



## Diabetes Mellitus: At Least Two Distinct Entities

**I**n the December 1979 issue of *DIABETES* appears the "Classification and Diagnosis of Diabetes Mellitus and Other Categories of Glucose Intolerance," developed by the National Diabetes Data Group.<sup>1</sup> This important document provides definitions and criteria for the diagnosis of diabetes and other forms of carbohydrate intolerance, including criteria for the performance and interpretation of oral glucose tolerance tests and blood glucose determinations. Most important, however, it emphasizes that diabetes mellitus constitutes at least two distinct entities—"insulin-dependent diabetes mellitus" (IDDM) and "noninsulin-dependent diabetes mellitus" (NIDDM). Although recognizing that this is neither a new categorization nor a complete one (in that other categories and subcategories exist and will require further definition as data accumulate), the Data Group classification again calls attention to the fact that these two types of diabetes are very distinct and require very different forms of therapy.

Insulin-dependent diabetes mellitus (IDDM) is the official term for type I or juvenile-onset or ketosis-prone diabetes mellitus. It is characterized by absolute deficiency of endogenous pancreatic insulin secretion, insulinopenia, proneness to ketosis, and a dependency on daily insulin administration for the maintenance of life. The major therapeutic principle is the careful balancing of energy expenditure (activity) with energy availability (food intake) and insulin dosage. Thus, careful planning of meals and activity, in concert with insulin therapy, is required. Deviations from daily activity routines or usual eating habits must be compensated for by accompanying alterations in at least one other of the three components of therapy—food intake, activity, or insulin dosage. Achieving meticulous control usually requires more than one injection of insulin daily.

Noninsulin-dependent diabetes mellitus (NIDDM) is the official term for type II or maturity-onset or obesity-related or ketosis-resistant diabetes mellitus. It also includes the

category maturity-onset diabetes of the young (MODY). It is usually characterized by retention of endogenous pancreatic insulin secretion, hyperinsulinemia or circulating insulin levels that are not usually diminished, absence of ketosis, and insulin resistance due to diminished target cell response to insulin. The majority (80%) of patients are obese. Insulin therapy, although often used to normalize glycemia, is not required for the maintenance of life. The major therapeutic principle in these patients should be reducing excess calorie intake and weight and promoting increased physical activity. With normalization of weight, hyperglycemia markedly diminishes and often abates. Intensive efforts at weight reduction should be the mainstay of therapy. If insulin therapy is used, it must be recognized that insulin inhibits lipolysis and promotes lipogenesis, and thus may make weight reduction more difficult to achieve. In my opinion, it should be reserved for those who have clearly failed at intensive efforts of weight reduction or who have symptomatic hyperglycemia. Sulfonylurea therapy may be advantageous in that these agents appear to act at the target cell level to increase insulin receptors and/or improve insulin action.<sup>2-4</sup>

Totally different therapeutic approaches and monitoring procedures are required for these two distinct forms of diabetes. IDDM patients typically have considerable lability in glycemic control, while NIDDM patients are characterized by having stable patterns of glycemia.<sup>5</sup> Thus, frequent monitoring of degree of control and alertness to possible hypoglycemic symptoms are required for IDDM patients, but may be an unnecessary burden for NIDDM patients.

It is my contention that the lack of recognition that there are two distinct forms of diabetes has created much confusion in the minds of health professionals and patients. It is time that we stop starving IDDM patients and stop forcing NIDDM patients to eat on time and clear their platters. The National Diabetes Data Group report, excellent for its comprehensiveness in dealing with a multitude of aspects of classification and definition, can serve as a rallying point to highlight the important differences between these two entities—IDDM and NIDDM. Appropriate therapy demands that these distinctions be borne in mind. Yet, we must recog-

nize that even this classification is tentative and that with the accumulation of new knowledge, further refinement will be required.

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## REFERENCES

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