

Pediatric Medication Administration

General Guidelines

- The responsibility of giving medications to children is a serious one.
- ½ of all medications on the market today do not have a documented safe use in children.
- Children are smaller than adults and medication dosage must be adjusted.
- Children react more violently.
- Drug reactions are not predictable.

General Guidelines

- The impact on growth and development must be considered Double checking is always best
- Pediatric drug therapy should be guided by the child's age, weight and level of growth and development
- Explanation regarding the medications should be based on the child's level of understanding
- It may be necessary to mix distasteful medication or crushed tablets with a small amount of honey, applesauce, or gelatin

General Guidelines

- Never threaten a child with an injection if he refuses an oral medication
- All medications should be kept out of the reach of children
- Medications should never be referred to as candy

Oral Medications

- GI tract provides a vast absorption area for meds.
- Problem: Infant / child may cry and refuse to take the medication or spit it out.
- Do not use if child has vomiting, malabsorption or refusal
- Kids < 5 Yrs find it difficult to swallow tablets
- Use suspension or chewable forms
- Divide only scored tablets
- Empty capsules in jelly
- Do not call medication 'candy'

Nursing Intervention

Infant:

- Place in small amount of apple sauce or cereal
- Put in nipple without formula
- Give by oral syringe or dropper
- Have parent help
 - Never leave medication in room for parent to give later.
 - Stay in room while parent gives the oral medication

Nursing Interventions

Toddler:

- Use simple terms to explain while they are getting medication
- Be firm, don't offer too many choices
- Use distraction
- Band-Aid if injection / distraction
- Stickers / rewards

Nursing Intervention

Preschool:

- Offer choices
- Band-Aid after injection
- Assistance for IM injection
- Praise / reward / stickers



Nursing Intervention

School-age

- Concrete explanations...do not “it won’t hurt”
- Choices
- Interact with child whenever possible
- Give choices
- Medical play
- When the child is old enough to take medicine in tablet or capsule form, direct him or her to place the medicine near the back of the tongue and to immediately swallow fluid such as water or juice

Nursing Interventions

Adolescent

- Use more abstract rationale for medication
- Include in decision making especially for long term medication administration

Nursing Alert

- For liquid medications, an oral syringe or medication cup should be used to ensure accurate dosage measurement. Use of a household teaspoon or tablespoon may result in dosage error because they are inaccurate.

