

**Information For The Patient**  
**LEVEMIR (LEV uh mere)**  
**Insulin detemir [rDNA origin] injection**  
**3 mL PenFill® Disposable Cartridge (300 units per cartridge)**  
**10 mL Vial (1000 units per vial)**  
**100 Units/mL (U-100)**

Read this information carefully before you begin treatment and each time you get a refill because there may be new information. This information does not take the place of talking with your doctor about your medical condition or your treatment. If you have any questions about **LEVEMIR** (LEV uh mere), ask your doctor. Only your doctor can determine if **LEVEMIR** is right for you.

**What is the most important information I should know about LEVEMIR?**

- **Do not change the insulin you are using without talking to your doctor.**  
Any change of insulin should be made cautiously and only under medical supervision. Changes in insulin strength, manufacturer, type (for example: Regular, NPH, analogs), species (beef, pork, beef-pork, human) or method of manufacture (recombinant DNA versus animal source insulin) may need a change in the dose. This dose change may be needed right away or later on during the first several weeks or months on the new insulin. Doses of oral anti-diabetic medicines may also need to change, if your insulin is changed.
- **You must test your blood sugar levels while using an insulin, such as LEVEMIR.**  
Your doctor will tell you how often you should test your blood sugar level, and what to do if it is high or low.
- **LEVEMIR should not be diluted or mixed with any other insulin or solution.**
- **LEVEMIR** comes as U-100 insulin and contains 100 units of LEVEMIR per milliliter (mL). One milliliter of U-100 insulin contains 100 units of insulin. (1 mL = 1 cc).

**What is LEVEMIR?**

- LEVEMIR (insulin detemir [recombinant DNA origin]) is a long-acting insulin. Because LEVEMIR is made by recombinant DNA technology (rDNA) and is chemically different from the insulin made by the human body, it is called an insulin analog. LEVEMIR is used to treat patients with diabetes for the control of high blood sugar. It is used once or twice a day to lower blood sugar.
- LEVEMIR is a clear, colorless, sterile solution for injection under the skin (subcutaneously).
- The active ingredient in LEVEMIR is insulin detemir. The concentration of insulin detemir is 100 units per milliliter (mL), or U-100. LEVEMIR also contains zinc, m-cresol, glycerol (mannitol for vial product), phenol, disodium phosphate dihydrate, sodium chloride, and water for injection as inactive ingredients. Hydrochloric acid and/or sodium hydroxide may be added to adjust the final pH. LEVEMIR has a pH of approximately 7.4.

- You need a prescription to get LEVEMIR. Always be sure you receive the right insulin from the pharmacy.

LEVEMIR is available as:

- 10 mL vials (small bottles) for use with a syringe
- 3 mL PenFill® cartridges\*
- 3 mL FlexPen®
- 3 mL InnoLet®

\* PenFill® cartridges are for use with Novo Nordisk 3 mL PenFill® cartridge compatible insulin delivery devices and NovoFine® disposable needles.

### **Who should not take LEVEMIR?**

#### **Do not take LEVEMIR if:**

- Your blood sugar is too low (hypoglycemia).
- You are allergic to LEVEMIR or any of its ingredients. Check with your doctor or pharmacist if you want information about the ingredients.

#### **Before starting LEVEMIR, tell your doctor about all your medical conditions including if you:**

- **have liver or kidney problems.** Your dose may need to be adjusted.
- **are pregnant or planning to become pregnant.** It is not known if LEVEMIR can cause any harm to your unborn baby if it is taken during pregnancy. It is very important to maintain control of your blood sugar levels during pregnancy. Your doctor will decide which insulin is best for you during your pregnancy.
- **are breast-feeding or planning to breast-feed.** It is not known whether LEVEMIR passes into your milk. Many medicines, including insulin, pass into human milk, and could affect your baby. Talk to your doctor about the best way to feed your baby.
- **take any other medicines,** including prescription and non-prescription medicines, vitamins, and herbal supplements. Be sure to mention about all medicines and supplements you are taking because some medicines, including non-prescription medicines and dietary supplements, may affect your diabetes. **Do not start any new medicines until you know how they may affect your insulin dose.**

