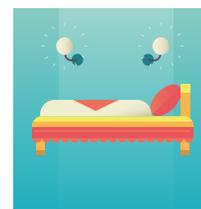
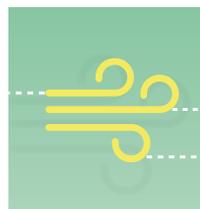


# *Asthma*

**A GUIDE TO ASTHMA**

The Organisation for Respiratory Health in Finland promotes respiratory health and good life for people suffering from respiratory diseases.

 **Hengitysliitto**



**A**sthma is a chronic lung condition that affects one in ten adults in Finland.

Although predisposition to asthma is lifelong, it is possible to lead a full life with the condition. Most people with asthma can achieve a good treatment balance through suitable medication and sensible lifestyle choices.

Treatment of asthma is based on medication that treats asthma inflammation and good self-care. The goal is to make everyday life symptom free.

This guide will include an overview on asthma, its diagnostics and monitoring, medical treatment and self-care.

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# 1 What is asthma?

Asthma is a chronic inflammatory disease that affects the mucous membrane of the bronchial tubes. First symptoms usually include a persistent cough, increased production of mucus and shortness of breath.

People with asthma are prone to respiratory symptoms, because inflamed and swollen mucous membrane is sensitive to stimuli such as dust, cold air, exertion, tobacco smoke and strong smells. Such stimuli make the smooth muscles surrounding the airway contract. This causes bronchial contraction and complicates breathing. Exhalation becomes laboursome, which results in shortness of breath. Inflamed mucous membrane produces mucus that further obstruct the airway.

The lungs of individuals with mild and incipient asthma function normally most of the time and symptoms are intermittent. Individuals with severe or untreated asthma experience symptoms frequently and obstruction of their airways may be permanent and partly irreversible.

In most cases, the inflammation can be kept mild and under control with medication.

## 1.1 Symptoms of asthma

The symptoms of asthma include:

- » persistent cough, lasting more than 2 months
- » increased mucus production
- » shortness of breath
- » occasional wheeze or whistling noise when exhaling

Symptoms commonly occur at night or in the morning.

Individual factors that may exacerbate symptoms:

- » viral respiratory infections
- » physical exertion
- » cold air
- » allergens
- » air pollutants, dust, smoke

The underlying factors for developing asthma are individual and the disease can manifest at any age. The cause of asthma is unknown, but its onset is often related to environmental stimuli or a protracted respiratory tract infection.

## 1.2 Risk factors

Risk factors related to asthma include:

- » allergies
- » hereditary tendencies/parents or siblings with asthma
- » allergic rhinitis
- » other upper respiratory tract conditions
- » smoking and exposure to tobacco smoke
- » obesity: BMI over 30

Indoor mold and moisture damage has been linked to respiratory conditions and respiratory symptoms related to asthma, but the relationship of cause and effect remains unclear.

Individuals with asthma are more prone to gastroesophageal reflux disease (GERD), but the condition does not appear to cause asthma.

Reflux disease is a condition in which stomach contents rise up into the esophagus resulting in heartburn, a burning sensation under the sternum, and the reflux of stomach contents into the mouth.

## 2 Different types of asthma

Clinical presentations of asthma range from mild to severe. For some individuals, asthma is a result of allergic sensitisation, while for other it is caused by a severe asthma inflammation of bronchial mucous membrane. Some individuals suffer from difficult-to-control asthma. The following sections include descriptions of known types of asthma.

### 2.1 Allergic asthma

Roughly every other adult with asthma also has allergies. They are often prone to atopic dermatitis and allergic rhinitis. Individuals with allergic asthma easily react to substances that they are sensitive to, and their body defends itself by producing an immunoglobulin E (IgE) antibody for the allergen in question.

Most people who have had asthma since childhood are also allergic to something, but if allergic asthma starts in adulthood it starts in early adulthood, at approximately 30 years of age.

Allergic or seasonal rhinitis and asthma often appear together. There is a concept of “one airway, one disease”.

Allergic rhinitis and sinusitis may worsen the symptoms of asthma. Allergic and chronic rhinitis should be treated appropriately (with cortisone nasal spray). Allergies should also be

treated, and desensitisation should be considered.

### 2.2 Asthma and chronic obstructive pulmonary disease (COPD)

Smoking doubles the risk of developing asthma. Individuals with smoking-related asthma are often men who are middle-aged or older. Some of them also contract chronic obstructive pulmonary disease (COPD). The efficacy of inhaled asthma preventer medication is not as good for individuals who smoke and the disease often has a poor treatment balance.

Smoking alters the asthma inflammation and makes it resemble inflammation associated with COPD. It damages the bronchial mucous membrane and lung tissue. An estimated 15–50% of individuals who suffer from COPD also have asthma.