Household Measures Used to Give Medications

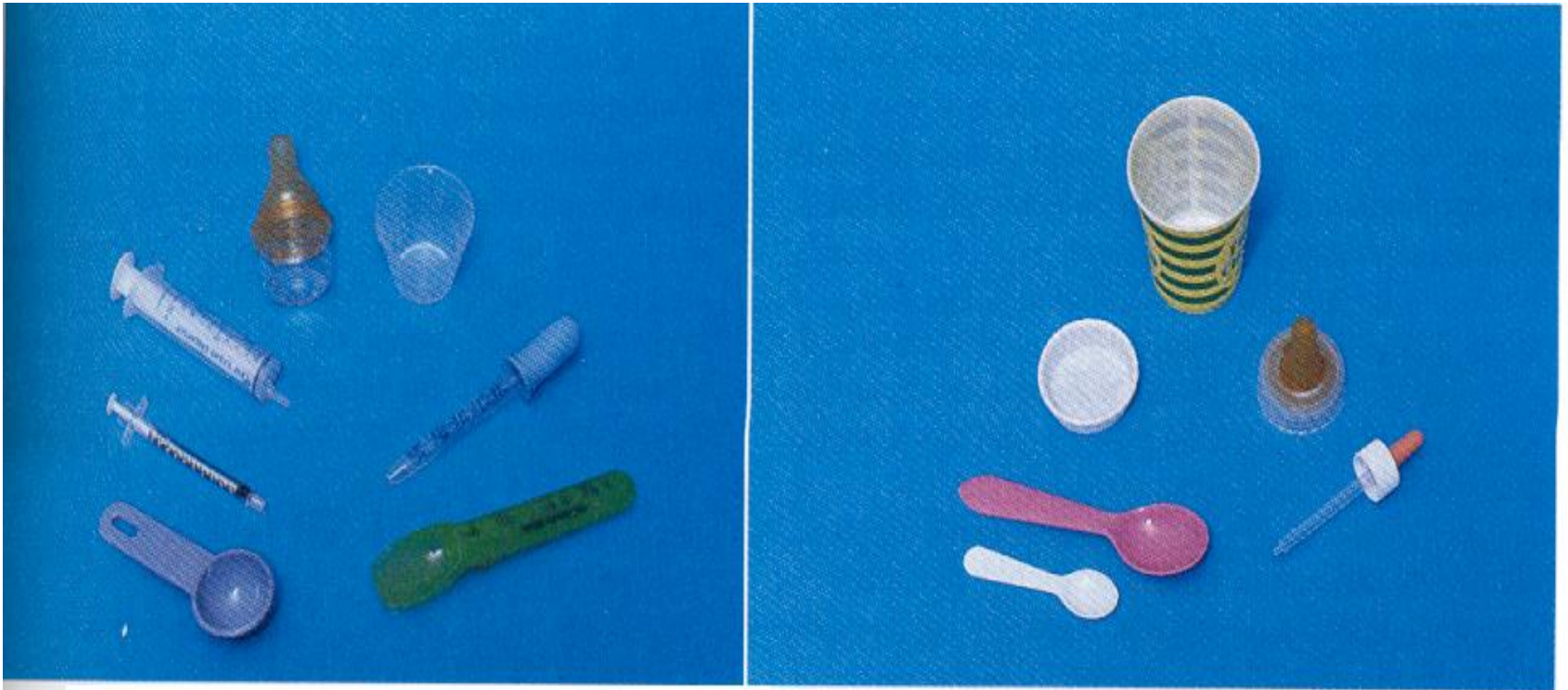


FIG. 22-18. **A**, Acceptable devices for measuring and administering oral medication to children (clockwise): measuring spoon, plastic syringes, calibrated nipple, plastic medicine cup, calibrated dropper, hollow-handled medicine spoon. **B**, Acceptable devices only for administering premeasured oral medication (clockwise): household teaspoons, paper cups, nipple, uncalibrated dropper.

Oral Medication Administration

- Depress the chin with the thumb to open infant's mouth
- Using the dropper or syringe, direct the medication toward the inner aspect of the infant's cheek and release the flow of medication slowly
- Note: child's hands are held by the nurse and child is held securely against the nurses body.

Oral Medication Administration



Oral Medication Administration

- Note child's hands are held by the nurse and child is held securely against the nurses body.
- Hold child / infant hands away from face
- Infant give in syringe or nipple
- DO NOT ADD TO FORMULA
- Small child: mix with small amount of juice or fruit
- Offer syringe or medicine cup
- Parent may give if you are standing in the room
-

Oral Medication: older child

- TIP: Tell the child to drink juice or mild after distasteful medication.
- Older child can suck the medication from a syringe, pinch their nose, or drink through a straw to decrease the input of smell, which adds to the unpleasantness of oral medications

Intramuscular Medications

- Rarely used in the acute setting.
- Immunizations
- Antibiotics
- Use emla
- TIP: Tell the child it is all right to make noise or cry out during the injection. His or her job is to try not to move the extremity.
- Secure child before giving IM injection.



IM procedure

- Tell the child it is all right to make noise or cry out during the injection. His or her job is to try not to move the extremity.
- Keep needle outside of child's visual field
- Secure child before giving IM injection.
- Hold, cuddle, and comfort the infant after the injection
- Inspect injection site before injection for tenderness or undue firmness

