Department of Health

Commencing insulin therapy

Great state. Great opportunity.

Queensland Government

What does insulin do?

During pregnancy, women make two to three times more insulin to keep blood glucose levels normal. Insulin is a hormone produced by the pancreas, which lowers blood glucose levels. Insulin acts like a key, opening the cells allowing glucose from our food to enter and be used for energy.

Insulin requirements during pregnancy

Placental hormones are produced in increasing amounts during pregnancy. While these hormones are necessary for the ongoing well-being of your baby, they oppose the effect of insulin in your body (insulin resistance). For some women, eating a healthy and balanced diet is not enough to keep blood glucose levels stable.

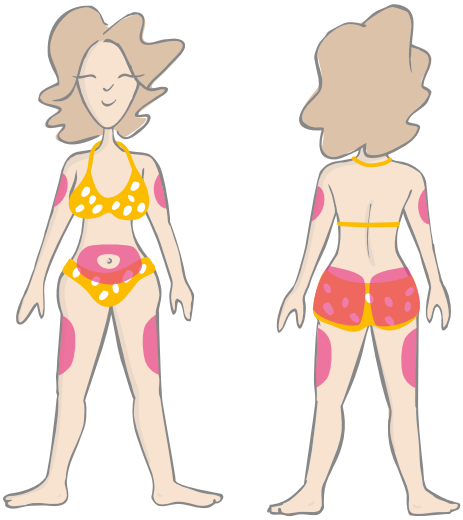
Most women with type 2 diabetes and up to 50 per cent of women with gestational diabetes will need insulin injections during pregnancy to maintain normal blood glucose levels. The insulin you inject is exactly the same as the insulin you make and works in the same way as insulin produced by your body. The injected insulin will not harm your baby.

Insulin treatment for women with gestational diabetes is used to lower blood glucose levels. By keeping your blood glucose levels within a normal range, complications in your pregnancy can be avoided. When in labour most women with gestational diabetes needing insulin therapy can stop their insulin injections.

Types of insulin

There are different types of insulin available which last for different periods of time. Your doctor will prescribe the most appropriate for your needs. Insulin can be administered using an insulin pen or a syringe and needle. It is usual to start off with a small dose of insulin and gradually increase the dose until the blood glucose levels are lowered to the normal range. This process varies from person to person.

Injection sites



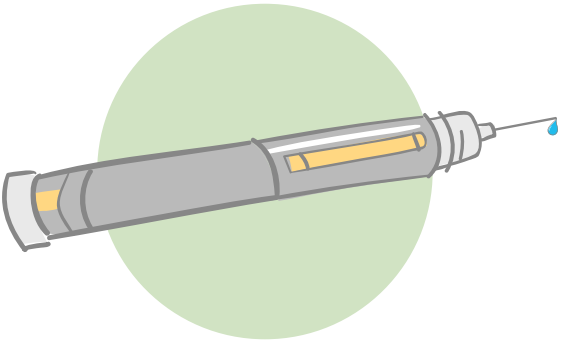
Insulin injections are given into the subcutaneous tissue beneath the skin, avoiding nerves, veins and arteries. Areas which can be injected safely are: the **thighs, abdomen, arms and buttocks**. During pregnancy the abdomen and thighs are the recommended sites for injection. As your pregnancy progresses, you may feel more comfortable using your thighs only. Avoid giving injections on the inside of the thigh or close to joints. Different injection sites have different absorption rates. It is therefore not advisable to rotate daily from one part of the body to another. It is important to rotate injections within the area being used e.g. within the thigh area.

- If you are having two or more injections a day, choose a morning and afternoon site (e.g. morning site: left thigh, afternoon site: right thigh).
- Start at the top of the thigh and move down 2–3cm (an inch) each day. When you get within a hands breadth of your knee, commence a new row. Continue in rows within comfortable reach.
- After about four weeks it will be necessary to repeat the cycle.

By following this pattern of rotation you will prevent problems, which could arise from giving injections in the same site repeatedly. Burns, depressions, pain change of colour, or lumpiness at any injection site should be reported to your diabetes educator or doctor.

Priming your insulin delivery device

1. Set dose selector at zero.
2. Dial up two units of insulin.
3. Hold device with needle pointing upwards and gently tap to remove air bubbles.
4. Depress (push) the button on the device.
5. A drop of insulin should be seen at the tip of the needle.
6. If droplet is not seen, repeat the steps above until a drop of insulin is seen at the tip of the needle.

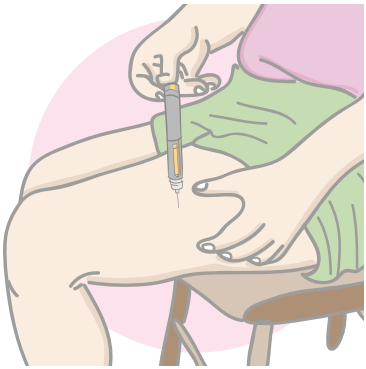


Injection technique

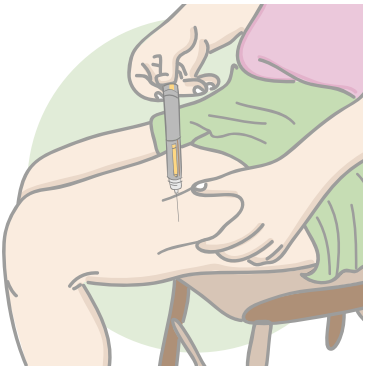
Your diabetes educator or doctor will provide step by step instructions and demonstrate how to draw up and administer your insulin.

