

# Forms of Medications

## Parenteral Dosage of Drugs

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CALHOUN COMMUNITY COLLEGE



# Solid Forms of Oral Meds

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## Tablets

- Caplets



- Scored Tablets



- Enteric-Coated Tablets



- Sublingual Tablets



# Solid Forms of Oral Meds

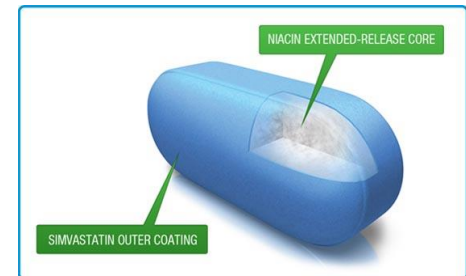
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## Tablets

- Layered Tablets



- Time-Release/Extended Release Tablets



- Filmed



# Solid & Liquid Forms of Oral Meds

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Capsules



Elixir



Suspension



Syrup



# Solid & Liquid Forms of Oral Meds

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- These liquids **may** also be administered enterally

## \*\*NG Tube

(nasogastric - tube in nose)



## \*\*G Tube

(gastrostomy - tube directly in stomach)



## \*\*J Tube

(jejunostomy - tube directly into intestine)



- These medications should **NEVER** be given any other route such as **IV or INJECTION**

# Don't Forget.....

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- Tablets come in various strengths ~

Choose the combination of strengths to achieve the least number of pills

EXAMPLE:

Order 75 mg – have 25 mg & 50 mg tablets available

(GOAL: maximum number of tablets to give for a certain dosage is 3)

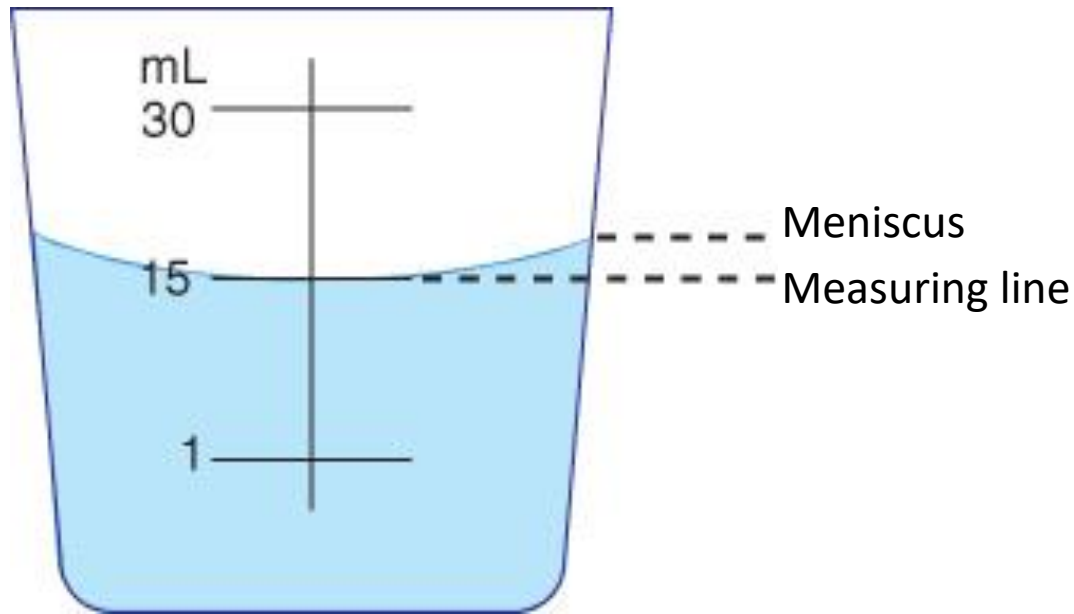
- Capsules are not scored and cannot be divided ~

You must administer in whole amounts only unless you consult a drug reference book or a pharmacist to clarify if a capsule can be opened or pierced or whether a tablet can be crushed

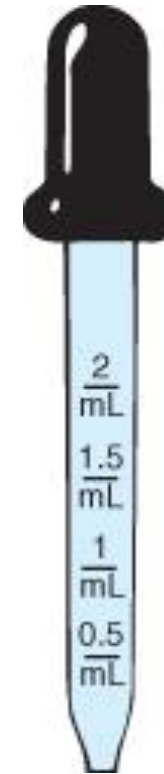
# Measuring Oral Liquids

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1. **Standard calibrated measuring cup**
  - Metric, apothecary, or household measure
  - Place on flat surface and view at eye level
  - Pour with label facing you so that it can be read
  - Read at the level of the meniscus (low point)
2. **Calibrated droppers**
  - Use only dropper supplied with medication
3. **Calibrated oral syringes (tsp/mL marks)**
  - Used for accuracy of liquid doses (e.g., 6.4 mL)
  - Pour medication in cup and draw up into syringe
  - **NEVER** use oral syringes for parenteral meds



**Figure 17-8** Reading meniscus. The meniscus is caused by the surface tension of the solution against the walls of the container. The surface tension causes the formation of a concave or hollowed curvature on the surface of the solution. Read the level at the lowest point of the concave. (From Clayton BD, Willihnganz M: *Basic pharmacology for nurses*, ed 16, St Louis, 2013, Mosby.)

