

GINA IMPLEMENTATION TOOLBOX



These documents offer various tools to help implement GINA recommendations into current care. They have been prepared by the Dissemination & Implementation Committee and revised by the Science Committee. They will be updated regularly.

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FREQUENTLY ASKED QUESTIONS:

ABOUT GINA

Is GINA another guideline?

- The GINA report is not a guideline, but a global strategy that provides a practical approach to managing asthma in clinical practice, that can be adapted for use in different countries. It is evidence-based and clinically oriented, and relevant to both low and high resources countries. Although the GINA report suggests management strategies, it also shows how these strategies can be adapted to each person's condition.

Is the GINA report updated regularly?

- Yes, the GINA report is updated every 12 months following a twice-yearly review of recent publications by the scientific committee.

Is GINA supported by pharmaceutical industry?

- No, the GINA report is written and updated by an independent group of asthma experts. GINA is a not-for-profit for clinicians to download, free of charge.

Why has the GINA strategy been developed?

- The GINA strategy has been developed to help health professionals, caregivers and patients to better understand what asthma is, and how it should be prevented and treated according to the most recent medical research evidence.

ABOUT ASTHMA

What is asthma?

- Asthma is a common and potentially serious chronic (long-term) disease of the airways (breathing tubes) that can start at any age. Asthma causes symptoms such as wheeze, shortness of breath, chest tightness and cough, and if untreated may limit the patient's ability to be physically active. People with asthma may have flare-ups (also called attacks or exacerbations) that sometimes require urgent health care and may be fatal.

Is asthma a common disease?

- Yes. In many countries, the prevalence of asthma (number of people with the disease at a given time), has increased in the last few decades. The World Health Organization considers that there are at least 300 million people in the world suffering from asthma and that this will increase in coming years, particularly in developing countries. About 10-15% of children have asthma and around 7-8% of the adult population although this prevalence varies from one country to the other.

Is asthma a severe disease?

- The vast majority of people with asthma have mild asthma, and can have a normal life with use of a regular controller treatment (also called preventer treatment). However, for few patients with severe asthma, or those not taking a controller treatment, asthma can cause ongoing limitations and may be fatal, but with current treatments, this should not happen. The people who die from asthma are mostly those who do not have access to controller medication, or are not taking this medication regularly, or have other conditions associated with asthma.

Is asthma caused by smoking?

- Smoking can contribute to the development of asthma, and can cause complications from asthma, but it is not the main cause of asthma. Smoking mostly causes chronic bronchitis and emphysema (COPD- Chronic Obstructive Pulmonary Disease). If a mother smokes, the child has an increased risk of developing asthma.

Is asthma caused by psychological factors or stress?

- No, it is a physical disease leading to the development of an increased responsiveness (twitchiness) of the air ways to triggers such as respiratory irritants, although prolonged stress in childhood may increase the risk of the child developing asthma.
- Psychological stress can cause asthma symptoms in someone who already has asthma.
- The symptoms of anxiety or of panic attacks can sometimes be mistaken for asthma, and the opposite can also occur.

What is the cause of asthma?

- Asthma is a heterogeneous disease; this means that there are many types of asthma. Asthma is thought to have many causes, including those that are inherited (genetics) and the person's environment (including air pollution, diet, infections, allergens and some work-related exposures). In many patients, the exact cause of their asthma can not be identified. Asthma is usually characterized by airway inflammation, which sets off the processes leading to asthma.

Is asthma only due to allergy?

- In many patients, asthma is due to the changes induced in the airways by allergic reactions to environmental airborne substances to which the person has become allergic. However, many other patients have asthma without evidence of allergy.

If I have allergic rhinitis (e.g. hay fever), will I develop asthma in the future?

- If you have hayfever (also called allergic rhinitis) there is an increased risk of developing asthma, although only about a quarter of people with allergic rhinitis will generally develop asthma.

If I have asthma will my child have also asthma?

- Asthma has a genetic component but this does not mean that the children of a person with asthma will also have asthma. They do however have an increased risk of developing asthma compared to children with parents who do not have asthma.

So, there is more than one type of asthma?

- Yes, it is now recognized that there are many types of asthma. Some of these are described by their cause (e.g.: allergic asthma, occupational asthma), some by when the asthma starts (e.g. childhood-onset asthma, adult-onset asthma), and some by their clinical presentation (e.g frequent flare-ups). Some types of asthma are described by the type of airway inflammation, some by the results of pulmonary function (breathing) tests (e.g. asthma with fixed (persistent) airway obstruction) and some by their severity (e.g mild, moderate or severe asthma). In severe asthma, new medications can target some very specific mechanisms of asthma.

What is occupational asthma?

- This is asthma that develops after exposure to a substance at the workplace. There are many examples of this, such as flour-induced asthma in bakers, isocyanate-induced asthma in automobile painters, some types of wood dust in carpenters, etc. If occupational asthma is suspected, the person should be referred to a specialist in this form of asthma as soon as possible. The person should stop exposure to this agent, otherwise asthma can worsen over time.

ABOUT MAKING A DIAGNOSIS OF ASTHMA

What symptoms does asthma cause?

- Asthma can present as breathlessness, chest tightness, wheezing, phlegm (mucus) production, cough, reduced capacity to perform exercise, either together or alone. A cough on its own, without any other symptoms, can be due to asthma but most often it is due to upper airways conditions (e.g. rhinitis with secretions in the back of the throat).

How is the diagnosis of asthma made?

- The diagnosis of asthma needs a history of suggestive symptoms, together with the demonstration of “variable airway obstruction”. Variable airway obstruction means increased variability of breathing tests (expiratory flows). This can be seen if breathing tests improve after taking a bronchodilator (reliever) inhaler, or if there is a significant change in breathing tests between visits or after a few weeks of anti-inflammatory treatment. Sometimes, a bronchial challenge (bronchoprovocation) test is needed to confirm the diagnosis (see next questions).

Can a breathing test prove that I have asthma?

- Spirometry is a breathing test that is commonly used to help confirm the diagnosis of asthma. If lung function from a spirometry test is lower than expected, this indicates the presence of airway narrowing, but this may have several causes other than asthma.

Measuring lung function while the person has symptoms, and after they take a reliever medication, can be particularly useful. In a person with asthma-like symptoms, a larger than normal increase in lung function either spontaneously or following medication use can suggest that they have asthma.

If the breathing tests are normal and asthma is suspected, we can perform a bronchoprovocation test (see below).

What is a bronchoprovocation test?

- This is a test in which a substance (e.g. methacholine) or another trigger (e.g. breathing dry air, exercise, or mannitol) is used to induce “bronchoconstriction” (a small reduction in lung function, e.g. 20%). According to how easy it is to induce this change, the test can show whether there is or not “hyperresponsiveness”. In a patient with asthma-like symptoms, this test can suggest whether or not they have asthma.
- If you are taking any asthma medications, you will be asked to stop taking these for a certain number of hours or days before a bronchoprovocation test. Check with the laboratory before your test.

If I have difficulty breathing during the night, is it due to asthma?