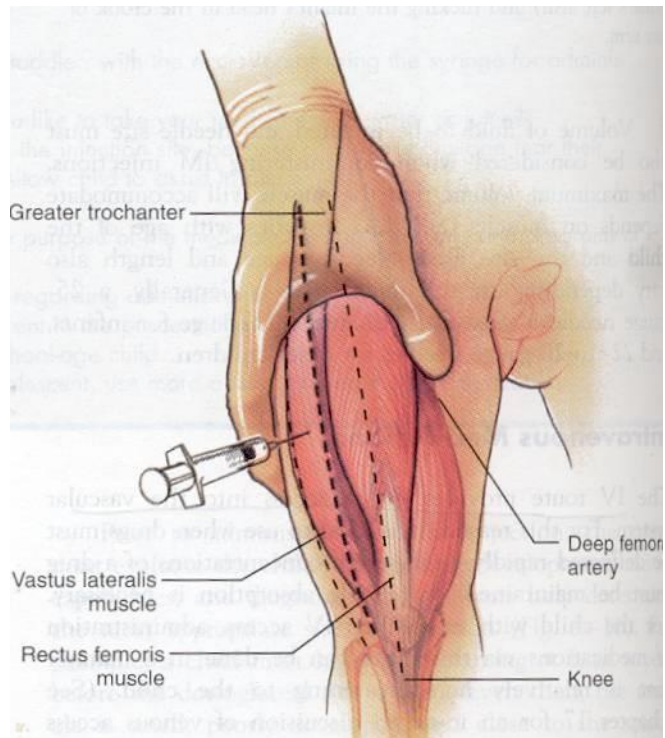
IM Injection Sites

- Vastus Lateralis
- Deltoid
- Dorsogluteal

Vastus Lateralis:

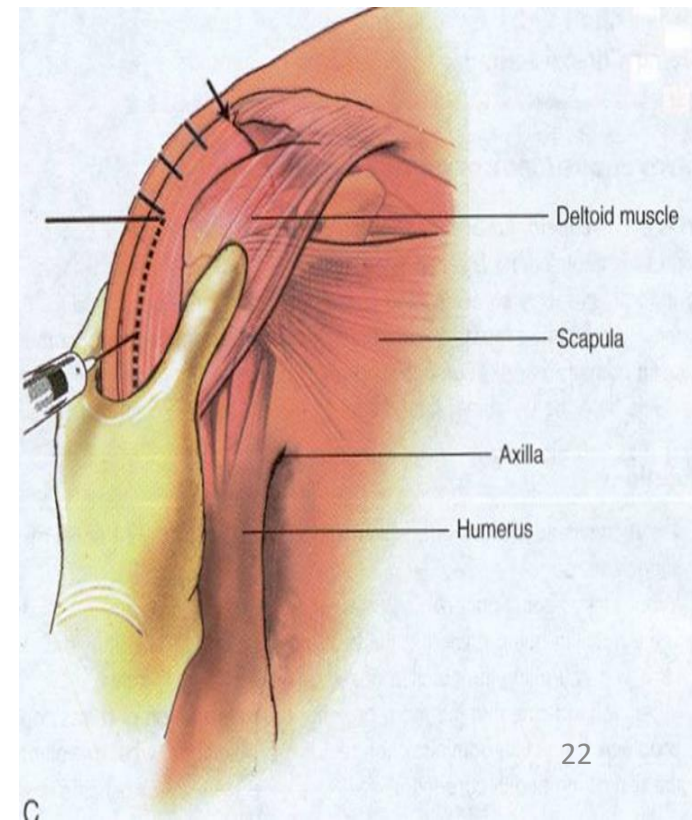
- Largest muscle in infants / small child.
- 0.5 ml in infant
- 1 ml in toddler
- 2 ml in pre-school
- Use 5/8 to 1 inch needle
- Use 5/8 to 1 inch (2.5 cm) needle
- Compress muscle tissue at upper aspect of thigh, pointing the nurse's fingers toward the infant's feet
- Needle is inserted at a 90-degree angle.

