Lecture 8

Subject

Medication Administration Part 1

Theoretical

Prepared by

Dr. Anmar Salah Nadum

Dr. Rania abd Elmohsen

A **medication** is a substance administered for the diagnosis, cure, treatment, or relief of a symptom or for prevention of disease.

Factors affecting medication action

1. Developmental Factors. (During pregnancy women, Infants, Older adults)
2. Gender.
3. Diet. (For example, vitamin K, found in green leafy vegetables, can counteract the effect of an anticoagulant such as warfarin).
4. Environment. (For example, A client who takes a sedative or analgesic in a busy, noisy environment may not benefit as fully as if the environment were quiet and peaceful).

5. Psychological Factors. (For example, client who believes that codeine is ineffective as an analgesic may experience no relief from pain after it is given.)
6. Disease and illness. (For example, aspirin can reduce the body temperature of a feverish client but has no effect on the body temperature of a client without fever).
7. Time of Administration. (For example, the anti-infective agent ampicillin absorbs more rapidly on an empty stomach, but the antidepressant trazodone hydrochloride is absorbed more rapidly with food).

Pharmacokinetics

involves how drugs move through the body from administration to elimination. It consists of four key processes:

- **Absorption:** How the drug enters the bloodstream.
- **Distribution:** How the drug spreads through body tissues.
- **Metabolism:** How the body breaks down the drug, primarily in the liver.
- **Excretion:** How the drug is eliminated, mainly through the kidneys.

Pharmacodynamics

involves how drugs interact with receptors, enzymes, and target cells to produce a therapeutic effect. It consists of four key components:

- **Drug-Receptor Interaction.**
- **Dose-Response Relationship.**
- **Therapeutic and Toxic Effects.**
- **Individual Variability**.

Ten “Rights” of Medication Administration

1. Right Medication.
2. Right Dose.
3. Right Time.
4. Right Route.
5. Right Client.
6. Right Client Education.
7. Right Client Refuse
8. Right Documentation
9. Right Assessment.
10. Right Evaluation

ROUTES OF ADMINISTRATION

A. Oral

Advantage

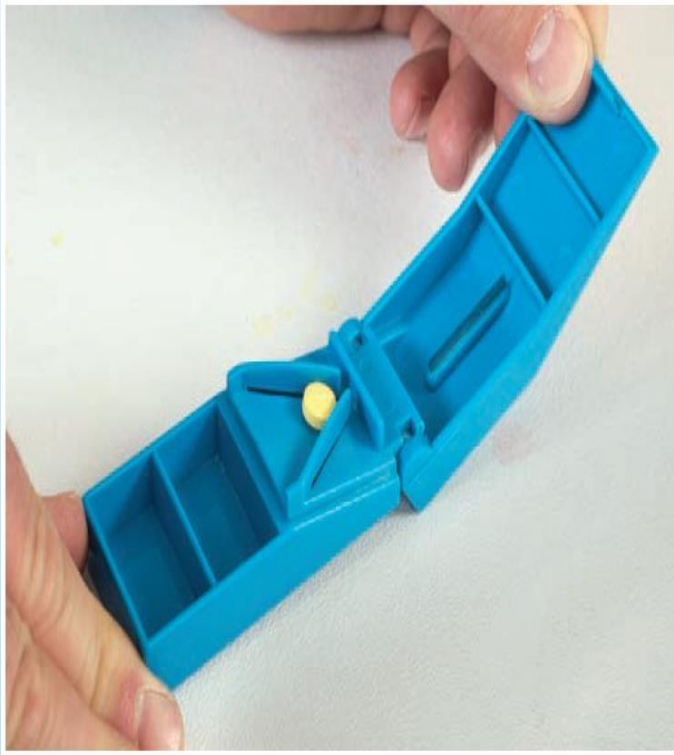
1. Most common
2. Least expensive,
3. Most convenient route for most clients.
4. Not cause stress.

Disadvantage

1. Unpleasant taste of the drugs,
2. Irritation of the gastric mucosa,
3. Slow or irregular absorption from the GI tract,
4. Harm to the client's teeth.

Administration oral medication

1. Perform hand hygiene.
2. Assess allergies to medication (s).
3. Assess client's ability to swallow the medication.
4. Assess presence of vomiting or diarrhea.
5. Obtain the appropriate medication.
6. Check the expiration date of the medication.
7. Calculate the medication dosage accurately.
8. Provide for client privacy.
9. Introduce your self.



