Smart asthma therapy

Patient information

Spacer – inhaling aid for metered-dose aerosol inhalers

:: Metered-dose inhalers – coordination technique

In the treatment of asthma and COPD the medications are usually inhaled. In this way they act locally in the lungs and therefore only have minimal side effects.

For inhalation there are two systems available: powder inhalers and metered-dose aerosol inhalers.

In the case of power inhalers the active substance is present in the form of a powder that is only released by the patient's breath. The drawback here is that the patient has to inhale very strongly in order to release the powder. This can be a problem, particularly in the event of acute symptoms in which the respiratory flow is restricted.

Metered-dose aerosol inhalers do not have this disadvantage: in these inhalers the active substance is embedded under pressure within a propellant gas. By pressing down the cartridge, the active substance is released independently of the patient's breathing. However the patient has to coordinate his/her breathing with the release of the spray. It has to be released right at the start of inhalation. This is not easy for many patients and it is for such patients that the "spacer" has been developed.

:: Spacer – brief definition

A spacer is a tubular inhaling aid, which is placed between the inhaler and the mouth. The spacer is therefore often referred to as a "holding chamber". The term comes from English and means a device that maintains a space.

:: Spacer – components

A spacer is a plastic or metal tube which, depending on the model, can be 10–30 cm in length. Basically all types have three elements in common:

1. The mouthpiece, which the patient surrounds with his/her mouth.
2. The attachment onto which the inhaler is fitted
3. The chamber which is placed between the mouthpiece and the inhaler attachment and into which the spray is released

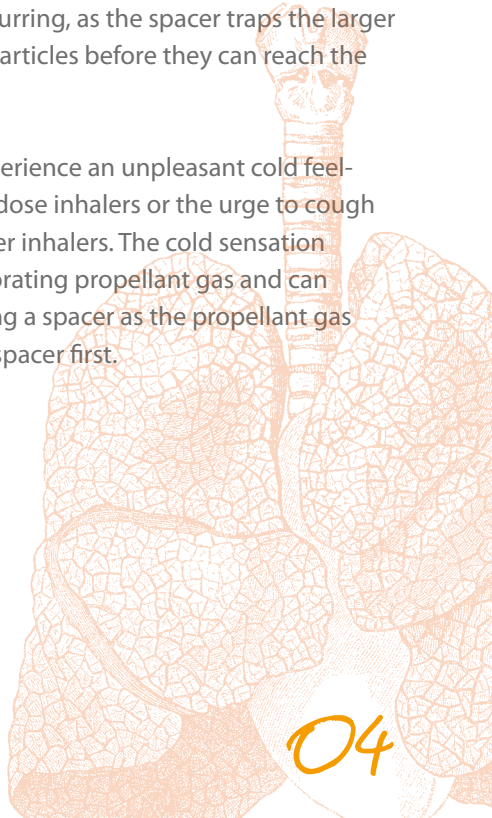
Spacers always have two ends:
The metered-dose inhaler is attached to one end; the other end is the mouthpiece, which the patient surrounds with his/her mouth. Some models also have air valves that prevent any of the aerosol escaping from the spacer.

:: Spacer – advantages

However, it is not only patients with coordination problems who can benefit from using a spacer:

- The use of metered-dose aerosol and powder inhalers can sometimes trigger fungal infections in the mouth and throat along with hoarseness and localised side effects. These are caused by large active substance particles, which cannot penetrate as far as the lungs and are instead deposited in the mouth, throat and on the vocal cords. Although these side effects can largely be avoided by thoroughly rinsing the mouth after each inhalation, a spacer can minimise the risk of such effects occurring, as the spacer traps the larger active substance particles before they can reach the mouth.

- Some patients experience an unpleasant cold feeling with metered-dose inhalers or the urge to cough when using powder inhalers. The cold sensation is caused by evaporating propellant gas and can be avoided by using a spacer as the propellant gas evaporates in the spacer first.



- A spacer can also increase the quantity of active substance reaching the lungs, firstly through the simplified and thus improved inhalation technique (particularly where there are coordination problems) and secondly, due to the fact that the fastest active substance particles are slowed down so that they reach the lungs more easily.

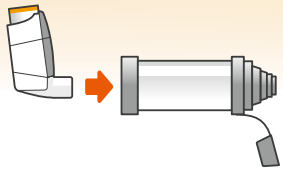
The spacer has many advantages and is a good accessory for the inhaler. Using a spacer makes sense particularly for patients with coordination problems and patients who frequently experience problems with fungal infections in the mouth or hoarseness. For all other patients the spacer is not absolutely necessary, but can provide an additional benefit (increased quantity of active substance in the lung, less localised side effects, no sensation of cold).

The following must always be taken into account when using a spacer:

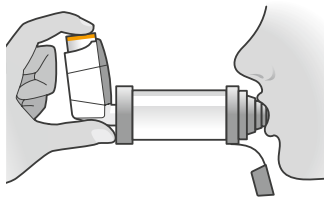
- *Always release just one spray into the spacer (multiple sprays cause the particles to accumulate on each other and are deposited within the space thus preventing them from being inhaled)*
- *Inhalation should take place immediately after releasing the spray*
- *In the case of a larger volume spacer it may be necessary to take several breaths to empty it completely*
- *It should be cleaned at least once per week by rinsing with soapy water and then air-dried (do not re-rinse with water or dry with a cloth!). In this way any electrostatic charges are neutralised or avoided.*

:: Using the spacer

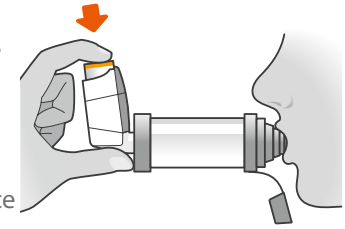
1. First of all shake the inhaler and then attach it to the back end of the spacer



2. Hold the spacer horizontally; place your lips firmly around the mouthpiece.



3. Release a spray into the spacer. Immediately afterwards breathe in slowly and deeply through the mouthpiece



4. Hold your breath for approximately 10 seconds and then breathe out through your nose.

Through the use of a spacer the spray is first released into the spacer and the aerosol is then breathed in. This means there is no longer any need for the sometimes difficult coordination in timing between inhalation and releasing the spray.

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