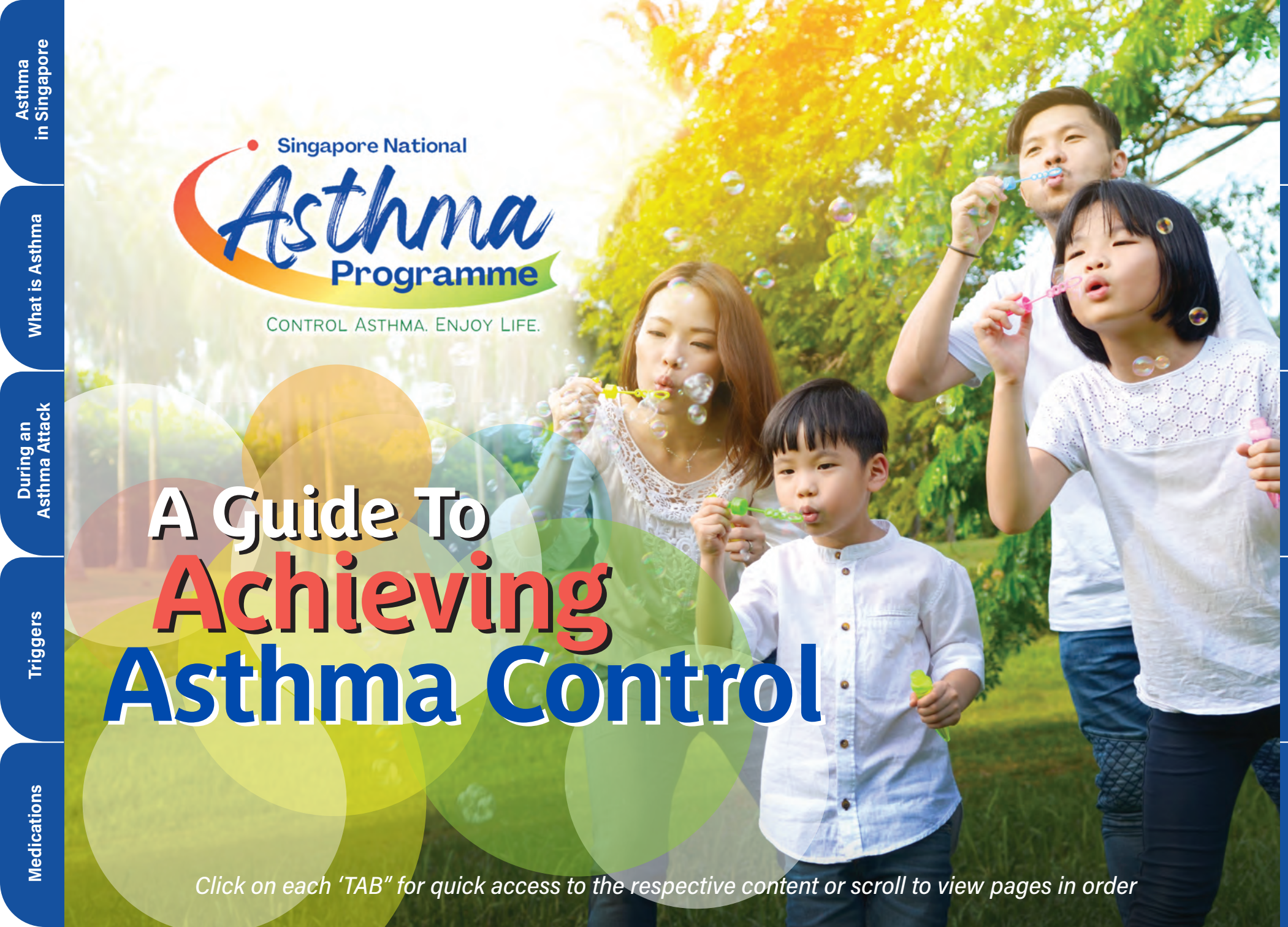
Singapore National Asthma Programme

CONTROL ASTHMA. ENJOY LIFE.



