ring Respiratory Physiology on 01223 638815.

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Author ID: Chief Clinical Physiologist
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Printed: January 2019
Review due: January 2021
Version: 1.4
Leaflet number: PI 153

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