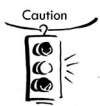


MIXING TWO TYPES OF INSULIN IN ONE SYRINGE

You have learned the steps for drawing up a single type of insulin into a syringe and injecting it. Did you know that some people need to take two types of insulin together in one syringe?

Yes, sometimes two types of insulin are used together in a **MIXED DOSE**. Usually, a mixed dose uses one faster-acting insulin with one slower-acting insulin.

Sometimes mixed doses come pre-mixed in a vial or insulin pen cartridge. Pre-mixed insulin can be drawn up using the standard steps you have already learned.



However, when mixed doses are not pre-mixed, they need to be mixed manually in one syringe. Mixing insulins manually requires extra steps that must be completed in a specific order.

When mixed doses are not already pre-mixed, they need to be mixed manually in one syringe.

The main difference between administering a single type of insulin and a mixed dose of insulin is how you prepare the syringe. Once the syringe is prepared, the steps for giving the injection are the same for a single type of insulin or a mixed dose.

As a general example, let's say that you need to mix:

5 units of a faster-acting insulin

WITH

25 units of a slower-acting insulin

Together, you can see that 5 units of one type of insulin mixed with 25 units of another type will give you a total of 30 units of mixed insulin in the syringe. More simply, $5 \text{ units} + 25 \text{ units} = 30 \text{ units}$.

5 units + **25 units**
Faster-acting insulin Slower-acting insulin




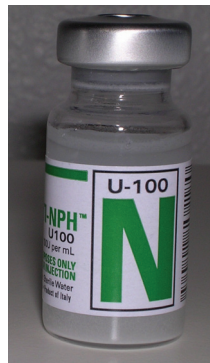
= 30 total units

The steps below show how to prepare the syringe differently with two types of insulin instead of one. Follow the other steps of the insulin administration process as you have already learned them.

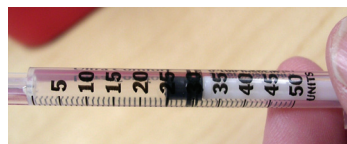
- 1 When you are mixing two types of insulin, you need to inject air into two vials instead of one.



- 2  You **always** inject air into the vial of the slower-acting insulin first.



- 3 Pull the plunger of the syringe back to the # of units of slower-acting insulin needed (in this case, 25 units).



- 4 Inject the air into the vial of slower-acting insulin.



- 5 Then, instead of turning the vial upside down and drawing out insulin, just pull the needle out of the vial.



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Now pull the plunger of the syringe back to the # of units of faster-acting insulin needed (in this case, 5 units).



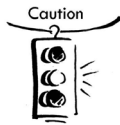
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Inject the air into the vial of faster-acting insulin and turn the vial upside down to draw the faster-acting insulin into the syringe, as usual (in this case, 5 units).



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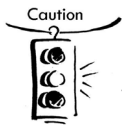
Insert the needle into the vial of slower-acting insulin and draw the slower-acting insulin into the syringe (in this case, 25 more units for a total of 30 mixed-dose units in the syringe).



Be careful when you draw the slower-acting insulin out of the second vial because you can not push the mixture back into the vial if you get air bubbles in the syringe or draw out too much insulin. Instead, you will have to start over with a new syringe.

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You now have a mixed dose of insulin in one syringe and can proceed with the standard steps for injection, documentation, and observation of side effects.



The steps for mixed doses must be followed in the correct order. Specifically, air must be injected into the vial of the slower-acting insulin first and the faster-acting insulin must be drawn into the syringe first.