

# Mannitol challenge test

## Information for patients

This information explains what happens when you have a mannitol challenge test, its risks, its benefits and any alternatives. If you have any questions or concerns, please do not hesitate to speak to any member of the team caring for you.

**Confirming your identity:** Before you have a treatment or procedure, our staff will ask you your name and date of birth and check your ID band. If you do not have an ID band we will also ask you to confirm your address. If we do not ask these questions, then please ask us to check. Ensuring your safety is our primary concern.

## **What is a mannitol challenge test?**

It is a breathing test that we use to assess whether you have sensitive (hypersensitive) airways. This helps us to diagnose your lung condition.

You breathe in a type of powdered sugar called mannitol. If your airways narrow, it means they are hypersensitive. If your airways do not narrow, they are not hypersensitive.

## **Why do I need this test?**

Having this test helps us to diagnose the condition(s) that may be affecting your lungs.

## **What are the risks?**

- The mannitol might make you cough when you breathe it in. If your airways are hypersensitive, it will cause them to narrow, so you might feel more wheezy, breathless or tight chested. We will give you an inhaler at the end of the test to ease your breathing.
- You will also do a spirometry (lung function) breathing test and this may make you feel dizzy, breathless or faint.
- If we give you an inhaler to use at the end of the test, this may cause palpitations or a fast heart rate.
- There is a small risk of side effects. These include headache, chest tightness, sore throat, light-headedness, nausea, runny nose, vomiting or dizziness.
- There is an extremely rare risk of allergic reaction.

## **What are the benefits?**

This is a simple, accurate and non-invasive test that helps us to:

- diagnose lung conditions
- monitor the health of your lungs or the development of a lung condition
- decide your treatment plan.

## **Are there any alternatives?**

You can have lung function tests, x-rays and scans, but the mannitol challenge is thought to be more accurate at helping us to diagnose active asthma.

## **Consent**

We must by law obtain your verbal consent to undergo the test procedure. Staff will explain the risks, benefits and alternatives before they ask you to consent. If you are unsure of any aspect of the test proposed, please do not hesitate to speak with a senior member of the staff again.

## Do I need to prepare for the test?

Do not use any inhaled respiratory medications and antihistamines and a number of other medicines before the test because this can affect the results. The table shows for how long you need to stop taking certain medications and substances to get ready for the test.

Medication/substance/activity	When to stop using
Bricani (terutaline) Ventolin, Salamol, Aeolin (salbutamol)	8 hours before the test
DuoResp (formoterol and budesonide) Foradil, Oxis (formoterol) Fostair (formoterol and beclomethasone) Seretide, Sirdupla (salmeterol and fluticasone) Serevent (salmeterol) Symbicort (formoterol and budesonide)	36 hours before
Flutiform (formoterol and fluticasone) Onbrez (indacaterol) Relvar Ellipta (vilanterol and fluticasone) Trelegy (vilanterol, umeclidinium and fluticasone)	48 hours before
Anora Ellipta (umeclidinium and vilanterol) Incruse Ellipta (umeclidinium) Dulclir Genuair (aclidinium and formoterol) Eklira Genuair (aclidinium) Seebri (glycopyrronium) Ultibro Breezhaler (glycopyrronium and indacaterol) Spiriva Respimat (Tiotropium) Spiolto Respimat (tiotropium and olodaterol) Trimbow (formoterol, glycopyrronium and beclomethasone)	72 hours before
Inhaled corticosteroids eg beclomethasone, fluticasone	6 hours before
Ipratropium bromide (atrovent)	12 hours before
Sodium Cromoglycate (intal)	4 hours before
Theophylline	24 hours before
Leotriene receptor Agonist (montelukast, singular, accolate/zafirlukast, zyflo)	4 days before
Caffeine (tea, coffee, energy drinks, caffeine pills)	24 hours before
Antihistamines (eg cetirizine, fexofenadine, loratadine)	72 hours before
Vigorous exercise	4 hours before
Smoking	6 hours before
Chocolate, cola drinks	Day of test

## **What happens before the test?**

When you come in for your test, you will see one of our physiologists, who will confirm your identity. They then check your height and weight and will use these measurements later on to help assess the results of your test. They will ask you about your current health and medical conditions to make sure that it is safe to go ahead with the test. They will also explain what happens during the test.

## **What happens during the test?**

You first have a spirometry (lung function) breathing test. You breathe normally into a mouthpiece attached to small machine called a spirometer, then take a deep breath in and blow out the air as fast and as hard as possible until your lungs are completely empty.

This is the baseline test that shows how well your lungs usually work by measuring how much air you can breathe out in one forced breath.

Next you will be asked to inhale some mannitol and then do the spirometry breathing test again by inhaling deeply and then breathing out as quickly and as fully as you can several times after you have breathed in the powder.

We will compare the results of the two tests – one before the mannitol, one after the mannitol.

You will do these tests again, each time with increasing amounts of mannitol, until you have had the maximum dose. You will be able to rest between each blow

If your airways are sensitive, we may see a drop in your lung function results. You may also cough and have a tight chest.

We will stop the test at any time if your lung function drops by 15%. If this happens, the physiologist will give you an inhaler (usually 400mcg of salbutamol) using an inhaler spacer. They will ask you to take a deep breath in while they press the inhaler down to give you a dose of the medication. They will do this four times. You will have a 15-minute break to allow the medication to work fully and then do the spirometry breathing test again to make sure your lung function is back to normal before you leave.

## **How long does the test take?**

The test usually takes about 1.5 hours.

## **Test results**

You will receive your results when you next attend the Chest Clinic. They will discuss the results with you and the next steps in your treatment.

## **More information**

### **Association for Respiratory Technology & Physiology (ARTP)**

[www.artp.org.uk/patients](http://www.artp.org.uk/patients)

### **Asthma & Lung UK**

[www.asthmaandlung.org.uk](http://www.asthmaandlung.org.uk)

## **Who can I contact with queries and concerns?**

If you have any queries or concerns after your test, please contact the appropriate Lung Function Department.

### **Lung Function Department at King's College Hospital**

**Tel:** 020 3299 4743 option 3

### **Chest Unit at Princess Royal University Hospital (PRUH)**

**Tel:** 01689 863104

9am - 5pm Monday to Friday

## **Sharing your information**

We have teamed up with Guy's and St Thomas' Hospitals in a partnership known as King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas'. To make sure everyone you meet always has the most up-to-date information about your health, we may share information about you between the hospitals.

## **PALS**

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. They can also pass on praise or thanks to our teams.

PALS at King's College Hospital, Denmark Hill, London SE5 9RS

**Tel:** 020 3299 3601

**Email:** [kch-tr.palsdh@nhs.net](mailto:kch-tr.palsdh@nhs.net)

PALS at Princess Royal University Hospital, Farnborough Common, Orpington, Kent BR6 8ND

**Tel:** 01689 863252

**Email:** [kch-tr.palspruh@nhs.net](mailto:kch-tr.palspruh@nhs.net)

**If you would like the information in this leaflet in a different language or format, please contact our Communications and Interpreting telephone line on 020 3299 4826 or email [kch-tr.accessibility@nhs.net](mailto:kch-tr.accessibility@nhs.net)**