

## Insulin Storage and Administration

For specific information on the brand and type of insulin a care home resident has been prescribed, read and follow the package leaflet provided with it from the pharmacy. If there is no leaflet in the box you can request this from the supplying pharmacy or find the patient information leaflet (PIL) online via the [www.medicines.org.uk](http://www.medicines.org.uk) website.

### Storage

**Before opening:** Store insulin in a refrigerator (2°C to 8°C). Keep it away from the freezer or freezing coils and do **not** freeze.

**During use:** The insulin in use may be kept out of the refrigerator for up to 28 days if kept below 30°C or as per the manufacturer's instructions. This avoids stinging when injecting cold insulin. Do not expose insulin to excessive heat or sunlight.

### Pre-filled pens, re-usable pens and cartridges

Pen devices are either re-usable with a cartridge or pre-filled disposable pens. They can be more convenient to use. **DO NOT UNDER ANY CIRCUMSTANCES** withdraw insulin from a pre-filled insulin pen or insulin cartridge with a syringe, as this can have **fatal consequences for the resident**.

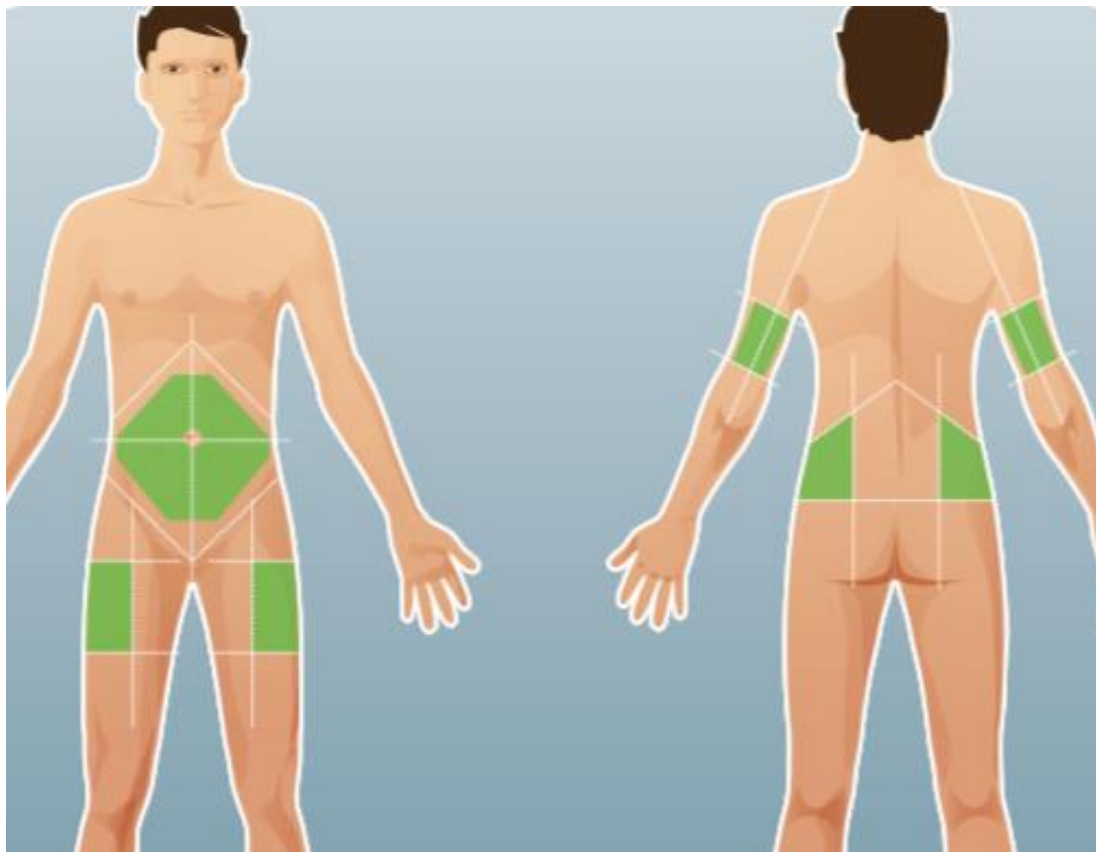
### Vials

Insulin may only be withdrawn from an insulin vial using an appropriate prescribed insulin syringe and needle, and only as directed by the GP or diabetes specialist team.

