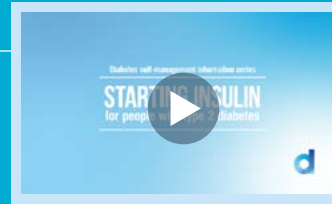


Diabetes quick guides

# INSULIN

## PART 1: Understanding insulin



### Watch the video

Click the thumbnail or visit the Diabetes Tasmania YouTube channel.

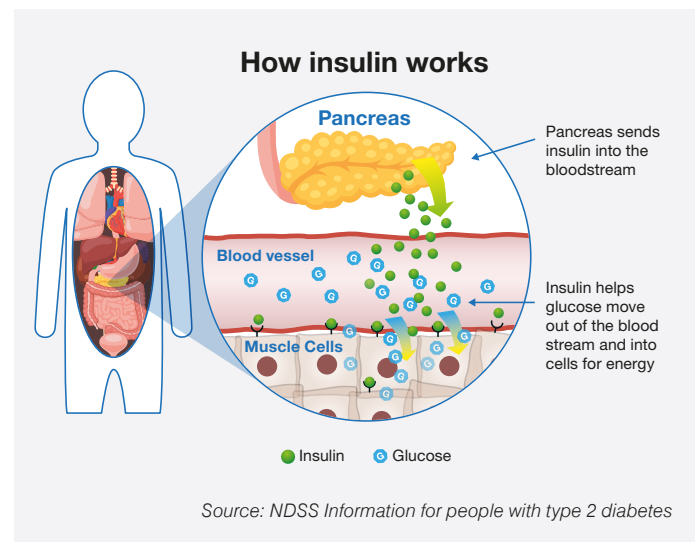
## What is insulin?

Insulin is a **hormone** produced by beta cells in the pancreas. It balances blood glucose levels by:

1. allowing glucose to move from the blood stream and into cells for energy; and
2. controlling the release of stored glucose from the liver.

## Who needs insulin?

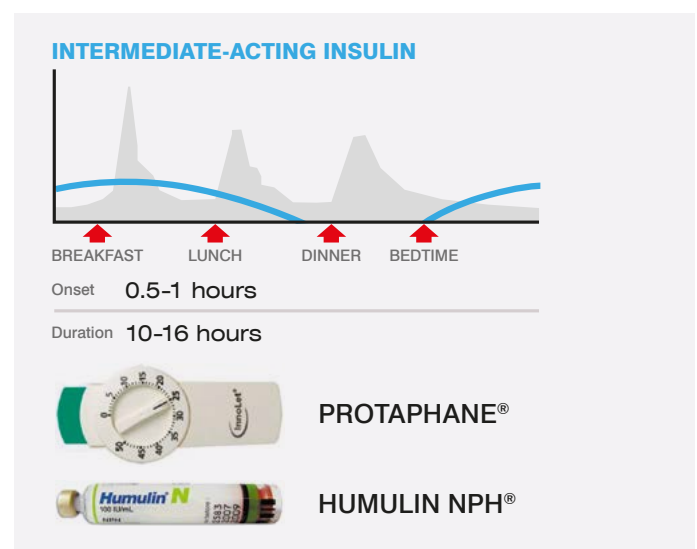
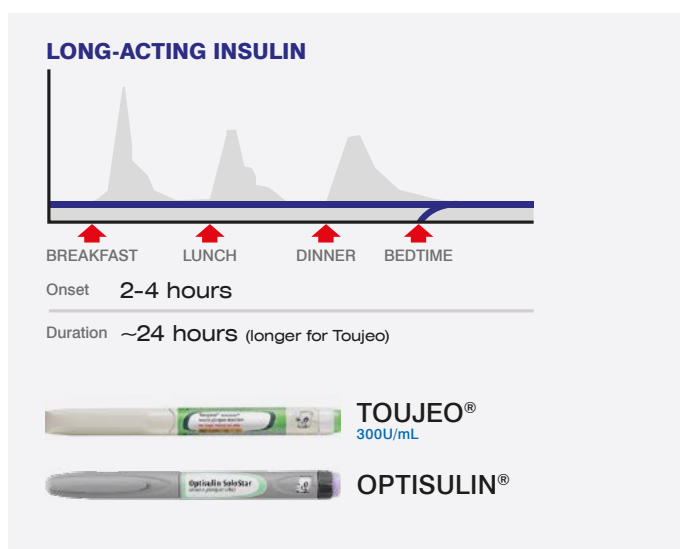
Diabetes is a condition where there is too much glucose in the blood. We need glucose for energy. With type 2 diabetes, your pancreas makes some but not enough insulin. As the condition progresses, many people with type 2 diabetes will require injected insulin to replace or 'top up' their own. With type 1 diabetes, your pancreas is unable to produce any insulin. All people with type 1 diabetes require injected insulin.



