

Indian Health Diabetes Best Practices:
Nutrition and Physical Activity



April 2007

Indian Health Service
Division of Diabetes Treatment and Prevention
5300 Homestead Road, NE
Albuquerque, New Mexico 87110
(505) 248-4182

www.ihs.gov/medicalprograms/diabetes

Indian Health Diabetes Best Practice: Nutrition and Physical Activity

Contents

Why is nutrition and physical activity important?	2
Best practices for nutrition and physical activity.....	3
Best practices for health care organizations	8
Essential elements of best practice nutrition and physical activity programs	9
Evaluating your nutrition and physical activity program	18
Sustaining your nutrition and physical activity program	19
Contacting others for help	19
Real-world best practice programs.....	20
Helpful websites.....	22
References.....	24

Why is nutrition and physical activity important?

Good nutrition and physical activity habits are essential elements of diabetes care and prevention. They play an important role in quality diabetes management for people with existing diabetes or at risk of developing diabetes.

Over the last century, American Indians and Alaska Natives have experienced drastic lifestyle and cultural changes. Many American Indians and Alaska Natives have adopted a “westernized” lifestyle characterized by an abundance of high fat and high sugar foods and a change from active to sedentary lifestyles. The combination of these food and activity changes, along with genetic factors, has resulted in high rates of overweight, obesity, and obesity-related disorders, including diabetes, among American Indians and Alaska Natives.

Overweight and obesity are strong risk factors for diabetes and other chronic diseases (ADA, 2006). In recent years, nutrition has come to the fore as a major *modifiable* determinant of these diseases. For example, a recent study of diabetes and obesity in Pima Indians in the U.S. and in Mexico found that the development of diabetes and obesity is determined mostly by behavioral and lifestyle factors, such as diet and nutrition, even in populations genetically prone to these conditions (Schulz *et al.*, 2006).

For people with diabetes, nutrition and physical activity interventions can help improve blood sugar control, blood pressure, and lipid levels (Kaplan *et al.*, 1987). For people at risk of developing diabetes, these interventions are key to *preventing* diabetes. The Diabetes Prevention Program (DPP) demonstrated that lifestyle changes, including improved nutrition and physical activity, can help reduce the incidence of diabetes. Consider these facts from the DPP (Knowler *et al.*, 2002):

- Participants with prediabetes who made improvements in their nutrition and physical activity habits had a 58% reduction in diabetes incidence. To accomplish this dramatic decrease in the number of new cases of diabetes, participants reduced the amount of fat and calories in their diet, which resulted in an average weight loss of 5–7%. The participants also exercised at moderate intensity, usually by walking an average of 30 minutes a day, five days per week.
- The DPP lifestyle intervention worked equally well in men and women and in all ethnic groups, including American Indians and Alaska Natives. The intervention was particularly effective in people over the age of 60, who lowered their risk of developing diabetes by 71%.

The benefits of good nutrition and physical activity habits also extend beyond diabetes to help prevent, delay, or treat other conditions such as metabolic syndrome, some cancers, gestational diabetes, cardiovascular disease, kidney disease and dialysis, childhood obesity, alcoholism, poor dental health, osteoporosis, and hypertension.

Best practices for nutrition and physical activity

Table 1 summarizes the best practices for nutrition and physical activity and describe:

1. Programs that emphasize learning lifetime skills for a healthy diet and increased physical activity.
2. Support for lifestyle changes.
3. Providing medical nutrition therapy by a registered dietitian.

Table 1. Best practices for nutrition and physical activity.

Provider Recommendations	Best Practices
<p>1. Provide programs that emphasize learning lifetime skills for a healthy diet and increased physical activity</p>	<p>Why?</p> <p>Research indicates that programs are most effective in achieving good diabetes control when they focus on <i>both</i> nutrition and physical activity (Pate <i>et al.</i>, 1995).</p> <p>How?</p> <p>A. Develop community-based programs that are innovative, informative, fun, adapted to the audience, focused on prevention, and culturally appropriate.</p> <ul style="list-style-type: none"> • Form coalitions with all like-minded groups or organizations. • Teach how to honor and listen to the body’s need for food. • Nutrition: <ul style="list-style-type: none"> – Teach slow eating practices. – Offer cooking classes to provide hands-on opportunities to learn alternative versions of familiar recipes, teach participants to include healthy food combinations in meals and snacks, emphasize what makes a recipe healthy, improve nutritious use of commodity foods, and encourage use of fresh and nutritious foods. – Demonstrate the cumulative effect of sugar and fat consumption. – Organize grocery store tours to teach participants how to find low fat, high fiber, and nutrient dense food choices. – Make a cookbook with healthy and balanced recipes. – Teach participants about portion distortion.

