

Severe symptoms are heavy breathing and a rapid pulse. **Get medical help immediately.**

If hypoglycaemia (low blood sugar) or hyperglycaemia (high blood sugar) are not treated they can be very serious and cause headaches, nausea, vomiting, dehydration, unconsciousness, coma or even death.

Three simple steps to avoid hypoglycaemia or hyperglycaemia are:

- Always keep spare syringes and a spare vial of Humulin S.
- Always carry something to show you are diabetic.
- Always carry sugar with you.

C. Illness

If you are ill, especially if you feel sick or are sick, the amount of insulin you need may change. **Even when you are not eating normally, you still need insulin.** Test your urine or blood, follow your 'sick rules', and tell your diabetes specialist nurse or doctor.

Reporting of side effects

If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via **Ireland:** HPRA Pharmacovigilance, Website: www.hpra.ie, **Malta:** ADR Reporting, Website: www.medicinesauthority.gov.mt/adrportal, **United Kingdom (Great Britain and Northern Ireland):** Yellow Card Scheme, Website: www.mhra.gov.uk/yellowcard or search for MHRA Yellow Card in the Google Play or Apple App Store. By reporting side effects you can help provide more information on the safety of this medicine.

5. How to store Humulin S

Keep this medicine out of the sight and reach of children.

Before the first use store your Humulin S in a refrigerator (2°C – 8°C). **Do not freeze.** Keep your 'in use' pen and cartridge at room temperature (below 30°C) for up to 28 days. Do not keep your 'in use' pen or cartridges in the fridge. Do not put them near heat or in the sun.

Do not use this medicine after the expiry date which is stated on the label and the carton. The expiry date refers to the last day of that month.

Do not use this medicine if you notice that it is coloured or it has solid particles in it. You must use it **only** if it looks like water. Check this each time you inject yourself.

Do not throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help to protect the environment.

6. Contents of the pack and other information

What Humulin S contains

- The **active substance** is human insulin. Human insulin is made in the laboratory by a recombinant DNA technology process. It has the same structure as the natural hormone made by the pancreas. It is therefore different from animal insulins.
- The **other ingredients** are metacresol, glycerol and water for injection. Sodium hydroxide or hydrochloric acid may have been used during manufacture to adjust the acidity.

What Humulin S looks like and contents of the pack

Humulin S (Soluble) 100 IU/ml, solution for injection is a sterile, clear, colourless, aqueous solution and contains 100 units of insulin in each millilitre (100 IU/ml). Each cartridge contains 300 units (3 millilitres).

The cartridges come in packs of 5 cartridges.

Marketing Authorisation Holder and Manufacturer

Humulin S in cartridge is made by:
Lilly France S.A.S., Rue du Colonel Lilly, 67640 Fegersheim, France.

The marketing authorisation is held by:

Eli Lilly Nederland B.V., Papendorpseweg 83, 3528 BJ Utrecht, The Netherlands

This medicinal product is authorised in the Member States of the EEA under the following names:

Huminsulin „Lilly“ Normal (Austria)
Umuline Rapide 100 UI/ml (France)
Humuline Regular (Belgium, Luxembourg, The Netherlands)
Huminsulin Normal für Pen 3 ml (Germany)
Humulin Regular (Cyprus, Greece, Portugal, Sweden)
Humulin S (Malta, Ireland, UK)
Humulin R (Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Italy, Poland, Romania, Slovenia)
Humulin R Cartridge (Czech Republic, Slovakia)

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For any information about this medicine, please contact the local representative of the Marketing Authorisation Holder:

Ireland and United Kingdom (Northern Ireland)
Eli Lilly and Company (Ireland) Limited, Tel: + 353-(0) 1 661 4377

Malta
Charles de Giorgio Ltd., Tel: + 356 25600 500

United Kingdom (Great Britain)
Eli Lilly and Company Limited, Tel: + 44-(0) 1256 315000

PA010FSAA07

Package leaflet: Information for the user

HUMULIN® S (Soluble) 100 IU/ml

solution for injection in cartridge

(Insulin human)

Lilly

Read all of this leaflet carefully before you start using this medicine because it contains important information for you.

