

INSULIN

Brand names Apidra, Humalog, Human Actrapid, Human Insulatard, Human Mixtard, Humulin, Hypurin, Insuman, Lantus, Levemir, NovoRapid, Pork Insulatard, Pork Mixtard, and others

GENERAL INFORMATION

Insulin is a hormone made by the pancreas and vital to the body's ability to use sugar. It is given by injection to supplement or replace natural insulin in the treatment of diabetes mellitus. It is the only effective treatment in Type 1 diabetes and may also be prescribed in Type 2 diabetes. Insulin should be used with a carefully controlled diet. Illness, vomiting,

or alterations in diet or exercise levels may require dosage adjustment. Insulin is available in short-, medium-, or long-acting preparations. Combinations of types are often given. People using insulin should carry a warning card or tag. They should be vigilant for signs of hypoglycaemia (low blood sugar), and should eat something sugary if they do develop.

QUICK REFERENCE

Drug group Drug for diabetes (p.100)
Overdose danger rating High
Dependence rating Low
Prescription needed Yes
Available as generic No

INFORMATION FOR USERS

Your drug prescription is tailored for you. Do not alter dosage without checking with your doctor.

How taken/used



Injection, infusion pump, pen injection.

Frequency and timing of doses

1–5 x daily. Usually 15–30 minutes before meals (short-acting); some forms given directly before or after eating. Exact timing of injections and longer-acting preparations tailored to individual needs; follow instructions given.

Adult dosage range

Exact timing of doses is tailored to individual needs. Follow manufacturer's instructions.

Onset of effect

15–60 minutes (short-acting); within 2 hours (medium-acting); 2–4 hours (long-acting).

Duration of action

2–8 hours (short-acting); 18–26 hours (medium-acting); 28–36 hours (long-acting).

Diet advice

A special diabetes diet is necessary. Follow your doctor's advice.

Storage

Refrigerate, but once opened may be stored at room temperature for 1 month. Do not freeze. Follow the instructions on the container.

Missed dose

Discuss with your doctor. Appropriate action depends on dose and type of insulin.

Stopping the drug

Do not stop taking the drug without consulting your doctor; confusion and coma may occur.

OVERDOSE ACTION



Seek immediate medical advice. You may notice symptoms of low blood sugar, such as faintness, hunger, sweating, and trembling. Eat or drink something sugary. Take emergency action if seizures or loss of consciousness occur.

See **Drug poisoning emergency guide (p.510)**.

SPECIAL PRECAUTIONS

Be sure to tell your doctor if:

- You have had a previous allergic reaction to insulin.
- You are taking other medicines, or your other drug treatment is changed.



Pregnancy

No evidence of risk to the developing baby from insulin, but poor control of diabetes increases the risk of birth defects. Careful monitoring is required because insulin requirements may change.



Breast-feeding

No evidence of risk. Adjustment in dose may be necessary while breast-feeding.



Infants and children

Reduced dose necessary.



Over 60

No special problems.



Driving and hazardous work

You must inform the DVLA you are taking insulin. You must check your blood sugar before driving and follow DVLA guidelines. Avoid driving or dangerous activities if you have signs of low blood sugar.



Alcohol

Avoid. Alcoholic drinks upset diabetic control.

Surgery and general anaesthetics

Insulin requirements may increase during surgery, and blood glucose levels will need to be monitored during and after an operation. Notify your doctor or dentist that you are diabetic before any surgery.

POSSIBLE ADVERSE EFFECTS

Symptoms such as dizziness, sweating, weakness, and confusion indicate low blood sugar, which is the most common side effect

of insulin. Serious allergic reactions (rash, swelling, and shortness of breath) are rare.

| Symptom/effect | Frequency | | Discuss with doctor | | Stop taking drug now | Call doctor now |
|----------------------------|-----------|------|---------------------|--------------|----------------------|-----------------|
| | Common | Rare | Only if severe | In all cases | | |
| Injection-site irritation | ● | | | ● | | |
| Weakness/sweating | ● | | | ● | | |
| Dimpling at injection site | | ● | | ● | | |
| Eyesight problems | | ● | | ● | | |
| Rash/facial swelling | | ● | | ● | | ● |
| Shortness of breath | | ● | | ● | | ● |

INTERACTIONS

General note 1 Many drugs, including some antibiotics, monoamine oxidase inhibitors (MAOIs), and oral antidiabetic drugs, increase the risk of low blood sugar.

Corticosteroids and diuretics may oppose the effect of insulin.

General note 2 Check with your doctor or pharmacist before taking any medicines; some contain sugar and may upset control of diabetes.

Beta blockers may affect insulin needs and mask signs of low blood sugar.

PROLONGED USE

No problems expected.

Monitoring Regular monitoring of blood sugar levels is required.