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# Diploma in Pharmacy 2nd Year
# Community Pharmacy & Management
## Experiment

**To provide counselling to patients with asthma and education on the use of inhalers, spacers and nebulizers.**

## Aim:

To provide counselling to patients with asthma and education on the use of inhalers, spacers and nebulizers.

## Reference :

‘ Dr. Gupta G.D. , Dr. Sharma Shailesh, Dr. Gupta Richa, “Practical Manual of Community Pharmacy and Management” Published by Nirali Prakashan, Page no 43 – 45

## Theory :

Asthma is a chronic condition that needs lifelong drug therapy. The pharmacist plays an active role in advising the patient on self-monitoring of drug therapy. life style modifications, and use of special dosage forms such as metered dose inhalers, dry powder inhalers, etc.

## Patient Counselling Points

1) Non-pharmacological measures include safety measures to be taken while travelling, prophylactic use of drugs before exercise, avoiding allergens, quitting use of tobacco (smoking), etc.
2) The patients should also cooperate with the pharmacist in the management of asthma.
3) Specific counselling should be given on the drugs that relieve symptoms, drugs that prevent asthma attack, and drugs that are given as a reserve treatment for severe attacks.
4) The pharmacist should provide training to the patients on the use of metered dose inhalers.

**Table 8: Drug Counselling Points in Asthma**

| Drugs | Pharmacist Role |
|---|---|
| Beta-receptor agonists | Short-acting medications in this category must primarily be used for symptom alleviation. The pharmacist should inform patients taking long-acting medications that the medication may take some time to show effect. He/she should check the patient for tremors and muscle discomfort. |
| Theophyllines | He/she should advise patients taking sustained-release drugs to not crush or chew their tablets. |
| Anticholinergics | He/she should check the patient for dry throat, nausea, headache, impaired vision, and painful urination. |
| Corticosteroids | Medications must be taken on a regular basis, and must not be abruptly halted. Before discontinuing, the dose must be tapered. After using inhaled drugs, gargling of mouth is necessary. |
| Mast cell stabilisers | He/she should inform the patient that this medicine is only intended to prevent asthma attacks and does not treat existing bronchospasm. |

## Inhalers

Prescription drugs are inhaled directly into the lungs through asthma inhalers in order to treat or prevent the symptoms of asthma. They can include steroid drugs that reduces airway inflammation or a bronchodilator medication that opens up the airways. A few inhalers include both.

## Types of Inhalers

1. **Metered-Dose Inhalers (MDIs):** They are mouthpiece-equipped canisters that pressurise medication delivery to the lungs. Hydrofluoroalkane (HFA), a substance that also serves as a propellant, is used to dissolve the medication. The main drawback of MDIs is that for efficient treatment, a high level of hand-breath coordination is necessary.
2. **Dry Powder Inhalers (DPIS):** The problems with hand-breath coordination were addressed by the development of Dry Powder Inhalers (DPIs). From a preloaded chamber, it releases a precise quantity of powdered medication for inhalation. These devices may be challenging to use for those with breathing difficulties like COPD.

3. **Soft Mist Inhalers (SMIs):** They are handheld devices that produce a soft mist that lasts longer and delivers more drug particles than an HFA propellant. Despite still requiring some hand-breath coordination, it is ideal for those with weak inhaling muscles. Children can utilise soft mist inhalers with a face mask or a mouthpiece.
4. **Nebulisers :** It is a small device that produces a mist from liquid medication. The drug is absorbed into the lungs for 10 to 15 minutes when breathe in slowly and deeply. It is most effective for younger children or older people who have difficulty controlling their hand-breathing or inhaling force.