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.



What is in this leaflet:

1. What Humulin S is and what it is used for
2. What you need to know before you use Humulin S
3. How to use Humulin S
4. Possible side effects
5. How to store Humulin S
6. Contents of the pack and other information

1. What is Humulin S and what it is used for

Humulin S contains the active substance human insulin, which is used to treat diabetes. You get diabetes if your pancreas does not make enough insulin to control the level of glucose in your blood (blood sugar). Humulin S is used to control glucose in the long term. Humulin S is a rapidly acting insulin preparation.

Your doctor may tell you to use Humulin S as well as a longer-acting insulin. Each kind of insulin comes with its own patient information leaflet to tell you about it. Do not change your insulin unless your doctor tells you to. Be very careful if you do change insulin. Each type of insulin has a different colour and symbol on the pack and the cartridge so that you can easily tell the difference.

2. What you need to know before you use Humulin S

Humulin S in cartridges is only suitable for injecting just under the skin using a reusable pen. Speak to your doctor if you need to inject your insulin by another method.

Do not use Humulin S:

- **If you think hypoglycaemia (low blood sugar) is starting.** Further in this leaflet it tells you how to deal with mild hypoglycaemia (see A in Section 4).
- If you are allergic to human insulin or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions

Talk to your doctor, pharmacist or nurse before using Humulin S.

- If your blood sugar levels are well controlled by your current insulin therapy, you may not feel the warning symptoms when your blood sugar is falling too low. Warning signs are listed later in this leaflet. You must think carefully about when to have your meals, how often to exercise and how much to do. You must also keep a close watch on your blood sugar levels by testing your blood glucose often.
- A few people who have had hypoglycaemia (low blood sugar) after switching from animal insulin to human insulin have reported that the early warning symptoms were less obvious or different. If you often have hypoglycaemia or have difficulty recognising the symptoms, please discuss this with your doctor.
- If you answer YES to any of the following questions, tell your diabetes specialist nurse, doctor or pharmacist.
 - Have you recently become ill?
 - Do you have trouble with your kidneys or liver?
 - Are you exercising more than usual?
- The amount of insulin you need may also change if you drink alcohol.
- You should also tell your diabetes specialist nurse, doctor or pharmacist if you are planning to go abroad. The time difference between countries may mean that you have to have your injections and meals at different times to when you are at home.
- Some patients with long-standing type 2 diabetes mellitus and heart disease or previous stroke who were treated with pioglitazone and insulin experienced the development of heart failure. Inform your doctor as soon as possible, if you experience signs of heart failure such as unusual shortness of breath or rapid increase in weight or localised swelling (oedema).

Skin changes at the injection site:

The injection site should be rotated to prevent skin changes such as lumps under the skin. The insulin may not work well if you inject into a lumpy area (See How to use Humulin S). Contact your doctor if you are currently injecting into a lumpy area before you start injecting into a different area. Your doctor may tell you to check your blood sugar more closely, and to adjust your insulin or your other antidiabetic medications dose.

Other medicines and Humulin S

Tell your doctor or pharmacist if you are taking, have recently taken or might take any other medicines.

Your insulin needs may change if you are taking any of the following:

- steroids,
- thyroid hormone replacement therapy,

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- oral hypoglycaemics (antidiabetic medication),
- acetylsalicylic acid (aspirin),
- growth hormone,
- octreotide, lanreotide,
- beta₂ stimulants (for example ritodrine, salbutamol or terbutaline),
- beta-blockers,
- thiazides or some antidepressants (monoamine oxidase inhibitors),
- danazol,
- some angiotensin converting (ACE) inhibitors (for example captopril, enalapril) or angiotensin II receptor blockers.

