

Diabetes: insulin, use it safely

A patient information booklet for adults who have diabetes and use insulin

Diabetes: insulin, use it safely

About this booklet

This booklet explains how you could help yourself be safer when using your insulin. It explains about an Insulin Passport and helps you understand about errors or mistakes that are very unlikely but could happen to you. Advice is given to help you avoid these problems.

The Insulin Passport

As a person with diabetes using insulin, you can choose to carry a credit-card sized paper record called the Insulin Passport. It can be used to record:

- up-to-date details of the type of insulin, syringes and pens that you use;
- emergency information that tells people what to do if you are found ill or unconscious; and,
- other information to help in an emergency, including contact names and telephone numbers and other medication that you could be taking.

Your diabetes nurse, doctor or pharmacist would be happy to help you decide if you want to use the Insulin Passport, or if there are alternatives that might suit you better.

How to use your Insulin Passport for greater safety

Know the details of the types of insulin you use, and the pen, syringes and other equipment that you use.

- Record this information yourself in your Insulin Passport. If you need help to fill in your Insulin Passport, ask your diabetes nurse, doctor, pharmacist or other healthcare staff.
- Keep it up-to-date. Whenever your insulin type changes draw a single line through old information, so that new information can be clearly seen.
- There is an option to record other medication that you take. If you decide do this, ensure this is also up-to-date.
- When you need a new Insulin Passport, ask at your diabetes clinic, or see your diabetes nurse or doctor for a new one.
- Include information on what you want people to do if you need help with a low blood glucose (or hypoglycaemic event).
- Fold the paper back to its credit-card size. Keep it somewhere easy to find in an emergency, like your wallet or purse.

Diabetes: insulin, use it safely

Getting the right insulin

A member of your diabetes team should already have explained how to recognise and treat a 'hypo' (a low blood glucose or hypoglycaemic event). If you are still not sure, please ask them to explain again.

Getting the right type of insulin is very important as they all act in slightly different ways, and getting the wrong type by mistake could lead to high or low blood glucose. Too low and you might end up collapsing from a 'hypo'.

Staff who prescribe or supply your insulin will do their best to make sure you always get the right type of insulin and the right equipment to use with it. Most of the time they get this right, but getting it right all the time is difficult. This is because there are many different types of insulin, and many different ways to give it, including vials, cartridges, pre-filled pens and insulin syringes. If you understand the types of mistakes that have happened in the past, you can help staff to make sure you always get the right insulin.

Potential problems

You could get the wrong type of insulin to use with your pen. Consider the case in the box below, which like all the cases in this booklet is based on a real event.

A patient was sent home with the wrong insulin pen, so was unable to give their insulin. The patient was given a Humapen rather than a Novopen and the cartridges will not fit in this pen.

Types of insulins with similar names could get mixed up.

A patient was given Novorapid by mistake instead of Novomix. This gave them a 'hypo' and they became confused and fell. Luckily the patient was found by his son and taken to hospital.

For example, we know these insulin names have been mixed up.

glulisine with glargine	different Hypurin products
Humalog with Humalog Mix	Lantus with lente
Humulin S, Humulin I or Humulin M3	Levemir with Lantus
Humalog with Humulin	Novorapid with Novomix

Diabetes: insulin, use it safely

When might there be a problem?

Your hospital diabetes clinic will always aim to write to your General medical Practitioner (GP) when they change your insulin. This is so that your GP knows the new repeat prescriptions you will need. Your GP will aim to do the same if you need to go into hospital for treatment. As you may see many different healthcare staff in hospital, there is a risk that changes to your insulin therapy could be missed.

What you can do to make sure you get the right insulin

- Show the information in the Insulin Passport to healthcare professionals to help them check you have the right insulin.
- Check that you have been prescribed the right type of insulin and all the equipment you need, such as vials, cartridges and pens to store, measure and inject insulin.
- When you are collecting a prescription or collecting your insulin from a pharmacy, check everything you receive and ensure it matches the information in your Insulin Passport.
- If you are not sure that you have the right type of insulin, or if you have any questions about the insulin product, ask your doctor, nurse or pharmacist. Question any changes, as the names of some type of insulin can look and sound very similar and that can result in mistakes.
- If your type of insulin is changed, dispose of your old insulin to make sure it doesn't get mixed up with your new insulin.