(Table 1 continued on next page)

Table 1. Best practices for nutrition and physical activity. (continued)

Provider Recommendations	Best Practices
<p>1. Provide programs that emphasize learning lifetime skills for a healthy diet and increased physical activity (continued)</p>	<ul style="list-style-type: none"> • Physical activity: <ul style="list-style-type: none"> – Offer fitness programs, such as walking clubs, fun runs, bike rides, fitness classes, community fitness events, and organized fitness and weight training programs. Ensure that programs represent various levels of intensity. – Focus on age-based and group-based programs, such as programs for people aged 55 years and older, teens, women, men, mothers, kids, families, and clans. – Work with the community to develop youth teams for activities such as soccer and lacrosse. – Perform fitness tests on participants to use as pre- and post-evaluations for fitness programs. Tests can include flexibility, cardiovascular strength, muscle strength, and endurance. – Perform body composition analyses to help determine realistic weight goals. – Start new activity classes and programs, such as tai chi classes, yoga classes, weekend hikes, hip hop dance classes, tennis programs, and pilates classes. • Both nutrition and physical activity: <ul style="list-style-type: none"> – Use storytelling, talking circles, and support groups to increase awareness and offer opportunities to share experiences and successes related to nutrition and physical activity. – Offer community events and programs, such as health fairs, youth wellness camps, diabetes camps, and tribal garden projects, which encourage and support active participation in nutrition and physical activity programs. – Develop employee wellness programs, preferably team-based programs. Investigate employee benefits for wellness (e.g., time during workday and incentives), arrange programs around work schedules, and include an evaluation component (e.g., basic health screening, fitness testing, and attitude and workplace satisfaction surveys). – Work with different businesses, tribal departments, United National Indian Tribal Youth (UNITY) groups, and schools to set wellness goals and steps to accomplish the goals.

(Table 1 continued on next page)

Table 1. Best practices for nutrition and physical activity. (continued)

Provider Recommendations	Best Practices
<p>1. Provide programs that emphasize learning lifetime skills for a healthy diet and increased physical activity (continued)</p>	<p>B. Conduct a community needs assessment to find out what kinds of programs community members want and would attend.</p> <p>C. Use a comprehensive curriculum, such as:</p> <ul style="list-style-type: none"> • For people at risk of diabetes, use a curriculum like the National Institutes of Health (NIH) <i>Diabetes Prevention Program Lifestyle Curriculum</i>. You can access this curriculum at: www.bsc.gwu.edu/dpp/manuals.htmlvdoc. • For people with diabetes, use a curriculum like the IHS <i>Balancing Your Life and Diabetes Curriculum</i>. Pregnancy and nutrition supplements for this curriculum are now available. You can access this curriculum and the supplements through the IHS Division of Diabetes Treatment and Prevention website at: www.ihs.gov/medicalprograms/diabetes. <p>D. Help patients overcome myths and misconceptions about nutrition and fitness. Provide resources on nutrition and fitness because many sources of incorrect information are in circulation.</p> <p>E. Link education objectives to identified patient priorities.</p> <p>F. Offer both individual and group programs in a variety of settings (e.g., home, school, and community settings).</p> <p>G. Use paraprofessionals and peer educators in your communities to strengthen links with the community and expand outreach.</p> <p>H. Focus on increasing healthy lifestyle behaviors to promote good health, and do not limit focus to weight loss.</p>

(Table 1 continued on next page)

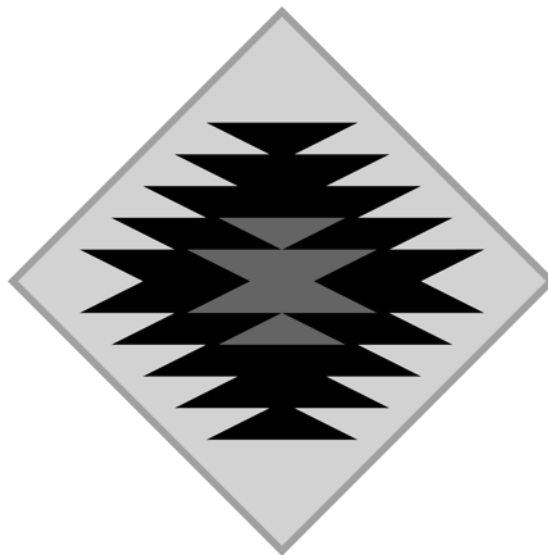
Table 1. Best practices for nutrition and physical activity. (continued)

Provider Recommendations	Best Practices
<p>2. Provide support for lifestyle changes</p>	<p>Why?</p> <p>For people at risk of developing diabetes, the DPP showed that lifestyle changes related to nutrition and physical activity were the biggest factors in reducing the risk of diabetes (Knowler <i>et al.</i>, 2002).</p> <p>For people with diabetes, improved diet and physical activity programs have been associated with decreases in body fat, increases in insulin sensitivity, improvements in long-term blood sugar control, improvements in blood pressure levels, and increases in cardiovascular fitness (Hamdy <i>et al.</i>, 2001).</p> <p>How?</p> <ul style="list-style-type: none"> A. Use Stages of Change, motivational interviewing, cognitive restructuring, and patient empowerment to facilitate behavior change. B. Have patients identify their health values and goals. C. Allow time for patients to be successful. It may take one or two years for patients to make lifestyle changes. Encourage small, incremental changes over time. D. Target entire families and communities for lifestyle change, not just individuals. E. Refer patients to registered dietitians, exercise professionals, certified diabetes educators, or behavioral health specialists as needed for nutritional and physical activity counseling and prescriptions. F. Help patients fit healthier choices into their other responsibilities. G. When possible and practical, use education materials that are based on evidence-based guidelines, at an appropriate literacy level, and culturally relevant. H. Help people making lifestyle changes understand the rationale for eating well and exercising regularly. Do not just restate the “facts” about why eating well and exercising are important. I. Identify and recognize any change no matter how small. J. Link patients and families to resources within and outside the community, such as weight loss, stress management, youth, elder, recreation, and fitness programs, as well as wellness centers. K. Offer stress management programs.

