



Exercise Challenge Test



Changi
General Hospital
SingHealth

What is Exercise Challenge Test?

The test is used to determine if there is airway narrowing during exercise.

Why do I need this test?

Your doctor may use this test to establish the diagnosis of exercise-induced asthma (EIA) or exercise-induced bronchoconstriction (EIB), the latter of which occurs in patients without asthma, if you are displaying respiratory symptoms such as shortness of breath, wheezing, chest tightness or cough during or after physical exertion. In addition, assessing for EIA or EIB may be important for certain physically demanding occupations.

Please clarify with your doctor if you are unsure why you need to undergo this test.

How do I prepare myself before the test?

How long before the test?	Avoid:
2 hours	Heavy meals
8 hours	Alcohol
Day of test	Smoking
	Exercise
	Wearing tight clothing that may restrict your breathing or movement

- On the day of the test, comfortable clothing and footwear suitable for cycling on an exercise bike or running on a treadmill such as trainers, loose trousers and short sleeved T-shirts should be worn.
- A written consent will be obtained before the test. If you are under 21 years of age, you are required to bring your legal guardian on the day of the test to sign the consent form.



The doctor will advise you on the medications to temporarily discontinue before the test as they can affect the test results. Please clarify with your doctor if you are on any other medication for your breathing that is not listed here so that they can advise you accordingly.

Inhaled medication containing only corticosteroids, such as Beclomethasone, Budesonide, Fluticasone, Triamcinolone, or Mometasone may be continued. Please confirm with your doctor if there is any need to stop these medications.

How long before the test?	Avoid	Examples
8 hours	Inhaled beta-agonists – Short acting	Albuterol or Salbutamol (Ventolin)
12 hours	Inhaled anticholinergics – Short acting	Ipratropium bromide (Atrovent)
	Oral Theophylline (Non-SR)	Nuelin
24 hours	Oral Theophylline (SR)	Nuelin SR
48 hours	Inhaled beta-agonists – Long acting	Formoterol (e.g. Symbicort, Flutiform) Salmeterol (e.g. Seretide)
	Inhaled beta-agonists – Ultra-long acting	Indacaterol (Onbrez & Ultibro Breezhaler)
		Olodaterol (Striverdi & Spiolto Respimat) Vilanterol (Anoro, Relvar & Trelegy Ellipta)
1 week	Inhaled anticholinergics – Long acting	Glycopyrronium (Seebri & Ultibro Breezhaler) Tiotropium (Spiriva & Spiolto Respimat) Umeclidinium (Incruse, Anoro & Trelegy Ellipta) Aclidinium

How is the test done?

Our clinical physiologist will guide you through the **three stages** of the test, estimated to take about 60 minutes. A doctor will also be present during the test to monitor your condition.

1. You will be asked a list of questions regarding your health status. A brief physical examination and a written consent will be obtained before the test. *If you are under 21 years of age, you are required to bring your legal guardian to sign the consent on the day of the test.*

Before the exercising begins, you will need to undergo a baseline lung function assessment first. You will be asked to use maximal effort to blow out and breathe in through the equipment. This step helps to ensure that your baseline lung function is not too low to proceed with the rest of the test.

2. During the exercise, you will be asked to either pedal on a stationary exercise bicycle or run on a treadmill for up to 8 minutes. The more you are able to achieve, the more information may be collected. However, the test may be stopped if you get too tired or unwell to continue, or if you fulfil certain test-ending criteria as decided by the clinical physiologist.
3. After the exercise is completed, you will repeat the lung function assessments at intervals of 1 minute, 3 minutes, 5 minutes, 10 minutes, 15 minutes, 20 minutes and 30 minutes to detect any significant change in your lung function from the baseline readings.

If a significant change is detected at any of the time intervals, subsequent lung function assessments will no longer be required. You may also be given an inhaled medication to re-open your airways if there is significant airway narrowing detected.

The assessments may also be discontinued if no significant change is detected 20 minutes post exercise and lung function readings have returned to the baseline levels. We will continue to monitor until your breathing and other vital signs are back to normal.

What are the possible risks from this test?

This is generally a safe test.

You may feel breathless or light-headed for a short while (usually lasting only for a few seconds) after the test is performed as the lung function assessments require some exertion during the breathing manoeuvres. It is also normal to experience the usual exercise-related fatigue during the test.

Generally, it is rare for the following situations to occur during or after exercise in the test:

- Fall in the blood pressure
- Abnormal heart rhythm or heart rate or signs of lack of blood flow to the heart
- Tightening of your airways, which is usually mild, transient, and you will be given inhaled medication to help re-open the airways



Please inform the clinical physiologist if you experience any discomfort such as chest tightness, shortness of breath, cough, wheezing, chest pain or discomfort, dizziness or palpitations during the test. After the test, it would be extremely rare to have ongoing symptoms or develop new symptoms. The test is done in our Pulmonary Function Laboratory with trained staff and there will be appropriate medical assistance available whenever necessary.

The risks and complications listed here are not intended to be exhaustive. There may be uncommon risks or those that are specifically applicable to you due to individual risk factors. Please check with your doctor if you have any concerns about this.

What can I expect after the test?

After the test, you can resume the medication(s) that you have stopped for the purpose of the test unless your doctor had given you other prior instructions. You can also go back to your usual diet and activities.

You will be given an appointment to see your doctor who will discuss the test results with you and answer any questions that you may have about your condition.

Is there a chance that I may not be able to have the test?

You may not be able to undergo the test in certain scenarios such as the following:

- If you are pregnant or nursing
- If you had a recent heart attack or stroke within the last 3 months
- If you have a known blood vessel problem
- If you have uncontrolled high blood pressure
- If you have a heart rhythm problem or unstable cardiac condition
- If your baseline lung function is too low prior to the start of exercising
- If you are unable to cycle on a stationary bike or run on a treadmill to a required intensity due to any neurological or orthopaedic condition

Please inform your doctor if you have any of these conditions that may preclude you from undergoing the test, so that alternative plans or tests can be arranged.

Can I undergo the test if I am not feeling well?

You should not proceed with the test if you have a fever, cold, respiratory tract infection or feeling unwell. Generally, you are advised to take the test one month after recovery for a more accurate test result.

Please call the CGH Appointment Centre at 6850 3333 to reschedule your appointment. Do check with your doctor if you have any concerns.

Notes:



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CGH Appointment Centre

For appointments and enquiries,
please call: (65) 6850 3333

Operating hours:
8.30 am to 5.30 pm (Monday to Friday)
8.30 am to 12.30 pm (Saturday)
Closed on Sunday & Public Holiday

For more information, please visit www.cgh.com.sg

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Information is correct as of February 2021 and subject to revision without prior notice.

All information provided within this publication is intended for general information and is provided on the understanding that no surgical and medical advice or recommendation is being rendered. Please do not disregard the professional advice of your doctor.