- Asthma can cause night-time symptoms but there are other diseases that can cause this. These include obstructive sleep apnea (intermittent blockage of the upper airways during sleep), reflux (acid going from the stomach into the throat) or heart problems. Tell your doctor if you have breathing problems during sleep; the physician should perform investigations to determine the exact nature of the problem.

Can asthma develop in the elderly?

- Asthma can develop at any age although it more frequently starts in childhood. When the asthma develops after the age of 50, it is usually less likely to be an allergic type.

Can obesity affect asthma?

- There is evidence that obesity can increase the chance of asthma developing, and that it can make asthma harder to control.
- Obese patients with asthma may be less responsive to asthma medications. A healthy diet, weight loss and aiming for an ideal weight are good ways to help control asthma and reduce its severity in obese patients, but asthma medications are also needed.

ASSESSMENT OF ASTHMA

What is a peak flow meter?

- A peak flow meter is a small device that measures how fast you can blow air out of your lungs. It is a measure of the amount of narrowing of the airways. The personal best (highest) value for a given person should be recorded and ideally it should be kept at this level. Peak flow normally goes down a little as you get older.

Should all people with asthma have an allergy skin test?

- It is useful to know if somebody is allergic to specific airborne allergens. These tests take just a few minutes to perform and are usually done on the surface of the forearm (skin prick test). If somebody is allergic, there will be a small wheal and flare reaction (swelling and redness) that can suggest the presence of antibodies against this allergen (allergy to this substance). Some drugs should be stopped before performing those tests.
- Having a reaction to an allergen on a skin prick test does not always mean that you have asthma. It also does not always mean that you will have symptoms if you breathe in this allergen, and it does not always mean that you need to avoid this allergen. You should discuss the results with your doctor.

Can asthma be diagnosed from a chest X-Ray?

- No. Sometimes there can be signs of lung distention or of complications of asthma. It is mostly used to exclude other diagnoses that could produce similar symptoms as asthma.

ABOUT ASTHMA CONTROL AND SEVERITY

What is asthma control?

- Asthma control means the extent to which the effects of asthma can be seen, or have been reduced or removed by treatment. Asthma control has two parts: symptom control and risk factors.
- Asthma symptom control means how often in the last four weeks you had asthma symptoms, used your reliever inhaler, woke at night due to asthma, or were limited in activity due to asthma. Poor symptom control, for example having asthma symptoms more than two days a week, or any waking due to asthma in the last month, increases the chance that you will have a flare-up.
- Risk factors are factors that increase your risk of having flare-ups, losing lung function, or having medication side-effects, even if you have no or few asthma symptoms (see below).

How can we determine the severity of asthma?

- Asthma severity is assessed from the level of treatment (medication) required to control symptoms and prevent flare-ups in addition to other clinical features.

Can mild asthma change towards most severe asthma?

- This is possible, particularly if the person with asthma keeps on being exposed to some environmental factors, including tobacco smoke, or if preventer treatment is not taken regularly; however the severity of asthma can even decrease if it is well-controlled with regular preventer medication.

ABOUT ASTHMA TRIGGERS, INDUCERS & FLARE-UPS (EXACERBATIONS)

Can infections worsen my asthma?

- Yes. Respiratory infections are one of the main causes of worsening of asthma. An asthma action plan written by the physician will provide recommendations about what to do with your medications in these circumstances.

Can air pollution cause or worsen my asthma?

- There is some evidence that air pollution may trigger asthma symptoms, particularly if asthma is not well controlled.

Can some drugs worsen my asthma?

- Yes. About 7% of people with asthma have worsening asthma and other symptoms if they take aspirin or other 'non-steroidal anti-inflammatory drugs' (NSAIDs), and these patients should avoid such medications. Most people with "aspirin intolerance" (also called "aspirin exacerbated respiratory disease" also usually have what we call "nasal polyps".

- Some drugs used for heart problems or hypertension, such as B-blockers will cause bronchoconstriction or a flare-up in most patients with asthma. These drugs are also sometimes included in eyedrops for glaucoma. Flare-ups caused by these drugs can be severe and sometimes fatal. If a person with asthma has a medical problem for which these drugs would normally be prescribed, the physician should carefully evaluate if it is safe for them to be taken, and they should be monitored very carefully.
- Some herbal or complementary treatments can make asthma worse, e.g. royal jelly; echinacea.

Can my diet be responsible for worsening my asthma?

- Some studies suggest that Vitamin D deficiency, or not eating enough Omega-3 (e.g. in fish) or antioxidants (e.g. in fruits and vegetables) is associated with a more difficult-to-control asthma although this should be confirmed. It is suggested for people with asthma to have a normal balanced diet with plenty of vegetables and fruit.

Can I keep my cat if I have asthma and my allergy skin tests are positive to cats?

- If somebody who has asthma is allergic to an animal, the contact should be eliminated or reduced to the minimum, otherwise asthma can worsen. There is no natural desensitization to animals if somebody has allergic asthma and he/she is exposed to the allergens. Allergy is caused not only by fur or hairs, but also by their saliva, epidermis, and urine. There is no such thing as a hypo-allergic animal. The best approach is not to have an animal to which you are allergic but if you have decided to take this risk, at least the animal should never be allowed to enter the bedroom and strict hygiene measures should be taken (including washing clothes that have been near the animal), although asthma can still be affected over time.

What are the best measures to reduce the effects of house-dust mites on my asthma?

- Most previous studies on environmental measures to reduce the effects of house-dust mites on asthma have been inconclusive, and some of these measures are expensive. GINA mentions that there are no evidence for interventions in adults, and some evidence for encasing bedding for children. Some specialists still suggest to keep humidity levels low in the house (around 40%) and use house-dust mite covers for mattresses and pillows. Chemical substances used to kill the house-dust mites (acaricides) are not recommended and their effects on health are unknown.

Can passive smoking be dangerous for a child's asthma?

- Passive smoking can definitely make a child's asthma worse. The child's asthma can be more difficult to control, they can have more frequent flare-ups, and they are more likely to need to go to hospital for their asthma. This is also true for adults with asthma.

If I have asthma can I perform exercise?

- Yes, in fact, regular exercise is recommended for people with asthma as has a lot of general health benefits, including improving fitness and improving the quality of life. However, as exercise causes faster breathing, it can induce bronchoconstriction (narrowing of the airways) due to dehydration (drying out) of the airways, so some preventative measures may be needed. The better asthma is controlled, the less that exercise will induce bronchoconstriction. Taking a regular inhaled anti-inflammatory controller medication every day will greatly reduce the chance of asthma symptoms occurring during exercise. If needed, a short-acting bronchodilator (blue reliever inhaler) can be used in the 15-20 minutes before exercise. Normally, reliever medication should not be needed before every time that exercise is performed; if it is needed every time, it suggests that asthma is insufficiently controlled, requiring reassessment of the maintenance treatment by the physician.

If I have problem with my rhinitis (e.g.: hay fever), will this affect my asthma?