(Table 1 continued on next page)

Table 1. Best practices for nutrition and physical activity. (continued)

Provider Recommendations	Best Practices
<p>3. Provide medical nutrition therapy by a registered dietitian</p>	<p>Why?</p> <p>Medical nutrition therapy is an integral component of diabetes and self-management education. The scientific literature provides convincing evidence that people with diabetes and metabolic conditions benefit from medical nutrition therapy as part of a comprehensive plan of care by a multidisciplinary team. In the Indian health system, research suggests that medical nutrition therapy provided by a registered dietitian results in better diabetes control (Wilson <i>et al.</i>, 2003).</p> <p>How?</p> <ul style="list-style-type: none"> A. Conduct an in-depth nutrition assessment of the patient. For example, assess their strengths and weaknesses, attitudes, desires, and awareness of self-care practices. B. Provide nutrition-based treatment (e.g., changes in diet, specialized diet therapy, and counseling). Medical nutrition therapy should be individualized, with consideration given to the individual’s usual food and eating habits, metabolic profile, treatment goals, desired outcomes, as well as time schedules, commitments, and other responsibilities. C. Monitor metabolic parameters, including A1c, lipids, blood pressure, body weight, kidney function, and quality of life.



Best practices for health care organizations

A health care organization that wants to improve nutrition and physical activity must be motivated and prepared for change throughout the entire organization. The organization’s leadership must identify nutrition and physical activity as important work. They must also develop clear improvement goals, policies, and effective improvement strategies. This will help encourage the entire organization to make changes that will help improve nutrition and physical activity and diabetes.

Table 2 describes the best practices for health care organizations.

Table 2. Best practices for health care organizations.

Organization Recommendations	Best Practices
<p>System and programmatic changes</p>	<p><i>Why?</i></p> <p>Changes in health care organizations have been associated with increased delivery of appropriate diabetes care.</p> <p><i>How?</i></p> <p>The following activities may help improve care for people with diabetes:</p> <ul style="list-style-type: none"> A. Use evidence-based clinical practice guidelines and recommendations to facilitate decision-making and improve diabetes outcomes. B. Implement registries and a system for follow-up phone calls and appointments to develop personal relationships and consequently improve participation in and adherence to nutrition and physical activity prescriptions and counseling. C. Use flowsheets and standing orders to improve documentation of appropriate care. D. Provide training and continuing education to health care providers so they may assist and encourage a greater frequency of nutrition and physical activity prescriptions and counseling. E. Provide community education on the importance of a healthy diet and increased physical activity to prevent or delay the onset of diabetes or complications of diabetes. F. Improve access to nutrition and physical activity services. For example, incorporate registered dietitian services into primary care clinics. G. Allow open access for nutrition appointments. H. Provide consistent training and support for program maintenance. I. Establish or enhance community liaison services to facilitate a seamless health care delivery system.

Essential elements of best practice nutrition and physical activity programs

High quality nutrition and physical activity programs involve implementing six essential elements* in your health care organization. These elements are:

- Community resources and policies.
- Health care organization leadership.
- Patient self-management support.
- Delivery system design: Services, programs, systems, and procedures.
- Decision support: Information and training for providers.
- Clinical information systems: Collecting and tracking information.

Table 3, starting on the next page, summarizes how these elements apply to basic, intermediate, and comprehensive nutrition and physical activity programs.

*Adapted from the Chronic Care Model, which was developed by the MacColl Institute for Healthcare Innovation at the Group Health Cooperative. For more information on the Chronic Care Model, visit their website at www.improvingchroniccare.org.

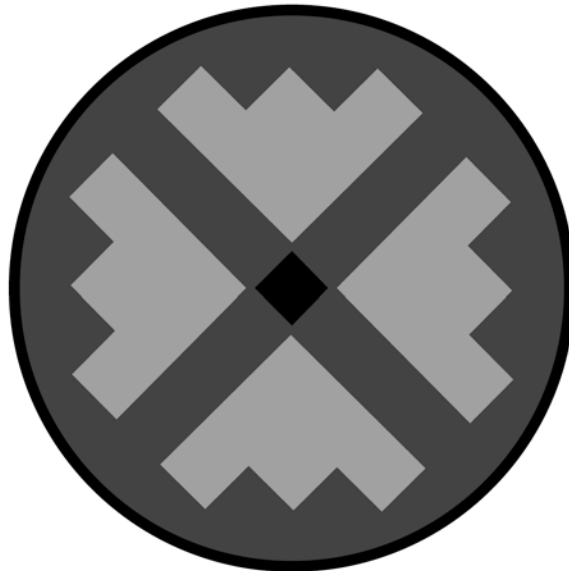


Table 3. Essential elements of basic, intermediate, and comprehensive best practice nutrition and physical activity programs.

