

**Information for Health Care Professionals
Switching between Insulin Products in an Emergency**

- These guidelines are intended to be used in emergency situations when patients are not on their usual schedule, may have limited monitoring capabilities, or access to their prescribed insulins.
- A reduction in insulin dose is recommended when switching to another insulin under emergency situations to avoid hypoglycemia. This may result in short-term, mild hyperglycemia until the patient is back to a normal routine and insulin regimen.
- **Individuals with Type 1 diabetes have priority for receiving insulin. Even a few hours of interrupted insulin therapy can result in life-threatening Diabetic Ketoacidosis (DKA).**
- The guidelines do not replace clinical judgment.

Switching insulins in patients with complicated insulin needs, e.g. pregnancy, dialysis, insulin pump, U500, should be done in consultation an experienced healthcare professional.

Rapid-acting and Regular Insulins are typically given before meals to regulate the rise in glucose after a meal.

RAPID-ACTING INSULINS:

Humalog® (insulin lispro U-100 & U-200)
Novolog® (insulin aspart)
Apidra® (insulin glulisine)

Rapid- and Short-acting insulins may be interchanged with a 20% reduction in the dose

Example: Humalog 10 units before meals can be switched to Regular 8 units before meals (80% of 10 units = 8 units)

SHORT-ACTING INSULINS:

Regular insulin brand name examples
Humulin®R
Novolin®R
ReliOn R from Walmart

- Rapid-acting insulins should be injected no more than 15 minutes before the start of a meal
- Regular insulin can be injected up to 30 minutes before the start of a meal

Intermediate-acting, long-acting, and ultra long-acting insulins are typically given once or twice daily to provide basal insulin needs (to prevent high glucose between meals and overnight).

INTERMEDIATE-ACTING INSULINS:

NPH insulin brand name examples
Humulin®N
Novolin®N
ReliOn NPH from Walmart

Intermediate-acting insulins may be substituted with a 20% reduction in dose (see bullet point below)

NPH ONCE daily to long-acting or ultra long-acting insulin

Example: NPH 20 units daily can be switched to Levemir® 16 units daily

NPH TWICE daily to long-acting insulin or ultra long-acting insulin

- Add all the units of NPH injected per day and give 80% as a single dose of long-acting insulin daily

Example: NPH 34 units AM and 16 units PM can be switched to Levemir® 40 units daily (80% of 50 units daily = 40 units)

LONG-ACTING INSULINS:

Levemir® (detemir)
Lantus®, Basalgar® (glargine U-100)
Toujeo® (glargine U-300)

Long- or ultra long-acting insulin insulins may be substituted with a 20% reduction in dose (see bullet point above)

Long- or ultra long-acting insulin to NPH (reduce dose by 20%)

- Split new dose into NPH 2/3 in the morning and 1/3 in the evening
- Example: Lantus® 60 units once daily would be decreased to 48 units and given as NPH 32 unit in am and 16 units PM

ULTRA LONG-ACTING INSULINS:
Tresiba® (degludec U-100 & U-200)

Sources: 1. Information Regarding Insulin Storage and Switching Between Products in an Emergency
www.fda.gov/Drugs/EmergencyPreparedness/ucm085213.htm

2. Professional Resource, How to Switch Insulin Products. Pharmacist's Letter/Prescriber Letter. Dec 2016

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<p>Premixed insulins combine an intermediate, long-acting, or ultra long-acting insulin with a rapid or regular insulin. The ratio of the mixture is indicated in the name. e.g. 70% intermediate or long-acting with 30% rapid or short-acting.</p>	
<p>PREMIXED INSULINS with Regular insulin NPH/Regular (Humulin® 70/30, Novolin® 70/30, or ReliOn 70/30)</p> <p>PREMIXED INSULINS with rapid-acting insulin Humalog® Mix 75/25 Humalog® Mix 50/50 Novolog® Mix 70/30</p> <p>PREMIXED INSULIN with rapid- and ultra-long acting insulins Ryzodeg® 70/30 (degludec/aspart)</p>	<p>Pre-mixed insulins may be switched with a 20% reduction</p> <ul style="list-style-type: none"> • Insulin mixes containing a rapid-acting insulin should be injected <u>no more</u> than 15 minutes before the start of a meal • Insulin mixes containing Regular insulin can be injected up to 30 minutes before the start of a meal <p>Premixed insulin to NPH or long-acting or ultra long-acting insulin</p> <ul style="list-style-type: none"> • Add all the units of premixed insulin injected per day • Decrease the total units by 20% • Give as single dose of long-acting or ultra long-acting insulin once a day or NPH 2/3 in the morning and 1/3 in the evening
<p>Unique insulin therapies</p>	
<p>Concentrated insulin: Humulin® R U500 Insulin Strongly recommend consulting a healthcare professional with experience in U500 insulin if needing to switch to another insulin</p>	
<p>Insulin Pump Insulin pump patients may only substitute Humalog®, Novolog®, Apidra® in the insulin pump</p> <ul style="list-style-type: none"> • Substitutions cannot include Regular, long-acting, ultra long-acting, or U-500 insulin <p>Individuals with Type 1 diabetes have priority for receiving insulin. Even a few hours of interrupted insulin therapy can result in life-threatening Diabetic Ketoacidosis (DKA). <u>If the patient does not have a plan for pump failure</u>, consult with a healthcare professional experienced in insulin pump management</p> <p>In emergency conditions when the insulin pump cannot be used, basal insulin is the primary need with rapid- or short-acting insulin a desirable addition:</p> <ul style="list-style-type: none"> • Give 0.3 units/kg of long- or ultra long-acting insulin as a once daily dose <p>Example: patient weighs 60 kg, give 18 units of long-acting insulin once daily</p> <ul style="list-style-type: none"> • If rapid or short acting insulin is available, give 0.3 units/kg divided by 6 at each meal <p>Example: patient weighs 60 kg, give 3 units of rapid or short-acting insulin with each meal</p>	
<p>Insulin Storage Notes:</p> <ol style="list-style-type: none"> 1. Insulin should be kept away from direct heat and sunlight. DO NOT use insulin that has been frozen. 2. <u>Unopened</u> insulin vials and pens should be stored in a refrigerator at 36° F to 46°F and are good until expiration date on the vial or pen. 3. <u>Opened</u> vials and pens may be left unrefrigerated at 59°F to 86°F for up to 28 days. 4. Insulin loses potency when exposed to extreme temperatures which can result in loss of blood glucose control, however, under emergency conditions insulin that has been stored above 86°F may be used if necessary. Once properly stored insulin becomes available, the insulin that has been exposed to extreme conditions should be discarded. 	

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2. Professional Resource, How to Switch Insulin Products. Pharmacist’s Letter/Prescriber Letter. Dec 2016