



Waitemata
District Health Board

Te Wai Awhina



Starting insulin for people with type 2 diabetes

What you need to know

Contents

Page

Why do I need insulin?	3
What does insulin do?	4
Why are there different types of insulin?	4
How do I take insulin?	4
How do I use my insulin pen?	5
Where do I inject my insulin?	6
How do I store my insulin?	6
How often do I need to inject insulin?	7
When do I inject insulin?	7
Does insulin have any side effects?	7
Do I need to change what I eat?	8
Monitoring my blood glucose	8
My blood glucose tests	9
What is hypoglycaemia and hyperglycaemia?	10
What does a 'hypo' feel like?	10
What causes a 'hypo'?	10
What should I do if I have a 'hypo'?	11
Hyperglycaemia, or high blood glucose	13
What should I do if my blood glucose remains too high?	13

Information

To receive this information in Chinese, Korean, Samoan or Tongan, contact the Diabetes Service at North Shore or Waitakere Hospital at **(09) 486 8920 extn 2505**.

An interpreter can be arranged for clinic appointments if you need one.

For health advice 24hours/day, contact Healthline at **0800 611 116** or www.healthline.co.nz. For further resources, visit Health Navigator www.healthnavigator.org.nz

Any questions?

This booklet does not tell you everything about your medicines.

Talk to your doctor, pharmacist or nurse if you do not understand something or want to know more about your medicines.

Glossary of terms

Cartridge	Vial of insulin designed to fit into insulin pens
Confusion	Getting mixed up or muddled
Glucose	The main type of sugar in the blood
Hyperglycaemia	High blood glucose
Hypoglycaemia	Low blood glucose
Insulin	A hormone that lowers blood glucose levels
Monitoring	Checking (e.g. monitoring blood glucose levels)
Prime	Get ready (e.g. prime blood glucose monitor)

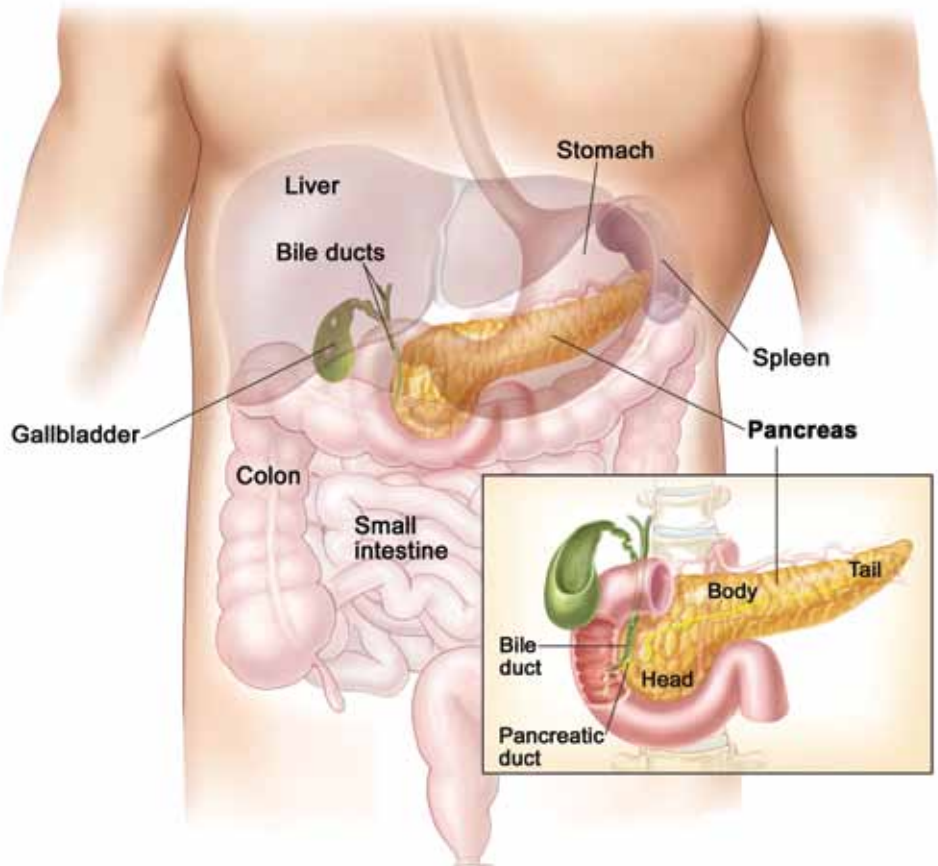
Why do I need insulin?

Your doctor has suggested that you start on insulin, as this is the next step in the treatment of your diabetes.

