

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

Decisions on insulin management should err on the side of mild hyperglycemia due to the risks of hypoglycemia for patients not on their usual schedule, with limited monitoring capabilities, and disruption of healthcare infrastructure.

The guidelines below are not intended to replace clinical judgment.

Rapid-acting and Regular Insulins are typically given before meals to regulate the rise in glucose after a meal.	
<p>RAPID-ACTING INSULINS: Humalog® U-100 (insulin lispro) Humalog® U-200 (insulin lispro) Novolog® (insulin aspart) Apidra® (insulin glulisine)</p> <p>SHORT-ACTING INSULINS: Regular insulin available as Humulin®R or Novolin®R or ReliOn R Brand from Walmart</p>	<p>-Rapid-acting and Regular insulins can be switched on a unit for unit basis</p> <ul style="list-style-type: none"> • Rapid-acting insulins should be injected <u>no more</u> 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).	
<p>INTERMEDIATE-ACTING INSULINS: NPH (Humulin®N or Novolin®N) or ReliOn Brand NPH from Walmart</p>	<p>-Different brands of Intermediate-acting insulins can be switched on a unit for unit basis</p> <p>- NPH ONCE daily to a long-acting insulin can be switched on a unit for unit basis</p> <ul style="list-style-type: none"> • e.g. NPH 20 units daily can be switched to Levemir® 20 units daily <p>-NPH TWICE daily to a long-acting insulin</p> <ul style="list-style-type: none"> • Add all the units of NPH injected per day and give as a single dose of long-acting insulin once a day • e.g. NPH 34 units AM and 16 units PM can be switched to Levemir® 50 units once a day
<p>LONG-ACTING INSULINS: Levemir® (detemir) Lantus®, Basalgar® (glargine U-100) Toujeo® (glargine U-300)</p>	<p>-Long-acting insulins can be switched on a unit for unit basis except Toujeo®</p> <ul style="list-style-type: none"> • Recommend 20% reduction if switching <u>from</u> Toujeo® to another long-acting insulin <p>-Long-acting insulin to NPH</p> <ul style="list-style-type: none"> • Decrease current long-acting dose by 20% • Split new dose into NPH 2/3 in the morning and 1/3 in the evening • e.g. Lantus® 60 units once daily would be decreased to 48 units and given as NPH 32 unit in am and 16 units PM
<p>ULTRA LONG-ACTING INSULINS: Tresiba® (degludec U-100) (degludec U-200)</p>	<p>-Intermediate or long-acting insulin to Tresiba®</p> <ul style="list-style-type: none"> • Convert on a unit for unit basis <p>-Tresiba® to long-acting insulin or intermediate insulin</p> <ul style="list-style-type: none"> • Decrease the dose by 20% • Give as Lantus®, Basalgar®, Toujeo®, Levemir® once daily • Split new dose into NPH 2/3 in the morning and 1/3 in the evening (see above for example)

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 or long-acting or ultra long-acting insulin with a rapid or short-acting insulin. The ratio of the mixture is indicated in the name. e.g. Novolin 70/30 is 70% NPH and 30% Regular; or Novolog Mix 70/30 is 70% aspart protamine and 30% aspart)</p>	
<p>PREMIXED INSULINS NPH/Regular (Humulin® 70/30, Novolin® 70/30, or ReliOn brand)</p> <p>Humalog® Mix 75/25 Humalog® Mix 50/50</p> <p>Novolog® Mix 70/30</p> <p>Ryzodeg® 70/30 (degludec/aspart)</p>	<p>-Premixed insulin to another brand premixed insulin convert unit for unit.</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 other insulin types: Only consider NPH or long-acting insulin unless experienced in insulin conversions using</p> <p>- Premixed to NPH can be converted unit for unit</p> <p>- Premixed to 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
<p>Humulin® R U500 Insulin</p>	<p>-U500 insulin is FIVE times more concentrated than U100 insulin and should be dosed by a health care professional with expertise with this insulin.</p> <ul style="list-style-type: none"> • Strongly recommend consulting a healthcare professional with experience in U500 insulin if needing to switch to another insulin
<p>Insulin Pump</p>	<p>-If the patient does not have a plan for pump failure, must consult with a healthcare professional experienced in insulin pump management</p> <p>-If the patient has Type 1 diabetes, they <u>must</u> have long-acting insulin if not receiving insulin by the pump or they will develop DKA</p> <p>In emergency conditions to prevent DKA when the insulin pump cannot be used:</p> <ul style="list-style-type: none"> • Give 0.2 units/kg of long acting insulin as a once daily dose • Example: patient weighs 60 kg, give 12 units of long-acting insulin once daily
<p>Insulin Storage Notes:</p> <ol style="list-style-type: none"> 1. Insulin should be kept away from direct heat and sunlight. 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. 5. DO NOT use insulin that has been frozen. 	

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