Nutrition Practice Guidelines Care Improves Diabetes Outcomes

Patti Geil

Introduction

Nutrition recommendations for individuals with diabetes have evolved over the years from starvation diets and no concentrated sweets meal plans to the current precise approach of carbohydrate counting. Medical nutrition therapy (MNT) for diabetes is not “one size fits all”. Each person with diabetes is an individual and finding the optimal approach to his or her nutrition care is a challenge for the registered dietitian. Nutrition Practice Guidelines (NPGs) for diabetes have been developed to guide the nutrition professional in providing medical nutrition therapy that individualizes as well as improves diabetes care and outcomes.

Clinical Goals for Medical Nutrition Therapy in Diabetes

Medical nutrition therapy is an essential part of attaining the clinical goals of diabetes management1,2 as outlined below. Clinical goals for MNT should be individualized, with certain populations, such as pregnant women, requiring special considerations.

Clinical Goals for Medical Nutrition Therapy in Diabetes: Non-pregnant Adults

<table>
<thead>
<tr>
<th>Glycemic Control</th>
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</thead>
<tbody>
<tr>
<td>A1C</td>
<td>&lt;7.0%*</td>
</tr>
<tr>
<td>Preprandial plasma glucose **</td>
<td>90-130 mg/dl</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>&lt;130/80 mmHg</td>
</tr>
</tbody>
</table>

*More stringent glycemic goals (i.e. A1C <6%) may further reduce complications at the cost of increased risk of hypoglycemia

**Postprandial glucose measurements should be made 1-2 h after the beginning of the meals, generally peak levels in patients with diabetes.

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Clinical Goals for Medical Nutrition Therapy in Diabetes: Gestational Diabetes

<table>
<thead>
<tr>
<th>Lipids</th>
<th>Value</th>
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<tbody>
<tr>
<td>Total Cholesterol</td>
<td>&lt;200 mg/dl</td>
</tr>
<tr>
<td>LDL</td>
<td>&lt;100 mg/dl</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>&lt;150 mg/dl</td>
</tr>
<tr>
<td>HDL</td>
<td>&gt;40 mg/dl (men) &gt;50 mg/dl (women)</td>
</tr>
</tbody>
</table>

Fasting plasma glucose ≤105 mg/dl or 1-h postprandial plasma glucose ≤155 mg/dl or 2-h postprandial plasma glucose ≤130 mg/dl

Nutrition Practice Guidelines

Nutrition practice guidelines (NPG) are systematically developed statements designed to guide practitioner and patient decisions about appropriate health care for specific clinical circumstances. They are based on the best available research and professional judgment. NPGs are comprehensive, specific and manageable. They are thoroughly researched and validated through field-testing by a pool of practitioners. NPGs outline the process the nutrition professional should follow in providing medical nutrition therapy to individuals with Type 1, Type 2, and gestational diabetes mellitus.

Specific recommendations are made regarding data to collect pre-visit, during the visit and post-visit to assist in tracking outcomes, as well as standards for determining the level of care to provide and suggestions for frequency of visits for each disease. NPGs are not a “cookbook approach” but do offer a step-by-step roadmap to medical nutrition therapy. Following a predetermined process helps the registered dietitian proceed through each step without omitting important aspects of care. Although NPGs are intended primarily for use by dietetic professionals, others such as health care providers, institutions and policy makers may find them useful for many purposes.
**Nutrition Practice Guidelines: Research Validation**

Practice guidelines work! Results of NPG field-testing showed that blood glucose control improved when individuals with diabetes received practice guidelines care. Specifically, in individuals with Type 1 diabetes, the A1C values at three months improved in 88% of the practice-guideline patients compared with 53% of the usual-care patients. Among individuals who had Type 2 diabetes for more than six months, those who received practice guideline care had significantly lower A1C values at the three-month follow-up than those who received basic nutrition care. Cost-effectiveness of diabetes treatment was also enhanced when dietitians were involved in active decision-making about interventions based on the patients' needs. For women with gestational diabetes mellitus, field-testing of GDM-specific NPGs showed that women who received practice guideline care had a lower frequency of insulin use and a lower frequency of abnormal A1C at follow-up.

