

Drug Dosage Practice Problems

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Metric Conversions

1. 300 mg = _____ g
2. 238 g = _____ mcg
3. 28 mL = _____ L
4. 42 g = _____ kg
5. 0.024 L = _____ mL
6. 635 mcg = _____ mg
7. 50 mL = _____ L
8. 16 g = _____ mg
9. 10 mg = _____ g
10. 0.015g = _____ mg
11. 8 mg = _____ g
12. 10 mg = _____ g
13. 60 mg = _____ g
14. 300 mg = _____ g
15. 0.2 mg = _____ g
16. 1.2 g = _____ mg
17. 0.0025 kg = _____ g
18. 0.065 g = _____ mg
19. 0.005 L = _____ mL
20. 1.5 L = _____ cc
21. 2 mL = _____ cc
22. 250 cc = _____ L
23. 2 kg = _____ g
24. 56.08 cc = _____ mL
25. 79,200 mL = _____ L
26. 1 L = _____ mL
27. 1 g = _____ mg
28. 1 mL = _____ L
29. 1.05 g = _____ kg
30. 18 mcg = _____ mg
31. 0.4 mg = _____ mcg
32. 25 g = _____ kg
33. 30 mg = _____ mcg
34. 5 mL = _____ L
35. 450 cc = _____ L
36. 23 mcg = _____ mg
37. 625 mcg = _____ mg
38. 16 g = _____ mg
39. 1.5 g = _____ g
40. 475 mL = _____ L
41. 2 kL = _____ L
42. 0.75 L = _____ mL
43. 8.65 mL = _____ L
44. 7.56 g = _____ mg



General Conversions

- 3 g = gr _____
- 84 lb = _____ kg
- 3 iss = _____ mL
- 15 mg = gr _____
- 2.5 mL = _____ t
- gr ss = _____ mg
- 7.5 mg = gr _____
- gr xx = _____ g
- gr 1/8 = _____ mg
- 75 mL = 3 _____
- 0.6 mg = gr _____
- 15 mL = 3 _____
- gr 3/4 = _____ mg
- 0.03 g = gr _____
- gr 1/150 = _____ mg
- gr viiss = _____ g
- 13 t = _____ cc
- 15 cc = 3 _____
- 20 mL = _____ t
- 4 T = _____ cc
- 9 kg = _____ lb
- 3 L = 3 _____
- 55 kg = _____ lb
- 3 t = _____ mL
- 99 lb = _____ kg
- 0.4 mg = gr _____
- 0.6 mg = gr _____
- gr x = _____ mg
- 300 mg = gr _____
- 90 mg = gr _____
- 60 mL = 3 _____
- gr 1/6 = _____ mg
- 30 mg = gr _____
- 40 kg = _____ lb
- 7.16 kg = _____ g
- 110 lb = _____ kg
- 3.5 kg = _____ lb
- 63 lb = _____ kg
- 120 mL = _____ oz

Oral Dosages

1. The physician writes an order for Diabinese 0.1 g p.o. q.d. 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 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 tablets available.
Give: _____ tablet(s)
5. Order: Lanoxin 0.125 mg p.o. b.i.d.
Supply: Lanoxin 0.25 mg 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. q.d.
Give: _____ tablet(s)
9. Zaroxolyn 5 mg tablets available. Order: Zaroxolyn 7.5 mg p.o. b.i.d.
Give: _____ tablet(s)
10. Coumadin 5 mg p.o. q.d. ordered. Coumadin 2.5 mg tablets available.
Give: _____ tablet(s)
11. The doctor orders 650 mg acetaminophen p.o. stat for your patient, but the drug available is in 325 mg tablets. How many tablets should you give?
12. Your patient is prescribed 250 mg clozapine p.o. daily. How many tablets should he take if each tablet contains 100 mg?
13. The doctor's order reads glyburide 1.5 mg iii tablets p.o. daily. What is the total dose in milligrams?

14. Your 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. Your 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 your 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. 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 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. Order: Pathocil 125 mg p.o. q.6h a.c.
Supply: Pathocil suspension 62.5 mg per 5 mL
Give: _____ t
23. Order: Erythromycin suspension 600 mg p.o. q.6h
Supply: Erythromycin 400 mg/5 mL
Give: _____ mL
24. Order: Ceclor suspension 225 mg p.o. b.i.d.
Supply: Ceclor suspension 375 mg per 5 mL
Give: _____ mL