Vastus Lateralis Muscle



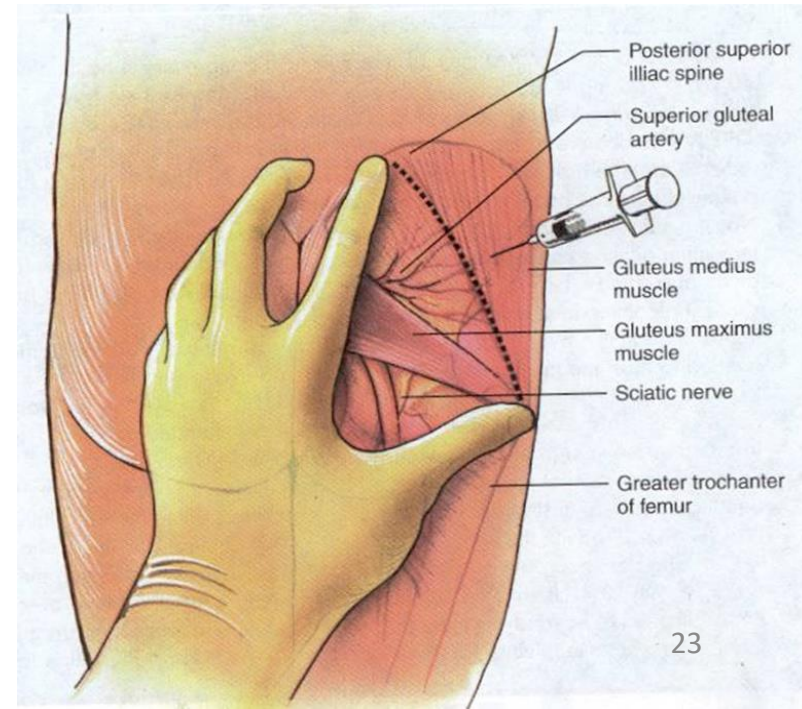
Deltoid

- Use ½ to 1 inch needle
- 0.5 to 1 ml injection volumes
- More rapid absorption than
- gluteal regions.



Dorsogluteal

- Should not be used in
- Children under 5 years.
- ❖ Gluteal muscle does not develop until a child begins to walk; should be used for injections only after the child has been walking for a year or more (Should not be used in children under 5 years.)
- ❖ $\frac{1}{2}$ to $1\frac{1}{2}$ inch needle
- ❖ 1.5 to 2 ml of injected volume.
- $\frac{1}{2}$ to $1\frac{1}{2}$ inch needle
- 1.5 to 2 ml of injectate
- volume



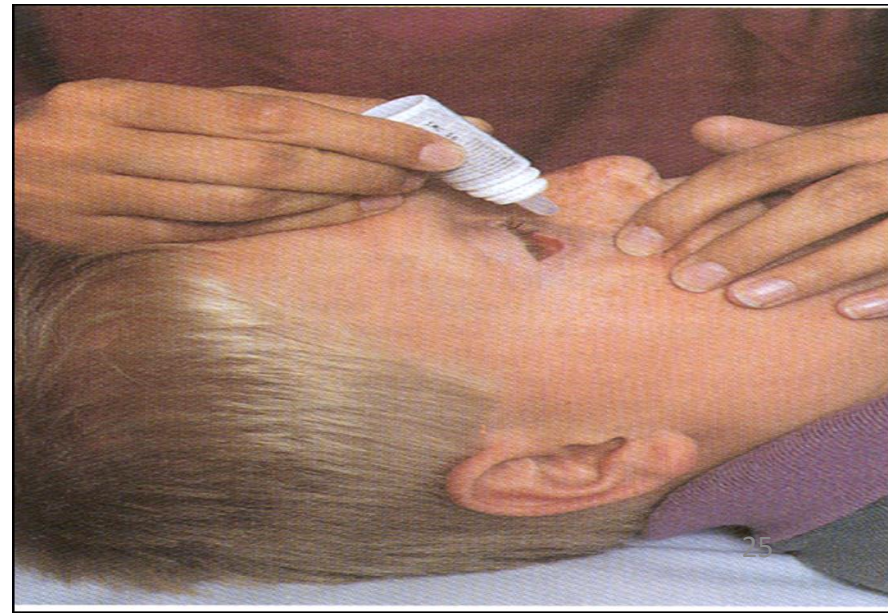
Eye Drops

Eye:

- Pull the lower lid down
- Rest hand holding the dropper with the medication on the child's forehead to reduce risk of trauma to the eye.

