**Diagnosis of Diabetes**

**Definitions of Diabetes:**
The terms Insulin Dependent Diabetes Mellitus (IDDM) and Non-Insulin Dependent Diabetes Mellitus (NIDDM) should be avoided as they classify patients on the basis of diabetes treatment rather than the pathogenesis of the disease.

**Type 1 Diabetes (previously IDDM)**
This results from an absolute deficiency of insulin due to pancreatic beta-cell destruction. It more commonly presents acutely in young people, but can occur at any age. Patients are insulin dependent and prone to ketoacidosis.

**Type 2 Diabetes (previously NIDDM)**
This results from a relative deficiency of or insensitivity to insulin and is more commonly diagnosed in older people, although can occur in young (especially obese) individuals.

Although the onset of Type 2 diabetes is less dramatic than that of Type 1 diabetes, the long-term sequelae are similar and equally devastating, as both Type 1 and Type 2 patients are at risk of developing the microvascular and macrovascular complications of the disease. **For this reason, Type 2 diabetes should never be referred to as ‘mild diabetes’**.

**Impaired Glucose Tolerance (IGT)**
IGT is a state of impaired glucose regulation, diagnosed on glucose tolerance testing (see page 14), which confers an increased risk of future diabetes of 2-5% per year. Patients with IGT tend to have higher blood pressure and plasma triglycerides when compared to non-diabetic individuals.

**Impaired Fasting Glycaemia (IFG)**
The term IFG has been introduced to classify individuals with fasting plasma glucose (FPG) values above the normal range but below those diagnostic of diabetes i.e. FPG > 6.0 mmol/L but < 7.0mmol/L. Diabetes UK recommends that all such individuals should have an oral glucose tolerance test to exclude a diagnosis of diabetes.

IGT and IFG are risk categories for future diabetes and/or cardiovascular disease. It is recommended that these patients should have either fasting plasma glucose (for IFG) or an oral glucose tolerance test (for IGT) annually and receive advice on the avoidance of obesity and the benefits of regular exercise. Co-existing cardiovascular risk factors should be treated aggressively.

**Gestational Diabetes Mellitus**
**Gestational diabetes mellitus** (GDM) (pg 68) is defined as carbohydrate intolerance of variable severity with onset or first recognition during pregnancy. It does not exclude that the glucose intolerance may have antedated pregnancy; therefore a post-natal oral glucose tolerance test (OGTT) should be performed. Women with a history of GDM have a 60% chance of developing diabetes (usually Type 2) within the subsequent 20 years and this risk is increased by obesity. For this reason they should be advised to control their weight and have an annual fasting glucose measurement performed.

Women with a history of GDM should be screened for the condition in future pregnancies and have a
Criteria for Diagnosis of Diabetes

1. **Classic symptoms** e.g. polyuria, polydipsia, unexplained weight loss

   *plus one of the following:*
   - Random plasma venous glucose concentration $\geq 11.1$ mmol/L
   - Fasting plasma venous glucose concentration $\geq 7.0$ mmol/L
   - Plasma venous glucose concentration $\geq 11.1$ mmol/L (2 hour sample in OGTT)

2. **No symptoms** i.e. incidental finding of glycosuria or hyperglycaemia

   - Diagnosis should not be based on a single venous plasma glucose measurement
   - Additional testing on another day with a value in the diabetic range is essential (using either fasting, random or samples taken 2 hours following glucose load)
   - If fasting or random values are not diagnostic, the 2-hour value should be used

Ketonuria

If ketonuria is present with severe symptoms i.e. vomiting and dehydration, urgent hospital admission is required.

- If ketonuria is present with milder symptoms and weight loss discuss patient urgently with the diabetes team for consideration of insulin therapy.

In such patients, it is useful to perform preliminary screening investigations i.e. random plasma glucose measurement and urinalysis for presence of glucose and ketones.

The diagnosis of diabetes has important medical and legal implications for the patient; therefore a diagnosis of diabetes can only be made on venous blood glucose and cannot be based solely on the finding of glycosuria, raised blood glucose (finger prick sample) on a ‘stick’ reading or elevated HbA1c result.

The World Health Organisation published revised guidelines on the diagnosis of diabetes in 2000 and Diabetes UK recommended that all UK health care professionals adopt these new criteria from 1st June 2000. These guidelines have since been updated in November 2005.

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