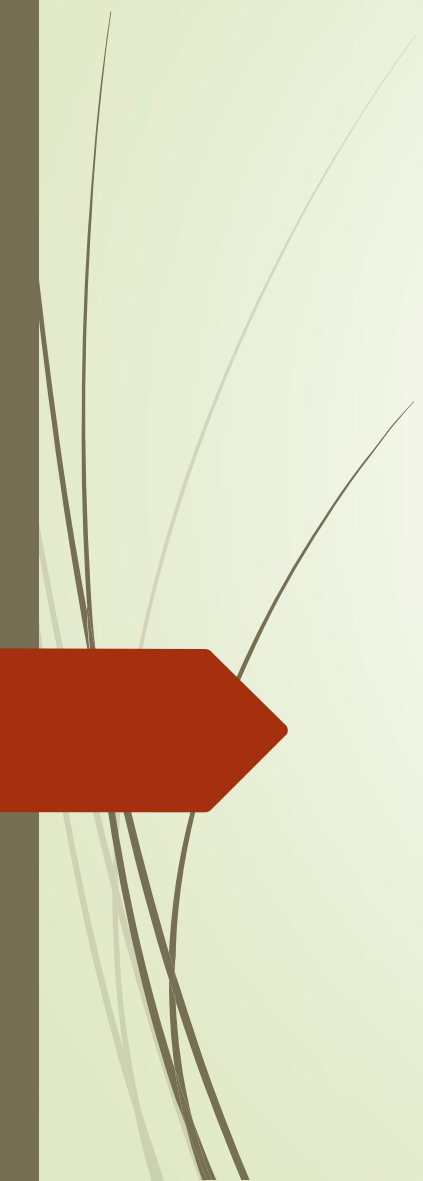




Bio Pharma

Saef Dawwas



Routes of administration

طرق اعطاء الدواء

Dispensing Oral Medications

Always check the manufacturer recommendations for storage and expiration dating on reconstituted products.

لازم نتأكد من ال expire date وال storage condition تاعت الدوا الي بتكون محددة من الشركة نفسها

Dispensing Oral Medications

زي ما اخذنا بالديس

When suspensions are dispensed, remind patients to store properly and shake the bottle before dosing.



عشان تتوزع ال
particles مزبوط
تاعت الدوا

Administering Oral Medications

- ❑ Patients with difficulty in swallowing solids should place the dose on the back of the tongue and tilt the head forward
- ❑ Liquid medication doses must be accurately measured
 - ❑ in a medication cup
 - ❑ medication measuring spoon
- ❑ Common household utensils are not accurate
 - ❑ an oral syringe or measuring dropper may be used for infants or small children



بعض الناس عندهم مشكلة بيلع الادوية الحبوب
(من ال disadvantages لل oral) فعشان المرضى
يحللوهم هاي المشكلة بحكولهم انو يحطو حبة الدوا
على آخر لسانهم زلما يشربوا مي بنزلوا راسهم لتحت
او الحل الثاني انو يوخذوا الدوا على شكل liquid
بس لازم يوخذوا ب utensile تكون measred عشان
ال accuracy ويوخذوا جرعة صحيحة

الادوات المنزلية ما بتزيط لهيك انو غير عن المعيار الي
مخصصة من قبل الشركة المصنعة

Administering Oral Medications

الخد

- Buccally administered nicotine gum
- proper administration allows the gum to release nicotine slowly and decrease cravings
- Proper administration technique:

1. شعور لاذع Chew the gum slowly and stop chewing when you notice a tingling sensation in the mouth.

2. تخزين الدواء (يضل بالفم) "Park" the gum between the cheek and gum, and leave it there until the taste or tingling sensation is almost gone.

3. Resume slowly chewing a few more times until the taste or sensation returns.

4. Park the gum again in a different place in the mouth.

5. Continue this chewing and parking process until the taste or tingle no longer returns when the gum is chewed (usually 30 minutes).

nicotine gum :

دوا بشبه العلكة بوخذه المدخنين عشان يقلعوا عن التدخين بضل يوخدها لفترة بعدين بقلل جرعتها بالتدريج عشان يتعود جسموا على عدم وجود النيكوتين بالنهاية فهاذ بسهل الاقلاع عن الدخان

Administering Oral Medications

If nicotine gum is chewed vigorously, then too much nicotine will be released, causing unpleasant side effects.

