Methacholine Challenge Test

This information will help you prepare for your methacholine challenge test at Memorial Sloan Kettering (MSK).

A methacholine (meth-a-KOLE-leen) challenge test (also known as a bronchial or Provocholine® challenge test) is a breathing test that evaluates your lung function. It is used to check for asthma in patients who have a cough, shortness of breath, or other breathing problems.

Methacholine is a medication that causes your airways to narrow if you have asthma. During the test, you will breathe in small amounts of methacholine and your lung function will be measured. If your lung function drops by 20% or more, you may have asthma.

This test takes about 90 minutes.

Before Your Test

When you schedule your test, tell your doctor or nurse if you:

- Have a history of hives, swelling of the upper airway, or both.
- Are breast feeding, pregnant, or if there is any chance that you are pregnant.
• Have a heart condition. If you do, your heart specialist must give you permission to have this test.

• Take any medications. If you do, you may need to stop taking certain ones before the test (see the “Stopping medications” section below).

**Stopping medications**

• You will need to stop taking medications for breathing problems or for your lungs before your test. The table below lists when you should stop taking them. Call your doctor if you have any problems after stopping a medication.

• If you take any other medications for your lungs or for breathing problems that are not listed below, tell your doctor or nurse.

• Keep taking all your other medications that are not for breathing problems or your lungs.

<table>
<thead>
<tr>
<th>When to stop taking the medication</th>
<th>Name of medication</th>
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<tbody>
<tr>
<td>6 weeks before your test</td>
<td>• Omalizumab (Xolair®)</td>
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</table>
| At least 2 weeks before your test | • Fluticasone and salmeterol (Advair®)  
  • Flunisolide (AeroBid®, Nasalide®)  
  • Triamcinolone (Azmacort®, Nasacort®)  
  • Beclomethasone (Beconase®, (QVAR®, |
<table>
<thead>
<tr>
<th>At least 1 week before your test</th>
<th>Tiotropium (Spiriva®)</th>
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<tr>
<td>4 days (96 hours) before your test</td>
<td>Triprolidine and pseudoephedrine (Actifed®)</td>
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<tr>
<td></td>
<td>Loratadine (Alavert®, Claritin®)</td>
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<td></td>
<td>Fexofenadine (Allegra®)</td>
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<tr>
<td></td>
<td>Triamcinolone (Aristocort®, Azmacort®)</td>
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<td></td>
<td>Azelastine (Astelin®)</td>
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<td></td>
<td>Hydroxyzine (Atarax®)</td>
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<td></td>
<td>Diphenhydramine (Benadryl®)</td>
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<td></td>
<td>Brompheniramine and pseudoephedrine (Bromfed®)</td>
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<tr>
<td></td>
<td>Chlorpheniramine and pseudoephedrine (Chlor-Trimeton®)</td>
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<td></td>
<td>Desloratadine (Clarinex®)</td>
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<tr>
<td></td>
<td>Acetaminophen, phenylpropanolamine hydrochloride, chlorpheniramine maleate, and dextromethorphan hydrobromide (Comtrex®)</td>
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<tr>
<td></td>
<td>Clemastine (Dayhist®)</td>
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<td></td>
<td>Pseudoephedrine (Dimetapp®)</td>
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<tr>
<td></td>
<td>Pseudoephedrine and brompheniramine (Dristan®)</td>
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<td></td>
<td>Clemastine (Tavist®)</td>
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<tr>
<td></td>
<td>Cetirizine (Zyrtec®)</td>
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<tr>
<td>At least 2</td>
<td>Oxtriphylline (Choledyl®)</td>
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</tbody>
</table>
| days (48 hours) before your test | • Formoterol (Foradil®)  
• Cromolyn (Intal®, Nasalcrom®)  
• Hydroxyzine, theophylline, ephedrine (Marax®)  
• Aminophylline (Phyllocontin®)  
• Guaifenesin and theophylline(Quibron®)  
• Theophylline (Elixophyllin®, Quibron®-T, Quibron®-T/SR, Slo-Bid®, Theochron®, T-Phyl®, Theo-24®, Theolair®, Theo-Dur®, Theolair-SR®, Uniphyl®)  
• Salmeterol (Serevent®)  
• Nedocromil (Tilade®) |
| --- | --- |
| At least 1 day (24 hours) before your test | • Albuterol (AccuNeb®, Proventil®, Ventolin®, Volmax®)  
• Apinephrine (Adrenalin®, MicroNefrin®, Primatene®)  
• Metaproterenol (Alupent®)  
• Opratropium (Atrovent®)  
• Terbutaline (Brethine®, Bricanyl®)  
• Ipratropium and albuterol (Combivent®, DuoNeb®)  
• Isoetharine  
• Isoproterenol (Isuprel®)  
• Pirbuterol (Maxair®)  
• Montelukast (Singulair®)  
• Levalbuterol (Xopenex®)  
• Accolate (Zafirlukast®)  
• Zileuton (Zyflo®) |

**Call your doctor or nurse if you:**

- Develop a lung infection, a cold, the flu or have
immunizations in the 2 weeks before the test. If you have had any of these, your test results may not be accurate and you may need to have the test on a later date.

- Do not feel well enough to perform this test.
- Need to change your appointment.
- Will be late.
- Have any questions or concerns.

You can reach your doctor or nurse by calling 212-639-8492.

The Day of Your Test

Things to remember

- Don’t eat anything 2 hours before your test. You can have a light meal, such as a sandwich, soup, or salad, at least 2 hours before your test.
- Don’t have any products with caffeine, such as coffee, tea, cola, or chocolate, at least 4 hours before your test.
- Don’t perform any strenuous activity the day of the test.
- Don’t wear tight clothes.
- Don’t put on lipstick, perfume, or cologne.

Where to go

Your test will take place in the pulmonary lab, which is located at 425 East 67th Street. This is a side entrance of the main hospital at MSK. Take the A elevators to the 3rd floor. Please arrive 15 minutes before your scheduled time.
What to expect
There are 3 stages for the test. Your technologist will guide you through each one.

1. Your technologist will first measure how fast you breathe. They will also check how much air you can breathe before and after you inhale a saline mist.

2. Then, you will inhale different concentrations of methacholine as a mist from a machine. Up to 4 concentrations will be used. Your breathing will be measured after each concentration. Your breathing may feel better, worse, or the same after inhaling the methacholine. Tell your technologist if you have any problems.

3. At the end of the test, you will get medication that you will breathe in to reverse any effects of the methacholine. Your breathing will be measured to be sure it is normal before you leave.

Although the test is safe, there is a small risk of having an asthma attack or severe coughing while inhaling the methacholine. You may also feel dizzy or uncomfortable while you breathe fast. Your doctor, nurse, or technologist will watch you closely during the test. If you have any concerns or begin to feel uncomfortable during the test, please let your technologist know.

After Your Test

- You can resume taking your medications, unless your doctor
gives you other instructions.

- You can go back to your usual diet and activities.
- Your test results will be ready in 2 days. Your lung specialist will discuss them with you and answer any questions you have.

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.