

Inhalers for Asthma

Inhalers are the main treatment for asthma. There are many different types of inhaler, which can be confusing. This leaflet gives information on: the drugs that are inside inhalers; the various types of inhaler device; some general information about inhalers.

This leaflet is about inhalers for asthma. Another leaflet in this series called '*Asthma*' gives more general information about asthma. There are also leaflets called '*Asthma - a Picture Summary*', '*Peak Flow Meters*' and '*Inhalers for COPD*'.

The drugs inside inhalers

The drug inside an inhaler goes straight into the airways. Therefore, you need a much smaller dose than if you took the drug as a tablet or liquid by mouth. The airways are treated, but little of the drug gets into the rest of the body. Therefore, side-effects are unlikely to occur, or are minor. In the treatment of asthma, the drugs inside inhalers can be grouped into 'relievers', 'preventers' and 'long acting bronchodilators'.

Reliever inhalers - contain bronchodilator drugs

You can take a reliever inhaler 'as required' to ease symptoms when you are breathless or wheezy. The drug in a reliever inhaler relaxes the muscle in the airways. This opens the airways wider, and symptoms usually quickly ease. These drugs are called bronchodilators as they dilate (widen) the bronchi (airways). There are several different reliever drugs. For example, salbutamol and terbutaline. These come in various brands made by different companies. There are different inhaler devices that deliver the same reliever drug. However, reliever (bronchodilator) drugs tend to be put in blue or grey inhaler devices.

If you only have symptoms every 'now and then', then the occasional use of a reliever inhaler may be all that you need. However, if you need a reliever three times a week or more to ease symptoms, a preventer inhaler is usually advised.

Preventer inhalers - usually contain a steroid drug

These are taken every day to prevent symptoms from developing. The drug commonly used in preventer inhalers is a steroid. There are various brands. Steroids work by reducing the inflammation in the airways. When the inflammation has gone, the airways are much less likely to become narrow and cause symptoms. (Inhalers that contain cromoglycate or nedocromil drugs are sometimes used as preventers. However, they do not usually work as well as steroids.)

It takes 7-14 days for the steroid in a preventer inhaler to build up its effect. Therefore, it will not give any immediate relief of symptoms. However, after a week or so of treatment, the symptoms have often gone, or are much reduced. It can take up to six weeks for maximum benefit. You may then not need to use a reliever inhaler very often, if at all.

Again, there are often different inhaler devices that deliver the same drug. However, preventer drugs tend to come in brown, orange, or red inhaler devices.

Long acting bronchodilator inhalers

The drugs in these inhalers work in a similar way to 'relievers', but work for up to 12 hours after taking each dose. They include salmeterol and formoterol. One may be advised in addition to a steroid inhaler if symptoms are not fully controlled by the steroid inhaler alone.

Some brands of inhaler contain a steroid plus a long acting bronchodilator for people who need both to control their symptoms.

Inhaler devices

Different inhaler devices suit different people. They can be divided into four groups.

- Pressurised MDIs (Metered Dose Inhalers)
- Inhalers with spacer devices
- Dry powder inhalers
- Nebulisers

Pressurised MDIs (Metered Dose Inhalers)

The standard MDI inhaler (shown on the right)

This has been used for over 40 years. This type of inhaler is used to deliver various types and brands of drugs. The MDI contains a pressurised inactive gas that propels a dose of drug in each 'puff'. Each dose is released by pressing the top of the inhaler. This type of inhaler is quick to use, small, and convenient to carry. It needs good co-ordination to press the canister, and breathe in fully at the same time.

The standard MDI is the most widely used inhaler. However, many people do not use it to its best effect. Common errors include: not shaking the inhaler before using it; inhaling too jerkily or at the wrong time; not holding your breath long enough after breathing in the contents.

Breath-activated MDIs

These are alternatives to the standard MDI. For example, the autohaler shown on the right. You don't have to push the canister to release a dose. Instead, you trigger a dose by breathing in at the mouthpiece. So, these types of MDI inhalers require less co-ordination than the standard MDI. They tend to be slightly bigger than the standard MDI.