## Types of insulin

### 1. Background (basal) insulin

A background (sometimes called basal) insulin is usually a medium- to long-acting insulin which is used to control fasting blood glucose levels. These insulins are taken at regular times once or twice a day regardless of mealtimes.



## Types of insulin (continued)

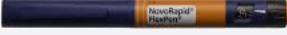



### 2. Bolus (mealtime) insulin

A rapid or short-acting insulin given before meals or to quickly reduce high blood glucose levels. These insulins are taken at mealtimes (5-15 minutes before for rapid-acting; 30 minutes before for short-acting; with or just after a meal for ultra-rapid acting).

**RAPID-ACTING INSULIN**

Onset ~5 minutes



Duration 4-5 hours

-  **NOVORAPID®**
-  **HUMALOG®**
-  **APIDRA®**
-  **FIASP®**  
Ultra-rapid acting, can be given just after meal

**SHORT-ACTING INSULIN**

Onset 30 minutes

Duration Up to 6 hours

-  **ACTRAPID®**
-  **HUMULIN R®**





### 3. Premix insulin

A mix of two types of insulin, combining a background (intermediate- or long-acting) and a mealtime (rapid- or short-acting) insulin. These are best given at regular times of the day with a meal, for example, Novomix30 dose 5-15 minutes before breakfast and 5-15 minutes before evening meal, ensuring each dose is at least 6 to 8 hours apart.

**PREMIX INSULIN (ANALOGUE)**

Onset 5-15 minutes



Duration 10-16 hours

-  **NOVOMIX30®**
-  **HUMALOG MIX 25®**
-  **HUMALOG MIX 50®**
-  **RYZODEG 70®**  
degludec lasts >24 hours

**PREMIX INSULIN (HUMAN)**

Onset 30 minutes

Duration 10-16 hours

-  **MIXTARD 30®**
-  **MIXTARD 50®**

## Your insulin

Ask your GP, NP or diabetes educator to write fill in this table when you start insulin.

Name of your insulin:	Is it background, bolus or premix?	When you will inject it each day (include time if that helps)?
<i>e.g. Novomix30</i>	<i>Premix</i>	<i>5-15 minutes before breakfast and before dinner</i>




## Further resources

### NDSS (National Diabetes Services Scheme)

Contact the NDSS on **1800 637 700** to order printed copies, or visit [ndss.com.au/about-diabetes/resources](http://ndss.com.au/about-diabetes/resources)

- [Insulin](#)
- [Starting insulin \(for people with type 2 diabetes\)](#)
- [Concerns about starting insulin \(for people with type 2 diabetes\)](#)

### Next steps

-  Insulin – Part 2: How to inject insulin
-  Monitoring blood glucose levels
-  Hypoglycaemia management

**Need help? Phone 6215 9000 or visit [diabetestas.org.au](http://diabetestas.org.au)**



Supported by



*NOTE: This information is a guide only and does not replace individual medical advice.*

Diabetes quick guides

# INSULIN

## PART 2: How to inject your insulin



### Watch the video

Click the thumbnail or visit the Diabetes Tasmania YouTube channel.

