

### Calculating IV Rate ml/hr

- Example 1 1 gram of procainamide hydrochloride in dextrose 5% in water is to be infused at a rate of 70 mcg/kg/minute. The IV has a total volume of 500 ml. Your patient's current weight is 48 lbs. At how many ml/hr will you infuse the IV?

To find the ml/hr:

Step 1 - Write down the patient's weight and convert

Step 2 - Write down desired infusion dosage

Step 3 - Write down the given IV strength (amt/volume)

Step 4 - Convert as needed

Step 5 - Reduce the units

Step 6 - Perform the math

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**Step 1**

$$\frac{48 \text{ lbs}}{1} \times \frac{1 \text{ kg}}{2.2 \text{ lbs}} = \frac{48 \times 1 \text{ kg}}{1 \times 2.2} = \frac{48 \text{ kg}}{2.2} = \frac{21.8 \text{ kg}}{1}$$

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**Step 1**   **Step 2**   **Step 3**   **Step 4**   **Step 6**

$$\frac{21.8 \text{ kg}}{1} \times \frac{70 \text{ mcg}}{1 \text{ kg/min}} \times \frac{500 \text{ ml}}{1 \text{ gram}} \times \frac{60 \text{ min}}{1 \text{ hour}} \times \frac{1 \text{ gram}}{1000000 \text{ mcg}} = \frac{21.8 \times 70 \times 500 \times 60 \text{ ml}}{1 \times 1 \times 1 \times 1000000 \text{ hour}}$$

**Step 5**

### Calculating IV Rate ml/hr

- Example 1** 1 gram of procainamide hydrochloride in dextrose 5% in water is to be infused at a rate of 70 mcg/kg/minute. The IV has a total volume of 500 ml. Your patient's current weight is 48 lbs. At how many ml/hr will you infuse the IV?

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**Step 6**

$$= \frac{21.8 \times 70 \times 500 \times 60 \text{ ml}}{1 \times 1 \times 1 \times 1000000 \text{ hour}} = \frac{45780000 \text{ ml}}{1000000 \text{ hr}} = 46 \text{ ml/hr}$$

Round ml/hr to the nearest whole number.

**Calculating IV Rate ml/hr**

- Example 2 200 milligrams of vibramycin in dextrose 5% in water is to be infused at a rate of 0.012 mg/kg/minute. The IV has a total volume of 220 ml. Your patient's current weight is 130lbs. At how many ml/hr will you infuse the IV?

To find the ml/hr:

- Step 1 - Write down the patient's weight and convert
- Step 2 - Write down desired infusion dosage
- Step 3 - Write down the given IV strength (amt/volume)
- Step 4 - Convert to hours
- Step 5 - Reduce the units
- Step 6 - Perform the math

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### Solution to Example 2

#### Calculating IV Rate ml/hr

- Example 2** 200 milligrams of vibramycin in dextrose 5% in water is to be infused at a rate of 0.012 mg/kg/minute. The IV has a total volume of 220 ml. Your patient's current weight is 130lbs. At how many ml/hr will you infuse the IV?

To find the ml/hr:

- Step 1 - Write down the patient's weight and convert
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**Step 1**

$$\frac{130 \cancel{\text{lbs}}}{1} \times \frac{1 \text{ kg}}{2.2 \cancel{\text{ lbs}}} = \frac{130 \text{ kg}}{2.2} = 59.1 \text{ kg}$$

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#### Calculating IV Rate ml/hr

- Example 2** 200 milligrams of vibramycin in dextrose 5% in water is to be infused at a rate of 0.012 mg/kg/minute. The IV has a total volume of 220 ml. Your patient's current weight is 130lbs. At how many ml/hr will you infuse the IV?

To find the ml/hr:

- Step 1 - Write down the patient's weight and convert
- Step 2 - Write down desired infusion dosage
- Step 3 - Write down the given IV strength (amt/volume)
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**Step 1**   **Step 2**   **Step 3**   **Step 4**   **Step 6**

$$\frac{59.1 \text{ kg}}{1} \times \frac{0.012 \text{ mg}}{1 \text{ kg/min}} \times \frac{220 \text{ ml}}{200 \text{ mg}} \times \frac{60 \text{ min}}{1 \text{ hour}} = \frac{59.1 \times 0.012 \times 220 \times 60 \text{ ml}}{1 \times 1 \times 200 \times 1 \text{ hour}} = \frac{9361.44 \text{ ml}}{200 \text{ hr}}$$

**Step 5**   = 47 ml/hr

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