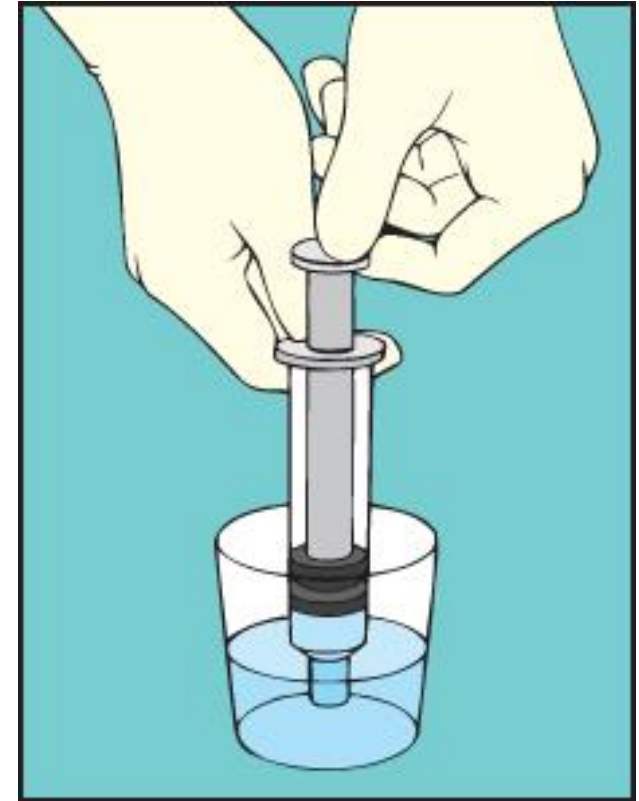


**Figure 17-9** Medicine dropper. (Modified from Clayton BD, Willihnganz M: *Basic pharmacology for nurses*, ed 16, St Louis, 2013, Mosby.)





**Figure 17-10** Oral syringes. (Courtesy Chuck Dresner. From Clayton BD, Willihnganz M: *Basic pharmacology for nurses*, ed 16, St Louis, 2013, Mosby.)



**Figure 17-11** Filling a syringe directly from medicine cup. (Modified from Clayton BD, Willihnganz M: *Basic pharmacology for nurses*, ed 16, St Louis, 2013, Mosby.)

# Parenteral Dosage of Drugs

## INJECTABLE ROUTES

1. INTRAMUSCULAR (IM)
  2. SUBCUTANEOUS (SUBCUT)
  3. INTRADERMAL (ID)
  4. INTRAVENOUS (IV)
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PARENTERAL ROUTES GENERALLY ACT MORE QUICKLY THAN ORAL BECAUSE THEY ARE ABSORBED MORE RAPIDLY INTO THE BLOOD STREAM

