

Better Living with Chronic Obstructive Pulmonary Disease

A Patient Guide

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THE
AUSTRALIAN
LUNG
FOUNDATION



**Queensland
Government**

Queensland Health

"When you can't breathe...nothing else matters"™

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Using your inhalation devices

This chapter will help you to understand:

- Why using inhalation devices is an important skill.
- How the inhalation devices work.
- How to correctly use the inhalation devices.
- When the inhalation devices are empty.
- How to clean and care for the inhalation devices.

Why is using inhalation devices an important skill?

Using an inhalation device is a skill. After many years of using inhalation devices, you can develop habits that may not allow you to make the most of your inhaled medications. You may also have extra medications prescribed over time that can complicate your treatment schedule. The more device types you are using, the greater the chance you have of using them incorrectly. If you are using more than two device types, talk to your doctor about reducing the number of device types without changing the medications you are on.

Having your inhalation device technique assessed by an appropriate member of your health care or pulmonary rehabilitation team is essential. You can also check with your managing doctor, nurse or a pharmacist.

To make the most of using an inhalation device, it is important to position your body appropriately.

It is important to store your inhalation device below 30°C and do not keep it in the car on hot days.

Typically you should be sitting upright or standing while taking your inhaled medication.

The inhalation devices covered in this chapter include:

1. Puffer (or metered dose inhaler)
2. Puffer and spacer
3. Autohaler™
4. Turbuhaler®
5. Accuhaler™
6. HandiHaler®
7. Breezhaler®
8. Nebuliser

Puffer (or metered dose inhalers)

A puffer is also known as a metered dose inhaler, or an aerosol.

How does the puffer work?

In the puffer, the medication is stored under pressure in the metal canister. When the puffer is fired, a fine mist of the medication is produced that can be inhaled into the lungs. These devices work best with spacers or holding chambers (see the following section on puffers and spacers).



Using the metered dose inhaler

How to use the puffer

1. Remove the cap.
2. Hold the puffer upright and shake vigorously.
3. Raise your chin and look straight ahead.
4. Breathe out gently and fully.
5. Place the puffer mouthpiece between your teeth and form a seal with your lips.
6. As you slowly start to breathe in, fire the canister by pressing firmly and continue to breathe in deeply.
7. Remove the canister from your mouth and hold your breath for 10 seconds, if possible.
8. Breathe out gently.
9. If you need to deliver an additional dose of your medication, repeat steps 2 to 8.
10. Replace cap.

When is the puffer empty?

A purple puffer is empty when the dose indicator on the back reaches zero. For other puffers, it is more difficult to know when they are empty. If the puffer is becoming empty, the amount of and speed at which the spray comes out is reduced, or the puffer may feel empty when shaken.

If using a puffer for regular medication, you can calculate when your puffer is likely to be empty. To do this, work out how many puffs per day you use and divide the number of puffs in the canister (written on the canister box) by the number of puffs per day you use. This will tell you how many days you can use your puffer before it needs replacing.

How to clean the puffer

Wiping the mouthpiece with a clean cloth is often all that is required unless the puffer becomes soiled or blocked.

Note: Puffers used to deliver inhaled corticosteroids eg. QVAR[®], Seretide[®], Flixotide[®] (see page 25) should be dry wiped weekly. They should NOT be washed or made wet.

- Puffers for short-acting reliever medication (Atrovent[®], Airomir[®], Asmol[®], Ventolin[®]) should be washed weekly.
- Remove the metal canister (do not wash the metal canister).
- Wash the plastic casing and cap with running warm water through the top and bottom for at least 30 seconds.
- Shake off excess water and allow to completely air dry.



Cleaning the metered dose inhaler

How to care for the puffer

- When reassembling the puffer, ensure that the metal canister fits securely into the plastic casing.
- Always keep the cap on the puffer when not in use to prevent foreign objects lodging in the mouthpiece.