In the past you may have been able to control your diabetes with healthy eating, regular exercise and tablets. These treatments are still important, but now you need to add insulin to your treatment plan.

It is common for people with type 2 diabetes to eventually need insulin to help control their diabetes and stay healthy.

This is because, over time, the cells in your pancreas begin to slow down and stop making enough insulin for your body.



What does insulin do?

Insulin helps move glucose from your blood into the cells of your body to make energy. If glucose can't get into your cells, it will stay in your blood and slowly cause damage to blood vessels, nerves, your eyes, heart and kidneys. You will also lose energy.

The best blood glucose range for people with diabetes is usually between **5-7mmol/L** (before meals); ask your doctor about the best range for you

A blood test called HbA1c will also be arranged by your doctor to check your diabetes control. An HbA1c level of 50-60 is a target for most people with diabetes.

Why are there different types of insulin?

Some insulin works over a short period of time and others work for longer. Some are a mixture of both types.

- Your doctor and diabetes team will decide which type of insulin will work the best
- They will help you with changing your dose to keep your blood glucose as close to the normal range as possible (5-7mmol/L before meals)

It is important that you know which type of insulin you are using

How do I take insulin?

Insulin cannot be put into a tablet because the acid in your stomach will destroy it. That is why you need to inject insulin. Insulin can be injected using a syringe, but most people use insulin pens.



How do I use my insulin pen?

Mix:

To make sure insulin is evenly mixed, rotate pen up and down at least 20 times.



Prime:

Dial up 2 units.

Remove needle cap with the needle pointing upwards, press plunger checking to see if insulin flows from the tip of the needle. Repeat process until insulin appears.



Inject:

Dial up your dose and inject.

After pushing the plunger in, count to 10 before removing the needle. Withdraw needle on the same angle as the injection to prevent bruising.



Dispose:

Used needles must not be put straight into household rubbish. Put used needles in an empty container first, e.g. a sturdy plastic bleach bottle with a child-proof lid.

Or contact Diabetes Auckland about their disposal scheme at (09) 623 2508 or 0508 DIABETES (0508 342 238), or via e-mail at service@diabetesauckland.org.nz.

Remember:

- Change needles every day
- Change insulin cartridge every 4 weeks even if there is still insulin in it
- Avoid hot showers and baths within 30 minutes of an injection to decrease the risk of a sudden drop in blood sugar level (a 'hypo')
- Keep insulin pen at room temperature
- Keep spare insulin in the refrigerator



Where do I inject my insulin?

- Your stomach is the best place to inject your insulin; it needs to be injected into the layer of fat just under the skin
- It is important that every time you inject yourself, you change where you insert the needle (e.g. moving across your stomach each time); this helps stop fatty lumps from forming, which reduce the effect of insulin
- Your nurse or doctor will show you how to do this
- Most people say that injecting insulin is less painful than a finger-prick

How do I store my insulin?

Your unopened insulin should be kept in the fridge.

The insulin you are using can be kept at room temperature for one month; after that it must be thrown away. In the summer, when carrying insulin with you or in the car, keep it in a chilly bag. Heat and direct sunlight can damage insulin so that it does not work.

Do not use insulin that has changed colour or gone lumpy

Do not use insulin that has passed its 'expiry date'

Do not freeze your insulin or leave it anywhere too warm or in the sun

Do not use insulin cartridges that are cracked or leaking

How often do I need to inject insulin?

The number of injections you may need can vary depending on your blood glucose tests. Your diabetes team will advise what is best for you.

When do I inject insulin?

Most people find their levels are **too high when they wake** up in the morning (above 7mmol/L is too high). This usually happens because your body makes glucose during the night, not because of what you ate the night before. To get your morning blood glucose lower, you will **need to take insulin at bedtime**.

A few people find that their levels are **highest later in the day**. These people will usually **start their insulin in the morning**.

- Your doctor or nurse will help you start and change your insulin doses
- It will usually take several weeks to get your dose right
- You will need weekly contact until blood glucose levels are stable
- Some people may need to use insulin two or more times a day to get better blood glucose control

Please talk to your doctor, nurse or pharmacist
if you have any problems or concerns about your insulin

Does insulin have any side effects?

Side effects from insulin are not very common. However, if you do not balance your eating, exercise, oral diabetes medications and insulin, your blood glucose may drop too low. This is called hypoglycaemia (a 'hypo').

On page 11 we will tell you what to do if you have a 'hypo'.

If you have any side effects that you think may be caused by your insulin, talk to your doctor.



Do I need to change what I eat?

