

The Hong Kong Asthma Society Health Education Series 1 (B)

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(First Edition)



THE HONG KONG ASTHMA SOCIETY

香港哮喘會

Knowing
About Asthma



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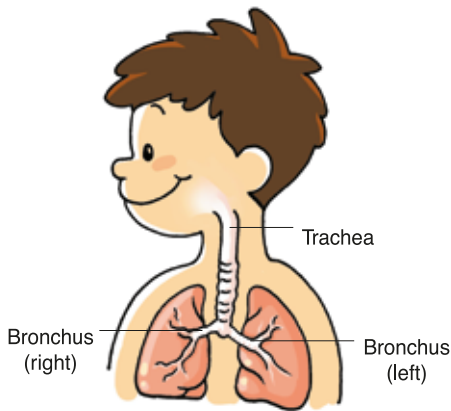
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1

What is Asthma?

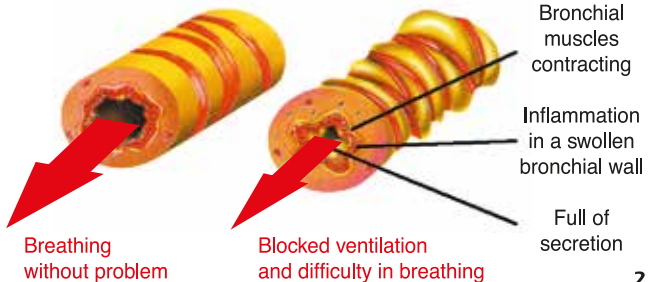
Asthma is a very common illness. According to local research, around 10% of children and about 5% of adults have suffered from asthma. Asthma is not infectious, but there are statistics to show that this illness is linked to hereditary and environmental factors.

Asthma is a chronic and long term allergic bronchial inflammation. During asthma attack, the bronchus is swollen, contracted and full of secretion. Patients may even have difficulty in breathing. In the worst case scenario, it could be fatal as the patient suffocates. If inflammation takes place without asthma attack, the symptoms will be less severe as it does not cause a blockage in the trachea. However, long term inflammation persists.



A normal bronchus

A bronchus during an asthma attack



Every year, asthma causes 70-90 deaths in Hong Kong, and amongst this number, 20-30 die between the healthy and active ages of 15-44. Patients' lack of understanding of the severity of the illness, which causes a delay in treatment, is found to be the primary cause of asthma attacks. Moreover, asthma may cause extensive stress to both the patient and his/her family.

Although there is still no complete cure for asthma, as long as the patient carefully follows the instructions of the doctor by adhering to prescriptions as well as being given an appropriate level of care, most people are able to control their conditions and live a normal life, just as if they were asthmatic medalists in the Olympic Games.

What are the Symptoms of Astham?

- Continuous or repetitive coughing (apparent especially during night-time, change of weather, catching a cold or after exercise)
- Shortness of breath, difficulty in breathing, wheezing
- Sensation of chest tightness

But Beware

It does not take all of the above symptoms to be characterised as asthmatic. Those with light symptoms may not suffer from a shortness of breath, coughing may be the only sign.



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Common Causes of Asthma

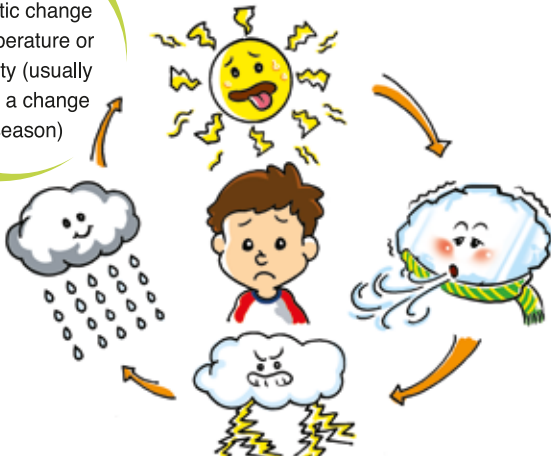


Inhaling "allergens", for example : Droppings of dust mites, cockroaches & debris, pet or animal hair, pollen, mould.