Haleraid[®]

Haleraid[®]

The Haleraid[®] can assist people who have difficulties pressing the canister.

A Haleraid[®] can be obtained from independent living centres or pharmacies, and is available in two sizes.

Puffer and spacer

Puffers (also known as a metered dose inhaler or an aerosol) may be used with a spacer, which is a small or large volume holding chamber.



Using a spacer with your puffer can increase the amount of medication that reaches your lungs

How does the puffer and spacer work?

A spacer holds the metered dose briefly before the spray is breathed in. Using a spacer with a puffer allows more medication to get to where it is needed in the breathing tubes or airways. A puffer and spacer, when used correctly, can significantly increase the amount of medication that reaches your lungs.

A spacer can prevent throat irritation by reducing the amount of medication sitting in your mouth or throat. Spacers have a one way valve that stops air being breathed into the spacer while the spacer is in your mouth.

If used correctly, a puffer used with a spacer is at least as effective as a nebuliser in delivering a similar dose of medication, that is, 4 to 10 puffs equals one nebuliser dose.

If you change the size of the spacer you are using, particularly for preventer or combination medications, it is best to have the dose reviewed by your doctor.

How to use the puffer and spacer

1. IMPORTANT - wash the spacer before first use.
2. Sit upright or stand.
3. Assemble the spacer and shake device to ensure that the one way valve is not stuck.

4. Hold the puffer upright, remove the cap and shake well.
5. Place the puffer mouthpiece into the end of the spacer opposite to the valve.
6. Place the mouthpiece between your teeth and close your lips around it making sure your neck is slightly tilted back.
7. Breathe out gently and slowly.
8. Activate the puffer into the spacer once only.
9. Either:
 - Breathe in slowly and deeply for five seconds through your mouth, and hold your breath for 10 seconds, if possible.

Or

 - Breathe in and out through your mouth normally for four breaths.
10. Wait 30 seconds between doses and repeat steps 2 to 9.



Small volume spacer with puffer

When is the puffer empty?

To determine when the puffer is empty, refer to the section on puffers (page 28).

How to clean your spacer

- To clean the spacer:
 - Once per month, dismantle the pieces of the spacer and wash in detergent water.
 - Do not rinse as the detergent helps to reduce the static charge in the spacer (static causes the medication to stick to the sides of the spacer reducing the amount of medication delivered to the breathing tubes or airways).
 - Allow to air dry thoroughly after washing.

DO NOT dry with a tea towel and DO NOT wash in dishwasher as these increase the static charge.

Autohaler™

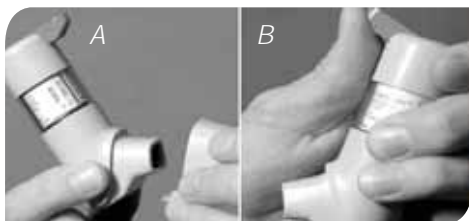
How does the Autohaler™ work?

Medications delivered via an Autohaler™ are Airomir® (reliever) and QVAR® (preventer).

The Autohaler™ is activated by breathing in through the mouthpiece, which triggers the device to expel the medication. The Autohaler™ is primed before use by lifting the pressure lever (the grey lever), which expels the medicine into a staging chamber.

How to use the Autohaler™

1. Unclip the mouthpiece cover from the back and shake (Below *A*).
2. Hold the Autohaler™ upright and click the grey lever upwards so that it stays up (Below *B*).
3. Breathe out gently.
4. Place the Autohaler™ between your lips to form a seal (do not block the air vents with your hands).
5. Tilt head back and breathe in with a slow, deep steady breath – don't stop when you hear the click.
6. Hold breath for 10 seconds, if possible.
7. Breathe out gently.
8. Push the grey lever down.
9. Wait 30 to 60 seconds between doses.
10. If another dose is required repeat steps 2 to 8.
11. Replace mouthpiece cap.