Healthy eating will still be an important part of your diabetes treatment. If you do not follow a healthy food plan, it will be hard to control your blood glucose levels.

You are also likely to put on extra weight if you eat more food than your body needs for energy.

It is important that you have regular meals containing carbohydrate so that you balance what you eat with how much insulin you inject. Some people require snacks between meals; check with your doctor or nurse for advice.

Monitoring my blood glucose

Checking your blood glucose levels helps you see how well your body responds to your food plan, exercise, diabetes tablets and insulin.

The goal for most people is to keep blood glucose levels as close to the normal range as possible (5-7mmol/L before meals).

When you first start on insulin, you will need to test your blood glucose at least 3 to 4 times a day. But once you have found the insulin dose that best suits you, you can do less testing.

Most people test their blood glucose 3 to 4 times a day, two or four days a week (usually before meals and before bed or supper). Sometimes people also need to test their levels two hours after meals. Occasionally you may be asked to test overnight.

If you are unwell, it is important you do more testing because it can change your blood glucose level.

My blood glucose tests

Keep a record of your glucose levels in a table like this one. This will show how well your diabetes is controlled and if you need changes to your treatment.

before breakfast	2 hours after	Before lunch	2 hours after	before dinner	2 hours after	bedtime	2am



You should think about wearing a MedicAlert® bracelet.

If there is an emergency, this will tell other people that you are on insulin. Contact MedicAlert® on 0800 840 111 or email inquiry@medicalert.co.nz

What is hypoglycaemia and hyperglycaemia?

- **Hypoglycaemia**, or a 'hypo' is when your blood glucose falls below 4 mmol/L
- **Hyperglycaemia** or 'high blood glucose' is when your blood glucose level remains higher than 15mmol/L

Please read the following pages, as it is important to know how to treat a 'hypo' immediately.

What does a 'hypo' feel like?

You may have some or all of these symptoms:

- Blurred vision
- Pins & needles on the lips or tongue
- Hunger
- Pounding heart
- Looking pale and having sweaty skin
- Headache
- Light-headedness
- Dizziness
- Trembling hands
- Weak and trembling knees

Some people feel confused, anxious or irritable as well.

What causes a 'hypo'?

- A missed meal or snack, late meal or snack, or not eating enough carbohydrate (starchy) foods
- More exercise than usual without eating extra carbohydrates
- Having too much insulin or too many diabetes tablets
- Drinking alcohol without food

Talk to your doctor or nurse if: you have a 'hypo' while first starting on insulin or if 'hypos' are happening frequently

What should I do if I have a 'hypo'?

Check your blood glucose if possible. If you feel any of the 'hypo' symptoms, treat it right away. Take ONE of the following 'sugary' foods or drinks to raise your blood glucose quickly:

THREE teaspoons of jam or honey or sugar



OR

HALF a glass of normal (not diet) lemonade or sugary drink



OR

6-7 small jelly beans



OR

Use glucose tablets or powders from your pharmacy:

- 3-4 Vita Energy tablets or
- 3-4 Dextro Energy tablets or
- 2 heaped teaspoons of glucose powder dissolved in water

THEN

After 5-10 minutes check your blood glucose again. If it is still below 4mmol/L take one of the above food or drink again.



OR

If you do not have your meter and you feel no better after 5-10 minutes, take one of the above foods or drinks again.

THEN

Check and treat every 5-10 minutes until your blood glucose is more than 4 mmol/L or you feel better.

When your blood glucose is more than 4mmol/L, have a meal if it is your usual meal time or have a snack such as:

- A thin slice of bread or



- A glass of milk or



- 2-3 cracker biscuits or



- A small container of yoghurt or



- A small piece of raw fruit



Be prepared:

You should always carry something sugary with you in case you have a 'hypo'

Hyperglycaemia, or high blood glucose

If you have eaten too much sweet or starchy food, your blood glucose may get too high. This is when your blood glucose level remains more than 15mmol/L.

Signs that your blood glucose is too high are:

- You are more thirsty
- You are going to the toilet frequently to pass water
- You feel more tired
- You have blurred vision

Some people may have no symptoms and only notice that their blood glucose is too high by checking their blood glucose levels.

Your blood glucose may also be too high when:

- You are unwell or have an infection
- You change the amount of exercise you do
- Your dose of insulin is too low or you miss an injection

What should I do if my blood glucose remains too high?

If your blood glucose falls after a few hours, you usually don't need to worry. But if it remains high (over 15mmol/L) after two or three days, it means you may need more insulin.

- Check your blood glucose level more often
- See your doctor or nurse for advice





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