Administering Oral Medications

□ Proper administration technique for buccally administered lozenges:

زبي ال
strepsils

1. Allow lozenge to dissolve slowly over a 30-minute period without chewing or swallowing.
2. A tingling sensation (from the release of nicotine) is expected.



Oral Routes of Administration

Remind the patient not to eat or drink for 15 minutes before or while using gum or lozenge dose forms.

Advantages and disadvantages

- advantages of the oral route

Ease and safety, rapid onset (for buccal and sublingual) *Just for those 2 types*

- disadvantages

Care needed for administration (shaking suspensions, measuring liquids, special instructions for buccal)

لانو بنعير بأدوات معينة

الو طريقة محددة للأعطاء

- ▣ **Topic** of a case study is a skin and/or mucous membrane
- ▣ Include eye, nose, ear, and lung

Topical Dose Forms

Dose forms for topical administration include:

□ Skin:

- creams
- ointments
- lotions
- gels
- transdermal patches
- disks

- Eye or ear:
 - solutions eye : ophthalmic or
 ocular
 - suspensions ear : otic
 - ointments
- Nose and lungs:
 - sprays and powders
 aresol

Topical Dose Forms

Dose forms for topical administration include:

- Vagina:

- tablets

- creams

- ointments

- Urethra:

- inserts

- suppositories

- Rectum: through the anus that is the last part of the colon
 - creams
 - ointments
 - solutions
 - foams

Topical Dose Forms

- Transdermal administration:
 - delivers drug to bloodstream via absorption through the skin via a patch or disk
 - Skin presents a barrier to ready absorption
 - absorption occurs slowly **The one set of action elongated**
 - therapeutic effects last for 24 hours up to 1 week
 - Chemicals in the patch or disc force drug
 - across membranes of the skin
 - into layer where absorption into bloodstream occurs
- Systemic circulation**

Topical Dose Forms

- ❑ Ocular administration is the application of a drug to the eye
- ❑ ^{بين الجفن ومقلة العين (الي هيبة العين نفسها)} Conjunctival administration is the application of a drug to the conjunctival mucosa or lining of the inside of the eyelid → جفن
- ❑ Nasal administration is the application of a drug into the passages of the nose
- ❑ Otic administration is the application of a drug to the ear canal

Topical Dose Forms

Rectal dosage forms:

- Suppository تحاميل

- solid dose form formulated to melt in the rectum at body temperature and release the active drug

- Creams, ointments, and foams

- used for local effects

- Rectal solutions, or enemas used for

- cleansing the bowel

- laxative or cathartic action

- drug administration in colon disease

Laxative : for treatment of constipation (الامساك)

Advantages and Disadvantages of the Topical Route

- Local therapeutic effects
- Not well absorbed into the deeper layers of the skin or mucous membrane
 - lower risk of side effects
- Transdermal route offers steady level of drug in the system
 - sprays for inhalation through the nose may be for local or systemic effects

يعتبر ال local rout احسن من ال systamic لأنو ما
بتعرض لل first pase metabolism (لأنها بتخلي
الدوا يطول حتى يوصل) فهيك تأثير الدوا بكون اسرع

ال transdermal patch بعطي controlled relaes
فبتطلع الدوا بكميات ثابتة وما بصيروا flactuation
(اضطراب)

Advantages and Disadvantages of the Topical Route

يستنشقوا لجوا الرئتين عن طريق الفم او الانف

- The **intrarespiratory route** of administration is the application of drug through inhalation into the lungs, typically through the mouth
 - lungs are designed for exchange of gases from tissues into bloodstream
 - usual dose form is an aerosol Pressured spray
 - “environmental friendly” propellants now required to replace chlorofluorocarbons (CFCs)

Advantages and Disadvantages of the Topical Route

زي بخاخ الربو

□ A **metered-dose inhaler (MDI)** is a common device used to administer a drug in the form of compressed gas through inhalation into the lungs

□ A diskus is a newer dosage form to administer drug to lungs as micronized powder