*A. Remove the cap and hold the Autohaler™ upright.
B. Push the lever up until it clicks and stays up.*

When is the Autohaler™ empty?

The Autohaler™ is empty when you do not hear any medication being delivered. To test if the Autohaler™ is empty, lift the lever, slide the lever on the bottom of the Autohaler™ across; if the Autohaler™ does not fire, it is empty.

How to clean the Autohaler™

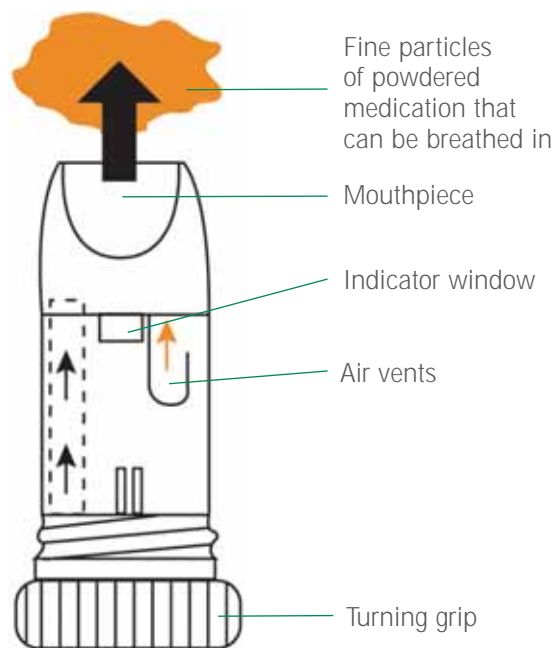
- Airomir®, delivered via Autohaler™, should be washed weekly. After removing the canister, and placing it aside to keep dry, wash the mouthpiece and cap under warm running water for 30 seconds. Allow to air dry.
- QVAR® delivered via Autohaler™ should NOT be washed. Dry wipe at least weekly; do NOT wash the inhaler or get it wet.

Turbuhaler®

How does the Turbuhaler® work?

A Turbuhaler® is a device that is activated by breathing in. When you load the Turbuhaler®, a precise dose of powdered medication is measured and deposited into a reservoir by gravity. Therefore, it is important that you hold the Turbuhaler® upright when you load it.

When the Turbuhaler® is placed in your mouth and you breathe in, air is drawn through vents on the side of the Turbuhaler®. This causes the air in the Turbuhaler® to become turbulent. This turbulence breaks up the powdered medication into very fine particles. As you breathe in, these very fine particles are able to go further down the breathing tubes or airways.



The Turbuhaler®

How to prime a new Turbuhaler®

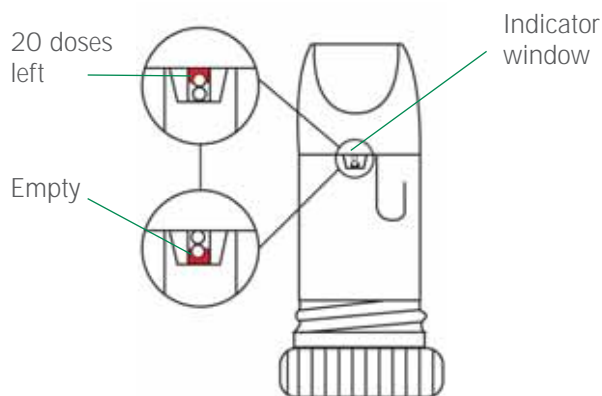
Before you start to use a new Turbuhaler® you need to "prime" it.

1. Remove the cap.
2. Hold the device upright and twist the base left and right as far as it will go. You will hear a 'click'.
3. Repeat step 2 one more time.

The Turbuhaler® is now primed. To use the Turbuhaler®, follow the instructions below.

