APPROVED PATIENT INFORMATION LEAFLET

BIOSULIN (R,-N, -L, -30/70

Read all of this leaflet carefully before you start using BIOSULIN (-R, -N, -L, -30/70)

- Keep this leaflet. You may need to read it again.
- If you have further questions, please ask your doctor or your pharmacist.
- **BIOSULIN** has been prescribed for you personally and you should not share your medicine with other people. It may harm them, even if their symptoms are the same as yours.

SCHEDULING STATUS OF THE MEDICINAL PRODUCT: S3

NAME OF THE MEDICINAL PRODUCT

BIOSULIN R (Solution for Injection)

BIOSULIN N (Suspension for Injection)

BIOSULIN L (Suspension for Injection)

BIOSULIN 30/70 (Suspension for Injection)

WHAT BIOSULIN CONTAINS

The active ingredient is:

BIOSULIN contains biosynthetic human insulin (recombinant DNA origin) 100 I.U./ml. Human insulin is a natural hormone and is made by the pancreas. **BIOSULIN** is made in the laboratory by a “recombinant DNA technology” process and has the same structure as the natural hormone. So it is different from animal insulin.

Details of **BIOSULIN R, -N, -L** and -**30/70** composition are as follows:

Preservative and type of biosynthetic Insulin

BIOSULIN preparation	**Type of biosynthetic Insulin (rDNA)**	**Preservatives**
BIOSULIN R	Soluble (short-acting)	m-cresol 0,25 % *m/v*
BIOSULIN N	Isophane suspension (Intermediate-acting)	m-cresol 0,16 % *m/v* phenol 0,065 % *m/v*
BIOSULIN L	Zinc suspension (Intermediate-acting)	Methylparaben 0,1 % *m/v*
BIOSULIN 30/70	30 % soluble 70 % Isophane (Biphasic)	m-cresol 0,16 % *m/v* phenol 0,065 % *m/v*

Other inactive ingredients are:

BIOSULIN R: Glycerin, 10 % hydrochloric acid solution and 10 % sodium hydroxide solution.

BIOSULIN N: Glycerin, protamine sulphate, zinc oxide, 10 % hydrochloric acid solution and 10 % sodium hydroxide solution.

BIOSULIN L: Zinc oxide, 10 % hydrochloric acid solution and 10 % sodium hydroxide solution.

BIOSULIN 30/70: Glycerin, protamine sulphate, zinc oxide, 10 % hydrochloric acid solution and 10 % sodium hydroxide solution.

WHAT BIOSULIN IS USED FOR

Your doctor has prescribed **BIOSULIN** to treat your medical condition - Diabetes. It is a condition when your pancreas does not make enough insulin to control the level of glucose in your blood. **BIOSULIN** is a substitute for your own insulin.

You should know your condition and be aware of all the symptoms indicating a low or a high blood sugar level. You should also be very careful in following your prescribed diet and general health instructions towards your condition.

BEFORE YOU USE BIOSULIN

Do not use BIOSULIN if you are

- suffering from Hypoglycaemia suspect a “Hypo’ is starting, do not inject your insulin dose and do not drive at all. Contact anybody who knows about your condition immediately and get assistance.
- hypersensitive to any of the ingredients.

Take special care with BIOSULIN

- **Under no circumstances should BIOSULIN N, -L or -30/70 be given intravenously.**
- **BIOSULIN R** solution should be clear and colourless or almost colourless. Do not use **BIOSULIN R** solution if it appears cloudy, thickened or if solid particles are visible.
- **BIOSULIN N, L** and **30/70** suspensions should look uniformly milky after gentle shaking. If a deposit of solid particles remains on the bottom or wall of the cartridge/vial or if there are clumps floating in the insulin after the cartridge/vial has been rotated or carefully shaken, such cartridges/vials of **BIOSULIN N, -L** and -**30/70** suspensions should not be used. If the **BIOSULIN N, -L** and -**30/70** suspension is clear and remains clear after the cartridge/vial is rotated or carefully shaken, it should also not be used.
- When your doctor suggests that you be changed from one type of insulin to another type or brand of insulin, this should be done under strict medical supervision as this may result in the need for a change in dosage.
- If you are on **BIOSULIN** therapy you are required to regularly monitor your therapy. This may be performed by testing the blood or urine for glucose concentrations and testing urine for ketones by means of urine dip-sticks.

