

Asthma: Breathe Easy

Patient Guide

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Every Breath Matters

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Introduction

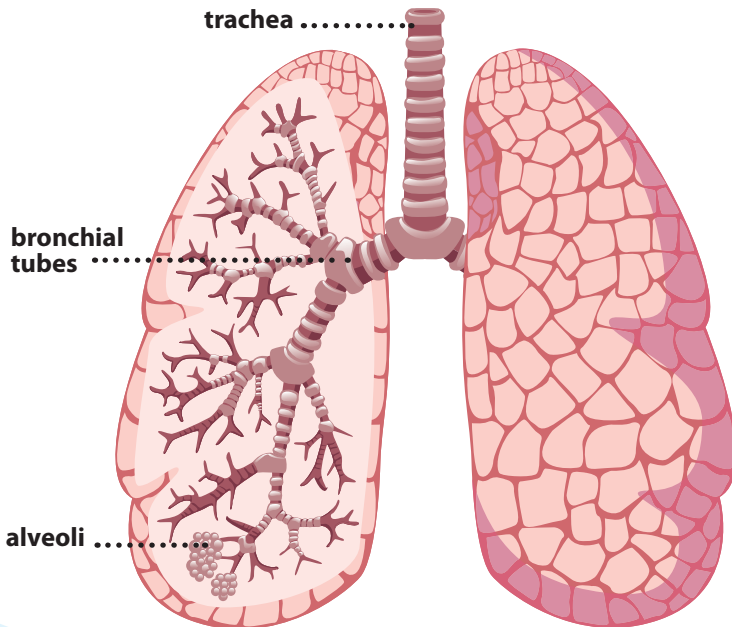
About 300 million people around the world have asthma, and this figure is expected to increase to 400 million by 2025.

In Malaysia, 4.5% of adults and 7.1% of children have asthma. Sadly, many of these children and adults are forced to miss school and work respectively due to uncontrolled asthma.

It is hoped that the information provided in this guide will help you to gain a clearer understanding of this disease as an asthmatic or caregiver, and be empowered to better manage it for a healthier lifestyle.

What is asthma?

Air containing oxygen is **inhaled** (breathed in) through the nose or mouth, goes down the **trachea** (windpipe), and then passes through a series of **bronchial tubes** (airways) inside the lung. These airways end in the **alveoli** (tiny balloon-like air sacs) where the oxygen-carbon dioxide exchange occurs, before the air containing carbon dioxide is **exhaled** (breathed out).



INSIDE OF YOUR LUNGS

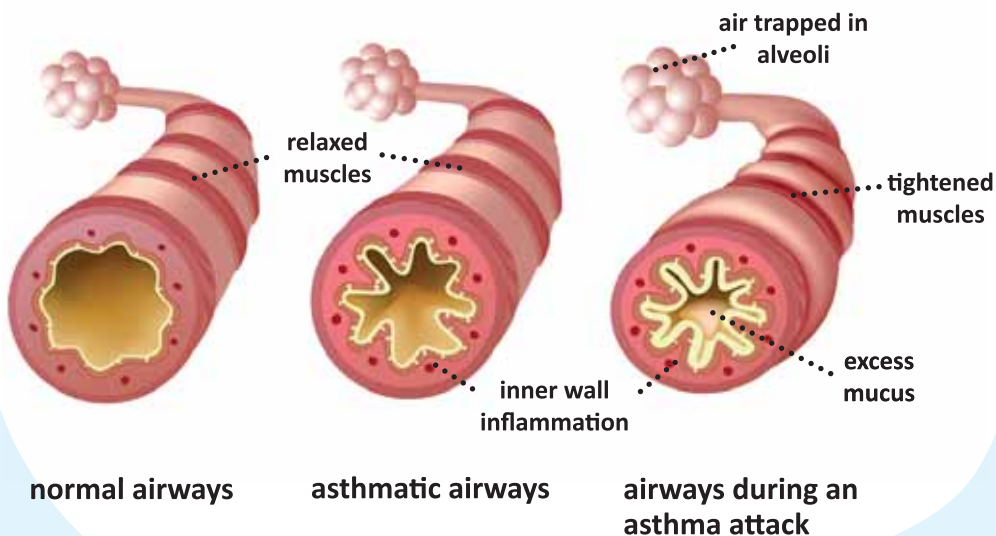


Asthma is a **chronic** (long-term) condition that affects the airways inside your lungs.