Basic Nutrition and Physical Activity Programs	Intermediate Nutrition and Physical Activity Programs Basic program <i>plus</i> :	Comprehensive Nutrition and Physical Activity Programs Basic and intermediate programs <i>plus</i> :	Examples
Community resources and policies			
<ul style="list-style-type: none"> – Obtain regular—formal or informal—community input through surveys and meetings, for example. – Network with available community programs and identify their commitment, resources, and available time. – Identify existing policies, systems, and settings that support nutrition and physical activity programs. 	<ul style="list-style-type: none"> – Develop and implement a community referral system. – Work with community programs to develop one common goal. Identify each program’s role in achieving that goal. 	<ul style="list-style-type: none"> – Network with community and national programs, including community transportation programs. – Develop and implement community education programs on nutrition and physical activity related to diabetes prevention and management. 	<ul style="list-style-type: none"> – Collaborate with programs such as Women, Infant, and Children (WIC); weight loss; elder; Head Start; commodity food; and other tribal food programs. – Work with community health workers and representatives. – Form partnerships with fitness clubs, gyms, and other facilities. – Offer tribal recreation opportunities. – Establish a referral mechanism between the clinic and community programs. – Train lifestyle coaches. – Offer community nutrition education. – Work with university programs, such as Cooperative Extension, Expanded Food Nutrition and Education, and 4-H programs. – Sponsor community fitness events.

(Table 3 continued on next page)

Table 3. Essential elements of basic, intermediate, and comprehensive best practice nutrition and physical activity programs. (continued)

Basic Nutrition and Physical Activity Programs	Intermediate Nutrition and Physical Activity Programs Basic program <i>plus</i> :	Comprehensive Nutrition and Physical Activity Programs Basic and intermediate programs <i>plus</i> :	Examples
Organization leadership			
<ul style="list-style-type: none"> – Provide administrative and tribal support for quality improvement. – Dedicate space, materials, and time for education programs. – Dedicate professional time to plan, organize, and network. 	<ul style="list-style-type: none"> – Include nutrition and physical activity in the clinic’s annual goals. – Provide adequate resources, space, materials, and time for education, physical assessment, and fitness programs. 	<ul style="list-style-type: none"> – Support and make appropriate policy changes. – Emphasize employee health. – Emphasize traditional healing, food, and activity practices. – Include specific outcome measures related to nutrition and physical activity in the facility’s annual performance-based objectives. – Include nutrition and physical activity objectives in the CEO, service unit director, or medical director annual performance plan. – Develop and maintain partnerships with businesses, communities, and tribal leadership that build nutrition and physical activity program capacity. – Build planned environments to support a healthy lifestyle. 	<ul style="list-style-type: none"> – Offer healthy food choices at clinic meetings. – Obtain provider buy-in to make referrals to specialists (e.g., registered dietitians and exercise specialists) and employee wellness programs. – Develop organization-wide nutrition and physical activity goals and wellness policies. – Provide increased access to nutrition and exercise services as evidenced by an annual diabetes audit. – Base staffing plans on the new IHS Resource Requirements Methodology for registered dietitians, wellness centers, etc. – Develop the capacity to run accurate data reports on: (1) patients who were seen by a registered dietitian and exercise specialist; (2) diabetes audits; and (3) education encounters.

(Table 3 continued on next page)

Table 3. Essential elements of basic, intermediate, and comprehensive best practice nutrition and physical activity programs. (continued)

Basic Nutrition and Physical Activity Programs	Intermediate Nutrition and Physical Activity Programs Basic program <i>plus</i> :	Comprehensive Nutrition and Physical Activity Programs Basic and intermediate programs <i>plus</i> :	Examples
Patient self-management support			
<ul style="list-style-type: none"> – Provide patient education on nutrition and physical activity. – Use a private location to conduct patient education and fitness assessments. – Provide effective behavior change interventions and peer support. – Provide log sheets for patients so they can track their outcomes (e.g., A1c, cholesterol, eye exams, and foot exams). – Provide access to safe recreation facilities. 	<ul style="list-style-type: none"> – Use comprehensive, evidence-based, culturally specific education curricula for nutrition and physical activity. Examples include the NIH <i>Diabetes Prevention Program Lifestyle Curriculum</i> and the IHS <i>Balancing Your Life and Diabetes Curriculum</i>. – Provide access to equipment, such as walkers, canes, and footwear, to help people with special needs exercise safely and comfortably. 	<ul style="list-style-type: none"> – Establish an IHS or American Diabetes Association recognized diabetes self-management education program. – Eliminate barriers to diabetes care (e.g., provide patients with diabetes free gym membership or same-day dental appointments). – Advocate for environmental changes to support healthy eating and safe physical activity that is not limited to recreational facilities. – Provide behavioral support. 	<ul style="list-style-type: none"> – Use the Resource and Patient Management System (RPMS) Patient Care Component (PCC), including customized PCC forms with education code boxes. – Use the RPMS case management program, run reports to determine who needs services, and prescreen charts to flag needed education services. – Offer services from registered dietitians, exercise specialists, certified diabetes educators, and lifestyle coaches. – Ensure patients and their families have ample time for questions, and provide room to accommodate families. – Provide education in home and community settings. – Link education objectives to identified patient priorities.

