

Insulin comparison and identification guide

The Pan Mersey APC advocates the use of [NICE guidelines in the management of diabetes](#) and has issued a summary of [recommendations to reduce errors in prescribing and administration](#). This insulin identification chart aims to reduce the risk of unintentional duplication of similar insulins. Pharmacokinetic data on the onset and duration of action should only be used as a guide to the type of insulin and must not replace clinical judgement.

Advice for all healthcare professionals

- All insulin requires specialist initiation of prescribing.
- Always prescribe insulin using the brand name, the strength and the form of delivery.
- If specified, the dose must include a frequency and be expressed as a number of units followed by the word 'units' spelled out in lower case.
- Ensure that patients read the pictorial or written information supplied and understand which insulin they are using so that they can be sure they are on the right treatment, especially if the patient has been transferred from standard-strength insulin to high-strength insulin.
- Insulin passports should be issued when prescribing insulin: [The adult patient's passport to safer use of insulin](#).
- Never use a syringe to withdraw insulin from a pre-filled pen or penfill cartridge.

Types of insulin regimen

One, two, or three insulin injections per day

These are usually injections of short-acting insulin or rapid-acting insulin analogue, mixed with intermediate-acting insulin (biphasic regimen). Long acting and intermediate acting insulins may also be used without rapid or short acting insulin.

Multiple daily injection basal-bolus insulin









The person has injections of short-acting insulin or rapid-acting insulin analogue before meals, together with one or more separate daily injections of intermediate-acting insulin or long-acting insulin analogue to cover the basal requirement.

Continuous subcutaneous insulin infusion (insulin pump)

This is a programmable pump and insulin storage reservoir that gives a regular or continuous amount of insulin (usually in the form of a rapid-acting insulin analogue or short-acting insulin) by a subcutaneous needle or cannula. Insulin pumps can be supplemented by short-acting insulin or rapid-acting insulin analogue injections









Insulin can also be used in combination with oral antidiabetic medication in type 2 diabetes.

More comprehensive information on meters, medications, pens and pumps available in the UK can be found at diabetes.org.uk.

Rapid acting analogue			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Apidra Glulisine Analogue	<i>Onset:</i> 10 – 20 minutes <i>Duration:</i> 1.5 – 4 hours <i>Usual timing:</i> just before / with / just after meals; or continuous infusion†	100 units/ml 10 ml vial <i>U100 insulin syringe with needle†, INJEX 30, InsuJet, infusion pump system</i>	
		100 units/ml 3 ml cartridge <i>AllStar PRO, JuniorSTAR ◐, Autopen24, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled pen <i>SoloStar</i>	
NovoRapid Aspart Analogue	<i>Onset:</i> 10 – 20 minutes <i>Duration:</i> 3 – 5 hours <i>Usual timing:</i> just before / with / just after meals; or continuous infusion†	100 units/ml 1.6ml cartridge <i>PumpCart (infusion pump system)</i>	
		100 units/ml 10 ml vials <i>U100 insulin syringe with needle†, INJEX 30, InsuJet, infusion pump system</i>	
		100 units/ml 3 ml cartridge <i>NovoPen 5, NovoPen Echo ◐, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled pen <i>FlexPen</i>	
		100 units/ml 3 ml pre-filled pen <i>FlexTouch</i>	




† If administration by syringe or infusion pump is necessary, a 10 ml vial should be used.




◐ half unit increments.

Rapid acting analogue			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Humalog Lispro Analogue	Onset: 15 minutes Duration: 2 – 5 hours Usual timing: just before / with / just after meals; or continuous infusion†	100 units/ml 10 ml vial <i>U100 insulin syringe with needle†, INJEX 30, InsuJet, infusion pump system</i>	
		100 units/ml 3 ml cartridge <i>Humapen Luxura HD ●, Humapen Savvio, Autopen Classic, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled pen <i>KwikPen</i>	
		200 units/ml 3 ml pre-filled pen <i>KwikPen</i>	
		100 units/ml 3 ml pre-filled pen <i>Junior KwikPen ●</i>	
Fiasp ▼ Aspart Analogue	Onset: 4 minutes Duration: 3 – 5 hours Usual timing: just before / with / just after meals; or continuous infusion†	100 units/ml 10 ml vial <i>U100 insulin syringe with needle†, INJEX 30, InsuJet, infusion pump system</i>	
		100 units/ml 3 ml cartridge <i>NovoPen 5, NovoPen Echo ●, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled pen <i>FlexTouch</i>	

† If administration by syringe or infusion pump is necessary, a 10 ml vial should be used.