**Nutrition Practice Guidelines: The Process**

A registered dietitian who uses the NPGs follows a systematic process that includes the familiar four-step approach to nutrition intervention: assessment, goal setting, intervention, and evaluation. NPGs expand these four steps to five by adding the development of the nutrition care plan into the goal setting step, and an additional step for documentation and communication prior to evaluation and reassessment.

<table>
<thead>
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<th>Four Step Approach</th>
<th>Nutrition Practice Guidelines</th>
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<td>Nutrition-Focused Assessment</td>
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<td>Goal Setting</td>
<td>Goal Setting and Establishing the Nutrition Care Plan</td>
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<td>Intervention</td>
<td>Intervention</td>
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<tr>
<td>Evaluation</td>
<td>Documentation and Communication</td>
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<td>Evaluation and Reassessment</td>
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Nutrition-Focused Assessment

A comprehensive assessment is the crucial step in providing individually tailored diabetes nutrition therapy. Assessments are based on referral data, which includes medical history, medications, and laboratory data as well as information provided by the individual with diabetes and family members. Other team members often provide valuable information. A complete nutrition assessment includes all past nutrition education or lack thereof, as well as the individual’s perception of that experience. It establishes rapport, which is particularly helpful in the goal setting stage. The professional uses the assessment to determine the best way in which the individual with diabetes learns. Health beliefs, attitudes, and behaviors should be considered. It is key to inquire about specific food habits that may be unique to an individual. Whether or not family members are supportive may not be obvious unless an in-depth assessment is undertaken. Literacy level, visual status, disabilities, and socioeconomic status are all important factors in the assessment.

A careful assessment allows the nutrition professional to tailor the intervention and diabetes nutrition therapy to the individual. The registered dietitian requires a sound basis of information to establish goals or determine a care plan and intervention. The nutrition-focused assessment provides this basis for establishing goals, as well as determining a care plan and strategy for self-management training.

Goal Setting and Establishing the Nutrition Care Plan

The second step is to establish goals and determine the nutrition care plan. When attempting to establish goals, the registered dietitian must distinguish between short-term and long-term goals, and also between the goals of the individual with diabetes and those of the health care provider. Goals for both parties should be reasonable, attainable and measurable. If the professional has established a good rapport with the client, it is easier to negotiate attainable goals. Goals evolve and need to be evaluated and frequently re-negotiated as circumstances change. For example, the nutrition professional and individual with diabetes may decide together that a reasonable goal is to “substitute water or diet soda for a sugared soft drink at lunch three days a week”. After this goal has been reached, it may be changed to “substitute water or diet soda for a sugared soft drink at lunch seven days a week”.

Once goals are set, the nutrition care plan can be established. An analysis of the assessment data helps
the registered dietitian determine attitudes and beliefs about diabetes. It also gives the professional some insight into the individual's ability and motivation to make the lifestyle changes necessary to manage their disease. Prochaska's transtheoretical behavioral change model\textsuperscript{11} outlines the stages of change (pre-contemplation, contemplation, preparation, action and maintenance) and allows the registered dietitian to understand and help the individual at each of the stages. Appreciating these stages and the fact that individuals don't always move through them in a systematic fashion, helps to frame realistic expectations. If the individual with diabetes has never been introduced to the concept of self-management and believes that the health professional should make all health care decisions, it is naïve to think he or she will be willing to take charge of their own health. However, it is appropriate at this stage to introduce the concept of self-management for future consideration.