ال diskus بتكون بودة حبيباتها كثير صغيرة بحكو
للمريض يوخدها بنفس عميق وسريع (deep and fast)

Advantages and Disadvantages of the Topical Route

- The **vaginal route** of administration is application of drug via cream or insertion of tablet into the vagina
- Common dose forms include:
 - emulsion foams
 - inserts
 - ointments
 - solutions
 - sponges
 - suppositories
 - tablets

Advantages and Disadvantages of the Topical Route

- The vaginal route is preferred for:
 - cleansing
 - contraception
 - treatment of infections
- Major disadvantages:
 - inconvenience
 - “messiness”

Advantages and Disadvantages of the Topical Route

- ❑ The **urethral route** of administration is application of drug by insertion into the urethra
- ❑ Common dose forms include:
 - ❑ solutions
 - ❑ suppositories
- ❑ Urethral delivery may be used to treat
 - ❑ incontinence
 - ❑ impotence in men
- ❑ Disadvantages
 - ❑ inconvenience
 - ❑ localized pain

Advantages and Disadvantages of the Topical Route

Rectal administration is a preferred method when:

- ❑ An oral drug might be destroyed or diluted by acidic fluids in the stomach
- ❑ An oral drug might be too readily metabolized by the liver and eliminated from the body
- ❑ The patient is unconscious and needs medication
- ❑ Nausea and vomiting or severe acute illness in the GI tract make patient unable to take oral drugs

لما الدواء يكون ما يستحمل الحمضية لانزيمات المعدة.
او الامعاء

او كان readily metabolized بال
etherahepatic circulation, first pase metabolism

فتكون كمية الدواء بالدم قليلة

وكمان إلى بغيوبة ما قدروا يوخذوا الدواء oral

عشان هيك بحاي الحالات يعطوا الدواء بال rectal
rout

Advantages and Disadvantages of the Topical Route

- ❑ Rectal administration disadvantages:
 - ❑ inconvenience
 - ❑ erratic and irregular drug absorption

بتختلف حسب مكان الامتصاص

Dispensing and Administering Topical Medications

لازم يـأخذ بطـريقة صـحيحة لتـقليل الـآثار

الـجانبية وتـحصيل اعلى تـأثير

- ❑ It is important for the patient to understand appropriate use and administration of topical drugs at the time of dispensing
- ❑ Improper technique or overuse of topical drugs can
 - ❑ increase the risk of side effects
 - ❑ alter drug efficacy

Ointments, Creams, Lotions, and Gels

- Dose forms should be applied as directed
 - generally applied to the skin
 - lotions, creams, and gels are worked into the skin
 - ointments are skin protectants and do not work into the skin but stay on the surface
- When using nitroglycerin ointment the patient or caregiver should wear gloves
 - to avoid absorbing excessive amounts of drug, which could cause a headache

النيترو جلايسيرين يستخدم ك vasodilator والشخص الي يعطي الدواء لازم يلبس gloves عشان ما يصير امتصاص للدوا على جلدو ويحس بوجع راس

Ointments, Creams, Lotions, and Gels

When using topical corticosteroids:

- Apply sparingly to affected areas for short periods of time
- Affected area should not be covered up with a bandage unless directed by the physician
 - occlusive dressings can significantly increase drug absorption and risk of side effects
- Overuse of potent topical corticosteroids can lead to serious systemic side effects