The dose may need to be increased should you experience the following:

- infection

- emotional stress
- accidental or surgical trauma
- during puberty

The dose may need to be decreased in:

- patients with a liver that is not functioning well
- patients with kidneys not functioning well

The dose may need adjusting up or down during:

- Periods of increased or decreased activity
- Change in the usual diet

Pregnancy and Breastfeeding

If you are pregnant or breastfeeding your baby while taking this medicine, please consult your doctor, pharmacist or other healthcare professional for advice.

It is essential to maintain good control of the diabetic patient throughout pregnancy and, therefore, diabetic patients should be advised to inform their doctor if they are pregnant or contemplating pregnancy. During pregnancy, **BIOSULIN** requirements usually decrease during the first trimester and increase during the latter two trimesters. Patients with diabetes who are lactating may require adjustment of **BIOSULIN** dose, diet or both.

Driving and using machinery

BIOSULIN is not normally expected to affect your ability to drive a car or operate machinery. But as **BIOSULIN** can cause hypoglycaemia patients are advised to look out for possible symptoms of a hypoglycaemic attack, which can cause headache, visual disturbances, hunger, sweating, palpitations, anxiety and tremor and confusion while on this treatment, under which circumstances one should not be driving a vehicle or use complicated and dangerous machinery.

Taking other medicines with BIOSULIN

If you are taking other medication on a regular basis, including complementary or traditional medicines, the use of **BIOSULIN** with these medications may cause undesirable interactions. Please consult your doctor, pharmacist or other healthcare professional, for advice.

- An increased risk of cardiac failure has been observed when pioglitazone is used in combination with insulin treatment , especially in those with predisposing factors of heart disease.

Many medicines affect blood glucose concentrations and may alter **BIOSULIN** requirements.

- **BIOSULIN** requirements may be decreased by:

  ACE inhibitors, alcohol, anabolic steroids, aspirin, beta-blockers (which may also mask the warning signs of hypoglycaemia), disopyramide, fenfluramine, guanethidine, some MAOIs (monoamine oxidase inhibitors), mebendazole, octreotide, some tetracyclines and amitriptyline.

- **BIOSULIN** requirements may be increased by:

  chlordiazepoxide, chlorpromazine, some calcium channel blockers such as dilitiazem or nifedipine, corticosteroids, diazoxide, lithium thiazide diuretics and thyroid hormones.

The use of cyclophosphamide, isoniazid and oral contraceptives may lead to increased or decreased **BIOSULIN** requirements.

HOW TO USE BIOSULIN

Always take **BIOSULIN** exactly as your doctor has instructed you. You should check with your doctor or pharmacist if you are unsure.

- Your healthcare provider or doctor will determine the dosage and type of **BIOSULIN** according to your personal requirements.

- You should always use a syringe marked for use with an insulin preparation that contains 10 units per ml, since use of an incorrect syringe could lead to dosage errors.
- You should ensure that you have been taught the correct and proper injection techniques and always use the appropriate injection sites which are the upper arm, thigh, buttock and abdomen.

BIOSULIN R may be administered by subcutaneous, intramuscular or intravenous injection.

BIOSULIN N, -L and -**30/70** should only be administered via subcutaneous or intramuscular injection.

Mixing of insulin:

Many insulin regimens involve the use of short-acting soluble insulin together with intermediate-acting insulin or a mixed insulin zinc suspension. On the advice of a physician **BIOSULIN R** (from vials) may be mixed with longer-acting insulin such as **BIOSULIN N** or -**L** (from vials) as required, usually twice daily. The shorter-acting **BIOSULIN R** should be drawn into the syringe first to prevent the longer-acting insulin contaminating the vial. It is recommended that patients inject immediately after mixing. Such mixtures must not be administered intravenously.

Since **BIOSULIN 30/70** is a ready-made mixture, patients do not need to mix insulins. It is usually given twice daily with about two-thirds of the total daily requirement administered before breakfast and the remaining third administered before the evening meal.

Administration using 10 ml vials and conventional insulin syringes:

- Always wash the hands.
- Remove the protective plastic cap on the vial. Use alcohol to wipe the exposed rubber top of the vial.
- Use the specified syringe and familiarise yourself with the distance the plunger needs to be drawn back corresponding to the quantity of **BIOSULIN** required.
- After ensuring that the plunger is not drawn out at all, pierce the rubber top with the

syringe needle and turn the vial and syringe upside down.

- Draw back on the plunger slowly to withdraw the correct dose of **BIOSULIN**, while simultaneously avoiding drawing air into the syringe.
- To avoid clogging the needle, inject the required amount of **BIOSULIN** promptly.

