

SPACE INHALERS

USE IN ASTHMA



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Q. What is a Space Inhaler device?

A. It is a chamber that holds the aerosol produced by a metered dose inhaler (MDI) before it is inhaled into the lungs. This chamber performs two major functions: (1) The aerosol remains inside the device for some time, hence the larger particles emitted by the MDI settle down on the walls of the chamber and do not unnecessarily go into the mouth or throat; (2) The distance between the MDI emission nozzle and the mouth of the patient is increased, whereby the finer particles of the mist form and penetrate into the distal airways.

Q. What are the different parts of the Space Inhaler device?

A. Many types of space inhaler devices are available. One type is in the form of a tube 10 cm long by 10.2 cm wide without a valve. Another is in the form of a collapsible bag with a capacity of 700 ml. And yet another type of chamber available in India is in the shape of a bottle with openings at both ends, in one of which the MDI is fixed and the other acts as a mouth-piece.

Another device said to be more scientifically designed, is the Spacehaler. Different parts of the

Spacehaler are depicted on the front page.

Comparison of the spacer devices has shown that the larger pear-shaped spacers are significantly better than the smaller spacers, in achieving optimal results.

Q. Can any Space Inhaler device be fixed to any MDI?

A. Usually this is possible. But in some cases the nozzle of the spacer device is shaped in such a manner that it can fix only a particular brand of MDI. Hence while purchasing one, make sure that the MDI and the spacer device fit properly.

Q. How is the Space Inhaler used?

- A. 1. Fix the MDI into the spacer device. Shake thoroughly so that the contents of the canister of MDI are properly mixed.
2. Hold spacer device with the mouth-piece pointing slightly upwards so that the valve is closed.
3. Press the canister to release the required dose into the chamber.
4. Breathe out slowly and completely.
5. Hold the mouth-piece between the lips.

Breathe in slowly and deeply through your mouth. Hold your breath for as long as possible or till you count upto 10. Breathe out through the mouth-piece. Breathe in again slowly and deeply through the mouth-piece to ensure that all the aerosol in the chamber has been inhaled.

Q. How is the Space Inhaler kept clean?

A. Dip the inhalation chamber in warm water using a mild detergent. The mouth-piece can be removed. Clean the plastic parts dry and reassemble the device when completely dry.

Space Inhaler must be regularly cleaned.

Q. Which asthma patients derive the maximum benefit from the use the Space Inhaler?

A. The elderly and or handicapped, and infant and children under the age of 5 years. These are the ages where the major problem of hand-mouth-lung discoordination exists. However, improper use of metered-dose inhaler devices is not limited to these specific groups. It has been shown that space inhalers improve bronchodilator response in patients unable to use metered-dose inhalers effectively.

Q. In what specific manner Space Inhaler helps children and older patients?

- A. 1. It is easy to hold in the right position.
2. It allows the patient to inhale medicine without co-ordinating a puff with a breath.
3. It helps more medicine to get to the small airways where it works effectively.
4. It lessens the bad taste of the medicine.
5. It reduces possible bad effects of the medicine.

Q. Can Space Inhalers be used beneficially by asthma patients other than children and older people?

- A. Patients who cannot master the proper technique of meter-dose inhaler use, should try using inhaler. For this reason, it is essential to determine each individual patient's technique when prescribing a metered-dose inhaler.

Q. Is it not a wastage of the drug that a significant proportion of the aerosol particles from MDIs stick to the walls of the Space Inhaler?

- A. The availability of aerosol particles in the respirable range (1-5 microns) is the crucial issue. Only such particles can enter the lungs and exert therapeutic action. Larger particles, in any

case, are trapped in the throat on inhalation and cause side effects.

Aerosol particles deposited on the walls of the spacing device are the larger ones which anyway would not enter the lungs but would otherwise get deposited in the mouth and throat. The space inhaler actually increases the amount of aerosol particles in the respirable range available for penetration deep into the lungs.

With the space inhaler, the amount of drug delivered is said to be significantly increased. The therapeutic efficacy is therefore increased.

Q. How does it help a patient that the larger particles of the MDI mist are deposited on the Space Inhaler walls ?

A. Throat deposition of the drug is reduced by 9 percent with the space inhaler. This is the reason why it virtually eliminates the side effects of throat candidiasis, a fungus infection, and also hoarseness of voice.

Q. How many doses of MDI aerosol should be released inside the Space Inhaler ?

A. Upto four doses can be released and be inhaled.

Q. For how long should the patient inhale from

the Space Inhaler, releasing aerosol from MDI in it ?

- A. If a deep inspiration is possible, inhaling twice from the space inhaler would empty the chamber of the aerosol.

If a deep inspiration is not possible as by small children or due to tightness of chest, the patient may breathe in at his own rate for about half a minute.

Laser holography studies have determined that a large number of aerosol particles in the respirable range, remain suspended in the chamber for 30 seconds.

Q. Which drugs can be used through space inhaler?

- A. All the drugs that come in the MDIs. These include salbutamol (Asthalin, SOS, Salbutamol), terbutalin (Bricanyl), steroids (Beclate, Pulmicort), Fluticasone or a combination of them, cromolyn sodium (Fintal, Cromal-5).

Q. Are the results shown to be specifically better with steroids used through Space Inhaler ?

- A. Studies with inhaled corticosteroids have noted that there is a marked increase in efficacy with

the use of space inhaler over metered-dose inhaler alone.

Q. Can Space Inhaler be recommended in moderately severe or severe attacks of asthma in the above specified groups of children and older patients ?

- A. Just as MDIs do not by themselves provide adequate relief in severe attacks, similarly use of space inhalers on MDIs would not provide adequate relief.

If the attack is severe, use of a nebulizer with salbutamol is recommended for bronchodilation. Besides, that, other anti-asthma drugs in the form of tablets or injections are prescribed by the physician.

Q. Are Space Inhalers recommended in other chest diseases causing breathlessness such as chronic bronchitis in older patients?

- A. Yes. They will prove helpful in cases needing salbutamol MDI. Very old patients of this disease having hand-mouth coordination problems, will definitely benefit by the use of this device.

Available Publications

1. Managing Asthma	Rs. 30.00
2. Asthma Attack : It Can be Prevented	Rs. 30.00
3. Asthma : Facts and Fiction	Rs. 20.00
4. Asthma Triggers: How to Avoid Them	Rs. 20.00
5. Asthma Attack : Early Signs	Rs. 20.00
6. Anti-Asthma Drugs : Their Proper Use	Rs. 20.00
7. Metered-Dose Inhalers : Use in Asthma	Rs. 20.00
8. Nebulizers : Use in Asthma	Rs. 20.00
9. Space Inhalers : Use in Asthma	Rs. 20.00
10. Peak-Flow Meter : Use in Asthma	Rs. 20.00
11. House Dust Allergy	Rs. 20.00
12. Food Allergy	Rs. 20.00
13. Urticaria	Rs. 20.00
14. Allergic Rhinitis (Sneezing Fits)	Rs. 20.00

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