# Forms of Parenteral Meds

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- Ampule



- Vial



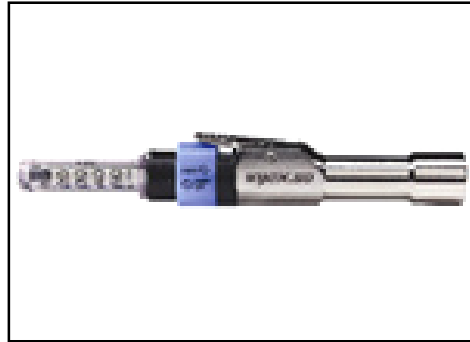
- Mix-o-vial



# Forms of Parenteral Meds

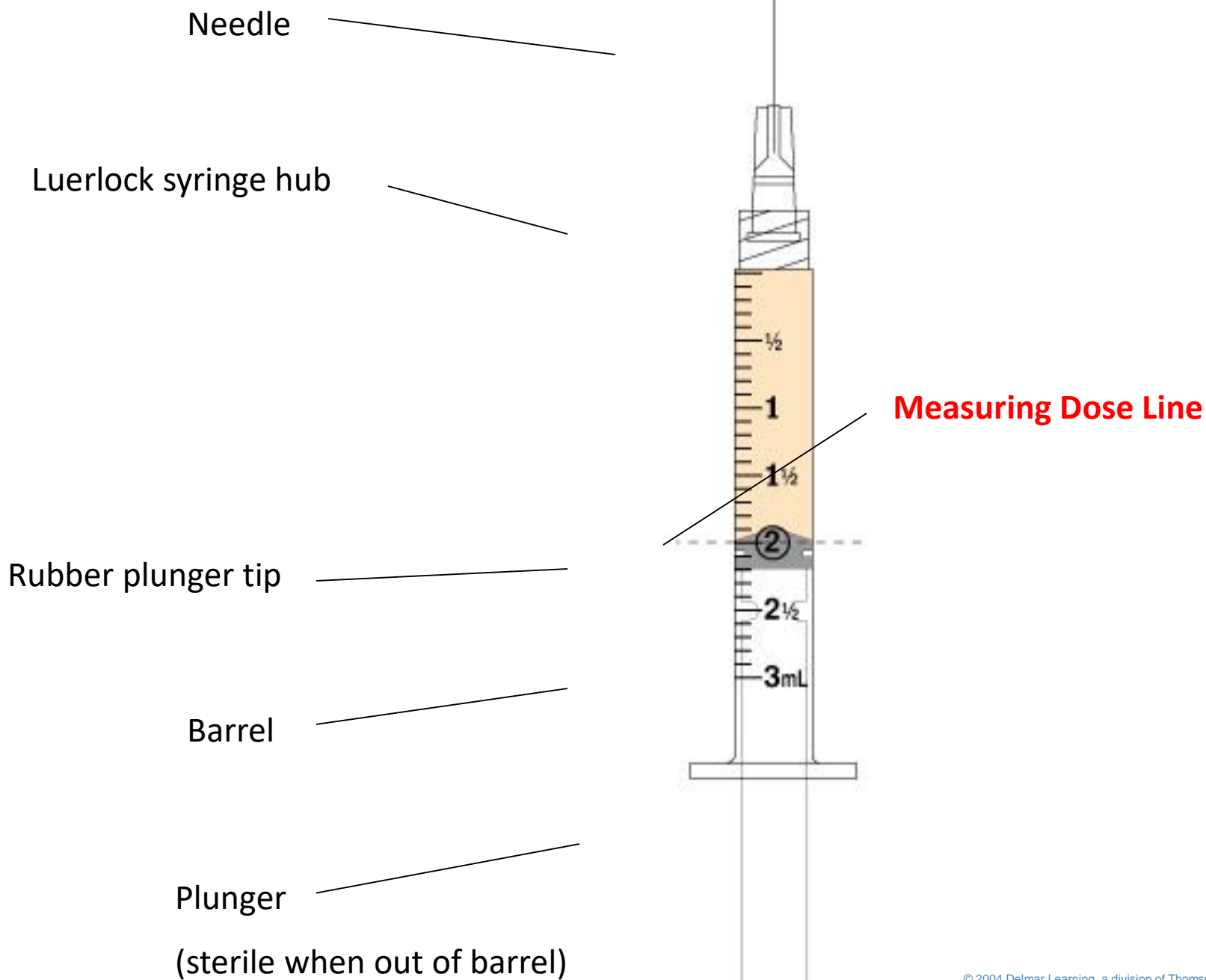
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- Cartridge



- Prepackaged Syringe

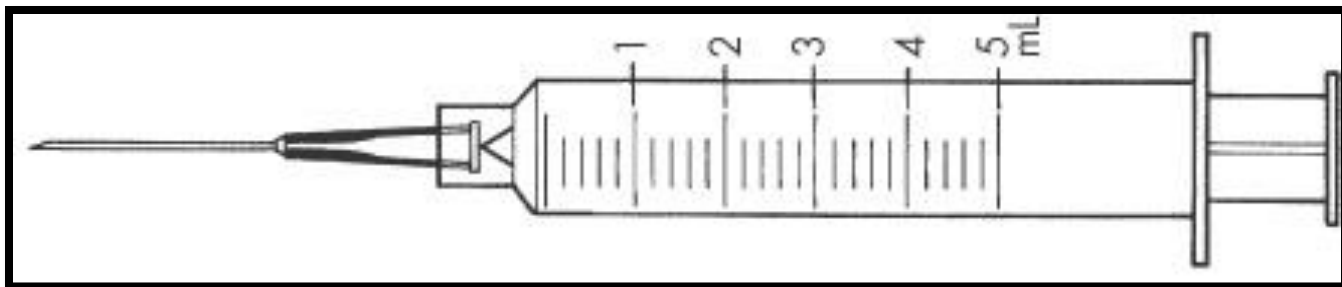
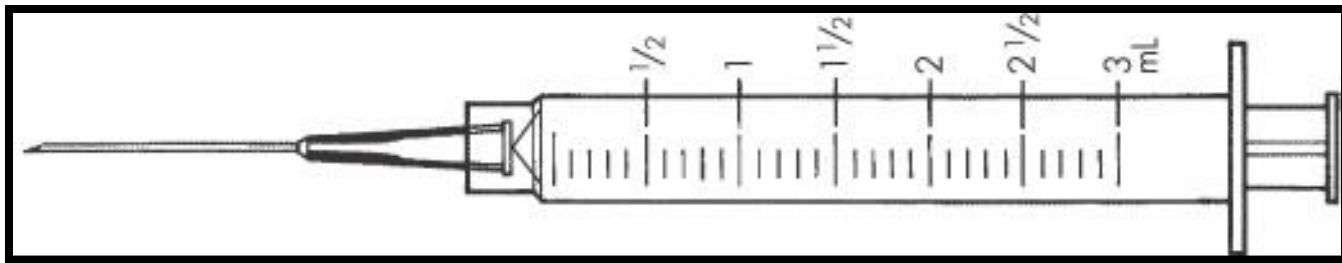




