

Tople 5 Drug Administration in Pediatric By

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Child and Adoleccent Name Practicum มหาวิทยาลัยราชภัฏนครปฐม Nakhon Pathom Rajabhat University



OBJECTIVES

The topic aims to develop in students an understanding of, and an ability to practice safety procedure related drug administration in pediatric Child and Adolescent Hundry Practicum มหาวิทยาลัยราชภัฏนครปฐม Nakhon Pathom Rajabhat University



DRUG ADMINISTRATION

Different medications must be absorbed to be effective.
For absorption, the drug must be administered in proper manner.

To choose a route of administration we need to relate the dosage form, the advantages and disadvantages etc.



ROUTES OF ADMINISTRATION

1. Enteral Route of Medication

- Oral administration
- Sublingual or buccal route
- Rectal route

2. Parenteral Route of Medication

- Intravenous injection
- Intramuscular medication route
- Subcutaneous injections

3. Topical Routes of Medicine

- Intranasal drug route
- Inhaled medication
- Vaginal route

ROUTES OF ADMINISTRATION

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Oral

(Including buccal and sublingual)

- Dry powders

- Liquid sprays

- Tablets
- Capsules
- Orally disintegrating tablets
- Buccal tablets
- Sublingual tablets
- Mini tablets
- Effervescent tablet
- Thin films
- Medicated gums
- Granules
- Troches
- Lozenges
- Solutions
- Suspension
- Emulsion
- Elixir
- Buccal sprays

Parenteral

Subcutaneous Intravenous Intradermal Intramuscular

Epidermis Dermis Subcutaneous tissue Muscle





Ocular

- Solutions - Emulsions
- Suspension
- Ointments
- Contact lens
- Implants
- Inserts
- Intravitreal

Topical / Transdermal

- Ointments
- Creams
- Lotion
- Gel
- Sprays - Patches
- **Rectal / Vaginal**
 - Suppository
 - Enema
 - Tablets Pessary
- Gel
- Cream
- Foam
- Sponge

Picture From:

https://www.researchgate.net/fi gure/Routes-of-drugadministration-and-associated dosage-forms-Images-areadaptedand_fig1_327587705

ROUTES OF ADMINISTRATION

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Method	Description	Example
Oral	Taken by mouth	Tablets, capsules, pills
Inhalation	Vapour breathed in Smoking	Asthma medication Drugs such as nicotine
Skin patches	Absorbed though the skin into the blood	Hormone patches
Suppositories	Inserted into the rectum	Laxatives for constipation
Eye or ear drops	Liquids administered into eyes or ears	Treatment of eye or ear infections
Injection (parenteral)	Injected into the muscle, • blood or under the skin	Vaccines, local anesthetics

Picture From:

https://www.medical.net/figure/Routes-of-drug-administration-and-associated-dosageforms-Images-are-adapted-and_fig1_327587705



CHILD AND ADOLESCENT O NURSING PRACTICUM

Topic 5

Prug Administration in Pediatric Enteral route



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INDICATION>>> ENTERAL ROUTE OF MEDICATION

Oral medications are convenient and are indicated for patients who can ingest and tolerate an oral form of medications. Some medications with short half-lives are administered orally as timed-release or sustained-release forms that get absorbed over several hours. Sublingual and buccal routes are indicated for medications with high first-pass metabolism that need to avoid clearance by the liver. For instance, nitroglycerin is cleared more than 90% during a single pass through the liver; therefore, it is given as a sublingual form. The sublingual and buccal routes also have advantages of rapid absorption, convenience, and low infection incidence.

Rectal route is useful for patients with gastrointestinal motility problems such as dysphagia or ileus that can interfere with delivering the drug in the intestinal tract. The rectal route is also often utilized in patients near the end-of-life undergoing hospice care.

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Capsules are gelatin containers that hold powder or liquid medicine. Timed-release or sustained-release capsules contain granules that dissolve at different rates, providing slow and constant release of medications. Capsules are available in a variety of sizes and shapes. They provide an easy way to administer medications that have an unpleasant taste or odor. Capsules must not be opened, crushed, or chewed because irritation and excessive or lessened drug activity may be produced.

