
Patient Information for Novolin® N**NOVOLIN® N (NO-voe-lin)**

NPH,
Human Insulin Isophane Suspension Injection
(recombinant DNA origin)

100 units/mL**Important:**

Know your insulin. Do not change the type of insulin you use unless told to do so by your healthcare provider. The amount of insulin you take as well as the best time for you to take your insulin may need to change if you take a different type of insulin.

Make sure that you know the type and strength of insulin that is prescribed for you.

Read the Patient Information leaflet that comes with Novolin N before you start taking it and each time you get a refill. There may be new information. This leaflet does not take the place of talking with your healthcare provider about your diabetes or your treatment. Make sure you know how to manage your diabetes. Ask your healthcare provider if you have any questions about managing your diabetes.

What is Novolin N?

Novolin N is a man-made insulin (recombinant DNA origin) NPH, Human Insulin Isophane Suspension that is structurally identical to the insulin produced by the human pancreas that is used to control high blood sugar in patients with diabetes mellitus.

Who should not use Novolin N?**Do not take Novolin N if:**

- Your blood sugar is too low (hypoglycemia).
- You are allergic to anything in Novolin N. See the end of this leaflet for a complete list of ingredients in Novolin N. Check with your healthcare provider if you are not sure.

Tell your healthcare provider:

- **about all of your medical conditions.** Medical conditions can affect your insulin needs and your dose of Novolin N.
- **if you are pregnant or breastfeeding.** You and your healthcare provider should talk about the best way to manage your diabetes while you are pregnant or breastfeeding. Novolin N has not been studied in pregnant or nursing women.
- **about all of the medicines you take,** including prescription and non-prescription medicines, vitamins and herbal supplements. Many medicines can affect your blood sugar levels and your insulin needs. Your Novolin N dose may need to change if you take other medicines.

Know the medicines you take. Keep a list of your medicines with you to show all your healthcare providers when you get a new medicine.

How should I take Novolin N?

Only use Novolin N if it appears cloudy or milky. There may be air bubbles. This is normal. If the precipitate (the white deposit at the bottom of the vial) has become lumpy or granular in appearance or has formed a deposit of solid particles on the wall of the vial, do not use it, and call Novo Nordisk at 1-800-727-6500. This insulin should not be used if the liquid in the vial remains clear after the vial has been gently rotated.

Novolin N comes in:

- 10 mL vials (small bottles) for use with syringe

Read the instructions for use that come with your Novolin N product. Talk to your healthcare provider if you have any questions. Your healthcare provider should show you how to inject Novolin N before you start taking it. Follow your healthcare provider's instructions to make changes to your insulin dose.

- **Take Novolin N exactly as prescribed.**
- **Novolin N is an intermediate-acting insulin.** The effects of Novolin N start working 1½ hours after injection.
- The greatest blood sugar lowering effect is between 4 and 12 hours after the injection. This blood sugar lowering may last up to 24 hours.
- **While using Novolin N,** any change of insulin should be made cautiously and only under medical supervision. Doses of oral anti-diabetic medicines may also need to change, if your insulin is changed.
- **Do not mix Novolin N** with any insulins other than Regular human insulin in the same syringe.
- **Inject Novolin N into the skin of your stomach area, upper arms, buttocks or upper legs.** Novolin N may affect your blood sugar levels sooner if you inject it into the skin of your stomach area. **Never inject Novolin N into a vein or into a muscle.**
- **Change (rotate) your injection site within the chosen area (for example, stomach or upper arm) with each dose. Do not inject into the same spot for each injection.**
- **If you take too much Novolin N, your blood sugar may fall low (hypoglycemia).** You can treat mild low blood sugar (hypoglycemia) by drinking or eating something sugary right away (fruit juice, sugar candies, or glucose tablets). It is important to treat low blood sugar (hypoglycemia) right away

because it could get worse and you could pass out (become unconscious). If you pass out, you will need help from another person or emergency medical services right away, and will need treatment with a glucagon injection or treatment at a hospital. See “What are the possible side effects of Novolin N?” for more information on low blood sugar (hypoglycemia).

- **If you forget to take your dose of Novolin N, your blood sugar may go too high (hyperglycemia).** If high blood sugar (hyperglycemia) is not treated it can lead to diabetic ketoacidosis, which can lead to serious problems, like loss of consciousness (passing out), coma or even death. Follow your healthcare provider’s instructions for treating high blood sugar (hyperglycemia), and talk to your healthcare provider if high blood sugar is a problem for you. Severe or continuing high blood sugar (hyperglycemia) requires prompt evaluation and treatment by your healthcare provider. Know your symptoms of high blood sugar (hyperglycemia) and diabetic ketoacidosis which may include:
 - increased thirst
 - frequent urination and dehydration
 - confusion or drowsiness
 - loss of appetite
 - fruity smell on breath
 - high amounts of sugar and ketones in your urine
 - nausea, vomiting (throwing up) or stomach pain
 - a hard time breathing
- **Check your blood sugar levels.** Ask your healthcare provider how often you should check your blood sugar levels for hypoglycemia (too low blood sugar) and hyperglycemia (too high blood sugar).