# Types of Syringes

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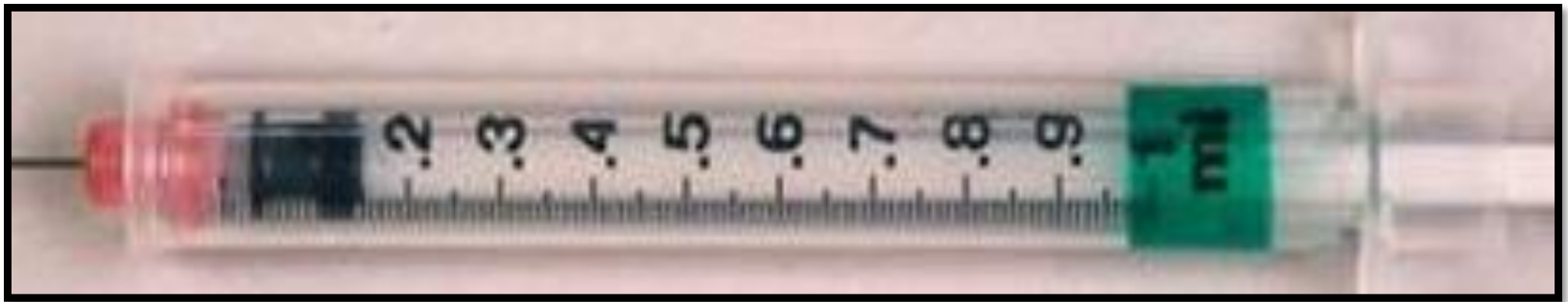
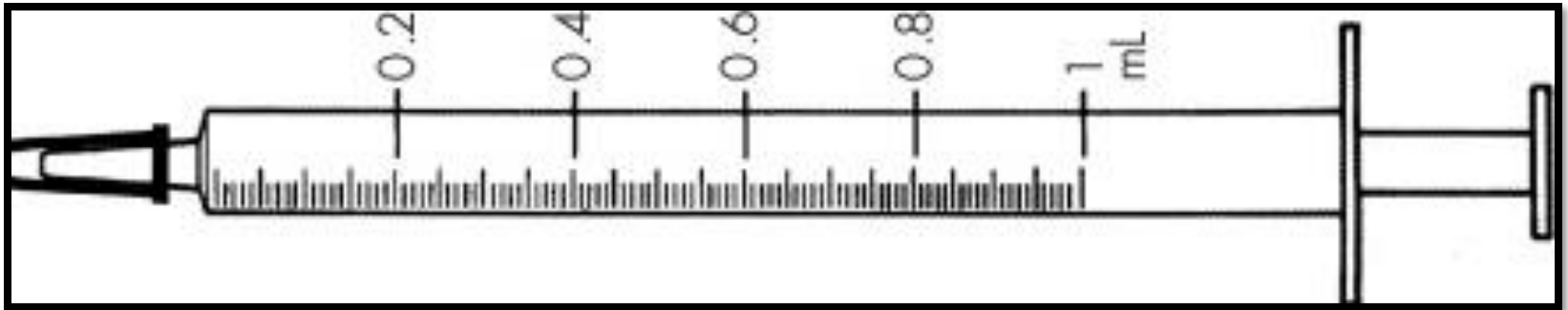
**Hypodermic** – 0.5 to 60 mL sizes, smaller syringes are marked off in tenths of a mL, each line is 0.1 mL; Larger syringes are marked off in two tenths of a mL, each line is 0.2 mL



# Types of Syringes

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**Tuberculin** – 0.5 to 1 mL in capacity, calibrated in **hundredths (0.01 mL)** and **tenths (0.1 mL)**



# Guidelines for Syringe Selection

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Calculate dose volumes and prepare injectable fractional doses in a syringe using these guidelines:

- Standard doses **MORE** than 1 mL:

Round to **tenths** and measure in a 3 mL syringe. The 3 mL syringe is calibrated to 0.1 mL increments.