(Table 3 continued on next page)

Table 3. Essential elements of basic, intermediate, and comprehensive best practice nutrition and physical activity programs. (continued)

Basic Nutrition and Physical Activity Programs	Intermediate Nutrition and Physical Activity Programs Basic program <i>plus</i> :	Comprehensive Nutrition and Physical Activity Programs Basic and intermediate programs <i>plus</i> :	Examples
Patient self-management support (continued)			
			<ul style="list-style-type: none"> – Assess patients’ readiness for change. – Foster growth in mind, body, and spirit. – Provide support to enhance and empower individual insight, ownership, growth, and development of life-long health. – Encourage self-improvement skills and health learning programs through various media. – Identify positive outcomes that will sustain self-management and good health. – Establish additional strategies to promote and implement behavior changes that will last.

(Table 3 continued on next page)

Table 3. Essential elements of basic, intermediate, and comprehensive best practice nutrition and physical activity programs. (continued)

Basic Nutrition and Physical Activity Programs	Intermediate Nutrition and Physical Activity Programs Basic program <i>plus</i> :	Comprehensive Nutrition and Physical Activity Programs Basic and intermediate programs <i>plus</i> :	Examples
Delivery system design: Services, programs, systems, and procedures			
<ul style="list-style-type: none"> - Establish a diabetes team that meets on a regular basis and develops specific action plans. - Conduct basic nutrition and fitness screening. - Provide access to behavioral health programs. - Ensure access to a registered dietitian and exercise professional (available at least by consultation). - Adopt evidence-based clinical and educational practice guidelines and protocols that have been customized by local providers through a consensus process. - Use an appointment system for acute, follow-up, and preventive visits. 	<ul style="list-style-type: none"> - Establish a diabetes team that includes a certified diabetes educator. - Hire a registered dietitian. - Conduct basic nutrition and fitness screening. - Implement a registry-based appointment system. - Develop strategies that address various risk levels. - Address alternative access issues. - Provide access to a behavioral specialist. 	<ul style="list-style-type: none"> - Establish a diabetes team that has appropriate clinical privileges and includes community members. - Develop specific action plans to address identified needs. - Provide case-management of diabetes. - Include a registered dietitian who provides medical nutrition therapy. - Provide access to exercise professionals who provides exercise prescriptions (e.g., an exercise physiologist). - Include a behavioral specialist on staff. - Make lifestyle coaches available in the community. - Obtain active support from behavioral health programs. - Adopt detailed guidelines that include principles of nutrition and physical activity. - Enable diabetes team members to cross-train one another. 	<ul style="list-style-type: none"> - Use registry-based appointment systems. - Provide effective behavior change interventions and peer support. - Use DPP guidelines, American College of Sports Medicine exercise prescription guidelines, and medical nutrition therapy practice guidelines. - Develop locally produced program brochures.

(Table 3 continued on next page)

Table 3. Essential elements of basic, intermediate, and comprehensive best practice nutrition and physical activity programs. (continued)

Basic Nutrition and Physical Activity Programs	Intermediate Nutrition and Physical Activity Programs Basic program <i>plus</i> :	Comprehensive Nutrition and Physical Activity Programs Basic and intermediate programs <i>plus</i> :	Examples
Delivery system design: Services, programs, systems, and procedures (continued)			
		<ul style="list-style-type: none"> – Encourage advanced level practice for professionals in the areas of diabetes, weight management, fitness, and health promotion. – Encourage continuing education in program management, public health practices, and community mobilization. 	

(Table 3 continued on next page)

Table 3. Essential elements of basic, intermediate, and comprehensive best practice programs for nutrition and physical activity. (continued)

Basic Nutrition and Physical Activity Programs	Intermediate Nutrition and Physical Activity Programs Basic program <i>plus</i> :	Comprehensive Nutrition and Physical Activity Programs Basic and intermediate programs <i>plus</i> :	Examples
Decision support: Information and training for providers			
<ul style="list-style-type: none"> - Train providers on basic nutrition, physical activity, and behavior change strategies. - Train community and key health workers on basic nutrition, physical activity, and behavior change strategies. 	<ul style="list-style-type: none"> - Train providers on exercise prescriptions. - Offer training for support staff. - Train providers on fitness principles, exercise recommendations, exercise-medication interactions, and risk factors. - Train providers on nutrition for diabetes. - Train providers on how to make appropriate referrals. - Train providers on motivational interviewing and assessing readiness to change. 	<ul style="list-style-type: none"> - Adopt detailed guidelines that include principles of nutrition and physical activity. - Enable diabetes team members to cross-train one another. - Encourage advanced level practice for professionals in the areas of diabetes, weight management, fitness, and health promotion. - Encourage continuing education in program management, public health practices, and community mobilization. 	<ul style="list-style-type: none"> - Review PACE (Physician-Based Assessment and Counseling for Exercise) guidelines. - Review IHS diabetes education curricula. - Help registered dietitians obtain a Certification of Childhood and Adult Weight Management through the Commission on Dietetic Registration. - Help staff obtain fitness certification through the American College of Sports Medicine. - Help staff obtain certification as a lifestyle coach.

