Example

A patient's weight is recorded as 18st9. We wish to calculate a dosage for them based on their bodyweight. Complete the necessary conversion in order to calculate the dosage.

Answer

Dosage calculations based on bodyweight require the patient's weight in kg. We must therefore convert the patient's weight into pounds, and then convert this to kg:

Weight in pounds = (number of whole stones x 14) + number of remaining pounds = (18st x 14) + 9lbs = 261lbs.

Weight in kg = weight in lbs x 0.454 = 261lbs x 0.454 = 118.49kg

Questions

1. What is 96kg in lbs?

2. What is 15st6 in kg?

3. What is 55kg in lbs?

4. What is 112kg in stones and pounds?

5. If a patient weighs 12st5 and they are prescribed a drug that has a dosage of 5mg/kg of bodyweight/day, what is the daily dose of the drug that they should take?

6. A patient's weight is recorded as 215lbs. They are prescribed a drug that has a dosage of 2mg/kg of bodyweight/day. They need to be administered the drug twice daily, and the drug comes in tablet form. The tablets contain 25mg of the drug. How many tablets should the patient be given in a single dose?

Answers

1. Weight in lbs $= \dfrac{\text{weight in kg}}{0.454} = \dfrac{96\ \text{kg}}{0.454\ \text{kg/lb}} = 211.45$ lbs.

2. Weight in lbs = (number of whole stones x 14) + number of remaining lbs

    = (15st x 14) + 6lbs = 216lbs

    Weight in kg = weight in lbs x 0.454 = 216lbs x 0.454 = 98.06kg.

3. Weight in lbs $= \dfrac{\text{weight in kg}}{0.454} = \dfrac{55\ \text{kg}}{0.454\ \text{kg/lb}} = 121.15$ lbs.

4. Weigh in lbs $= \dfrac{\text{weight in kg}}{0.454} = \dfrac{112}{0.454} = 246.70$ lbs

    Weight in stones $= \dfrac{\text{weight in lbs}}{14} = \dfrac{246.70\ \text{lbs}}{14\ \text{lbs/stone}} = 17.62$ st

    Weight in stones and pounds =

    (whole number part of weight in stones) st (decimal part of weight in stones x 14) =

    17st(0.62 x 14) =17st8.7

5. Weight in lbs = (number of whole stones x 14) + number of remaining pounds = (12st x 14)
    + 5lbs = 173lbs

    Weight in kg = weight in lbs x 0.454 = 173lbs x 0.454 = 78.54kg

    Daily dose (mg/day) = dosage (mg/kg/day) x patient bodyweight (kg)

    = 5mg/kg/day x 78.54kg = 392.71 mg/day

6. Weight in kg = weight in lbs x 0.454 = 97.61kg

    Daily dose (mg/day) = dosage (mg/kg/day) x patient bodyweight (kg)

    = 2 mg/kg/day x 97.61kg = 195.22mg/day

    Single dose (mg/dose) $= \dfrac{\text{Daily dose (mg/day)}}{\text{number of doses per day (doses/day)}} = \dfrac{195.22\ \text{(mg/day)}}{2\ \text{(doses/day)}} = 97.61$ mg/dose.

    Tablet dose (tablets) $= \dfrac{\text{dose prescribed (mg/dose)}}{\text{dose in stock (mg/tablet)}} = \dfrac{97.61\ \text{(mg/dose)}}{25\ \text{(mg/tablet)}} = 3.904$ tablets

Rounded to the nearest whole tablet = 4 tablets