

Bronchial Provocation Testing Using Mannitol

Information for patients, relatives and carers

① For more information, please contact:

Cardio-Respiratory Department

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Caring with Pride

Introduction

This leaflet is intended for patients who have been asked by their doctor to undergo an investigation into how sensitive the airways of their lungs are to an inhaled stimulus.

The test will be carried out by a Respiratory Clinical Physiologist in the Cardio-Respiratory Department which is on the first floor of the Out Patients area.

If you require further information or clarification of any of the following then you can contact the department during office hours on 01904 726525. At other times a voicemail facility is available if you wish to leave a message and we will ring you back as soon as possible.

What is a mannitol challenge test?

Mannitol is a naturally occurring sugar which when inhaled in small doses under controlled conditions mimics the body's response to a substance which causes an allergic response. It produces a change in the fluid balance of your airways which results in the release of the mediators of the allergic response. The classic example of this is hay fever or the inflammation seen after an insect bite. In people with active asthma an exaggerated response of the airways to mannitol is seen.

What are the benefits/alternatives?

Your doctor will probably have asked you to undergo this investigation in order to confirm or rule out the diagnosis of asthma. Asthma is often very difficult to diagnose with the usual lung function tests. However, this specialised investigation is very sensitive and specific in identifying individuals with asthma. In addition your doctor will be able to use the results to formulate and discuss a treatment plan with you as appropriate.

Alternatives to mannitol are available but mannitol is the only substance licensed for this investigation in the UK. Also, it has been formally assessed and accepted for use in this investigation by the York Teaching Hospital NHS Foundation Trust.

The procedure

The procedure will be explained to you in detail on the day of the test. You will be asked to inhale increasing amounts of mannitol and the response of your airways will be measured after each dose by asking you to breathe in as deeply as possible and then blow out as quickly as possible into a machine through a disposable mouthpiece and with your nose sealed with a nose clip.

Is the investigation safe?

As a result of inhaling mannitol some individuals may experience a short lived period of wheeziness which will either resolve spontaneously within a few minutes or will be reversed by the administration of a fast acting inhaled bronchodilator. The nature of this investigation causes some patients to cough. However, you will be given sufficient time to recover and will be permitted to drink water in order to relieve the coughing. There have been no significant adverse reactions to mannitol in clinical trials of using this substance for the purpose of bronchial provocation testing.

Although this specific investigation is very safe there are some general considerations that need to be taken into account prior to the test. The small risks there are arise from any pre-existing conditions that may be made worse by performing the required respiratory manoeuvres. These conditions are known as contra-indications and are as follows:

- Current or recent chest infection within two weeks of the investigation.
- Uncontrolled high blood pressure, blood clot in lung (pulmonary embolus) or heart attack (MI) within the last month.
- Recent stroke or cerebro vascular event.
- Recent thoracic, abdominal or eye surgery.
- Coughing up blood (haemoptysis).
- Collapsed Lung (pneumothorax).
- Nausea, vomiting or pain.

You will be asked about contra-indications when you attend your appointment but if you are currently affected by any of these conditions it would be helpful if you contacted the department to check that your investigation can go ahead at the present time.

What preparations are needed before the tests?

To ensure that the investigation is carried out under the best possible conditions please observe the following prior to your appointment.

- Do not smoke for 24 hours.
- Do not eat a large meal within two hours.
- Do not consume alcohol within four hours.
- Do not take vigorous exercise within 30 minutes.
- Do not wear tight clothing that may restrict your breathing.
- If you use inhalers, nebulisers or take tablets for your breathing, please try not to take the following:

Four days before the test.

- Leukotriene receptor antagonists such as Montelukast

Three days before the test.

- Very long acting bronchodilators such as Spiriva
- Antihistamines such as Cetrizine, Fexofenadine and Loratadine.

24 hours before the test.

- Longer acting bronchodilators such as Salmeterol and Formoterol.
- Combined bronchodilator/Corticosteroid inhalers such as Seretide and Symbicort.
- Oral bronchodilators such as Theophylline.

12 hours before the tests.

- Inhaled corticosteroids such as Beclometasone, Budesonide and Fluticasone.
- Anti-cholinergic bronchodilators such as Ipratropium Bromide (Atrovent).

Eight hours before the tests.

- Short acting bronchodilators such as Salbutamol, Ventolin and Bricanyl.
- Inhaled non-steroidal anti-inflammatory agents such as Sodium Cromoglycate and Sodium Nedocromil.

You will be asked about your currently prescribed medication so please bring a list with you if possible. If you feel too breathless to stop taking any of the above please contact us so that we can advise if it is still possible to carry out the investigation.

Results

Unless you are seeing your doctor immediately after your appointment you will not be given the results on the day of your test. The results will be sent to your doctor who will explain them at your next clinic visit.

Please note that in some cases the results are sent to a specialist for reporting and consequently they may not reach your own doctor for up to six weeks.

Tell us what you think of this leaflet

We hope that you found this leaflet helpful. If you would like to tell us what you think, please contact: Muhammad Khan, Highly Specialist Clinical Respiratory Physiologist, The York Hospital, Wigginton Road, York, YO31 8HE, or telephone 01904 726525.

Teaching, training and research

Our Trust is committed to teaching, training and research to support the development of health and healthcare in our community. Healthcare students may observe consultations for this purpose. You can opt out if you do not want students to observe. We may also ask you if you would like to be involved in our research.

Patient Advice and Liaison Service (PALS)

PALS offers impartial advice and assistance to patients, their relatives, friends and carers. We can listen to feedback (positive or negative), answer questions and help resolve any concerns about Trust services. PALS can be contacted on 01904 726262, or email pals@york.nhs.uk. An answer phone is available out of hours.

Please telephone or email if you require this information in a different language or format

如果你要求本資訊以不同的語言或版式提供，請致電或發電郵

Jeżeli niniejsze informacje potrzebne są w innym języku lub formie, należy zadzwonić lub wysłać wiadomość e-mail

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