# A Guide To Achieving Asthma Control

*Click on each 'TAB" for quick access to the respective content or scroll to view pages in order*

# *How common is Asthma in Singapore?*

- **Asthma is the most common chronic lung condition in Singapore.**

- **About 5% of adults and 20% of school-going children in Singapore, have asthma.**

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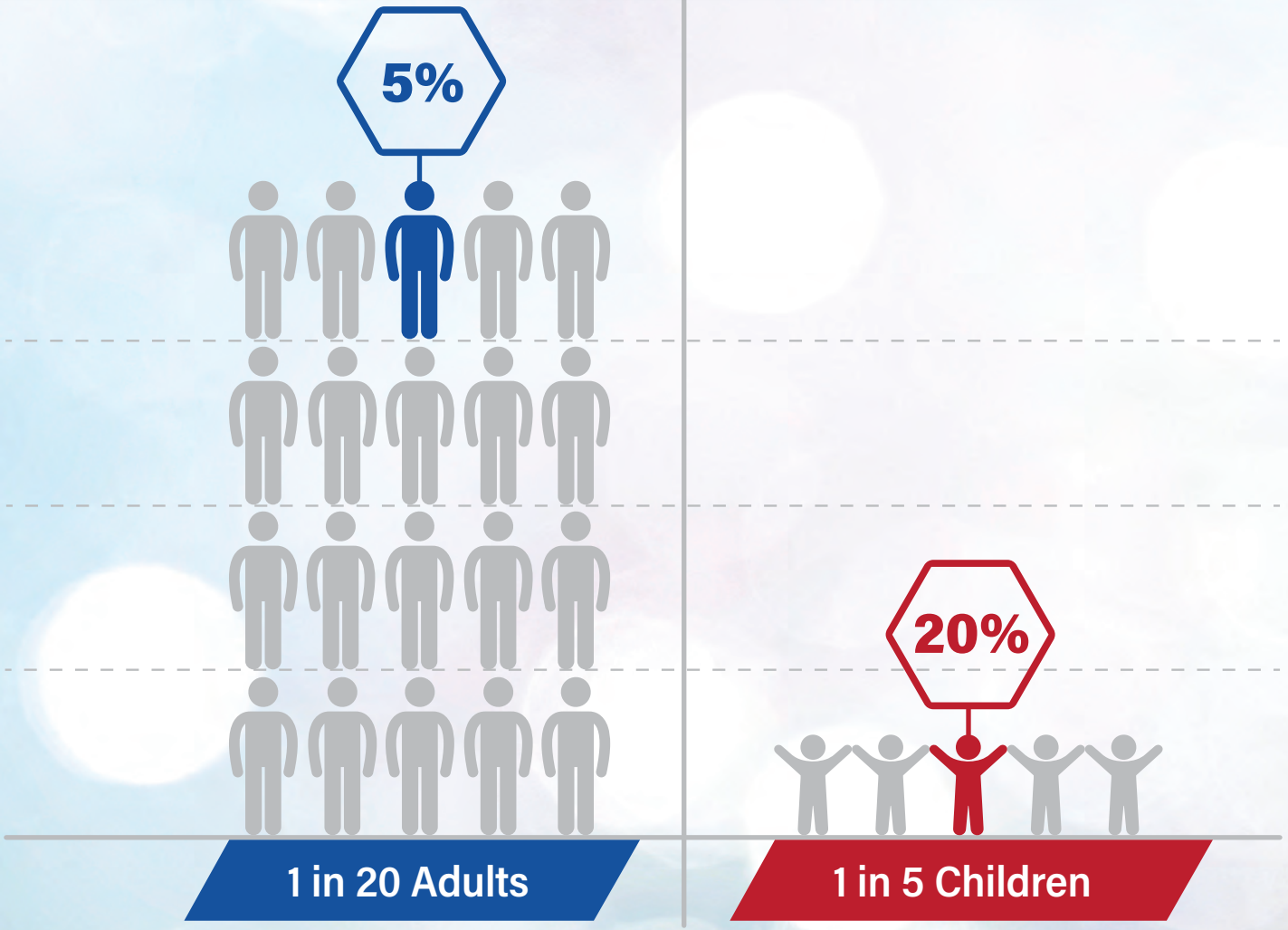
# How common is Asthma in Singapore?

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Reference: National Health Survey 2010. Epidemology & Disease Control Division, Ministry of Health, Singapore. www.moh.gov.sg/resources-statistics/reports/national-health-survey-2010

# What is Asthma?

- Asthma is a chronic (long-term) condition of the airways (air pipes in the lungs).
- When exposed to certain triggers, the airways become swollen and narrow, making breathing difficult.
- Asthma cannot be cured but can be controlled in most people.