- If rhinitis is not controlled, it can indeed affect asthma control. This should be evaluated by the physician, and a treatment or preventative measure should be prescribed according to the type and severity of the problem. There are several types of medication that can reduce or prevent the symptoms of hay fever or rhinitis.

Who is at risk of flare-ups (exacerbations or worsenings) of asthma?

- A person with asthma is at greater risk of having a flare-up in the next 12 months if they have any of the following: one or more flare-ups (exacerbations) in the last 12 months; ever being in intensive care unit or intubated for asthma, uncontrolled asthma symptoms, low lung function before treatment is started, incorrect inhaler technique and/or poor adherence, smoking, obesity, pregnancy, blood eosinophilia (a type of inflammatory cells).

What is a written asthma action plan (WAAP)?

- A WAAP (also called a personal asthma action plan, or PAAP) is a document on which the health professional records what to do if asthma worsens. It should include the patient's usual asthma medications, how to recognize when asthma is getting worse, when/how to increase reliever and controller or start oral corticosteroids (e.g. prednisone) and when to access medical care if symptoms fail to respond.

Who should receive a written asthma action plan (WAAP)?

- Every person with asthma should receive a WAAP and know how to use it.

When should I go to the emergency department for my asthma?

- You should go to the emergency department or see a physician urgently if your asthma symptoms become severe with an increase in the need of rescue bronchodilator (many times per day), with night-time awakenings, difficulty doing normal activities, feeling breathless most of the time, or getting worse quickly.

ABOUT ASTHMA TREATMENT

Can asthma be cured?

- No, asthma cannot be cured. It can however be well-controlled so that its effects are minimized, allowing a normal and active life for the majority of individuals.

What are the long-term goals of asthma management?

- They include :
 - A) **Symptom control:** to achieve good control of symptoms and maintain normal activities and
 - B) **Risk reduction:** to minimize the risk of flare-ups (exacerbations), reduction of lung function and medication side-effects

What are the main non-medication interventions for management of asthma?

- 1) Avoid tobacco smoke exposure; quit smoking if a smoker
- 2) Avoid or reduce contact with relevant substances to which one is allergic
- 3) Avoid contact with an agent if it caused occupational asthma
- 4) Maintain ideal weight
- 5) Perform regular exercise
- 6) Avoid medications that make asthma worse (see above)
- 7) Reduce mold in houses.

What is self-management education?

- Self-management education means a combination of three things: monitoring your symptoms and/or peak flow, having a written asthma action plan, and having regular medical review of your asthma. Together, these three things reduce asthma symptoms, reduce time off work, and reduce flare-ups. Self-management education is recommended for everyone who has asthma.
- Everyone who has asthma needs to know what the disease is, what the treatments are and how to use them, how to assess asthma control and what to do in case of an exacerbation or worsening. To do so, talking to an asthma educator is ideal as this information can be provided and self-management skills promoted. Asthma is a variable disease and it is mandatory that the person with asthma knows how to assess his disease and how to adapt his or her treatment.

When should I start taking regular controller treatment if asthma is diagnosed?

- A regular controller treatment should be started if asthma symptoms occur more than twice a month, if there is any awakening due to asthma more than once a month, or if the person has any risk factors for exacerbations. The initial "maintenance" treatment is usually a low-dose of inhaled corticosteroid. If taken regularly, this reduces inflammation in the airways, reduces symptoms, and reduces the risk of flare-ups.

Are asthma medications harmful?

- No, not in normal doses. When used appropriately, as prescribed, they are not harmful. They may cause some occasional side-effects but these are usually minor and reversible (see questions for each type of drug).

Are asthma medication habit causing (addictive)?

- No, asthma drugs are not addictive.

Do I really need a maintenance (regular daily) treatment? Can I just use a bronchodilator on demand?

- The blue reliever (bronchodilator) inhaler is only for use as needed, to relieve intermittent symptoms. It does not treat the basic problem of asthma which is inflammation. A maintenance treatment is needed for almost all people with asthma, apart from those with the most trivial form of the disease (e.g. symptoms less than once a month). The maintenance treatment reduces airway twitchiness and optimizes lung function so that the asthmatic can have a normal life. However, to do so, these medications have to be taken regularly every day.

What are the main side-effects of blue reliever inhalers (bronchodilators)?

- When these medications are first taken, or are taken in high doses, they may cause tremor of the hands, or palpitations, or a feeling of anxiety. These symptoms usually settle down quickly.
- If you overuse your blue reliever medication (e.g. using more than 8 puffs a day for more than a few days), it may become less effective

What are the main side-effects of inhaled corticosteroids? Are they the same as cortisone pills?

- No, inhaled corticosteroids have much fewer side-effects, because they are taken as aerosols, in very small doses -micrograms. Their possible effects in the mouth or throat, especially if high doses are needed, could be a change in voice (dysphonia) or mouth or throat fungal infection (candidiasis), but these are rare if the person takes the medication by a dry powder inhaler or, for a puffer, takes it with a spacer. Fungal infection can also be prevented if the person rinses his/her mouth after use (but does not prevent dysphonia). Fungal infection can be treated with lozenges or mouth-wash (although the former is better) that contain an anti-fungal agent (such as nystatin). If troublesome and recurrent, the physician may adjust the treatment. If high doses of inhaled corticosteroids are needed for long periods of time, this may increase the person's risk of osteoporosis, cataract or glaucoma, so high doses are only used if essential.

Do asthma controller medications lose their effectiveness when taken regularly over time?

- No. They will always be effective.

Is it dangerous to take oral corticosteroids (e.g. prednisone, prednisolone)?

- For a person having a severe asthma flare-up (severe exacerbation), these drugs will help re-establish control quickly. If they are used for a few days during severe exacerbations, the risk is very minimal. There can be a temporary increase in blood pressure in those with hypertension, or slight increase in the blood sugar in diabetics, but usually this is short-term and mild. These drugs will stimulate appetite, can cause reflux (heartburn) and mood changes, and can cause transient insomnia, which is less likely if the dose is taken in the morning. Oral corticosteroids may cause serious side-effects when they are used for long periods of time, including increased risk of osteoporosis, cataract, glaucoma, weight gain, increased risk of infection, and suppressed adrenal gland hormone production.

If I feel good, can I stop my asthma treatment?

- No, you should always consult a physician before tapering or when you think you can stop your medication. For most people, controller inhalers should not be stopped, otherwise asthma will come back as bad as it was before, and stopping controller medication increases the risk of serious flare-ups.

Will there be a time when I can stop my medication or should I use it all my life?

- As for diabetes or hypertension, asthma is a life-long disease in most people. So, as for these former, medication should be taken lifelong.

If I have asthma which is persistently severe or difficult-to-control, are there some new drugs that can be used?

- Yes, there are an increasing number of new agents that can be used for some of the most severe types of asthma. In this situation, special tests will need to be done to know if somebody is likely to benefit from one of these drugs.

Is immunotherapy (desensitization) indicated in asthma?