How to use the Turbuhaler®

1. Remove the cap.
2. Hold the device upright and twist the base left and right as far as it will go. You will hear a 'click'.
3. Breathe out gently away from the Turbuhaler®.
4. Place the mouthpiece between your lips and form a seal (do not put your lips over the air vents on the side of the Turbuhaler®).
5. Hold the coloured part of the Turbuhaler® (to make sure the air vents are not covered).
6. Breathe in forcefully and deeply through your mouth.
7. Remove the Turbuhaler® from your mouth and hold your breath for up to 10 seconds, if possible, before breathing out.
8. If another dose is required, repeat steps 2 to 7.
9. Replace the cap.



Determining when the Turbuhaler® is empty

When is the Turbuhaler® empty?

The Symbicort® Turbuhaler® (red base) has a counter that counts down to zero (in twenties). When the counter is at '0', the device is empty.

On other Turbuhalers®, a red line will appear at the top of the indicator window on the side of the device, which indicates that 20 doses are left (this is a good time to organise a new device). When the red line appears at the bottom of the window, the Turbuhaler® is empty.

How to clean the Turbuhaler®

- Wipe the inhaler with a clean, dry tissue after use.
- Do not wash any part of the Turbuhaler® or get it wet.

How to care for the Turbuhaler®

- Do not breathe into the device as the medication is a dry powder.
- Do not expose to water (keep the cap on tightly to prevent moisture entering the device).
- The powder you hear when you shake the device is NOT medication, it is a drying agent.
- The medication is inhaled directly into the lungs; therefore, you may not feel or taste anything.

Accuhaler™

How does the Accuhaler™ work?

The Accuhaler™ is a breath activated device that contains a hidden foil strip that has 60 regularly spaced doses of medication.



Accuhaler™

How to use the Accuhaler™

1. Check the window that indicates the number of doses left.
2. To open, hold the base of the Accuhaler™ horizontally in one hand; place the thumb of the other hand in the thumb grip and push the thumb grip around as far as possible.
3. With the Accuhaler™ held horizontal, push the lever around until it clicks. The number indicator reduces by one.

4. Breathe out gently away from the Accuhaler™.
5. Put the mouthpiece between your teeth and lips to form a seal.
6. Breathe in steadily and deeply through your mouth.
7. Hold your breath for about 10 seconds, if possible.
8. Remove the Accuhaler™ from your mouth.
9. Breathe out away from the Accuhaler™.
10. If another dose is required, repeat steps 3 to 9.
11. To close the Accuhaler™, put your thumb in the thumb grip and slide it until the cover clicks in place.

The Accuhaler™ is empty when the dose counter indicates zero.

When is the Accuhaler™ empty?

The Accuhaler™ is empty when the dose counter on the top indicates zero. The last five doses will appear in red.

How to clean the Accuhaler™

- Wipe the inhaler with a clean, dry tissue after use.
- Do not wash any part of the Accuhaler™ or get it wet.

How to care for the Accuhaler™

- Keep your Accuhaler™ dry.
- Keep your Accuhaler™ closed at all times.



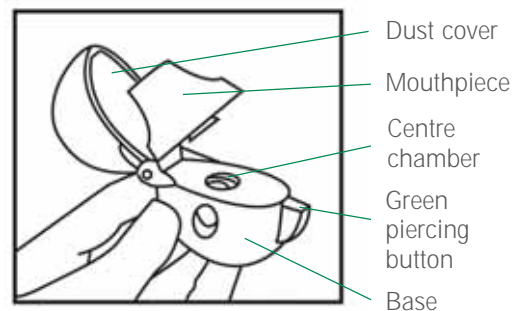
HandiHaler®

How does the HandiHaler® work?