### **How should I take LEVEMIR?**

- Follow your doctor's instructions about monitoring your blood sugar. Do not make any changes with your insulin unless you have talked to your doctor. Your insulin needs may change because of illness, stress, other medicines, or changes in diet or activity level. Talk to your doctor about how to adjust your insulin dose.
- LEVEMIR can be taken once- or twice-daily. Your LEVEMIR dose and frequency of dosing should be individualized based on your doctor's advice.
- Before injecting LEVEMIR, make sure that you have the correct type and strength of insulin. Carefully follow the instructions on how to use your insulin syringe or insulin Pen.
- LEVEMIR should be inspected visually prior to administration and should only be used if the solution appears clear and colorless.
- Inject LEVEMIR under your skin (subcutaneously). Never inject it into a vein.

- The effect of an injected insulin dose may occur faster if the insulin is injected into your upper arm or abdomen (stomach area). However, you may also inject under the skin of your thigh.
- Change (rotate) injection sites within the same body area.
- Measure your blood sugar level as directed by your doctor.
- Carefully follow the instructions given by your doctor about the type of insulin you are using, its dose, and time of its injection. Any change in insulin should be made cautiously and only with your doctor's guidance. Your insulin needs may change due to a number of factors, such as illness, stress, medicines, or changes in diet or exercise routines. Follow your doctor's instructions to make these changes in your dose regimen.
- Clean your hands and the injection site with soap and water or with alcohol before you start the injection process.
- If you use insulin delivery device (insulin Pen), see the instructions on how to use the insulin Pen. It is important to read, understand, and follow the step-by-step instructions.

### **What should I use to take my insulin?**

- 3 mL PenFill® cartridges\*  
\*LEVEMIR PenFill® cartridges are for use with Novo Nordisk 3 mL PenFill® cartridge compatible insulin delivery devices and NovoFine® disposable needles.
- 10 mL vials (small bottles) for use with a syringe.
  - Always use a syringe that is marked for U-100 insulin. If you use something other than U-100 insulin syringe, you may get the wrong dose of insulin causing serious problems for you, such as blood sugar level that is too low or too high. Always use a new needle and syringe each time you give LEVEMIR injection.
  - NEEDLES AND SYRINGES MUST NOT BE SHARED
  - Disposable syringes and needles should only be used once. Used syringe and needle should be placed in "sharps" containers (such as red biohazard containers, hard plastic containers (such as detergent bottles), or metal containers (such as empty coffee cans). Such containers should be sealed and disposed of properly.

**See the end of this patient information for instructions about preparing and giving the injection.**

### **Mixing with LEVEMIR**

LEVEMIR should NOT be mixed with any other insulin or solution. It will not work as intended and you may lose blood sugar control, which could be serious.

### **What should I know about using LEVEMIR?**

- LEVEMIR can be taken once-daily in the evening. LEVEMIR can also be taken twice-daily in the morning and in the evening.
- Depending on dose, the effect of LEVEMIR can last for up to 24 hours after injection.

The effects of insulin may be different for different people. Even in the same person, the effects may vary from day to day. Because of this variation, the time periods listed here are general guidelines only.

### **What can affect how much insulin I need?**

**Illness.** Illness may change how much insulin you need. It is a good idea to think ahead and make a "sick day" plan with your doctor in advance so you will be ready when this happens. Be sure to test your blood sugar more often and call your doctor if you are sick.

**Medicines.** **Many medicines can affect your insulin needs.** Other medicines, including prescription and non-prescription medicines, vitamins, and herbal supplements, can change the way insulin works. You may need a different dose of insulin when you are taking certain other medicines. **Know all the medicines you take,** including prescription and non-prescription medicines, vitamins and herbal supplements. You may want to keep a list of the medicines you take. You can show this list to your doctor and pharmacist anytime you get a new medicine or refill. Your doctor will tell you if your insulin dose needs to be changed.

**Meals.** The amount of food you eat can affect your insulin needs. If you eat less food, skip meals, or eat more food than usual, you may need to adjust your insulin dose. Talk to your doctor if you change your diet so that you know how to adjust your LEVEMIR and other insulin doses.

**Alcohol.** Alcohol, including beer and wine, may affect the way LEVEMIR works and affect your blood sugar levels. Talk to your doctor about drinking alcohol.

**Exercise or Activity level.** Exercise or activity level may change the way your body uses insulin. Check with your doctor before you start an exercise program because your dose may need to be changed.