Until recently, the propellant gas in MDI inhalers has been a CFC (chlorofluorocarbon). However, CFCs damage the earth's ozone layer, and so are being phased out. The newer CFC-free inhalers work just as well, but they use a different propellant gas that does not damage the ozone layer.

Spacer devices

Spacer devices are used with pressurised MDIs. There are various types - an example is shown opposite. The spacer between the inhaler and the mouth holds the drug like a reservoir when the inhaler is pressed. A valve at the mouth end ensures that the drug is kept within the spacer until you breathe in. When you breathe out, the valve closes.

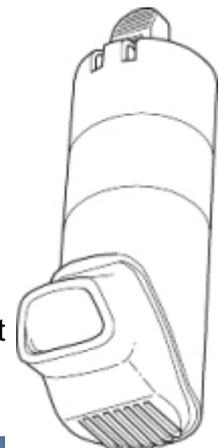
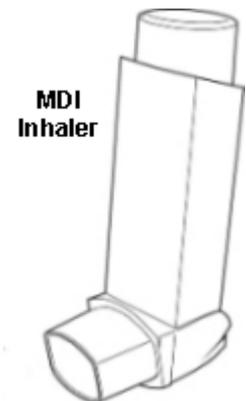


A face mask can be fitted onto some types of spacers, instead of a mouthpiece. This is sometimes done for young children and babies who can then use the inhaler simply by breathing in and out normally through the mask.

So, you don't need to have good co-ordination to use a spacer device. They are commonly used by children, but many adults also use them.

Tips on using a spacer device

The following are tips if you are prescribed a 'holding' spacer. These have a valve at the mouth end - the spacer in the picture above is an example.



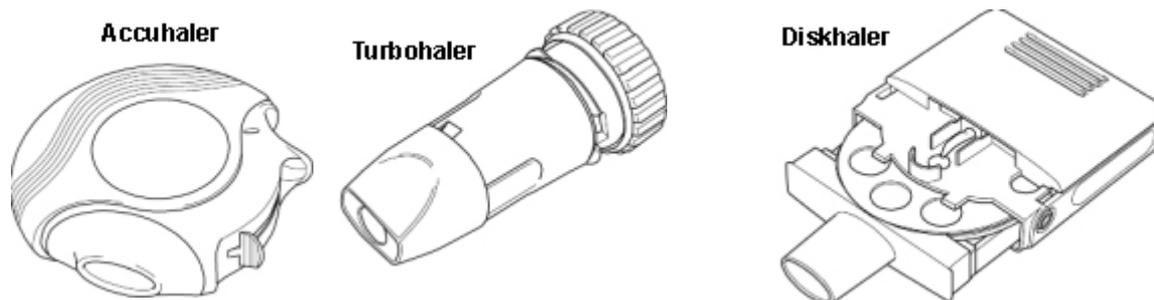
- If your dose is more than one puff, then do one puff at a time.
- Shake the inhaler before firing each puff.
- Start breathing in from the mouthpiece as soon as possible after firing the 'puff' into the device.
- Try to hold your breath for a few moments when you have breathed in.
- Breathe in and out a few times before firing the next puff. Try to hold your breath for a few moments each time you breathe in.
- Check that the valve opens and closes with each breath.
- A face mask can be put onto the valve end for babies and young children. They just breathe normally with their face against the mask. The valve opens and closes with each breath in and out. Hold the spacer slightly tilted with the inhaler end uppermost to help the valve open and close easily.
- 'Static charge' can build up on the inside of the plastic chamber. This can attract particles of drug, and reduce the output when the spacer is used. To prevent this, wash the plastic spacer as directed by the maker's instructions. This is usually before first use, and then about once a month with washing up liquid and water. Let it dry in air without rinsing or wiping.

Dry powder inhalers

These types of inhaler do not have a gas propellant to 'squirt' the drug out of a canister.

Instead, each dose contains a tiny amount of drug in a powder form that you suck in.

