GERMANNA
ACADEMIC CENTER
FOR EXCELLENCE

Drug Dosage: Oral, Parenteral, and Safe Dosage

This handout will provide practice problems for solving oral, weight based, parenteral, insulin, and safe dosage problems to help prepare for drug dosage testing. For a list of common conversions and formulas, refer to the Nursing Conversions and Formulas handout. Unless otherwise stated, all drug label images in this handout were retrieved from the NIH National Library of Medicine.

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Oral Dosages

Round all answers to the nearest tenth as applicable.

1. The physician writes an order for Diabinese 0.1 g p.o. daily. The drug container label reads Diabinese 100 mg tablets.
   Give: _____ tablet(s)

2. Duricef 500 mg tablets available. The order is for Duricef 0.5 g p.o. b.i.d.
   Give: _____ tablet(s)

3. Urecholine 10 mg scored tablets available. Order: Urecholine 15 mg p.o. t.i.d.
   Give: _____ tablet(s)

4. Order: Hydrochlorothiazide 12.5 mg p.o. t.i.d. 25 mg scored tablets available.
   Give: _____ tablet(s)

5. Order: Lanoxin 0.125 mg p.o. b.i.d.
   Supply: Lanoxin 0.25 mg scored tablets
   Give: _____ tablet(s)

6. Order: Motrin 600 mg p.o. b.i.d.
   Supply: Motrin 300 mg tablets
   Give: _____ tablet(s)

7. Order: Slow-K 16 mEq p.o. stat
   Supply: Slow-K 8 mEq tablets
   Give: _____ tablet(s)

8. Cytoxan 25 mg tablets available. Order: Cytoxan 50 mg p.o. daily.
   Give: _____ tablet(s)

9. Zaroxolyn 5 mg scored tablets available. Order: Zaroxolyn 7.5 mg p.o. b.i.d.
   Give: _____ tablet(s)

10. Coumadin 5 mg p.o. every day ordered. Coumadin 2.5 mg tablets available.
    Give: _____ tablet(s)

11. The doctor orders 650 mg acetaminophen p.o. stat for a patient, but the drug available is in 325 mg tablets. How many tablets should you give?

12. A patient is prescribed 250 mg clozapine p.o. daily. How many tablets should he take if each scored tablet contains 100 mg?

13. The doctor's order states for the patient to take three glyburide 1.5 mg tablets p.o. daily. What is the total dose in milligrams?

14. A patient is receiving 500 mg of Ceclor oral suspension. The label says Ceclor 250 mg/5 mL, and the bottle contains 100 mL. How many milliliters of Ceclor should you give?

15. A patient needs 400 mg of erythromycin oral suspension. The label says erythromycin 200 mg/5 mL. How many milliliters should you give?

16. The doctor orders 100 mg Dilantin oral suspension t.i.d. for a patient. The label says Dilantin 125 mg/5 mL. How many milliliters should you give?

17. Order: Demerol syrup 75 mg p.o. q.4h p.r.n. for pain
    Supply: Demerol syrup 50 mg per 5 mL
    Give: _____ mL

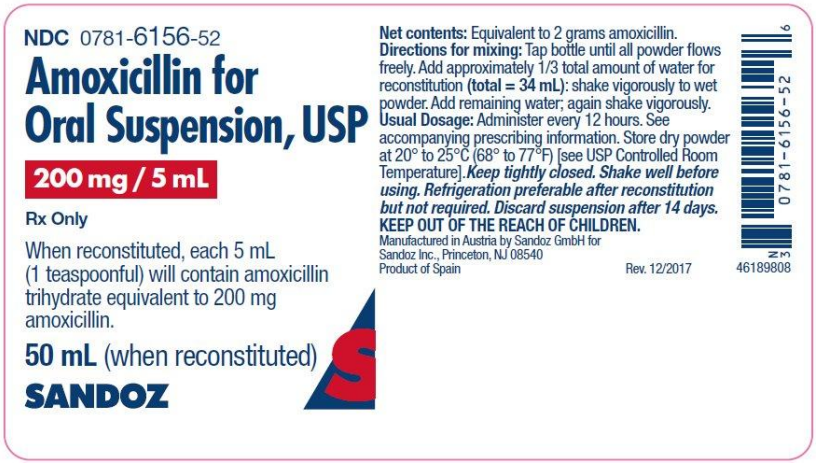
18. Order: Pen-Vee K 1 g p.o. 1h pre-op dental surgery
    Supply: Pen-Vee K oral suspension 250 mg (400,000 U) per 5 mL
    Give: _____ mL