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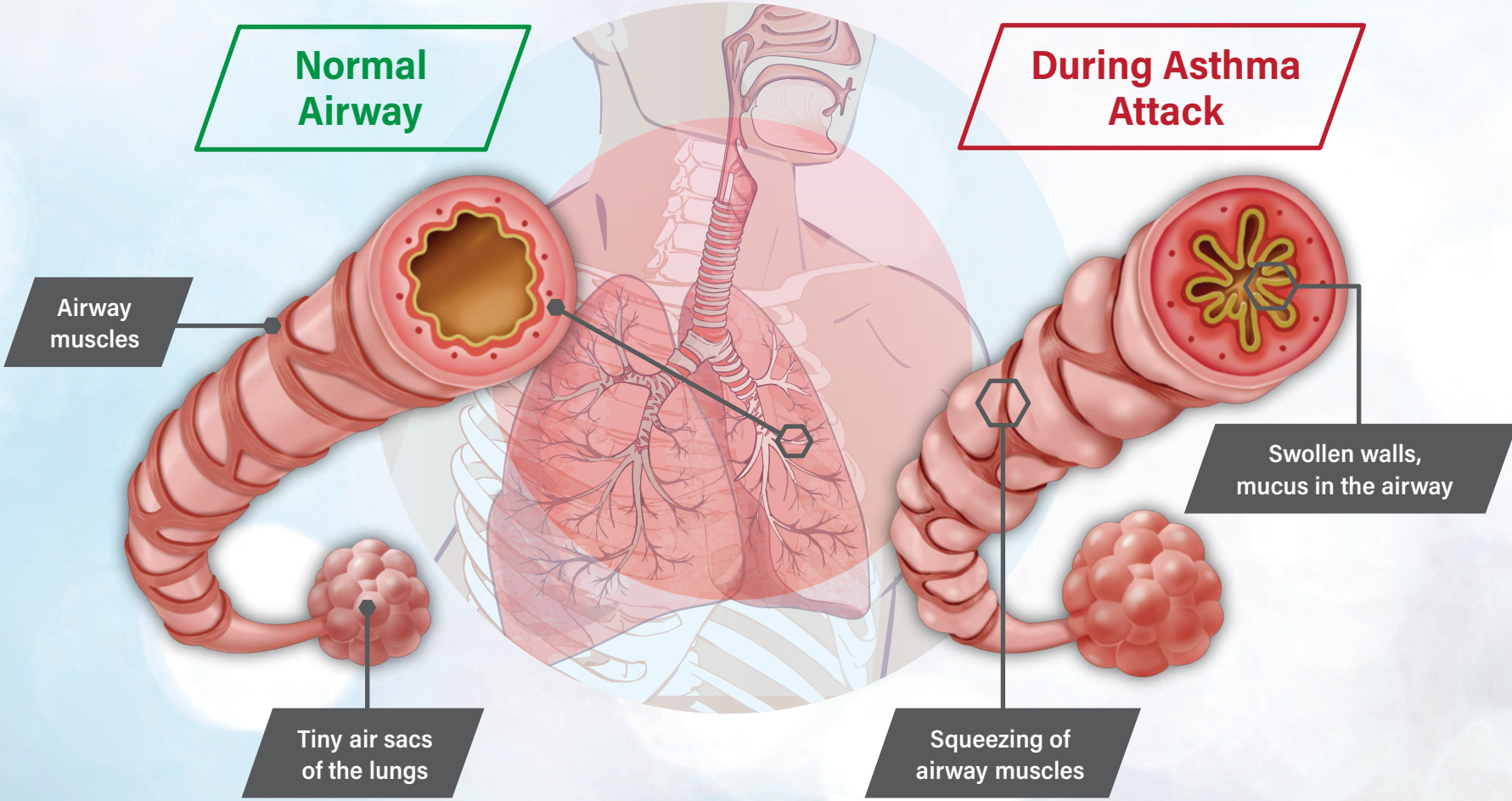
# What is Asthma?

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# What happens during an asthma attack?

People with asthma have sensitive airways. When exposed to trigger factors, it causes:

- **Narrowing of the airways**
  Muscles surrounding the airways squeeze and tighten.

- **Swelling of the airways**
  The lining of the airways swells and fills with excessive mucus, making breathing difficult, and causing a person to cough and have sputum.

