

# Win

Against  
Diabetes



# Types of Insulin

## TYPES OF INSULIN AND THEIR ACTION PROFILES

There are many types of insulin available in Singapore. The ones presented in this booklet represent what is presently registered and available in Singapore.

Insulin is administered by subcutaneous (just under the skin) injection. Insulin should only be used when prescribed by a doctor and dose adjustments should be supervised.

## TYPES OF PREPARATIONS

Insulin preparations can be categorised according to their time action profile: quick-acting, intermediate-acting and long-acting. There are also premixed insulins which contain a mixture of quick-acting and intermediate-acting insulin.

Insulin preparations are available in vials, cartridges and disposable pens.



It is important to ensure the correct dose of insulin is given and that the technique of administration is correct, since improper administration can lead to high (hyperglycaemia) and low glucose levels (hypoglycaemia).

Low blood glucose levels may happen when there is a mismatch of carbohydrate intake to insulin, during exercise, after alcohol intake, or in relation to other medical conditions.



The tables below show the types of insulin available in Singapore as well as their:

- Onset of action (how quickly they start acting)
- Peak action (greatest glucose-lowering effect)
- Duration of action (when they stop lowering glucose levels)







## Quick-acting and Short-acting Insulin

| Onset of insulin action | Brand and type        | Generic name      | Type of insulin   |
|-------------------------|-----------------------|-------------------|---|
| 15 min                  | Apidra®<br>Solostar   | Insulin Glulisine | <br>Onset: 5-15 mins<br>Peak: 1-2 hrs<br>Duration: 3-4 hrs  |
| 15 min                  | NovoRapid®<br>FlexPen | Insulin Aspart    | <br>Onset: 10-20 mins<br>Peak: 1-3 hrs<br>Duration: 3-5 hrs |
| 30 min                  | Actrapid®             | Regular Insulin   | <br>Onset: 0.5 hrs<br>Peak: 1-3 hrs<br>Duration: 8 hrs      |





## Intermediate-acting Insulin

| Onset of insulin action | Brand and type | Generic name | Type of insulin  |
|-------------------------|----------------|--------------|--|
| > 60 min                | Insulatard®    | NPH Insulin  | <br>Onset: 1.5 hrs<br>Peak: 4-12 hrs<br>Duration: 24 hrs |



# Long-acting Insulin

| Onset of insulin action   | Brand and type                      | Generic name     | Type of insulin  |
|---|-------------------------------------|------------------|--|
|  > 60 min | Lantus®<br>Solostar                 | Insulin Glargine | <br>Onset: 1-2 hrs<br>Peak: no peak<br>Duration: 24 hrs  |
|  > 60 min | Levemir®<br>FlexPen                 | Insulin Detemir  | <br>Onset: 1-2 hrs<br>Peak: 3-14 hrs<br>Duration: 24 hrs |
|  > 60 min | Toujeo®<br>SoloStar<br>300 units/ml | Insulin Glargine | <br>Onset: 6 hrs<br>Peak: no peak<br>Duration: > 24 hrs  |

# Premixed Insulin

| Onset of insulin action   | Brand and type        | Generic name   | Type of insulin  |
|---|-----------------------|--|--|
|  15 min | NovoMix®30<br>FlexPen | Biphasic Insulin<br>Aspart                                   | <br>Onset: 10-20 mins<br>Peak: 1-4 hrs<br>Duration: 24 hrs |
|  30 min | Mixtard® 30           | Biphasic 30%<br>Soluble Human<br>Insulin +70%<br>NPH Insulin | <br>Onset: 0.5 hrs<br>Peak: 2-8 hrs<br>Duration: 24 hrs     |

# Co-formulation Insulin

| Onset of insulin action   | Brand and type         | Generic name  | Type of insulin  |
|---|------------------------|---|--|
|  9-14 min | Ryzodeg®<br>FlexTouch® | Insulin<br>Degludec/<br>Insulin Aspart -<br>IDegAsp (IDeg<br>70% + IAsp<br>30%) | <br>Onset: 9-14 min (IAsp component)<br>Duration of action: > 30 mins (IDeg component) |



**More topics are available in the full  
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