

# Dosage Calculation

## Dimensional Analysis

How many seconds in one day?  
you need: seconds/day

Set up your table starting with the first unit. Use the information you have to fill in equivalent units until you reach the other unit you need.

60sec	60min	24hr	multiply	86,400sec
1min	1hr	1 day	across	1 day

## Drip-Rate Questions

Order: 250mL D5W in 2.5hrs  
Tubing: 15gtts/mL

How many gtts/mL?

$$\frac{15\text{gtts}}{1\text{mL}} \times \frac{250\text{mL}}{2.5\text{hrs}} \times \frac{1\text{hr}}{60\text{min}} = \frac{3750}{150}$$

## Dosage-Calc Basics

The doctor ordered 160mg of tylenol. You have tylenol concentrated with 80mg/mL. How many mL will you administer per dose?

You have 80mg and you need to know how many mL to give per dose

$$\frac{\text{per}}{80\text{mg}} \times \frac{\text{you need}}{160\text{mg}} \times \frac{1\text{mL}}{\text{dose}} = \frac{160}{80} = 2\text{mL} / 1 \text{ dose}$$

## Weight-Based Questions

Order: 7.5 mg/kg/day in 4 equal doses  
Child's weight: 42 lbs  
How many mg/dose?

first convert weight

$$42\text{lbs} \times 12.2 = 19.09 \text{ kg}$$

next multiply

$$7.5\text{mg} \times 19.09\text{kg} \text{ to get daily dose}$$

$$7.5\text{mg} \times 19.09\text{kg} = 143.175\text{mg/day}$$

you need mg/dose

$$143.175\text{mg} \times 1 \text{ day} = 143.175$$

$$1 \text{ day} \times 4 \text{ dose} = 4$$

$$= 35.79\text{mg/dose}$$

## Conversions

1 kg	=	2.2 lbs
1 mg	=	1000 mcg
1 g	=	1000 mg
1 oz	=	30 mL
1 tsp	=	5 mL
1 tbsp	=	15 mL
1 L	=	1000 mL
1 mL	=	1 cc
1 cup	=	8 oz
1 kg	=	1000 g

## Banned Abbreviations

μ - write mcg (microgram) instead

TIW - write 3 times weekly instead

U - write unit instead

IU - write international unit instead

QD - write everyday instead

QOD - write every other day instead

HS/hs - write 1/2 strength or bedtime

D/C - write discharge or discontinue