

Management of Diabetes in Correctional Institutions

AMERICAN DIABETES ASSOCIATION

People with diabetes in correctional facilities should be provided care equivalent to that provided to all patients with diabetes. Inmates with diabetes have unique circumstances that need to be considered so that all of the standards of care (1) may be provided. Adolescents in juvenile detention or boot camp facilities should have particular attention provided to diabetes management.

On entering the correctional facility, all inmates with diabetes require a complete history and physical examination. The history should focus on the inmate's type of diabetes, and if the inmate is taking insulin, efforts should be made to differentiate between type 1 diabetes and insulin-requiring type 2 diabetes. A nutritional history should be obtained, including a summary of the types of food generally avoided by the inmate for spiritual, allergic, and other reasons. A review of and justification for the types of snacks should be determined. A review of medications should focus not only on the dose of the drug(s) and on the timing of administration, but also on the timing of meals and snacks. Routine changes in medical nutrition therapy (MNT) or medication for exercise should also be noted. The frequency of ketoacidosis as well as hypoglycemia should be determined. A history of severe hypoglycemia without awareness (i.e., requiring the assistance of another person) should be sought. Finally, a history of any known chronic complications and findings from the last dilated retinal examination should be noted.

Monitoring of blood glucose should be performed for those who are taking insulin or oral glucose-lowering agents. This is required both to achieve goals of glycemic control (Table 1) and to detect asymptomatic hypoglycemia. (Many blood glucose monitors approved for

Table 1—Glycemic control for people with diabetes

	Normal	Goal	Additional action suggested*
Plasma values†			
Average preprandial glucose (mg/dl)	<110	90–130	<90/>150
Average bedtime glucose (mg/dl)	<120	110–150	<110/>180
Whole blood values‡			
Average preprandial glucose (mg/dl)	<100	80–120	<80/>140
Average bedtime glucose (mg/dl)	<110	100–140	<100/>160
A1C (%)	<6	<7	>8

The values shown in this table are by necessity generalized to the entire population of individuals with diabetes. Patients with comorbid diseases, the very young and older adults, and others with unusual conditions or circumstances may warrant different treatment goals. These values are for nonpregnant adults. *Values above/below these levels are not "goals" nor are they "acceptable" in most patients. They are an indication for a significant change in the treatment plan. "Additional action suggested" depends on individual patient circumstances. Such actions may include enhanced diabetes self-management education, comanagement with a diabetes team, referral to an endocrinologist, change in pharmacological therapy, initiation of or increase in self-monitoring of blood glucose, or more frequent contact with the patient. A1C is referenced to a nondiabetic range of 4.0–6.0% (mean 5.0%, SD 0.5%). †Measurement of capillary blood glucose; ‡values calibrated to plasma glucose.

home use and some test strips now calibrate blood glucose readings to plasma values. Plasma glucose values are 10–15% higher than whole blood glucose values, and it is crucial that people with diabetes know whether their monitor and strips provide whole blood or plasma results. (Table 1 contains preprandial and bedtime whole blood and plasma glucose values.) Frequency and timing of glucose monitoring should be dictated by the needs and goals of the individual, but for most individuals with type 1 diabetes, monitoring three or more times daily is recommended. The optimal frequency of glucose monitoring for individuals with type 2 diabetes is not known, but it should be sufficient to facilitate reaching goals of glycemic control.

People with diabetes generally do best when their medication is administered, and their meals are eaten, at approximately the same time each day. For pa-

tients receiving insulin, timing of the insulin injection with meals and snacks needs to be individualized. The delay between injection and eating should be decreased or eliminated if premeal hypoglycemia is present. Regular exercise is also beneficial and should be incorporated into the treatment plan. Ideally, exercise should occur at approximately the same time each day. The risks of immediate and late hypoglycemia as a result of exercise should be understood and, if necessary, decreased by modifying the diabetes regimen.

Appropriate MNT needs to be provided. This may at times require food different from that provided to the other inmates. Because the meal plan is such an important part of diabetes therapy, a nutritionist familiar with these principles should be available to educate the inmate.

Self-management is important for all people with diabetes. Treatment targets for both blood glucose and A1C should be discussed at the initial encounter. Targets should be as close as possible to those recommended by the American Diabetes

Originally approved 1989. Most recent review/revision, 2000.

Abbreviations: MNT, medical nutrition therapy.

Association (Table 1). Because of the nature and circumstances surrounding incarceration, all inmates must have access to prompt treatment of hypoglycemia and hyperglycemia. Furthermore, correctional staff should be trained about the recognition and treatment of hypoglycemia. Appropriate staff should be trained to administer glucagon. Correctional staff should be trained to recognize symptoms and signs of serious metabolic decompensation and refer the inmate promptly for appropriate care.

At the initial evaluation, a complete examination, including blood pressure measurement, cardiovascular examination, and foot inspection, should be performed. The A1C test should be performed initially and at least twice a year in patients who are meeting treatment goals and have stable glycemic control, and more frequently (quarterly assessment) in patients whose therapy has changed or

who are not meeting glycemic goals. Urine protein should be measured annually. If the result is negative for protein, a test for the presence of microalbumin is necessary. A dilated retinal examination by an ophthalmologist or optometrist who is knowledgeable and experienced in the management of diabetic retinopathy should also be performed yearly. Fasting lipid levels (serum cholesterol, triglyceride, HDL cholesterol, and calculated LDL cholesterol) should be tested annually; if values fall in lower-risk levels, assessment may be repeated every 2 years.

Patients with diabetes should have blood pressure levels <130/80 mmHg and LDL cholesterol levels \leq 100 mg/dl (2.60 mmol/l). Specific therapies for the treatment of hypertension (2), diabetic nephropathy (3), and dyslipidemia (4) should follow the recommendations of the appropriate American Diabetes Association statements.

Correctional facilities should have written policies and procedures for the management of diabetes and training of medical and correctional staff in diabetes care.

References

1. American Diabetes Association: Standards of medical care for patients with diabetes mellitus (Position Statement). *Diabetes Care* 25 (Suppl. 1):S33–S49, 2002
2. American Diabetes Association: Treatment of hypertension in adults with diabetes (Position Statement). *Diabetes Care* 25 (Suppl. 1): S71–S73, 2002
3. American Diabetes Association: Diabetic nephropathy (Position Statement). *Diabetes Care* 25 (Suppl. 1):S85–S89, 2002
4. American Diabetes Association: Management of dyslipidemia in adults with diabetes (Position Statement). *Diabetes Care* 25 (Suppl. 1):S74–S77, 2002