Your insulin dosage may need to change because of:

- illness
- stress
- other medicines you take
- change in diet
- change in physical activity or exercise
- surgery

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

What should I avoid while using Novolin N?

- **Alcohol.** Alcohol, including beer and wine, may affect your blood sugar when you take Novolin N.
- **Driving and operating machinery.** You may have difficulty concentrating or reacting if you have low blood sugar (hypoglycemia). Be careful when you drive a car or operate machinery. Ask your healthcare provider if it is alright to drive if you often have:
 - low blood sugar
 - decreased or no warning signs of low blood sugar

What are the possible side effects of Novolin N?

- **Low blood sugar (hypoglycemia).** Symptoms of hypoglycemia (low blood sugar) may include:
 - sweating
 - dizziness or lightheadedness
 - shakiness
 - hunger
 - fast heart beat
 - tingling of lips and tongue
 - trouble concentrating or confusion
 - blurred vision
 - slurred speech
 - anxiety, irritability or mood changes
 - headache

Severe low blood sugar (hypoglycemia) can cause unconsciousness (passing out), seizures, and death. Know your symptoms of low blood sugar. Follow your healthcare provider's instructions for treating low blood sugar. Talk to your healthcare provider if low blood sugar is a problem for you.

- **Serious allergic reaction (whole body reaction).** **Get medical help right away if you develop** a rash over your whole body, have trouble breathing, a fast heartbeat, or sweating.
- **Reactions at the injection site (local allergic reaction).** You may get redness, swelling, and itching at the injection site. If you keep having skin reactions, or they are serious, talk to your healthcare provider. You may need to stop using Novolin N and use a different insulin. Do not inject insulin into skin that is red, swollen, or itchy.
- **Skin thickens or pits at the injection site (lipodystrophy).** Change (rotate) where you inject your insulin to help prevent these skin changes from happening. Do not inject insulin into this type of skin.
- **Swelling of your hands and feet**
- **Vision changes**
- **Low potassium in your blood (hypokalemia)**

These are not all of the possible side effects from Novolin N. Ask your healthcare provider or pharmacist for more information.

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

How should I store Novolin N?

All Unopened Novolin N:

- **Keep all unopened Novolin N in the refrigerator between 36° to 46°F (2° to 8°C).**
- Do not freeze. Do not use Novolin N if it has been frozen.
- If refrigeration is not possible, the unopened vial may be kept at room temperature for up to 6 weeks (42 days), as long as it is kept at or below 77°F (25°C).
- Keep unopened Novolin N in the carton to protect from light.

Novolin N in use:**Vials**

- Keep at room temperature below 77°F (25°C) for up to 6 weeks (42 days).
- Keep vials away from direct heat or light.
- Throw away an opened vial after 6 weeks (42 days) of use, even if there is insulin left in the vial.
- Unopened vials can be used until the expiration date on the Novolin N label, if the medicine has been stored in a refrigerator.

General advice about Novolin N

Novolin N is used for the treatment of diabetes only. Medicines are sometimes prescribed for conditions that are not mentioned in the patient leaflet. Do not use Novolin N for a condition for which it was not prescribed. Do not give Novolin N to other people, even if they have the same symptoms you have. It may harm them.

This leaflet summarizes the most important information about Novolin N. If you would like more information about Novolin N or diabetes, talk with your healthcare provider. For more information, call 1-800-727-6500 or visit www.novonordisk-us.com.

Helpful information for people with diabetes is published by the American Diabetes Association, 1701 N Beauregard Street, Alexandria, VA 22311 and on www.diabetes.org.

Novolin N ingredients include:

- | | |
|--|------------------------|
| • Human Insulin Isophane Suspension (recombinant DNA origin) | • Metacresol |
| • Zinc chloride | • Glycerol |
| • Sodium hydroxide | • Hydrochloric acid |
| • Phenol | • Protamine sulfate |
| • Disodium phosphate dihydrate | • Water for injections |

All Novolin N vials are latex-free.

Date of issue: May 14, 2010
Version: 5

Novolin[®] and Novo Nordisk[®] are trademarks of Novo Nordisk A/S.

© 2005-2010 Novo Nordisk A/S

Manufactured by:
Novo Nordisk A/S
DK-2880 Bagsvaerd, Denmark

For information about Novolin N contact:
Novo Nordisk Inc.
100 College Road West
Princeton, New Jersey 08540