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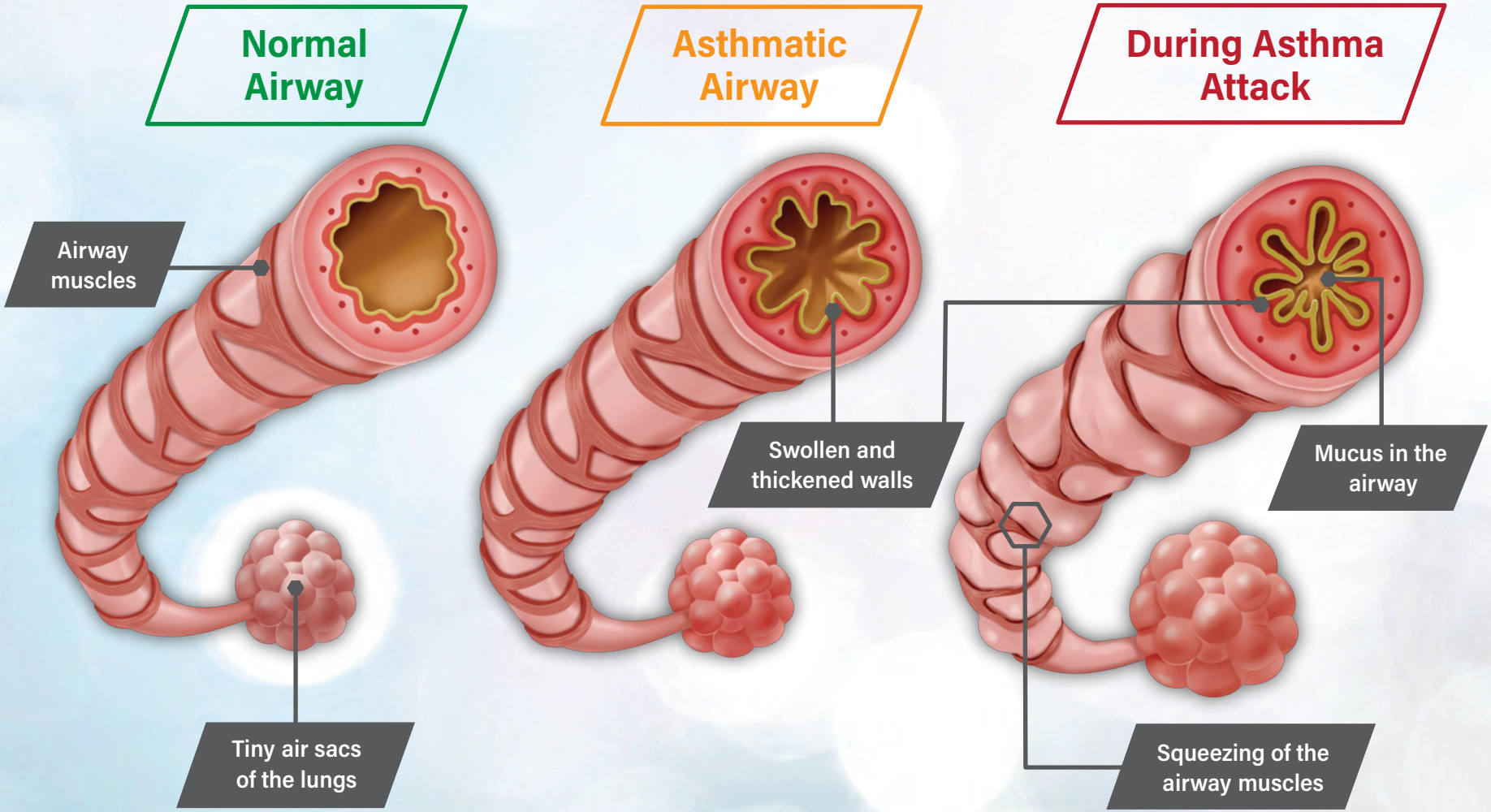
# What happens during an asthma attack?

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# What are the symptoms of an asthma attack?

**You may experience:**

- Coughing
- Shortness of breath due to narrowed breathing tubes
- Chest tightness
- Noisy breathing (wheeze)

**You may experience asthma symptoms more often:**

- At night
- When waking up in the early morning
- During and after exercise

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# What are the symptoms of an asthma attack?

Chest Tightness

Shortness of Breath

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Cough

Wheeze - a high pitch whistling sound made while breathing with difficulty

# Triggers

- Triggers are factors that may lead to an asthma attack.
- People with asthma have extra-sensitive airways. When exposed to certain triggers, the airways become swollen and narrow, causing difficulty in breathing.
- Asthma triggers include dust and dust mites, upper respiratory tract infection (URTI), cigarette smoke, pet dander (e.g. from cats and dogs), pollution in the air, moulds, emotions, exercise, strong smells or chemicals like certain detergents, perfumes or paint.
- To keep your asthma under control, learn to identify what your asthma triggers are and avoid them where possible.