**NEVER** round to whole number unless your math comes out to a whole number or the provider orders the dose rounded to the whole number.

- Example: 1.53 mL is rounded to 1.5 mL and drawn up in a 3 mL syringe.



# Guidelines for Syringe Selection

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- Small (*less than 1 mL*); critical care; or children's doses: Round to **hundredths** and measure in 1 mL syringe. The 1 mL syringe is calibrated in 0.01 increments.
- **Example:** 0.257 mL is rounded to 0.26 mL and drawn up in a 1 mL syringe.
- Amounts of **0.5–1 mL** calculated in tenths can be accurately measured in either a 1 mL or 3 mL syringe.
- **Do NOT round on certain medications, one example is Heparin – exact dosage CRUCIAL**

# Calculation by Formula Method: Parenteral with Conversion

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Order: Robinul 150 mcg IM stat

Supply: *Robinul 0.2 mg per mL*

## **Step 1. Convert**

- Equivalent: 150 mcg = 0.150 mg

## **Step 2. Think**

- You want to give less than 1 mL



# Calculation by Formula Method: Parenteral with Conversion

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## **Step 3. Calculate**

$$\circ \frac{D}{H} \times Q = \frac{\overset{3}{\cancel{0.150}}}{\underset{4}{\cancel{0.2}}} = \frac{3}{4} \text{ mL} = 0.75 \text{ mL}$$

Given intramuscularly immediately.

Select a *1 mL syringe*, and *measure 0.75 mL* of Robinul 0.2 mg/mL. You may have to change needles, as this is an IM injection.

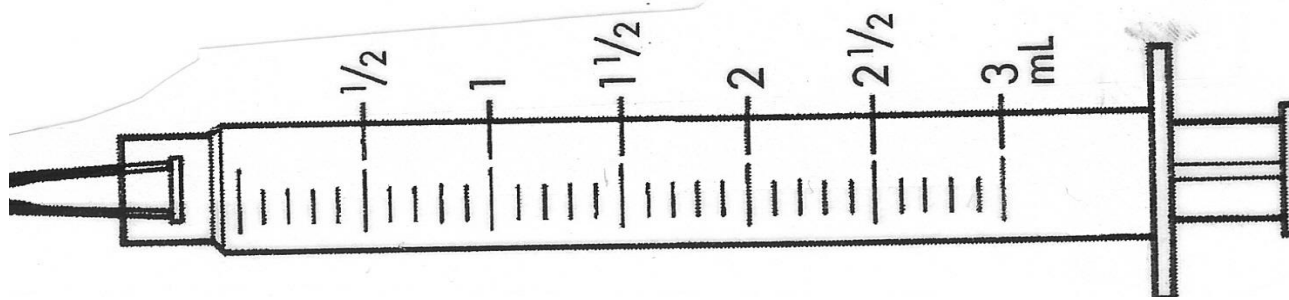
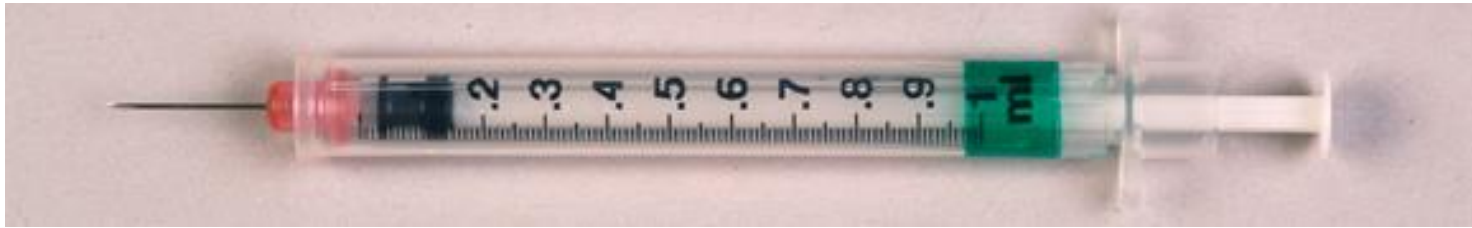


