

## Medications to Treat Asthma



### What is Asthma?

Asthma is a common long-term disease which affects the small airways causing breathing difficulties.

When you have asthma, the small airways become inflamed and cause symptoms such as wheezing, coughing, shortness of breath and thick phlegm (mucus). It can be triggered by different causes, which varies between patients.

### What are the Triggers?

- Allergies: animal hair or fur, house dust mites, grass or flower pollen, dust
- Irritants: cigarette smoking, chemicals
- Viral or bacterial chest infection
- Air pollution
- Extreme weather (Too hot or too cold)

### What are the Signs of an Asthma Attack?

- Wheezing (a high pitched whistling sound)
- Coughing after exercise and/or coughing at night
- A cough may be the only sign of asthma
- Shortness of breath
- Chest tightness
- Thick phlegm (mucus)

### What are the Medications Used to Treat Asthma?

Asthma is mainly treated using inhalers. Inhalers are devices that deliver medications directly into your lungs. There are 2 types of inhalers:

- Reliever inhaler
- Controller inhaler

Oral medications may also be prescribed by your doctor, in addition to inhalers. These oral medications for asthma treatment include:

- Montelukast
- Theophylline
- Prednisolone

## Types of Inhalers

Medication class	Medicine Name (Brand)	How it works
Short-acting Beta2-Agonists	Salbutamol	Reliever Opens the airways
Inhaled corticosteroids	Beclometasone	Controller Reduce airway inflammation
	Budesonide	
Long-acting Beta2-Agonists with Inhaled corticosteroid (Combination Inhaler)	Salmeterol/Fluticasone (Seretide®)	Controller Keeps the airways open and reduce airway inflammation
	Budesonide/Formoterol (Symbicort®)	
	Fluticasone/Formoterol (Flutiform®)	
	Fluticasone/Vilanterol (Relvar®)	
	Beclometasone/Formoterol (Fostair®)	
Long-acting muscarinic antagonist	Tiotropium (Spiriva Respimat®)	Controller Keeps the airways open
Short-acting muscarinic antagonist	Ipratropium	Reliever Opens the airways
Short-acting Beta2-Agonist with short acting muscarinic antagonist	Fenoterol / Ipratropium (Berodual®)	Reliever Opens the airways

## What Is the Difference Between Reliever and Controller Inhaler?

- The reliever inhalers help with breathing difficulties immediately by opening the airways. They DO NOT prevent asthma attack from happening.
- The controller inhalers reduce airways inflammation and keep the airways open in long run. Hence, they PREVENT asthma attacks from recurring
- Controller inhalers MUST be used EVERYDAY, while reliever inhalers can be used when necessary

## How are Inhalers Being Administered?

- Each type of inhaler has its own administration method. Please consult your doctor, pharmacist, or nurse clinician if you are unsure of how to use your inhaler.
- If you miss a dose, take the missed dose as soon as you remember. If it is almost time for your next dose, take only the usual dose. Never take a double dosage to make up for the missed dose.

## Types of Oral Medications to Manage Asthma

Medication class	Medicine Name	How it works
Methylxanthine	Theophylline	Opens the airways
Leukotriene antagonist	Montelukast	Reduce airway inflammation
Steroid	Prednisolone	Reduce airway inflammation

## Can Oral Medications for Asthma Be Administered / Taken With Other Medications?

- Please inform your doctor or pharmacist if you are taking other medications, including supplements, traditional or herbal remedies.

## What Are The Important Side Effects?

- Medications prescribed by your doctor should be beneficial for your condition even though they may result in some side effects.
- While serious side effects are rare, some common side effects can be minimized or prevented with appropriate management. Always discuss with your doctor if you experience any persistent side effects.

Medication Class	Side Effect	Management
Inhaled Steroid	<ul style="list-style-type: none"> <li>• Sore throat</li> <li>• Voice changes</li> <li>• Hoarseness</li> <li>• White patches in mouth or throat (oral thrush)</li> </ul>	These can be avoided by rinsing the mouth thoroughly with water after inhalation.
Beta2-Agonists	<ul style="list-style-type: none"> <li>• Nervousness</li> <li>• Restlessness</li> <li>• Trembling of hands</li> <li>• Pounding heartbeat</li> <li>• Headache</li> </ul>	Check with your doctor if the side effects persist
Anticholinergic	<ul style="list-style-type: none"> <li>• Dry mouth/throat</li> <li>• Cough</li> <li>• Nervousness</li> <li>• Nausea</li> <li>• Constipation</li> <li>• Headache</li> </ul>	Check with your doctor if the side effects persist
Medication Class	Side Effect	Management