It may be challenging to tell the difference between COPD and asthma because both conditions have similar symptoms: cough, increased mucus production, recurring infections and shortness of breath. The onset of COPD is often slow and symptoms manifest gradually. An individual who develops COPD may have had a “smoker’s cough” for years. Variability of symptoms is characteristic of asthma.

Unlike with asthma, in COPD bronchial obstruction is progressive and permanent.



**More information:** [www.hengitysliitto.fi](http://www.hengitysliitto.fi) and A Guide Chronic Obstructive Pulmonary Disease (in Finnish).



### 2.3 Asthma in the elderly

Asthma is a common but underdiagnosed condition among the elderly. Diagnosis of asthma is made more difficult by other concurrent conditions, such as cardiac insufficiency or COPD. Many symptoms of asthma, such as shortness of breath, are often interpreted as being part of another condition. Concurrent use of multiple medications also often creates challenges for the elderly and medication as a whole should be revised regularly.

Asthma in the elderly is more common and severe among women. Asthma in the elderly is often accompanied by allergic rhinitis. Asthma is often non-atopic for individuals who develop it at the age of 65 or older.

### 2.4 Asthma in obese people

Obesity and especially abdominal obesity increases the risk of developing asthma. Fatty tissue around the abdominal area produces an inflammation transmitter substance that spreads to the lungs through blood circulation.

Obesity puts a strain on the entire body, including the cardiovascular and circulatory system. Especially fat that has accumulated in the abdominal cavity and around the chest area makes breathing more difficult. The diaphragm's movement becomes reduced which in turn reduces lung capacity, functioning of

respiratory muscles and flexibility of the rib cage.

Obese individuals breathe differently than those of normal weight. They might develop respiratory insufficiency which makes breathing shallow and fast. Their lungs do not fill up properly and the operational capacity of the lungs is reduced. Even minor weight loss can make breathing easier and improve wellbeing.

Medicine intended to treat inflammation is not as effective on individuals who are obese. They often need a substantial amount of additional medication to treat their respiratory symptoms and face challenges in reaching a treatment balance.

Abdominal obesity also makes you susceptible to pauses in breathing during sleep. Untreated sleep apnoea increases the risk of asthma symptoms at night. The start or approach of menopause may make obese women susceptible to asthma. They also display proportionately more symptoms even if their lung function is relatively good.



**More information:**

[www.hengitysliitto.fi](http://www.hengitysliitto.fi)  
and A Guide to  
Sleep Apnoea.



## 2.5 Severe refractory and difficult-to-control asthma

Severe refractory asthma is often confused with difficult-to-control asthma because the symptoms are usually similar. The lack of awareness about severe refractory asthma can be explained by its relative rarity. Severe asthma is slightly more common in women than in men and onset is not dependent on age.

Severe refractory asthma can be developed by children, the working-age population and the elderly alike. It is difficult to estimate the annual number of severe refractory asthma diagnoses, but the number is closer to a few dozen than hundreds of cases.

Approximately 5 % of all asthma patients have severe refractory asthma. The symptoms of severe refractory asthma cannot always be controlled, even with maximal therapy.

A pulmonologist's assessment is usually necessary for people with severe refractory asthma. Some cases of severe refractory asthma can be treated with biologics that are administered in central hospitals and university hospitals.

The symptoms of difficult-to-control asthma and severe refractory asthma are similar: increase of chronic respiratory symptoms and exacerbations of asthma that all reduce functional ability and quality of life.

An individual with difficult-to-control asthma has, for whatever reason, not achieved a treatment balance despite maximal treatment. The most common problem is insufficient commitment to self-care and regular use of asthma medication in particular. Many forget to take their medication daily or use inhaled medication incorrectly.

## 2.6 Occupational asthma

Biological and chemical substances in the work environment cause occupational asthma. Asthma may develop when an individual is exposed to factors that sensitise or irritate airways. A person may be suspected to have occupational asthma if that individual works in a profession with an increased risk of asthma or uses a substance that is known to cause occupational asthma. Occupational asthma is a concept of medical law and a compensable occupational disease.

Professions associated with occupational asthma include:

- » baker;
- » textile worker;
- » metal worker;
- » agricultural worker;
- » cleaner;
- » painter; and
- » hairdresser.

The diagnosis of occupational asthma requires that the likely and primary cause of asthma is a substance present in the work environment.

The most common substances that cause asthma include:

- » microbes typical of moisture damage and flour dust;
- » wheat and animal feed;
- » animal epithelia, hair and secretions;
- » dust mites in warehouses;
- » wood dust; and
- » chemicals used by hairdressers.



In the case of moisture damage related asthma in particular, PEF workplace monitoring is an important method for diagnosing occupational asthma. It must be carried out carefully as early as possible and before the start of regular use of preventer medication, if possible. The duration of workplace PEF monitoring should be at least 4 weeks and include both work days and days off.

Further information and instructions for investigating indoor air problems: [www.hengitysliitto.fi](http://www.hengitysliitto.fi).