**Travel.** If you travel across time zones, talk with your doctor about how to time your injections. When you travel, wear your medical alert identification. Take extra insulin and supplies with you.

**Pregnancy or nursing.** The effects of LEVEMIR on an unborn child or on a nursing baby are unknown. Therefore, tell your doctor if you planning to have a baby, are pregnant, or nursing a baby. Good control of diabetes is especially important during pregnancy and nursing.

### **What should I avoid while taking LEVEMIR?**

- Alcohol, including beer and wine, may increase and lengthen the risk of hypoglycemia (too low blood sugar) when you take LEVEMIR.
- Be careful when you drive a car or operate machinery. Your ability to concentrate or react may be reduced if you have hypoglycemia. Ask your doctor if you should drive if you have frequent hypoglycemia or reduced or absent warning signs of hypoglycemia.

### **What are the possible side effects of LEVEMIR?**

Insulins, including LEVEMIR, can cause hypoglycemia (low blood sugar), hyperglycemia (high blood sugar), allergy, and skin reactions.

**Hypoglycemia** (low blood sugar) This is the most common side effect. It occurs when there is a conflict between the amount of carbohydrates (source of glucose) from your food, the amount of glucose used by your body, and the amount and timing of insulin dosing. Therefore, **hypoglycemia can happen with:**

- **The wrong insulin dose.** This happens when too much insulin is injected.
- **Medicines that directly lower glucose or increase sensitivity to insulin.** This can happen with oral (taken by mouth) antidiabetes drugs, sulfa antibiotics (for infections), ACE inhibitors (for blood pressure and heart failure), salicylates, including aspirin and NSAIDS (for pain), some antidepressants, and with other medicines.
- **Medical conditions that limit the body's glucose reserve, lengthen the time insulin stays in the body, or that increase sensitivity to insulin.** These conditions include diseases of the adrenal glands, the pituitary, the thyroid gland, the liver, and the kidney.
- **Not enough carbohydrate (sugar or starch) intake.** This can happen if:
  - a meal or snack is missed or delayed
  - you have vomiting or diarrhea that decreases the amount of glucose absorbed by your body
  - alcohol interferes with carbohydrate metabolism
- **Too much glucose use by the body.** This can happen from:
  - too much exercise
  - higher than normal metabolism rates due to fever or an overactive thyroid

What are symptoms of **mild to moderate** hypoglycemia:

- Sweating
- Dizziness
- Palpitation (fast heart beat)
- Tremor (shakiness)
- Hunger
- Restlessness
- Tingling in the hands, feet, lips, or tongue
- Lightheadedness
- Trouble concentrating
- Headache
- Drowsiness
- Sleep problems
- Anxiety
- Blurred vision
- Slurred speech
- Depressed mood
- Irritability
- Abnormal behavior
- Unsteady movement
- Personality change

What are symptoms of **severe** hypoglycemia:

- Disorientation
- Unconsciousness
- Seizures (convulsions)
- Death

If you develop serious hypoglycemic reactions, get medical help right away.

Without recognition of early warning symptoms, you may not be able to take steps to avoid more serious hypoglycemia. Be alert for all of the various types of symptoms that may indicate hypoglycemia. Patients who experience hypoglycemia without early warning symptoms should monitor their blood glucose frequently, especially prior to activities such as driving. If the blood glucose is below your normal fasting glucose, you should consider eating or drinking sugar-containing foods to treat your hypoglycemia. Mild to moderate hypoglycemia may be treated by eating foods or drinks that contain sugar. Patients should always carry a quick source of sugar, such as candy mints or glucose tablets. More severe hypoglycemia may require the assistance of another person. Patients who are unable to take sugar orally or who are unconscious require an injection of glucagon or should be treated with intravenous administration of glucose at a medical facility. You should learn to recognize your own symptoms of hypoglycemia. If you are uncertain about these symptoms, you should monitor your blood glucose frequently to help you learn to recognize the symptoms that you experience with hypoglycemia.

If you have frequent episodes of hypoglycemia or experience difficulty in recognizing the symptoms, you should consult your doctor to discuss possible changes in therapy, meal plans, and/or exercise programs to help you avoid hypoglycemia.