انوار احتمالية لرفع كمية السكر بالدم

Transdermal Patches

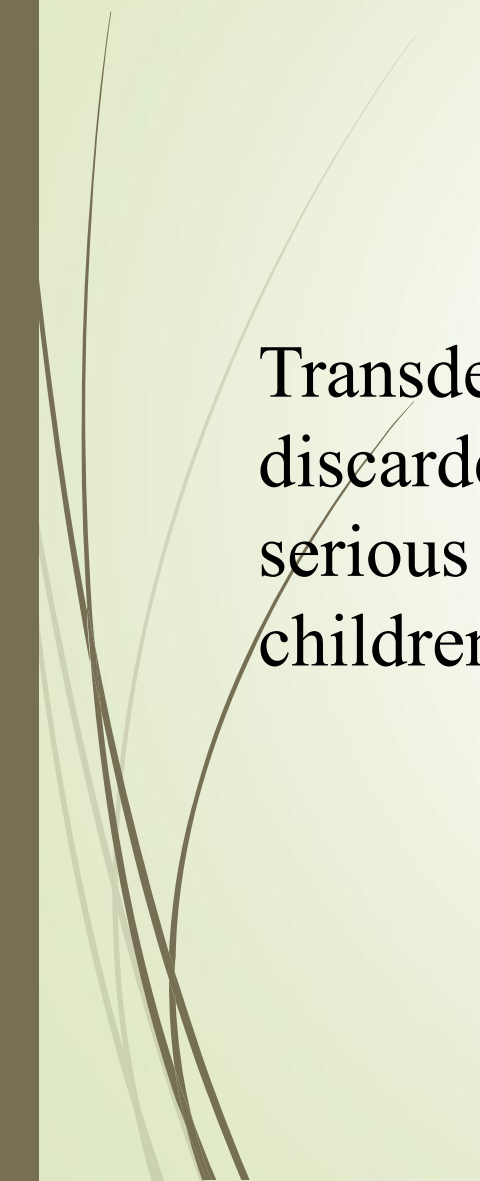
- ❑ Site of administration must be rotated and relatively hair free
- ❑ Should not be placed over a large area of scar tissue بتأثر على الامتصاص
- ❑ Some are replaced every day, others maintain their effect for 3 to 7 days
- ❑ Some patients should remove nitroglycerin patch at bedtime to prevent development of **drug tolerance** where the body requires higher doses of drug to produce the same therapeutic effect.
- ❑ Some testosterone patches are applied to the skin of the scrotum

الي بوخذوا nitroglycerin patches لازم يشيلوها
لما ينامو عشان ما يصير عندهم tolerance
انو الجسم بتعود على تأثير الدوا فبصير الجسم محتاج
جرعة اكبر





Transdermal Patches



Transdermal patches should be carefully discarded after use because they could cause serious side effects if ingested by young children or pets.

Ophthalmic Medications

- ❑ Must be at room temperature or body temperature before application
- ❑ Should be stored according to package information
 - ❑ reduces bacterial growth
 - ❑ ensures stability
- ❑ Considered sterile products
 - ❑ only preparations with preservatives can be repeatedly used

condition
تاعتها
المكتوبة على
العبوة

اغلب القطرات تستخدم مرة واحدة الا اذا كانت تحتوي مواد حافظة

Ophthalmic Medications

- Unused medication should be discarded 30 days after the container is opened.
- Manufacturer expirations do not apply once a patient has opened the medication.

ال Expiration date بتكون حاطيتوا الشركة
عشان مدة بقاء الدوا بالسوق بس لما تنفتح العلبة بصير تاريخ ثاني
لبقاء ال Stability تاعت الدوا

Ophthalmic Medications

- ❑ Before application, patient should wash hands
 - ❑ prevents contamination of application site
- ❑ Tube or dropper should not touch the application site
 - ❑ medication may become contaminated
- ❑ Only sterile ophthalmic solutions or suspensions should be used in the eye
 - ❑ **not** preparations intended for other uses (e.g., otic)
- ❑ Some products are unit of use
 - ❑ to be used for one administration only and then discarded



Ophthalmic Medications

Ear drops can never be used in the eye, but eye drops can be used in the ear.

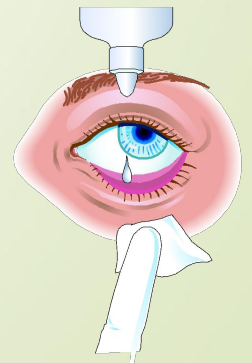
Ophthalmic Medications

- ❑ Previously applied medications should be cleaned away
 - ❑ also any drainage from the eye
- ❑ Intended location is the conjunctiva
- ❑ Poorly administered eye drops could result in loss of medication through the tear duct
- ❑ Poorly placed ointments may be distributed over the eyelids and lashes

Ophthalmic Medications

- Patient's head should be tilted back
- After administration, the patient should place a finger in the corner of the eye, next to the nose to close the lacrimal gently **بتعمل هيك عشان تسكر ال tear canal**
- prevents loss of medication through tear duct
- Patient should also keep the eyes closed for 1 or 2 minutes after application

