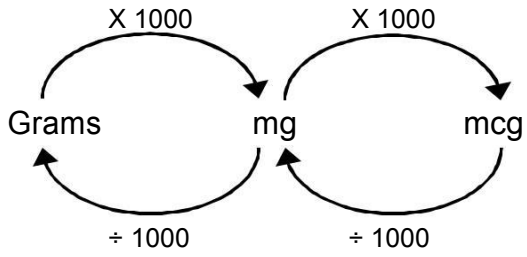
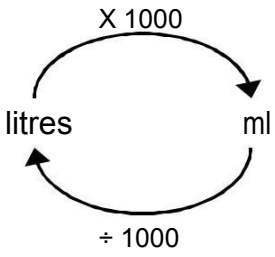
Drug Calculations Refresher Sheet

Conversions:





Body Weight:

4mg/kg means give 4mg for every kg the person weighs.

A 75 kg person would need 75 x 4 = 300mg.

Tablets:

Amount prescribed / Amount in a tablet	=	Number required

Dosage Calculations (liquids or injections):

Required drug dose =	Amount you want / Amount you have	x Volume it's in

e.g. 50mg of a drug is required and your stock is 150mg in 6ml.

Required dose = (want) 50 x 6 (vol) = $\frac{50}{150} \times 6 = 2\text{ml}$

(have) 150

Hours 60

Remember:

Before doing any calculations – make sure your units are the same.

You may find this a useful way to find infusion rates (as taught on *Safe Medicate* ®).

Infusion Rates:

You could be asked for **ml/hour** (ml per hour) or **drops/min** (drops per min).

A standard giving set will administer:
Clear: 20 drops/ml
Blood: 15 drops/ml
Paediatric: 60 drops/ml

To calculate: **ml per hour =** ——————

To calculate: **Drops per min =** (——————) ÷

Where: **drop rate denominator (DRD) =** $\frac{60}{\quad}$

To complete the boxes in Safe Medicate:

1st part: ( ) = /h

2nd part: (1) =

e.g. A prescription asks for 800ml, via I.V. infusion for 5 hours.
The I.V. administration set administers 15 drops/ml.

1st part: $\frac{800}{5} = 160$ /h

2nd part: $\frac{160}{4}$

(DRD = $\frac{60}{15}$ = 4 because the set administers 15 drops per ml)

Try some conversions:

1. 685 micrograms (mcg) = ? mg
2. 24 ml = ? litres
3. 1500g = ? kg
4. 4.5 litres = ? ml
5. 0.02mg = ? mcg
6. 7mg = ? mcg
7. 0.4kg = ? g
8. 8 grams = ? mcg

Tricky questions:

9. 200mg/4ml = ? mg/ml
10. 280mg/7ml = ? mcg/ml

Drug Calculation Questions (give answers to 3dp where appropriate):

1) How many 40mg tablets of codeine are required for a dose of 0.08g?

2) Gentamycin dose is 7mg/kg daily given in divided doses three times. How much should a patient weighing 84kg receive at each dose?

3) A 70mg post immunisation dose of paracetamol is required. Stock available is 140mg in 5ml. What volume is required?

4) A 40mg dose of Amoxicillin is required. Stock available is 200mg in 10ml. What volume is required?

5) Using an infusion pump what rate is required, in ml/hr, for 1 litre of 0.9% sodium chloride over 4 hours?

6) Using an infusion pump what rate is required, in ml/hr, for 3 litre of 0.9% sodium chloride over 6 hours?

7) 800ml of sodium chloride 0.9% is to run over 8 hours. Calculate the drip rate in drops per minute. The I.V. set administers 20 drops/ml.

8) A unit of blood with a volume of 380ml is to run over 4 hours. Calculate the drip rate. The I.V. set administers 15 drops/ml.

9) 1.8 litres of drug x is to run over 9 hours. Calculate the drip rate in drops per minute. The I.V. set administers 12 drops/ml.

10) 900ml of drug y is to run over 3 hours. Calculate the drip rate in drops per minute. The I.V. set administers 10 drops/ml.