**Hyperglycemia** (high blood sugar) is another common side effect. It also occurs when there is a conflict between the amount of carbohydrates (source of glucose) from your food, the amount of glucose used by your body, and the amount and timing of insulin dosing. Therefore, **hyperglycemia can occur with:**

- **The wrong insulin dose.** This can happen when too little or no insulin is injected.
- the insulin's ability to lower glucose is changed by incorrect storage (freezing, excessive heat), or usage after the expiration date
- **Medicines that directly increase glucose or decrease sensitivity to insulin.** This can happen, for example, with thiazide water pills (used for blood pressure), corticosteroids, birth control pills, and protease inhibitors (used for AIDS).
- **Medical conditions that increase the body's production of glucose or decrease sensitivity to insulin.** These medical conditions include fevers, infections, heart attacks, and stress.
- **Too much carbohydrate intake.** This can happen if you:
  - eat larger meals
  - eat more often
  - increase the proportion of carbohydrate in your meals

In patients with type 1 or insulin-dependent diabetes, long-lasting hyperglycemia can cause diabetic ketoacidosis (DKA). The first symptoms of DKA usually come on slowly, over a period of hours or days, and include feeling drowsy, flushed face, thirst, loss of appetite, and fruity odor on the breath. With DKA, urine tests show large amounts of glucose and ketones. Heavy breathing and a rapid pulse are more severe symptoms. If uncorrected, long-lasting hyperglycemia or DKA can lead to nausea, vomiting, stomach pains, dehydration, loss of consciousness, or even death. Therefore, it is important that you obtain medical help right away.

**Other possible side effects include the following:**

- **Serious allergic reaction.**  
Get medical help right away if you develop a rash over your whole body, have trouble breathing, a fast heartbeat, or sweating. These are signs of a dangerous allergic reaction (systemic allergic reaction). These reactions are not common.
- **Reaction at the injection site** (local allergic reaction). You may get redness, swelling and itching at the injection site. If you have serious or continuing reactions, you may need to stop using LEVEMIR and use another insulin. Do not inject insulin into skin sites with these reactions. No type of insulin should be injected into skin sites with these reactions.
- **Skin thickens or pits at the injection site**, especially if the injection site is not rotated (changed).
- **Vision changes** that may require evaluation by an ophthalmologist (medical doctor specializing in eye disease) or changes in your eyeglasses or contact lens prescription.
- **Fluid retention or swelling of your hands and feet.**
- **Low potassium in your blood** (hypokalemia)

There are other possible side effects from LEVEMIR. Ask your doctor or pharmacist for further information. Tell your doctor or pharmacist if you have any other unwanted effects that you believe are caused by this insulin.

**How should I store LEVEMIR?**

- **Unopened vials and PenFill cartridges:**  
Store unopened vials and PenFill cartridges in a refrigerator (36°F to 46°F; 2°C to 8°C) but not in the freezer. Do not use LEVEMIR if it has been frozen. Keep unopened LEVEMIR vials and PenFill® cartridges in the carton so they will stay clean and protected from light because the product is light sensitive.
- **Punctured vials:**  
After initial use, the punctured vials should be stored in a refrigerator but not in a freezer. If refrigeration is not possible, the vial that you are currently using can be kept at room temperature up to 42 days, as long as it is kept below 30°C [86°F]. **Throw away unrefrigerated vials after 42 days from the first use, even if they still contain insulin.**
- **Punctured cartridges:**  
**After initial use (the rubber membrane has been punctured), do not refrigerate the punctured LEVEMIR PenFill® cartridges.** However, keep them as cool as possible (below 30°C [86°F]). PenFill® cartridge that you are currently using can be kept at room temperature up to 42 days, as long as they are kept below 30°C [86°F]. **Throw away unrefrigerated disposable LEVEMIR PenFill® cartridges after 42 days from the cartridges first use, even if it still contains LEVEMIR.**

Keep all disposable PenFill® cartridges and vials away from direct heat and sunlight.