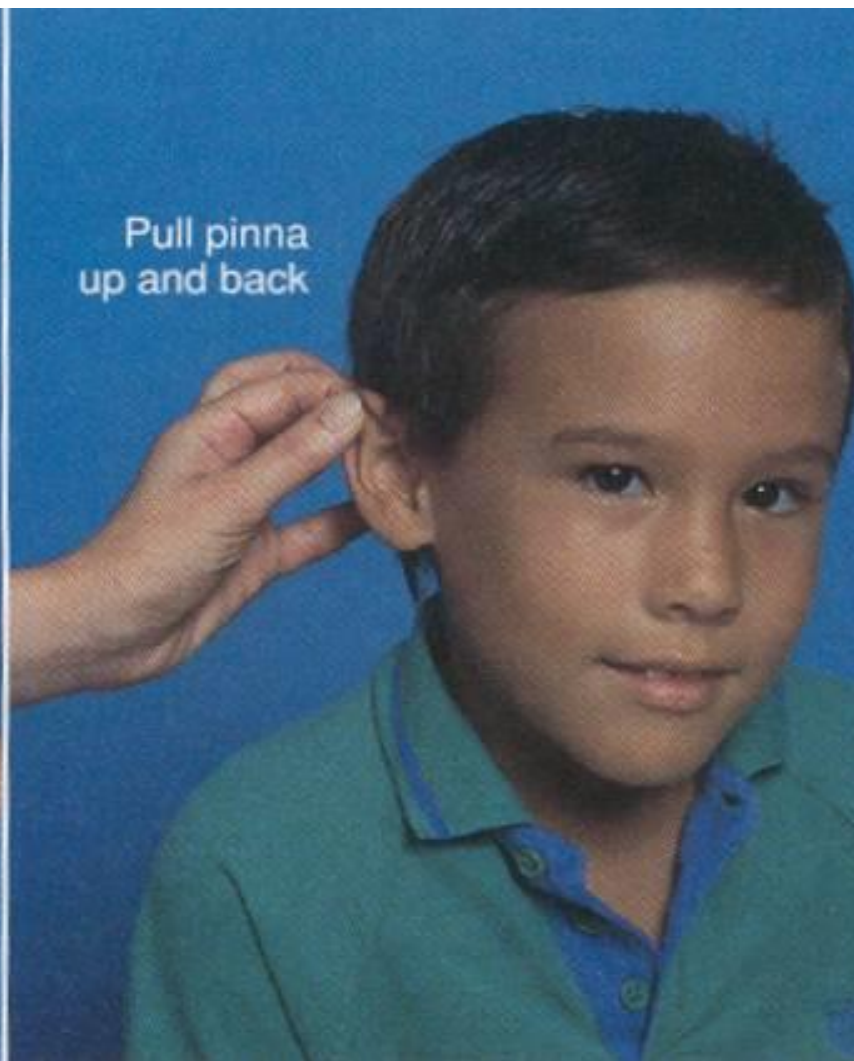
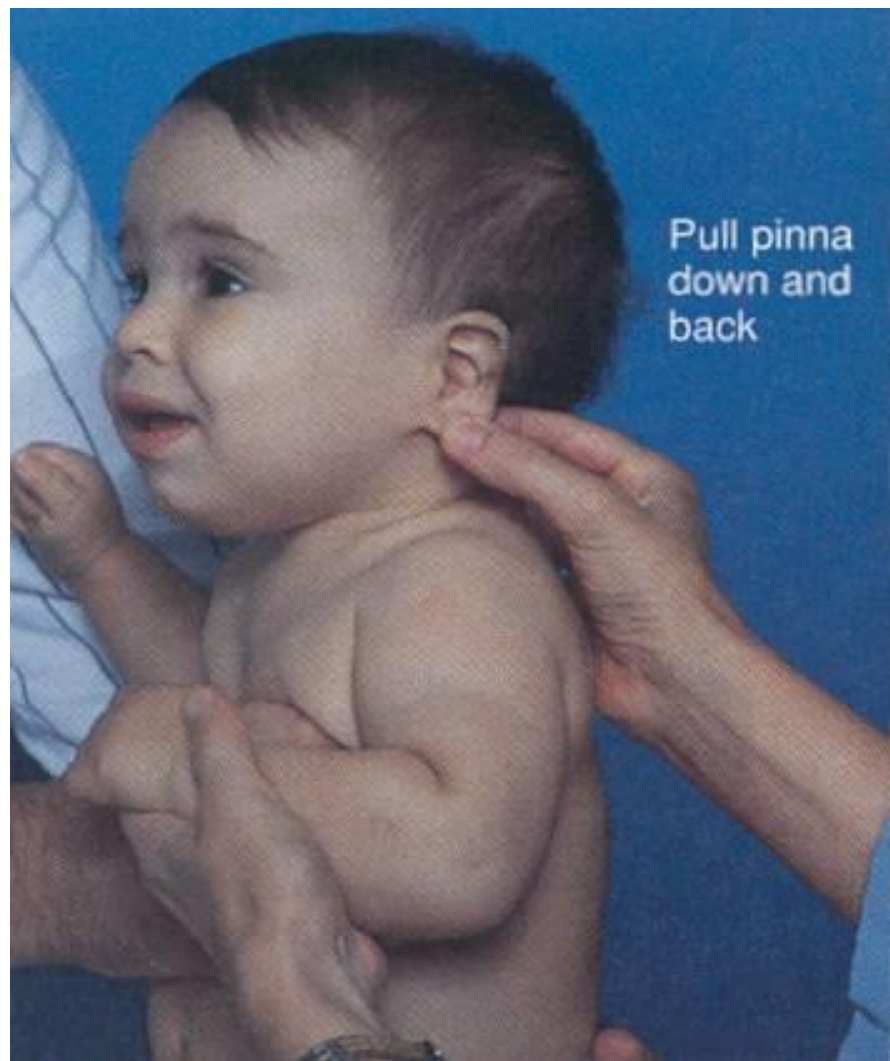
Eye Drops

