

Translation of the Diabetes Nutrition Recommendations for Health Care Institutions

AMERICAN DIABETES ASSOCIATION

The “Nutrition Recommendations and Principles for People with Diabetes Mellitus” (1,2) provide diabetes medical nutrition therapy (MNT) guidelines for individuals living in a home setting; however, they do not include information about how to incorporate the recommendations into health care facilities. Health care facilities are defined as institutions providing acute and long-term medical and nursing care for people with diabetes.

The purpose of the technical review (3) and position statement is to provide recommendations and suggestions regarding how the recommendations may be translated for health care institutions. The position paper is based on the technical review, which discusses published research and issues that remain unresolved. For some issues, limited studies are available on which to base the suggested recommendations. In these instances, consensus was reached by the American Diabetes Association (ADA) task force that was charged with addressing these concerns.

Central to the nutrition recommendations is the need to individualize MNT, integrate nutrition into the overall diabetes management plan, and use an interdisciplinary team approach. Nutrition recommendations for people with diabetes are based on nutrition assessment, desired treatment outcomes, and modification of usual food intake. Measurement and documentation of desired outcomes—medical, clinical, educa-

tional, psychosocial—are essential and provide the information needed to evaluate how well MNT has been integrated into the overall diabetes management plan. Primary goals of MNT for diabetes are to attain and maintain optimal metabolic control (glucose, lipids, and blood pressure), prevent and treat the chronic complications of diabetes, improve overall health through healthy food choices and optimal nutrition, and address individual needs. There are numerous strategies that can be used to implement and achieve these goals.

ACUTE HEALTH CARE FACILITIES

— In the last 15 years, needs of the hospitalized patient with diabetes have changed. Lengths of hospital stays have decreased, and individuals are no longer routinely admitted for diabetes management and education. As a result, many hospitalized patients have increased acuity and coexisting medical conditions. Further, there are fewer resources available for nutrition services in hospitals because of cost containment and reimbursement issues.

Standardized calorie-level meal patterns based on exchange lists have traditionally been used to plan meals for hospitalized patients. However, a number of alternative meal-planning systems are available with various advantages and disadvantages. Included among these is a new system termed the “consistent-carbohydrate diabetes meal plan.” This system uses meal plans without a specific

calorie level; instead, it incorporates a consistent carbohydrate content. To clarify further, the carbohydrate content would be comparable from day to day at breakfast, each day at lunch, and each day at dinner (as well as snacks). The amount of carbohydrate at each meal in a given day would not necessarily be comparable, e.g., the carbohydrate content each day at breakfast may be less than that at lunch. These meal plans also incorporate appropriate fat modifications and consistent timing of meals and snacks. A typical day’s meals and snacks would provide ~1,500–2,000 calories with ~50% of the calories from carbohydrate, ~20% from protein, and ~30% from fat. If a patient’s nutritional needs are more or less than provided by these meal plans, individualized adjustments may be required. Patients who may require adjustments include children, adolescents, metabolically stressed patients, pregnant women, and geriatric patients. Other meal planning systems include: menus based on the *Nutrition and Your Health: Dietary Guidelines for Americans* (4), regular hospital menus, individualized meal plans, or menus using carbohydrate counting.

Just as there is no one nutrition prescription that meets the needs of every patient with diabetes, there is no one meal planning system that is ideal for every hospital setting. A system should be identified for each hospital setting that best meets its needs. After a review by the task force of the different meal planning systems, it is suggested that hospitals consider implementing the consistent-carbohydrate diabetes meal planning system. It can meet patients’ nutritional needs and, along with glucose monitoring and appropriate adjustments in diabetes medications, facilitate improved metabolic control for patients in acute care settings.

The recommendations in this paper are based on the evidence reviewed in the following publication: Translation of the diabetes nutrition recommendations for health care institutions (Technical Review). *Diabetes Care* 20:96–105, 1997.