19. Order: Amoxicillin 100 mg p.o. q.i.d.
    Supply: 80 mL bottle of Amoxil (amoxicillin) oral pediatric suspension 125 mg per 5 mL
    Give: _____ mL

20. Order: Tylenol 0.5 g p.o. q.4h for p.r.n. pain
    Supply: Tylenol 500 mg in 5 mL
    Give: _____ t

21. Order: Promethazine HCl 25 mg p.o. h.s. pre-op
    Supply: Phenergan Plain (promethazine HCl) 6.25 mg per teaspoon
    Give: _____ mL

22. The doctor orders 800 mg of Amoxicillin p.o. b.i.d. Use the medication label below to answer the following questions.
    a. What is the concentration of oral suspension in mg/mL? _____
    b. What is the total volume of the suspension after reconstitution? _____
    c. How many days post reconstitution is the medication able to be used for? _____
    d. Give: _____ mL

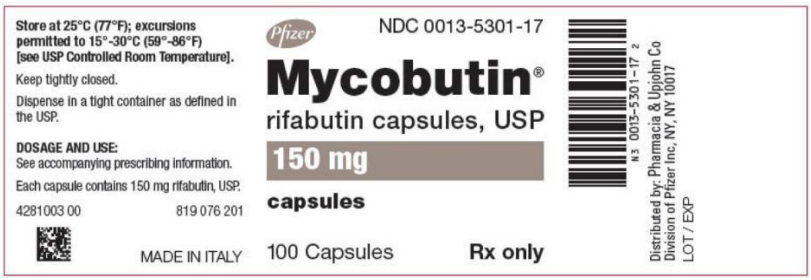


23. Order: Pathocil 125 mg p.o. q.6h a.c.
    Supply: Pathocil suspension 62.5 mg per 5 mL
    Give: _____ t

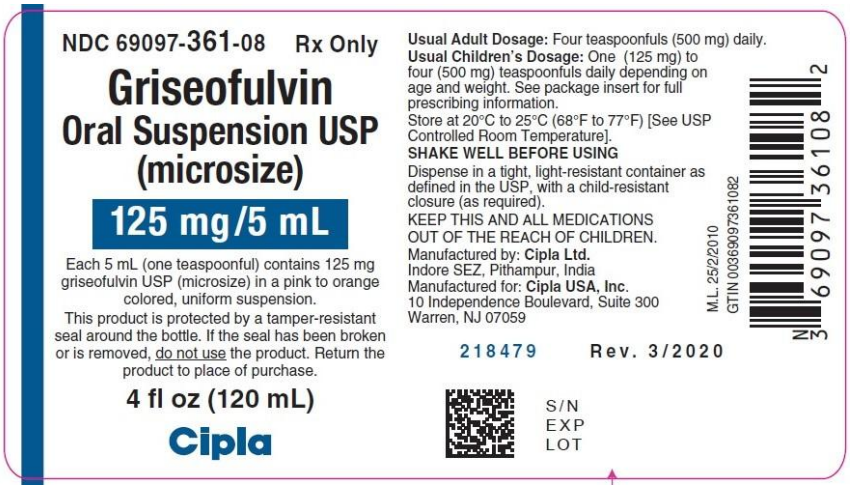
24. Order: Erythromycin suspension 600 mg p.o. q.6h
    Supply: Erythromycin 400 mg/5 mL
    Give: _____ mL