Pregnancy, breast-feeding and fertility

The amount of insulin you need usually falls during the first three months of pregnancy and increases for the remaining six months.

If you are breast-feeding, you may need to alter your insulin intake or diet.

If you are pregnant or breast-feeding, think you may be pregnant or are planning to have a baby, ask your doctor or pharmacist for advice before using this medicine.

Driving and using machines

Your ability to concentrate and react may be reduced if you have hypoglycaemia (low blood sugar). Please remember this in all situations where you might put yourself and others at risk (e.g. driving a car or operating machinery). You should contact your diabetes specialist nurse or doctor about the advisability of driving if you have:

- frequent episodes of hypoglycaemia
- reduced or absent warning signs of hypoglycaemia.

Humulin S contains Sodium

This medicine contains less than 1 mmol sodium (23 mg) per dose unit, that is to say essentially 'sodium-free'.

3. How to use Humulin S

The 3 ml cartridge is only for use in 3ml pens. It is not for use in 1.5 ml pens.

Always check the pack and the cartridge label for the name and type of the insulin when you get it from your pharmacy. Make sure you get the Humulin that your doctor has told you to use.

Always use this medicine exactly as your doctor or pharmacist has told you. Check with your doctor or pharmacist if you are not sure. To prevent the possible transmission of disease, each cartridge must be used by you only, even if the needle on the delivery device is changed.

Dosage

- Your doctor has told you which insulin to use, how much, when and how often to inject. These instructions are only for you. Follow them exactly and visit your diabetes clinic regularly.
- If you change your insulin type (for example from animal to human), you may have to take more or less than before. This might just be for the first injection or it may be a gradual change over several weeks or months.
- Humulin S in cartridges is only suitable for injecting just under the skin using a reusable pen. Speak to your doctor if you need to inject your insulin by another method.

Preparing Humulin S

- Humulin S is already dissolved in water, so you do not need to mix it. But you must use it **only** if it looks like water. It must be clear, have no colour and no solid particles in it. Check each time you inject yourself.

Getting the pen ready to use

- First wash your hands. Disinfect the rubber membrane of the cartridge.
- **You must only use Humulin S cartridges in Lilly insulin pens to ensure you get the correct dose.**
- Follow the instructions that come with the pen. Put the cartridge into the pen.
- You will set the dose to 1 or 2 units. Then hold the pen with the needle pointing up and tap the side of the pen so that any bubbles float to the top. With the pen still pointing up, press the injection mechanism. Do this until a drop of Humulin S comes out of the needle. There may still be some small air bubbles left in the pen. These are harmless, but if the air bubble is too big, it may make the dose of your injection less accurate.

Injecting Humulin S

- Before you make an injection, clean your skin as you have been instructed.
- Inject under the skin, as you were taught. **Do not** inject directly into a vein. After your injection, leave the needle in the skin for 5 seconds to make sure you have taken the whole dose. Do not rub the area you have just injected. Make sure you inject at least half an inch (1 cm) from where you last injected and that you 'rotate' the places you inject, as you have been taught.
- You must not inject Humulin S into a vein. Inject Humulin S as your diabetes specialist nurse or doctor has taught you. Only your doctor can inject Humulin S into a vein. He or she will only do this under special circumstances such as surgery or if you are ill and your glucose levels are too high.

After injecting

- As soon as you have done the injection, unscrew the needle from the pen using the outer needle cap. This will keep the insulin sterile and prevent leaking. It will also stop air going back into the pen and the needle clogging up. **Do not share your needles or your pen.** Replace the cap on your pen.

Further injections

- Leave the cartridge in the pen. Before every injection, dial 1 or 2 units and press the injection mechanism with the pen pointing up until a drop of Humulin S comes out of the needle. You can see how much Humulin S is left by looking at the gauge on the side of the cartridge. The distance between each mark on the gauge is about 20 units. If there is not enough for your dose, change the cartridge.

Do not mix any other insulin in a Humulin S cartridge. Once the cartridge is empty, do not use it again.