Parenteral Dosages

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 gr 1/6 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 gr $\frac{1}{4}$ SC q.4h p.r.n., 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. nausea
Supply: 2 mL vial Tigan containing 100 mg per mL
Give: _____ mL stat and _____ mL q.6h
8. Order: Heparin 8000 U SC q.8h
Supply: 10,000 U per mL
Give: _____ mL
9. Order: Potassium chloride 15 mEq added to each 1000 mL IV fluid container
Supply: Potassium chloride 30 mL vial containing 2 mEq/mL
Give: _____ mL
10. Order: Demerol 60 mg IM q.4h p.r.n. 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 your 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 your 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 your patient. The vial available contains 40 mg/mL. How much gentamicin should you give?
14. Order: Atropine gr 1/100 IM on call preoperatively
Supply: 0.4 mg per mL
Give: _____ mL
15. Order: Morphine sulfate gr 1/6 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 4500 U SC q.d.
Supply: 10,000 USP Units per mL
Give: _____ mL
18. Order: Compazine 7.5 mg IM q.3-4h p.r.n. 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. 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

Reconstitution of Powdered Drugs

1. Your patient needs 25 mg of gentamicin I.M. The label says to add 1.3 ml sterile diluent to yield 50 mg/1.5 ml. How many milliliters of reconstituted solution should you give the patient?
2. The doctor orders 500 mg of ampicillin for your patient. A 1 g vial of powdered ampicillin is available. The label says to add 4.5 ml sterile water to yield 1 g/5 ml. How many milliliters of reconstituted ampicillin should you give?
3. For use as a topical antiseptic, the therapeutic protocol is to reconstitute hydrogen peroxide to $\frac{1}{2}$ strength with normal saline used as the solvent. You decide to make 4 ounces that can be kept in a sterile container at the patient's bedside for traction pin care. How many ounces of each do you need to prepare 4 ounces of a $\frac{1}{2}$ strength hydrogen peroxide topical antiseptic?
4. Suppose a physician orders a patient's wound irrigated with $\frac{2}{3}$ strength hydrogen peroxide and normal saline solution q.4h while awake. The nurse needs 60 mL per irrigation and will do 3 irrigations during her 12 hour shift. She will need to prepare 60 mL x 3 irrigations = 180 mL total solution. How much stock hydrogen peroxide and normal saline are needed?
5. How would you prepare 480 mL of $\frac{1}{3}$ strength for wound irrigation from liquid stock hydrogen peroxide, with saline as the solvent?
6. How would you prepare 4 ounces of $\frac{1}{4}$ strength for skin cleansing from liquid stock hydrogen peroxide, with saline as the solvent?
7. 500 mL 50% betadine solution using normal saline. _____ mL stock betadine; _____ mL normal saline.
8. 300 mL 20% acetic acid solution. _____ mL stock acetic acid; _____ mL water.
9. The physician orders 800 mL of $\frac{3}{4}$ strength Sustacal through a gastrostomy tube over 8 hours to supplement a patient while he sleeps. Sustacal ready-to-use formula comes in 10 ounce cans.
10. A physician orders Ensure $\frac{1}{4}$ strength 120 mL q.2h via NG tube x 3 feedings for a patient who is recovering from gastric surgery. Available are 4 and 8 ounce cans of Ensure, ready-to-use formula.

Pediatric Dosages

1. The doctor orders a single dose of 20 mg/kg/dose of amoxicillin oral suspension for a toddler who weighs 20 lb. What's the dose in milligrams?
2. The doctor orders penicillin V potassium oral suspension 56 mg/kg/day in four divided doses for a patient who weighs 55 lb. The suspension that's available is penicillin V potassium 125 mg/5 ml. What volume should you administer for each dose?
3. A child who needs chemotherapy is 36" tall and weighs 40 lb. What's the safe drug dose if the average adult dose is 1,000 mg?
4. 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?
5. The practitioner orders Vistaril 10 mg IM q.4-6h p.r.n., nausea. The child weighs 44 lb. The drug resource indicateds 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?
6. 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?
7. 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?
8. The physician orders Cefazolin 2.1 g IV q.8h for a child with a serious joint infection. The child weighs 95 lb. The drug reference indicates that the usual IM or IV dosage for infants and children in 50-100 mg/kg/day divided every 8 hours; maximum dosage is 6 g/day. This means that regardless of how much the child weighs, the maximum safe allowance of this drug is 6 g per 24 hours. Is the order safe?
9. 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°. 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 6-8 hr; Maximum daily dose: 40 mg/kg/day. Is the order safe?"