If sufficient treatment balance cannot be achieved for occupational asthma or work-exacerbated asthma or if ability to work is under threat, possibilities for rehabilitation should be investigated.

**Asthma is considered to be work-exacerbated** if it gets worse when working but does not meet the criteria for occupational asthma put forward in the Workers' Compensation Act. In approximately one fifth of adult-onset asthma cases, asthma has been found to exacerbate with a dusty work environment, work in abnormal temperatures or strenuous work.

In such cases, the workplace-related factors that exacerbate asthma must be cut down or completely eliminated. Measures may include the use of a respiratory mask, reorganising of work duties and improvement of working conditions, for example.

**Occupational asthma** is a compensable occupational disease pursuant to the

Employment Accidents Insurance Act. Physicians diagnose occupational asthma based on medical grounds. Insurance companies make decision on compensating asthma as an occupational disease based on legal grounds. If occupational asthma is diagnosed, the employee with asthma must be appropriately protected and possible solutions may include other work duties or work locations where the employee is not exposed to factors that exacerbate symptoms.

#### ASTHMA AND CHOICE OF CAREER

Asthma only limits career choices in exceptional cases. Mild asthma with a good treatment balance generally does not rule out any profession.

However, people with asthma are less suited for professions that involve significant exposure to airway irritating dust or allergens. Such professions include hairdresser, animal handler and cleaner, for example. Heavy physical labour is usually not suitable for people with severe asthma.

#### MILITARY SERVICE AND ASTHMA

Asthma does not disqualify you from military service or a career in the military if your symptoms are under control and your medication is in order. Each conscript's condition is individually assessed before the start of military service.



### 3 Diagnosis and examinations

Asthma is diagnosed using breath tests. Key tests include spirometry and 2-week at-home **PEF monitoring**. If necessary, exercise and provocation tests may also be performed.

Spirometry is a breath test that measures lung function and indicates lung volume and the degree of obstruction of bronchial tubes. The PEF test measures the maximum speed of expiratory flow during the first second of exhalation.

Expiratory flow is measured before and after the use of reliever medication that opens the airway. Asthma may be suspected if there are significant differences between PEF values taken in the morning and the evening and the values improve with the use of reliever medication.

For many asthma sufferers, PEF monitoring is an important tool for monitoring treatment balance. It is important to determine what is the optimal PEF value for you. Factors that affect the PEF value include gender, age and height, which means that your optimal PEF value will change over time. Your physician will provide you with instructions on how much your PEF value can change before more medication is needed.

The monitoring period is 1–2 weeks. Breath tests are performed immediately after waking up and repeated in the evening.

If you are using reliever medication that opens airways, tests are performed before taking the medicine and 15–20 minutes after taking the medicine. At least 3 consecutive blows of air are needed per measurement. If the difference between the two best results is over 20 l/min, additional blows are needed. It is recommended to record all 3 results.

#### How to perform a PEF test:

- » Reset the measuring device.
- » Fill your lungs with as much air as possible.
- » Place the mouthpiece tightly between your lips and teeth.
- » Blow out sharply as hard and fast as you can (explosively fast start!).
- » Write down the result.
- » Always stand up when taking the test, if possible.



#### More information:

[www.hengitysliitto.fi](http://www.hengitysliitto.fi) and the YouTube channel of the Organisation for Respiratory Health in Finland.



## 4 Medical treatment

The goal of asthma treatment is to achieve a good treatment balance, which means making the life of the individual with asthma as free of symptoms as possible. This requires regular monitoring and adjustment of medication to suit your individual needs as instructed by your physician.

Every person with asthma should always carry reliever medication to quickly alleviate symptoms when necessary. Heavy use of reliever medication is a sign of poor asthma management and the use of preventer medication should be increased. The less reliever medication is needed, the more successful treatment has been. The goal is a good treatment balance:

### Good treatment balance:

- » good functional capacity and quality of life;
- » symptom-free life;
- » symptom relieving medication taken no more than twice per week; and
- » no deviating PEF values.

If a treatment balance has not been achieved, physical exertion almost always causes symptoms. Recurrent bronchitis may also be a sign of poor treatment balance.

Nasal sprays that contain cortisone and antihistamines may be used to treat allergic rhinitis. Avoidance of allergens that cause symptom should be discussed with a physician. The use of a neti pot may alleviate symptoms and discomfort.

Fluctuation of symptoms is typical of asthma.

Good periods may be followed by exacerbations. Increase of symptoms is treated according to instructions provided by a physician.

### Signs of exacerbation:

- » increased need for reliever medication;
- » stuffy flu-like feeling;
- » shortness of breath and difficulty breathing, especially at night;
- » increased coughing or mucus production;
- » poorer tolerance of exertion or exercise; and
- » lower PEF values.

### 4.1 Preventer medication

Regular use of preventer medication intended to treat bronchial asthma inflammation plays a key role in the treatment of asthma. Preventer medication helps keep asthma inflammation of bronchial mucous membrane in control and sometimes even soothe it completely. The medication is based on inhaled corticosteroids (glucocorticoid).