The initial draft of this paper was prepared by Rebecca G. Schafer, MS, RD, CDE (chair); Betsy Bohannon, MS, RD, CDE; Marion J. Franz, MS, RD, CDE; Janine Freeman, RD, CDE; Alberta Holmes, MS, RD, CDE; Sue McLaughlin, RD, CDE, LD, LMNT; Linda B. Haas, PhC, RN, CDE; Davida F. Kruger, MSN, RN, C, CDE; Rodney A. Lorenz, MD; and Molly M. McMahon, MD. The paper was peer-reviewed, modified, and approved by the Professional Practice Committee and the Executive Committee, August 1996. Reviewed 1997.

Abbreviations: ADA, American Diabetes Association; MNT, medical nutrition therapy.

Although the term “ADA diet” has never been clearly defined, in the past it has usually meant a physician-determined calorie level with a specified percentage of carbohydrate, protein, and fat based on the exchange lists. It is recommended that the term “ADA diet” no longer be used, since the ADA no longer endorses any single meal plan or specified percentages of macronutrients as it has done in the past. Hospitals should have a system for notifying the dietitian of which patients with diabetes require an assessment. It is then the dietitian’s responsibility to do the assessment, determine an appropriate nutrition prescription, and plan for self-management education. While the patient may receive a consistent-carbohydrate diabetes meal plan during hospitalization, the meal plan for home may differ.

Meal plans such as no concentrated sweets, no sugar added, low sugar, and liberal diabetic diets are no longer appropriate. These diets do not reflect the diabetes nutrition recommendations and unnecessarily restrict sucrose. Such meal plans may perpetuate the false notion that simply restricting sucrose-sweetened foods will improve blood glucose control.

PATIENT SELF-MANAGEMENT EDUCATION IN ACUTE CARE FACILITIES

— The hospitalized patient presents a unique challenge. Often, only assessment of the patient and provision of initial or basic nutrition education can be accomplished. Therefore, it is important that dietitians be involved in discharge planning and that plans be made for continuing nutrition self-management education.

Diabetes nutrition self-management education is usually best provided in an outpatient or home setting, where the individual with diabetes is generally better able to focus on learning needs.

LONG-TERM HEALTH CARE FACILITIES

— The risk of developing diabetes increases with age. Older individuals living in institutionalized settings may be malnourished, and malnutrition has been associated with adverse outcomes. Providing adequate nutrition is the primary concern for the residents of long-term care facilities if malnutrition is to be prevented or corrected. Experience has shown that residents eat better when they are given less restrictive diets. Sup-

port for the use of regular diets for nursing home residents with type 2 diabetes is provided by a study in which 14 residents received the regular nursing home diet and 14 received a no-concentrated-sweets diet. At 6 months, there was no change among the subjects’ A1C in either group (5).

Therefore, it is appropriate to serve residents with diabetes the regular (unrestricted) menus, with consistent amounts of carbohydrate at meals and snacks. Calories should not be restricted to less than daily needs to control blood glucose levels because of the risk of malnutrition. Regular menus in long-term care facilities generally are consistent in calories, are served at consistent times, and contain small portions of food. If desserts are served, the portions are usually small. A fat restriction is not indicated for the majority of this population because of the risk of malnutrition. Increased quality of life, heightened satisfaction, improved nutritional status, and decreased feelings of isolation are potential benefits to residents with this approach.

Long-term care facilities for a younger population (i.e., rehabilitation centers) will often need a regular diet with consistent carbohydrate, a higher calorie level, and a lower fat content than is implemented for the older population.

There may be residents in either type of long-term care facility who require more individualization. Capillary blood glucose monitoring can be used to evaluate the effectiveness of the nutrition care plan. Often it may be more important to make medication changes than food adjustments.

As members of the health care team in the long-term care facility, dietitians are responsible for ensuring that the residents’ nutritional needs are met. Implementation of the nutrition recommendations is an important step toward achieving this goal for individuals with diabetes.

SPECIAL NUTRITION ISSUES

— Special nutrition issues include liquid diets, surgical diets, catabolic illnesses, and enteral or parenteral nutrition.

- Patients requiring clear or full liquid diets should receive ~200 g of carbohydrate per day in equally divided amounts, at meal and snack times. Liquids should not be sugar-free. Patients require carbohydrate and calories, and

sugar-free liquids do not meet these nutritional needs. Diabetes medications may need to be adjusted to achieve and maintain metabolic control.