Administration using the Biosulin Pen device and cartridges;

- Always wash the hands.
- Follow the detailed instructions which are provided on the “Biosulin Pen Pack” leaflet, provided with your Biosulin Pen device.

General good and basic administration/injection practices to be followed using insulin from either the vials or the cartridges to be administered using the Biosulin Pen device

- CLEAN - Clean the skin where the injection is to be made. Inject the **BIOSULIN** as directed by a healthcare professional.
- DO NOT MASSAGE - The injection site should not be massaged after the injection.
- Patients should take care to ensure that a blood vessel is not entered when injecting **BIOSULIN N, -L** or -**30/70.**
- CHANGE INJECTION SITE - Since lipohypertrophy is associated with repeated injections at the same site, the site of subcutaneous injection should be changed every time you inject yourself.

DO NOT SHARE YOUR MEDICATION OR NEEDLES WITH ANY OTHER PERSON.

If you have injected more BIOSULIN than you should

In the event of injecting more insulin than your should, you should eat glucose tablets, followed by a fruit or biscuits. You should try to rest but you need to alert somebody close to you to monitor your reaction. They should be able to assist you should your condition not

normalise soon. If nobody is available, seek help at the nearest hospital.

Overdosage causes hypoglycaemia and should be treated in a conscious and co-operative patient is treated by administering sugar or glucose orally. In cases of hypoglycaemic coma, up to 50 ml of a 50 % solution of glucose should be administered intravenously or glucagon 0.5 to 1 mg should be administered subcutaneously.

injections at the same site. Lipoatrophy appears to occur less frequently with purified insulins than with conventional insulins. Lipohypertrophy may usually be overcome by rotating the site of injection.

If you forget to inject BIOSULIN

Try to inject **BIOSULIN** as prescribed and as per your blood sugar results that you should check regularly.

Forgetting to inject yourself will result in you developing hyperglycaemia. Acute hyperglycaemia is a medical emergency and can rapidly produce serious complications which can result in you going into a coma should you not get assistance soon. Therefore it is of utmost importance to check your blood sugar levels and inject your insulin accordingly.

POSSIBLE SIDE-EFFECTS

BIOSULIN can have side-effects. Not all side-effects reported for **BIOSULIN** are included in this leaflet. Should your general health worsen while on **BIOSULIN,** please consult your doctor, pharmacist or other health care professional for advice.

The following are considered life-threatening side-effects therefore you and your family or somebody living with you should be aware of this and you should be taken to an emergency care centre immediately

- Signs and symptoms of Hypoglycaemia - which include headache, visual disturbances such as blurred or double vision, slurred speech, paraesthesia of the mouth and fingers, alterations in behaviour, and impaired mental or intellectual ability, hunger, pallor, sweating, palpitations, anxiety and tremulousness

- Signs and symptoms of Hyperglycaemia - which include frequent thirst, frequent hunger, blurred vision, fatigue and sleepiness, dry mouth, cardiac arrhythmia, stupor and coma
- You can also experience anaphylactic shock which is also a life-threatening condition

Tell your healthcare provider right away if you get one or more of these symptoms:

- Allergic or hypersensitivity reactions which include itching and serious skin rash and redness.
- Swelling of the facial area, mouth and lips
- Skin and tissue changes at injections sites
- Weight gain

Not all side-effects reported for this medicine are included in this leaflet. Should your general health worsen while taking this medicine, please consult your doctor, pharmacist or other health care professional for advice.

STORING AND DISPOSING OF BIOSULIN

KEEP ALL MEDICINES OUT OF THE REACH AND SIGHT OF CHILDREN.

Store in a refrigerator 2 °C to 8 °C, protected from light.

Do not store in bathrooms.

Do not use after the expiry date stated on the container.

Return all unused medicine to your pharmacist.

Do not dispose of unused medicine in drains or sewerage systems (e.g. toilets)

PRESENTATION OF BIOSULIN

Single 10 ml clear glass vial or alternatively a carton containing five (5) 3 ml clear glass cartridges.

IDENTIFICATION OF BIOSULIN

BIOSULIN R is a clear colourless liquid, free from turbidity and foreign matter.

BIOSULIN N, -L and -**30/70** are white suspensions which on standing deposit white sediment and leave an almost colourless supernatant liquid. The sediment is readily re-suspended on gentle shaking.

REGISTRATION NUMBERS:

BIOSULIN R	37/21.1/0670
BIOSULIN N	37/21.1/0671
BIOSULIN L	37/21.1/0672
BIOSULIN 30/70	37/21.1/0673

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