Remember, you can always ask

Diabetes: insulin, use it safely

Timing of insulin and missed doses

The timing of your insulin in relation to food can be critical. Your diabetes nurse or doctor will advise you on the right time for you to use your insulin. It can be dangerous to delay a dose of insulin, or miss out a dose of insulin.

Potential problems at home

Insulin can be missed out or delayed if you run out of insulin or the equipment you need. Pharmacies cannot usually keep stocks of every type of insulin, and if you ask for your repeat prescription too late, they may not be able to supply it in time.

If, for whatever reason, you are not eating, remember your body will still need some insulin. Your diabetes nurse or doctor should have given you advice on what to do if you can't eat or drink normally. If you are not sure what to do, ask them to explain again.

Potential problems in hospital

Some hospitals will have set times for medicine rounds and for mealtimes that don't match the routine you have at home. The insulin injection may not match the mealtime. The case below is an example of what can go wrong.

The patient's morning insulin was missed. The patient was given their normal insulin at teatime but their blood glucose was still too high the next morning.

In hospital you may need to be 'nil-by-mouth' (or fasting) and stop eating or drinking for surgery, or for other reasons. You will still need insulin, but how and when you have insulin may be changed. For example, your insulin may be given through a drip that allows the rate to be adjusted regularly (sometimes called a 'sliding scale'). This can sometimes be forgotten, as in the following case.

Diabetes: insulin, use it safely

A patient with diabetes who was insulin dependent was admitted the day before surgery and kept nil-by-mouth but was not seen by a doctor the day before surgery so no sliding scale insulin was ordered. His blood glucose increased and surgery was postponed.

Actions that you can take to help you get your insulin on time

- Plan ahead. Make sure you don't run out of your insulin or the pen, syringes and other equipment you use. Ask for repeat prescriptions in good time and keep reserve supplies, including a spare insulin pen. Allow extra days around holiday times.
- If you have a 'regular' community pharmacy, tell them your prescription needs with enough time for them to get in stocks of your insulin and equipment.
- If you have to go into hospital, tell the staff if you want to carry on giving your own insulin. Many hospitals have lockable bedside medicine lockers and it is best if your medicine is stored in these lockers. It is unlikely that the insulin you are using will need to be stored in a fridge (see page 9).
- If you count your carbohydrates and decide on your own dose of insulin, for example following the DAFNE regimen, tell the hospital staff. Ask them to arrange easy access to your insulin, and make sure that the dose you use and your blood glucose monitoring is recorded in your chart or patient notes.
- If you give your own insulin in hospital make sure you tell the nurse exactly what dose you have had. It must be recorded on your medication chart and in your patient notes.
- If you are not able to give your own insulin, don't be afraid to remind staff when your insulin is due.
- Your insulin or the equipment you use to give it may be changed as part of your hospital stay. Make sure that you are given enough supplies of the new insulin and know how to use it before you are sent home from hospital.

Diabetes: insulin, use it safely

Getting the right dose of insulin

The most careful person with your insulin is often you. If you are too ill to look after your own insulin, healthcare staff will do their best to give your insulin correctly. But, because there are many different types of insulin and different pens and syringes, there is still a very small risk of a mistake. If you understand the mistakes that have happened in the past, you can help staff to make sure you always get the right dose of insulin. Errors can be made when prescriptions are written down, or when they are read by staff giving the insulin.

The amount of insulin you use is measured in 'units', using either an insulin pen or a special insulin syringe marked in units. For most other injections, different syringes with a scale marked in millilitres (mls) are used. Confusing the two types of syringe can lead to a very high dose of insulin being given by mistake, as in the next case.