Inhaled corticosteroids may begin to take effect in a couple of days but sometimes finding the best efficacy can take one or two months. It is important to keep using preventer medication even if symptoms do not go away. Once a treatment balance has been achieved, the medication is used as prescribed by a physician, only taking enough to keep symptoms in control.

Your physician may also prescribe inhaled combination medicines that include preventive corticosteroids and long-acting reliever medicine that opens airways. Inhaled tiotropium, a long-acting airway opener, may also be used as an additional drug. Some individuals with asthma take medication, such as leukotriene inhibitors or theophylline, in pill form in addition to inhaled corticosteroids. They alleviate the inflammation and open airways.

If necessary, during exacerbation periods, for example, asthma sufferers may

be prescribed a course of cortisone pills that are taken orally. There are also injectable biologics available for the treatment of very severe allergic or eosinophilic asthma. This type of medicine is only used for specialist medical care patients who, despite all available forms of treatment, have severe symptoms of asthma with recurrent exacerbations, and if the medicine is suited for their asthma type.

When asthma has been under control for a long period of time, from six months to a year, a physician can assess whether the amount of medication can be reduced. The medication of people with allergies should not be reduced just before the pollen season and the medication of people with symptoms from freezing temperatures should not be reduced just before winter.

Depending on the treatment balance, physicians may also consider the possibility of periodic medication. In such case, medication is taken during periods when symptoms are expected to begin, in connection with a respiratory track infection or the pollen season, for example.

## 4.2 Reliever medication

Reliever medication is medication that quickly opens airways and it is used when asthma symptoms get worse or breathing becomes difficult. Use of reliever medication is a fast way to open airways that have narrowed due to an irritant. Reliever medication can also be used before a strenuous activity to prevent contraction of bronchial tubes.

Reliever medicines are usually fast-acting sympathomimetics (beta2-agonists). They relax bronchial smooth muscle and open airways. Other drugs (anticholinergics) reduce bronchial muscle contraction and production of mucus.

Long-acting asthma reliever medication is used as an additional medicine alongside regularly inhaled corticosteroids. Both long-acting beta2-agonists and long-acting anticholinergics (tiotropium) are available. Depending on the medicine, the airway-opening effect of long-acting medicines lasts between 12 and 24 hours. Reliever medication reduce symptoms and increase exercise tolerance. It reduces exacerbation periods of people who are prone to exacerbations. The most convenient form of medication is usually a



### •••• Possible side effects of corticosteroid treatment

Possible side effects of corticosteroid treatment include oral thrush, thinning of skin, bruising and osteoporosis. However, medicines that contain inhaled corticosteroids **are needed because** their adverse effects are mild compared to asthma getting worse if not used. If the use of medicine that contains inhaled corticosteroids is interrupted for an extended period, there is a high risk that asthma gets worse and corticosteroids need to be taken in pill form for longer. This often makes the adverse effects of corticosteroids more severe.

combination medicine that contains inhaled corticosteroids and long-acting beta2-agonist, which allows both drugs to be inhaled at the same time.

The use of long-acting reliever alone, without inhaled corticosteroids is harmful to people with asthma. Although symptoms may initially be alleviated, inhaled corticosteroids are always needed to treat inflammation of mucous membrane of the lungs.

New asthma medication that is a combination of 3 drugs (inhaled corticosteroids, long-acting beta2-agonists and long-acting anticholinergics) is currently under development. The medication will allow all 3 drugs to be inhaled at the same time.

### 4.3 Inhalers

When inhaled medication is prescribed, a suitable inhaler must also be selected to administer the medicine. It is important that a physician or a nurse makes sure that the patient knows the correct inhaler technique when a new inhaled drug is prescribed. Correct use of the inhaler should be checked at every follow-up appointment. Correct inhaler technique can also be checked at the pharmacy when collecting prescribed medication.

Inhalers are either dry powder inhalers or pressurised metered dose inhalers. When selecting a suitable inhaler, the simultaneous function of the hands and breathing, as well as inhalation speed should be taken into account.

**When using a dry powder inhaler** inhalation should be efficient and breath must be held for 5–10 seconds. It does not require simultaneous release of medicine and inhalation. Dry powder inhalers are not suited for the elderly or individuals with severe refractory asthma because they might not be able to reach a sufficient speed of inhalation.

**The use of meter dose inhalers** requires simultaneous use of hands and inhalation because the dose must be released at the same time as inhalation begins. However, it does not require a high speed of inhalation. The drug is administered while breathing in slowly, calmly and deeply. Breath then needs to be held for ten seconds. This type of inhaler is better suited for the elderly and individuals with severe refractory asthma, when used with a spacer.

Without a spacer, reliable inhalation is usually only successful with younger patients.