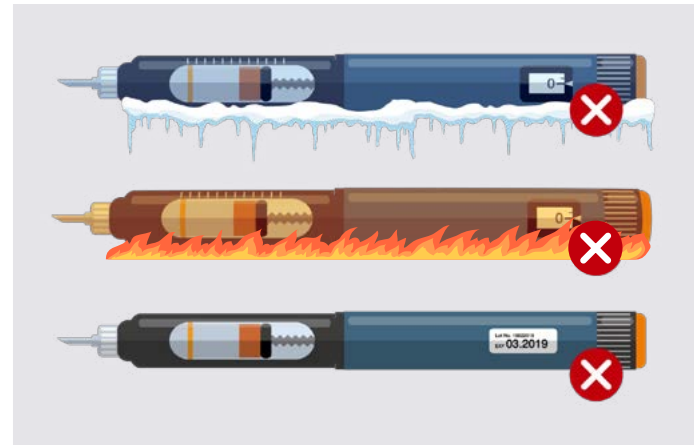
### Storage of insulin

Store insulin you are not using in the fridge. Use the door of the fridge so it does not freeze.

Insulin can be kept at room temperature (less than 25 degrees Celsius) for up to 30 days, then it must be discarded (and start a new pen or cartridge).

**Do not** use insulin if:

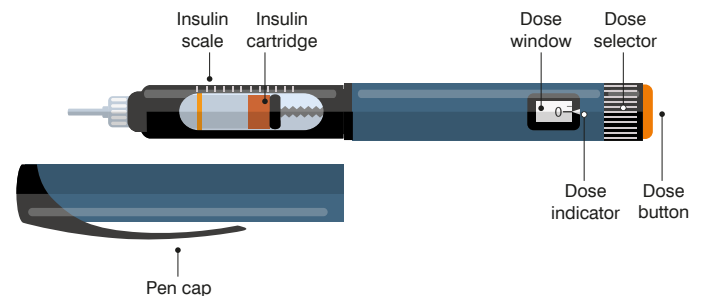
- it has been frozen
- it has been in heat over 30 degrees
- it has expired (check the date on the pen).



### Insulin pen device

Insulin comes in disposable pen devices or cartridges for use in non-disposable pen devices.

**Do not** draw insulin out of the device. **Do not** leave a needle on your pen (this will let air in).



### Injection site

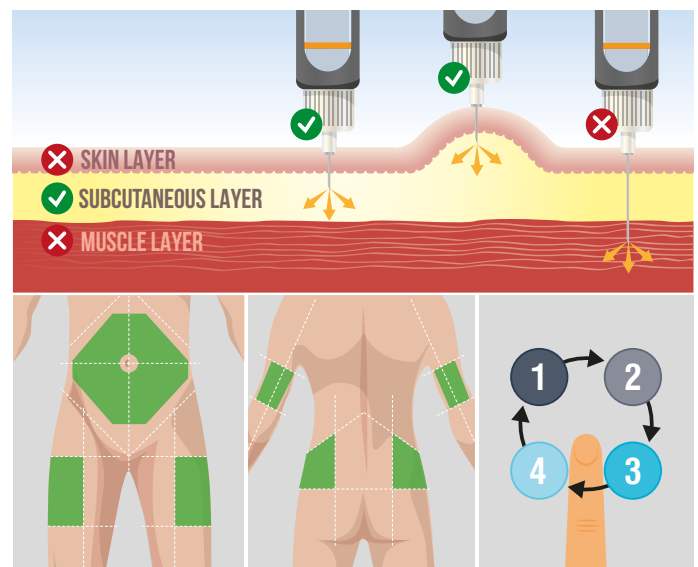
The aim is to inject insulin into the fat layer under the skin (known as the subcutaneous layer).

Avoid:

- scars and stretch marks
- muscle (pinch up the fat layer if needed)
- injecting in the same area every time.

Rotate (change) your injection site by 1cm (finger width) each injection.

Use only 4mm, 5mm or 6mm length needles.



## How to inject with a pen device

**1** Mix with *gentle* roll and shake (cloudy insulins only)

x10

**2** Attach a new needle:

1. Remove paper tab
2. Screw onto pen
3. Remove outer cap (keep this)
4. Remove inner cap (throw out).

**3** Prime needle with 2 units, holding pen upright (repeat until you see insulin come out)

**4** Dial up dose

EXAMPLE:  
5 units selected  
24 units selected

**5** Inject at 90 degrees and hold for 10 seconds

10s

**6** Replace large cap on needle, unscrew and place in sharps container

## Further resources

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### Next steps

- Monitoring blood glucose levels
- Hypoglycaemia management

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