- These are mainly used for allergic rhinitis (e.g.: Hay fever). Immunotherapy tablets have recently been approved for people with mild asthma and good lung function, who are allergic to house dust mite and have flare-ups despite taking a regular controller therapy.

When will the physician consider stepping up asthma medication?

- If asthma is not well controlled despite current treatment, an increase in treatment may be recommended, but only after the following have been carefully checked: a) Inhaler technique b) Environmental triggers c) Other coexisting contributing diseases d) Good adherence to treatment

If I get rid of phlegm, will asthma disappear?

- Phlegm (mucus) production may be due to asthma but may also to other conditions (e.g chronic bronchitis, bronchial dilatation (bronchiectasis). If asthma is well-controlled, phlegm production should be minimal. Coughing up mucus will not change asthma severity or make it disappear.

Will I need oxygen for my asthma in the future?

- No, if asthma is well-controlled there is no such need. Oxygen is mostly needed for patients with smoking-related chronic obstructive pulmonary disease (COPD) such as chronic bronchitis or emphysema, or other non-asthma conditions, who have severe disease with reduced oxygen in their blood. The vast majority of asthmatics will never need oxygen.

ASTHMA INHALER DEVICES

Should I use a metered-dose inhaler or powder inhaler?

- This is left to the decision of the patient and the physician, and the ability of the patient to use the device after training. The choice of inhaler device sometimes depends on which medication is being prescribed. Some patients will prefer one type of inhaler, and some, another. If the person has difficulties in using a metered-dose inhaler, a spacer chamber can help.

What is a spacer chamber?

- A spacer chamber is a small plastic or polycarbonate reservoir in which a puffer (pressurized inhaler) is inserted at one end and the patient breathes at the other end. It reduces the deposition of the drug in the throat and can reduce therefore reduce the possibility of local side-effects. It also helps those who have coordination problems with puffers.

Are nebulizers useful in the treatment of asthma?

- Nebulizers are not needed by the vast majority of asthmatics as we now have many types of inhalers and spacer chambers that can allow the medication to be taken properly for almost everybody, including very young children. Using a nebulizer may increase the risk of side-effects.

ABOUT ASTHMA FOLLOW-UP/TREATMENT STEP-DOWN

Once diagnosed, how often should asthma be reviewed?

- Between 1-3 months after treatment is started, then every 3-12 month
- During pregnancy, asthma should be reviewed every 4-6 weeks
- After a flare-up (exacerbation), asthma should be reviewed within 1 week.

Can I consider stopping asthma treatment when symptoms disappear?

- No, for the vast majority of people with asthma, asthma controller medication should be taken regularly (daily) for all their life. However the doses and number of drugs can be reduced if asthma remains well controlled. There are very occasional situations in which asthma treatment can safely be stopped, e.g. in a person whose asthma was due to a specific cause that has been removed, and who has normal lung function and has had no symptoms for many weeks.

When can I consider stepping down asthma treatment ?

- When symptoms have been well controlled and lung function stable for at least 3 months. Stepping down is done by reducing ICS doses by 25–50% at 3-month intervals while monitoring control. Stepping down should be postponed if the patient has a respiratory infection, is travelling or is pregnant

ABOUT TREATMENT ADHERENCE

How can we help adherence to treatment?

- For each person with asthma, there may be things that will help them to take their medication regularly. If they are simply forgetting, it can be helpful to set a reminder, or put the inhaler where they will see it easily (e.g. next to the toothbrush), or link it to a regular habit (e.g. before leaving for work). The physician, nurse or pharmacist can help to discuss other barriers to taking the medication, e.g. if the patient does not think they need it, or are concerned about side-effects. The patient and health professional can work together to find the best ways for someone to take their medication regularly.

ABOUT DIET AND ASTHMA

Should milk or dairy products be avoided to reduce phlegm production?

- Apart from rare cases, these products will not affect asthma or phlegm production, and should not be avoided. It is important to maintain good calcium intake.

ASTHMA AND SPECIAL SITUATIONS

PREGNANCY

What happens to asthma when a woman becomes pregnant?

- Pregnancy can affect asthma in different ways. In about a third of cases, asthma is improved, in about a third, it does not change, and in about a third, it can worsen.
- The most important point is that it is safe for both mother and baby to take asthma medications regularly during pregnancy. Asthma should be well-controlled by adjusting the treatment up if needed, and to avoid any worsening as this could be detrimental to the baby.

If I become pregnant can I stop my asthma medication?

- No, this may be harmful to the mother and the baby. Asthma control should be optimized in a pregnant woman to avoid any risk for the baby. Most asthma drugs are safe during pregnancy; you should discuss any concerns with the physician.

ATHLETES and SPORTS

I heard that in high-level athletes, asthma is more frequent than in non-athletes. Is it due to their sport?

- We have evidence that long-term regular high-level exercise in elite athletes can contribute to the development of asthma. This is sometimes due to environmental exposure such as chlorinated pools or cold air, etc. It is important to diagnose this problem in the high-level athlete as it can be mistaken for other conditions. If they have asthma, it should be properly treated to allow optimal performances. The good news is that in many of these athletes, asthma can disappear when they stop competing.

Are asthma medications considered as doping?

- No. The vast majority of asthma drugs, including inhaled corticosteroid controller medications, are not considered to be performance-enhancing and therefore are not considered as doping. They simply normalize the function of the airways so that athletes have an equal chance to win competitions compared to non-asthmatics. Some previously used drugs were ergogenic. Anabolic steroids (which are often heard of in connection with doping) are completely different from the corticosteroids used for asthma, which are not doping agents. If you are an athlete with asthma, make sure that you check which medications can and cannot be used.

If I have asthma can I perform diving?

- There is always a risk to perform diving if you have asthma, particularly if it is not optimally controlled. Snorkeling is not a problem but scuba diving, particularly if it is performed in deep waters, can cause a risk of inducing bronchoconstriction due to the dryness of the air, while the changes in pressure may create a pneumothorax (passage of air into the lung envelope with collapse of the lung). It is very important to have asthma carefully evaluated by a physician before doing such sport.

SPECIAL SITUATIONS

Any specific precautions if I have asthma and I am traveling?

- Yes, ideally asthma should be well-controlled before traveling abroad. The asthmatic person should bring sufficient medications and his/her action plan. It is better to have the medications and prescription with you when you pass customs and security, and to have a letter from your doctor saying what medications you are taking. When travelling, it is usually better to avoid extreme exposures to pollutants or allergens to which you are allergic.

If I have asthma, can I do some trekking, walk long distances or climb mountains?

- Yes, if asthma is well controlled, it should be possible. In fact many Olympic athletes have asthma and they can compete successfully. It is important however to ensure that asthma is well under control before doing these activities and the required medication should be carried in case of intercurrent symptoms or exacerbation, particularly if you are not close from medical facilities.

Any specific precautions if I have asthma and need to have surgery?

- Yes, ideally asthma should be well controlled before surgery and pulmonary function tests should be at their best (e.g. spirometry). You should inform the anesthetist and surgeon that you have asthma and what medications you are taking, particularly if you had a recent worsening of your asthma or a respiratory infection.