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Tablets are dried, powdered drugs compressed into small shapes. These shapes are small enough so that they may be swallowed whole. Tablets usually contain trademarks, designs, or words for product identification and may have a line through the middle so the tablet may be divided (this is known as a scored tablet). Tablets may also contain coatings of various types to increase solubility or absorption.



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Elixirs are liquids made up of drugs dissolved in alcohol and water that may have coloring and flavoring agents added. The alcohol makes the drug more dissolvable than water alone.



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Emulsions are solutions that have small droplets of water and medication dispersed in oil, or oil and medication dispersed in water. These preparations help disguise the bitter taste of a drug or increase its solubility.



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Lozenges are medicine mixed with a hard sugar base to produce small, hard preparations of various sizes or shapes. Medication is released slowly when the lozenge is sucked.





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Suspensions are liquids with solid, insoluble drug particles dispersed throughout. These solid particles tend to settle out in layers, so the medication must be shaken before pouring.









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Syrups are liquids with a high sugar content designed to disguise the bitter taste of a drug. These are often used for pediatric patients.





ORAL ADMINISTRATION EQUIPMENTS

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https://www.researchgate.net/figure/lt-shows-dosing-devices-found-enclosed-inoral-liquid-medication-packages-medicine-cups_fig2_253241851

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ORAL ADMINISTRATION EQUIPMENT



Medicine Cup May include metric, household, and apothecary measures 30 milliliters = 1 ounce 5 milliliters = 1 teaspoon 15 milliliters = 1 tablespoon 30 mL or 1 fl oz capacity for oral liquids

http://consumermedsafety.org/update/component/k2/item/709-safety-tipswhen-measuring-doses-2

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Step One: Getting Ready

1. Check the accuracy of the order as written and the time to be given. Clarify any information now known about the patient or the medication, such as allergies.

2. Wash the hands well. This is essential to avoid contaminating the medication. Although it seems an obvious step, it is often neglected by busy nurses.

3. Assemble the medication equipment. Obtain the plastic medication cups, paper souffle cup, glass, water or juice, and straw if needed. Unlock medication cart, if necessary.

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Step Two: Preparing the Medication

- 1. Read the order on the medication form and obtain the correct medication from the cabinet or cart (G). Medications may come in a cardboard or plastic container, a bottle, or an individually wrapped package.
- 2. Compare medication order with label on container. First check for the right patient, drug, route, dosage, and time of administration.
- 3. Open the container and pour the correct number of tablets or capsules into the paper medication cup.
- Do not touch the medication, but pour the medication directly into the bottle lid or the cup.
- Return any extra medication to the container.
- To avoid errors, hold the medication cup at eye level when pouring liquids.
- If the unit-dose system, Pyxis dispensing machine, or nurse service is used, the medication will come in a labeled package. It is not removed from the wrapping until the nurse is at the patient's bedside.

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Step Two: Preparing the Medication (Cont.')

- 4. Compare the information on the medication card or the medication administration record (MAR) with the label on the container. This is the second check for accuracy.
- 5. Close the box or replace the lid on the container, and check the information on it for the third time with the medication card or MAR. Medication lids are always replaced immediately after use.
- Medication that requires special storage (such as refrigeration) is replaced immediately.
- 6. Put the medication container back on the shelf.
- 7. Place the cup containing the medication next to the medication card or MAR on the tray.
- 8. Repeat this process for each medication ordered for the patient. All of the tablets for one patient may be placed in the same medication cup.

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Step Three: Administering the Medication

1. Go to the patient's bedside. Help the patient into an upright position, if possible. Ask the patient his or her full name and birth date at the same time the nurse is checking the patient's identification bracelet. Their name may also be on a tag on the bed or door. If possible, scan bar code of patient's identification bracelet and each medication to help ensure the correct patient is getting the medication. Never give medication without identifying the patient. Confused or critically ill patients may answer to any name.

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Step Three: Administering the Medication

2. Explain what medicine is being given and answer any of the patient's questions. Give any special instructions or teach the patient about the medication as needed. Make any special assessments required. If the patient makes any comment about the medication looking different from usual, having just taken the medication, or not having had that medication before, recheck the medication order.