25. Order: Ceclor suspension 225 mg p.o. b.i.d.
    Supply: Ceclor suspension 375 mg per 5 mL
    Give: _____ mL

26. A dosage of 300 mg b.i.d. is ordered for a patient suffering from an infection. Using the information provided on the medication label below, find the label information and the daily dosage the patient requires.
    a. What is the generic name for this drug?
    b. What is the brand name for this drug?
    c. How many milligrams of the drug does each capsule contain?
    d. Give: _____ capsule(s)



27. The doctor prescribes a daily dosage of 500 mg for a patient to be divided into two doses. Find the amount of medication in mL required for an individual dose for this patient by using the label below and identify the drug information.
    a. Give: _____ mL
    b. What is the route of administration for this drug?
    c. Should this drug be refrigerated?



28. Answer the following questions using the following drug label below.

Fakelixir (mixturezole difakate, USP) [png]. (2025). *How to Read a Medication Label Nursing Quiz.* Registered Nurse RN.

A. What is the generic name of this drug?

B. What is the trade/brand name of this drug?

C. What is the concentration of this medication?

D. When does this medication expire?

E. What is the route of this medication and what is the form?

F. Where should this medication be stored and for how long after opening?

G. Doctor orders: 400 mg of Fakelixir q.8h. How many mL would be administered in a day? Round to the nearest tenth if applicable.

H. How much water needs to be added to the drug in order to make the suspension?

I. After reconstitution, what is the total volume of the drug bottle?

J. If the patient receives 20 mL of the medication, how many milligrams of the drug did the patient receive?

Weight Based Dosing

Round all answers to the nearest tenth as applicable.

1. A doctor orders 15 mg/kg of a medication. The patient weighs 60 lb. Pharmacy dispenses a liquid suspension labeled 100 mg/5 mL. How many mL of the medication should the nurse administer? Round the answer to the nearest tenth.

2. A doctor prescribes 5 mg/kg of a medication q.6 hours. The patient weighs 110 lb. Pharmacy dispenses a bottle of scored tablets labeled 100 mg/tablet. How many tablets will the patient receive in 24 hours?

3. A patient weighs 35 kg The doctor orders 10 mg/kg t.i.d. of acetaminophen. In the Pyxis is a bottle of acetaminophen labeled 150 mg/2.5 mL oral suspension. How many mL will the patient receive per dose?

4. A 66 lb patient has been ordered 1 mg/kg daily divided into three doses. The pyxis dispenses scored tablets with a concentration of 20 mg/tablet. How many tablets will the patient receive per dose?

Parenteral Dosage Calculations

Round all answers to the nearest tenth as applicable.

1. Order: Atropine sulfate 0.15 mg SC stat
   Supply: Atropine sulfate 0.4 mg per mL
   Give: _____ mL

2. The drug order reads morphine sulfate 10 mg IM q.3-4h p.r.n., and the label states morphine sulfate 15 mg per mL. How many mL do you administer?

3. Order: Codeine 15 mg SC q.4h p.r.n. for pain
   Supply: 20 mL vial Codeine labeled 30 mg per mL
   Give: _____ mL

4. Order: Bicillin 2,400,000 U IM stat
   Supply: 10 mL vial of Bicillin containing 600,000 U per mL
   Give: _____ mL

5. Order: Digoxin 600 mcg IV stat
   Supply: 0.5 mg in 2 mL
   Give: _____ mL

6. Order: Procaine penicillin G 2.4 million U IM stat
   Supply: Wycillin (Procaine penicillin G) disposable, single-dose syringe containing 2,400,000 U/2 mL.
   Give: _____ mL

7. Order: Tigan 200 mg IM stat, then 100 mg q.6h p.r.n. for nausea
   Supply: 2 mL vial Tigan containing 100 mg per mL
   Give: _____ mL stat and _____ mL q.6h

8. Order: Heparin 8,000 U SC q.8h
   Supply: 10,000 U per mL
   Give: _____ mL

9. Order: Potassium chloride 15 mEq to be added to each 1000 mL IV fluid container
   Supply: Potassium chloride 30 mL vial containing 2 mEq/mL
   Add: _____ mL

10. Order: Demerol 60 mg IM q.4h p.r.n. for pain
    Supply: Demerol 75 mg per 1.5 mL
    Give: _____ mL

11. The doctor prescribes 4 mg of I.M. morphine every 3 hours for a patient's pain. The drug is available in a prefilled syringe containing 10 mg of morphine/mL. How many milliliters of morphine should you waste?