ASTHMA AND OTHER CONDITIONS

What is the difference between asthma and COPD and will asthma lead to COPD?

- Asthma will not lead to COPD (chronic bronchitis or emphysema). Although some asthmatics can develop what we call a "fixed component" or airway obstruction as in smoking-induced COPD, the diseases are different and the treatment will not be the same.

In COPD, there is an accelerated loss of lung function, faster than for asthma, and even more so if the person still smokes. An asthmatic person who smokes for many years can however develop a component of COPD, a condition called "Asthma-COPD Overlap".

Is rhinitis, such as hay fever, common in asthmatic persons?

- Yes, most people with asthma also have a rhinitis (inflammation of the nasal mucosa) either of allergic origin or not. It should ideally be well treated to avoid its influence on asthma control.

1) In patients with respiratory symptoms, confirm asthma diagnosis with objective evidence of variable expiratory airflow limitation

BARRIERS:

- A) Lack of access to spirometry/ bronchoprovocation tests
- B) Difficulties in interpreting pulmonary function tests
- C) Patient already on asthma medication (may modify test response)

FACILITATORS:

- A) Increase access to spirometry/ bronchoprovocation tests
- B) Provide training or make app available
- C) Consider progressive medication weaning or step-up to confirm change in lung function (see Box 1-5 of GINA 2017 report)

2) Assess asthma control according to GINA criteria for symptom control and risk factors

BARRIERS:

- A) Insufficient knowledge
- B) Time constraints

FACILITATORS:

- A) Training
- B) Tools & reminders
- C) Flow sheet or reminder card with criteria for symptom control and risk factors
- D) Asthma control Stamp in chart
- E) Flag at-risk patients for more frequent follow-up
Inclusion into EMR

3) Adapt pharmacological treatment to patient needs

BARRIERS:

- A) Insufficient knowledge
- B) Insufficient access to medication
- C) Fears about side-effects

FACILITATORS:

- A) Training, summaries and reminders (see Box 3-3 and Box 3-5 of GINA 2017 report)
- B) Increase access to medication (drug facilities, reimbursements)
- C) Titration of each patient's minimal medication needs
- D) Control modifiable risk factors

4) Check inhaler technique

BARRIERS:

- A) Lack of time
- B) No resource (educator)

FACILITATORS:

- A) Refer to educator/nurse/respiratory therapist/pharmacist for brief show-and-tell training
- B) Refer to web site for inhaler videos (e.g. <http://www.admit-inhalers.org/>; www.nationalasthma.org.au)
- C) Check inhaler technique at every opportunity

5) Assess/promote adherence to therapy

BARRIERS:

- A) Lack of time
- B) Insufficient knowledge of methods
- C) Fears about side-effects

FACILITATORS:

- A) Empathic discussion about barriers to adherence
- B) Refer to educator/nurse/ respiratory therapist
- C) Refer to web site (see p.57 of GINA report)
- D) Shared decision-making

6) Provide an action plan for the prevention and management of exacerbations

BARRIERS:

- A) Insufficient knowledge
- B) Insufficient time
- C) No access to educator

FACILITATORS:

- A) Training, reminders, tools (see Box 4-2 of GINA 2017 report)
- B) Action plan templates (e.g. www.asthma.org.uk; www.asthma.ca; www.fpagc.com/; www.nationalasthma.org.au)
- C) Refer to educator
- D) Make educator available & trained appropriately

7) Ensure adequate follow-up

BARRIERS:

- A) Lack of time – discontinuity of care
- B) Limited access

FACILITATORS:

- A) Organize schedule
- B) Allied health contact

8) Provide/ refer for asthma education

BARRIERS:

- A) Lack of time
- B) No resource (educator)

FACILITATORS:

- A) See Chapter 3C (p. 56) of GINA 2017 report
- B) Refer to educator
- C) Develop asthma education facility

9) Provide smoking cessation advice

BARRIERS:

- A) Lack of time
- B) No resource (educator)

FACILITATORS:

- A) Refer to educator
- B) Refer to smoking cessation facility

10) Provide counselling on environmental control where appropriate

BARRIERS:

- A) Lack of time
- B) Insufficient knowledge
- C) Insufficient tools

FACILITATORS:

- A) Refer to educator/nurse/respiratory therapist
- B) Refer to GINA 2017 report (Appendix Chapter 6)
- C) Take cost and effectiveness of environmental control strategies into account

11) Promote ideal weight (weight loss in obese patients)

BARRIERS:

- A) Unhealthy life habits
- B) Insufficient exercising
- C) Poor diet
- D) Cultural influence

FACILITATORS:

- A) Nutritional counselling; promote healthy diet with plenty of vegetables and fruit
- B) Promote exercise
- C) Give advice about exercise-induced bronchoconstriction

12) Identify and address co-morbidities

BARRIERS:

- A) Lack of awareness of these problems in the asthma assessment

FACILITATORS:

- A) Education
- B) Reminders

GINA ASSESSMENT OF ASTHMA CONTROL 2019

For section B, references can be found in the 2019 GINA report

A. Asthma Symptom Control Level of Asthma Symptom Control

In the past 4 weeks, has the patient had:

		Well Controlled	Partly Controlled	Uncontrolled
• Daytime asthma symptoms more than twice/week?	Yes <input type="checkbox"/> No <input type="checkbox"/>	None of these	1-2 of these	3-4 of these
• Any night waking due to asthma?	Yes <input type="checkbox"/> No <input type="checkbox"/>			
• Reliever needed for symptoms * more than twice/week?	Yes <input type="checkbox"/> No <input type="checkbox"/>			
• Any activity limitation due to asthma?	Yes <input type="checkbox"/> No <input type="checkbox"/>			

B. Risk Factors For Poor Asthma Outcomes

Assess risk factors at diagnosis and periodically, particularly for patients experiencing exacerbations.

Measure FEV₁ at start of treatment, after 3-6 months of controller treatment to record the patient's personal best lung function, then periodically for ongoing risk assessment.

