

# Insulin in Pregnancy

Information for women

Tena koutou katoa | Kia orana | Talofa lava | Malo  
e lelei Fakaalofa lahi atu | Taloha Ni | Ni Sa Bula

Vinaka

欢迎 | こんにちは | ابحرم

Greetings and Welcome to

National Women's Health  
Auckland District Health Board

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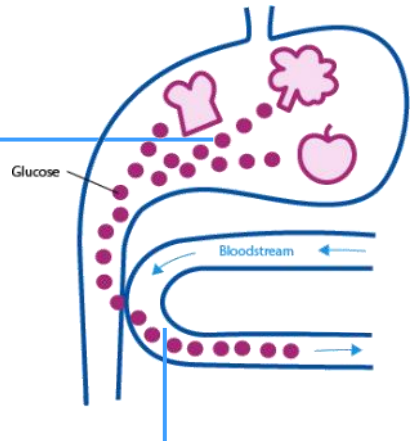
In order to keep you and your baby safe, it is important to keep in touch at least once a week.

This can be via text, phone or email.

## What is Diabetes?

- 1 Our body gets a large part of its energy from **glucose**.

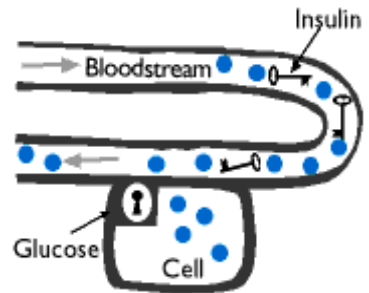
Glucose is a form of sugar that comes from **carbohydrate foods** (e.g. bread, rice, potatoes, kumara, taro, corn, pasta, cereals, dried beans, lentils, milk, cakes, biscuits and fruit).



- 2 After these foods are digested in your stomach, they enter the blood stream as glucose. The body needs the help of a hormone called insulin to get glucose from the blood stream to the muscle and other tissues of the body to be used as energy.

During pregnancy, the placenta nourishes your baby as it grows. Hormones from the placenta also help your baby develop. But these hormones can also block the normal action of insulin during pregnancy. This is called **insulin resistance**. Your body needs to make four times more insulin during pregnancy.

Insulin resistance means insulin does not work effectively in the mother's body. Without enough insulin the glucose accumulates in the blood and your blood sugars rises abnormally high.



Insulin opens the door so that glucose can enter the cell to be used as energy.

## How do you treat diabetes?

Diabetes is treated by balancing your **food**, **exercise** and **insulin** or tablets to keep your blood sugar level as close to normal as possible. A normal blood sugar helps you to keep well and prevent complications for you and your baby.

### Step 1: Meal Plan



#### **A dietitian will help you develop a meal plan.**

This healthy eating plan should be:

- low in fat,
- no added sugar and
- high in fibre.

The carbohydrate (glucose making foods) that you eat will be evenly spread over the day. This will result in smaller rises in blood sugar after meals and make good use of a limited insulin supply. The meal plan will also provide a nutritious diet.

The reason for having low fat is because when fatty food is digested, the fat that enters the blood stream can also interfere with insulin action and worsen insulin resistance

**People with diabetes do not need special “diet” foods. The healthy eating plan for people with diabetes is good for everyone.**

## Step 2: Exercise



**Being physically active helps the body control the level of glucose in the blood stream by helping insulin to work properly.**

Aim to do 30 minutes of moderate intensity activity on most days of the week.

- Walk
- Swim/water walk

Any exercise is better than none.

## Step 3: Blood tests



**You will need to monitor your blood glucose frequently.**

Each blood glucose result must be recorded accurately so that the Diabetes in Pregnancy team can observe any trends and advise on appropriate treatment.

Aim for:

1. Blood sugars less than 5.0 mmol/L before breakfast
2. Blood sugars less than 6.0 mmol/L 2 hours after **the start** of each meal.

In women who have diabetes in pregnancy the fasting levels are 3.5 – 5.0 mmol/l and the test 2 hours after meals is less than 6.0mmol/l.

## Insulin

Your diabetes physician will prescribe Insulin according to your blood sugar results. It is very important that you test your blood sugars and record them accurately.

There are two main types of insulin that we use:

### **Rapid Acting or ‘Clear’**

(Novorapid or Humalog)

#### **Use**

You have this **with** meals.

Give the injection when your food is on your plate and you are about to eat.

