

# Acute Training Solutions

## Subcutaneous Fluids - Calculation Rates

The fluid is infused by gravity and there is no need for a pump to regulate administration.

To set up a manually controlled drip accurately by eye, you need to be able to count the number of drops per minute, which will equate to the amount prescribed.

The formula for calculation is:

$$\text{RATE} = \frac{\text{VOLUME (IN DROPS)}}{\text{TIME (IN MINUTES)}}$$

To calculate the volume in drops, use the following formula:

$$\frac{\text{Number of millilitres to be infused}}{\text{Number of hours over which infusion is to be administered}} \times \frac{\text{Number for drops per millilitre (20)}}{60 \text{ (to give an answer in mins)}}$$

20 is the number of drops per millilitre of most single chambered giving sets. This number will be marked on the packaging of the giving set.

The Primary set recommended for use within the following examples delivers 20 drops per ml.

**Example: Prescription 1 litre to be given over 12hours**

$$\frac{1000 \text{ mls (volume of Infusion)} \times 20 \text{ drops}}{12 \text{ (hrs)} \times 60 \text{ (mins)}} = \frac{20,000}{720} = 27.7 \text{ drops per min}$$

**Example: Prescription 1 Litre to be given over 24hrs**

$$\frac{1000 \text{ mls (volume of Infusion)} \times 20 \text{ drops}}{24 \text{ (hrs)} \times 60 \text{ (mins)}} = \frac{20,000}{1440} = 13.8 \text{ drops per min}$$

**NB:**

When trying to work out a number of drops, it is sensible to round up to a whole number.

Each bag of fluid must be discarded after 24 hours even if the infusion is not complete.