- Pull the lower lid down
- Rest hand holding the
- dropper with the medication
- on the child's forehead to
- reduce risk of trauma to
- the eye.
- Whaley & Wong



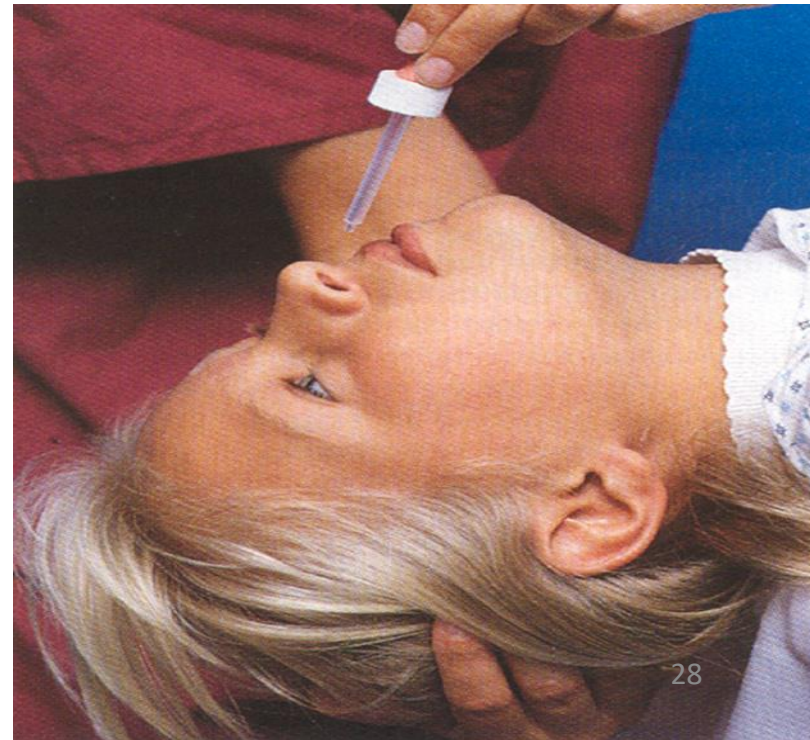
Ear Drops

- In children younger than age 3 years the pinna is pulled down and back to straighten the ear canal
- In the child older than 3 years, the pinna is pulled up and back.



Nose Drops

- Position child with the head hyper extended to prevent strangling sensation caused by medication trickling into the throat.