2 A cutting device can be used to divide tablets.

10. Assist the client to a sitting position or to a side-lying position.
11. Explain the purpose of the medication.
12. Administer the medication at the correct time.
13. Give the client sufficient water or preferred juice to swallow the medication.
14. Stay with the client until all medications have been swallowed.
15. Document each medication given.

B. Sublingual

In sublingual administration a drug is placed under the tongue, where it dissolves (for example: Nitroglycerin)

Advantage

1. Short time to action.
2. Largely absorbed into the blood vessels

Disadvantage

The medication should not be swallowed.

C. Topical

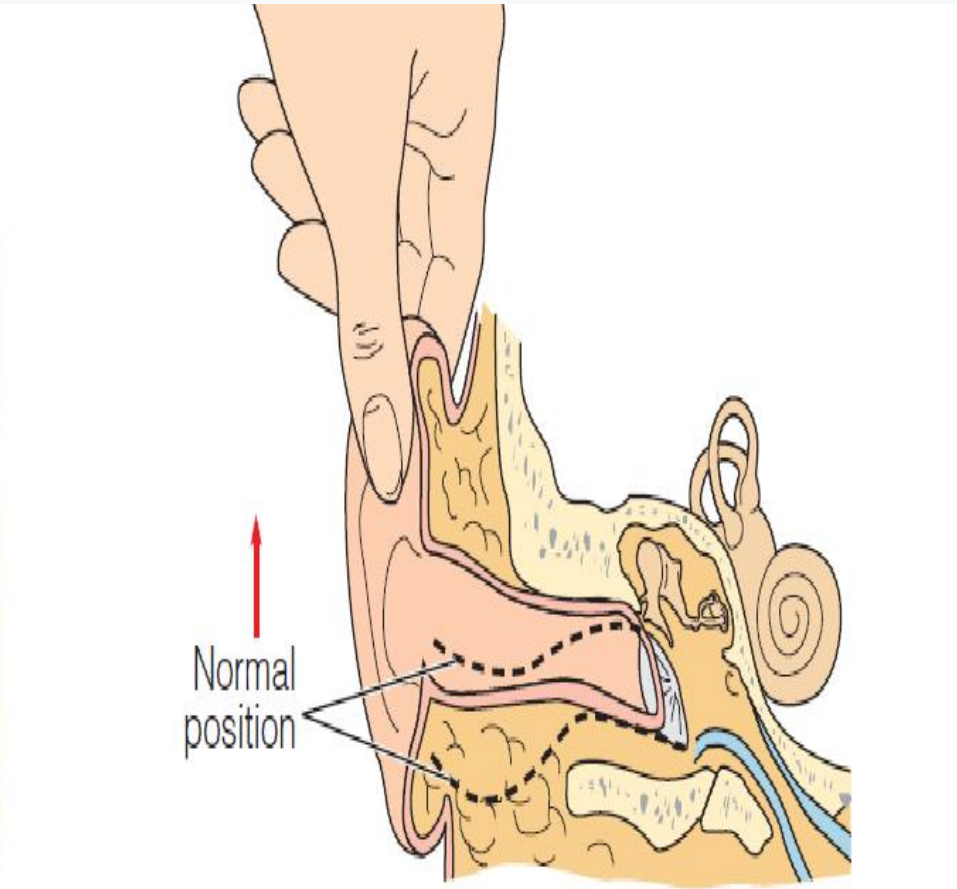
Topical applications are those applied to a circumscribed surface area of the body. They affect only the area to which they are applied.

Topical applications include the following:

1. **Dermatologic preparations**—applied to the skin

2- **Instillations and irrigations**—applied into body cavities or orifices, such as the urinary bladder, eyes, ears, nose, rectum, or vagina.