12. The doctor orders 100 mg of methylprednisolone (Solu-Medrol) I.M. every 4 hours for a patient with asthma. The vial contains 120 mg/mL. How much Solu-Medrol should you give?

13. The doctor prescribes 100 mg of gentamicin I.M. for a patient. The vial available contains 40 mg/mL. How much gentamicin should you give?

14. Order: Atropine 0.6 mg IM on call preoperatively
    Supply: 0.4 mg per mL
    Give: _____ mL

15. Order: Morphine sulfate 10 mg IM q.3-4h p.r.n.
    Supply: Morphine sulfate 10 mg per mL
    Give: _____ mL

16. Order: Procaine penicillin G 400,000 U IM t.i.d.
    Supply: 300,000 U per mL
    Give: _____ mL

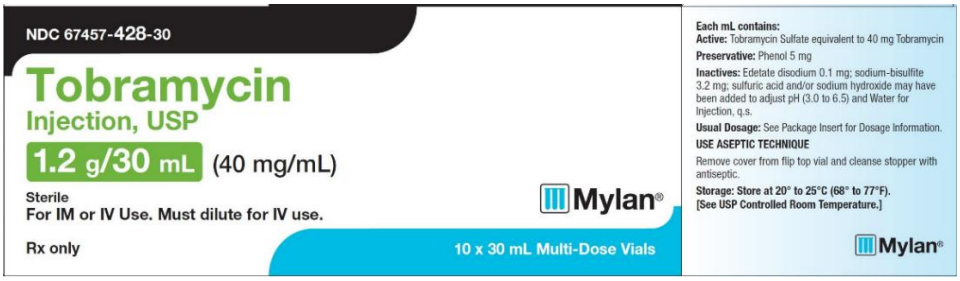
17. Order: Heparin 4,500 U SC every 24 hours.
    Supply: 10,000 USP Units per mL
    Give: _____ mL

18. Order: Compazine 7.5 mg IM q.3-4h p.r.n. for nausea and vomiting
    Supply: 10 mL vial Compazine containing 5 mg per mL
    Give: _____ mL

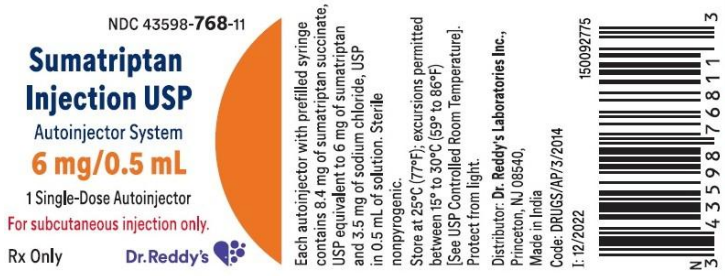
19. Order: Vistaril 20 mg IM q.4h p.r.n. for nausea
    Supply: 10 mL vial of Vistaril 25 mg/mL
    Give: _____ mL

20. Order: Gentamicin sulfate 60 mg IM b.i.d.
    Supply: 2 mL vial Garamycin (gentamicin sulfate) 40 mg/mL
    Give: _____ mL

21. The doctor prescribes 0.04 g Tobramycin IM t.i.d. for a patient. Find the total daily dosage for this patient using the medication label below.
    Give: _____ mL



22. A patient has a severe migraine, and the doctor prescribes 18 mg of Sumatriptan subcut stat. Use the label below to calculate the correct dosage for the patient.
    Give: _____ mL



23. A patient develops a post-operative vitamin B12 deficiency, so the doctor prescribes 2 mg of Cyanocobalamin IM daily. Use the medication label below to find the correct daily dosage for the patient.
    Give: _____ mL

Insulin Dosages

1. A patient has been ordered insulin to be given based on a sliding scale. Using the sliding scale below, calculate the patient's needed units of insulin based on the current blood glucose reading. The patient BG was 462.

