

Core Dosage Formulas

CALCULATION	FORMULA
Tablets or volume to give	$(\text{Desired} \div \text{Have}) \times \text{Quantity}$
Weight-based dose	$\text{Dose per kg} \times \text{weight in kg}$
IV flow rate	$\text{Volume (mL)} \div \text{time (hr)} = \text{mL/hr}$
IV drip rate	$[\text{Vol (mL)} \div \text{time (min)}] \times \text{drop factor} = \text{gtt/min}$
Infusion duration	$\text{Volume (mL)} \div \text{rate (mL/hr)} = \text{hr}$
mcg/kg/min $\rightarrow$ mL/hr	$(\text{dose} \times \text{kg} \times 60) \div \text{conc (mcg/mL)}$
Concentration	$\text{Total drug} \div \text{total volume}$
BSA (Mosteller)	$\sqrt{[(\text{ht cm} \times \text{wt kg}) \div 3600]}$
IBW (Devine, male)	$50 \text{ kg} + 2.3 \text{ kg/in over } 5 \text{ ft}$
IBW (Devine, female)	$45.5 \text{ kg} + 2.3 \text{ kg/in over } 5 \text{ ft}$

Conversions to Memorise

UNIT	EQUALS
1 kg	1,000 g · 2.2 lb
1 g	1,000 mg
1 mg	1,000 mcg
1 L	1,000 mL
1 tsp	5 mL
1 tbsp	15 mL · 3 tsp
1 fl oz	30 mL · 2 tbsp
1 cup	240 mL
1 grain (gr)	60 mg
1 lb	454 g

Drop Factors

TUBING	FACTOR	USED FOR
Macrodrop	10 gtt/mL	Large volumes, blood
Macrodrop	15 gtt/mL	Standard IV fluids (US)
Macrodrop	20 gtt/mL	Standard IV fluids (global)
Microdrop	60 gtt/mL	Paediatric, critical drugs

With a 60 gtt/mL microdrop set, gtt/min always equals mL/hr — the 60 drops and 60 minutes cancel out.

Rounding & Sanity Checks

MEASURE	ROUND TO
Drops per minute	Whole drop
Tablets	Half — only if scored
mL (adult)	One decimal place
mL (paediatric)	Two decimal places
Pump rate	Whole mL/hr

Stop and recheck if: the answer needs more than ~3 tablets, less than a quarter tablet, an IM injection over 3 mL, a drip rate too fast to count, or a dose far outside the drug's usual range. These are arithmetic errors, not unusual prescriptions.