<p>Potentially modifiable independent risk factors for flare-ups (exacerbations)</p> <ul style="list-style-type: none"> • Uncontrolled asthma symptoms⁷⁸ • High SABA use⁷⁹ (with increased mortality if >1 x 200-dose canister/month⁸⁰) • Inadequate ICS: not prescribed ICS; poor adherence;⁸¹ incorrect inhaler technique⁸² • Low FEV₁, especially if <60% predicted^{83, 84} • Major psychological or socioeconomic problems⁸⁵ • Exposures: smoking;⁸⁴ allergen exposure if sensitized⁸⁴ • Comorbidities: obesity;⁸⁶ rhinosinusitis;⁸⁷ confirmed food allergy⁸⁸ • Sputum or blood eosinophilia;^{89, 90} elevated FENO (in adults with allergic asthma⁹³ • Pregnancy⁹² <p>Other major independent risk factors for flare-ups (exacerbations)</p> <ul style="list-style-type: none"> • Ever intubated or in intensive care unit for asthma⁹³ • ≥ 1 severe exacerbation in last 12 months⁹⁴ 	<p>Having one or more of these risk factors increases the risk of exacerbations even if symptoms are well controlled.</p>
---	--

Risk factors for developing fixed airflow limitation

- Lack of ICS treatment⁹⁵
- Exposures: tobacco smoke;⁹⁶ noxious chemicals; occupational exposures³¹
- Low initial FEV₁;⁹⁷ chronic mucus hypersecretion;^{96, 97} sputum or blood eosinophilia⁹⁷

Risk factors for medication side-effects

- Systemic frequent OCS; long-term, high dose and/or potent ICS; also taking P450 inhibitors⁹⁸
- Local; high-dose or potent ICS;^{98, 99} poor inhaler technique¹⁰⁰

FEV₁: forced expiratory volume in 1 second; ICS: Inhaled corticosteroid; OCS: oral corticosteroid; P450 Inhibitors: cytochrome P450 Inhibitors such as ritonavir, ketoconazole, itraconazole; SABA : short-acting beta₂-agonist.

*Excludes reliever taken before exercise. For children 6-11 years, also refer to Box 2-3, p.30. See Box 3-8, p.50 for specific risk reduction strategies.

This consensus-based GINA control classification corresponds to that in GINA 2010 - 2012, except that lung function now appears only in the 'future risk' assessment. 'Current clinical control' has been renamed 'symptom control', to emphasize that these measures are not sufficient for assessment of disease control - future risk assessment for adverse outcomes is also needed. 'Independent' risk factors are those that are significant after adjustment for the level of symptom control. Poor symptom control and exacerbation risk should not be simply combined numerically, as they may have different causes and may need different treatment strategies.

ASTHMA ACTION PLAN

Name: _____

Phone: _____

Action plan updated: M _____ / D _____ / Y _____

Bring this action plan to your doctor/nurse at each visit.

Doctor's Contact Details: _____

Nurse/Educator Details: _____

In an emergency call: _____

OR CALL AN AMBULANCE IMMEDIATELY.

YOUR EMERGENCY CONTACT PERSON

Name: _____

Phone: _____

Relationship: _____

IF YOUR ASTHMA IS WELL CONTROLLED

You need your reliever inhaler less than 3 times per week, you do not wake up with asthma and, and your asthma does not limit your activities (including exercise) (If used, peak flow over ___L/min)

Your controller medication is: _____ (name) _____ (strength)

Take: _____ puffs/tablet _____ times EVERY DAY

Use a spacer with your controller inhaler

Your reliever/rescue medication is: _____ (name) _____ (strength)

Take _____ puffs if needed to relieve asthma symptoms like wheezing, coughing, shortness of breath

Use a spacer with your reliever inhaler

Other medications: _____ (name) _____ (strength) _____ (how often)

_____ (name) _____ (strength) _____ (how often)

Before exercise take: _____ (name) _____ (strength) _____ (how many puffs/tablets)

IF YOUR ASTHMA IS GETTING WORSE

You need your reliever more often than usual, you wake up with asthma, or you cannot do your normal activities (including exercise) because of your asthma (If used, peak flow between ___ and ___L/min)

Take your reliever/rescue medication: _____ (name) _____ (strength) _____ (how often)

Use a spacer with your controller inhaler

Take your controller medication: _____ (name) _____ (strength)

Take: _____ puffs/tablet _____ times EVERY DAY

Use a spacer with your reliever inhaler Contact your doctor

Other medications: _____ (name) _____ (strength) _____ (how often)

IF YOUR ASTHMA SYMPTOMS ARE SEVERE

You need your reliever again more often than every 3-4 hours, your breathing is difficult, or you often wake up with asthma (if used, Peak Flow under ___L/min)

Take your reliever/rescue medication: _____ (name) _____ (strength) _____ (how often)

Take prednisone/prednisolone: _____ (name) _____ (strength)

Take: _____ tablet _____ times every day

CONTACT A DOCTOR TODAY OR GO TO THE EMERGENCY DEPARTMENT

Additional comments: _____

ASTHMA SELF-MANAGEMENT ACTION PLAN: MEDICATION CHANGES IF LOSS OF CONTROL

Medication	Short-term change (1-2 weeks) for worsening asthma	Evidence Level
Increase usual reliever: Short-acting beta ₂ -agonist (SABA) Low dose ICS/formoterol*	Increase frequency of SABA use For pMDI, add spacer Increase frequency of reliever use (maximum formoterol total 72mcg/day)	A A A
Increase usual controller: Maintenance and reliever ICS/formoterol* Maintenance ICS with SABA as reliever Maintenance ICS/formoterol with SABA as reliever Maintenance ICS/other LABA, with SABA as reliever	Continue maintenance ICS/formoterol and increase reliever ICS/formoterol as needed* (maximum formoterol total 72mcg/day) At least double ICS; consider increasing ICS to high dose (maximum 2000 mcg/day BDP equivalent) Quadruple maintenance ICS/formoterol (maximum formoterol total 72mcg/day) Step up to a higher dose formulation of ICS/other LABA, or consider adding a separate ICS inhaler (to maximum 2000 mcg/day BDP equivalent)	A B B D
Add oral corticosteroids (OCS) and contact doctor OCS (prednisone or prednisolone)	Add OCS for severe exacerbations (e.g. PEF or FEV ₁ <60% personal best or predicted), or patient not responding to treatment over 48 hours Adults: prednisone 1 mg/kg/day (maximum 50 mg) usually for 5-7 days Children: 1-2 mg/kg/day (maximum 40 mg) usually for 3-5 days. Tapering is not needed if OCS are prescribed for <2weeks	A D B

BDP: beclometasone dipropionate; FEV₁: forced expiratory volume in 1 second; ICS: inhaled corticosteroid; PEF: peak expiratory flow; SABA: short-acting beta₂-agonist. Options are listed in order of evidence.

*ICS/formoterol maintenance and reliever regimen: low dose budesonide or beclometasone with formoterol. This regimen is not approved for children <12 years in many countries.

From Box 4.2 GINA report 2017

ASTHMA POST-ADMISSION QUICK CASE REVIEW TEMPLATE

ABOUT THIS TEMPLATE

This structured template is designed to assist doctors and nurses in doing a quick assessment & reflecting on care for patients who have been admitted to hospital (or treated in the Emergency Department or Urgent Care Center) for an episode of uncontrolled asthma or a flare-up (exacerbation). *It is based on a document produced by Dr Mark Levy.*

The aim of this tool is to help determine whether there were preventable factors that could have helped this patient avoid this flare-up and therefore helped to avoid this admission. A good model template for assessing asthma control can be found at www.ginasthma.org and for controlling asthma.

The key relevant findings of the National Review of Asthma Deaths were:

- Excess prescription of SABAs (short acting relievers)
- Insufficient prescription of inhaled corticosteroids (ICS)
- Failure to provide a written Asthma Action Plan (also known as personal asthma action plan or PAAP)
- Failure to assess asthma control; and to ensure control was achieved where this was poor.
- Failure to assess and correct inhaler technique.