When you have asthma, your airways are **inflamed**; the inner walls swell up and produce a lot of thick **mucus** or phlegm (a sticky substance produced by the inner wall to trap dirt from the air inhaled). Hence, compared to a person without asthma, your airways are more sensitive to certain things or conditions called **triggers**. These triggers can worsen your asthma and may lead to an asthma attack.

During an asthma attack, the following three biological events take place causing your sensitive airways to become even more narrow and inflamed:

1. More inflammation
2. More production of mucus
3. **Bronchoconstriction** (tightening of the muscles around the airways)



Symptoms

The narrowing and inflammation of the airways result in one or a combination of the following common symptoms:

coughing

chest tightness
(squeezing sensation)

wheezing
(whistling noise when breathing)

difficulty breathing

Triggers

As mentioned earlier, triggers are certain things or conditions that your airways are extra sensitive to, and can result in an asthma attack. Common triggers for asthma are as follows:

- **Allergens:** Substances to which a person is allergic to such as animal hair or secretions, pollen (powder produced by flowers), house dust mites (tiny creatures living in house dust) and cockroaches
- **Extreme weather:** Very cold or very hot weather
- **Pollutants:** Air from car exhaust, cigarette smoke and haze
- **Medications:** Nonsteroidal anti-inflammatory drugs (NSAIDs) or pain-killers (e.g. aspirin & ibuprofen) and beta-blockers
- **Food additives:** Sulfites in wine, beer or dried fruit
- **Illnesses:** Cold and flu
- **Strong odours:** Scents from perfumes, cleaning products and air fresheners
- **Emotions:** Stress, bouts of extreme laughter or crying



Medications

(Note: Examples provided are for illustration only, and does not cover all medications available in the market)

Type	Medications
1. Quick-Reliever Medication <ul style="list-style-type: none"> Used as needed to relieve asthma symptoms when they occur Used during an asthma attack May be used before exercising, if advised by a doctor <p>Note: If you need to use your reliever more than 3 times per week (other than before exercise), you should see a doctor for advice.</p>	Short-acting beta-2 agonists (SABAs) <ul style="list-style-type: none"> Relax the muscles surrounding the airways within 5 - 10 mins Keep airways open for 4 – 6 hours <p>Inhaled: Salbutamol (<i>Ventolin</i>), terbutaline (<i>Bricanyl</i>), fenoterol (<i>Berotec</i>)</p> <p>Swallowed: Salbutamol (<i>Ventolin</i>), terbutaline (<i>Bricanyl</i>)</p>
	Anticholinergics <ul style="list-style-type: none"> Same action as SABAs, but takes a longer time to work (15-30 mins) Usually given with a SABA <p>Inhaled: Ipratropium bromide (<i>Atrovent</i>)</p>
	Combination (SABA + anticholinergic) <p>Inhaled: Ipratropium bromide + salbutamol (<i>Combivent</i>) Ipratropium bromide + fenoterol (<i>Duovent</i>)</p>

Terbutaline

Turbuhaler

Salbutamol

Tablet



Evohaler



Syrup

Ipratropium bromide













Metered dose inhaler (MDI)

Ipratropium bromide + salbutamol

Unit dose vial (Used with nebuliser)



