

## Patient Information for Lung Function Testing

Your doctor may refer you to have lung function testing to assess how well your lungs are working or to investigate respiratory symptoms such as chronic cough or shortness of breath. The following list describes respiratory function tests which are commonly performed at our laboratory. Prior to attending your appointment check if you need to do anything to prepare for your test.

During your test, you will have the test explained to you by one of our respiratory technicians. They will guide you through the procedure and ensure that you get the best results possible. Testing should not cause any pain, however will require maximal effort from you to get the best test results. Please let our friendly staff know if you are experiencing any discomfort or if you have any questions about the tests.

The length of the test may depend on what your doctor has requested, please allow between 30 minutes to one hour for your test.

## Spirometry

Spirometry is performed to assess how much air you are able to blow out of your lungs, and how fast you are able to blow the air out. This test requires you to take in the biggest breath you possibly can and then blow out into a measuring device as fast as you can for as long as you can. To ensure the accuracy of your test results, you will be required to perform this measurement several times and will be coached on your performance by a respiratory technician. Spirometry is generally performed before and after taking a bronchodilator medication such as Ventolin to assess whether there is any improvement in your results. Unless told otherwise, please refrain from taking your respiratory medications prior to your appointment. Withholding times for respiratory medications may be found here [<insert link to withholding information>](#).

## Gas Transfer (TLCO)

The gas transfer test is performed to assess how well your lungs are able to extract oxygen from the air you breathe and transfer it into your blood stream. You will be required to breathe into a machine, breathe all the way in until you are full, then hold your breath for approximately ten seconds. To ensure the accuracy of your results please refrain from smoking for one hour prior to testing. Supplemental oxygen must also be removed ten minutes prior to testing.

## Lung Volumes (Plethysmography)

Plethysmography is a test which measures the maximum volume of air that your lungs can hold. The test involves sitting in a large glass box and breathing into a machine. After a few normal breaths, the mouth-piece will block and for the next two seconds you will be required to perform a series of gentle pants (quick shallow breathes).

## Bronchial Provocation (Mannitol Challenge Test)

Bronchial provocation challenge tests are performed to exclude asthma or assist in the diagnosis of asthma-like respiratory symptoms such as chronic cough. Before performing a bronchial provocation test it is important that you correctly prepare for the test by follow a set of withholding instructions. Failure to properly adhere to withholding instructions may cause false negative test results. The test preparation involves avoiding consumption of caffeine containing food and beverages, and temporarily withholding certain medications such as inhalers and antihistamine tablets. Full instructions for how to prepare for you test may be found here <insert link to withholding information>.

When performing a Bronchial Provocation test, you will be required to inhale a substance which acts as a mild airway irritant. The respiratory technician will then ask you to perform a series of spirometry manoeuvres which will be used to assess the sensitivity of your airways (for spirometry procedures please refer to the above passage). Depending on how your airways respond to the inhaled substance, you may be required to inhale several doses of the substance at increasing strengths. Bronchial provocation tests are safe to perform however, people with highly reactive airways may experience coughing, shortness of breath, chest tightness and/or wheeze.

## Fractional Exhaled Nitric Oxide (FeNO)

The FeNO test is performed to assess whether you have allergic airway inflammation, to predict how well you might respond to inhaled corticosteroid medications or to assess whether your asthma is under control. The FeNO test involves inhaling slowly and steadily through a mouth-piece, then exhaling steadily when you are full. Visual feedback will be provided to help maintain the correct inhalation/exhalation flow rates required for a successful test. It is important that you do not consume any food or drink for one hour before your test. Also avoid consuming any high in nitrogen on the day of the test including ham, bacon, salami, strawberries, currants, raspberries, cherries, gooseberries, spinach, lettuce, beetroot, celery, chervil radish and turnip tops.

## Six Minute Walk Test (6MWT)

A six-minute walk test measures your blood oxygen (SpO<sub>2</sub>) levels during exercise and is useful in determining whether you need supplementary oxygen. This test involves walking up and down a hallway for six minutes with the aim of covering as much distance as you comfortably can.

## Maximal Inspiratory Pressure (MIP) and Maximal Expiratory Pressure (MEPS)

MIPS and MEPS are tests which are used to assess the strength of muscles involved in breathing. It may be performed if physician suspects respiratory muscle weakness. The test involves breathing into a machine which measures pressures. For the assessment of MEPS you will be instructed to breath in as much as you can and then push out as hard as you can against a blocked mouth-piece. For the assessment of MIPS you will be instructed to breath out as much as you can and then suck in as hard as you can against a blocked mouth-piece. To ensure you get the best result possible you will be required to perform each test several times.

## Cardiopulmonary Exercise Test (CPET)

Cardiopulmonary exercise testing is performed to evaluate your capacity to exercise. It will assess how well your lungs, heart and muscles tolerate exercise and may assist in finding a cause for unexplained shortness of breath. You will be required to exercise for approximately ten minutes on a stationary bicycle. The work load will increase gradually until you are exercising at maximal capacity. During the test you will have various medical devices attached to you which will measure your heart rate, blood oxygen levels, breathing rate, oxygen uptake and carbon dioxide production. On the day of the test ensure you are well rested, refrain from smoking and wear comfortable clothing and suitable footwear. You may continue taking your respiratory medications as instructed by your respiratory physician.