● half unit increments.




Rapid acting analogue			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Insulin lispro Sanofi ▼ Lispro Analogue	Onset: 15 minutes Duration: 2 – 5 hours Usual timing: just before / with / just after meals; or continuous infusion†	100 units/ml 10 ml vial U100 insulin syringe with needle‡, INJEX 30, InsuJet, infusion pump system	
		100 units/ml 3 ml cartridge AllStar PRO, JuniorSTAR ◐, Autopen24, INJEX 30, InsuJet	
		100 units/ml 3 ml pre-filled pen SoloStar	

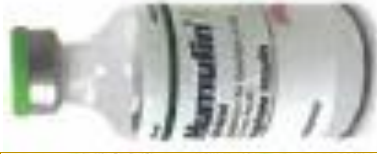


Short acting / neutral			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Actrapid Soluble Human	Onset: < 30 minutes Duration: 7 – 8 hours Usual timing: 30 minutes before meals	100 units/ml 10 ml vial U100 insulin syringe with needle‡, INJEX 30, InsuJet	
Humulin S Soluble Human	Onset: 30 minutes – 1 hour Duration: 6 – 12 hours Usual timing: 20 – 45 minutes before meals	100 units/ml 10 ml vial U100 insulin syringe with needle‡, INJEX 30, InsuJet	
		100 units/ml 3 ml cartridge Humapen Luxura HD ◐, Humapen Savvio, Autopen Classic, INJEX 30, InsuJet	

† If administration by syringe or infusion pump is necessary, a 10 ml vial should be used.

‡ If administration by syringe is necessary, a 10 ml vial should be used.

◐ half unit increments.






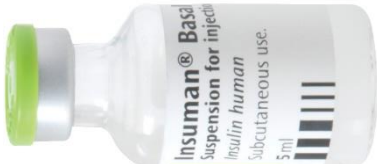

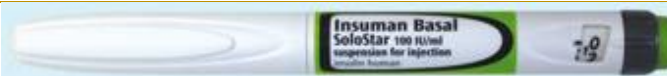
Short acting / neutral			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Hypurin Porcine Neutral Soluble Porcine	Onset: 30 minutes – 1 hour Duration: 6 – 8 hours Usual timing: 30 minutes before meals	100 units/ml 10 ml vial U100 insulin syringe with needle ‡, INJEX 30, InsuJet	
		100 units/ml 3 ml cartridge Autopen Classic, INJEX 30, InsuJet	
Insuman Rapid Soluble Human	Onset: < 30 minutes Duration: 7 – 9 hours Usual timing: 15 – 20 minutes before meals	100 units/ml 3 ml cartridge AllStar PRO, JuniorSTAR ◐, Autopen24, INJEX 30, InsuJet	

Medium- and long-acting			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Humulin I Isophane Human	Onset: 30 minutes – 1 hour Duration: 22 hours Usual timing: about 30 minutes before meals or bed, usually once or twice daily	100 units/ml 10 ml vial U100 insulin syringe with needle ‡, INJEX 30, InsuJet	
		100 units/ml 3 ml cartridge Humapen Luxura HD ◐, Humapen Savvio, Autopen Classic, INJEX 30, InsuJet	
		100 units/ml 3 ml pre-filled pen KwikPen	

‡ If administration by syringe is necessary, a 10 ml vial should be used.

◐ half unit increments.