**Intervention**

The third step is to implement the intervention. According to Holler and Pastors, intervention refers to the diabetes educator's activities, specifically those that facilitate or support the patient's diabetes nutrition self-management plan.\textsuperscript{10} Information from the assessment and goals for diabetes management enable the registered dietitian to calculate a nutrition prescription. Once the nutrition prescription has been established, meal planning skills can be taught. The meal planning approach should be selected with the understanding that this method may change as the individual's understanding of the disease and motivation to self-manage evolve. An individual with newly diagnosed Type 2 diabetes may begin with The First Step to Diabetes Meal Planning and within weeks progress to the more complex consistent Carbohydrate Counting approach. A complete listing of diabetes nutrition resources from the American Diabetes Association is available.\textsuperscript{12}

Education, which consists of providing accurate and timely information to the individual with diabetes, is the main focus at this step. However, the role of the educator goes beyond merely supplying facts. The educator is a counselor and a coach, helping the individual understand the disease and cope with its implications. The educator is a partner to the individual with diabetes in disease management, helping him or her discover how they may be motivated to change their behaviour to improve their health.

**Documentation and Communication**

The fourth step in the NPG process is to document efforts in the medical record and communicate to
other members of the health care team. Clear documentation of both clinical and behavioural goals, including the nutrition prescription, meal planning approach, and educational topics covered, should be accomplished after the first visit. The NPG materials have progress notes specifically designed to be used for documentation. At each subsequent visit, it is important to document and communicate acceptance and understanding, behavioral changes made, and plans for on-going care to the primary care giver (usually the referral source) and other team members. Written documentation can be shared with the individual with diabetes to demonstrate their progress to them and encourage further efforts.

**Evaluation and Reassessment**

The fifth step in nutrition practice guideline care is an on-going evaluation and reassessment. The measurable goals established earlier will make evaluation a straightforward task. If the evaluation reveals changes are needed, it is helpful to put these changes into perspective as merely course corrections without “threatening” the individual with diabetes. If initial goals have not been met, they may need to be changed or renegotiated. If the goals have been met, new reasonable, attainable, and measurable goals may be designed.

**Case Study: Using the NPGs to Manage Gestational Diabetes**

Working through the following case study will help illustrate the application of nutrition practice guideline care in a woman with gestational diabetes mellitus. Using nutrition practice guidelines simplifies practice, individualizes the care plan to ensure success for the patient, and produces improved diabetes care and outcomes that can be clearly documented.

**Case Study: Managing Gestational Diabetes Mellitus**

**Assessment**

Caucasian female, twenty-fifth week of second pregnancy
66 inches tall
Currently 185 lbs, pre-pregnancy weight 175 lbs
BMI= 28 kg m⁻²
31 years of age
Family history of Type 2 diabetes mellitus

Results of 50 g glucose challenge test:
BG 155 mg/dl 1 hr post glucose load

Results of 100 g OGTT:
- Fasting:  90 mg/dl
- 1 hour: 230 mg/dl
- 2 hour: 168 mg/dl
- 3 hour: 136 mg/dl

Additional laboratory values are within normal range for pregnancy.
MB is married with a three-year-old son and works full-time. She does not smoke cigarettes or drink alcohol. Her only medication is a prenatal vitamin prescribed by her OB. She has no regular program of physical activity.

Diet recall reveals intake of approximately 3500 calories with 425 grams of CHO. MB is eating frequently to prevent nausea. Breakfast is typically sweetened cereal, skim milk, fruit juice and a sweet roll. Lunch is often a fast food "value meal" with a regular soft drink. MB snacks on chips or popcorn from the office vending machines. Supper is usually late in the evening and often consists of a casserole-type dish served with a salad, bread and dessert. MB has a bedtime snack every evening of a large bowl of ice cream.

- List three goals that would be reasonable for this client.
- What should be included in the nutrition care plan for this client?
- What nutrition education resources would you use for this client?
- How would you document an encounter with this client?
- How soon would you set a follow-up appointment for this client?
- What would you evaluate on the return visit?

References


