

# Pulmonary Function Tests



The Pulmonary Function Laboratory provides a comprehensive range of diagnostic investigations to help doctors in the evaluation, diagnosis and treatment of asthma, breathing disorders and pulmonary diseases. Pulmonary Function Laboratory services are available at the Specialist Outpatient Clinic and as an inpatient service.

# Pulmonary Function Tests

- **Spirometry (Pre / Post Bronchodilator)**

The purpose of this test is to assess the variability of obstruction in your breathing airways. It is the main diagnostic test for asthma and pulmonary diseases and is a breathing test that measures the amount and / or speed of air that can be measured in a full inspiration and expiration.

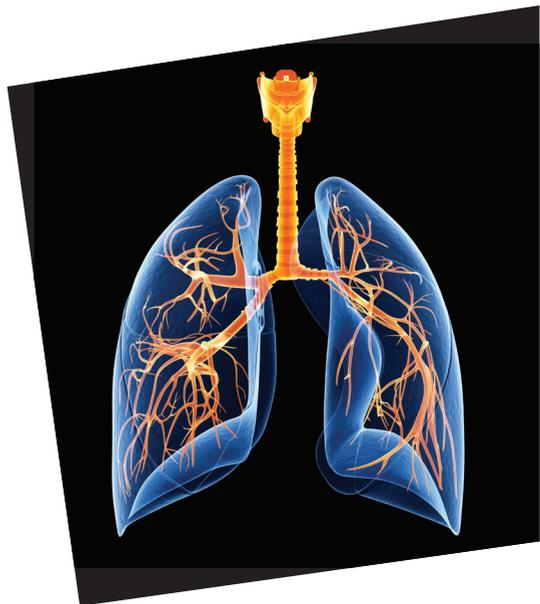
This test is sometimes repeated after administering a bronchodilator to determine if airway reversibility is present in the Spirometry Pre / Post bronchodilator test.

- **Static Lung Volumes (N2 Washout Technique and Plethysmography)**

The purpose of this test is to assess patients with lung diseases often associated with a low lung capacity (TLC). The test is important for pre-operative clearance, for the diagnosis and management of restrictive and / or obstructive lung diseases. It is a breathing test that evaluates the lungs' capacity and measures how much air is left in the lungs at the end of an exhalation.

- **Diffusion Study (Single breath hold technique)**

The purpose of this test is to diagnose a variety of lung abnormalities associated with diffusion defects in the lungs. It is a test that evaluates the lungs diffusion capacity to measure how well gases such as oxygen move from the lungs into the blood capillaries.



- **Maximum Inspiratory and Expiratory Pressure (MIP / MEP)**

The purpose of this test is to assess the respiratory muscle strength and is commonly done to assist in the diagnosis of patients with neuromuscular disease, restrictive lung disease; and the evaluation of respiratory muscle weakness. It is a non-invasive clinical procedure to determine the index of inspiratory muscle strength both in healthy subjects and in patients with pulmonary or neuromuscular diseases.

- **Exhaled Nitric Oxide (ENO) Test**

The purpose of this test is to evaluate if there is evidence of acute inflammation in the bronchial tubes. The test is also ordered to monitor inhaled corticosteroid treatment in patients who are diagnosed with asthma. It can also determine the severity of inflammation and allows the doctor to prescribe the appropriate treatment.

## **How should I prepare for these tests?**

- You do not need to fast and can take a light meal.
- Continue with your current medication unless otherwise instructed.
- You may be advised to omit inhaler / bronchodilator (Ventolin / Salbutamol) for at least 6-8 hours before the test and long acting beta agonist for at least 12 hours before the test.
- If you wear glasses, hearing aids or dentures, please wear them for the test.
- If you are on oxygen therapy, you will usually be asked to go off it for a few minutes before taking the test.
- A technologist will perform a pre-assessment on you before commencing the test. The pre-assessment will review your history of smoking and alcohol consumption, etc.

