

Type 1 Diabetes

If type 1 diabetes is suspected the patient should be referred to secondary care diabetes services urgently

- Most patients are young (<50 years), but insulin may be required at any age
- BMI often less than 25kg/m²
- Check urine for ketones. Anything more than minimal ketosis is a strong indication for insulin
- Often associated with marked hyperglycaemia, rapid weight loss and rapid onset of severe symptoms
- Some people may have a personal and/or family history of autoimmune disease
- Severely ill patients may show features of acidosis including deep, sighing respiration and alteration in conscious level and require **urgent hospitalisation** [Protracted vomiting or ketonuria \(Type 1\)](#)
- Same day referral to secondary care diabetes services for insulin initiation [Newly diagnosed Type 1](#)
- Do not routinely measure C-peptide and/or diabetes-specific autoantibody titres to confirm type 1 diabetes in adults [Appendix K. The clinical utility of C-peptide and autoantibody testing](#)

General advice on Insulin Treatment

Types of Insulin

See [Appendix J](#) for a list of insulins, with average onsets of, peaks and durations of action. Human insulin is preferred by NICE in some situations, but so-called 'designer insulins' (insulin analogues) are more appropriate in some circumstances and preferred in the management of type 1 diabetes.

For many years insulin was only available in 100 unit/ml strength (U100) but, recently, U200 and U300 strengths of one or two insulins have become available and 2015 saw the introduction of the first biosimilar insulin.

Animal insulins – bovine and porcine – are not routinely used.

What quantity of insulin should be prescribed?

Most of the preparations are available in vial, in cartridge form or in pre-loaded devices.

Each pack of insulin contains five 3ml cartridges where each cartridge contains 300 units of insulin (a 10ml vial contains 1000 units). Therefore a patient using 20 units twice a day will use 4 cartridges per month (or 1 pack of 5 cartridges).

Hypodermic Equipment

Patients should be advised on the safe disposal of lancets, single use syringes and needles. Standard needle is 5mm (8, 6, 5 and 4 mm are also available).

This includes the prescribing of sharps bins and information on local sharp disposal services. Sharps bins are provided via FP10 prescription form.

Types of Pen Devices

- Pen devices are available on prescription.
 - Novo Nordisk, Lilly and Sanofi each have their own ranges. Ensure that the insulin is prescribed with the compatible device.
 - The Owen Mumford Autopen is compatible with CP and Lilly insulin devices (eg Hypurin insulin) and the Autopen 24 and Classic are available for use with Sanofi insulins (eg Lantus) – largely superseded by the KlikSTAR and SoloSTAR pens
- Pre-loaded devices are becoming more common and more competitively priced
- Insulin choice is often device driven; advantages/disadvantages and ease of use
- All cartridge sizes are 3ml, with the exception of the Hypurin insulin range, which are available in 1.5 and 3ml sizes

Lancets

These are available on prescription and are compatible with specified finger pricking devices. NB finger-pricking devices are NOT allowed on prescription.

Initial Treatment and Education

Type 1 diabetes

Intensive education programmes to promote empowerment and self-management for people with type 1 diabetes are currently provided only on an individual basis.

Support and Individualised Care

- Every person with diabetes should have a personalised care plan
- Take account of any disabilities (including visual impairment) when planning and delivering care to adults with type 1 diabetes
- Care should be co-ordinated and delivered by a multi-disciplinary team of individuals, preferably based in a common environment such as a Diabetes Centre

There should be easy access for adults with type 1 diabetes to specialist services and advice

Education

Carbohydrate Counting

A monthly carbohydrate counting education session is held on the 3rd Friday of the month from 1-4pm at the Robert Hague Centre for Diabetes and Endocrinology for people with type 1 diabetes using multiple daily injections or an insulin pump.

References

- National Institute for Health and Clinical Excellence (2004) Type 1 Diabetes. NICE, London
- National Institute for Health and Clinical Excellence (2008) Type 2 Diabetes (Update). NICE, London
- LeRoith, D. et al (2004) Diabetes Mellitus: A Fundamental and Clinical Text. 3rd Ed. Lippincott Williams and Wilkins, Philadelphia PA
- World Health Organisation (2010) Global Recommendations on physical activity for health. WHO, Geneva