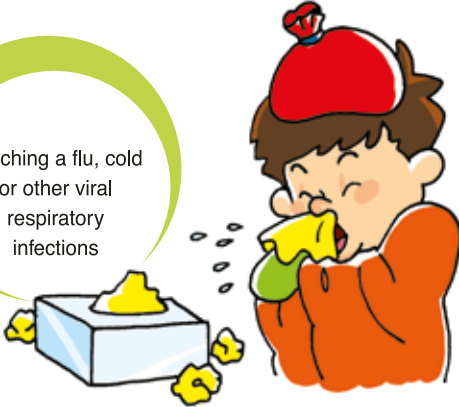
Second-hand smoke (also known as passive smoke), polluted air, insecticides or wet paint which consist of volatile organic chemicals and compounds.



A drastic change in temperature or humidity (usually during a change in season)



Catching a flu, cold or other viral respiratory infections



Strenuous exercise
(Although exercising can be one of the reasons for asthma attacks, this does NOT mean that patients should give up exercising. For details please refer to the "Physical Activities and Asthma" leaflet or consult a doctor)



Emotional instability, such as being over-excited, stressed / anxious or having a tantrum

Beware

Please be aware that predisposing factors could cause **different** reactions amongst asthmatic patients. Please consult your doctor to learn how to determine and recognise the causes of asthma for you or your family.

Less Common Causes of Asthma

An allergy to medication

Aspirin and certain painkillers

Food allergy

A small number of people are allergic to milk and eggs. Some foods containing preservatives such as sulphites and artificial flavours may also trigger asthma.

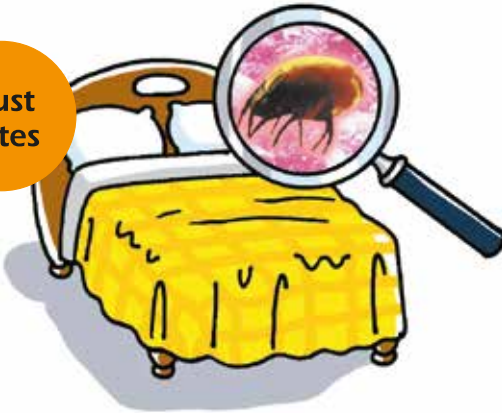
3

Reducing Asthma Attacks : Improving Household and Working Environments



- Give up smoking and avoid breathing in "second hand smoke" (also known as passive smoke)
- It is best not to have a pet, such as a dog, a cat, a bird etc.
- Do not place devices which send off strong odours at home, for example perfumes, burning incense, fragrance oils etc.
- Turn on the de-humidifier or air-conditioner during humid weather, in order to prevent the breeding of mould and dust mites
- Have influenza vaccination when appropriate, and stay clear of flu-infected individuals.

Dust mites



The droppings of dust mites are common triggers of asthma. These excrements cannot be seen by the naked eye, but around 60% of asthma patients are allergic to them. In particular, bed sheets, carpets, curtains, furry furniture and furry dolls are typical breeding grounds of these mites.

Vary Ways to Reduce Dust Mites at Home:



- Frequent cleansing. Replace dusters with wet cloths, mops and vacuum cleaners (Hoovers).



- Furry dolls should be washed in hot water every week

- Do not install carpets



- Beddings should be treated with special care: frequent changes and washed with hot water (>55°C). Regular vacuuming is also required; you may also wish to use a more tightly woven bedspread.
- Use cleanable Venetian blinds rather than curtains
- Use furniture which is easy to clean

4

Medications and Treatments

Asthmatic medications and treatments can be divided into two main categories, doctors will adjust combinations and dosages according to the conditions and needs of the patients, especially taking into consideration the extent to which the patient has asthma under control.

Relievers

Short-acting Inhaled
Bronchodilators









Controllers

Long term treatments,
such as inhaled steroids
and combined dosage
consisting of inhaled
steroids and long-acting
bronchodilators

1. Relievers

Short-acting Inhaled Bronchodilators

This is for emergency treatment which is used during an asthma attack. It can rapidly dilate the bronchus and relieve the patient from a shortness of breath as well as chest pressure, and eventually brings breathing back to a normal level. This treatment comes in the form of an inhaler as well as a nebuliser.