## **What can I expect during the test?**

- These tests are predominantly performed in a seated position.
- A pulmonary function technologist will explain the procedure to you. This includes how to perform a series of breathing manoeuvres through lung testing devices. Try to relax and listen to the technologist's instruction at all times. A clip will be placed on your nose to keep your nostrils closed.
- At times, you will be asked to repeat the test 2-3 times to ensure the result is accurate and consistent.
- You may feel short of breath or experience some dizziness after the test. This is usually temporary and will go away.
- If you feel uncomfortable during the test, please inform the technologist and doctor.

## **Are these tests safe? Will there be any side effects?**

These tests are generally safe and no known side effects have been reported.

## **When will I know the results?**

A team of respiratory specialists will review and interpret your test results. Your referring physician will inform you of your test results at the next review appointment.

## For more information

### Ng Teng Fong General Hospital and Jurong Community Hospital

1 Jurong East St 21, Singapore 609606

[www.ntfgh.com.sg](http://www.ntfgh.com.sg) | [www.jch.com.sg](http://www.jch.com.sg)

### Clinic opening hours

Monday – Friday: 8.30am – 5.30pm

Saturday: 8.30am – 12.30pm (Selected clinics only\*)

Dental Clinic: Monday – Thursday: 8.00am – 5.30pm, Friday: 8.00am – 5.00pm

\*Please refer to our websites for more details.

### General enquiries & appointments

General enquiries line: 6908 2222 (24-hr)

Fax: 6716 5500 | Email: [contactus@nuhs.edu.sg](mailto:contactus@nuhs.edu.sg)

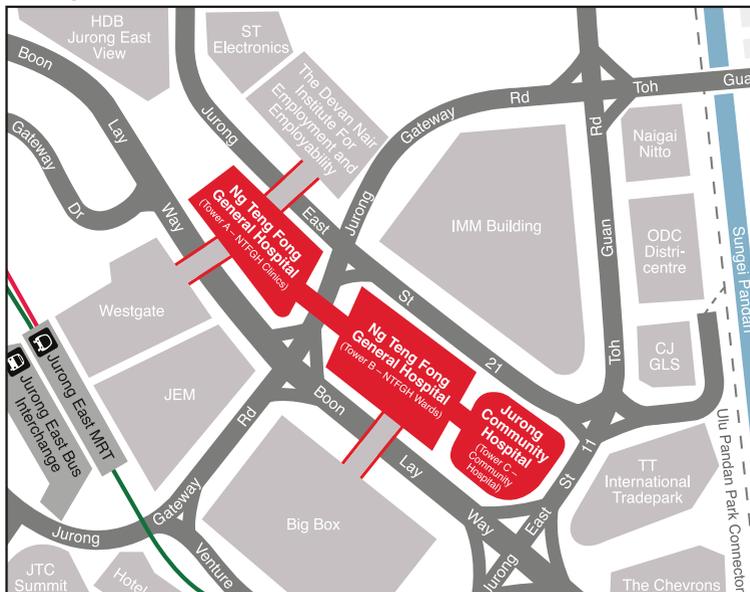
Appointment line: 6908 2222 (Monday – Friday: 8.00am – 5.30pm, Saturday: 8.00am – 12.30pm)

Fax: 6716 2200 | Email: [appointment@nuhs.edu.sg](mailto:appointment@nuhs.edu.sg)

Dental appointment line: 6716 2233 (Monday – Friday: 8.00am – 5.30pm)

Fax: 6716 2200 | Email: [JHCampus\\_Dental@nuhs.edu.sg](mailto:JHCampus_Dental@nuhs.edu.sg)

## Getting there



### By train

Alight at Jurong East MRT Station

### By bus

#### Jurong East Bus Interchange

41, 49, 51, 52, 66, 66B, 78, 78A, 79, 79A, 97, 97E, 98, 98M, 105, 143, 143M, 160, 160A, 160M, 183, 183B, 197, 333, 334, 335, 506

#### Along Boon Lay Way

49, 99, 333, Private bus service 625, 990

### Disclaimer:

The information in this brochure is meant for educational purposes and should not be used as a substitute for medical diagnosis or treatment. Please seek your doctor's advice before starting any treatment or if you have any questions related to your health, physical fitness or medical condition. Information is accurate at the time of printing.