

Choice of Insulin preparation in Type 2 Diabetes

Many patients with type 2 diabetes commence once daily insulin to supplement oral therapy before moving to more involved regimes such as twice daily insulin mixtures or basal bolus insulin therapy. The purpose of this document is to provide guidance on the initial once daily insulin therapy for people with type 2 diabetes.

Human isophane (NPH) insulin is recommended by NICE for initiation in all new patients with Type 2 diabetes who are deemed to need long acting insulin.

As per NICE guidelines, analogue Insulin in Type 2 diabetes has **same reduction in HbA1c** and less hypoglycaemia overall (but no difference in severe hypoglycaemia).

NICE CG87 Type 2 diabetes - newer agents (a partial update of CG66) May 2009

During clinical consultations for patients not achieving their present goals of therapy, consideration should be given to alternative clinically appropriate and potentially more cost-effective regimen choices.

NPH insulin is intermediate acting insulin, also known as isophane insulin or isophane protamine insulin injection. NPH human insulin products are **Insulatard® insulin, Humulin I® insulin and Insuman® Basal insulin** and the NPH bovine and porcine isophane insulin injections are the **Hypurin® products**.

Recommendations

New patients with Type 2 diabetes requiring insulin should be prescribed human isophane (NPH) insulin first line

Long acting insulin analogues, insulin detemir or insulin glargine, should ONLY be considered as an alternative to NPH for people with Type 2 Diabetes in the following categories:

- **the patient needs assistance from a carer or health professional to inject insulin, and use of a long-acting insulin analogue would reduce the frequency of basal injections from twice to once daily**
- **the patient's lifestyle is restricted by recurrent symptomatic hypoglycaemic episodes**
- **the patient would otherwise need twice-daily NPH insulin injections in combination with oral glucose-lowering drugs**
- **the patient cannot use the device to inject NPH insulin**

Patients with Type 2 diabetes currently on an insulin analogue, i.e. insulin detemir and insulin glargine, to be audited and considered for a change to NPH insulin if

- it has not previously been tried AND HbA1c not within target OR
- 2 or more injections per day are being used, taking care to tailor any switch to the needs of the individual patient.

Locally, MERIT / IMIT provide the education process to help understand the rationale behind the above.

It is also important to bear in mind that an important determinant of success can be the choice of device when initiating insulin.

NB: This document is intended for PATIENTS WITH TYPE 2 DIABETES

Insulin Vial	Cost and pack size	Cost / ml of insulin (100 units/ml)
Insulatard® 10ml vial	£7.48 per 10ml vial	£0.75
Insuman® Basal 5ml vial	£5.61 per 5ml vial	£1.12
Humulin I® 10ml vial	£15.68 per 10ml vial	£1.57
Lantus® (insulin glargine) 10ml vial	£30.68 per 10ml vial	£3.07

Insulin Cartridge	Cost and pack size	Cost / ml of insulin (100 units/ml)
Insuman® Basal 5 x 3ml cartridge for ClickSTAR®, Autopen® 24	£17.50 for 5 x 3ml cartridge	£1.17
Humulin I® 5 x 3ml Cartridge for Autopen® Classic / HumaPen®	£19.08 per 5 x 3ml cartridge	£1.27
Insulatard Penfill® 5 x 3ml cartridge for Novopen®	£22.90 for 5 x 3ml cartridge	£1.53
Lantus® (insulin glargine) 5x3ml cartridge for Autopen®	£41.50 per 5 x 3ml cartridge	£2.77
Levemir® (insulin detemir) Penfill 5 x 3ml cartridge for NovoPen®	£42.00 per 5 x 3ml cartridge	£2.80
Insuman® Basal Solostar® 5 x 3ml	£19.80 for 5 x 3ml pre-filled disposable injection device	£1.32
Insulatard InnoLet® Prefilled Disposable Pen	£20.40 for 5 x 3ml prefilled disposable pen	£1.36
Humulin I KwikPen® prefilled disposable pen	£21.70 for 5 x 3ml prefilled disposable pen	£1.45
Lantus® (insulin glargine) SoloStar® 5 x 3ml prefilled pen	£41.50 per 5 x 3ml prefilled disposable pen	£2.77
Levemir® (insulin detemir) Flexpen® 5 x 3ml prefilled disposable pen	£42.00 per 5 x 3ml prefilled disposable pen	£2.80
Levemir® (insulin detemir) Innolet® 5 x 3ml prefilled disposable pen	£44.85 per 5 x 3ml prefilled disposable pen	£2.99

Insulin Disposable Pen	Cost and pack size	Cost / ml of insulin (100 units/ml)
Insuman® Basal Solostar® 5 x 3ml 2-unit dose adjustments	£19.80 for 5 x 3ml pre-filled disposable injection device	£1.32
Insulatard InnoLet® Prefilled Disposable Pen	£20.40 for 5 x 3ml prefilled disposable injection device	£1.36
Humulin I KwikPen® prefilled disposable pen	£21.70 for 5 x 3ml prefilled disposable pen	£1.45
Lantus® (insulin glargine) SoloStar® 5 x 3ml prefilled pen	£41.50 per 5 x 3ml prefilled disposable pen	£2.77
Levemir® (insulin detemir) Flexpen® 5 x 3ml prefilled disposable pen	£42.00 per 5 x 3ml prefilled disposable pen	£2.80
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