Nose drops

- Act as vasoconstrictors excessive use may be harmful
- Discontinued after 72 hours
- Congested nose will impair infants ability to suck
- Give 20 minutes before feeding
- Have kleenex
- Keep child's head below the level of shoulders for 1 to 2 minutes after instillation

Rectal

- Usually sedatives and antiemetics
- Use little finger
- Insert beyond anal sphincter
- Apply pressure to anus by gently holding buttocks together until desire to expel subsides

Intravenous Medications

- IV route provides direct access into the vascular system.
- Adverse effects of IV medication administration:
 - Extravasation of drug into surrounding tissue
 - Immediate reaction to drug

Intravenous Medications

- Check your institution's policy on which drugs must be administered by the physician and which must be verified for accuracy by another nurse.
- All IV medications administered during your pediatric rotation must be administered under direct supervision of your clinical instructor.
- Check for compatibilities with IV solution and other IV medications.
- Flush well between administration of IV drugs.
- IV medications are usually diluted.

Nursing Alert

- The extra fluid given to administer IV medications and flush the tubing must be included in the calculation of the child's total fluid intake, particularly in the young children or those with unstable fluid balance.

IV Medications

- IV push = directly into the tubing
- Syringe pump = continuous administration
- Burette = used to further dilute drug

IV Push

- Refers to the drug that can safely be administered over 3 to 5 minutes.



Syringe pump

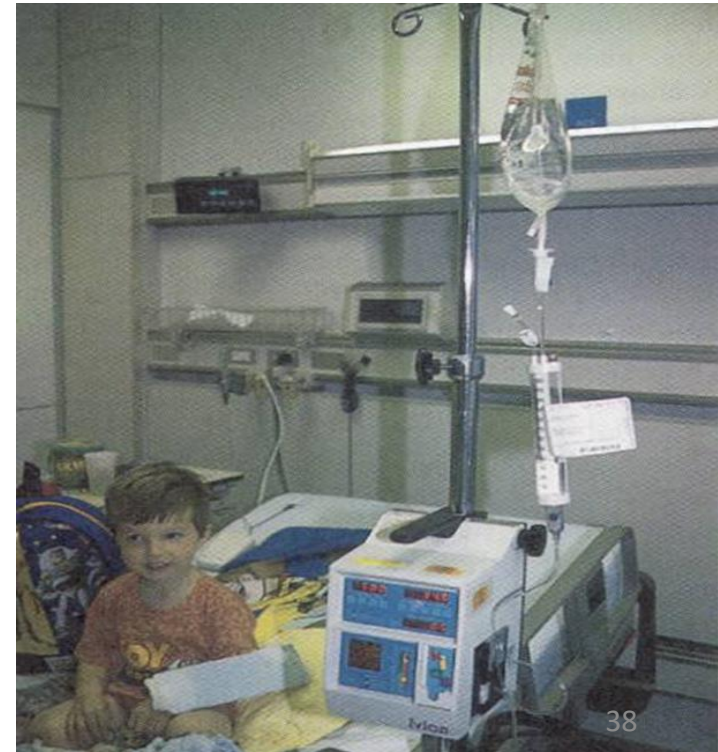
- Accurate delivery system for administering very small volumes
- ICU
- NICU

IV Buretrol

- A *buretrol* or *volutrol* is device attached between the IV fluid bag and the intravenous catheter.
- used to deliver IV fluids in a safe manner to children and medications
- Usual volume capacity is 150 ml.
- Some units have a policy that a buretrol will be used on all children under 10 kg while others may state 20 kg. Individual units vary on policy.
- In practice: Make note of hospital/unit policy for use of buretrols. Current theory is that buretrols should be used for children weighing <10-15 kg.