If you use more Humulin S than you should

If you use more Humulin S than you should, your blood sugar may become low. Check your blood sugar. (see A in Section 4).

If you forget to use Humulin S

If you use less Humulin S than you should, your blood sugar levels may increase. Check your blood sugar. Do not inject a double dose to make up for a forgotten dose.

If you stop using Humulin S

If you use less Humulin S than you should, your blood sugar levels may become too high. Do not change your insulin unless your doctor tells you to.

If you have any further questions on the use of this medicine, ask your doctor, pharmacist or nurse.

4. Possible side effects

Like all medicines, this medicine can cause side effects, although not everybody gets them.

Human insulin may cause hypoglycaemia (low blood sugar). See more information on hypoglycaemia below in the subsection "Common problems of diabetes".

Possible side effects

Systemic allergy is very rare (affects less than 1 person in 10,000). The symptoms are as follows:

- fall in blood pressure
- difficulty in breathing
- fast heart beat
- rash over the whole body
- wheezing
- sweating

If you think you are having this sort of insulin allergy with Humulin S, tell your doctor at once.

Local allergy is common (affects less than 1 person in 10). Some people get redness, swelling or itching around the area of the insulin injection. This usually clears up in anything from a few days to a few weeks. If this happens to you, tell your doctor.

Skin changes at the injection site:

If you inject insulin too often at the same place, the fatty tissue may shrink (lipoatrophy) or thicken (lipohypertrophy) (*may affect up to 1 in 100 people*). Lumps under the skin may also be caused by build-up of a protein called amyloid (cutaneous amyloidosis; how often this occurs is not known). The insulin may not work very well if you inject into a lumpy area. Change the injection site with each injection to help prevent these skin changes.

Oedema (e.g. swelling in arms, ankles; fluid retention) has been reported, particularly at the start of insulin therapy or during a change in therapy to improve control of your blood glucose.

Common problems of diabetes

A. Hypoglycaemia

Hypoglycaemia (low blood sugar) means there is not enough sugar in the blood. This can be caused if you:

- take too much Humulin S or other insulin;
- miss or delay meals or change your diet;
- exercise or work too hard just before or after a meal;
- have an infection or illness (especially diarrhoea or vomiting);
- have a change in your need for insulin; or
- have trouble with your kidneys or liver which gets worse.

Alcohol and some medicines can affect your blood sugar levels.

The first symptoms of low blood sugar usually come on quickly and include the following:

- tiredness
- nervousness or shakiness
- headache
- rapid heartbeat
- feeling sick
- cold sweat

Until you become confident in recognising your warning symptoms, avoid situations such as driving a car, in which you or others would be put at risk by hypoglycaemia.

Do not use Humulin S if you think hypoglycaemia (low blood sugar) is starting.

If your blood sugar is low, eat glucose tablets, sugar or drink a sugary drink. Then eat fruit, biscuits, or a sandwich, as your doctor has advised you and have some rest. This will often get you over mild hypoglycaemia or a minor insulin overdose. If you get worse and your breathing is shallow and your skin gets pale, tell your doctor at once. A glucagon injection can treat quite severe hypoglycaemia. Eat glucose or sugar after the glucagon injection. If you do not respond to glucagon, you will have to go to hospital. Ask your doctor to tell you about glucagon.

B. Hyperglycaemia and diabetic ketoacidosis

Hyperglycaemia (too much sugar in the blood) means that your body does not have enough insulin. Hyperglycaemia can be brought about by:

- not taking your Humulin S or other insulin;
- taking less insulin than your doctor tells you to;
- eating a lot more than your diet allows; or
- fever, infection or emotional stress.

Hyperglycaemia can lead to diabetic ketoacidosis. The first symptoms come on slowly over many hours or days. The symptoms include the following:

- feeling sleepy
- flushed face
- thirst
- no appetite
- fruity smell on the breath
- feeling or being sick

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