Commonly used Short-acting Inhaled Bronchodilators	Inhaler (usually blue in colour)		Nebuliser
	Metered dose	Dry powder	
Ventolin (Salbutamol)			
Bricanyl (Terbutaline)			
Salamol (Salbutamol)			
Atrovent (Ipratropium)			
Combivent (Ipratropium / Salbutamol)			

Attention

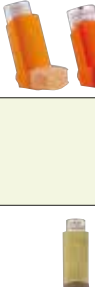


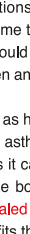



- Only use short-acting bronchodilators when in need or under the doctor's advice.
- These medications have immediate effects but no anti-inflammatory ingredients. You must not over-rely on this medication at the expense of other preventive medications.
- If you have used the short-acting bronchodilator for more than three times a week to quickly relieve your acute asthma, this may signify that your illness is no longer under control, and you must go to a doctor as soon as possible.
- When leaving home, please bring your short-acting inhaled bronchodilator to be used in an emergency asthma attack.
- Side effects such as hand tremors and rapid heartbeats will only occur to patients who have taken medication orally.

2. Controllers

E.g. inhaled steroids and combined medications consisting of inhaled steroids and long-acting bronchodilators

A. Types of steroids

Using preventive medication (anti-inflammatory medication) can reduce swelling and inflammation of the bronchial wall, which can then reduce allergic reactions and effectively stop asthmatic attacks. This medication comes in the form of inhaler and nebuliser, and the inhalation of steroids is the most common and most effective anti-inflammatory treatment.

Commonly used Inhaled Steroids	Inhaler (usually brown, red or orange in colour)		Nebuliser
	Metered dose	Dry powder	
Flixotide (Fluticasone)			
Pulmicort (Budesonide)			
Beclazone (Beclometasone)			
Alvesco (Ciclesonide)			
Beclate (Beclometasone)			

Attention

- These anti-inflammatory medications are NOT antibiotics. Their aim is to keep asthma under control in the long run by reducing allergic inflammatory drugs.
- Anti-inflammatory medications are not designed to be used during an emergency as it does not stop breathing problems.
- Using anti-inflammatory medication according to the doctor's instructions and timings is the most effective way of keeping conditions in control and reduces the risk of sudden attacks
- Anti-inflammatory drugs may take some time before showing signs of effects (sometimes up to a week or two), but at no point should the patient stop using the medication without prior permission no matter if there has been an asthma attack or if there are no longer any signs of asthma.
- Oral or injected steroids (also known as hormones)
Doctors will only prescribe this when asthma symptoms are severe. This medication should not be taken on a long-term basis as it can lead to Osteoporosis, obesity, high blood sugar, high blood pressure and reduces the body's resistance to pathogens. It can further slow children's growth. In comparison, **inhaled steroids are much safer**. Under the directions of the medical doctor, there are more benefits than harm even if it is used in the long-run.

B. Non-steroids

There are also non-steroid type drugs on the market which have anti-inflammation functions:

- **Singulair (Montelukast Sodium)**
This oral medication can suppress Leukotriene. Leukotriene can cause contraction and swelling in the trachea, and a suppression of Leukotriene can improve asthma conditions and can help prevent asthma attacks. However, the effectiveness is less than that of inhaled steroids.



- **Long-acting Oral Drug : Theophylline**
This oral medication can relax the smooth muscle within the bronchus and has a slight purpose of bronchus-dilation and anti-inflammation.

C. Long-acting Inhaled Bronchodilators

Long-acting inhaled bronchodilators are long term drugs for asthma control, and require a doctor's prescription. They can dilate the bronchus for up to 12 hours as well as relieving shortness of breath and chest tightness, which help return breathing back to a normal level.

Commonly used long-acting inhaled bronchodilators	Inhaler (usually turquoise in colour)	
	Metered dose	Dry powder
Serevent (Salmeterol)		

Attention

- Long-acting inhaled bronchodilators **must be used simultaneously with inhaled steroids**, because they can strengthen the anti-inflammatory functions of the inhaled steroids, but one **cannot rely upon this type of bronchodilator solely** as a means of treatment.
- This treatment is not to be used during emergency asthma attacks, but can relieve symptoms during an attack.