Blood Glucose Level	Insulin Units
50-150 mg/dL	5 Units
151-300 mg/dL	10 Units
301- 450 mg/dL	15 Units
451-600 mg/dL	20 Units
600 mg/dL and above	25 Units

For # 2-10, use the sliding scale to calculate the needed units of insulin for each patient's blood glucose.

Blood Glucose Level	Insulin Units
40-100 mg/dL	2 Units
101-200 mg/dL	4 Units
201-300 mg/dL	6 Units
301- 400 mg/dL	8 Units
400 mg/dL +	10 Units

2. Patient #1: BG level: 60 mg/dL

3. Patient #2: BG level: 110 mg/dL

4. Patient #3: BG level: 450 mg/dL

5. Patient #4: BG level: 315 mg/dL

6. A patient's morning blood glucose level is 160 mg/dL. The patient has been ordered a 5 Unit bolus dose of insulin. What is the total amount of insulin the patient is to receive including the standing order with the sliding scale?

7. A patient's pre-prandial blood glucose is 45 mg/dL. In the MAR, a 10 Unit bolus dose is ordered for pre-prandial blood glucose levels above 200 mg/dL. The nurse also reviews the sliding scale insulin order. How much insulin should be administered at this time?

8. A patient has a post-prandial blood glucose level of 410 mg/dL. The MAR contains an order that the patient is to receive a 10-unit bolus of insulin if the blood glucose level is above 250 mg/dL. How many units of insulin is the patient to receive at this time including the sliding scale dose and the bolus?

9. The doctor orders a 4-unit bolus of NPH and a 6-unit bolus of regular insulin before meals. The doctor also ordered insulin to be given based on the sliding scale. The patient's current BG is 350 mg/dL. How many units in total should the nurse draw up and administer?

10. A patient's current blood glucose level is 110 mg/dL. The order states that a 6-unit bolus of regular insulin should be administered for blood glucose over 200 mg/dL. How much insulin should the nurse draw up including the dose according to the sliding scale and the bolus?

Calculating Safe Dosages

Round all answers to the nearest tenth as applicable.

1. The doctor orders chloral hydrate 75 mg P.O. to sedate a 3 kg neonate for an electroencephalogram. The drug resource states the usual (recommended) dosage of chloral hydrate for a neonate is 35 mg/kg/dose for sedation prior to a procedure. Is the order safe?

2. The practitioner orders Vistaril 10 mg IM q.4-6h p.r.n., nausea. The child weighs 44 lb. The drug resource indicates that the usual IM dosage is 0.5 mg to 1 mg/kg/dose every 4 to 6 hours as needed. Is this a safe dose?

3. The doctor orders Ceclor 100 mg p.o. t.i.d. The child weighs 33 lb. The recommended dosage on the drug label, "Usual dose: Children, 20 mg per kg a day in three divided doses." Is this dosage safe?

4. Suppose the physician orders Amoxil (amoxicillin) 200 mg p.o. q.8h for a child who weighs 22 lb. The label describes the recommended dosage as, "usual child dosage: 20-40 mg/kg/day in divided doses every 8 hours." Is this dosage safe?

5. The order reads ibuprofen 40 mg p.o. q.6h p.r.n., temp > 101.6°. The 7-month-old baby weighs 17 ½ lb. and has a temp of 102.6°F. The drug reference manual states "Children: 6 months-12 years: Temperature < 102.5°F - 5 mg/kg/dose; temperature > 102.5°F - 10 mg/kg/dose; given every 6-8hr; Maximum daily dose: 40 mg/kg/day. Is the order safe?

6. Order: Chloromycetin 55 mg IV q.12h for an 8-day-old infant who weighs 2,200 g. The recommended dosage for Chloromycetin is 50 mg/kg/day IV divided q.12h. Is this dosage safe?