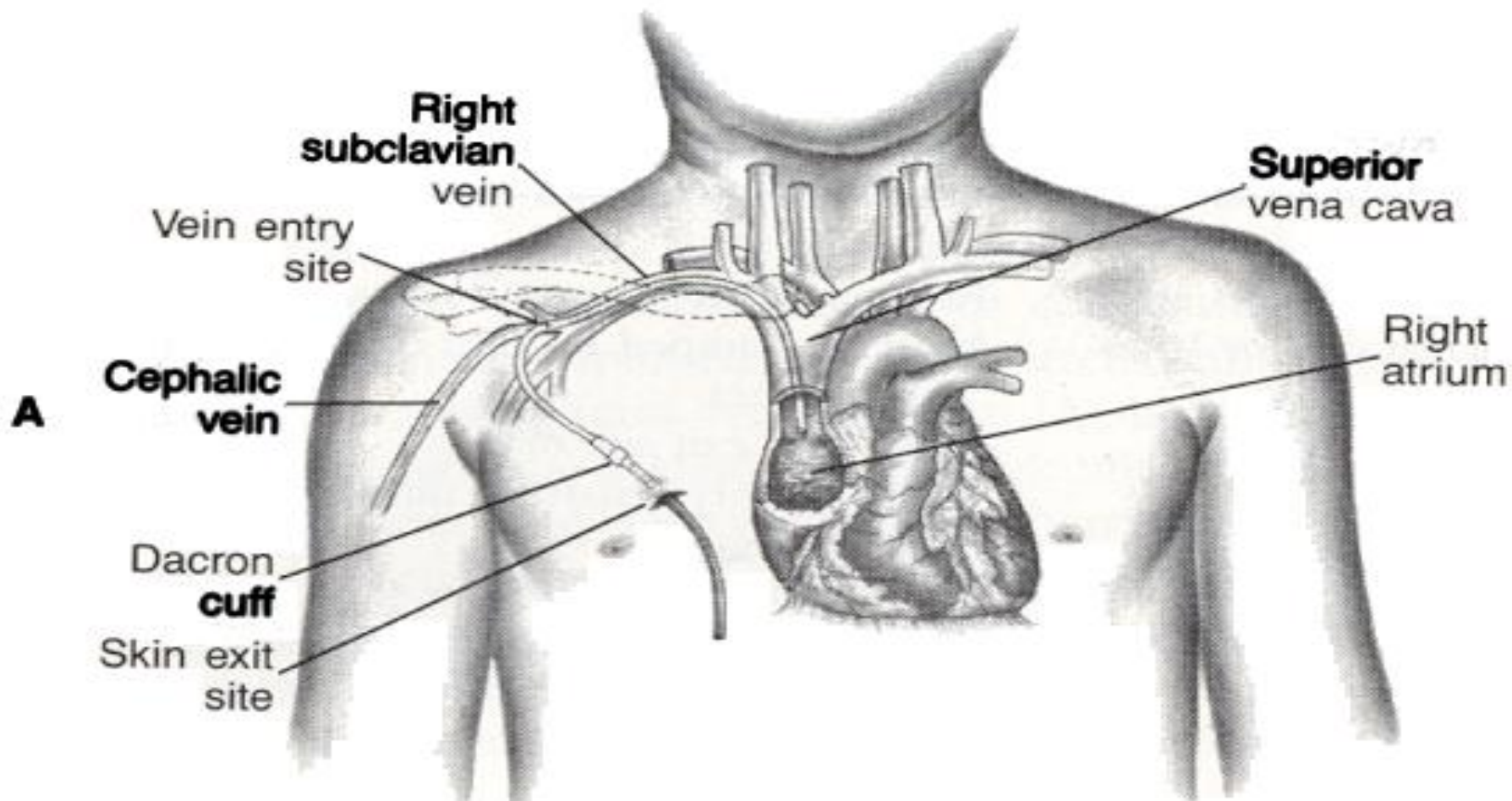
IV Buretrol

- Buretrol acts as a second chamber
- Useful when controlling amounts of fluid to be infused
- Useful for administering IV antibiotics / medications that need to be diluted in order to administer safely



Central Venous Line

- A large bore catheter that are inserted either percutaneously or by cut down and advanced into the superior or inferior vena cava
- Umbilical line may be used in the neonate
 - Used for long term administration of meds
 - Used for chemotherapy
 - Total parental nutrition



Type of fluid

- Glucose and electrolytes
 - Maintenance
 - Potassium added
- Crystalloid: Normal Saline or lactated ringers
 - Fluid resuscitation
 - Acute volume expander
- Colloid: albumin / plasma / frozen plasma

Reason for pump alarm

- Needs to have volume re-set
- Needs more IV solution in bag or buretrol
- Kinked tubing at infusion site
- Child lying on tubing
- Air in tubing
- Infiltrated at site of infusion

Clinical Pearls

- If alarm states upward occlusion
 - Look at IV bag
 - Look at fluid level in buretrol
 - Look to see if ball in drip chamber is floating
- If alarm states downward occlusion
 - Look to see that all clamps are open
 - Look to see if line is kinked
 - Irrigate with normal saline or heparin

Q & A ?