



# Aerosols

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# Introduction

Inhalation therapy has been used for many years, and there has been a resurgence of interest in delivery of drugs by this route of administration. The number of new drug entities delivered by the inhalation route has increased over the past five to ten years. This type of therapy also has been applied to delivery of drugs through the nasal mucosa, as well as through the oral cavity for buccal absorption. Originally, this type of therapy was used primarily to administer drugs directly to the respiratory system (treatment of asthma) inhalation therapy is now being used for drugs to be delivered to the bloodstream and finally to the desired site of action.



# Drug Administration

Drugs administered via the respiratory system (inhalation therapy) can be delivered either orally or nasally.



# Types of aerosols

- Metered dose inhalers (MDIs)
- Dry powder inhalers (DPIs)
- Nebulisers.



# Metered-dose inhalers

MDIs are a commonly used system, which is particularly useful for the treatment of acute respiratory conditions, for example breathlessness in asthma patients. It is formulation component of two parts: the propellant and the therapeutic agent and they are two methods for using an MDI: Spacer (these devices attach to the MDI) and without it. The clinical efficacy is often dependent on the ability of the patient to use the MDI correctly.



# Dry powder inhalers

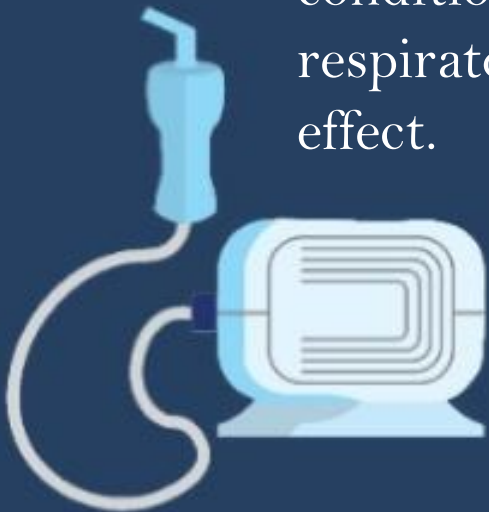
Dry powder inhalers are a group of inhalers that have the medication in very fine dry powder format.

There are a number of designs of these systems: for examples Inhalers in which the drug and excipients are present within a hard gelatin capsule. And inhalers in which the drug and excipients are present within a blister pack.



# Nebulisation

Nebulisation involves the application of energy to a solution of a therapeutic agent and results in the formation of droplets of solution, which are then inspired by the patient through a facemask or a tube. The rising steam is inhaled through the mouth and nose and thus acts directly upon the infected airways. The use of nebulisers is generally reserved for the treatment of acute conditions or in those patients who have difficulties using other respiratory dosage forms. Also this type particularly long-lasting effect.



## Perform aerosol correctly

- Hands must be clean
- Mouthpiece or mask?





# Mouthpiece

Mouthpiece more suitable for adults, because it allows the solution to be given directly to the respiratory system and to avoid filtering through the nose.



# Mask

The mask is more suitable for children because they mainly breathe from the nose (make it fit will through the face) and encourage the child to breathe through the mouth and do not forget that the effectiveness will decrease if the child is asleep or crying





## The last thing

- The treatment should take 5 to 10 minutes
- Wash all devices under water. you can use Some sodium carbonate for disinfection
- The last thing is that you should change the plastic accessories every two months





## References

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