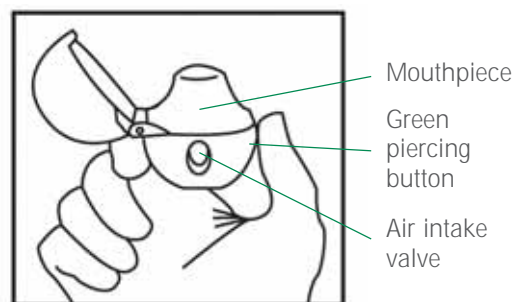
The HandiHaler® is activated by breathing in through the mouthpiece. When loaded, a capsule (containing the medication) inside the HandiHaler® is pierced, allowing the medication to be inhaled.

How to use the HandiHaler®

1. Have the HandiHaler® and capsules ready for use.
2. Open the dust cap by pressing the green piercing button.



3. Open the mouthpiece by pulling upwards.
4. Peel the foil back carefully to expose only one capsule.
5. Remove the capsule from the foil and drop the capsule into the centre chamber.
6. Firmly close the mouthpiece, leaving the dust cap open.



7. Press the green button once to pierce the capsule, and then release the green button.
8. Breathe out gently away from the HandiHaler®.
9. Put the mouthpiece between your lips to form a seal, making sure not to block airway vents with your fingers.
10. Breathe in slowly and deeply (enough to hear or feel the capsule vibrate) and fully through your mouth, keeping your head in an upright position.



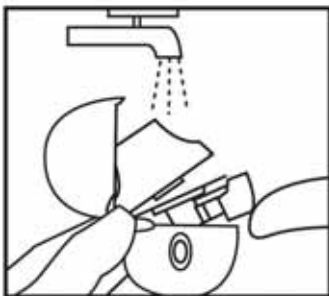
11. Hold your breath for about 10 seconds, if possible.
12. Remove the HandiHaler® from your mouth.
13. Breathe out away from the HandiHaler®.
14. Repeat steps 8 to 11 to completely empty the capsule. Do not pierce capsule a second time.

When is the HandiHaler® empty?

When you have run out of capsules, you will have no more medication. The HandiHaler® should be replaced yearly.

How to clean the HandiHaler®

- Once a month, you should:
 - Open the dust cap.
 - Open the mouthpiece.
 - Open the bottom part by pressing the green lever in and up.



- Rinse under warm water to remove dry powder.
- Shake out excess water.
- Leave to air dry for 24 hours with the HandiHaler® open.
- Dry the outside with a clean cloth, if needed.
- Remember that as the HandiHaler® takes 24 hours to dry, you should wash it immediately after a dose to ensure that it is completely dry before the next dose.

Breezhaler®

How does the Breezhaler® work?

The Breezhaler® is activated by breathing in through the mouthpiece. When loaded, a capsule (containing the medication) that has been pierced inside the Breezhaler® allows the medication to be inhaled.

How to use the Breezhaler®

1. Have the Breezhaler® and capsule ready for use.
2. Pull off the cover/cap.
3. Open the inhaler by holding the base firmly and tilt the mouthpiece.
4. Remove one capsule from blister pack with dry hands (always keep capsules in blister pack until use), and insert into base of the inhaler.



5. Close the inhaler fully. You should hear a 'click' as it closes fully.
6. Hold the inhaler upright. There are two blue buttons at the base of the inhaler. Press both of these buttons fully, one time. You should hear a "click" as the capsule is being pierced. Then release the buttons. **DO NOT PRESS THE PIERCING BUTTONS MORE THAN ONCE.**
7. Breathe out gently away from the device.
8. Place the mouthpiece in your mouth and form a seal with your lips around the mouthpiece. Hold the inhaler with the buttons to the left and right (not up and down).
9. Breathe in rapidly and steadily, as deeply as you can.
 - You should hear a whirring noise, which is the capsule spinning in the chamber. If you don't hear the noise, the capsule may be

stuck in the cavity. If this occurs, open the inhaler and carefully loosen the capsule by tapping the base of the device. Do not press the piercing buttons to loosen the capsule.