Complete the template for asthma patients who have had an admission to the Emergency Department or hospital. If the patient has any of the features marked with **, the admission could potentially have been prevented, and steps should be taken to improve their care in the practice.

To do this review:

- 1) Identify **patients** who have been admitted to hospital in the last few months. Alternatively select patients who have been treated in the Emergency Department or the Urgent Care Center in the last few months.
- 2) Complete the form below (some of the entries are simple tick boxes, simply click in the grey areas to mark or enter text) and then discuss the cases in peer groups.
- 3) Use the GINA Asthma strategy document (www.ginasthma.org) as the standard for your discussions.

ASTHMA POST-ADMISSION QUICK CASE REVIEW TEMPLATE

Name: _____ Date: _____

Patient Initials: _____	Confidential Identifier: _____	Male: <input type="checkbox"/> Female: <input type="checkbox"/>
Admission Date: ____ / ____ / ____	Discharge Date: ____ / ____ / ____	
Date Reviewed After Discharge: ____ / ____ / ____	Not Reviewed : <input type="checkbox"/>	
Asthma treatment at the time of (ie just before) admission (From your records): Controller Drug (s) _____ Dose _____ Frequency _____ Device _____ _____ Dose _____ Frequency _____ Device _____ Spacer used: Yes <input type="checkbox"/> No <input type="checkbox"/> Not Known <input type="checkbox"/> Not needed <input type="checkbox"/> (dry powder inhaler)		
Reliever Drug _____ Dose _____ Frequency _____ Device _____ Spacer used: Yes <input type="checkbox"/> No <input type="checkbox"/> Not Known <input type="checkbox"/>		
In the 12 months before admission: How many reliever inhalers prescribed? _____ ^{**} 1 How many preventer inhalers prescribed? _____ ^{**} How many unscheduled attendances for asthma? (Practice) _____ How many unscheduled attendances for asthma? (ED) _____ How many asthma-related admissions to hospital? _____		
Personal Written Asthma Action Plan: Date Issued: ____ / ____ / ____ ; Never Issued: <input type="checkbox"/> ^{**} Date last reviewed: ____ / ____ / ____ Unknown _____		
Date of last routine asthma review (before the admission): ____ / ____ / ____ Was asthma control assessed? Yes <input type="checkbox"/> No <input type="checkbox"/> No Record <input type="checkbox"/> ^{**} If yes was his/her asthma: Well Controlled <input type="checkbox"/> Poorly Controlled <input type="checkbox"/> If poor control: Was his/her asthma treatment increased or changed Yes <input type="checkbox"/> No <input type="checkbox"/> ^{**} If good control: Was his/her asthma treatment decreased or changed Yes <input type="checkbox"/> No <input type="checkbox"/> Was his/her inhaler technique checked? Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> ^{**} Was it poor <input type="checkbox"/> ^{**} or good <input type="checkbox"/> ? Was use of a peak flow meter recommended? Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> If yes, was he/she provided with a peak flow meter? Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Was the patient prescribed an ICS-containing controller on discharge? Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Was a follow-up appointment offered: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>		
In your opinion was this patient's asthma managed according to GINA strategy report? Yes <input type="checkbox"/> No <input type="checkbox"/> ^{**} Not Known <input type="checkbox"/> ^{**} If No describe: _____ ^{**}		

¹ There are evidences that ≥ 3 inhalers in a year increases the risk of exacerbations in the following year, and ≥ 12 inhalers in a year increases the risk of asthma-related death

ASTHMA POST-ADMISSION QUICK CASE REVIEW TEMPLATE

All patients should have an assessment of their asthma control following an admission – if this has not yet been done in this patient, please recall the patient and take steps to optimise the treatment if needed.

Date Discussed at Appraisal: ____ / ____ / ____ Signed by Appraiser: _____

GINA CRITERIA FOR ASTHMA CONTROL (See GINA 2017 report Chapter 2 for more details)

PART A. What is the patient's level of asthma symptom control?

In the last 4 weeks, has the patient had...	Tick if Yes	Symptoms Well Controlled	Symptoms Partly Controlled	Symptoms Uncontrolled
Daytime asthma symptoms more than twice/week?		None of these	1-2 of these	3-4 of these
Any night waking due to asthma?				
Reliever needed for symptoms* more than twice/week?				
Any activity limitation due to asthma?				

If asthma symptoms are not well-controlled, check adherence and inhaler technique, confirm symptoms are due to asthma, and check for modifiable risk factors, before considering a step-up in treatment. Treat modifiable risk factors (see next page).

PART B. Are there any risk factors for poor asthma outcomes? (Tick if yes; see GINA Box 3-8 for treatment)

Risk factors for flare-ups (exacerbations)		Risk factors for developing fixed airflow limitation	
Uncontrolled asthma symptoms (as above)		Not prescribed ICS controller	
Excessive reliever use		Poor adherence	
Not prescribed ICS controller		Incorrect inhaler technique	
Poor adherence		Exposure to tobacco smoke	
Incorrect inhaler technique		Low baseline FEV1	
≥1 severe exacerbation (requiring OCS) in last year		Chronic mucus hypersecretion	
Obesity		Exposure to noxious chemicals	
Smoking		Sputum or blood eosinophilia	
Low FEV1, especially if <60% predicted		Occupational exposure	
Rhinosinusitis		Risk factors for medication side-effects	
Major psychological or socioeconomic problems		Systemic side-effects	
Ever intubated or in intensive care unit for asthma		Frequent OCS	
Pregnancy		Long-term high dose and/or potent ICS	
Confirmed food allergy		Taking P450 inhibitors	
Elevated FeNO in allergic non-smoking adults		Local side-effects	
Allergen exposure (if sensitized)		Poor ICS inhaler technique	
Sputum or blood eosinophilia		High dose and/or potent ICS	

Assess risk factors at diagnosis and periodically, particularly for patients experiencing exacerbations. Measure FEV1 at start of treatment, after 3–6 months of controller treatment to record the patient's personal best lung function, then periodically for ongoing risk assessment. FEV1: forced expiratory volume in 1 second; ICS: inhaled corticosteroid; OCS: oral corticosteroid; P450 inhibitors: cytochrome P450 inhibitors such as ritonavir, ketoconazole, itraconazole; SABA: short-acting beta2-agonist.

*Excludes reliever taken before exercise.

ASTHMA POST-ADMISSION QUICK CASE REVIEW TEMPLATE

See tool on assessment of asthma control for additional information to obtain.

