Methacholine Provocation Test

Lung Function Department

Patient Information

If you would like this information in another language or audio, please contact Interpreting services on telephone: 01223 348043, or email: interpreting@addenbrookes.nhs.uk
For Large Print information please contact the patient information team: patient.information@addenbrookes.nhs.uk

We are a smoke-free site: smoking will not be allowed anywhere on the hospital site.
For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.
Why am I having a Methacholine Provocation test?
A Methacholine Provocation test assesses whether the airways are more sensitive than normal to becoming narrowed. Assessing the sensitivity of your airways can help your doctor to understand the type of conditions that may be affecting your lungs.

Who performs a Methacholine Provocation?
A Methacholine provocation is performed for patients who have asthma-like symptoms and/or a cough. It can be performed on subjects of all ages from five years upwards, providing they can achieve reproducible spirometry.

What does a Methacholine Provocation involve?
Spirometry will be performed to assess airflow through the airways. If reproducible and a good technique is demonstrated, the physiologist will ask you to inhale a solution of saline to determine a baseline response. You will be asked to take slow, deep breaths to full through a nebuliser. This test is time dependent and will involve several stages, which are all very similar. The early stages have fewer breaths and the latter have more, ranging from one to sixteen. The physiologist will give you the saline solution and after waiting one minute, you will then perform spirometry as before.

If there has not been a significant change in spirometry, the process will be repeated but this time with a dose of the drug Methacholine. After the dose of Methacholine has been inhaled, you will wait for another 2 minutes before performing spirometry again.

The amount of Methacholine given will increase as the test continues. The test can be stopped once all stages have been completed or the lung function drops below a set level. A Salbutamol nebuliser will then be given to reverse the effects, and spirometry will be repeated as before.
The test can last approximately 90 minutes.

**What if I am unwell prior to the appointment?**
Please contact the department using the phone number stated if you have had a recent chest infection, are currently on a course of antibiotics or have just finished a course of antibiotics for your chest. If you are, it may not be appropriate to perform the test at this time and your appointment may be rescheduled.

If you are unwell please inform the department at the earliest opportunity, however, if you are unwell on the day of the appointment please still call and let us know as this will allow us to rearrange your appointment for a more suitable time.

**Who will be present at my appointment?**
CUH Addenbrooke’s NHS Trust is a teaching hospital and so there may be occasions when a student or staff members accompany your physiologist, however, we will always seek your permission first.

**Test results**
After your appointment your test results will be sent to your referring consultant, who will then contact you to discuss the results and the next steps in your pathway.

**Consent**
You will be asked for consent to perform tests during your appointment. You will also have an opportunity to ask questions before you give consent. In the unlikely event there are risks related to the test, these will be discussed with you before the test starts.

**Risks**
Inhaling the Methacholine may result in you coughing more often during the test. The Methacholine may cause the airways to narrow depending on how sensitive they are. This may result
in you feeling more wheezy, out of breath or tight chested than when you started the test. The nebuliser at the end of the test should help to resolve these issues.

All drugs carry at least a small risk of side effects. For Methacholine this includes a headache, sore throat, light-headedness, nausea, vomiting, or dizziness. Please be aware that although very rare, all medications also carry a risk of allergic reaction.

Due to the nature of the tests and the exertion required, some patients may feel dizzy or faint during testing. Serious complications are rare and risks will be kept to a minimum by your physiologist.

**Potential but rare complications**

- airway narrowing in those with sensitive airways
- heart attack in patients with previous cardiac disease
- sudden changes in blood pressure
- stroke
- collapsed lung
- retinal detachment

These complications are very rare; you will be questioned by your physiologist prior to doing the tests to ascertain whether you are at increased risk.

**If you can’t attend your appointment**

If you need to rearrange your appointment, or no longer need an appointment, please call us on 01223 217065 at the earliest opportunity to advise us. The ability to reallocate appointments helps us to reduce waiting times.

**Contacts/further information**

If you are unsure about any of the information provided in this leaflet or have any other questions then please do not hesitate to contact the lung function department at Addenbrooke’s hospital on 01223 217065 or alternatively by contacting clinic