Methylxanthine (Theophylline)	<ul style="list-style-type: none"> <li>• Nausea and gastrointestinal disturbances</li> <li>• Headache</li> <li>• Insomnia</li> <li>• Irregular/ rapid heartbeat</li> <li>• Potential for toxicity if not used as prescribed</li> </ul>	<ul style="list-style-type: none"> <li>• If stomach upset is severe, theophylline can be taken after meals.</li> <li>• Seek medical attention immediately if you experience vomiting, rapid or irregular heart beat or seizures.</li> <li>• Do not exceed prescribed dose.</li> </ul>
Leukotriene antagonist (Montelukast)	<ul style="list-style-type: none"> <li>• Sore throats</li> <li>• Upper respiratory infection</li> <li>• Abdominal pain</li> <li>• Thirst</li> <li>• Headache</li> <li>• Drowsiness</li> <li>• Sleep disturbance</li> <li>• Mood and behaviour changes</li> <li>• Rash</li> </ul>	Check with your doctor if the side effects persist
Oral Steroid	<ul style="list-style-type: none"> <li>• Gastrointestinal irritation</li> <li>• Mood changes</li> </ul>	<ul style="list-style-type: none"> <li>• Take oral steroids after food to minimise gastric side effects.</li> <li>• Inform your doctor if these side effects become severe or bothersome.</li> <li>• Short courses of oral steroids do not cause any problem.</li> </ul>
Medication Class	Side Effect	Management

Oral Steroid	<p><u>For long-term or high dose steroids</u></p> <ul style="list-style-type: none"> <li>• Increased susceptibility to infections</li> <li>• Increased blood pressure and blood glucose</li> <li>• Weight gain</li> <li>• Osteoporosis</li> </ul>	<ul style="list-style-type: none"> <li>• Inform your doctor if these side effects e.g. sore throat, fever, mouth ulcers or flu-like symptoms are persistent.</li> <li>• Clinical parameters e.g. blood pressure, blood glucose, weight and bone mineral density will be monitored regularly if you are taking long-term oral steroids.</li> </ul>
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If you develop rashes, facial swelling or shortness of breath after taking or using the medication(s), you could be allergic to the medication(s). Please seek medical attention immediately.

#### Are There Any Special Precautions That I Need To Take?

- It is important to inform your doctor if you intend to conceive or breastfeed while taking or using any asthma medication(s).

#### How Do I Store These Medications?

- Store your medication in a cool, dry place away from heat, moisture and direct sunlight.

#### What is an Asthma Attack?

You're having an asthma attack if any of the following happens:

- Your reliever isn't helping
- Your symptoms are getting worse
- You're too breathless or it's difficult to speak, eat or sleep
- Your breathing is getting faster and you feel you can't draw in a full breath

#### How Do I Manage an Asthma Attack?

- Sit comfortably and try to keep calm
- Use your reliever inhaler two puffs 4 times a day when necessary, as per instructed on the medicine label. OR Inhale four puffs of your reliever inhaler, one puff at a time, preferably through a spacer device. Take four

to six breaths from the spacer with each puff. Wait for 10 minutes. May repeat and use up to six puffs of the reliever inhaler.

- Seek medical attention if your condition is not controlled by daily maximum dose of 12 puffs.
- Take SLOW STEADY BREATHS
- Monitor response for 10-60 minutes. If response is poor or a relapse occurs in 1-4 hours, seek medical care immediately for further treatment.

#### What Else can I do to Help My Condition?

- Avoid triggers such as cigarette smoke, grass or flower pollen, animal hair or fur, dust mites etc, to prevent the occurrence of an asthma flare-up.
- Exercise. Regular exercise helps to ease symptoms and improve your breathing as well as your quality of life.
- Vaccination. People with asthma are at risk for worsening symptoms because of respiratory infections. Infections may be avoided with vaccination against influenza and pneumococcal pneumonia. Please speak to your doctor for more information, or if you are keen to receive vaccinations.
- Stop smoking. The first and most important part of any treatment plan for asthma is to stop smoking. As smoking is one of the triggers for asthma flare-up. Chemicals from cigarette smoking may damage the airways, leading to the development of another lung disease, such as Chronic Obstructive Pulmonary Disease (COPD). Please speak to your doctor or pharmacist if you need help to quit smoking.

If you encounter any problems with your treatment, or have any queries, please contact your doctor, pharmacist, or nurse clinician.

Please keep all medications out of reach of children.