1. Wash hands.
2. Attach needle to injection device or syringe.
3. Prime needle with insulin to ensure the insulin flow before each injection.
4. Select the site.
5. Inject the insulin – push the plunger down all the way gently.
6. Wait the count of 5 to 10 seconds.
7. Remove the needle and dispose into sharps container.

A pinch up of a fold of skin at the injection site is only necessary when using certain sized needles.



☐ No Pinch up = 4mm needle



☐ Pinch up = 5mm needle or greater

Release pinch prior to removing needles from injection site.

Handling insulin

Storage

- Insulin not in use should be stored in the refrigerator between 2°–8°C. Do not store in the freezer.
- Insulin penfills/cartridges in use can be stored at room temperature.
- Insulin is destroyed by heat therefore do not leave it in a car or anywhere the temperature exceeds 40°C.
- Insulin should not be exposed to direct sunlight.
- Check expiry dates.
- Discard insulin in use one month after opening.

Travelling

- Store insulin in an insulated container.
- Do not use an ice brick.
- If flying – it is necessary to take a letter from your health care team so you can carry your insulin and needles on board.

Driving

- You need to take care when driving now that you are on insulin.
- You will need to notify your local transport department that you are taking insulin – type 1 and type 2 diabetes only. It is not necessary if you have GDM and commencing insulin.
- Check with your doctor – you may need a medical certificate.
- Check your blood glucose level before you start driving – it is recommended that your level is '5' to drive.
- Hypoglycaemia (low blood glucose levels) can impair your ability to drive safely.
- It is advisable to have a carbohydrate snack available in the car.
- Pull over immediately and stop the car if you feel as though your blood glucose level is low.
- Treat the hypoglycaemia and do not drive until you have checked your blood glucose level and it is above 5.
- Always carry your meter when driving.

Disposal of needles

Approved sharps containers can be purchased from retail pharmacies or Diabetes Australia, Queensland.

Contact your local council regarding waste disposal of needles or sharps containers.

Hypoglycaemia (low blood sugar levels)

After you commence insulin injections it will be necessary to maintain a balance between the amount of insulin given, your food intake and the amount of physical activity you undertake.

The most common reasons for hypoglycaemia are:

- a missed, delayed or inadequate meal
- an unusual amount of exercise
- a higher insulin dose than required
- alcohol intake, especially on an empty stomach (alcohol is not recommended in pregnancy).

With the small doses of insulin used to treat women with gestational diabetes it is unlikely that any serious reactions will occur.

Symptoms of hypoglycaemia include:

- headache or dizziness
- trembling, shaking
- tingling sensation of the lips and fingers
- nausea
- sweaty, cold and clammy
- feeling hungry.

Do a blood glucose test to check your blood glucose level – if it is 4.0 or below and you are experiencing the symptoms of hypoglycaemia then choose one of the following:

- a glass of soft drink or sports drink (not diet soft drink)
- seven glucose jellybeans
- three heaped teaspoons of sugar or honey dissolved in water
- 100mls of Lucozade.

If after 15 minutes your symptoms have not improved and your blood glucose level remains below 4.0 have another serve of fast release carbohydrate. When you feel better, and if it is not time for a meal, eat some longer lasting carbohydrate (low GI) for example:

- one piece of fresh fruit e.g. apple or orange
- sandwich using multigrain bread or fruit bread
- glass of low fat milk.

Severe hypoglycaemia can lead to confusion and loss of consciousness. Whilst it is very rare, your family should be aware that if severe hypoglycaemia occurs and you become unconscious, they must call an ambulance immediately. They should **not attempt** to give you food or fluids in these circumstances.

The following simple guidelines will help to prevent a 'hypo' or quickly treat one:

- Eat carbohydrates regularly.
- Use your medication carefully.
- Take extra food if you are engaging in an unusual amount of exercise.
- Carry some sugar containing foods such as jelly beans with you at all times.
- Also carry longer lasting carbohydrates, such as fruit for use if meals are delayed.
- Carry your identification on you at all times.
- Carry your blood glucose meter at all times.

Insulin therapy use in gestational diabetes is a valuable treatment option when dietary changes and physical activity have not resulted in achieving glucose levels within the recommended range for pregnancy.

Your health care team will provide ongoing support and education during your pregnancy to assist you with management of your insulin therapy.

Useful information

BD – **www.bd.com**

Novonordisk – **www.novonordisk.com.au**

Diabetes Australia (Victoria) – **www.diabetesvic.org.au**

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