



## INSULIN STORAGE GUIDE

Wisconsin Department of Health Services / Division of Quality Assurance

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Insulin is available from drug manufacturers in two basic packages – vials and pens

General insulin storage requirements are as follows:

1. Never freeze; frozen insulin should be thrown away.
2. Never use insulin beyond the expiration date stamped on the vial, pen, or cartridge that is supplied from the drug manufacturer.
3. Never expose insulin to direct heat or light.
4. Inspect insulin prior to each use. Any insulin that has clumps or solid white particles should not be used. Insulin that is supposed to be clear should not have any cloudy appearance.
5. Check storage guidelines specific to the insulin formulation. This is usually in the product package insert.
6. Unopened, not-in-use insulin should be stored in a refrigerator at a temperature of 36-46° F.
7. Opened, in-use insulin should be stored at a room temperature below 86° F.
8. If receiving insulin through the mail, always confirm that the insulin is going to be stored under proper conditions.

Mixing insulin in vials or in syringes is a **generally** acceptable approach to customize insulin treatment and minimize injections. It is recommended that the same technique or procedure to mix and store these customized preparations be utilized. Some types of insulin, when mixed, may react with each other; therefore, it is recommended that all mixtures be stored for a consistent amount of time before using or that they be used immediately. ***When mixing insulin, it is extremely important that the rapid-acting insulin be drawn into the syringe FIRST, followed by the long acting. Before mixing insulin, a pharmacist or physician should be consulted.***

The following tables address specific expiration or beyond-use dating guidelines that apply to insulin products. The tables also include onset of action information. Every effort has been made to assure the accuracy of the attached information. This information is not intended to be used as a tool to prescribe medication or provide other clinical services. Please consult with a pharmacist for the most up-to-date information on insulin.

## INSULIN STORAGE

Product Name	Unopened Refrigerated	Unopened Room Temperature	Seal Punctured, Refrigerated / Room Temperature
<b>VIALS</b>			
<b>Humulin: R</b>	Labeled expiration date	31 days	31 days
<b>Humulin: N, 70-30</b>	Labeled expiration date	31 days	31 days
<b>Humulin: U-100, U-500</b>	Labeled expiration date	31 days	31 days
<b>Humalog: 50/50, 75/25</b>	Labeled expiration date	28 days	28 days
<b>Novolin: R, N, 70-30</b>	Labeled expiration date	42 days	42 days (recommended to stay at room temp once used)
<b>Novolog: Novolog, 70/30</b>	Labeled expiration date	28 days	28 days
<b>Levemir®</b>	Labeled expiration date	42 days	42 days
<b>Lantus® / Basaglar®</b>	Labeled expiration date	28 days	28 days
<b>Toujeo®</b>	Labeled expiration date	42 days	42 days
<b>PENS</b>			In use, must be at room temperature
<b>Humulin: N Prefilled pen</b>	Labeled expiration date	14 days	14 days
<b>Humulin: 70/30 Prefilled pen</b>	Labeled expiration date	10 days	10 days
<b>Humalog: 50/50 Prefilled Pen, KwikPen</b>	Labeled expiration date	10 days	10 days
<b>Humalog: Prefilled Pen, KwikPen</b>	Labeled expiration date	28 days	28 days
<b>Humalog: 75/25 Prefilled Pen, KwikPen</b>	Labeled expiration date	10 days	10 days
<b>Novolog</b>	Labeled expiration date	28 days	28 days
<b>Novolog: 70/30</b>	Labeled expiration date	14 days	14 days
<b>Levemir®</b>	Labeled expiration date	42 days	42 days
<b>Lantus®</b>	Labeled expiration date	28 days	28 days
<b>Tresiba®</b>	Labeled expiration date	56 days	56 days
<b>Toujeo® SoloStar®</b>	Labeled expiration date	28 days	28 days

## INSULIN CHARACTERISTICS

Brand	Action	Onset	Peak	Duration	Appearance	Comments
<b>Apidra</b>	Rapid	20 min.	30-60 min.	3-5 hrs.	Clear	15 min. before or within 20 minutes after meals
<b>Humalog</b>	Rapid	15-30 min.	30-90 min.	3-5 hrs.	Clear	15 min. before or immediately after meals
<b>Humalog: 75/25 Mix</b>	Mixed	15-30 min.	1-6.5 hrs.	Up to 24 hrs.	Cloudy	Within 15 min. of meals
<b>Humalog: 50/50 Mix</b>		10-15 min.	Varies	10-16 hrs.	Cloudy	Within 15 min. before meals
<b>Humulin: L</b>	Intermediate	1-4 hrs.	4-14 hrs.	12-24 hrs.	Cloudy	30-60 min. before meal or at bed time
<b>Humulin: N</b>	Intermediate	1-4 hrs.	4-14 hrs.	10-24 hrs.	Cloudy	
<b>Humulin: R</b>	Short	0.5-1 hr.	2.5-5 hrs.	8-12 hrs.	Clear	30-60 min. before a meal.
<b>Humulin: U</b>	Long	4-6 hrs.	8-20 hrs.	18-36 hrs.	Cloudy	30-60 min. before a meal or at
<b>Humulin: 70/30</b>	Mixed	0.5-1 hr.	1.5-16 hrs.	10-24 hrs.	Cloudy	30 min. before a meal
<b>Humulin: 50/50</b>	Mixed	0.5-1 hr.	2.5-5 hrs.	10-24 hrs.	Cloudy	30 min. before a meal
<b>Lantus</b>	Long	1.5 hrs.	Constant	24 hrs.	Clear	
<b>Levemir</b>	Long	N/A	6-8 hrs.	12-24 hrs.	Clear	
<b>Novolin: N</b>	Intermediate	1-4 hrs.	4-14 hrs.	10-24 hrs.	Cloudy	
<b>Novolin: R</b>	Short	0.5-1 hr.	2.5-5 hrs.	8-12 hrs.	Clear	30-60 min. before a meal.
<b>Novolin: 70/30</b>	Mixed	0.5-1 hr.	1.5-16 hrs.	10-24 hrs.	Cloudy	30 min. before a meal
<b>Novolog</b>	Rapid	15 min.	1-2 hrs.	3-5 hrs.	Clear	5-10 min. before a meal
<b>Novolog: 70/30</b>	Mixed		1-4 hrs.	15-24 hrs.	Clear	Within 15 min. of meals
<b>Afrezza</b>	Rapid	10-20 min.	12-15 min.	3 hrs.	N/A, Inhaled Powder	At beginning of each meal
<b>Toujeo</b>	Ultra Long	6 hrs.	Constant	36 hrs.	Clear	
<b>Tresiba</b>	Long Acting	N/A	Constant	24 hrs.	Clear/ colorless	