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Step Three: Administering the Medication

- 3. Give the patient a glass of water or juice and have the patient place the medication in the back of his mouth, take a sip of water, and swallow. Most medication dissolves better and causes less stomach discomfort when it is taken with adequate liquid.
- 4. Remain at the beside until the medication is swallowed. Do not leave medication at the bedside for the patient to take later. The nurse is responsible for making certain the medication is given when ordered. The nurse cannot ensure the patient takes the medicine unless the nurse see him or her swallow it.

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Step Four: Concluding

- 1. Take the medication cup away. Wash hands.
- 2. Update electronic records of the MAR or note on the chart the time that the medication was given and sign their name or initials. Record accurately that the medication was given as ordered. Also record if the drug was refused or omitted and notify the charge nurse or the health care provider if the patient did not take the drug for some reason.
- 3. Later, check the patient again and note any responses or adverse effects that need to be recorded on the medication card or MAR and reported.

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SUBLINGUAL AND BUCCAL ROUTES

- Sublingual administration is where the dosage form is placed under the tongue rapidly absorbed by sublingual mucosa
- Buccal administration is where the dosage form is placed between gums and inner lining of the cheek (buccal pouch) absorbed by buccal mucosa



Sublingual Route

Buccal Route

Picture From:

https://www.pharmapproach.com/buccal-and-sublingual-routesof-administration-advantages-and-disadvantages/

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RECTAL ROUTE



Picture From: https://www.philadelphia.edu.jo/academics/aadnan/uploads/SUPPOSITORIE.pdf Child and Adolescent Name Practicum มหาวิทยาลัยราชภัฏนครปฐม Nakhon Pathom Rajabhat University

RECTAL ROUTE

When a patient has severe nausea or vomiting, medication may need to be put into the rectum, thus avoiding the mouth and stomach. Unlike an enema, when medication is given rectally, the medication is left to be absorbed and not expelled. Accurate dosage through rectal administration is somewhat more difficult and harder to predict than are the small, accurate doses used in oral medications. This is true for a variety of reasons:

- Some required medications do not come in suppository or enema form.
- Sometimes the patient has diarrhea and cannot hold the medication.
- Sometimes other rectal problems may make using this route a problem.
- If the patient has a lot of fecal material, the medication may not be well absorbed.
- Medications are not absorbed from the rectal mucosa at a standard or predictable rate.

ADMINISTERING THE MEDICATION หาวิทยาลัยราชภัฏนครปฐม RECTAL ROUTE Administering the Medication



https://www.ndsu.edu/pub⁶ web/bismarcknursing/adv anced/skill/T007.html

ADMINISTERING THE MEDICATION หาวิทยาลัยราชภัฏนครปฐม RECTAL ROUTE Nakhon Pathom Rajabhat University

Step Three: Administering the Medication

1. Go to the patient's bedside. Help the patient turn over on his or her side with one leg bent over the other in a Sims' position. Protect the patient's modesty as much as possible by closing the drapes and draping the patient. Ask the patient his or her name at the same time the nurse is checking the patient's identification bracelet and bed tag. Never give medication without identifying the patient.

2. Explain what medicine is being given and answer any of the patient's questions. Give any special instructions, such as holding the medicine inside and not letting it come out, and teach the patient about the medication as needed. Make any special assessments required.

3. Put on gloves.

ADMINISTERING THE MEDICATION RECTAL ROUTE

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https://clinicalgate.com/10-preparing-andadministering-medications/

ADMINISTERING THE MEDICATION RECTAL ROUTE

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https://clinicalgate.com/10-preparing-andadministering-medications/

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Step Four: Concluding

- 1. Dispose of the foil packet or plastic containers and the gloves. Clean the medication tray or cart.
- 2. Leave patients with tissues to wipe themselves if needed and a way to wash their hands.
- 3. Wash hands.
- 4. Note on the medication card or MAR the time that medication was given and sign name or initials. Record accurately that the medication was given as ordered.

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Step Four: Concluding (Cont.')

 5. Check the patient again later and note any response or adverse effects that must be recorded on the medication card or MAR and reported.
Medicated enemas may be given for severe asthma, to relieve constipation, or to instill steroids used to treat bowel disorders. The nurse must always look for and report any response to the medicated enema.

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General Principles that Underlie All Procedures

- Accuracy
- Acceptance of responsibility
- Asepsis

CHILD AND ADOLESCENT NURSING PRACTICUM

THANK YOU

DO NOT FORGET TO DO HW.



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