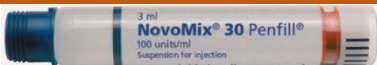
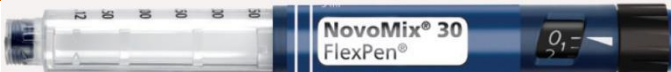
Medium- and long-acting

Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Hypurin Porcine Isophane Isophane Porcine	Onset: < 2 hours Duration: 18 – 24 hours Usual timing: as advised by healthcare team, once or twice daily	100 units/ml 10 ml vial <i>U100 insulin syringe with needle ‡, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml cartridge <i>Autopen Classic, INJEX 30, InsuJet</i>	
Insulatard Isophane Human	Onset: < 1.5 hours Duration: 24 hours Usual timing: as advised by healthcare team, once or twice daily	100 units/ml 10 ml vial <i>U100 insulin syringe with needle ‡, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml cartridge <i>NovoPen 5, NovoPen Echo ☉, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled doser <i>InnoLet</i>	
Insuman Basal Isophane Human	Onset: < 1 hour Duration: 11 – 20 hours Usual timing: 45 – 60 minutes before meals, usually once or twice daily	100 units/ml 5 ml vial <i>U100 insulin syringe with needle ‡, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml cartridge <i>AllStar PRO, JuniorSTAR ☉, Autopen24, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled pen <i>SoloStar</i>	

‡ If administration by syringe is necessary, a 10 ml vial should be used.

☉ half unit increments.






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Mixed			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Humulin M3 30% soluble 70% isophane Human	Onset: 30 – 60 minutes Duration: 22 hours Timing: 20 – 45 minutes before meals	100 units/ml 10 ml vial U100 insulin syringe with needle‡, INJEX 30, InsuJet	
		100 units/ml 3 ml cartridge Humapen Luxura HD ☉, Humapen Savvio, Autopen Classic, INJEX 30, InsuJet	
		100 units/ml 3 ml pre-filled pen KwikPen	
Hypurin Porcine 30/70 Mix 30% neutral 70% isophane Porcine	Onset: < 2 hours Duration: 24 hours Timing: as advised by healthcare team, usually within 30 minutes of a meal twice a day	100 units/ml 10 ml vial U100 insulin syringe with needle‡, INJEX 30, InsuJet	
		100 units/ml 3 ml cartridge Autopen Classic, INJEX 30, InsuJet	
NovoMix 30 30% soluble aspart 70% protamine aspart Human	Onset: 10 – 20 minutes Duration: 24 hours Timing: just before / with / just after meals	100 units/ml 3 ml cartridge NovoPen 5, NovoPen Echo ☉, INJEX 30, InsuJet	
		100 units/ml 3 ml pre-filled pen FlexPen	

‡ If administration by syringe is necessary, a 10 ml vial should be used.

☉ half unit increments.


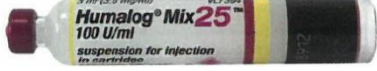



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Mixed			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Insuman Comb 15 15% neutral 85% isophane Human	Onset: 30 – 60 minutes Duration: 11 – 20 hours Timing: 30 – 45 minutes before meals	100 units/ml 3 ml cartridge AllStar PRO, JuniorSTAR ●, Autopen24, INJEX 30, InsuJet	
Insuman Comb 25 25% neutral 75% isophane Human	Onset: 30 – 60 minutes Duration: 12 – 19 hours Timing: 30 – 45 minutes before meals	100 units/ml 5 ml vial U100 insulin syringe with needle‡, INJEX 30, InsuJet	
		100 units/ml 3 ml cartridge AllStar PRO, JuniorSTAR ●, Autopen24, INJEX 30, InsuJet	
		100 units/ml 3 ml pre-filled pen SoloStar	
Insuman Comb 50 50% neutral 50% isophane Human	Onset: < 30 minutes Duration: 12 – 16 hours Timing: 20 – 30 minutes before meals	100 units/ml 3 ml cartridge AllStar PRO, JuniorSTAR ●, Autopen24, INJEX 30, InsuJet	

‡ If administration by syringe is necessary, a 10 ml vial should be used.