D. Combined Medications

Pharmaceutical firms have developed inhalers containing inhaled corticosteroid agents and long-acting inhaled bronchodilator. Bronchodilators are used to relax airways in order to allow for better breathing, while inhalable corticosteroids can reduce chances of airway inflammation. These combined medications can be used, under the directions and prescriptions of the doctor, as long-term treatment to prevent asthma attacks.

These inhalers are known as "combined medication" which is designed to be used by patients with ease, and can target problems concerning patients who do not have enough inhaled steroids intake.

Commonly used combined medication	Metered dose	Dry powder
Symbicort (Budesonide / Formoterol)		
Seretide (Salmeterol / Fluticasone)		

E. Anti-immunoglobulin E-antibody Treatment (Anti-IgE treatment)

This can be regarded as a supplementary treatment. Doctors usually consider this method for severe asthmatic patients who have not managed to control their condition after a high dosage treatment of inhaled steroids and long-acting inhaled bronchodilators. Treatment method is by subcutaneous injection (injection under the epidermis) once every 2-4 weeks, with a trial period of 16-24 weeks, and a final assessment at the end to analyse the results.

Asthma Control Treatment step-by-step (Over five years old)



Step 1	Step 2	Step 3	Step 4	Step 5
Education and environmental control				
Use short-acting inhalable bronchodilators if necessary	Use short-acting inhalable bronchodilators if necessary, with the addition of long-acting prevention medication			
Long-acting prevention medication not required	One long-acting prevention medication from below:	One long-acting prevention medication from below:	Medication in Step 3 + One long-acting prevention medication from below:	Medication in Step 4 + One long-acting prevention medication from below:
	Low dosage of inhaled steroids	Low dosage of inhaled steroids + Long-acting bronchodilators	Medium/high dosage of inhaled steroids + Long-acting bronchodilators	Oral steroids (minimal dosage)
	Leukotriene receptor antagonist (LTRA)	Medium/high dosage of inhaled steroids	Leukotriene receptor antagonist (LTRA)	Anti-IgE treatment
		Low dosage of inhaled steroids + Leukotriene receptor antagonist (LTRA)	Theophylline	
	Low dosage of inhaled steroids + Theophylline			

Source: GINA Pocket Guide for Asthma Management and Prevention 2010, p.14

3. Others

Desensitization Therapy

Allergen-specific immunotherapy is also known as Desensitization Therapy. It uses multiple subcutaneous injections to inject allergens, which cause allergic reactions, into patients. The dosage is increased steadily with an aim to induce the patient's tolerance to the allergen, which in turn significantly reduces allergic reactions, or even banishes such reactions altogether, and therefore reduces the risk of allergens causing severe asthma, as well as the patient's reliance on the treatment. The treatment process takes approximately two to three years. However, because this treatment can cause severe allergic reactions which may be life-threatening, it is not recommended for those with severe asthma or asthmatic patients who have not had their conditions under control. If the patient is only allergic to one allergen, this is an effective method of treatment; if the patient is allergic to two or more allergens, there has not yet been sufficient medical evidence to show this treatment's effectiveness. Individual patients may only approach this treatment under the directions of his/her medical doctor.

5

Supportive Devices

The Importance of Using Inhaling Medication Correctly

Bronchodilators and prevention medication can both come in the form of inhalers which carry the medication directly into the bronchus. The way and manner of inhaling must therefore be correct and accurate, so as to ensure the medication is delivered to the bronchus to be effective. The doctor will choose the most suitable inhaler tailored to personal conditions, and if there is difficulty in inhaling the medication, supportive devices should be used.

Spacer

When the patient has not yet understood the method of inhaling, these devices will be useful in terms of helping the patient to inhale successfully, and are particularly helpful to young children and the elderly.



Nebuliser (Doctor's advice and directions required if to be used)

The nebuliser will transform liquid medication into a mist form for patients to inhale. Doctors usually only prescribe this when the patient's condition is severe.



The Hong Kong Asthma Society is
commissioned to sell spacers and nebulisers.
For enquiries, please call 2895 6502

6

How do I know Whether My Asthma is Now Under Control ?

A. Peak flow

"Peak flow" refers to the maximum speed of exhalation from your lungs. It shows your lung capacity and functions, and reflects how controlled the asthma condition is. When asthma worsens, the bronchus contracts and the peak flow will drop accordingly, vice versa when condition improves, the bronchus dilates and breathing is easier, the peak flow will rise.