10. Continue to hold your breath as long as is comfortable up to 10 seconds. Then breathe out.
11. Most people are able to empty the capsule with 1 or 2 inhalations. You can check this by opening the inhaler to see if any powder is left in the capsule. Repeat steps 7 to 10 if needed.
12. Remove capsule and discard, close the inhaler and replace the cap.

You may experience a sweet taste as the medication goes into your lungs.

Some people occasionally cough soon after inhaling the medicine. If you do, don't worry, as long as the capsule is empty you will have received the full dose.

Do not store capsules in the Breezhaler®.

How to clean the Breezhaler®

Clean your inhaler once a week.

- Wipe the mouthpiece inside and outside to remove any powder with a clean, dry, lint-free cloth.
- Do not wash your inhaler with water. Keep it dry.
- Do not take the inhaler apart.

Nebuliser

How does the nebuliser work?

Medications delivered by inhalers are an effective, easy and convenient way to deliver the correct amount of medication into your breathing tubes or airways. Most people with COPD can effectively use their inhalers to manage their conditions. This is preferred as inhalers are more practical, convenient and are less likely to cause infection.

However, if you cannot use your inhalers correctly a nebuliser might be prescribed.

In a nebuliser, pressurised air is pumped through liquid to form a fine mist that is inhaled through a face mask or mouthpiece. The pump is usually driven by electricity; some pumps may be driven by a battery or 12 volt car batteries.

A mouthpiece stops the medication going into the eyes and on the skin which sometimes causes irritations.



Nebuliser Machine

How to use the nebuliser

1. Assemble clean dry equipment (face mask or mouthpiece, nebuliser bowl, tubing and nebuliser pump).
2. Place pump on a firm flat surface.
3. Ensure the two halves of the nebuliser bowl are connected.
4. Fill the nebuliser bowl with the required amount of medication.
5. Connect the tubing and the mouthpiece or face mask to the nebuliser bowl.
6. Put the facemask on or the mouthpiece in your mouth, and turn the machine on.
7. Sit upright and breathe normally until the nebuliser starts to splutter and the amount of vapour coming out is minimal (usually 10 minutes).
8. Switch the machine off when finished.

How to clean the nebuliser

- After each use, rinse the nebuliser bowl and the facemask or mouthpiece.
- Ensure that the nebuliser parts are completely dry before storage (liquid left in the bottom of the nebuliser bowl is an ideal site for germs to grow).
- Do not wash the tubing. You may remove the mask and bowl from the tubing and turn the nebuliser on to blow air through the tubing. This can reduce any condensation in the tubing. Replace the tubing if it is discoloured or there is any sign of mould.

- Each week, soak the nebuliser bowl and the mouthpiece or facemask in half vinegar and half water, rinse and allow to air dry.
- Replace your nebuliser tubing, bowl and face mask or mouthpiece every three months.

Correct cleaning of your nebuliser will reduce the risk of chest infections.

How to care for the nebuliser

- Inspect the nebuliser bowl and tubing for cracks, and if cracks are found, replace.
- Nebuliser bowls have a limited life span. Check the manufacturer's manual for the expected life span of your nebuliser bowl.
- If you have acquired a nebuliser bowl through a hospital, it will only last one to three months and should be replaced (check manufacturer's recommendations).
- If you have a new nebuliser bowl and it is not working, check for an extra piece of plastic in

the bowl called a baffle (sometimes the baffle is missing, and if so, the bowl will need to be returned).

- The filter on the nebuliser pump may need to be replaced occasionally. See the manufacturer's manual for how often the pump may need replacing.
- Have the nebuliser pump checked annually for correct airflow and pressure by the company that sold you the nebuliser or by your local pharmacy.
- If nebulising Atrovent® or Pulmicort®, the use of a mouthpiece is preferable. If you do not use a mouthpiece, the use of eye protection is advisable.
- Ensure you rinse your mouth and face afterwards.

Nebuliser bowls have a limited life span. Check manufacturer's manual for expected life span.