● half unit increments.




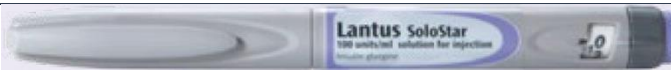





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Mixed			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Humalog Mix 25 25 % lispro 75% lispro protamine Analogue	Onset: 15 minutes Duration: 22 hours Timing: just before / with / just after meals; usually once or twice a day	100 units/ml 10 ml vial U100 insulin syringe with needle‡, INJEX 30, InsuJet, infusion pump system	
		100 units/ml 3 ml cartridge Humapen Luxura HD ☉, Humapen Savvio, Autopen Classic, INJEX 30, InsuJet	
		100 units/ml 3 ml pre-filled pen KwikPen	
Humalog Mix 50 50% lispro 50% lispro protamine Analogue	Onset: 15 minutes Duration: 22 hours Timing: just before / with / just after meals; usually once or twice a day	100 units/ml 3 ml cartridge Humapen Luxura HD, Humapen Savvio, Autopen Classic, INJEX 30, InsuJet	
		100 units/ml 3 ml pre-filled pen KwikPen	

Long-acting analogue			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Abasaglar ▼ Glargine Analogue	Onset: 30 – 60 minutes Duration: 24 hours Timing: once daily at any time but at the same time each day	100 units/ml 3 ml cartridge Humapen Luxura HD ☉, Humapen Savvio, Autopen Classic, INJEX 30, InsuJet	
		100 units/ml 3 ml pre-filled pen KwikPen	




‡ If administration by syringe is necessary, a 10 ml vial should be used.

☉ half unit increments.

Long-acting analogue			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Semglee ▼ Glargine Analogue	<i>Onset:</i> 30 – 60 minutes <i>Duration:</i> 24 hours <i>Timing:</i> once daily at any time but at the same time each day	100 units/ml 3 ml pre-filled pen	
Lantus Glargine Analogue	<i>Onset:</i> 30 – 60 minutes <i>Duration:</i> 24 hours <i>Timing:</i> once daily at any time but at the same time each day	100 units/ml 10 ml vial <i>U100 insulin syringe with needle‡, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml cartridge <i>AllStar PRO, JuniorSTAR ●, Autopen24, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled pen <i>SoloStar</i>	
Levemir Detemir Analogue	<i>Onset:</i> 30 – 60 minutes <i>Duration:</i> 24 hours <i>Timing:</i> once daily at any time but at the same time each day; for twice daily dosing, the evening dose can be in the evening or at bedtime	100 units/ml 3 ml cartridge <i>NovoPen 5, NovoPen Echo ●, INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled pen <i>FlexPen</i>	
		100 units/ml 3 ml pre-filled doser <i>InnoLet</i>	
Toujeo Glargine Analogue	<i>Onset:</i> 30 – 60 minutes <i>Duration:</i> 24 – 36 hours <i>Timing:</i> once daily at any time but at the same time each day	300 units/ml 1.5 ml pre-filled pen <i>SoloStar</i>	
		300 units/ml 3 ml pre-filled pen <i>DoubleStar (2 unit increment)</i>	

‡ If administration by syringe is necessary, a 10 ml vial should be used.

● half unit increments.

Long-acting analogue			
Preparation	Onset, duration, usual timing ^[1,2,3]	Delivery system ^[4]	Presentation
Tresiba Degludec Analogue	<i>Onset:</i> 30 minutes – 1.5 hours <i>Duration:</i> > 42 hours <i>Timing:</i> once daily at any time but at the same time each day	100 units/ml 3 ml cartridge <i>NovoPen 5, NovoPen Echo</i> ☹, <i>INJEX 30, InsuJet</i>	
		100 units/ml 3 ml pre-filled pen <i>FlexTouch</i>	
		200 units/ml 3 ml pre-filled pen <i>FlexTouch (2 unit increment)</i>	

References

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