How to Measure Your "Peak flow"?

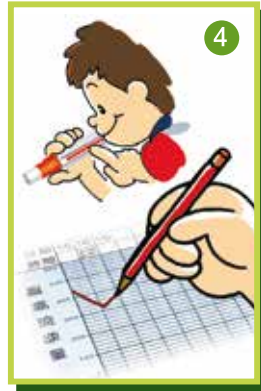
The "Peak flow meter" is the most direct way to measure your peak flow, and can be used in clinics and at home. Normally, children aged above six are able to learn to use the "Peak flow meter" correctly.

The "Peak flow meter" can :

- Help the doctor to determine whether you are still suffering from asthma
- Help determine whether there is adequate control on your illness and to monitor your response
- Help find out in advance whether your condition is worsening or improving

It is often difficult for us to use our own subjective perceptions to determine whether our conditions have worsened or not. Taking measurements from the "Peak flow meter" on a daily basis would give you more accurate and objective information. If your peak flow continues to fall and does not return to a normal level, you could suffer from an asthma attack any moment. Finding out early and using additional medication during early stages of worsening conditions could prevent further deterioration and severe attacks.

How to Use the "Peak flow meter" ?



1. Adjust the "Peak flow meter" dial to "0"
2. Take a deep breath
3. Put your mouth onto the mouthpiece of the "Peak flow meter", and exhale as much and as quickly as you can
4. Record your results
5. Repeat steps 1-3 three times in total, and record your highest reading
6. Measure your peak flow every day, once in the morning and once in the evening. The more discrepancies between readings in the mornings and evenings, the more unstable your condition is



If you have any enquiries, please ask your doctor the way to use the "Peak flow meter" correctly and contingency plans when conditions worsen.

The Hong Kong Asthma Society
is commissioned to sell the "Peak flow meter".
For enquiries, please call 2895 6502

B. Asthma Control Test (ACT™)

Asthma Control Test (ACT) is a simple, objective and reliable way of diagnosis, which allows patients and doctors to monitor the asthmatic conditions.

Adult asthma patients only need to answer 5 questions, while 4-11 year-old children and their parents answer 7 questions, and when all points are added up, we can tell whether the extent of asthma control is satisfactory.

This test is free of charge, you can take the test every month on The Hong Kong Asthma Society's website. Inform your doctor about your results and he/she will adjust your prescription and dosage accordingly.

Take the test here

Chinese Version : www.hkasthma.org.hk

English Version : www.asthmacontroltest.com



7

Monitoring Programme for Those Asthmatics whose Disease is Not Come Under Control

Circumstances below show that your asthmatic conditions are no longer under control:

- Your sleep is disturbed by symptom of asthma, including continuous coughing or difficulty in breathing
- Asthma is triggered during exercise or daily physical activities (e.g. climbing stairs)
- An increase in the use of bronchodilators
- Conditions have not improved after the use of bronchodilators
- Peak flow readings have fallen
- Significant discrepancies for peak flow readings between mornings and evenings



The Asthma Monitoring Programme

Doctor and patient should formulate a PERSONAL "Asthma Monitoring Programme" according to conditions and the type of treatments, which can be used when conditions are out of control, when symptoms have intensified and when peak flow readings have fallen.

The plan is divided into two main sections :

Part 1 :

Outlining the daily dosage in order to prevent asthma attacks

Part 2 :

Outlining the dosage when conditions are out of control, when symptoms have intensified and when peak flow readings have fallen to 80% and 60%.

Step 1

First, use the inhaling/oral bronchodilator

Step 2

If conditions are not yet under control, there is a need to increase the dosage of inhaled steroids

Step 3

Occasionally the doctor will prescribe oral steroids, but this usually only lasts for a short period of 3-5 days

Step 4

If the steps above have not eased the conditions or have not brought the peak flow readings back, then you will need to see a doctor or visit the hospital.