Various devices are made by different companies. Each has a different method of providing the correct amount of powder for each dose. Some types are shown below.



You need to breathe in fairly hard to get the powder into your lungs. Most adults and older children can do this, even when wheezy. However, dry powder inhalers are not usually suitable for young children as they may not breathe in hard enough to suck in the powder.

Nebulisers

This is a device that generates an aerosol vapour of the drug. There are many types. You

need to wear a face mask, or use a mouthpiece to inhale the vapour. You do not need any co-ordination to use these - you just breathe in and out, and you will breathe the vapour in.

Nebulisers are used mainly in hospital for severe attacks of asthma when large doses of inhaled drugs are needed. They are used less commonly than in the past as modern spacer devices are usually just as good as nebulisers for giving large doses of inhaled drugs.

Common questions and further information

Do you get side-effects from inhalers?

Usually not. At standard inhaled doses, the amount of drug is small compared to tablets or liquid drugs. This is one of their main advantages. Read the packet insert for details of possible side-effects.

One problem that might occur when using a steroid inhaler (especially if you are taking a high dose) is that the back of your throat may get sore. Thrush infection in the mouth may develop. This can usually be treated easily with a course of pastilles that you suck or liquid that you hold in your mouth.

If you rinse your mouth with water and brush your teeth after using a steroid inhaler you are less likely to develop a sore throat or thrush. Also, some inhaler devices (such as spacers) are less likely to cause throat problems. A change to a different device may help if mouth problems or thrush occur.

If you use a **high dose** of inhaled steroid over a long time it may be a 'risk factor' for osteoporosis. You can help to prevent osteoporosis by taking regular exercise, not smoking, and eating a diet with enough calcium. See leaflet called '*Osteoporosis*' for details.

Also, children who use an inhaled steroid over a long time should have their growth monitored. This is because there is a small risk that enough steroid may get into the body to delay growth.

Which is the best inhaler device to use?

This depends on various factors such as:

- Convenience. Some inhalers are small, can go easily in a pocket, and are quick to use. For example, the standard MDI inhaler.
- Your age. Children under six generally cannot use dry powder inhalers. Children under 12 generally cannot use standard MDI inhalers without a spacer. Some elderly people find the MDI inhalers difficult to use.
- Your co-ordination. Some devices need more co-ordination than others. In particular, the standard MDI.
- Side effects. Some of the inhaler drug hits the back of the throat. Sometimes this can cause problems such as thrush in the mouth. This tends to be more of a problem with higher doses of steroid inhalers. Less drug hits the throat when using a spacer device. Therefore, a spacer device may be advised if you get throat problems, or need a high dose of inhaled steroid.

Often the choice of inhaler is just your personal preference. Most GPs and practice nurses have a range of devices to demonstrate, and let you get a feel for them. If you are unhappy with the one you are using then it is reasonable to try a different type after taking advice from your GP or practice nurse.

Further help and information

Asthma UK

Summit House, 70 Wilson Street, London, EC2A 2DB
Asthma Helpline: 0845 7 01 02 03 Web: www.asthma.org.uk

References

- [Asthma](#), Clinical Knowledge Summaries (2007)
- [No authors listed](#); Inhaler devices for asthma. *Drug Ther Bull.* 2000 Feb;38(2):9-14. [abstract]
- [Asthma \(children under 5\) - inhaler devices](#), NICE (2000)
- [Asthma \(older children\) - inhaler devices](#), NICE (2002)
- [British Guideline on the Management of Asthma](#), British Thoracic Society and SIGN (May 2008)

Comprehensive patient resources are available at www.patient.co.uk

Disclaimer: This article is for information only and should not be used for the diagnosis or treatment of medical conditions. EMIS and PiP have used all reasonable care in compiling the information but make no warranty as to its accuracy. Consult a doctor or other health care professional for diagnosis and treatment of medical conditions. For details see our [conditions](#).
© EMIS and PiP 2008 Reviewed: 17 Sep 2008 DocID: 4593 Version: 39