

403 **Diabetes Mellitus: Diagnosis, Classification, and Pathophysiology**

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Diabetes mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Several distinct types of DM are caused by a complex interaction of genetics and environmental factors. Depending on the etiology of the DM, factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilization, and increased glucose production. The metabolic dysregulation associated with DM causes secondary pathophysiologic changes in multiple organ systems that impose a tremendous burden on the individual with diabetes and on the health care system. In the United States, DM is the leading cause of end-stage renal disease (ESRD), nontraumatic lower-extremity amputations, and adult blindness. Persons with diabetes are at increased risk for cardiovascular disease, which is the main cause of morbidity and mortality in this population.

CLASSIFICATION

DM is classified on the basis of the pathogenic process leading to hyperglycemia ([Table 403-1](#)). There are two broad categories of DM, designated as either type 1 or type 2 DM. However, there is increasing recognition of other forms of diabetes in which the molecular pathogenesis is better understood and may be associated with a single gene defect. These alternative forms as well as other “atypical” forms may share features of type 1 and/or type 2 DM. Type 1 DM develops as a result of autoimmunity against the insulin-producing beta cells, resulting in insulin deficiency. Type 2 DM is a heterogeneous group of disorders characterized by variable degrees of insulin resistance, impaired insulin secretion, and increased hepatic glucose production. Defects in insulin action and/or secretion