Order: Vitamin B 12 ~ 0.5 mg IM once a week

Have: *Vitamin B 12* ~ 1 mg/mL

Give: \_\_\_\_\_ mL

Fill in area on correct syringe



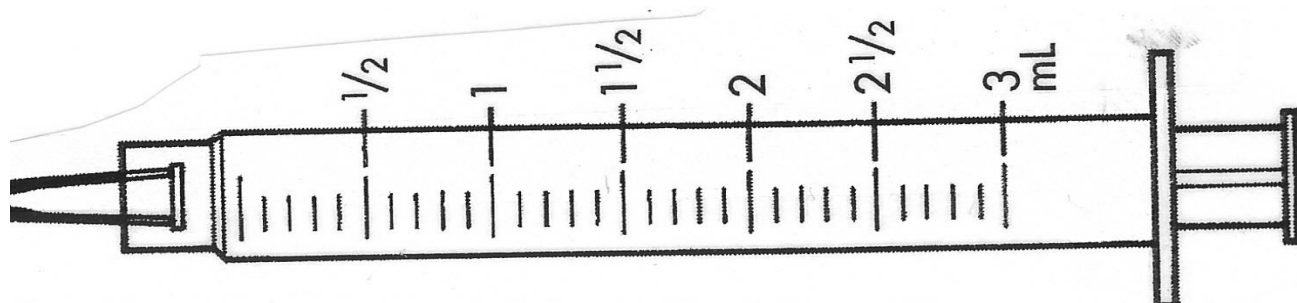
## ANSWER

Order: Vitamin B 12 ~ 0.5 mg IM once a week

Have: *Vitamin B 12* ~ 1 mg/mL

Give: 0.5 mL

Fill in area on correct syringe

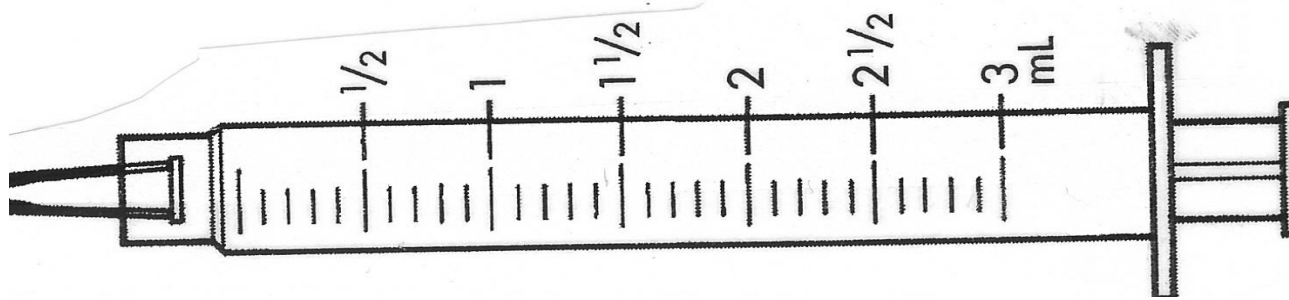
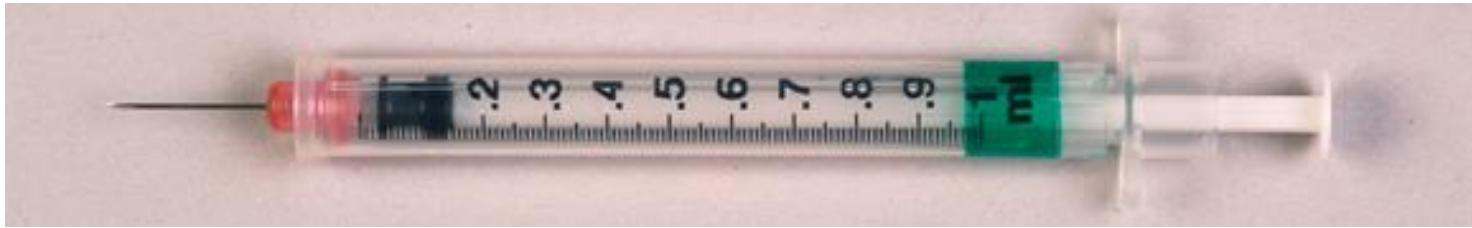