(Table 3 continued on next page)

Table 3. Essential elements of basic, intermediate, and comprehensive best practice programs for nutrition and physical activity. (continued)

Basic Nutrition and Physical Activity Programs	Intermediate Nutrition and Physical Activity Programs Basic program <i>plus</i> :	Comprehensive Nutrition and Physical Activity Programs Basic and intermediate programs <i>plus</i> :	Examples
Clinical information systems: Collecting and tracking information			
<ul style="list-style-type: none"> - Establish and maintain a diabetes registry. - Run diabetes audits. - Establish a referral system. - Conduct basic program evaluations and reviews on an annual basis (at minimum). 	<ul style="list-style-type: none"> - Establish and maintain a diabetes registry capable of tracking measures (e.g., risk assessments, education, and referrals), and listing them on the Health Summary. - Determine how your program will use data to improve care. - Conduct regular (at least annual) evaluations of program quality. 	<ul style="list-style-type: none"> - Establish and maintain a diabetes registry capable of tracking nutrition and fitness outcomes (e.g., improved blood sugar control and body mass index [BMI]) and listing them on the Health Summary. - Use feedback systems that include quality assurance reports. - Contract with third-party program reviewers and evaluators. 	<ul style="list-style-type: none"> - Develop an RPMS registry and track patients according to risk category, such as end-stage renal disease, prenatal patients, gestational diabetes, and cardiovascular disease. - Use case management flow sheets and highlight needed elements. - Conduct diabetes audits and quality assurance reports. - Develop customized exercise prescription and nutrition forms to ensure that information is correctly entered into the clinical database.

Evaluating your nutrition and physical activity program

Evaluation is important because it helps you see what is working and what is not working in your nutrition and physical activity program. It will show you if adjustments or changes need to be made to improve your program. Evaluation also provides you with information that you can use to share your successes with clients, providers, tribal leaders, administrators, the community, funders, and other stakeholders.

Consider including the following when developing your program and evaluation:

For nutrition (baseline and ongoing data to assess change and program effectiveness)—

- Anthropometrics (e.g., weight, BMI, and waist circumference).
- Weight and BMI change over time.
- Body composition analysis and change over time; changes in lean and fat mass.
- Participants' progression in meeting personal nutrition goals.
- Baseline and ongoing data to assess change.
- Laboratory values (e.g., A1c, lipid panels, blood sugar levels, blood urea nitrogen (BUN), creatinine, glomerular filtration rate, albumin, and liver panel).
- Food intake review (e.g., dietary variety, balance, portion sizes, meal spacing, and nutrient analysis).
- Behavior and attitude changes.
- Process and outcomes evaluation to measure achievement of program goals and objectives.

For physical activity and fitness (baseline and ongoing data to assess change and program effectiveness)—

- Anthropometrics (e.g., weight, BMI, and waist circumference).
- Body composition analysis.
- Fitness levels (e.g., PACE self-assessment of fitness level; FITT (frequency, intensity, time, and type) model).
- Participants' progression in meeting personal exercise goals.
- Baseline and ongoing data to assess change.
- Laboratory values (e.g., lipid panels, A1c, resting heart rate, and blood pressure).
- Behavior and attitude changes.
- Process and outcomes evaluation to measure achievement of program goals and objectives.

Sustaining your nutrition and physical activity program

Often, for nutrition and physical activity goals to be reached, programs must be in place for more than a few years. Here are some helpful tips for sustaining your program:

- Bill for medical nutrition therapy and diabetes education services.
- Ensure ownership of programs by the community rather than just the clinic.
- Collect data and program outcomes for future funding from available sources.
- Build coalitions.
- Establish community advocacy efforts for nutrition and physical activity.
- Create and maintain safe and accessible places for physical activity.

Contacting others for help

Contacting other people involved in nutrition and physical activity is important because they can help you get started with your program. Your peers at other health care organizations can share their expertise, materials, and ideas, and can also tell you what has worked for them and what has not worked. This can help you avoid reinventing the wheel. Here are some tips on how to connect with others:

- Ask your Area Diabetes Consultant for the names of people who may be able to help you.
- Contact the IHS Division of Diabetes Treatment and Prevention for ideas. They may be able to point you in the right direction.
- Ask the IHS Integrated Diabetes Education Recognition Program for suggested contacts. They have names and contact information for people who work with IHS-accredited diabetes education programs.
- Flip through issues of *Health for Native Life Magazine*. The magazine profiles many diabetes programs throughout Indian Country. The articles may give you ideas for activities to try and people to contact.
- Review resources from the National Diabetes Education Program (NDEP). NDEP offers materials that will help your program get started, including information specifically for American Indians and Alaska Natives. You can access these resources at the website: www.ndep.nih.gov

Real-world best practice programs

Chinle Service Unit Community Nutrition Program

Graydon Yatabe, RD, MPH, CDR, USPHS, Community Nutrition Coordinator and Acting Diabetes Program Coordinator

☎ (928) 674-7488

✉ PO Box PH
Chinle, AZ 86503

At the Chinle Service Unit, the Community Nutrition Program provides a family-centered and community-based approach to delivering nutrition services. The program uses various strategies to promote and support positive and healthy community-based behavior change. In addition, the program works with a variety of community, agency, and governmental partners to provide services, such as: working with worksite lifestyle management programs; providing medical nutrition therapy at the teen clinic of a local high school; promoting a lactation support program that incorporates both Navajo tradition and evidence-based clinical practice; working with traditional healers to incorporate nutrition education into their practice; working with schools to implement and evaluate their mandated wellness policies; and utilizing paraprofessionals to supplement and expand nutrition education efforts.

