

Workshop: Concentrations

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Conversion between concentrations

1. Convert the following concentrations into mg/ml

- a. 100 mg in 5 ml
- b. 1000 mg in 20 ml
- c. 1 g in 100 ml
- d. 1 g in 200 ml
- e. 2 g in 500 ml
- f. 10 g in 1 l

Which of the concentrations in question 1 is the weakest and which is the strongest?

2. Convert the following concentrations into %w/v. %w/v means g/100 ml.

$$\%w/v = \frac{\text{mass (g)}}{\text{volume (ml)}} \times 100$$

- a. 1 g in 100 ml
- b. 5 g in 100 ml
- c. 5 g in 1000 ml
- d. 5 g in 50 ml
- e. 500 mg in 10 ml
- f. 150 mg/ml

Which two concentrations in question 2 have the same strength?

3. Convert each of the following concentrations into the given unit.

- a. 250 mg/10 ml into mg/ml
- b. 250 mg/10 ml into %w/v

- c. 40% w/v into mg/ml
 - d. 2% w/v into mg/ml
4. Convert each of the following concentrations into %v/v. %v/v can be thought of as ml/100 ml (or l/100 l).
- a. 50 ml in 200 ml
 - b. 2 ml in 50 ml
 - c. 500 ml in 2 l
 - d. 0.5 ml in 500 ml

Ordering concentrations by strength

5. Order the following concentrations from weakest to strongest.
- A: 50 mg/ml
 - B: 100 mg/10 ml
 - C: 250 mg/100 ml
 - D: 1 g/500 ml
6. Order the following concentrations from weakest to strongest.
- A: 5% w/v
 - B: 2.5 g/100 ml
 - C: 5 g/10 ml
 - D: 0.8 g/ml
7. Order the following concentrations from weakest to strongest.
- A: 1% w/v
 - B: 100 mcg/ml
 - C: 1 mg/5 ml
 - D: 1 mg/ml

Calculating dosage

8. A patient requires a drug dose of 200 mg. The drug comes in liquid form with a strength of 5 mg/ml. How many ml does the patient need?
9. A patient requires a drug dose of 500 mg. The drug comes in liquid form with a strength of 2 % w/v. How many ml does the patient need?
10. A patient requires a drug dose of 2 g. The drug comes in liquid form with a strength of 800 mg/10 ml. How many ml does the patient need?
11. A patient is given a drug that comes in a strength of 0.4% w/v. The patient needs 20 mg of the drug, twice daily for 7 days. What is the total number of ml required for the treatment?
12. A particular drug comes in a strength of 10 % v/v. The patient needs an active dose of 5 ml per day for 5 days, followed by 10 days of 2.5 ml per day. What is the total ml needed to complete the treatment?