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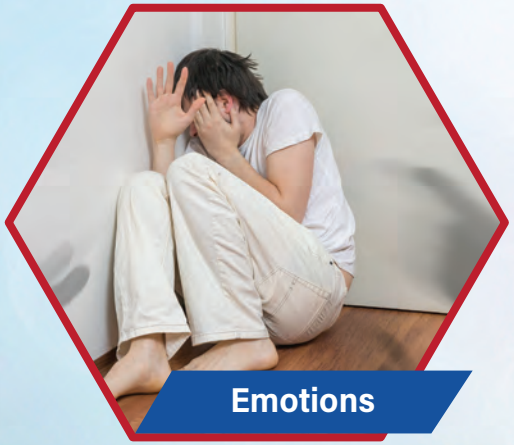
# Triggers

Cold, Flu, or Other Airway Infections

Smoking or Environment

Chemicals



Emotions

Allergies or Intolerances

Exercise

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# *Triggers: Cold, Flu, or Other Airway Infections*

- **Asthma is often triggered by a cold, flu or other lung infections.**
- **It may start with what seems to be a mild cold (runny nose, scratchy throat).**
- **Then over hours or days, asthma symptoms (such as cough, wheezing, chest tightness, breathlessness) start to appear.**
- **The asthma symptoms can persist for 1 to 2 weeks.**

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# *Triggers: Cold, Flu, or Other Airway Infections*

**Cold**

**Cough**

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# *Triggers: Smoking or Environment Pollution*

- **Asthma can also be triggered by the irritants and chemicals in cigarettes or environmental pollutants.**
- **Avoid smoking or exposure to cigarette smoke and environments which are polluted (where possible).**
- **Close windows during haze or when the environment outside is polluted.**

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**Smoking cessation resources:**

- I Quit 28-Day Countdown (www.healthhub.sg/IQuit)
- START to S.T.O.P (Speak To Our Pharmacists programme) (www.pss.org.sg/start-stop)

**Haze health advisory (National Environment Agency and Ministry of Health)**

- PSI 101-200: avoid prolonged or strenuous outdoor physical exertion.
- PSI >200: avoid outdoor activity.

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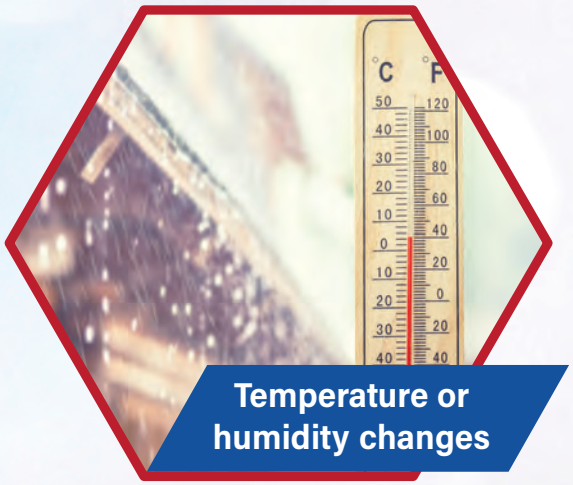
# Triggers: Smoking or Environment Pollution

Active or passive smoking




Temperature or humidity changes

Haze

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## Smoking cessation resources:

healthhub.sg/IQuit

pss.org.sg/start-stop

# Triggers: Chemicals

- Some people are sensitive to certain chemicals used at work or at home and these may trigger their asthma.
- Look out for any correlation between exposure to chemicals and asthma symptoms.
- Avoid these chemicals if you find that you are sensitive to them.

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# Triggers: Chemicals


Powder / Flour


Emulsion Paint


Perfume

Cleansing Liquid


Fogging Smoke

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# *Triggers: Allergies or Intolerances*

- **Animal fur or dander from pets**
  - **If having a pet makes your asthma worse, avoid having a pet/ exposure to pets; if you are unable to avoid having a pet at home, keep pets away from your bedroom, keep your house clean and wash pets regularly.**
- **Dust mites, mould**
  - **Avoid carpets, dust and clean your house regularly, reduce dampness indoors.**
- **Certain Additives in Food and Medications**
  - **Food, drinks or additives may contain monosodium glutamate (MSG), food preservatives (containing metabisulfite) or some food colouring agents that can trigger asthma.**
  - **Certain medications may also trigger asthma, e.g. Aspirin, NSAIDS, Beta Blockers.**
  - **Identify your individual triggers and avoid them.**

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# *Triggers: Allergies or Intolerances*

Dust mites

Mould

Animal fur or dander from pets

Certain Additives in Food & Beverages

Certain Medications

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# Triggers: Emotions and Exercise

- **Emotions**
  - Stress and other psychological factors can trigger asthma symptoms.
  - Early identification and taking steps to manage your stress and emotions can help to reduce asthma symptoms.