عشان نحافظ على بقاء الدواء لمدة اكبر

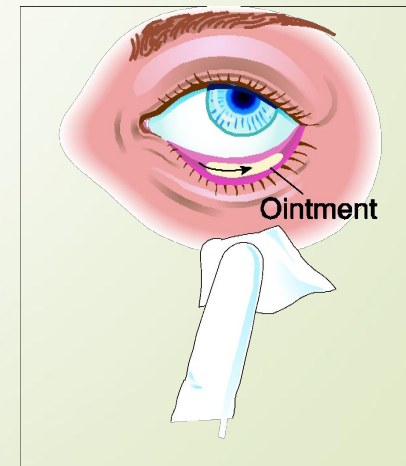


Ophthalmic Medications

- When multiple drops of more than one medication are to be administered, the patient should wait 5 minutes between different medications
 - the first drop may be washed away
- If an ointment and a drop are used together, the drop is used first
 - wait 10 minutes before applying the ointment

Ophthalmic Medications

- ❑ Ointments are generally applied at night
 - ❑ drug form of choice when extended contact with the medication is desired
 - ❑ remind patient that some temporary blurring of vision may occur after application



Otic Medications

- ❑ Must be at room temperature or body temperature
 - ❑ heated drops may cause rupturing of the eardrum ^{تمزق}
 - ❑ cold drops can cause vertigo and discomfort ^{دوخة}
- ❑ Old medication should be removed along with any drainage before applying fresh medication
- ❑ Alcohol causes pain and burning sensation
 - ❑ should not be used if the patient has a ruptured tympanic membrane (eardrum)

Otic Medications

ميل راسك

- Tilt head to side with ear facing up
 - 2 to 5 minutes
- Cotton swabs placed in the ear after administration of drops will prevent excess medication from dripping out of the ear
 - swabs will not reduce drug absorption



Patients under 3 should have lobes pulled down and back.



Patients over 3 should have lobes pulled up and back

Nasal Medications

□ Applied by:

- drops (instillation)
- sprays
- aerosol (spray under pressure)

□ Used for:

- relief of nasal congestion or allergy symptoms
- administration of flu vaccine

Nasal Medications

- Patient should:
 - tilt head back
 - insert dropper or spray or aerosol tip into the nostril pointed toward the eyes
 - apply prescribed number of drops or sprays in each nostril
- Breathing should be through mouth to avoid sniffing medication into the sinuses
- Important not to overuse nasal decongestants
- follow label instructions carefully

جيوب انفية

Inhaled Medications



- Metered-dose inhalers (MDI) provide medication with compressed gas
 - deliver specific measured dose with each activation



Inhaled Medications

Like cortison

If an MDI contains a steroid, the patient should rinse the mouth thoroughly after dose to prevent oral fungal infection.

Inhaled Medications

- Some devices use a powder or nonaerosolized spray for inhalation instead of compressed gas
- تبخيرة ضباب Nebulizers create a mist when a stream of air flows over a liquid
 - commonly utilized for young children or elderly patients with asthma or lung disease

Inhaled Medications

Proper administration of aerosolized medications:

1. Shake canister well
2. جهاز عينة أولية "Prime" by pressing down and activating a practice dose.
3. Insert canister into a mouthpiece or spacer to reduce the amount of drug deposited on the back of the throat.
4. Breathe out and hold spacer between lips making a seal. **Breath out in full exhal**
5. Activate MDI and take a deep slow inhalation.
6. Hold breath briefly and slowly exhale through the nose. لمدة ١٠ ثواني

Vaginal Medications



- Indicated for
 - bacterial or fungal infection
 - hormone replacement therapy
- The patient is instructed to use the medication for the prescribed period to ensure effective treatment

Rectal Medications

□ Suppository

- remove suppository from its package
- insert small tapered end first with index finger for the full length of the finger
- may need to be lubricated with a water-soluble gel to ease insertion

□ Enemas

- rectal injection of a solution

Rectal Medications

عشان ما يذوب

Refrigeration may make insertion of rectal medications easier in warm climates.

آخر سلايد بالمحاضرة

بالتوفيق



Artery Academy