Healthy O’odham Promotion Program (HOPP)

Dolores Galaz, RD, Clinical Director

☎ (520) 383-6240

✉ dolores.galaz@tonation-nsn.gov

In addition to HOPP’s extensive fitness activities (e.g., monthly fun runs, yearly half marathon, aerobics classes, and fitness centers), the HOPP Nutrition Program offers several classes, projects, and demonstrations throughout the year at sites throughout the Tohono O’odham Nation. Food and nutrition specialists and a full-time registered dietitian conduct these activities, which include Feast Projects; monthly Family Nights with specific nutrition, diabetes, and fitness lessons; a basic nutrition education curriculum; worksite nutrition classes; food demonstrations; and featured articles in HOPP’s newsletter. In addition, the registered dietitian develops the nutrition lesson plans and provides individualized counseling for clients at risk for diabetes and its complications, as well as counseling for general wellness and weight loss.

Pueblo of San Felipe Farmers Market

Felice Lucero, Manager

This program reaches almost every person in the pueblo. Elders teach how to plant and raise gardens, and youth help harvest. Families get fresh fruits and vegetables through the WIC Program. Elders receive vouchers for free produce. Today, more than 100 people in the pueblo are growing and selling produce, and many people have improved their eating habits.

Pascua Yaqui Diabetes Prevention Program

Kris Olson-Garewal, MD, Director

☎ (520) 879-6018

Chelsea Sanders, RD, Manager

☎ (520) 879-6105

✉ chelsea.sanders@pascuayaqui-nsn.gov

This program incorporates input from focus group to create a professionally staffed fitness program.

Rocky Mountain Gym

Dave Sorensen

☎ (307) 332-6805

✉ d_s025@yahoo.com

✉ PO Box 538
Fort Washakie, WY 82514

This facility provides individualized fitness programs designed by certified trainers. It also offers special programs and classes that are integrated into the community.

United Indian Health Services

Dwight Pargee

✉ Spigee@aol.com

A certified fitness professional directs the fitness program at the United Indian Health Services.

Helpful websites

Alliance for a Healthier Generation

🔗 www.healthiergeneration.org

The American Heart Association and the William J. Clinton Foundation have joined together to form the Alliance for a Healthier Generation to combat the spread of childhood obesity and the serious diseases associated with it, such as heart disease and diabetes. The Alliance is taking a comprehensive approach to stop the increase of childhood obesity by 2010.

American Diabetes Association: Clinical practice recommendations on nutrition

🔗 http://care.diabetesjournals.org/cgi/content/full/27/suppl_1/s36

American Diabetes Association: Evidence-based nutrition principles and recommendations for the treatment and prevention of diabetes and related complications

🔗 <http://care.diabetesjournals.org/cgi/content/full/25/1/148>

American Dietetic Association

🔗 www.eatright.org

***BAM! Body and Mind* (Centers for Disease Control and Prevention)**

🔗 www.bam.gov

BAM! Body and Mind is an online destination for kids aged 9–13 years that gives them the information they need to make healthy lifestyle choices. The site focuses on topics that kids told the program are important to them, such as stress and physical fitness, using kid-friendly lingo, games, quizzes, and other interactive features. *BAM! Body and Mind* also serves as an aid to teachers, providing them with interactive, educational, and fun activities that are linked to the national education standards for science and health.

The Community Guide (Centers for Disease Control and Prevention)

🔗 www.thecommunityguide.org

This site provides information on evidence-based recommendations for programs and policies to promote population health.

Diabetes Prevention Program

🔗 www.bsc.gwu.edu/dpp/

This site contains study documents available to the public who are interested in the research aspects of the Diabetes Prevention Program (DPP).

Healthfinder for Kids (U.S. Department of Health and Human Services: Office of Disease Prevention and Health Promotion)

🔗 www.healthfinder.gov/kids

This site provides information and resources about health for kids, parents, and people taking care of children.

International Food Information Council

🔗 www.kidnetic.com

This site is a healthy eating and active living web site designed for kids aged 9–12 years and their families. The site serves as a resource for kids and their families to inspire them to move toward healthier lifestyles. In addition, the site serves as a resource for health professionals and educators to use when working with patients and students. The site is also a non-commercial site. This means no advertising and nothing for sale.

Small Step

(U.S. Department of Health and Human Services)

🔗 www.smallstep.gov

This site provides information on the small steps adults and children can take toward discovering a healthier self.

IHS Division of Diabetes Treatment and Prevention

🔗 www.ihs.gov/medicalprograms/diabetes

U.S. Department of Agriculture: Center for Nutrition Policy and Promotion

🔗 www.cnpp.usda.gov

This site provides information and links to nutrition information and materials from MyPyramid, MyPyramid for Kids, and the *Dietary Guidelines for Americans 2005*.

U.S. Department of Agriculture: Food and Nutrition Information Center

🔗 www.nal.usda.gov/fnic/

This site provides credible, accurate, and practical resources for nutrition and health professionals, educators, government personnel, and consumers.

U.S. Department of Agriculture: Food Stamp Nutrition Connection

Ethnic and cultural information—

🔗 www.nal.usda.gov/fnic/foodstamp/Topics/ethnic.htm

Overweight and obesity prevention—

🔗 www.nal.usda.gov/fnic/foodstamp/Topics/obesity.html

Physical activity—

🔗 www.nal.usda.gov/fnic/foodstamp/Topics/physical_activity.html

Resource library—

🔗 www.nal.usda.gov/fnic/foodstamp/Library/index.html

U.S. Department of Agriculture: National Agricultural Library

🔗 www.nutrition.gov

This site provides easy, online access to government information on food and human nutrition for consumers.

