

## Mixing NPH and Regular Insulin for Injection

Mixing two types of insulin for injection such as regular insulin, which is short acting and NPH insulin, which has a moderate peak of action is often indicated for patients who chronically require insulin therapy. To prevent contamination from multi-use vials the nurse must be familiar with the procedure and special considerations when combining two types of insulin in one syringe for injection.



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### Verify Order

#### Checking Order

The order and the number of units of NPH insulin and regular insulin should be verified in the medication administration record (MAR). Note that the shorter acting insulin is drawn up first. The proper supplies should also be selected including the vials of the insulin, syringe, alcohol pads, and proper PPE.

### Roll NPH Insulin

#### Rolling Neil-Patrick-Harris-vial with Insect-syringe

Roll the NPH insulin between your hands to evenly distribute the medication throughout the vial. Upon completion of rolling the NPH insulin, it should appear uniformly cloudy.

### Alcohol to Multiuse Vials

#### Alcohol-swab Wiping Multiuse Vials

Multiuse vials require the use of an alcohol preparation prior to use of the vial for medication administration.

### Inject Air into NPH Insulin (Cloudy)

#### Injecting Air into Neil-Patrick-Harris-vial with Insect-syringe (Cloudy)

An injection of air equal to the number of units of insulin allows for the medication to be easily withdrawn from the multiuse vial. Vials of medication are vacuum-sealed and failure to inject air into the vial first could create difficulty in attempting to withdraw the medication.

### Inject Air into Regular Insulin (Clear)

#### Injecting Air into Regular-vial with Insect-syringe (Clear)

An injection of air equal to the number of units of insulin allows for the medication to be easily withdrawn from the multiuse vial. Vials of medication are vacuum-sealed and failure to inject air into the vial first could create difficulty in attempting to withdraw the medication. Injecting air into NPH insulin first, then regular insulin second, allows one to immediately withdraw from the regular insulin vial. Regular insulin must always be drawn prior to withdrawing the NPH insulin.

### Withdraw Regular Insulin Units

#### Withdrawing from Regular-vial with Insect-syringe

Withdraw the number of units of regular insulin (clear) ordered into the syringe. Vials should be inverted to withdraw medications.

### **Withdraw NPH Units**

#### [Withdrawing Neil-Patrick-Harris-vial with Insect-syringe](#)

Withdraw the number of units of NPH (cloudy) insulin into the syringe being careful to draw the exact number. Vials should be inverted to withdraw medications.

### **Verify with 2nd Nurse**

#### [Checked by 2nd Nurse](#)

Once the amount of insulin is withdrawn it should be verified with a second nurse. The second nurse should compare the types of insulin, the units, and the mixed syringe with the MAR.

### **Discard if Error**

#### [Throwing-out the Insect-syringe with Error](#)

If the incorrect amount of insulin was withdrawn, the entire syringe should be discarded and the process should be started over. Never return additional amounts withdrawn back into the multiuse vial as this may cause mixing of insulin types.