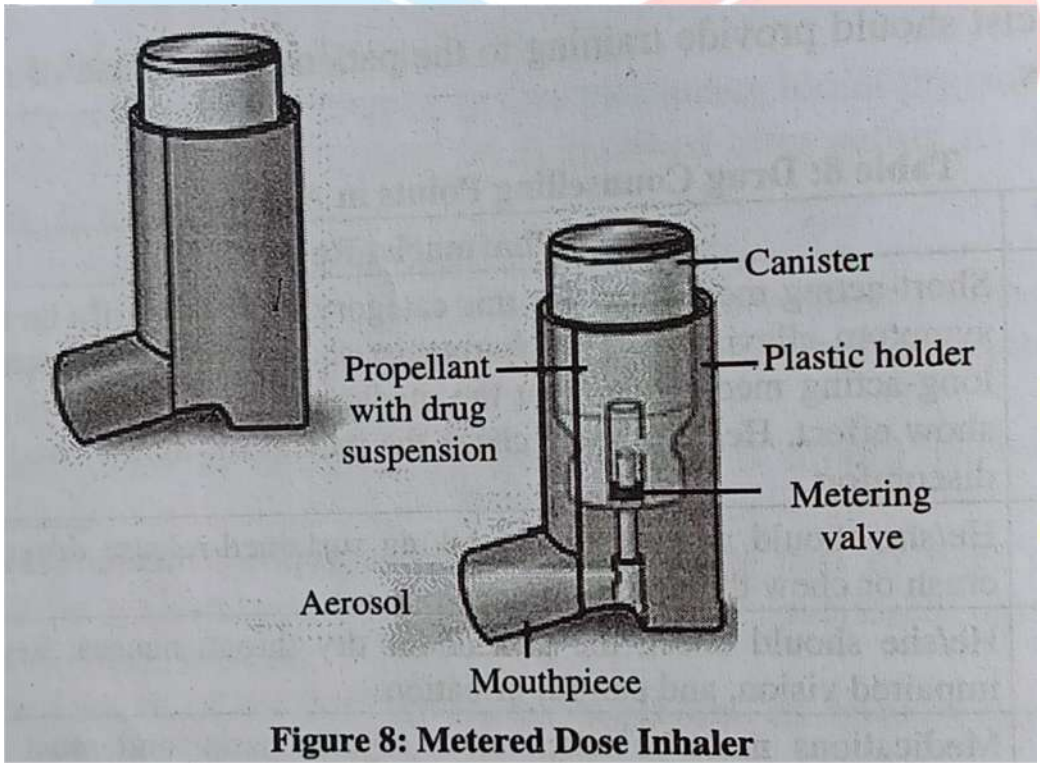

**Figure 8: Metered Dose Inhaler**

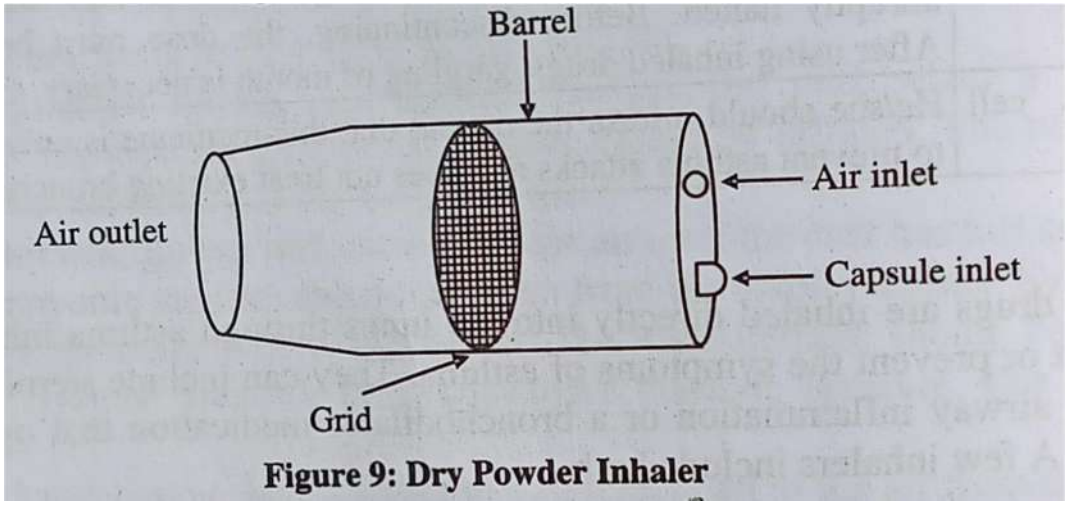

**Figure 9: Dry Powder Inhaler**

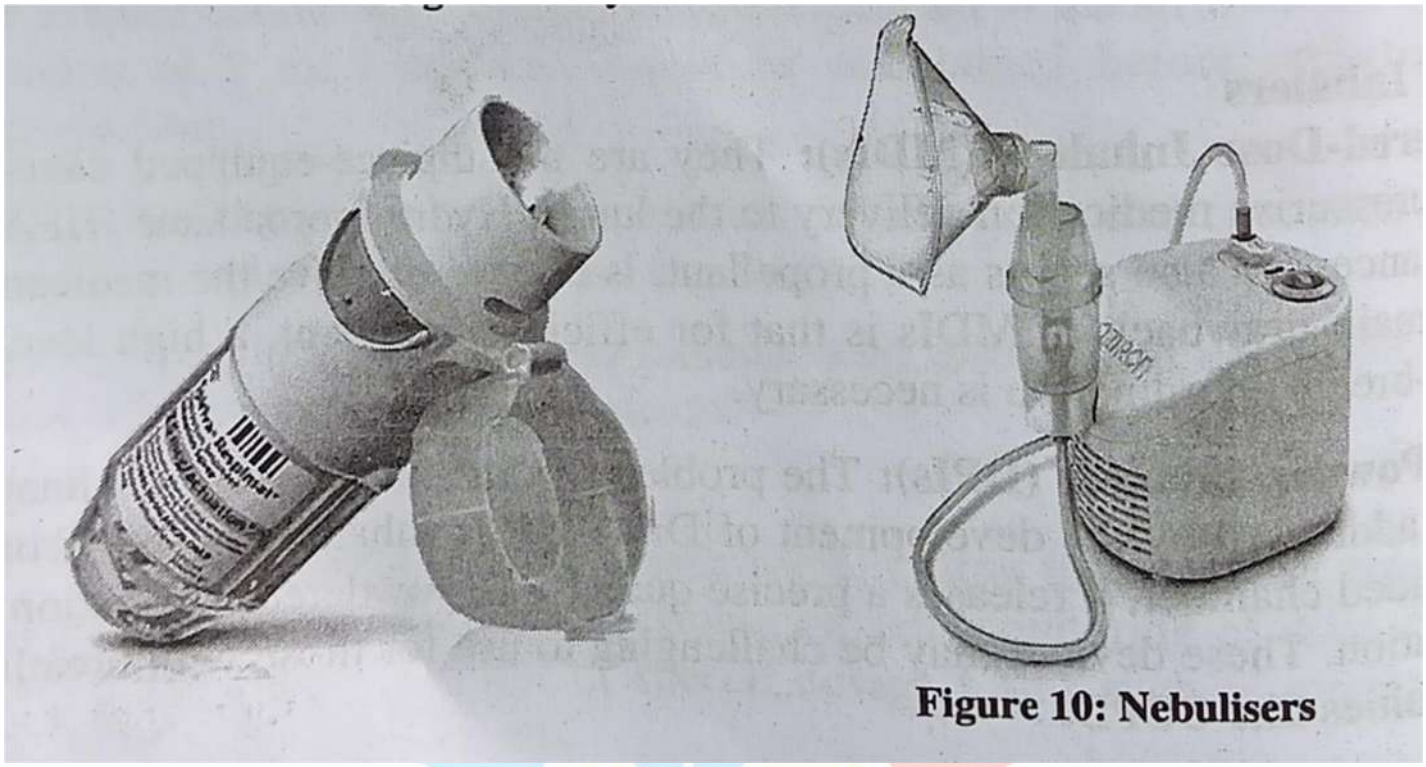

**Figure 10: Nebulisers**

**Table 9: Patient Counselling Tips**

| |
|---|
| 1) **Metered-Dose Inhaler (MDI):** When using an MDI, the below mentioned techniques should be followed; and for the first use prime the device as directed:<br>i) Take away the cap and shake well.<br>ii) Ensure mouthpiece has no unfamiliar substance.<br>iii) Exhale deeply via mouth.<br>iv) Keep inhaler in mouth, or two finger widths away from an open mouth, or apply a spacer device.<br>v) Deep breath in slowly and push down the top of canister down.<br>vi) Hold the breath for around 10 seconds.<br>vii) To repeat inhalation, pause for a minute and repeat steps.<br>viii) After taking in corticosteroid, rinse the mouth. |
| 2) **Dry-Powder Inhaler (DPI):** When using a DPI, the below mentioned techniques should be followed; and the device should be kept safe from moisture:<br>i) Make a dose as per directions given in information leaflet for each device.<br>ii) Keep the device stable and level to the ground.<br>iii) Exhale deeply from the mouth and do not breathe inside the device.<br>iv) Wrap lips around the mouthpiece and breathe in rapidly and deeply through mouth.<br>v) Hold breath for 10 seconds.<br>vi) Rinse mouth after inhalation of corticosteroid. |
| 3) **Nebulizer:** When using a nebuliser, the below mentioned techniques should be followed:<br>i) Uncap unit-dose vial of medication to be inhaled.<br>ii) Transfer the contents of vial to reservoir of nebuliser.<br>iii) Attach the mouth piece or face mask to the reservoir.<br>iv) Connect the compressor to nebuliser.<br>v) Sit straight and keep the mouthpiece in mouth or face mask over mouth.<br>vi) Turn the compressor on, and take deep breath calmly. |

## Spacer

A spacer, commonly referred to as a holding chamber, should always be used with inhaler. It makes easier to breathe because it holds the medicine in place.

