

# Diabetes in Clinical Practice

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# Contents

## vii Author biographies

### CHAPTER 1

- 1 Type 2 diabetes: the modern epidemic**
- 1 Diagnosing diabetes
- 4 Prediction and prevention of type 2 diabetes

### CHAPTER 2

- 9 Management of diabetes**
- 9 Goals of treatment
- 11 Shared care – the multidisciplinary approach
- 12 Healthy eating and weight control
- 15 Exercise

### CHAPTER 3

- 19 Non-insulin agents in the management of type 2 diabetes**
- 20 Treatment goals
- 20 Pathogenesis of hyperglycemia in type 2 diabetes
- 22 Non-insulin antihyperglycemic agents
- 26 Selection of initial antihyperglycemic agents
- 28 Combination therapy
- 28 Conclusions

### CHAPTER 4

- 31 Insulin in the management of type 2 diabetes**
- 31 Indications
- 31 Insulin secretion in individuals without diabetes
- 32 Types of insulin
- 34 Adverse effects
- 35 General principles of insulin regimens
- 38 Conclusion

## **CHAPTER 5**

### **41 Complications of diabetes**

- 41 Microvascular complications
- 42 Macrovascular complications
- 42 Role of insulin resistance in the pathogenesis of atherosclerosis
- 43 Impact of tight metabolic control on complications
- 43 Treatment goals to prevent diabetes complications
- 44 Prevention and management of specific diabetes complications
- 55 Screening for coronary heart disease

## **CHAPTER 6**

### **59 Diabetic emergencies**

- 59 Hyperglycemic crisis
- 66 Hypoglycemia

## **CHAPTER 7**

### **67 Patient education**

- 67 Goals of patient education
- 69 Monitoring glycemic control
- 70 Identifying and overcoming barriers to effective self-care
- 73 Patient resources

### **77 Index**

## Author biographies

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# Chapter 1

## Type 2 diabetes: the modern epidemic

Type 2 diabetes is a major clinical and public health problem. It is estimated that in the year 2000, 171 million people worldwide had type 2 diabetes, including about 18 million Americans, and it is estimated that these numbers will grow to 366 million people worldwide and 30 million Americans by the year 2030.

This high prevalence of diabetes leads to a high global burden of the condition and its complications. Diabetes is the leading cause of blindness below the age of 65 years, and it is responsible for almost half the cases needing dialysis. It is responsible for most non-traumatic amputations. The financial cost of this condition is staggering, with one in seven healthcare dollars in the USA spent on treating the condition or its complications. Indeed, despite the fact that only about 10–15% of the Medicare population has diabetes, about 25% of the American Medicare budget is spent on this condition. In addition, there is a considerable expenditure on the social costs involved with people who suffer with long-term complications, including disability and premature death.

The purpose of this handbook is to give the practitioner a quick overview of the subject, along with practical suggestions for the management of this condition.

### Diagnosing diabetes

#### *Criteria for the diagnosis of diabetes*

- Symptoms of diabetes (polyuria, polydipsia, unexplained weight loss) plus random plasma glucose concentration  $>200$  mg/dL (11 mmol/L).
- Fasting plasma glucose (FPG)  $>126$  mg/dL (7 mmol/L). (Fasting = no caloric intake for at least 8 h.)
- Two-hour plasma glucose  $>200$  mg/dL (11 mmol/L) during an oral glucose tolerance test (OGTT) (75 g).

In the absence of unequivocal hyperglycemia with acute metabolic decompensation, these criteria should be confirmed by repeat testing on a different day. The OGTT is not recommended for routine clinical use.

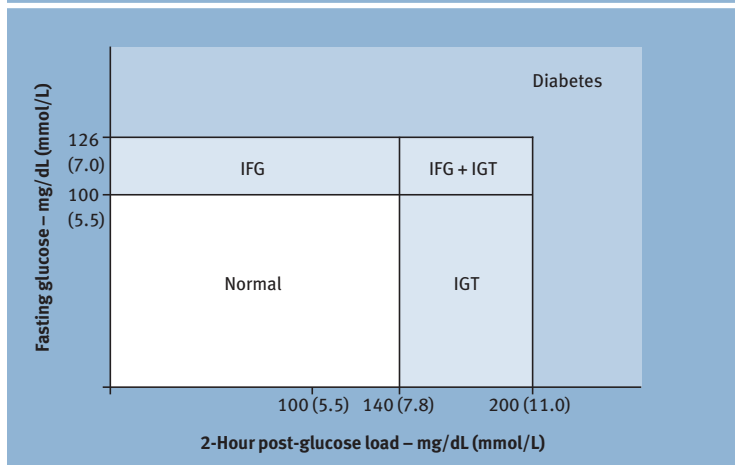


These diagnostic criteria are summarized in Figure 1.1.

The diagnosis of diabetes is currently made on the basis of several diagnostic criteria (summarized above) [1]. In patients who have classic symptoms, such as polyuria, polydipsia, and weight loss, a random plasma glucose greater than 200 mg/dL (11 mmol/L) is diagnostic. However, most patients are asymptomatic and those suspected of having diabetes should be screened with either a fasting glucose or a 75 g glucose tolerance test. An FPG greater than or equal to 126 mg/dL (7 mmol/L) is considered diagnostic of diabetes, but should be confirmed on another occasion in asymptomatic patients. Following an OGTT, a value greater than 200 mg/dL (11 mmol/L) is considered diagnostic. However, values below these figures are not entirely normal, as a normal fasting glucose is less than 100 mg/dL (5.5 mmol/L), and therefore fasting glucose between 100 mg/dL (5.5 mmol/L) and 125 mg/dL (7 mmol/L) is diagnostic of impaired fasting glucose (IFG), and a 2-hour post-glucose load of 140–199 mg/dL (7.8–11.0 mmol/L) is called impaired glucose tolerance (IGT). Both of these conditions predict increased risk of subsequent progression to diabetes, and also of macrovascular complications, even in the absence of progression to diabetes. The latter is particularly true in patients with IGT.

It is also relatively easy to identify people who are at increased risk of diabetes, who should therefore be screened early even if asymptomatic in order to start treatment early, or take preventive steps described below should they have IFG or IGT.

**Figure 1.1** Summary of diagnostic criteria for diabetes



IFG, impaired fasting glucose; IGT, impaired glucose tolerance