10. 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?
11. 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 dosage safe? _____ Keflex is available in an oral suspension of 250 mg per 5 mL. If the dosage is safe, give _____ mL/dose.
12. Order for a 66 lb child: Depakene 450 mg p.o. at 8 AM; Depakene 900 mg p.o. at 8 PM. (NOTE: The child is taking a safe, individualized dosage verified with blood levels).
Supply: 480 mL bottle of Depakene syrup 250 mg/5 mL
 - a. How many mg/kg/day does this child receive?
 - b. Calculate the amount to be given for each of the two daily doses.
 - c. How many full days will this bottle last?
13. Order: Gentamicin sulfate 18 mg IVPB q.8h for a 9 kg child.
Supply: Gentamicin sulfate 20 mg/2 mL
Recommended dose: Gentamicin sulfate 2 mg/kg/dose IV q.8h
If safe, give _____ mL/dose
14. The physician orders a drug according to the recommended dosage: Tylenol 10 mg/kg/dose q.3-4h p.r.n., fever > 99°F for a child weighing 12 kg. How many milligrams of Tylenol per dose should the child receive?
15. 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?
16. 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)?
17. 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.
18. Order: Codeine 20 mg p.o. q.4h p.r.n., 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?
19. What is the dosage of acyclovir required for a child with a BSA of 1 m², if the recommended dosage is 250 mg/m²?

20. Child is 45 inches tall and weighs 55 pounds. Order: Methotrexate 3.3 mg/m² IV q.d. Supply: Methotrexate 5 mg/2 mL. How many mL do you give?
21. Order: Give Benoject 22 mg IV q.8h. Child has BSA of 0.44 m². Recommended safe dosage of Benoject is 150 mg/m²/day in divided dosages every 6-8 hours. Is this a safe dosage?
22. Order: Deferoxamine mesylate IV per protocol. Child has BSA of 1.02 m². Protocol: 600 mg/m² initially followed by 30 mg/m² at 4 hour intervals for 2 doses; then give 300 mg/m² q.12h for 2 days. Calculate the total dosage received.
23. Order: Accutane 83.75 mg IV q.12h for a child with a BSA of 0.67 m². The recommended safe dosage range is 100 to 250 mg/m²/day in 2 divided doses. Is this dosage safe?
24. Order: Cerubidine 9.6 mg IV on day 1 and day 8 of cycle. Protocol: 25 to 45 mg/m² on days 1 and 8 of cycle. Child has BSA of 0.32 m². Is this dosage safe?
25. Child is 30 inches tall and weighs 25 pounds. Order: Zovirax (acyclovir) 250 mg/m² IV q.8h. Supply: Acyclovir 50 mg/mL. How many mL do you give?
26. Order: Give quinidine 198 mg p.o. q.d. for 5 days. Child has BSA of 0.22 m². Recommended safe dosage of quinidine is 900 mg/m²/day given in 5 daily doses. Verify safe dosage, and calculate total milligrams received over 5 days of therapy.
27. What is the total daily dosage range of Mitomycin required for a child with a BSA of 0.59 m² if the recommended dosage range is 10 to 20 mg/m²/day?
28. What is the dosage of one dose of Interferon Alpha-2b required for a child with a BSA of 0.82 m² if the recommended dosage is 2 million units/m²?
29. Order: Albuterol 1.2 mg p.o. t.i.d. for an 18 kg child with severe asthma. Recommended dosage from the manufacturer: 0.2 mg/kg/day orally in three equally divided doses. Is the ordered dosage safe?
30. 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?
31. Order: Suprax 120 mg p.o. q.d. 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?



IV FLOW RATES

1. You receive an order that reads KCl 40 mEq in 100 ml of NS over 40 minutes. You proceed to use a controller for the infusion, along with a tubing set calibrated at 60 gtt/ml. What is the drip rate?
2. Your patient needs 15 ml of erythromycin, which is equal to 500 mg. The infusion is to be completed in 30 minutes using a tubing set calibrated to 20 gtt/ml. What is the drip rate?
3. Your patient needs 250 ml of normal saline solution over 2 hours. What is the infusion rate?
4. If you plan to infuse 1 L of D5W at 50 ml/hour, what's the infusion time?
5. Your patient requires 500 ml of normal saline solution at 80 ml/hour. What's the infusion time? If the normal saline solution is hung at 5 a.m., what time will the infusion end?
6. The doctor prescribes 250 ml of normal saline I.V. at 32 gtt/minute. The drip factor is 15 gtt/ml. What's the infusion time?
7. Order: 3,000 mL D5W IV @ 125 mL/h. Drop factor: 10 gtt/mL. What is the drip rate?
8. Order: Two 500 mL units of whole blood IV to be infused in 4 h. Infusion rate is calibrated to 20 drops per milliliter. What is the drip rate?
9. Order: 3,500 mL D5LR IV to run at 160 mL/h. Drop factor: 15 gtt/mL. What is the drip rate?
10. Order: 500 mL D5W 0.45% Saline IV to infuse @ 165 mL/h Drop factor: 10 gtt/mL. What is the drip rate?
11. Order: 3 L NS IV to infuse @ 125 mL/h. Drop factor: 15 gtt/mL. What is the flow rate (gtt/min)?
12. Order: 1,000 cc NS IV @ 50 cc/h. Drop factor: 60 gtt/mL. What is the flow rate?
13. Order: 2,500 mL D5 0.45% NaCl IV @ 105 mL/h. Drop factor: 20 gtt/mL. What is the flow rate (gtt/min)?