**The use of a spacer** makes it easier to take the drug and reduces the amount of medication that stays in the mouth and throat. A spacer makes it possible to breath the medicine in calmly with 5–10 inhalations.

**Nebulizer** medicine is in liquid form and requires a separate prescription. If necessary, a mask may also be used with a spacer and nebulizer.



#### 4.4 Medical treatment of the elderly

When determining suitable medical treatment for older individuals with asthma it is important to find out what is the smallest possible dose of medicine. Blood glucose level and blood pressure should be monitored.

When selecting an inhaler, attention should be paid to the force of inhalation and functioning of hands, shaking of hands and joint pain for example, and problems such as poor vision. A meter dose inhaler with a spacer might be the best solution.

##### LIST OF MEDICATIONS

- » You can make your treatment go more smoothly by listing your medication and any hypersensitivities you might have.
- » You should also include vaccinations, such as flu vaccines, and drugs that do not require a prescription, i.e. over-the-counter drugs and natural remedies.
- » Always bring an up-to-date list of medication when you go to a doctor's or follow-up appointment.
- » You can list your medication on a blank sheet of paper, ask for a list from your health centre or maintain a list at [www.laakekortti.fi](http://www.laakekortti.fi).



#### 4.5 Reimbursements for medicine expenses

Asthma medicines are included in Kela's (Social Insurance Institution of Finland) special reimbursement category. Kela reimburses 65% of the cost of asthma medication.

In order to receive reimbursement for asthma medication, a physician must diagnose you with asthma. Asthma can be diagnosed using lung function tests. Medication that reduces inflammation of bronchial mucous membrane must be in regular use for 6 months before entitlement to reimbursement is granted. Until then, the medication falls under basic reimbursement.

Entitlement to reimbursement is applied for based on a medical certificate issued by a doctor, which states the examinations and diagnostic tests performed and their results, benefits from the use of medication and an assessment on its continuity. The medical certificate should be submitted to Kela. Once Kela has processed your case, it will send you a new Kela card with the code 203 (chronic asthma and similar chronic obstructive pulmonary diseases) on it.

There is an annual maximum limit on prescription drug costs. Kela monitors purchase of medication based on information it receives from pharmacies and notifies you when the maximum limit has been reached.

#### 4.6 Drug hypersensitivity and polypharmacy

Drug hypersensitivity is more common in people with asthma. People who are hypersensitive to drugs often also suffer from chronic rhinitis and non-allergic asthma.

Some people with asthma (5–10 percent) are hypersensitive to anti-inflammatory drugs. Acetylsalicylic acid (aspirin) and similar anti-inflammatory

drugs, such as ibuprofen, may increase asthma symptoms. Analgesics that contain paracetamol can usually be safely used as a painkiller.

Beta blockers used to treat heart problems and high blood pressure may

hinder the effects of medication used to open airways. Eye drops used for glaucoma that contain beta blockers may also exacerbate asthma.

Codeine and morphine may sometimes cause obstruction of bronchial tubes.

## 5 Monitoring

The condition of asthma may fluctuate from occasional symptoms to severe asthma. The amount of symptoms may even vary daily, depending on the amount of triggers the individual is exposed to. Good medical treatment can reduce symptoms, which in turn may change the need for medication.

If regular asthma medication is in use, follow-up appointments are usually need once per year, or more often if necessary. Follow-up appointments can be carried out by a health care professional, such as an asthma nurse, who will refer the patient to a physician if necessary. However, a physician's assessment should be performed at least every 3–5 years.

Follow-up appointments usually take place in a health centre or occupational health care (if available). If necessary, a physician may send a patient, who is in bad condition, to a pulmonary disease clinic for an assessment if outpatient health care is unable to get the patient's condition under control. You should schedule your next follow-up appointment at the end of each appointment. Health centres do not usually invite you for follow-up appointments, which means that you need to make sure that you remember to schedule your follow-up appointments yourself.

It is recommended that you monitor your PEF values before follow-up appointments, because this makes it easier for you doctor to determine how good your treatment balance is. Written asthma tests can also be used to help assess treatment balance.

**The health and care plan** is a tool designed for self-care and it can be used to check what to do and who to contact if your condition gets worse. The plan is updated regularly to ensure that your information is always up to date. It includes information about all of your diseases and their treatment, medication and monitoring. Particularly individuals with long-term or multiple conditions should request a written health and care plan.

You can bring up and discuss the health and care plan during a doctor's appointment. Your physician is responsible for drawing up the plan, but you will be involved in the process.

You can prepare for the drawing up of the plan by writing down your own assessment on your state of health, condition and coping in daily life and by listing your medication, including over-the-counter drugs and natural remedies. Prevention of breathing-related symptoms, ensuring medical treatment, need for aids and preparing for pollen season or winter are examples of information to include in the plan.

