

Types of Therapies:

1• Acute therapy;

It's the common type of therapy, that used for short time to treat acute illness as with stroke or heart attack.

2• Maintenance (chronic) therapy;

Therapy used to treat long –term illness that require regular, daily use of medicines.

e.g; Drugs used to treat high blood pressure, heart disease, asthma and diabetes.

3• Supplemental (replacement) therapy;

Therapy used to compensate deficiency of endogenous component or supply substance not available to the body. e.g; minerals, vitamins, hormones, ...

4• Palliative therapy;

Therapy that designed to relieve symptoms, and improve quality of life in patients with severe illness. e.g; narcotic analgesic given to relief pain in patients with cancer.

5• Supportive therapy;

The type of therapy that helps patients to deal with their problems more effectively and maintain normal body function. e.g; fluid & electrolytes.

6• Prophylactic therapy;

Medications used to prevent illness based on scientific evidence to support their use. e.g; antibiotics given before surgery.

7• Empiric therapy;

Medical treatment based on clinical experience in the absence of complete or perfect information.

e.g ; The use of empirical antimicrobial for patients with meningitis.

Types of Drug Effects:

1-Therapeutic Effects;

A predictable desired response of medication. Some drugs have more than one therapeutic effect e.g; Propranolol, Atropine.

2-Side effects;

- They are predictable secondary unwanted effect of drugs that usually occur as

an extension of the drug's normal effects in the body. Mild in nature and mostly self-resolved or limited effects, not hinder the main effect of drug

- Could be good or harmful e.g; minoxidil, ampicillin

3-Adverse effects;

These are serious unexpected harmful effects need immediate attention. They may or may not be preventable, and usually interfere with main drug action and may cause complication. Adverse drug reactions are always harmful. The onset of the adverse reaction may be sudden or develop over time. e.g; Hypersensitivity reaction, thalidomide disaster,etc

4-Toxic effect:

It observed when drug plasma level being above maximum therapeutic level due toxic overdose or impaired clearance

- Idiosyncratic effect:

unexpected reaction observed in rare individuals with the first use of drug and not related to the pharmacologic property of a drug.

Such a reaction may have explained on genetically or abnormal immune response to normal dosages of a drug.

e.g; Halothane hepatotoxicity, Chlorpromazine induced cholestatic jaundice.

- Allergic effect or reaction;

Occur due to previous activation of immune system to particular antigen. Where, patient's immune system recognizes the drug molecule, its metabolite, or another ingredient in a drug formulation as *a dangerous foreign substance*.

This response can result in reactions ranging from *mild reactions such as skin erythema or mild rash to severe, even life-threatening reactions such as constriction of bronchial airways and tachycardia*.

5- Teratogenic effects;

Drug effect on embryo or fetus producing birth defect or congenital anomalies , when used during 1st trimester of pregnancy.

6- Mutagenic effects;

The effect which cause change in genetic information that lead to development of morphological or functional abnormalities in the next generations.

Drugs capable of inducing mutations are called mutagens.

7-Carcinogenic effects;

The effect that cause persistent or cumulative injury in genetic code or metabolic process that result in development of cancer. Agents that produce such effects are called carcinogens.

• Application of Nursing Process in Drug Therapy:

The nursing process include five basic steps:

1- Assessment (case history):

In this step the nurse must collect complete data about patient condition including

Subjective= what patient describe

i-Health history & ii-Medication history ; you have to *know all previous and current medication used* by patient including [*prescribed, herbal, vitamins , supplements, and OTC*]

➤ Create medication profile and check all information related to the used drug

Objective = measurable data

i- Physical assessment [*Temp, weight, Bp, PR, RR,*]

ii-Diagnostic lab. Tests [*liver & kidney functions, Albumin level,*]

➤ Assess the patient for oral administration and ability to swallow and other problems.

2- Diagnosis for Drug Administration

Nursing diagnosis represent identification of patient response to drug therapy, based on undesirable effects, risk factors and patient non compliance. e.g.: Morphine → Constipation,
-Atropine→ dry mouth & urinary retention

3- Planning

The information obtained from diagnosis used to design a plan according to patient situation (individualized)

- Identify the Goals or desired patient outcome; to ensure safe and effective drug therapy (produce maximum benefit)
- Setting Priorities; The life threatening problems (*drug reactions*) must consider first (anaphylactic shock, ventricular fibrillation ,....)