#### **Action**

It starts acting within ten minutes and reaches its peak action between one and two hours after administration. Its action is usually complete within 4 hours.

### **Intermediate or ‘Cloudy’**

(Protaphane or Humulin NPH)

#### **Use**

You have this before bed.

**Always shake gently before giving.**

#### **Action**

It starts working two to four hours after administration, reaches its peak action between six to twelve hours after administration and its action is usually complete within twenty hours. *Your physician may advise you to have this insulin twice a day.*

1

**Your doctor will send an electronic script to your pharmacy** for insulin cartridges for three months (this includes two free repeats). It is important that you give the amount of insulin that your doctor has advised.

2

**Collect your prescription at your chosen pharmacy.** There will be a cost, which will be reduced if you have a Community Services Card.

3

**Store the insulin you are not using** in the main part of the fridge.

4

**Keep the insulin pen you are using in a safe place,** away from children and out of direct sunlight.

5

**Give insulin using an insulin pen.** Your diabetes midwife/nurse will show you how to use these.



## Insulin pens

### Do not use insulin if:

- The clear insulin has turned cloudy
- The expiry date has been reached as shown on the cartridge
- The insulin has been frozen or exposed to high temperatures
- Lumps or flakes are seen in the insulin or deposits of insulin are seen on the inside of the cartridge which remain after initial shaking
- The insulin has discoloured
- The cartridge is cracked.

## Getting your insulin pen ready

1. **Wash your hands** and prepare on a clean surface.
2. **Check your pen.** Check the cartridge to make sure there are no cracks in the glass, no solids in the insulin and that the expiry date has not been reached.
3. **Prepare your pen.** Remove the cover and unscrew the top.
4. **Insert an insulin cartridge.** Insert cartridge with the threaded end first. Reattach to base.
5. **Attach a new pen needle.** Turn it until it is tight.
6. **Test the insulin flow.** Dial up 2 units and squirt this out to make sure the pen is “primed.” If no insulin comes out – repeat the priming process.





## How to give your insulin

“Dial up” the amount of Insulin prescribed. **With the “Cloudy” insulin always shake gently before giving.**

### Where to give your insulin

Give your injection into your abdomen/stomach.

Choose a different place on your abdomen for each injection or a tough fatty lump may form.

- Don't inject through your clothes
- Don't inject into damaged skin

**1** With one hand, pinch up a layer of your abdomen and with the other hand hold the pen

**2** Using a 90 degree angle, push the needle into the pinched area as far as the needle will go

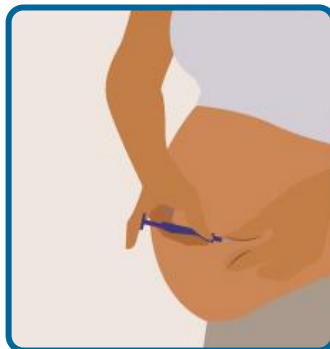
**3** Push the plunger to inject the insulin.

**4** When the dial is at 0 - count to 6 slowly, and then remove the needle.

**5** Let go of your abdomen.

Recap pen lid, put the pen back in its case and return it to a safe place.

Dispose of used needles safely into a hard plastic container – keep away from children.



### Rapid Acting or “Clear” Insulin

Change the needle every 1 – 4 days.

After the new needle is on dial up and squirt out 2 units.

### Intermediate or “Cloudy” Insulin

Change the needle every 1 to 3 uses.

After the new needle is on dial up and squirt out 2 units.

**REMEMBER TO TAKE YOUR INSULIN – if you forget your pre-meal Insulin you can take it directly after your meal.**

## Hypoglycaemia or Low Sugar in your Blood

**A blood sugar below 4.0 mmol/L is called a “HYPO”.  
It must be treated immediately.**

The treatment of your diabetes is to “balance” your food, your exercise and your insulin to keep your blood sugar as close to normal as possible.

When your blood sugar drops below 4.0 mmol/L in pregnancy the “balance” has been upset and you may feel unwell.