1 Instilling an eyedrop into the lower conjunctival sac.



1 Straightening the adult ear canal by pulling the pinna upward and backward.

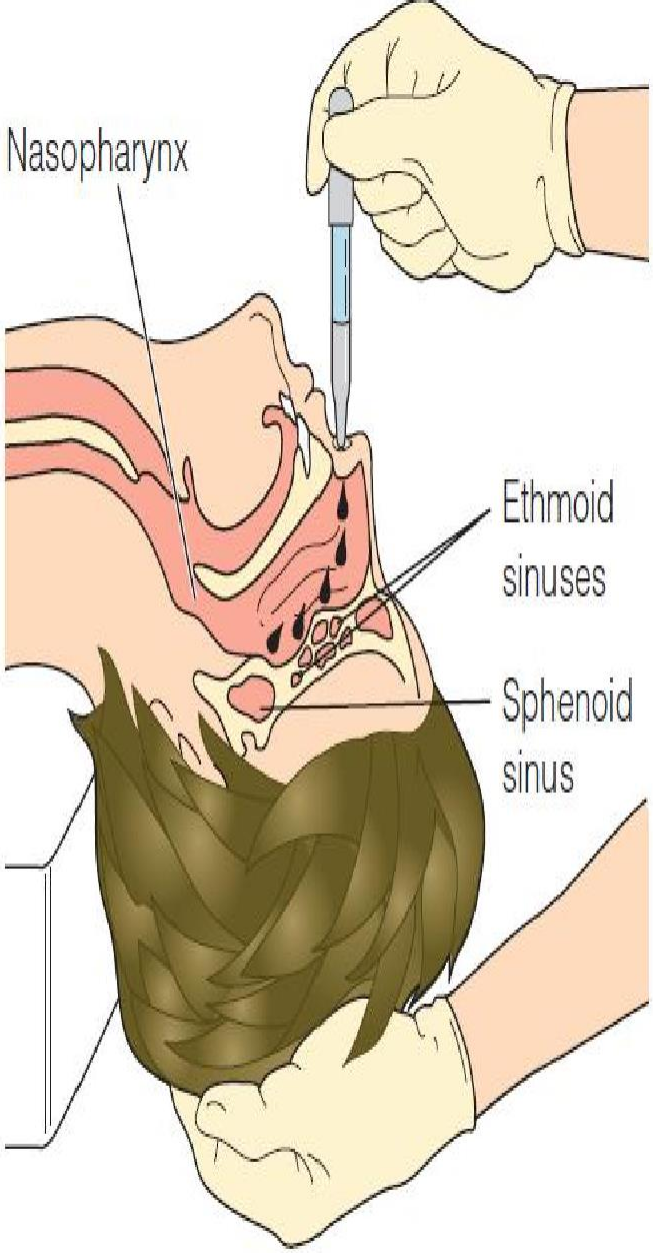


Figure 35–51 ■ Position of the head to instill drops into the ethmoid and sphenoid sinuses.

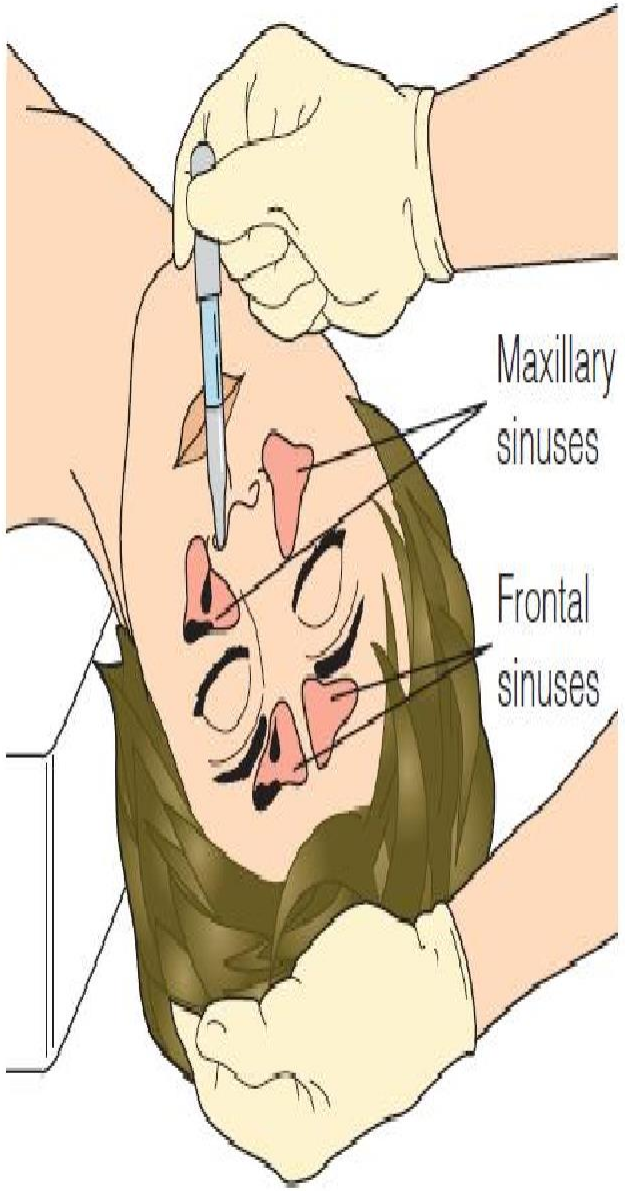


Figure 35–52 ■ Position of the head to instill drops into the maxillary and frontal sinuses.