## 6 Self-care

Self-care of asthma aims for symptom-free life, management of the condition and prevention of exacerbations. In practice, self-care means regular taking of medication, monitoring of your own health, recognition of symptoms, avoidance of irritants, measuring of PEF values and regulation of medication in accordance with doctor's instructions during periods such as the pollen season or winter.

Each person with asthma is the foremost expert on their own condition. In order to be able to make choices and decisions about your own treatment you need information about the disease, medication, use of medication and factors that exacerbate the disease.

You can get written instructions from your physician to support self-care and medical treatment. The instructions are an easy tool for checking what to do in different situations and how to regulate medication when necessary.

### 6.1 Vaccinations

Seasonal flu vaccine should be taken annually before the start of the flu season in November–December. People with asthma are in the risk group for influenza and they can get their vaccination free of charge from their local healthcare centre. The vaccine is also recommended to those close to an individual with asthma.

It is also recommended that individuals with asthma get vaccinated against infection caused by pneumococcus bacteria. The vaccine prevents pneumonia caused by pneumococcus bacteria.

### 6.2 Smoking

Smoking increases the risk of developing asthma and weakens the lungs. Therefore, you should quit smoking. Research has

shown that the efficacy of asthma medication is not as good for people who smoke.

Electronic cigarettes may also damage the lungs.

Information and support to quit smoking and the use of other nicotine products is available from the Stumppti.fi service by the Organisation for Respiratory Health in Finland. You can also get help free of charge by calling Stumppti hotline at 0800 148 484. [Stumppti.fi](https://stumppti.fi)

### 6.3 Oral care

Medication used to treat asthma may cause hoarseness of the throat and thrush in the mouth and throat. Traces of inhaled medication may stay in the mouth after taking the medicine. This increases the growth of yeast fungus (thrush) in the mouth and can make you susceptible to tooth decay. Asthma medicines also contain lactose, which also increases the risk of tooth decay.

These adverse effects can be easily prevented as follows: Always brush your teeth before taking your medication. Rinse your mouth after taking medication and spit out the water. Finally, finish rinsing by drinking some water.

Medication can make your mouth dry. You can increase salivation by chewing xylitol gum or sucking on lozenges.

In order to prevent tooth decay, it is important to brush your teeth regularly with fluoride toothpaste, use xylitol and have your teeth checked regularly.



## 6.4 Weight management

If an individual with asthma is overweight, losing weight makes breathing easier, enhances the efficacy of asthma medication and makes the person feel better overall.

Regular mealtimes are important for successful weight management and permanent weight loss. It is recommended that you eat every 3–4 hours. Some of this can be snacks that include whole grains, fat-free dairy products, vegetables or fruit, for example.

Other ways to help weight management include making your portion sizes smaller and use of the plate model: fill one half of your plate with vegetables and the other half with other food. You should eat vegetables, fruit and berries with every meal because they help fill your stomach but contain few calories.

## 6.5 Exercise

Exercise is an important part of self-management of asthma. Good fitness improves lung function. It enhances lung ventilation and expelling of mucus from airways. It also enhances the body's ability to recover from respiratory infections and exacerbations of asthma and reduces shortness of breath.

People with asthma always benefit from exercise. Asthma sufferers who exercise need smaller doses of medicine and do not need to be absent from work or go to the hospital as often.

It is a good idea to exercise even if it feels difficult at first. The human body quickly adapts to exercise and lung function improves. Exercising and breathing become easier gradually.

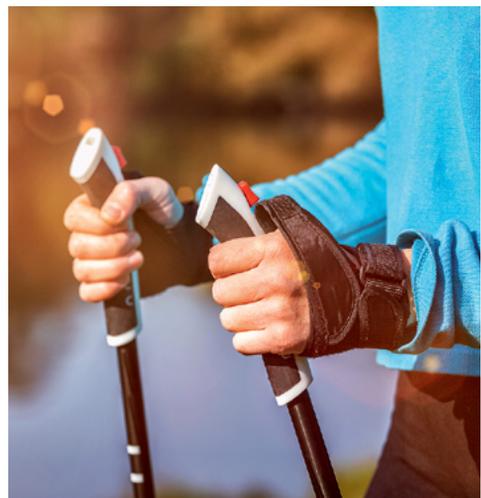
Regular exercise increases exercise tolerance and reduces symptoms from physical exertion. When the level of fitness rises the need to take medicine

for exertion symptoms is reduced or completely eliminated.

You can only increase your level of fitness by getting out of breath. There is no need to fear getting out of breath. You should make the difference between getting out of breath and shortness of breath clear to yourself. If you get out of breath the feeling goes away after you stop exercising, but shortness of breath continues and often gets worse after exercise.

If exercise increases shortness of breath, coughing or wheezing you should discuss the use of medication that prevents symptoms caused by exercise with your physician. If symptoms occur frequently during exercise, the agreed medicine should be taken before exercising.