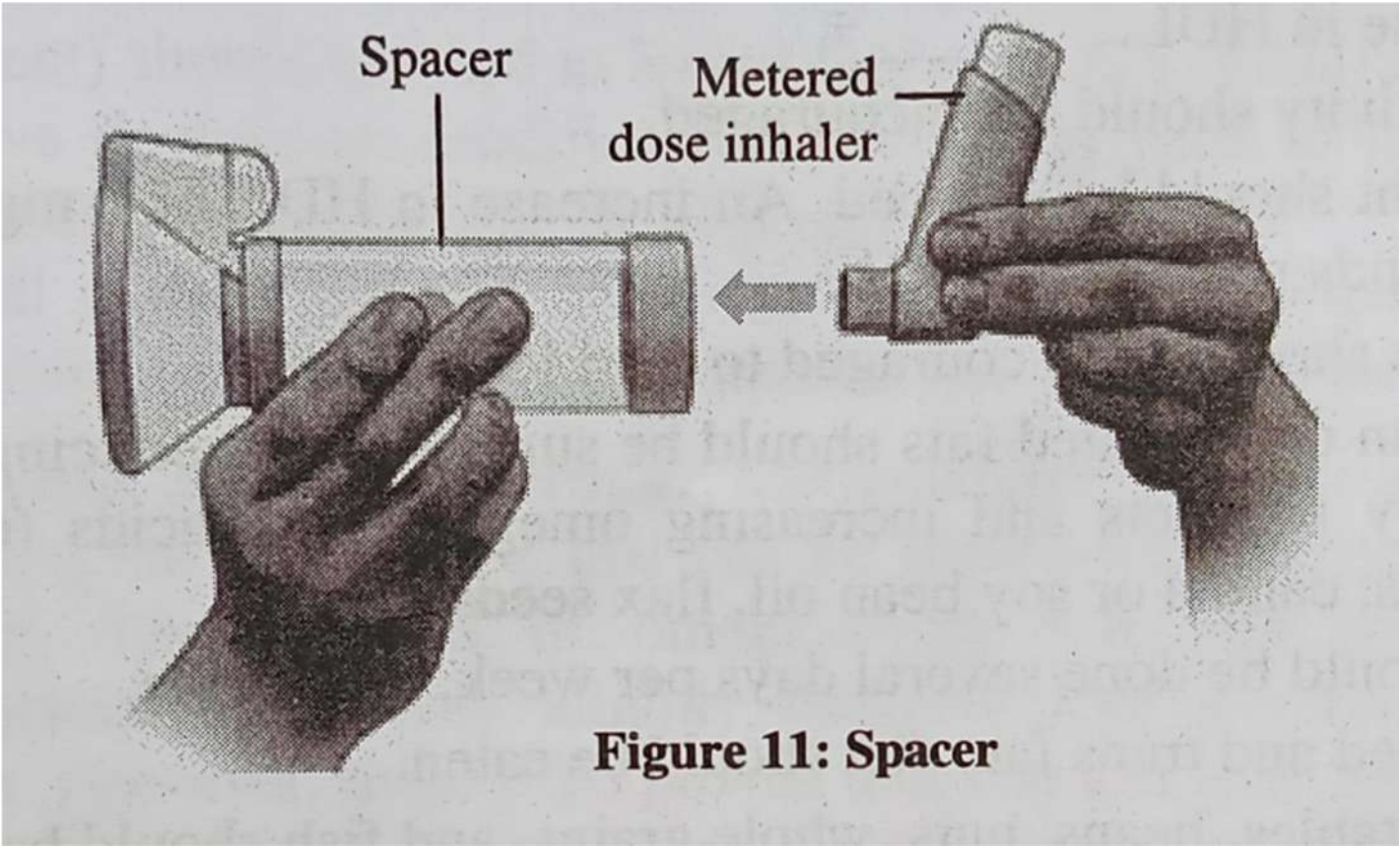


**Figure 11: Spacer**

## Using a Spacer Device

1) The inhaler, spacer, and mouthpiece should be checked to confirm that there is no dirt or debris and if there is still enough medication in it.
2) During this process, sitting or standing position should be maintained. Back should be straight and head should be in normal position, not too far backward or forward.
3) Excess of air should be exhaled from the lungs.
4) inhaler should be placed in the mouth.
5) One puff of medicine should be sprayed and inhaled slowly for about 3-5 seconds. The mouth should be tightly closed around the inhaler so that air cannot pass. When breathing in, whistling sounds suggest that breathing is too fast.

6) Inhalation should be held for 10 seconds by counting in head or using a timer on watch or phone.
7) The inhaler should be removed from the mouth
8) It should be repeated by taking as many puffs as described by the doctor, Duration of 1 minute should be maintained between puffs if using inhalers having albuterol.
9) Mouth should be washed with water if an inhaled corticosteroid is used. An oral infection is reduced with the help of this.

## Result :

Counselling to patients with asthma and education on the use of inhalers, spacers and nebulizers were provided.

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