When there is an asthma attack, you should :

- Keep calm
- Allow the patient to sit, with his/her body leaning slightly forwards
- Use short-acting bronchodilators as soon as possible
- If you have an agreed plan with the doctor, for example taking more medication, follow the plan accordingly and promptly



If any of the below conditions appear, the patient must be brought to A&E Department of a hospital or to a doctor immediately:

- The use of short-acting bronchodilators have shown no effects, and the patient continues to suffer from the asthma attack
- The patient is unable to walk, speak, sleep or eat because of a shortness of breath
- If lips have turned blue or purple in colour, it signifies a drop of oxygen level in blood
- The patient falls unconscious
- The peak flow has fallen to or below 60% of its best reading on a normal day



8

Why Do I Need Regular Medical Check-Ups?

Even if conditions have improved, there should be regular check-ups in order to :

- Assess your latest conditions and test your lung functions to decide further treatment you will need, and whether the dosage needs to be adjusted
- Check that you are using the inhaler correctly
- Monitor whether young patients have grown normally



9

Long Term Target: To be in Complete Control of Asthma

As long as there is adequate care, asthmatic patients can live a healthy and active life. You and your doctor should set a target and steadily progress towards the stage of being "in complete control of asthma".

According to the guidelines for the prevention and cure of asthma, these are the categories for levels at which asthma is being controlled:

Symptoms (In the past 4 weeks)	Entirely controlled	Partially controlled	Not in control
	Fits all of the following conditions	Fits one or two of the following conditions	Fits three or more of the following conditions
Day-time symptoms	None/ twice a week or less	Three times or more a week	
Limitation of activities	No	Yes	
Nocturnal symptoms/awaking	None	Yes	
Need of reliever/ rescue inhaler	None/ twice a week or less	Three times or more a week	
Lung function (Peak flow PEF / Expiratory volume in 1 second FEV ₁)	Normal	< 80%	

Source: GINA Pocket Guide for Asthma Management and Prevention 2010, p.8



The Key To Achieve "Complete Control of Asthma":

- Using/taking medication correctly
- Monitor conditions every day, once in the morning and once in the evening, using the Peak flow meter
- Take the "Asthma Control Test ACT™" once a month, and inform your doctor with your results directly
- Understand and accept that asthma is a long-term illness, and you should consult your doctor for a long term control plan and develop an "Asthma Monitoring Programme".
- If you know what allergen(s) is (are) causing you problems, you should avoid it (them)
- Do regular exercise, in particular aerobic exercise, to strengthen your heart and lungs
- Give up smoking



Disclaimer

The Society would like to thank all doctors and medical personnel who have provided all the relevant medical information to date. However, the content of this guide should not replace professional medical advice and should only be used for reference. If you or your family have any worries or troubles relating to asthma, please consult your doctor or qualified medics immediately. This booklet is edited and printed by The Hong Kong Asthma Society. The Society and its entire staff will not be liable to any compensation, damages, loss or any other responsibilities or consequences related to the contents of this booklet.



The Hong Kong Asthma Society Mission and vision

The HKAS aims to help asthma and allergy patients leading to a normal life. Our various support services enable patients, their families and people in general to learn more about the the diseases and its prevention. It also builds a support network so that members of the society can help one another.

Objectives

1. Educate asthma and allergy patients and their families about the diseases.
2. Facilitate communication among patients and their families so that they can share their difficulties and encourage one another.
3. Organize recreational and social activities to enrich members' life and enhance their physical and mental health.
4. Promote awareness of these diseases among the public.
5. Promote patients' welfare and green issues, and defend legitimate rights.

Target clients

Patients and their families
with Asthma and Allergy



The Hong Kong Asthma Society
has printed the following leaflets. Should you require
any of them, please call 2895 6502 for details.

1. Knowing about Asthma
(Traditional Chi., Simplified Chi., Eng., Urdu, Hindi, Nepali)

2. Knowing about Asthma (Nurse's edition)
(Traditional Chi., Simplified Chi.)

3. The Elderly with Asthma
(Traditional Chi.)

4. Children and Infants with Asthma
(Traditional Chi.)

5. Pregnancy and Asthma
(Traditional Chi.)

6. Physical Activities and Asthma
(Traditional Chi.)

7. Occupation and Asthma
(Traditional Chi.)

8. What is Allergy?
(Traditional Chi.)

9. Be a Smart Parent
(Traditional Chi.)

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The Hong Kong Asthma Society

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Patient Resources Centre opening times

Monday to Friday : 9:30 a.m. - 5:30 p.m.
Saturday : 9:30 a.m. - 4:30 p.m.