7. Order: Keflex 125 mg p.o. q.6h for a 44 lb child. If the recommended dosage is 25 mg/kg/day in four divided doses, is this a safe dosage? Keflex is available in an oral suspension of 250 mg per 5 mL. If the dosage is safe, give ____mL/dose.

8. The physician orders Versed 1 mg IM stat preoperatively for a child weighing 14 kg. The recommended dosage of Versed is 0.05 to 0.1 mg/kg per dose preoperatively. Is the dosage ordered safe?

9. If the safe dose range of fentanyl IV preoperatively is 1 to 2 mcg/kg/dose, how many milligrams of fentanyl could a child weighing 40 kg receive per dose (minimum and maximum)?

10. The recommended dosage range of Solu-Medrol is 1 to 2 mg/kg/day. Calculate the safe dosage range per day of Solu-Medrol for a child weighing 22 kg.

11. Order: Codeine 20 mg p.o. q.4h p.r.n. for pain for a child who weighs 40 kg. The recommended dosage is 0.5 mg/kg/dose not to exceed 6 doses per day. Is this ordered dosage safe?

12. Order: Nebcin (tobramycin) 10 mg IM q.8h. The neonate weighs 4,000 g. The recommended dosage of tobramycin is 2.5 mg/kg/dose IM q.8h. Is this dosage safe?

13. Order: Suprax 120 mg p.o. daily for a 33 lb child. The recommended dosage of Suprax for children is 8 mg/kg/day p.o. as a single dose. Is this dosage safe?

Answers

Oral Dosages

1. 1 tablet
2. 1 tablet
3. 1.5 tablets
4. 0.5 tablets
5. 0.5 tablets
6. 2 tablets
7. 2 tablets
8. 2 tablets
9. 1.5 tablets
10. 2 tablets
11. 2 tablets
12. 2.5 tablets
13. 4.5 mg
14. 10 mL
15. 10 mL
16. 4 mL
17. 7.5 mL
18. 20 mL
19. 4 mL
20. 1 t
21. 20 mL
22. a. 40 mg/mL
    b. 50 mL
    c. 14 days
    d. 20 mL/dose
23. 2 t
24. 7.5 mL
25. 3 mL
26. a. rifabutin
    b. Mycobutin
    c. 150 mg
    d. 4 capsules/day
27. a. 10 mL/dose
    b. PO (by mouth)
    c. No, it should be stored at room temperature.
28. a. mixturezole difakate
    b. Fakelixir
    c. 350 mg/5 mL
    d. January of 2080
    e. Route: PO; Form: Liquid Suspension
    f. Refrigerated for 14 days post-preparation
    g. 17.1 mL/day
    h. 80 mL
    i. 100 mL
    j. 1400 mg

Weight Based Dosing

1. 20.5 mL
2. 10 tablets in a day
3. 5.8 mL
4. Half of a tablet (0.5 tab)

Parenteral Dosages

1. 0.4 mL
2. 0.7 mL
3. 0.5 mL
4. 4 mL
5. 2.4 mL
6. 2 mL

7. 2 mL stat and 1 mL q6h
8. 0.8 mL
9. 7.5 mL
10. 1.2 mL
11. 0.6 mL
12. 0.8 mL
13. 2.5 mL
14. 1.5 mL
15. 1 mL
16. 1.3 mL
17. 0.5 mL
18. 1.5 mL
19. 0.8 mL
20. 1.5 mL
21. 3 mL/day
22. 1.5 mL
23. 2 mL/day

Insulin Dosages

1. 20 Units
2. 2 Units
3. 4 Units
4. 10 Units
5. 8 Units
6. 9 Units in total
7. 2 Units in total
8. 20 Units
9. 18 Units
10. 4 Units

Calculating Safe Dosage

1. No, too low.
2. Yes
3. Yes
4. No, the order is too high
5. No, the order is too low
6. Yes
7. Yes; 2.5 mL/dose
8. Yes
9. 0.04-0.08 mg/dose
10. 22-44 mg/day
11. Yes
12. Yes
13. Yes