Order: Demerol 60 mg IM q 4 h p.r.n pain

Have: *Demerol 75 mg per 1.5 mL*

Give: \_\_\_\_\_ mL

Fill in correct amount on syringe



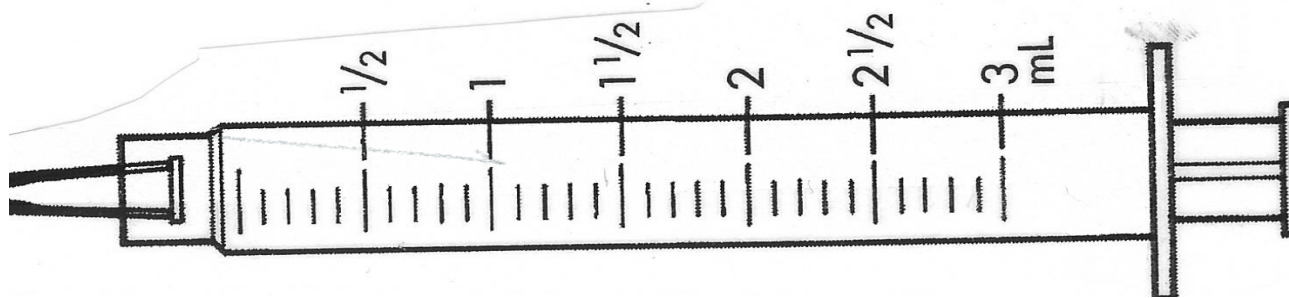
## ANSWER

Order: Demerol 60 mg IM q 4 h p.r.n pain

Have: *Demerol 75 mg per 1.5 mL*

Give: 1.2 mL

Fill in correct amount on syringe

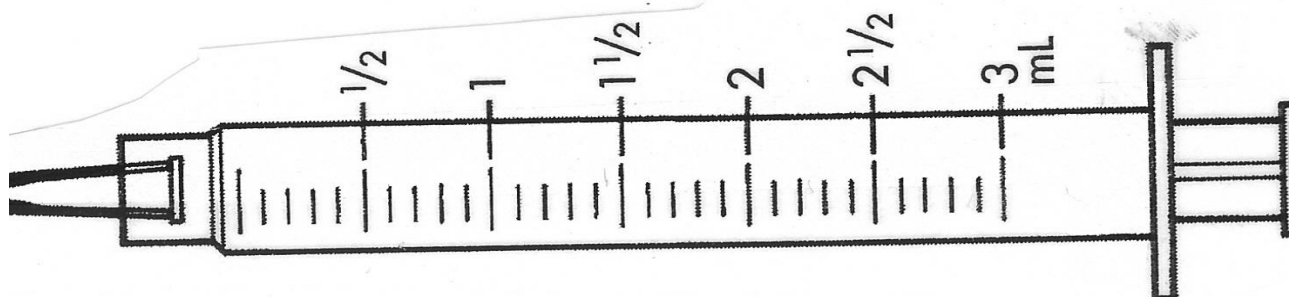
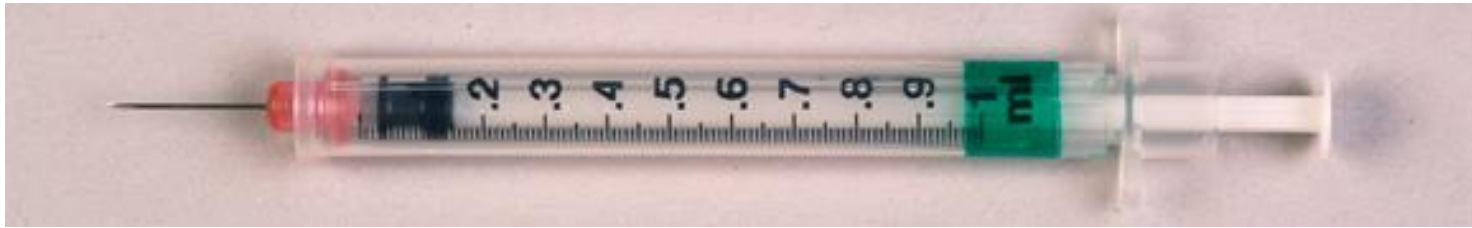