ASTHMA SYMPTOMS & PEAK EXPIRATORY FLOW DIARY

PATIENT NAME: _____

DOCTOR NAME: _____

DOCTOR TELEPHONE: _____

At the end of each week record number of days with symptoms of asthma according to the following scale:

COMMENTS: _____

ASTHMA SYMPTOMS: cough, wheezing, breathlessness, chest tightness (record number of days/week with those symptoms)

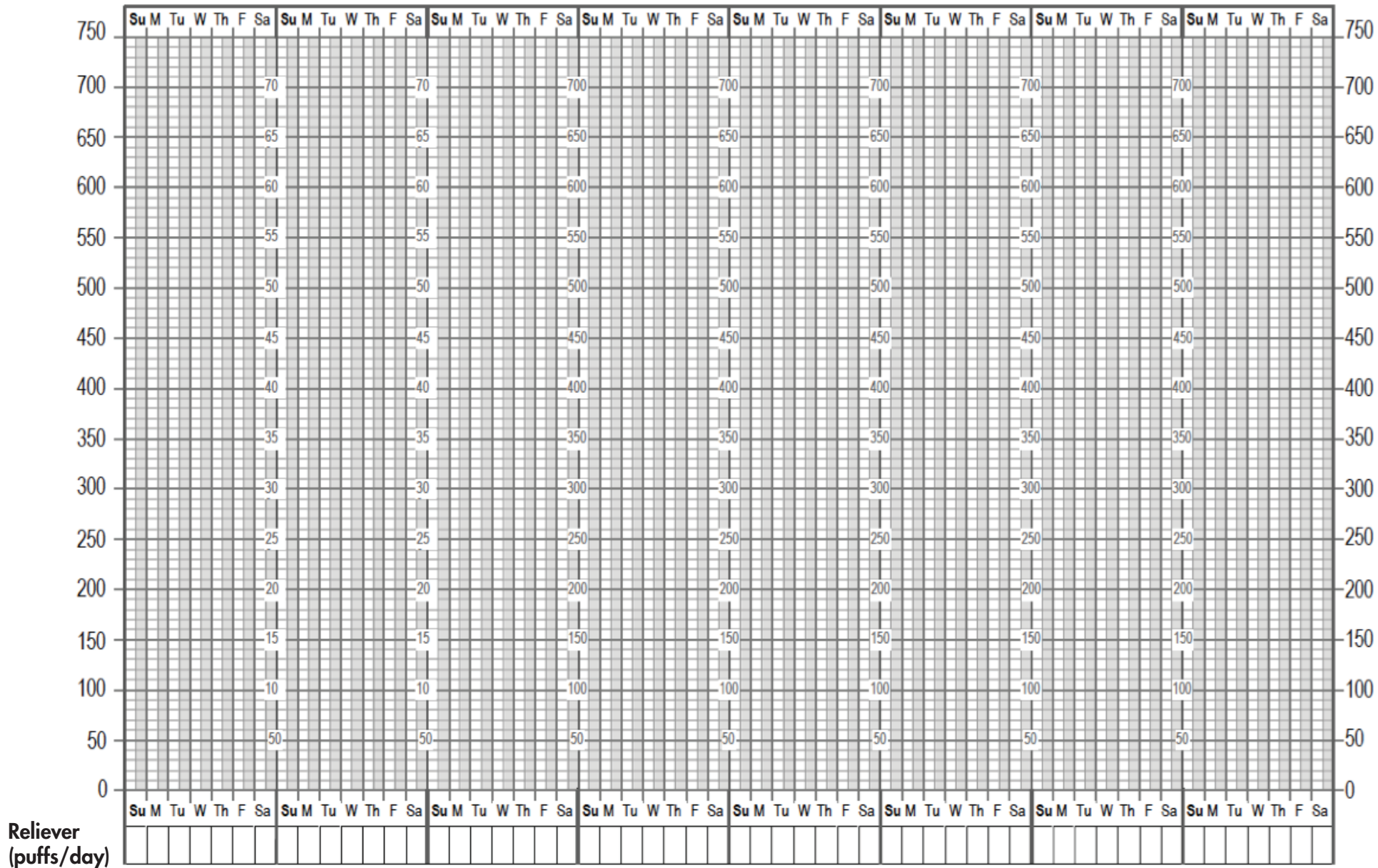
START DATE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8
MONTH								
DAYTIME SYMPTOMS								
NIGHTTIME SYMPTOMS								
ACTIVITY LIMITED DUE TO ASTHMA								
OTHERS*								
START DATE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8
CONTROLLER MEDICATION (record the number of days that controller medication was taken during the week)								

How to record your peak flow readings:

1. Each page on this chart holds 8 weeks of peak flow readings. For each day (e.g. Su for Sunday), there is a white column for your morning reading & a grey column for your evening reading.
2. Each morning and evening, record the highest of three peak flows. Take a deep breath, seal your mouth tightly around the mouthpiece, then blow as hard and as fast as you can. Check the number, re-set the pointer to zero, and repeat two more times.
3. Use a black pen to record the highest peak flow on the chart. Each square up the chart represents 10 on your peak flow meter.
4. Start recording in the first week on the page, and write the start date at the top of each page.
5. Each night, use the box at the bottom to record the total number of puffs of reliever medication (e.g. Ventolin) which you used in the last 24 hours.

NOTES:

- If you miss measuring your peak flow, don't make up a number, just leave a gap. If you have any difficulty recording your peak flow, please discuss it with your doctor.
- Always take this chart with you when you visit your doctor. Even if you have not been recording your peak flow regularly, doing 2 weeks of readings before a visit will be helpful.
- You can also use your peak flow chart to record colds and medications changes.
- Remember to use the treatment on your Asthma Action Plan if your asthma gets worse or your peak flow falls below your "action point".



OTHER: _____

MEDICATIONS: _____

This PEF chart has been reproduced with permission from the Woolcock Institute, Sydney, Australia ©

DISCHARGE PLAN FROM THE EMERGENCY DEPARTMENT AFTER ACUTE ASTHMA

MEDICATION

PREDNISONE PREDNISOLONE _____ mg (_____ Tablets) Each Morning For _____ Days

RELIEVER/RESCUE MEDICATION _____ 2 Puffs _____ Times per Day As Needed

CONTROLLER MEDICATION (inhaled corticosteroid or combined ICS and long-acting inhaled β 2 agonist)

Name _____ Dose _____ Puffs _____ Times per Day _____

OTHER MEDICATIONS _____

INHALER TECHNIQUE CHECKED?

PEAK FLOW METER PROVIDED? USE EXPLAINED?

TEMPORARY WRITTEN ACTION PLAN PROVIDED?

REFERRAL TO AN ASTHMA EDUCATOR? Details: _____

APPOINTMENT WITH GP SCHEDULED? Details: _____

DOCTOR'S SIGNATURE: _____ DATE: _____

ADDITIONAL INSTRUCTIONS TO PATIENT

If your asthma improves:

Continue the controller treatment as suggested above, and reduce your reliever as your asthma symptoms improve

If little/no improvement: Call: _____ or see a physician

If your asthma worsens: Call a physician quickly _____

or call _____ or come back to the emergency department

NOTE: YOU SHOULD SEE YOUR DOCTOR WITHIN 2 TO 7 DAYS AFTER DISCHARGE

Asthma is well-controlled if: You need your reliever less than 3 times per week, do not wake up with asthma and can do your activities normally including exercise

(If used, peak flow is over _____L/min)

COMMENTS

(SEE REVERSE)