**It is important that you know:**

1. How you may feel when your blood sugar is low
2. Why it happens (causes)
3. What to do to treat a low blood sugar (hypo)

**Your blood sugar is too low if it is below 4.0mmol/L**

### How you may feel when your blood sugar is low?

**You may have some or all of these symptoms.**

- Headache
- Sweating
- Dizziness
- Pins & needles feeling on your lips & tongue
- Impaired vision
- Fast heartbeat
- Hunger
- Shaking
- Irritability
- Anxiety
- Weakness/fatigue

### Why does it happen?

1. Missing a meal or a snack. Being late for a meal or snack. Having a meal but not enough starchy food (carbohydrate)
2. More exercise than usual.
3. Too much Insulin
4. Drinking alcohol without food. In pregnancy alcohol should be avoided.

## What to do to treat a “Hypo” or Low Blood Sugar

**TEST** – if your blood sugar is below 4.0mmol/l – **TREAT**.

### Step 1

**FIRST** have some simple sugar (**ONE** of the following):

1 tablespoon of  
jam, honey or  
sugar

1/2 glass of  
ordinary  
lemonade

1/2 glass of  
unsweetened  
fruit juice

6 large  
jellybeans or  
soft jubes

### Step 2

**Wait for 5 – 10 minutes test your blood sugar again and if it is not above 4.0mmol/L, repeat one of the above.**



### Step 3

**Then when your blood sugar is above 4.0mmol/L you have to eat more complex carbohydrate to stay in the normal range.**

**If a meal is not due**, have **ONE** snack such as:

A slice of  
bread

A sandwich

A glass of milk

2 – 3 crackers  
or plain biscuit

**If your meal is due**, and you would normally take insulin before the meal, take the insulin  $\frac{1}{2}$  way through the meal.

**If you keep having “HYPOS” call the Diabetes in Pregnancy team, your self-employed midwife or after hours for advice.**

**Make sure your family and friends know how to treat a “Hypo”.**

## ▶ Driving

It is dangerous to drive while you have a low blood sugar level or soon after you have treated a hypo.

5 before  
you drive

We recommend you treat a hypo and wait for 45 minutes before driving. Remember the rhyme “**5 before you drive**”.

It is best to ensure your blood sugar level is 5.0 or above before driving.

Check out the NZTA information on diabetes and driving:  
<https://bit.ly/34hpsbH>

## ▶ Sick Days

Illness such as colds, flu, infections, vomiting or diarrhoea can cause problems for people with diabetes.

***Illness can cause you blood sugar levels to rise.***

When you feel sick you may not feel like worrying about your diabetes but it is more important that you do to stop more serious problems developing.

## ▶ What to do

- Contact your doctor, diabetes midwife or for after hours, contact Women’s Assessment Unit on 09 631 0784
- **Keep taking your insulin** though this will need to be adjusted.
- **Keep testing your blood sugar** as requested – more often if high.
- **Drink plenty of water** – one glass every hour.

## Complications of Diabetes

Over time, high glucose levels can lead to the following complications:

- Stroke
- Eye disease
- Heart disease
- High blood pressure
- Kidney disease
- Pain or loss of the lower leg(s) due to impaired blood flow
- Peripheral neuropathy (nerve disease)

### Remember

The blood sugars we aim for are:

<b>Fasting (Before breakfast)</b>	Less Than 5.0mmol/L
<b>2 Hours after meals</b>	Less Than 6.0mmol/L

### **A hypo is less than 4.0 mmol/L in pregnancy**

*Again, in women who have diabetes in pregnancy the fasting levels are less than 5.0 mmol/L and the test 2 hours after meals is less than 6.0mmo/LI*

**If you have any questions phone your diabetes midwife.**

## Notes



## Other great websites to check out:

Diabetes NZ	<a href="https://www.diabetes.org.nz/">https://www.diabetes.org.nz/</a>
Ministry of Health	<a href="https://www.health.govt.nz/your-health/conditions-and-treatments/diseases-and-illnesses/diabetes?">https://www.health.govt.nz/your-health/conditions-and-treatments/diseases-and-illnesses/diabetes?</a>
Green Prescription	<a href="https://www.healthnavigator.org.nz/videos/m/maternal-green-prescription/">https://www.healthnavigator.org.nz/videos/m/maternal-green-prescription/</a>
Health Navigator	<a href="https://www.healthnavigator.org.nz/health-a-z/d/diabetes-gestational/">https://www.healthnavigator.org.nz/health-a-z/d/diabetes-gestational/</a>
<b>Resources</b>	<a href="https://adips.org/resources-pregnancy-and-diabetes.asp">https://adips.org/resources-pregnancy-and-diabetes.asp</a>

Women's Health,  
Diabetes Clinic,  
Auckland City Hospital  
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