Order: Compazine 7.5 mg IM q 3-4 h p.r.n nausea/vomiting

Have: *10 mL vial Compazine containing 5 mg per mL*

Give: \_\_\_\_\_ mL

Fill in area on correct syringe





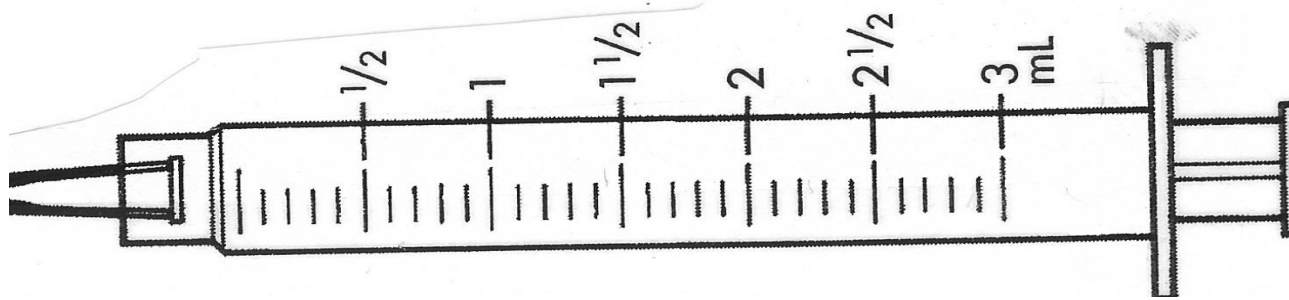
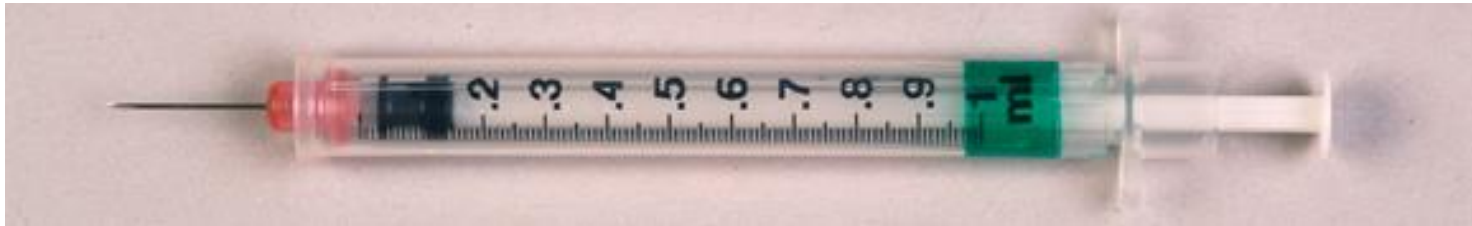
## ANSWER

Order: Compazine 7.5 mg IM q 3-4 h p.r.n nausea/vomiting

Have: *10 mL vial Compazine containing 5 mg per mL*

Give: 1.5 mL

Fill in area on correct syringe

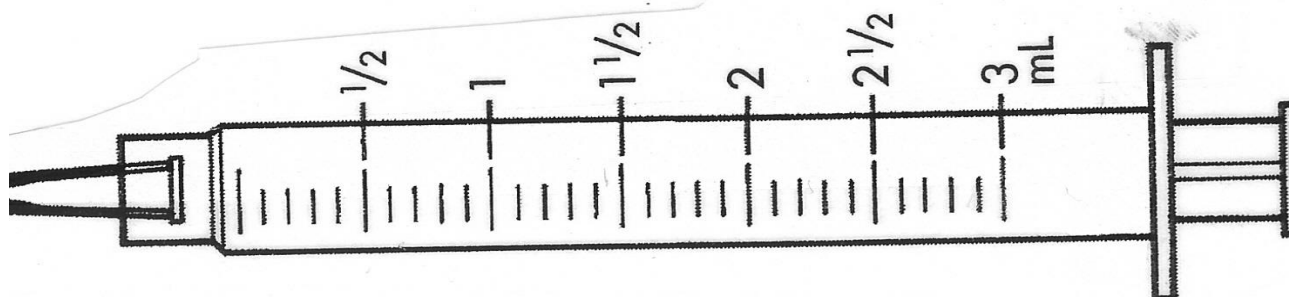
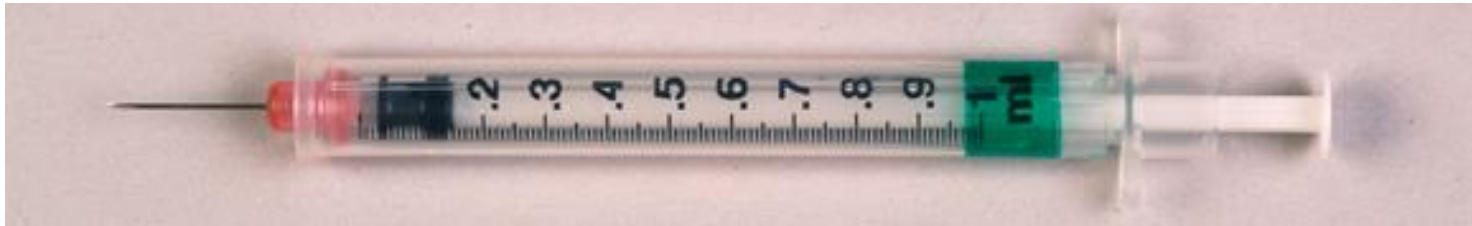


Order: Vistaril 20 mg IM q 4 h p.r.n nausea

Have: *10 mL vial of Vistaril 25 mg/mL*

Give: \_\_\_\_\_ mL

Fill in area on correct syringe



## ANSWER

Order: Vistaril 20 mg IM q 4 h p.r.n nausea

Have: *10 mL vial of Vistaril 25 mg/mL*

Give: 0.8 mL

Fill in area on correct syringe

