

Addressing a common medication error...

TRICKY INSULIN CALCULATION: NOTE THE DECIMALS (how many zeros) & UNITS (IU/mL)!

A common mistake with insulin, namely Actrapid has been reported quite frequently and is mainly due to errors in:

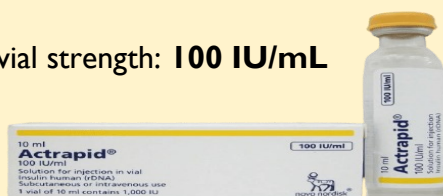
- ★ Dose Calculation
- ★ Dose Administration

Same dose : Actrapid 5 IU
2 different error types

1. CALCULATION

(note the DECIMALS)

Actrapid vial strength: 100 IU/mL



If 5 IU is prescribed, how many mL should be administered?

Answer:

$$\begin{array}{l} x \text{ mL} \rightarrow 5 \text{ IU} \\ 1 \text{ mL} \rightarrow 100 \text{ IU} \end{array} \quad x \text{ mL} = \frac{5 \text{ IU} \times 1 \text{ mL}}{100 \text{ IU}}$$

$$x = 0.05 \text{ mL}$$

$$\text{Hence, } 0.05 \text{ mL} = 5 \text{ IU.}$$

Example of Prescribing Error:

Intended dose: 5 IU

Wrongly prescribed : 0.5 mL

Result : **10X** overdose! (50 IU!)

Consequence: Refractory hypoglycaemia

2. ADMINISTRATION

(note the UNITS)

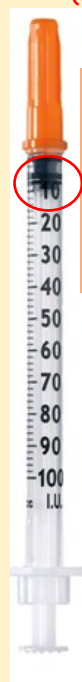
If 5 IU is prescribed, 0.05mL should be administered.

HOW?

If using Insulin Syringe
(RECOMMENDED)

[Scale in IU]

If an insulin syringe is used (left picture), for a dose of 5 IU, make sure to take only 5 IU, which **should not exceed** the 10 IU mark

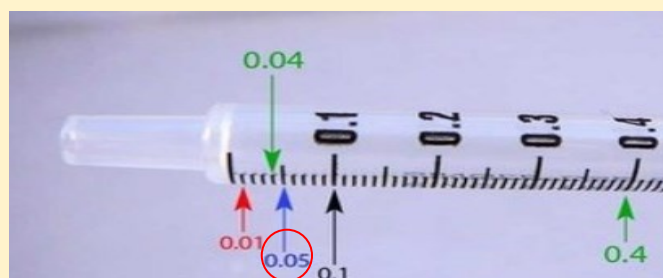


Insulin syringes can be ordered from the central store

Check the VOLUME
and
UNITS
of the syringe!

If using 1ml Syringe

[Scale in 0.01ml]



For 1mL syringe (pic above), make sure to syringe out at the 0.05mL (blue mark) for 5 IU dose. Anything > 0.1mL is overdose!