14. Order 1,000 cc D5 0.45% NaCl to infuse over 8 hours. Drop factor: On electronic infusion pump. What is the flow rate(mL/h)?

15. Order: 500 cc LR to infuse over 4 h. What is the flow rate?

16. Order: 100 ml IV antibiotic to infuse in 30 min via electronic infusion pump. What is the flow rate?

17. Order: 1,500 mL Lactated Ringer's IV for 12 hours @ 125 mL/h. Drop factor: 20 gtt/mL. What is the flow rate (gtt/min)? After 6 hours, there are 850 mL remaining; describe your action at this time.

18. Order: 500 mL D5NS IV for 5 h @ 100 ml/h. Drop factor: 20 gtt/mL. What is the flow rate (gtt/min)? After 2 hours, there are 250 mL remaining, describe your action now.

19. Order: Ancef 1 g in 100 cc D5W IV PB to be infused over 45 min. Drop factor: 60 gtt/mL. What is the flow rate (gtt/min)?

20. Calculate the flow rate for each of the following: Order: Give 1,000 mL of 0.45% NaCl IV @ 200 mL/h
 - a. Drop factor 10 gtt/mL
 - b. Drop factor 15 gtt/mL
 - c. Drop factor 20 gtt/mL
 - d. Drop factor 60 gtt/mL

21. Order: Ampicillin 500 mg dissolved in 200 mL D5W IV to run for 2 h. Drop factor: 10 gtt/mL. What is the flow rate (gtt/min)?

22. Order: 1,000 mL D5W IV per 24 h KVO. Drop factor: 60 gtt/ml. What is the drip rate?

23. Order: 200 mL D5RL IV to run KVO for 24 h. Drop factor is 60 gtt/ml. What is the flow rate?

24. Order: 2.5 L NS IV to infuse at 125 mL/h. Drop factor is 20 gtt/mL. Calculate the flow rate.

25. Order: 1,000 mL D5W IV for 6 h. Drop factor is 15 gtt/mL Calculate the flow rate in gtt/min. After 2 hours, 800 mL remain. Describe your action now.

Heparin/Intravenous Calculations

1. Order: Heparin IV to infuse at 1,000 U/h. Is this dosage safe? Normal adult range is 20,000 to 40,000 U/24 h.
2. Order: Heparin IV to infuse at 850 U/h. Is this dosage safe? (same normal range as above).
3. Order: Heparin IV 2,000 U/h. is this dosage safe? (same normal range as above).
4. Order: Add 225 mg of a medication to 250 mL of IV solution and administer 3 mcg/kg/min via infusion pump for a person who weighs 110 lb. Determine the flow rate (mL/h).
5. Order: Lidocaine 2 g IV per 1,000 mL D5W at 4 mg/min. What is the flow rate?
6. Order: Pronestyl 0.5 g IV per 250 mL D5W at 2 mg/min. What is the flow rate?
7. Order: Isuprel 2 mg IV per 500 cc D5W at 5 mcg/min. What is the flow rate?
8. Order: Dopamine 800 mg in 500 mL NS IV at 15 mcg/kg/min. Calculate the flow rate.
9. Order: 1,000 mL 0.45% NS c heparin 25,000 U to infuse at 1,000 U/h. What is the flow rate? What is the daily heparin dosage (U/24h)?
10. Order: 500 mL D5W IV c heparin 40,000 U to infuse at 1,100 U/h. What is the flow rate?
11. Order: 500 mL 0.45% NS IV c heparin 25,000 U to infuse at 500 U/h. What is the flow rate?
12. Order: D5W 1,000 mL IV c heparin 40,000 U to infuse at 40 mL/h. What is the hourly heparin dosage?
13. Order: D5NS 500 mL c heparin 5,000 U added to infuse at 80 mL/h. What is the hourly heparin dosage?
14. Order: D5W 1L IV c heparin 40,000 U to infuse at 30 mL/h. What is the hourly heparin dosage?