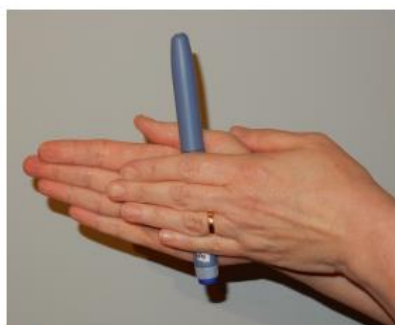
### KEY POINTS

- Ensure ALL staff are aware of which residents are on insulin and that it is a high risk medication
- Label all insulin supplies for a resident with their name and date of birth
- Ensure the correct insulin is in date (see above, under 'Storage') and is given at the correct time to the right resident – this may not necessarily coincide with the drug rounds
- Always prime insulin pens before each use, check manufacturer's instructions. Usually, dial 2 units on the pen and dispel them into the sink (this is known as an 'air shot'). Look for a bead of insulin at the end of the needle. If this is missing repeat the 2 unit 'air shot'. If after repeated priming no insulin is seen at the end of the needle on the pen **DO NOT** use the pen. Note that Toujeo information recommends 3 units.
- If a resident is on a mixed or cloudy insulin (see table 1), ensure the insulin is mixed immediately prior to use. To do this, gently invert the pen 10 times and roll the pen 10 times until the insulin looks white not cloudy (see diagram 1). **DO NOT** shake the insulin as this will affect the insulin molecules.
- When administering insulin injections ensure the injection sites are rotated as advised by the GP or diabetes specialist team (for potential injection sites see diagram 2). Also check the resident's injection sites at regular intervals for any lumpy areas. If any lumps are found do not inject into these and avoid the area.
- Never re-use needles, syringes or lancets and dispose of them in an approved sharps container immediately after use
- A needle size between 4mm (for most people) and 5mm (may be acceptable in obese people) is usually recommended for giving insulin.
- The word '**units**' must be written in full with no abbreviations on the insulin label and the resident's medicines administration record
- Residents on insulin are at higher risk of hypoglycaemia (low blood sugar level). Monitor these residents closely and treat the low blood sugar as directed by the GP or diabetes specialist team. If hypoglycaemia occurs, please contact the GP as soon as possible to review the resident's medication, as insulin doses may require adjustment.

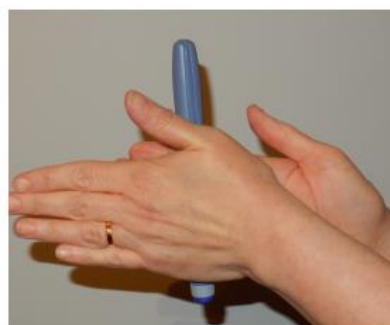
**Diagram 1: Sites which may be used for insulin injections**



**Diagram 2: How to roll (A) and invert (B) the insulin pen prior to use**



(A)



(B)

**Table 1: Types of Insulin**

There are several different types of insulin, some of which are identified in the table below.

NAME OF INSULIN	COLOUR OF INSULIN	DURATION OF ACTION	WHEN TO BE GIVEN
LANTUS (LONG ACTING INSULIN)	Clear	Lasts approximately 24 hours	Given once daily, same time each day but doesn't need to be given with food.
LEVEMIR (LONG ACTING INSULIN)	Clear	Lasts 20-24 hours approximately	Usually given once a day. Can also be given twice a day, same time(s) each day. Doesn't need to be given with food.
HUMALOG (RAPID ACTING INSULIN)	Clear	Lasts approximately 3-5 hours	Given with food, just as food about to be eaten. Can be given at very end of meal but only if advised to do so by GP or diabetes specialist team.
NOVORAPID (RAPID ACTING INSULIN)	Clear	Lasts approximately 3-5 hours	Given with food, just as food about to be eaten. Can be given at very end of meal but only if advised to do so by GP or diabetes specialist team.
APIDRA (RAPID ACTING INSULIN)	Clear	Lasts approximately 3-5 hours	Given with food, just as food about to be eaten. Can be given at very end of meal but only if advised to do so by GP or diabetes specialist team.
NOVOMIX 30 (MIXED INSULIN)	Cloudy	Each injection lasts 10-16 hours approximately	Given twice daily with breakfast and evening meal. Give as food about to be eaten. Has to be mixed prior to injecting.
HUMALOG MIX 25 (MIXED INSULIN)	Cloudy	Each injection lasts 10-16 hours approximately	Given twice daily with breakfast and evening meal. Give as food about to be eaten. Has to be mixed prior to injecting.
HUMULIN M3 (MIXED INSULIN)	Cloudy	Each injection lasts up to 12 hours approximately	Given twice daily with breakfast and evening meal. Give 30 minutes before food. Has to be mixed prior to injecting.
INSUMAN COMB 15, 25, 50 (MIXED INSULIN)	Cloudy	each injection lasts between 11-20 hours approximately	Given twice daily with breakfast and evening meal. Give 30 minutes before food. Has to be mixed prior to injecting.

## **References**

- British National Formulary. Edition 78. September 2019 - March 2020.
- Diabetes Policy Wirral Care Homes 2018. Available at < <https://www.wuth.nhs.uk/media/8835/diabetes-policy-with-nice-approval-wirral-care-homes-70618-locked.pdf>> [Accessed 26 March 2020 and permission granted by Karen Leong, Diabetes Specialist Nurse, to adapt)
- Toujeo Patient Information Leaflet: <https://www.medicines.org.uk/emc/product/6938/pii> accessed 16.2.22