**Quick Guide to Insulin**

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<td>Knowledge resource for clinical staff in the safe use of insulin.</td>
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| Controlled Document Lead (Author): | Angela Murphy (Diabetes Renal CNS)  
|                      | Lesley Peter (Diabetes CNS) |  |
| Approved By:        | Clinical Guidelines Group    |
|                      | Trust wide diabetes teams and associated pharmacists. |
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| Distribution:       | All clinical staff that care for patients with diabetes. |
| Information for:    | All clinical staff that care for patients with diabetes. |
### UHB Guide to commonly used insulin *

#### Type

- **Rapid**
- **Intermediate**
- **Long**
- **Ultra Long**
- **Mixed**
- **Insulin mixtures**

#### Duration

- **Profile over 4 hrs**
- **Profile over 8 hrs**
- **Profile over 24 hrs**

#### Insulin

- **Humalog** (Insulin Lispro)
- **Novorapid** (Insulin Aspart)
- **Humulin M3 (Human)**
- **Humulin R USO (Insulin Lispro)**
- **Tresiba 100 (Insulin degludec)**
- **Toujeo 300 (Glargine)**
- **Humalog Mix 25**
- **Novomix 30**
- **Humalog Mix 50**

#### Available in

- **Vial, Cartridge, Disposable pen**
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- **Vial, Cartridge, Disposable pen**

#### Administration

- Immediately before, with or immediately after meals.
- Should be omitted if patient not eating. (If BG elevated then will require medical review).
- Can be used for corrective doses.
- Flap onset of action is within 4-15 minutes.
- 30 minutes before meals or bed.
- 30 minutes before food or evening meal.
- Always be at least an 8 hour gap between doses.

#### With IV insulin

- Stop VR11 30 minutes after subcutaneous dose.
- Stop VR11 1 hour after subcutaneous dose.
- Stop VR11 1 hour after subcutaneous dose.
- Must be given within 1 hour of prescription time.
- Must be resuspended by gently mixing before use.
- Only to take every 3-4 days.
- Do not replace existing prescriptions with biosimilars (Lantus is not interchangeable with other biologic Glargine insulin).

### Safety Standards

- Each patient must have their own labelled insulin.
- Insulin safety needles must be used for all insulin administration by staff and patients whilst in hospital.
- Staff must not remove non-insulin safety needles, as high risk of needle stick injury. Patients to remove own needle and deposit in designated sharps bin.
- All ‘in use’ insulin must be labelled with patient’s name, hospital registration number and date and insulin was opened.
- All ‘in use’ insulin must be stored at room temperature and discarded 28 days after opening, apart from Levemir and Toujeo to be discarded 8 weeks after opening.
- Only insulin syringes should be used to draw up and administer insulin from a 1ml vial.
- Insulin must not be drawn up from a 3ml cartridge or disposable pen using a syringe.

### Self-administration

- Patients who administrate their insulin at home and have been assessed as safe, competent and accurate in insulin administration should be able to self administer in hospital if able (assessment must be documented as per self assessment guidelines).
- When assessing patients ability to self administer insulin safely, the whole process must be assessed adding a needle, reconstitution, test dose, injection technique and disposal of sharps.
- All self administered insulin doses must be accurately documented in the medical record by Registered Health Care Professional: including the dose and time administered.
- Patients initiated onto insulin must be provided with an insulin Passport / insulin safety card.

### Insulin management

- Ward medical team to review diabetes control daily. If out of target (4-12mmol/L) follow diabetes plan or consider referral.
- In some patients targets may differ due to individual needs such as frailty, renal function, palliative care.
- Inconsistently elevated blood glucose (BG) or recurrent hypoglycaemia must trigger a diabetes review.
- Check and document ketones if BG above 15mmol/L in type 1 diabetes or 20mmol/L in type 2 diabetes and inform medical staff immediately if positive.
- PRN doses should be used with caution. Rapid acting insulin must be used as first line for PRN/ correction doses.
- If requiring frequent PRN/correction dose review regular prescription of insulin.
- PRN doses of rapid acting insulin must be administered at meal time (4-6 hourly) unless ketotic (1.5mmol/L or +) when it may be advised 2 hourly by the diabetes team.
- Insulin doses/regime will require review for surgery or planned procedure please refer to the Inpatient management of adults with diabetes undergoing surgery.
- When adjusting insulin, doses are usually adjusted by 10-20% every 2 to 3 days. The insulin dose preceding the first out of target result should be adjusted first.
- If parental feed or steroid therapy commenced or altered please monitor glucose closely and refer to the relevant policy available on the Trust Diabetes intranet page.
- Deterioration in renal function may change insulin profile, leading to reduced insulin requirements.

### Regular insulin must be restarted before stopping TIR

### Insulin preparations/devices

- **3ml Pre-filled insulin pen**
- **10ml Vial**
- **3ml Cartridge**
- **Actrapid 10ml Vial**

#### With thanks to the diabetes teams across sites for input.

Version 5: April 2020 Diabetes Team Authors: A. Murphy (Diabetes Renal CNS) and L.Peters (Diabetes CNS).

*Please note insulins listed are those commonly used and is not an exclusive list of currently available insulins.

**WAC (2017), BNF (2017), IB202 (2019). Safe and effective use of insulin.**