- **Exercise**
  - Don't let asthma hold you back from physical activity.
  - If exercise triggers your asthma, use a quick relief inhaler (e.g. salbutamol inhaler) 5 to 10 minutes before you start exercising.
  - Allow 10 to 15 minutes for warm up and cool down before/after exercise.
  - If you start having asthma symptoms during exercise, stop and use your quick relief inhaler (e.g. salbutamol inhaler) immediately.
  - Avoid exercising if you have asthma symptoms.

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# *Triggers: Emotions and Exercise*

**Emotions**

**Exercise**

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# Asthma Medications

- The main goals in the medical treatment of asthma are to prevent asthma attacks and to relieve the symptoms during an attack.
- Many asthma medications are given by inhaler devices.
- Most people with asthma take two kinds of medicine:

| | Preventer Medication | Reliever Medication |
|---|---|---|
| What it does | Contains corticosteroids to control airway inflammation and prevent asthma attacks | Relaxes tight airway muscles fast, relieving symptoms |
| When to take it | – Take it every day as prescribed<br>– Do not stop taking even if you feel better<br>– See your doctor first before stopping your medication | – Only when you have symptoms<br>– During an Asthma attack<br>– Before exercise, as advised by your doctor |
| Additional Tips | Rinse your mouth after every use to prevent side effects such as oral thrush | Keep it within reach and carry it with you at all times |

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# Asthma Medications

## Preventer Medication


*Symbicort may also be used as a reliever too

## Reliever Medication

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# Preventer Medication

- Preventer medications, also known as controllers, contain Inhaled Corticosteroids (ICS), and are the main type of medications used in the treatment of asthma.
- They prevent and reduce swelling (inflammation) in the airways, reduce airway sensitivity, mucus production and the frequency of asthma attacks.
- They are inhaled, and therefore, have less side-effects compared to oral steroids.
- These medications should be used regularly, every day, even when you do not have asthma symptoms.
- Research has shown that daily use of preventer medications reduces the chance of dying from asthma, reduces asthma attacks, improves day-to-day symptom control, prevents lung function decline and improves overall quality of life.

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# *Preventer Medication*

**Use preventer medications daily.**
**Do not stop using preventer medications even if you are feeling well.**


*Symbicort may also be used as a reliever too

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# Reliever Medication

- Reliever medications, also known as bronchodilators, relax the muscles in the airways, opening the airways wider, relieving asthma symptoms.

- Reliever medications may cause hand tremors (shaking of the hands), and increased heart rate (sensation of heart racing). This usually subsides with time.

- If you need to use your reliever frequently, more than twice a week, consult your doctor, you may require a higher dose or a change in your preventer medication.

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# Reliever Medication

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# Types of Inhalers

- Asthma medicine can be taken in different ways.
- Inhalers for asthma come in different devices.
- Some inhalers deliver the medication via spray (e.g. metered dose inhaler), others deliver the medication in powder form (e.g. dry powder inhaler).
- Children should always use a spacer (with or without mask) with a metered-dose inhalers (MDIs), as they may not be able to coordinate the inhalation process properly.

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# Types of Inhalers

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# *Inhaler Techniques*

- **For asthma treatment to be effective, good adherence to your prescribed inhaler as well as the correct inhalation technique is important.**

- **Your inhalation technique can significantly affect the amount of medication delivered to the lungs; the correct inhalation technique will ensure that more asthma medication reaches the lung instead of being deposited in the mouth.**

- **Using an inhaler is a skill that must be learnt and maintained in order for the medication to be delivered effectively.**

- **Check your inhaler technique with your healthcare provider at every visit or at least once a year.**

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# *Inhaler Techniques*

## Inhaler techniques resources:


English


Malay


Mandarin


Tamil

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**More information on inhaler devices and administration techniques in HealthHub (www.healthhub.sg/a-z/)**

# *Why do we need to use Spacer Devices?*

- **A spacer is used when you find it difficult to use a Metered Dose Inhaler (MDI) directly. The spacer makes it easier to get the medicines into your lungs.**
- **An inhaler is fitted to the end of the spacer device, and the other end has a face-mask or a mouthpiece.**
- **The medicine is sprayed into the spacer device and you can breathe the medication in slowly through the spacer, without the need to coordinate your inhalation with the pressing down of the inhaler canister.**

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# Why do we need to use Spacer Devices?