- After surgery, food intake should be initiated as quickly as possible. Progression from clear liquid to full liquid to solid foods should be completed as rapidly as tolerated. Adequate carbohydrate and calories should be provided.
- During catabolic illness, careful and continuous monitoring of nutritional and glycemic status is critical to ensure that increased nutritional needs are being met and that hyperglycemia is prevented. Caloric needs for most patients are in the range of 25–35 kcal/kg every 24 h. Care must be taken not to overfeed patients, because it can exacerbate hyperglycemia. For patients with normal hepatic and renal function, protein needs range from 1.0 to 1.5 g/kg body wt, depending on the degree of stress.
- As in a solid diet, the total grams of carbohydrate provided by enteral or parenteral formulations will have the greatest impact on blood glucose response. Use of the enteral versus the parenteral route of feeding provides several advantages: a more physiological route, avoidance of central-catheter-related complications, the trophic effect of gastrointestinal cells, and lower costs. For tube feedings, either a standard enteral formula (50% carbohydrate) or a lower-carbohydrate-content formula (33–40% carbohydrate) may be used. Regardless of the type of feeding used, blood glucose monitoring is required to guide adjustments in diabetes medication and maintenance of glycemic control.

EDUCATING HEALTH CARE PROFESSIONALS AND ADMINISTRATORS

— Dietitians should continue to take the initiative in interpreting the current nutrition recommendations to other health care professionals. Education should be provided to health care facility nursing, pharmacy, and medical staff regarding new nutrition guidelines and subsequent changes in meal service. Team members should have access to simplified guidelines such as *The First Step in Diabetes Meal Planning* (6) or *Dietary Guidelines for Americans* (4) to provide to patients until a dietitian is available.

Physicians and administrators should

be aware of the new nutrition guidelines. They can help support the implementation of the new guidelines when they recognize that changes in patient food service may lead to improved patient satisfaction and may prove to be more cost-effective.

THE FUTURE — Improving the coverage and reimbursement for diabetes MNT in health care facilities, in outpatient settings, and for home health care is a critical issue. Coverage and reimbursement is more likely when the impact from MNT on medical and clinical outcomes, patient quality of life, cost-benefit, and cost-effectiveness is documented. MNT improves health outcomes and can be cost beneficial for many patients. Therefore, it is essential to continue measuring and documenting outcomes of diabetes MNT.

This information is essential for improving the coverage and reimbursement of MNT.

References

1. Franz MJ, Bantle JP, Beebe CA, Brunzell JD, Chiasson JL, Garg A, Holzmeister LA, Hoogwerf B, Mayer-Davis E, Mooradian AD, Purnell JQ, Wheeler M: Evidence-based nutrition principles and recommendations for the treatment and prevention of diabetes and related complications (Technical Review). *Diabetes Care* 25:148–198, 2002
2. American Diabetes Association: Evidence-based nutrition principles and recommendations for the treatment and prevention of diabetes and related complications (Position Statement). *Diabetes Care* 26 (Suppl. 1):S51–S61, 2003
3. Schafer R, Bohannon B, Franz MJ, Freeman J, Holmes A, McLaughlin S, Haas L, Kruger D, Lorenz R, McMahon M: Translation of the diabetes nutrition recommendations for health care institutions (Technical Review). *Diabetes Care* 20:96–105, 1997
4. U.S. Department of Agriculture, U.S. Department of Health and Human Services: *Nutrition and Your Health: Dietary Guidelines for Americans*. 5th ed. USDA's Human Nutrition Information Service, Home and Garden Bulletin no. 232, 2000
5. Tariq SH, Karcie E, Thomas DR, Thomson K, Philpot C, Chapel DL, Morley JE: The use of no-concentrated-sweets diet in the management of type 2 diabetes in nursing homes. *J. Am Diet Assoc* 101:1463–1466, 2001
6. American Diabetes Association, The American Dietetic Association: *The First Step in Diabetes Meal Planning*. Alexandria, VA, American Diabetes Association, 2003