These storage conditions are summarized in the following table:

	Not in-use (unopened) Room Temperature (below 30°C)	Not in-use (unopened) Refrigerated	In-use (opened) Room Temperature (below 30°C)
10 mL vial	42 days	Until expiration date	42 days refrigerated/room temperature
3 mL PenFill cartridges <sup>®</sup>	42 days	Until expiration date	42 days ( <b>Do not refrigerate</b> )

### General information about LEVEMIR

Use LEVEMIR only to treat your diabetes. **Do not** give it to any other person. Ask your doctor or pharmacist about any concerns you have. They can answer your questions and give you written information about LEVEMIR written for health care professionals.

Doses of insulin are measured in units. LEVEMIR is available as a U-100 insulin. One milliliter (mL) of U-100 contains 100 units of insulin detemir. (1 mL = 1 cc). Only U-100 type syringes should be used for injection to ensure proper dosing.

Disposable syringes and needles are sterile if the package is sealed. They should be used only once and thrown away properly, to protect others from harm.

### How should I prepare and deliver the injection using different delivery devices?

#### Using the 10 mL vial:

1. At your first use, remove the tamper-resistant cap from the vial. If the cap has already been removed, do not use this vial and return it to your pharmacy.
2. Wipe the rubber membrane with an alcohol swab.
3. Do not roll or shake the vial. Vigorous shaking right before the dose is drawn into the syringe may cause bubbles or froth, which could cause dosage errors. The insulin should be used only if it is clear and colorless.
4. Pull back the plunger on your syringe until the black tip reaches the marking for the number of units you will inject.
5. Push the needle through the rubber membrane into the vial.
6. Push the plunger all the way in. This inserts air into the vial.
7. Turn the vial and syringe upside down together and slowly pull the plunger back to a few units beyond the correct dose.
8. If there are air bubbles, tap the syringe gently with your finger to raise the air bubbles to the needle. Then slowly push the plunger to the correct unit marking.
9. Lift the vial off the syringe.
10. Inject right away.
11. The syringe and vial should be disposed of properly without recapping the needle. After each injection, patients must **remove the needle without recapping** and dispose of it in a puncture-resistant container. Used syringes, needles, or lancets should be placed in sharps containers (such as red biohazard containers), hard plastic containers (such as detergent bottles), or metal containers (such as an empty coffee can). Such containers should be sealed and disposed of properly.

**Using the LEVEMIR 3 mL PenFill® cartridge in 3 mL PenFill® cartridge delivery devices\* (\*see 3 mL PenFill® cartridge compatible delivery devices section):**

1. Read the instruction manuals for the 3 mL PenFill® cartridge compatible delivery device\* before the device is used.
2. The insulin should be used only if it is clear and colorless. Insert the PenFill® cartridge into the 3 mL PenFill® cartridge compatible delivery device\*.
3. Place the needle onto the 3 mL PenFill® cartridge compatible delivery device\* immediately before use
4. Airshots should be done prior to each injection. Directions for performing an airshot and setting the dose are provided in your insulin delivery device instruction manual.
5. Discard needle after each dose. The needle should not be recapped to avoid needlesticks. After each injection, patients must **remove the needle without recapping** and dispose of it in a puncture-resistant container. Used syringes, needles, or lancets should be placed in sharps containers (such as red biohazard containers), hard plastic containers (such as detergent bottles), or metal containers (such as an empty coffee can). Such containers should be sealed and disposed of properly.

**After the first use of PenFill® cartridge:**

1. Airshots should be done prior to each injection. Directions for performing an airshot and setting the dose are provided in your insulin delivery device instruction manual.
2. To avoid needle sticks, **do not recap** the needle. Throw away the needle safely after each injection

**How should I inject LEVEMIR insulin with a syringe or 3 mL PenFill® cartridge compatible delivery device\*?**

1. Pinch your skin between two fingers, push the needle into the skinfold, and push the plunger to inject the insulin under your skin. The needle should be perpendicular to the skin. This means the needle will be straight in.
2. Keep the needle under your skin for at least 6 seconds to make sure you have injected all the insulin.
3. If blood appears after you pull the needle from your skin, press the injection site lightly with a finger. Do not rub the area.

\* LEVEMIR PenFill® cartridges are for use with Novo Nordisk 3 mL PenFill® cartridge compatible insulin delivery devices and NovoFine® disposable needles.

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For additional information regarding diabetes, contact the American Diabetes Association (ADA) at 1-800-DIABETES (1-800-342-2383), or visit the ADA website ([www.diabetes.org](http://www.diabetes.org)).

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