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# *Why we need to use a Peak Flow Meter?*

- **The peak flow meter measures how well you can blow air out of your lungs.**
- **It can be used to find out if you are about to get an attack.**
- **It can help you and your doctor decide how to adjust your asthma medications.**
- **It can be used to monitor the severity of your asthma.**

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**Recommendation:**
**It is advisable to encourage monitoring for 2 to 3 weeks to determine personal best.**

**The highest number obtained during the 2 to 3 weeks is the personal best.**

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# Why we need to use a Peak Flow Meter?


**Adult Peak Flow meter**


**Child Peak Flow meter**

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# Self Management

## It is important that you learn to manage your asthma. To do so, you need to:

- Work with your doctor/ asthma nurse to develop an individualized asthma plan i.e. asthma action plan.
- Follow your asthma action plan and consult your doctor immediately for any worsening symptoms at any time.

## Some of the important things you need to do in managing your asthma are:

- Use your preventer medication daily.
- Top up your asthma medications regularly before they run out.
- Know and recognize your triggers and avoid them where possible.
- Make sure you know how to use your inhaler correctly.
- Attend your regular reviews as advised by your doctor or at least once a year, even if your asthma is well controlled.
- Ensure you book your next asthma review appointment at each visit.

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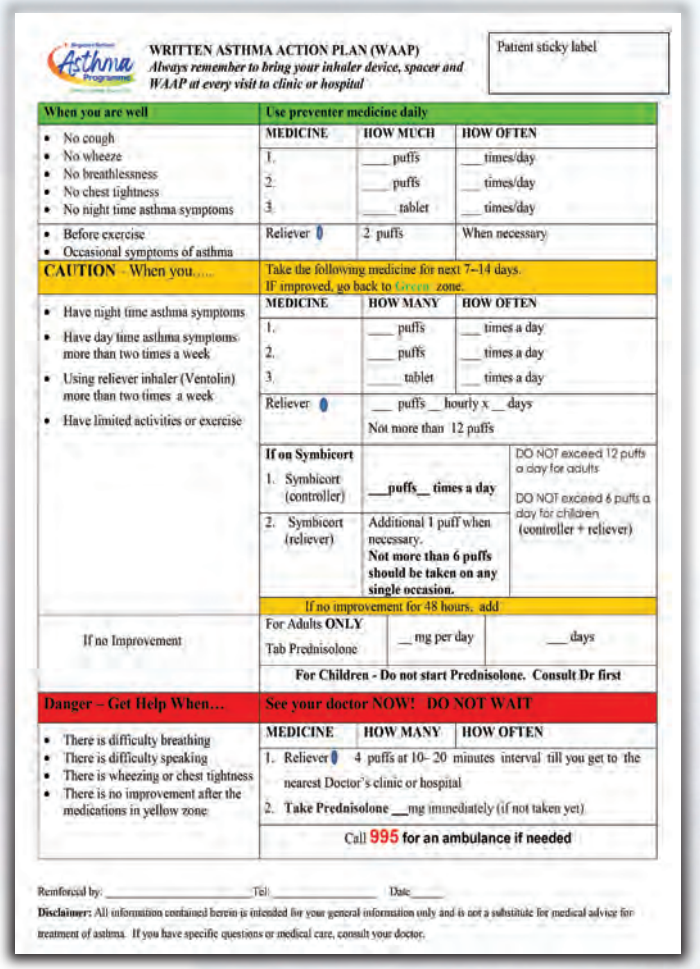
# Self Management

- Develop an Asthma Action Plan.
- Base your action plan on your symptoms or peak flow readings.

***Important:***

- Use your preventer medication daily.
- Know and recognize your triggers. Avoid if possible.



**WRITTEN ASTHMA ACTION PLAN (WAAP)**
***Always remember to bring your inhaler device, spacer and WAAP at every visit to clinic or hospital***