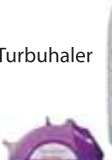





Type	Medications
2. Preventer Medication <ul style="list-style-type: none"> Prevents occurrence of asthma symptoms and asthma attacks Usually prescribed for those with frequent asthma symptoms Need to be taken daily as prescribed by the doctor to keep your asthma under control 	Corticosteroids <ul style="list-style-type: none"> Reduce inflammation in the airways Makes airways less sensitive to triggers <p>Inhaled: Budesonide (<i>Pulmicort</i>), fluticasone (<i>Flixotide</i>), beclomethasone (Beclomet Easyhaler), ciclesonide (<i>Alvesco</i>)</p> <p>Swallowed: Methylprednisolone, prednisolone (<i>only used in severe and difficult to control asthma</i>)</p> <p>Leukotriene modifiers</p> <ul style="list-style-type: none"> Helps to reduce inflammation of airways but are generally less effective compared to corticosteroids <p>Swallowed: Montelukast (<i>Singulair</i>)</p>
3. Symptom Controller Medication <ul style="list-style-type: none"> Prescribed if still have asthma symptoms despite taking corticosteroid preventer medication 	<p>Long-acting beta-2 agonists (LABAs)</p> <ul style="list-style-type: none"> Relax the muscles around airways, but takes a longer time to work than SABAs Keep airways open for 12 hours <p>Inhaled: Salmeterol, formoterol (<i>Oxis</i>)</p> <p>Swallowed: Salbutamol (slow release), terbutaline (slow release)</p> <p>Xanthines</p> <ul style="list-style-type: none"> Relax the muscles around airways through a different mechanism of action from LABA <p>Swallowed: Theophylline (slow release)</p>
4. Combination <ul style="list-style-type: none"> Preventer + Symptom controller 	<p>Inhaled: Budesonide + formoterol (<i>Symbicort</i>) Fluticasone + salmeterol (<i>Seretide</i>)</p>

Budesonide	Fluticasone	Beclomethasone	Prednisolone
 Turbuhaler	 Evohaler Accuhaler	 Easyhaler	 Tablet
Montelukast			
 Chewable tablet	 Film-coated tablet	 Oral granules (sachet)	
Formoterol			
 Turbuhaler			
Theophylline (slow release)			
 Tablet		 Tablet	
Budenoside + formoterol		Fluticasone + salmeterol	
 Turbuhaler	 Evohaler Accuhaler		

Types of inhalers

An inhaler is a device that delivers the asthma medication right into the airways of your lungs, where it is most needed.

Types	Description	Example
1.Metered dose inhaler (MDI)	<ul style="list-style-type: none"> A measured dose of liquid medication is released in the form of a mist when the top of the inhaler is pressed down and you breathe in at the same time. Requires good hand-breath coordination. Attaching a spacer (tube between the inhaler and your mouth) can make an MDI easier to use. Contains a pressurised propellant gas to push out the medication. 	 
2.Dry powder inhaler (DPI)	<ul style="list-style-type: none"> A measured dose of medication is released in the form of very fine powder when you breathe in (breath-activated). Does not require any hand-breath coordination, but you must breathe in very deep and fast. Several common types of DPI available locally are the Turbuhaler, Accuhaler, and Easyhaler. 	  
3.Nebulizer	<ul style="list-style-type: none"> Machines that turn liquid medication into a fine mist. Mist is inhaled with a facemask or a mouthpiece. Does not need any coordination, just breathe in and out like normal. 	

How to control your asthma?

Bad control of asthma can lead to **respiratory failure** (oxygen levels in the blood drop too low or carbon dioxide levels in the blood rise too high) which is life-threatening.

IMPORTANT NOTE: In the following two conditions, take your quick reliever medication immediately and call or rush to see a doctor straight away :

- Asthma symptoms occur everyday
- Sudden severe asthma attack (i.e. breathless, unable to talk or move)

The following are **6 important asthma control tips** to help you 'breathe easy':

1. PEAK FLOW METER



Regularly use this simple tool to measure how fast you can push out air from your lungs. This helps to monitor how open your airways are.

If required, discuss with your doctor and choose one you're comfortable with. Learn how to use it correctly.

2. INHALER USAGE



Note: Inhaled medications are better than oral ones because they go straight to the airways of the lungs where the problem is.

3. PREVENTER MEDICATION

Identify and avoid your asthma triggers.

Note: Smoking or inhaling cigarette smoke should be strictly avoided

If prescribed, take it daily even when you are feeling fine unless your doctor tells you to stop using it.

4. TRIGGERS

5. ASTHMA DIARY

Walking, cycling and swimming are exercises you should consider to keep fit and enjoy a healthier life

Monitor and record your symptoms daily. If worsening, see your doctor immediately.

6. EXERCISE

Note: Take a quick reliever medication before exercising, if advised by your doctor to do so.

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