4- Implementation

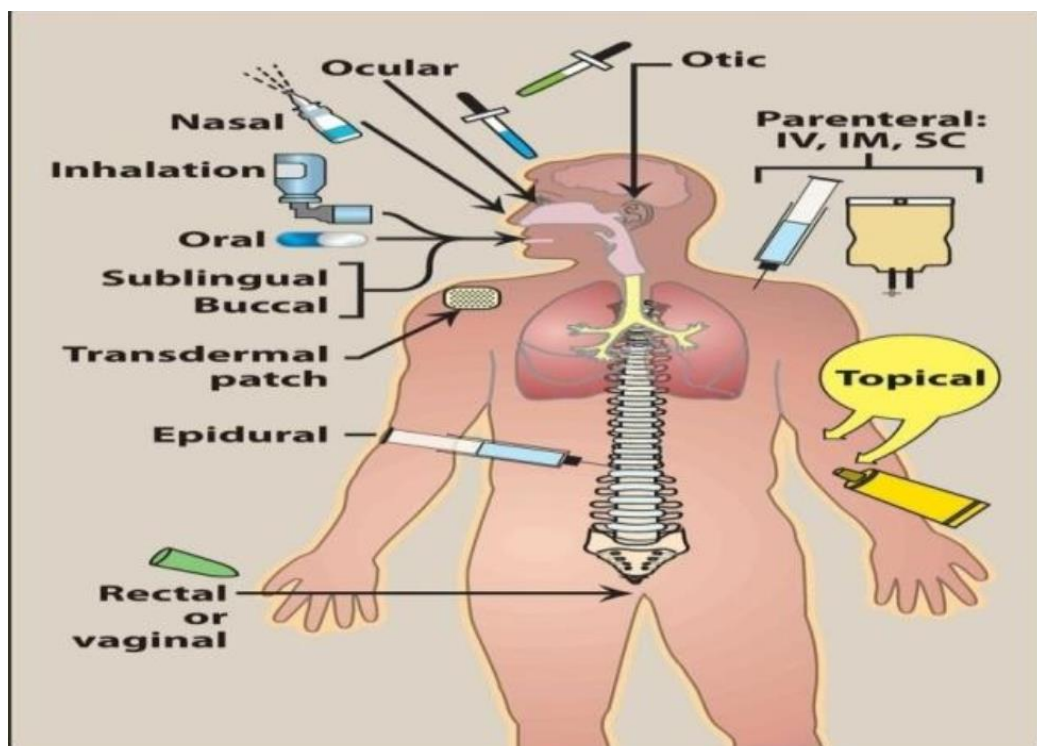
- Carrying out the interventions coordinating with other members of the healthcare team regarding drug administration, management of adverse effects and life style adjustment.
- Understand the information for each medication used and *why its used*.
- Document each action in the plan to be evaluated.

5- Evaluation

The evaluation step may lead to changes in nursing interventions being used to provide better and safer patient care.

Routes of drug Administration

- 1- **Enteral** (via the gastrointestinal [GI] tract).
- 2- **parenteral** ; *outside the GI tract*. e.g; injections, respiratory and topical (transdermal).



ROUTE OF ADMINISTRATION	ABSORPTION PATTERN	ADVANTAGES	DISADVANTAGES
Oral	<ul style="list-style-type: none"> Variable; affected by many factors 	<ul style="list-style-type: none"> Safest and most common, convenient, and economical route of administration 	<ul style="list-style-type: none"> Limited absorption of some drugs Food may affect absorption Patient compliance is necessary Drugs may be metabolized before systemic absorption
Intravenous	<ul style="list-style-type: none"> Absorption not required 	<ul style="list-style-type: none"> Can have immediate effects Ideal if dosed in large volumes Suitable for irritating substances and complex mixtures Valuable in emergency situations Dosage titration permissible Ideal for high molecular weight proteins and peptide drugs 	<ul style="list-style-type: none"> Unsuitable for oily substances Bolus injection may result in adverse effects Most substances must be slowly injected Strict aseptic techniques needed
Subcutaneous	<ul style="list-style-type: none"> Depends on drug diluents: Aqueous solution: prompt Depot preparations: slow and sustained 	<ul style="list-style-type: none"> Suitable for slow-release drugs Ideal for some poorly soluble suspensions 	<ul style="list-style-type: none"> Pain or necrosis if drug is irritating Unsuitable for drugs administered in large volumes
Intramuscular	<ul style="list-style-type: none"> Depends on drug diluents: Aqueous solution: prompt Depot preparations: slow and sustained 	<ul style="list-style-type: none"> Suitable if drug volume is moderate Suitable for oily vehicles and certain irritating substances Preferable to intravenous if patient must self-administer 	<ul style="list-style-type: none"> Affects certain lab tests (creatinine kinase) Can be painful Can cause intramuscular hemorrhage (precluded during anticoagulation therapy)
Transdermal (patch)	<ul style="list-style-type: none"> Slow and sustained 	<ul style="list-style-type: none"> Bypasses the first-pass effect Convenient and painless Ideal for drugs that are lipophilic and have poor oral bioavailability Ideal for drugs that are quickly eliminated from the body 	<ul style="list-style-type: none"> Some patients are allergic to patches, which can cause irritation Drug must be highly lipophilic May cause delayed delivery of drug to pharmacological site of action Limited to drugs that can be taken in small daily doses
Rectal	<ul style="list-style-type: none"> Erratic and variable 	<ul style="list-style-type: none"> Partially bypasses first-pass effect Bypasses destruction by stomach acid Ideal if drug causes vomiting Ideal in patients who are vomiting, or comatose 	<ul style="list-style-type: none"> Drugs may irritate the rectal mucosa Not a well-accepted route
Inhalation	<ul style="list-style-type: none"> Systemic absorption may occur; this is not always desirable 	<ul style="list-style-type: none"> Absorption is rapid; can have immediate effects Ideal for gases Effective for patients with respiratory problems Dose can be titrated Localized effect to target lungs: lower doses used compared to that with oral or parenteral administration Fewer systemic side effects 	<ul style="list-style-type: none"> Most addictive route (drug can enter the brain quickly) Patient may have difficulty regulating dose Some patients may have difficulty using inhalers
Sublingual	<ul style="list-style-type: none"> Depends on the drug: Few drugs (for example, <i>nitroglycerin</i>) have rapid, direct systemic absorption Most drugs erratically or incompletely absorbed 	<ul style="list-style-type: none"> Bypasses first-pass effect Bypasses destruction by stomach acid Drug stability maintained because the pH of saliva relatively neutral May cause immediate pharmacological effects 	<ul style="list-style-type: none"> Limited to certain types of drugs Limited to drugs that can be taken in small doses May lose part of the drug dose if swallowed