



**Wolverhampton
Diabetes Care**

What Care to Expect

Glycaemic Control Strategies for those on Insulin

Targets

The lowest HbA1c or fasting blood glucose that can be safely attained without significant risk of hypoglycaemia aiming for HbA1c $\leq 7\%$ (DCCT) and fasting and pre-prandial blood glucose ≤ 7 mmol/l.

Insulin start up, revision and intensification programmes - See protocols

Such programmes are run by the Specialist Diabetes Team at the Wolverhampton Diabetes Centre but also by them in the community in various settings including, wherever possible, in the patients home. In general, insulin start up and intensification is to be undertaken by the specialist team. Primary care teams may wish to commence insulin independently should they feel able to competently deliver the full process of patient education and stabilisation. Then central team will support them as appropriate.

Diet, weight, exercise and lifestyle

A comprehensive understanding of lifestyle, and of any lifestyle changes required, is crucial to the successful and safe use of insulin therapy. Without the understanding of the tripartite balance between activity, diet and insulin, such therapy is unlikely to achieve good glycaemic outcome and may impose the risk of dangerous hypoglycaemic. The use of insulin therapy may have significant onward consequences such as in employment and driving. Such factors must be considered in the decision to start insulin.

Education based, patient centred, patient empowered.

To achieve improved glycaemic control requires a degree of skill and knowledge in patients that is delivered in structured insulin start up education programmes. Their purpose is to ensure that the patient can become self caring and self directed in fully managing their own treatment.

New Type 1 diabetes

All such patients should be referred urgently by telephone to the Specialist Team.

Conversion to insulin in Type 2 Diabetes

This should occur when oral hypoglycaemic agents are being used in a near maximal or maximal dose, without achieving acceptable glycaemic control (HbA1c $< 7\%$). There may be other compelling reasons to start insulin in T2DM such as contraindication to drug therapy, progressive micro or macrovascular disease, acute syndromes such as painful neuropathy or other inter-current illnesses and co-morbidities. Patients should be prepared for the possibility of insulin therapy well in advance; conversion to insulin should not be used as a threat to enforce compliance since this undermines their confidence in this mode of therapy. They should not come to see insulin as a failure. In general, the vast majority of patients cope with insulin therapy without problems and feel much better for it.

Insulin and oral agent combination therapy in Type 2 Diabetes

On conversion to insulin it is usual to stop oral agents. The only acceptable combination of oral agents and insulin is with Metformin. Only occasionally is it appropriate to continue Metformin at insulin start up in those obese patients (BMI > 30) with prior difficulty in controlling weight gain. Consider re-starting Metformin with insulin if significant weight gain ($> 3\%$) and/or poor control with high insulin doses (HbA1c $> 7\%$ and insulin $> 2U/Kg$).

Twice daily insulin starting regimes (see protocols)

The preferred starting regime is with pre-mixed twice daily insulin injections. The choice of specific insulin type within that is more governed by the selection of injection devices as determined by assessment of dexterity and visual ability, as well as patient preference. In general, given the above considerations, the cheapest pre-mixed insulin will be used, although the analogue based pre-mixed insulins may confirm some minor advantage in patient preference and hypoglycaemia risk.

Once daily insulin

These regimes are not recommended other than when effective glycaemic control is no longer a key issue and the purpose of insulin treatment is to ensure safe control whilst avoiding hypoglycaemia and symptomatic hyperglycaemia. Such patients will usually be non-self caring, dependent and with limited life expectancy.

Twice daily insulin and poor control (see protocols)

All patients with diabetes, including those on insulin and the primary care teams caring for them have full, open and direct access to the specialist diabetes team. Patients on insulin will be supplied with contact numbers. Patient's urgent problems will be seen same –day, next-day. Others will be seen as required in a variety of rapid access clinics. The specialist service will run regular group revision classes for those on insulin who have experienced deterioration in control.

Intensification of insulin therapy and complex insulin regimes (see protocols).

The complexity of an insulin regime is not a measure of its intensity. The latter is dependent upon the depth of understanding about diet, lifestyle, self monitoring and dose adjustment and the intensity with which they proactively self manage their diabetes. Many patients on 2 injections a day intensively manage their own diabetes and achieve good or excellent long term glycaemic control.

For a variety of reasons twice daily insulin may not deliver effective glycaemic control with freedom from significant hypoglycaemia.

Where a patient is not reasonably participating in their own self care, moving to a complex insulin regime alone will not improve control.

Where the patient is self caring to an acceptable degree but still fails to achieve their metabolic targets, then, if in accordance with their wishes, they will be progressed to a multi dose insulin regime and further to insulin by insulin pump as required according to the stipulated guidelines.