Bronchial challenge test

We have given you this factsheet because you are due to have a bronchial challenge test. It explains what the test involves, how to prepare for the test, and the potential benefits and risks. We hope it will answer some of the questions you may have. If you have any further questions or concerns, please contact a member of our team using the details at the end of this factsheet.

What is a bronchial challenge test?

A bronchial challenge test helps your doctor to see how sensitive your airways (breathing tubes) are. It can be used to diagnose asthma.

What happens during a bronchial challenge test?

During a bronchial challenge test, we will ask you to breathe in a medication called methacholine. This medication will irritate your airways and cause them to narrow.

You will then breathe out forcefully into a spirometer (a measuring device). This is called spirometry. You will repeat this several times. We will measure how much the methacholine affects the amount of air you inhale and exhale, and how quicky you exhale.

Methacholine

We use small doses of methacholine that we slowly increase. If you have very reactive airways, they will narrow quicker than expected when you breathe in methacholine. If you do not have very reactive airways, we will stop the test after all the doses have been given.

We will stop increasing the dose when:

- there is evidence of significant narrowing
- the maximum dose of methacholine is reached

The test will take approximately 60 to 90 minutes.

Preparing for a bronchial challenge test

Contact the department using the number at the end of this factsheet if:

- you have had a heart attack in the week before your test
- you have come to the emergency department as a patient in the two or three days before your test
- you currently have a chest infection or have had a chest infection in the last two weeks before your test
- you are pregnant or are breastfeeding
- you have chest pain on the day of your test

We may have to reschedule your bronchial challenge test for another day.

On the day of the test

On the day of your test, you **must avoid**:

- food and drinks containing caffeine (such as fizzy drinks, tea, coffee, and chocolate)
- wearing tight or restrictive clothing (such as collared shirts, ties or belts)

You **must** also follow the guidance in the table below.

Time before the test	Things to avoid
Four hours before the test	Do not drink any alcohol.
Two hours before the test	Do not eat a large meal (light meals such as cereal or a sandwich are fine).
One hour before the test	Do not smoke.
30 minutes before the test	Do not take part in any vigorous exercise (such as running).

Inhalers and other medications

Before the bronchial challenge test, it is important that you do not take certain medications. The doctor who referred you for this test will help you understand which medications you should not take and how long to stop them for before the test. Below is a table with the most common inhalers and how long to stop them before the test. If you are unsure which medicines you should stop, please ask your doctor.

Generic name	Brand name	How long to stop before test
Salbutamol	Ventolin, Airsalb, Salamol, Airomir, Salbulin, Bricanyl	6 hours
Ipratropium	Atrovent	12 hours (half a day)
Formoterol	Fostair, Symbicort, DuoResp, Bibecfo, Flutiform, Fobumix, Luforbec, Proxor, Vivaire, WockAIR, Atimos, Oxis, Easyhaler Formoterol	36 hours (one and a half days)
Salmeterol	AirFluSal, Aloflute, Avenor, Campona, Combisal, Fixkoh, Fusacomb, Sereflo, Seretide, Sirdupla, Stalpex, Serevent, Soltel	
Olodaterol	Striverdi	48 hours (two days)
Vilanterol	Relvar, Trelegy, Anoro Ellipta	
Indacaterol	Onbrez, Ultibro	
Aclidinium	Eklira, Duaklir	7 days (one week)
Glycopyrronium	Enerzair, Trimbow, Trixeo, Seebri, Bevespi	
Tiotropium	Acopair, Braltus Zonda, Spiriva, Tiogiva, Trokide, Spiolto	
Umeclidinium	Incruse, Trelegy	
Other medication		
Theophylline	Uniphyllin	24 hours (one day)

Please take all your other medication as usual.

If you feel short of breath and need to take an inhaler before your appointment, please use the inhaler with the shortest withhold time (see table above). If you need to take an inhaler within its withhold time period, please contact the department using the telephone number on page 4. We will discuss with you on the phone if the test can still be carried out.

If you have used your inhaler on the day of your test, please make a note of:
- the inhaler name
- the time you took your inhaler

You will need to let the physiologist (a specialist healthcare professional carrying out the bronchial challenge test) know this information when you arrive for your appointment.

During the test

The physiologist will check that it is safe for you to do the test.

We will ask you to breathe in and out into a spirometer. This will tell us what your airways are usually like. We will then give you a dose of saline (salty water) through a nebuliser (a machine that turns liquid into a fine mist). We will then ask you to breathe in and out into the spirometer again. We will look for any changes in your airways.

If your airways do not narrow, we will ask you to breathe in small doses of methacholine. We will ask you to breathe in and out forcefully after each dose at 30 second and 90 second intervals.

We will stop the test if your airways narrow significantly. We will then give you a medication through a mouthpiece to help your airways return to normal. We will assess this by asking you to breathe into the spirometer again.

If your airways do not narrow significantly after we have given you the maximum dose of methacholine, we will stop the test. We will also give you medication through a mouthpiece to help your airways return to normal, as a precaution.

After the test

You will be able to leave the department once the test has finished and your airways have returned to normal.

Side effects

A bronchial challenge test is a safe test but it does have some side effects, including:
- wheezing
- coughing
- laboured (difficulty) breathing
- chest tightness

Some people can develop more serious side effects. You should let us know immediately during your test if you experience:
- chest pain
- dizziness
- light-headedness

Alternatives to a bronchial challenge test

You may have had other breathing tests before being referred for a bronchial challenge test. However, your doctor will have discussed the reasons for having a bronchial challenge test with you.

It is your choice to have this test. If you do not want to have this test, your doctor may not have all the information they need to make the best decision for your care. This may affect the medical treatment you receive.

If you are unsure why you need the test, or would like any further information, please speak to your doctor.

Contact us

Respiratory physiology department
Telephone: **023 8120 1360** (Monday to Friday, 9am to 4pm)

If you have a question about your appointment time, or need to cancel or reschedule, please contact the booking team as soon as possible.

Booking team
Telephone: **023 8120 2093** (Monday to Friday, 9am to 4pm)

Useful links

www.asthmaandlung.org.uk/symptoms-tests-treatments/tests/bronchial-challenge-tests

If you are a patient at one of our hospitals and need this document translated, or in another format such as easy read, large print, Braille or audio, please telephone **0800 484 0135** or email **PFSH@uhs.nhs.uk**

For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit **www.uhs.nhs.uk/additionalsupport**

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