Interval training, alternating between short periods of exercise and rest, is particularly beneficial to people who have severe asthma or get symptoms from lengthy exercise. In the beginning, the period of exercise can last from just ten seconds to a couple of minutes. The period of rest should always be at least double the duration of the period of exercise. It should be either active rest or light exercise on a level that makes breathing easier.



## 6.6 Rehabilitation

Rehabilitation is an integral part of the treatment and management of asthma. The purpose of rehabilitation is to maintain a good ability to work and function. Rehabilitation provides the best results if started early.

Rehabilitation helps you cope with the disease at work, at home, in studies and other situations in life. It also provides information about the disease, its treatment and management of symptoms. If your treatment requires changes to your lifestyle, rehabilitation offers help and support this.

It is recommended that you bring up the subject of rehabilitation when visiting a physician, nurse or rehabilitation counsellor. You can ask for a referral for rehabilitation from your physician.

Kela rehabilitation does not cost anything to the rehabilitee. Further information is available on Kela's website at <https://www.kela.fi/web/en/rehabilitation>

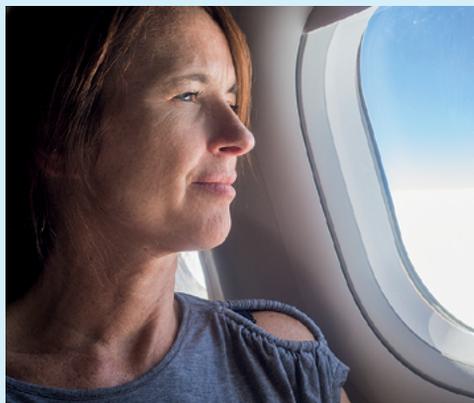


If you have an occupational disease you can seek rehabilitation from your pension insurance company.



## 7 Travel and asthma

If a good treatment balanced has been achieved asthma does not prevent you from flying. The dry low-pressure air and air conditioning in airplanes may cause asthma symptoms and you should always carry asthma medication in your hand luggage. You should also carry other medication you might need during your trip in your hand luggage in its original packaging. As a precaution, you should



take with you enough of your regular medications to last you for the duration of your trip plus 2 weeks. When travelling outside of Europe, you should always carry your prescriptions and a report of your medication in English.

It is always a good idea to have travel insurance when travelling. Make sure that your insurance also covers treatment of any asthma exacerbations. You should check the terms and conditions of your travel insurance policy well in advance of your trip because some insurance policies do not cover the treatment expenses of chronic diseases even in acute situations.

The European Health Insurance Card entitles you to receive medically necessary treatment in the public health care system for the same price as the locals in another EU country. The card also covers acute treatment of chronic illnesses. You can order your European Health Insurance Card from Kela.

# REMEMBER!



Other guides published by the Organisation for Respiratory Health in Finland. For people affected by asthma, we recommend the guide entitled *Hengitä ja hengästy* for better breathing.

The contents of this guide were designed by Mervi Puolanne and Hanna Salminen. Tiina Salo was involved in writing the guide. Hannu Kankaanranta, Professor of Pulmonary Diseases, Chief Physician, has carried out the expert review.

The guide has been updated from the previous guide, published in 2015, the expert review for which was carried out by Tuula Toijamo, M.D., Docent and Chief Physician.

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[www.astrazeneca.fi](http://www.astrazeneca.fi)

## JOIN YOUR LOCAL ASSOCIATION

The Organisation for Respiratory Health in Finland and its local associations promote respiratory health and good life for people suffering from respiratory diseases.

Become a member

Become a secondary member of the local association of \_\_\_\_\_, I am a member of the \_\_\_\_\_ local association. (paying the member fee of both associations)

You can also fill out a form online at [www.hengitysliitto.fi/liity-jaseneksi](http://www.hengitysliitto.fi/liity-jaseneksi).

LAST NAME AND FIRST NAME(S) (underline the name by which you wish to be referred)	ADDRESS >
DATE OF BIRTH >	POSTCODE AND CITY/TOWN >
PROFESSION >	PLACE OF DOMICILE >
TELEPHONE >	EMAIL >
FIRST LANGUAGE >	

You can send me information about events and activities by text message and e-mail

I am interested in respiratory diseases (please indicate which):

I am a guardian of a child under 15  I am under 15 years old  
 I do not have a respiratory disease

There is a member of a local respiratory association in our family:

No  Yes NAME >

Your membership fee is determined by the local respiratory association. We will send your membership application to the respiratory association of your home municipality. The privacy statement of the membership register is available at: [www.hengitysliitto.fi/liity-jaseneksi](http://www.hengitysliitto.fi/liity-jaseneksi).

I hereby accept that the information above will be saved in the register of members of which the local association is the data controller and Hengitysliitto ry (The Organisation for Respiratory Health in Finland) is the data processor.