A patient had run out of insulin syringes and so the community nurse gave the dose using a syringe marked in mls, which meant the patient received ten times as much insulin as normal. The patient became unwell not long afterwards, an ambulance was called and the patient need several days of hospital treatment.

Be aware, the use of the abbreviation 'u' for insulin units is sometimes misread as a '0' resulting in a ten-times overdose of insulin.

The patient had been given 40 units of insulin in the morning instead of 4 units. The prescription had been written as '4u' and this had been mistaken for '40'. The patient became aggressive and confused as the insulin error had caused a 'hypo'.

Diabetes: insulin, use it safely

Actions that you can take to make sure you get the correct dose of insulin

- If someone else is giving your insulin, ask to check the dose and times it has been prescribed. This is especially the case if the dose has been written as 'u' as an abbreviation of 'units' as it could be mistaken for a zero and lead to a dangerous overdose
- Make sure the syringes you are given have the words 'insulin syringe' 'units' or 'international units' written on them. Don't use any syringes without these markings as this could lead to a dangerous overdose of insulin. Insulin should always be given using a commercial insulin pen or insulin syringe.
- Make sure you know what to do if the wrong dose is injected. If you have too much insulin you may have too little glucose in your blood. The effect is known as hypoglycaemia or a 'hypo'. The opposite is having too little insulin and the effect is hyperglycaemia. The feelings that you get with either a hypo or hyperglycaemic event can be explained by your healthcare professional. The Diabetes UK website (www.diabetes.org.uk) describes the effects and what you can do to avoid or deal with them.
- Include in your Insulin Passport clear instructions on what you want people to do for you in an emergency. You should discuss with your healthcare professional how you may want people to help you if you have a 'hypo'
- Do not use the Insulin Passport as a daily diary of your insulin doses. Use the Insulin Passport to record types of insulin you use, and the pen, syringes and other equipment. If you are not sure how to record this information, ask a healthcare professional for advice.

Diabetes: insulin, use it safely

How should I store my insulin?

Insulin products that are in use do not usually have to be stored in a refrigerator, provided the temperature they are stored in is lower than 25-28°C [Centigrade] or 77-82°F [Fahrenheit].

Insulin can be kept at room temperature for 4 weeks when in use, so long as the specified temperature is not exceeded. Normal room temperature in the UK is usually below 28°C, but can be warmer during a hot summer or while on holiday. Don't store your insulin near ovens, heaters, fires or radiators or in direct sunlight.

Remember that open vials, cartridges or pre-filled pens you use every day must be discarded after 28 days.

Insulin products that are intended for future use should be stored in refrigerator at 2 to 8°C [36 to 46°F] until they are used. Do not store any insulin in the freezer compartment. Do not store insulin in contact with the internal walls of a refrigerator. This is where the temperature is at its lowest.

Some hospitals allow you to keep your insulin at your bedside locker and to self-administer. It is unlikely that high ward temperatures will mean you need to store your insulin in the refrigerator while in hospital.

Diabetes: insulin, use it safely

Further information

Read this booklet and the Insulin Passport alongside all the other information about diabetes that your diabetes nurse or doctor has given to you. You will also need to read the technical information that comes with your insulin and with your insulin equipment.

The most important action you can take is to keep the Insulin Passport up-to-date and keep it with you. Use it to help others do the right thing.

More information about diabetes is published by the following organisations.

Diabetes UK 10 Parkway London NW1 7AA Telephone 0207 4241000 www.diabetes.org.uk	NHS Diabetes 3rd Floor, St John's House 30 East Street Leicester LE1 6NB Telephone 0116 222 5263/5181 http://www.diabetes.nhs.uk/
--	---

Important notice

This patient information booklet is not intended to be exhaustive and should not be used as a substitute for consulting your healthcare professional on any particular issue. The National Patient Safety Agency makes no representation, warranties or guarantees as to the accuracy, completeness or adequacy of any of the content of this patient information booklet. It cannot be held responsible for any liability, loss or damage whatsoever which may arise from the use of, or reliance upon, this patient information booklet, except as may otherwise be required by law.

Edition 1.0/2011 NPSA