Patient sticky label

| When you are well | Use preventer medicine daily | | |
|---|---|---|---|
| • No cough<br>• No wheeze<br>• No breathlessness<br>• No chest tightness<br>• No night time asthma symptoms | **MEDICINE** | **HOW MUCH** | **HOW OFTEN** |
| | 1. | ___ puffs | ___ times/day |
| | 2. | ___ puffs | ___ times/day |
| | 3. | ____ tablet | ___ times/day |
| • Before exercise<br>• Occasional symptoms of asthma | Reliever | 2 puffs | When necessary |
| **CAUTION** – When you..... | Take the following medicine for next 7–14 days.<br>If improved, go back to Green zone. | | |
| • Have night time asthma symptoms<br>• Have day time asthma symptoms more than two times a week<br>• Using reliever inhaler (Ventolin) more than two times a week<br>• Have limited activities or exercise | **MEDICINE** | **HOW MANY** | **HOW OFTEN** |
| | 1. | ___ puffs | ___ times a day |
| | 2. | ___ puffs | ___ times a day |
| | 3. | ____ tablet | ___ times a day |
| | Reliever | ___ puffs __ hourly x __ days<br>Not more than 12 puffs | |
| | **If on Symbicort**<br>1. Symbicort (controller) | **___puffs__ times a day** | DO NOT exceed 12 puffs a day for adults<br>DO NOT exceed 6 puffs a day for children (controller + reliever) |
| | 2. Symbicort (reliever) | Additional 1 puff when necessary.<br>**Not more than 6 puffs should be taken on any single occasion.** | |
| | If no improvement for 48 hours, add | | |
| If no Improvement | For Adults **ONLY**<br>Tab Prednisolone | __ mg per day | ___ days |
| | **For Children - Do not start Prednisolone. Consult Dr first** | | |
| **Danger – Get Help When...** | **See your doctor NOW! DO NOT WAIT** | | |
| • There is difficulty breathing<br>• There is difficulty speaking<br>• There is wheezing or chest tightness<br>• There is no improvement after the medications in yellow zone | **MEDICINE** | **HOW MANY** | **HOW OFTEN** |
| | 1. Reliever | 4 puffs at 10–20 minutes interval till you get to the nearest Doctor's clinic or hospital | |
| | 2. **Take Prednisolone** ___mg immediately (if not taken yet) | | |
| | Call **995** for an ambulance if needed | | |

Reinforced by: _____ Tel: _____ Date: _____

**Disclaimer:** All information contained herein is intended for your general information only and is not a substitute for medical advice for treatment of asthma. If you have specific questions or medical care, consult your doctor.

**Asthma Action Plan form**

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# How to recognize an asthma attack?

- An asthma attack can be sudden. It can develop in a few minutes or over a few days after exposure to a trigger.
- During an asthma attack, chest tightness, coughing, wheezing and shortness of breath can quickly worsen.
- If this happens, follow your asthma action plan and act accordingly.

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## This is how you can assess the severity of your attack:

- **Moderate attack:** Have persistent cough, wheeze, breathless, can speak only in short sentences; your peak flow is between 50% to 80% of your usual best; **follow your asthma action plan as advised by your doctor/ nurse.**
- **Severe attack:** Feeling very distressed and anxious, gasping for breath, bluish around the lips, pale and sweaty, unable to speak or only a few words in a breath; your peak flow is <50% of usual best. **Call for an ambulance straight away.**

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# How to recognize an asthma attack?

## Symptoms experienced during an asthma attack:

Chest Tightness

Shortness of Breath

Cough

Wheeze - a high pitch whistling sound made while breathing with difficulty

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# What is a Written Asthma Action Plan?

## A Written Asthma Action Plan (WAAP) is:

- A written summary of how you should be managing your asthma.
- A source of reference to reinforce the advice given by your doctor during consultation.

**Recommendation:**

- Issue an individualised WAAP for patient if he/she does not have one.
- Go through each zone of the action plan with the patient.
- Check the patient's understanding using Teach-Back technique.

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# What is a Written Asthma Action Plan?

The components of the action plan are:

## GREEN ZONE (Peak flow 80% to 100% of your personal best)

- Signals all clear
- No asthma symptoms
- Continue regular preventer medication

## YELLOW ZONE (Peak flow 50% to 80% of your personal best)

- Signals caution
- You may be having an asthmatic attack that requires an increase in medication
- You need to follow the medication plan set by your doctor

## RED ZONE (Peak flow below 50% of your personal best)

- Signals a medical alert
- Start prednisolone as ordered
- Take reliever medication immediately and seek medical attention quickly

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# Vaccination

- **Respiratory infections such as influenza (Flu) and pneumonia may trigger asthma attack and lead to serious complications.**

- **It is recommended for you to get an annual influenza (Flu) vaccination and the pneumococcal vaccination based on the National Adult Immunization programme.**

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# Vaccination

Annual Flu Vaccination

Pneumococcal Vaccination

## Vaccination resources:

for.sg/healthhub-vaccination

book.health.gov.sg

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