DATE >	SIGNATURE,	GUARDIAN'S SIGNATURE IF YOU ARE UNDER 15 >
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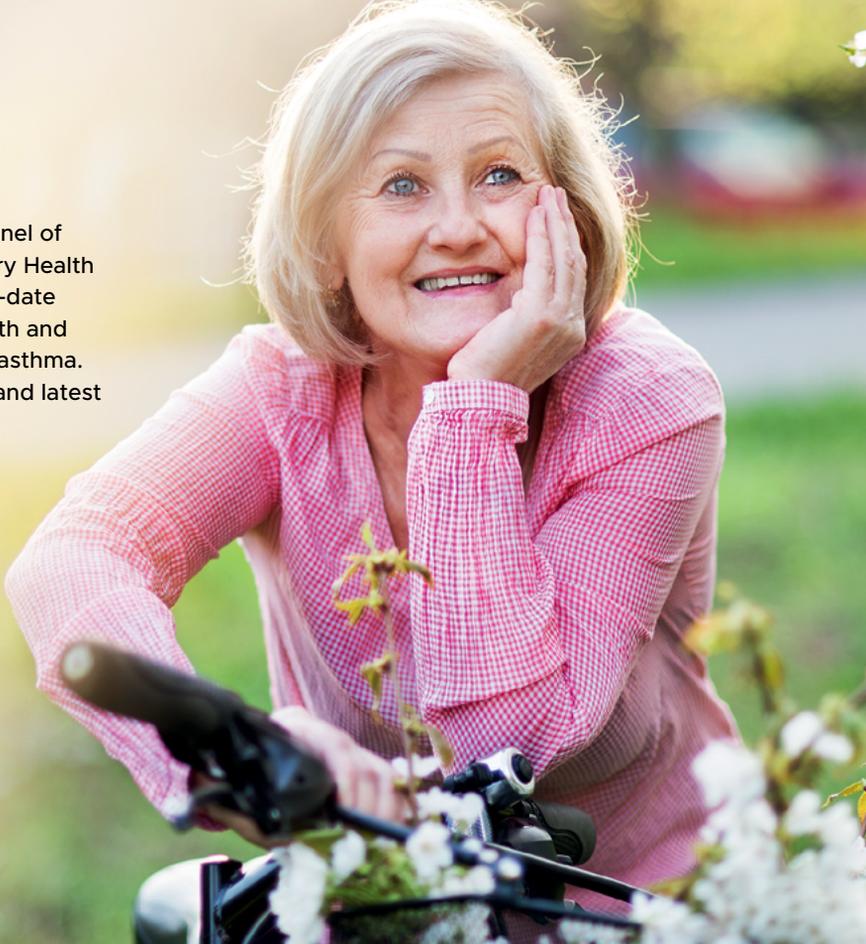
The website and YouTube channel of The Organisation for Respiratory Health in Finland feature a lot of up-to-date information on respiratory health and respiratory diseases, including asthma. Stay updated on our activities and latest news by following us at:

[www.hengityслиitto.fi](http://www.hengityслиitto.fi)

@Hengityслиitto



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**LOCAL ASSOCIATIONS FOR RESPIRATORY HEALTH OFFER MANY BENEFITS FOR THEIR MEMBERS:**

- » You can download the mobile membership card from your app store. It helps you keep track of the news, activities and events of your local respiratory association and The Organisation for Respiratory Health in Finland, as well as find peer activities and edit your personal information.
- » Local respiratory associations regularly organise peer groups and sports activities, events, lectures and other types of recreational activities.
- » Come and join the work: you can become a volunteer peer instructor, sports instructor, expert by experience or an elected representative in the association. The Organisation for Respiratory Health in Finland offers training for its volunteers.
- » Members' newsletter Hengityсли is published four times per year.
- » You can check the member benefits of your local respiratory association and the national organisation on their respective websites.



Fill in the form, cut it out and fold it along the dashed line on the other side to form a letter. Fasten the edges with tape. The postage is paid by The Organisation for Respiratory Health in Finland, so you can drop the letter in a mailbox without a stamp.

The  
Organisation for  
Respiratory  
Health pays the  
postage

Hengityслиitto ry  
5005132  
00003 Vastauslähetyks



## *Peer support from the Organisation for Respiratory Health in Finland*

Offering peer support is one of the key activities of the Organisation for Respiratory Health in Finland and its local associations around Finland.

Peer support offers individuals suffering from a certain condition the chance to share their experiences. Together, they can reflect on how their lives, resources and conditions differ from each other and what they have in common. Even more serious topics can be brought up. At its best, peer support is an empowering force for both the person receiving support as well as the one offering it.

The illness also affects family members and other loved ones. Many people feel that it is a relief to discuss the condition with other people in the same situations, as you do not have to worry about troubling your loved ones too much with your worries.



**Go the website of the Organisation for Respiratory Health in Finland at [www.hengityслиitto.fi](http://www.hengityслиitto.fi), and find out which local association is active in your region. Come and join the activities!**

The website and YouTube channel of The Organisation for Respiratory Health in Finland also feature a lot of up-to-date information on respiratory health and respiratory diseases, including asthma.