3- Inhalations—administered into the respiratory tract by a nebulizer (Air, oxygen, and vapor).

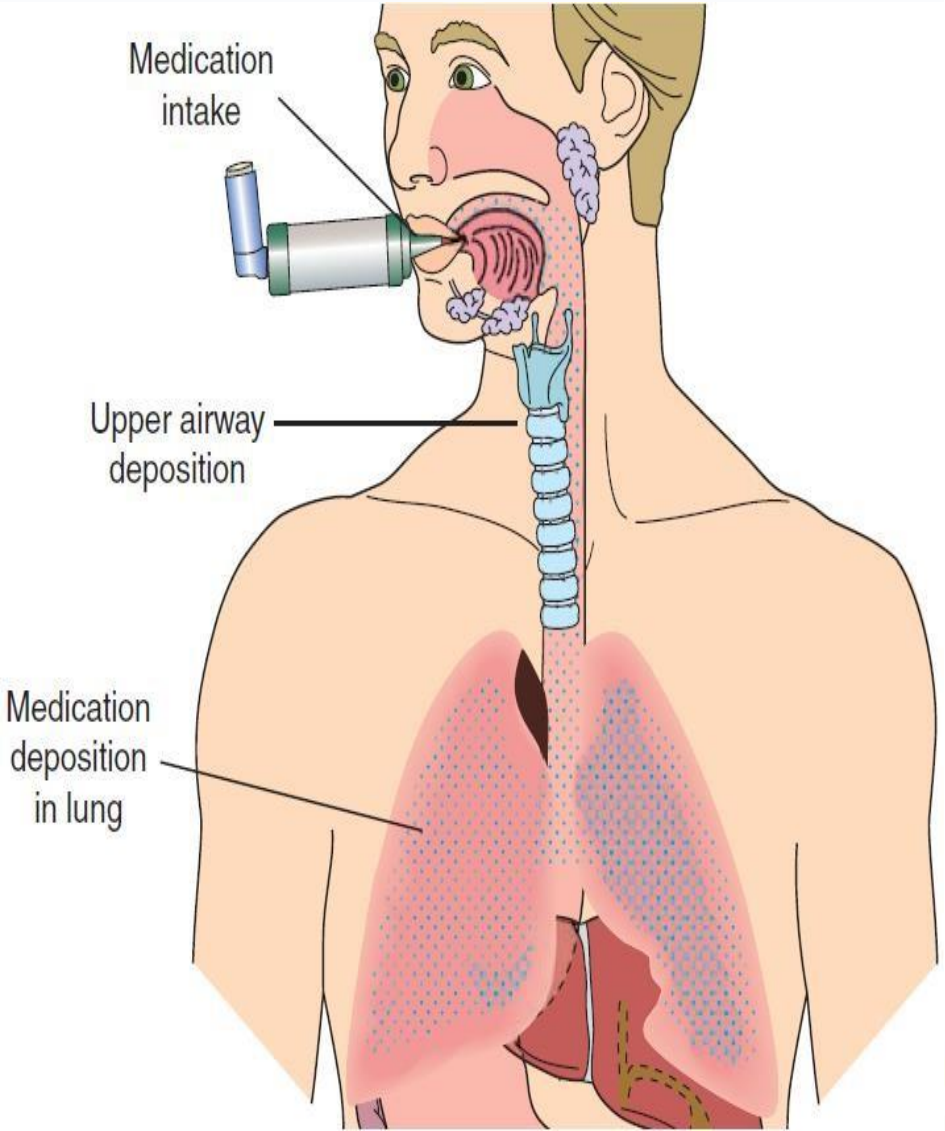


Figure 35–57 ■ Placing MDI in mouth with lips sealed around the mouthpiece.

Reference

Berman, A. T., Snyder, S., & Frandsen, G. (2016). *Kozier & Erb's. Fundamentals of Nursing: Concepts, Process, and Practice (9 th) Edition*.