Walkable Communities, Inc.

🔗 www.walkable.org

We Can! Program
(National Heart, Lung, and Blood Institute, National Institutes of Health)

🔗 www.nhlbi.nih.gov/health/public/heart/obesity/wecan/

🔗 www.kidshealth.org

We Can! or “Ways to Enhance Children’s Activity and Nutrition” is a national program designed for families and communities to help children achieve a healthy weight. The program focuses on three important behaviors: (1) improved food choices; (2) increased physical activity; and (3) reduced screen time. *We Can!* provides families and communities with helpful resources and practical tips.

References

General references

Davis SM, Clay T, Smyth M, Gittleson J, Arviso V, Flint-Wagner H, Holy Rock B, Brice RA, Metcalfe L, Stewart D, Vu M, and Stone EJ. Pathways curriculum and family interventions to promote healthful eating and physical activity in American Indian schoolchildren. *Preventive Medicine*. 2003;37(6 pt 2):S24–34.

Hamdy O, Goodyear LJ, and Horton ES. Diet and exercise in type 2 diabetes mellitus. *Endocrinology and Metabolism Clinics of North America*. 2001;30(4):883–907.

Kaplan RM, Hartwell SL, Wilson DK, and Wallace JP. Effects of diet and exercise interventions on control and quality of life in non-insulin-dependent diabetes mellitus. *Journal of General Internal Medicine*. 1987;2(4):220–28.

Knowler WC, Barrett-Connor E, Fowler SE, Hamman RF, Lachin JM, Walker EA, and Nathan DM. Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *New England Journal of Medicine*. 2002;246(6):393–403. Further information on the Diabetes Prevention Program is available at: www.bsc.gwu.edu/dpp/. Accessed January 2006.

Prochaska JO, Norcross J, and DiClemente C. *Changing for Good: The Revolutionary Program That Explains the Six Stages of Change and Teaches You How to Free Yourself From Bad Habits*. New York: William Morrow, 1994.

Schulz LO, Bennett PH, Ravussin E, Kidd JR, Kidd KK, Esparza J, and Valencia ME. Effects of traditional and western environments on prevalence of type 2 diabetes in Pima Indians in Mexico and the U.S. *Diabetes Care*. 2006;29:1866–71.

Nutrition references

American Diabetes Association. Nutrition recommendations and interventions for diabetes—2006: a position statement of the American Diabetes Association. *Diabetes Care*. 2006;29(9):2140–57.

Archer SL, Greenlund KJ, Rith-Najarian S, Croft J, and Casper ML. Differences in food habits and cardiovascular disease risk factors among Native Americans with and without diabetes: The Inter-Tribal Heart Project. *Journal of Public Health Nutrition*. 2004;7(8):1025–32.

Geil PB and Leontos C. Nutrition practice guideline care improves diabetes outcomes. *Diabetes Spectrum*. 2004;17(2):83–86.

Wilson C, Brown T, Acton K, and Gilliland S. Effects of clinical nutrition education and educator discipline on glycemic control outcomes in the Indian Health Service. *Diabetes Care*. 2003;26(9):2500–04.

Physical activity references

American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription*, 7th edition. Whaley MH, editor. Philadelphia: Lippincott Williams & Wilkins, 2005.

American College of Sports Medicine. *ACSM's Exercise Management for Persons with Chronic Disease and Disability*, 2nd edition. Durstine JL and Moore GE, editors. Champaign, IL: Human Kinetics, 2003.

Centers for Disease Control and Prevention Task Force on Community Preventive Services. Increasing physical activity: A report on recommendations of the Task Force on Community Preventive Services. *Morbidity and Mortality Weekly Report*. 2001;50(RR18):1–16.

Diabetes Spectrum. 2005;18(2):67–127. The entire issue focuses on physical activity and diabetes.

Di Loreto C, Fanelli C, Lucidi P, Murdolo G, De Cicco A, Parlanti N, Ranchelli A, Fatone C, Taglioni C, Santeusano F, and De Feo P. Make your diabetic patients walk: Long-term impact of different amounts of physical activity on type 2 diabetes. *Diabetes Care*. 2005;28(6):1295–302.

Mullooly CA and Kemmis KL. Diabetes educators and the exercise prescription. *Diabetes Spectrum*. 2005;18(2):108–13.

Pate RR, Pratt M, Blair SN, Haskell WL, Macera CA, Bouchard C, Buchner D, Ettinger W, Heath GW, King AC, *et al.* Physical activity and public health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *Journal of the American Medical Association*. 1995;273:402–07.

Polley DC, Spicer MT, Knight AP, and Hartley BL. Intrafamilial correlates of overweight and obesity in African-American and Native-American grandparents, parents, and children in rural Oklahoma. *Journal of the American Dietetic Association*. 2005;105(2):262–65.

Sigal RJ, Kenny GP, Wasserman DH, and Castaneda-Sceppa C. Physical activity/exercise and type 2 diabetes. *Diabetes Care*. 2004;27(10):2518–39.