

At Queen Anne Street Medical Centre Cardio-Pulmonary Department we will conduct all necessary tests to investigate a patient's symptoms. We will accurately diagnose any breathing, heart, sleep or allergic problems, and investigate possible causes.

Providing high level care, our Lung Function Lab is equipped with first class medical technology, to efficiently and effectively diagnose and treat different conditions.

## **Pulmonary Function Tests (PFTs)**

Pulmonary function tests are a group of tests that measure how well your lungs are working. This will give you information about the size of your lungs and how effectively your lungs are transferring oxygen to the rest of your body.

### **Spirometry**

Spirometry is a test that allows us to know how well you breathe in and out. You will be asked to take a deep breath and blow quickly into a machine (Spirometer), and to repeat this process a few times. The test takes approximately 10-15 mins.

### **Reversibility**

You will be asked to take a Spirometry test a few minutes after taking an inhaler. This will help us understand the extent to which the inhaler affects your lungs and, in some cases, help with the diagnosis.

### **Gas transfer**

This test measures how well the lung surface works and the ability of your lungs to transfer the oxygen from your breath into the blood. It involves breathing in a specific mixture of gases which will then be analysed when you breathe out.

### **Lung Volumes**

This assessment measures your lungs total capacity, including the areas inside the lung which cannot be emptied.

This can be measured using two different methods:

Body Box: involves being seated in a glass box where pressure is measured.

Helium Dilution: involves breathing normally a known concentration of helium and oxygen.

### **IOS**

Is a non-invasive and quick technique that measures lungs resistance and reactance, requiring the patient to breathe normally through a mouthpiece for a few minutes.

### **Methacholine/Mannitol Challenge**

These tests are design to diagnose Asthma and to ascertain whether your lungs are hypersensitive. The patient will breathe a special substance (Methacoline) with different concentrations at different times and a Spirometry will be performed during each stage.

### **FeNO**

Measurement of the fractional exhaled nitric oxide, which helps diagnose asthma.

## **Cardio-Pulmonary Exercise Testing**

If you're coming for a Cardio-Pulmonary Exercise Test (CPET) or exercise test you will be required to gently exercise on an upright bicycle whilst breathing through a mouthpiece. The capacity and strength of the lungs is measured before and during exercise monitoring your heart rhythm (ECG).

This test can last up to 40 mins, however the total exercise time should not exceed 10 minutes.

## **Sleep Apnoea**

Obstructive Sleep Apnoea (OSA) is a serious condition where the muscles in the throat relax during sleep stopping you from breathing. If untreated it can occur hundreds of times in a night leading to daytime fatigue, sleepiness, mood swings, headache and other health problems. Once diagnosed it can be easily treated.

### **Sleep Study**

This is a test designed to assess your breathing pattern while you're sleeping. You'll take a small piece of equipment home. This will record your breathing, abdominal movement, oxygen levels and snoring. This is a very easy and simple test that will help diagnosing obstructive Sleep Apnoea.

### **CPAP Titration**

CPAP therapy is a treatment that uses air pressure to keep your airways open while you sleep. CPAP equipment is typically used by people who have breathing problems, such as sleep apnoea.

## **Allergy Tests**

### **Skin Prick**

This tests involve placing a small amount of suspected allergy-causing substances on the skin, usually the forearm, upper arm, or the back. The skin is then pricked so the allergen goes under its surface. The

health care provider closely watches the skin for signs of a reaction, usually swelling and redness of the site. Results are usually seen within 15-20 minutes. Several allergens can be tested at the same time and this can help identify whether you are allergic to any type of food or inhaled allergen.

## Cardiac Assessments

### Exercise (Bike)

Exercise test, or stress test, gathers information about how your heart works during physical activity. Because exercise makes your heart beat faster than usual, an exercise stress test can reveal problems within your heart that might not be noticeable otherwise.

The exercise stress test involves riding a stationary bike while your heart rhythm, blood pressure and breathing are monitored.

### 12 Lead ECG

An electrocardiogram (ECG) is a test that checks your heart rhythm and electrical activity.

## Frequently asked questions:

### 1. Why are these tests done?

There are several reasons for performing these tests:

- To help your diagnosis for conditions such as Asthma, COPD, Bronchitis or Emphysema.
- If you're having symptoms of lung or cardiac problems like getting out of breath.
- As part of a routine physical check.
- To monitor how effective your treatment is if you have a lung disease, such as asthma or COPD.
- To assess how well your lungs are working before you have surgery.
- To find out what are you allergic to.
- To find out why you snore.
- To assess how fit you are.

### 2. How to prepare for these tests?

You should take all your medicine according to your doctor's instructions; if you use **inhalers**, you should **stop taking them 8 hours** before the test if possible.

To achieve the most accurate results, please:

- Do not smoke for the 24 hours leading up to the test
- Do not exercise in the 30 minutes before testing
- Do not eat a large meal in the 2 hours before testing
- Do not drink alcohol for at least 4 hours prior to the test

### **3. Are there any Risks and or side effects?**

- Lung Function Tests are generally safe and easy to perform with most patients as they don't require any invasive procedures.
- Some of the tests can be tiring due to the heavy breathing and patients might become slightly light-headed, but this will only last for a short period of time and patients will be given enough time to rest between tests.
- If you have recently had a heart attack, chest pain or have any allergies be sure to tell the physiologist.
- These tests may also not be suitable if you have an active pneumothorax or active tuberculosis.

### **4. What happens during these tests?**

- Before the tests begin the Physiologist will ask you a few questions about your clinical history and will explain all the procedures in detail.
- PFTs are painless and involve breathing into a mouthpiece. This mouthpiece is connected to an instrument that measures the amount of air you breathe and the rate at which you breathe over period of time. You might be asked to breathe normally or breathe heavily with forced inhaling and exhaling depending on the type of test your doing. An inhaler might be given to check how it might affect your breathing.
- The examination will last up to an hour depending on the tests performed.

**If you have any other questions about our tests or want to know more about what we do in our laboratory, please contact our Physiologist**

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