IHS Best Practice Model
Nutrition and Physical Fitness Programs for People with Diabetes

Why is this important?

Nutrition and physical fitness play major roles in helping people with diabetes and their families stay healthy. Investment of time and resources in programs fostering healthy eating and physical fitness promise long-term benefits not only for diabetes, but also in reducing risks for heart disease and promoting overall health. Blending traditional and local nutrition and fitness practices helps to effect needed lifestyle changes for families and communities.

Would your community benefit from a nutrition and fitness program?

What are the rates of diabetes in your community? Are they going up? What is the prevalence of obesity and is the prevalence increasing? What does your community offer in the way of fitness activities and nutrition counseling? If you see opportunities for improvement, you should consider sponsoring a program focusing on nutrition and fitness.

What is the scientific evidence for the benefits of nutrition and fitness programs and what lessons have we learned about these programs?

- Nutrition and fitness should be offered together (can't do one without the other).
  - Research shows that weight loss and diabetes control are achieved most effectively with both components.
  - *Pate, et al JAMA 1995*
- Programs need to be culturally relevant.
  - *Venkat Narayan, et al, Diabetic Medicine 1998*
- Community input is essential.
  - *Pargee, J Health Educ March 1999*
- Programs should serve all people--don't segregate clients with diabetes from those without diabetes (e.g. fitness for the family); the general focus should be on "health" rather than weight loss.
  - *Venkat Narayan et al Diabetic Med, 1998*
- Programs should target entire families for lifestyle change, not just the overweight child within a family.
- There is a strong behavioral component to lifestyle change.
  - *Foreyt, Clin Diab, Jan/Feb 1995*
  - *Gregg, et al Diab Care, 19, 1996*
  - *Dunn et al JAMA 281, 1999*
  - *Pratt, JAMA 281 1999*
- Use people indigenous to communities as your leaders and as teachers.
  - *Pargee,* as above

- To be more successful in the community, collaborate with other agencies (such as WIC, universities, etc.).
- It **is** possible to maintain weight loss long-term.
  - *Klem, Wing, et al, AJCN, 1997*
- Even a 10 percent decrease in weight can improve diabetes control.
- Knowing how to cook and sitting down together as a family and enjoying the social aspects of eating both contribute to improved eating behaviors.
- Programs should focus on prevention activities; be proactive.
  - *Story, et al AJCN 69, 1999*
  - Walking to prevent Type 2: *Hu et al JAMA 282 1999*
- Adequate staffing is needed to implement programs; daily, ongoing programs versus once-a-month or once-a-quarter activities are more successful in improving nutrition and fitness.
  - Having a dietitian and fitness consultant on site on a daily basis (or trained community members) versus professional consulting on an occasional basis is recommended.
  - Staff should provide ongoing support, not just occasional visits; use incentives to help motivate people.
- Both group and individual interventions have their strengths; a variety of settings should be offered for physical activity; activities of both higher and lower intensity are effective (*King, et al, JAMA 266 1991*).
- Programs should be innovative and teaching methods should be adapted to the audience; for example, there is no <u>one</u> meal planning method--the diabetic exchange system is one method, but not commonly used in this population.
- Fitness: need both aerobic and strength training programs for overall wellness.
- People tend to believe many myths and misconceptions about nutrition and fitness; this is a barrier that needs to be overcome before learning and knowledge can take place.
- Professional cross-training is very effective; for example, fitness professional teaching nutrition, dietitian teaching use of blood glucose meters (principle of "team management" of diabetes).
- Allow time for your program to be successful; change needs time--it may take 1 to 2 years for clients to change health behaviors, don't give up them!

What are Best Practice models for nutrition and fitness programs?

The following Best Practice models are listed in the following order: nutrition (only), fitness (only), and nutrition and fitness combined.

<u>Nutrition:</u>

- Cooking classes
  - Learning Kitchens–5-class module from IHS "Cooking for Good Health" (Nonie Woolf, IHS National Diabetes Program, 1995)
  - Classes at Indian Health Council, Pauma Valley, CA

- Tribal community gardens
  - Head Start model (contact: Indian Health Council, Pauma Valley, CA)
  - Crow Reservation Garden (Charlene Johnson)
  - Article from Diabetes Educator journal on gardening in a Northwest tribe
  - Leech Lake tribal garden
  - Montana gardens
- Community-based coalitions
  - Diabetes advisory groups
  - Nutrition coalitions–nutrition professionals from various agencies collaborating to work on programs based on needs in communities
    - Montana Nutrition Coalition
    - Blackfeet Community Nutrition Council
    - Nutrition Council of California Indian Clinics
  - CDC program: "Diabetes Today"– extensive curriculum on developing coalitions in communities to fight diabetes (not just nutrition)
- Strong Women Stay Slim (Nonie Woolf)
- Summer feeding program – Kidz Café (Deb) – Level: comprehensive
- Prenatal GDM Keychain (Nonie) – Level: basic
- Grocery store tours
- Claremore Diabetes Program (Melanie Sipe)
- Power of Stories:
  - Snow White and the 7 Fruits and Vegetables – plays presented to elementary and middle schools, also Head Start, on nutrition/health topics (contact: Monica McCorkle, Indian Health Council, Calif.)
  - Teddy Bear clinic (Brenda Broussard has reference)
- Healthy Choice Pow–Wow stand (contact: Deb)
- Nutrition/health presentations with discussion afterward (support group atmosphere), delivered at weekly diabetes clinics with healthy breakfast served (contact: Monica Giotta, IHC)
- Awakening the Spirit NA Outreach Program ADA program – Lorraine is the contact
- Food access issues, e.g. availability of fresh produce
- USDA commodity food programs
  - Food/recipe demonstrations at site of food distribution
    - Examples: FDPIR program, Nutrition aide at Indian Health Council (contact: Monica McCorkle)
- Staged Diabetes Management

Fitness:

- Native Wellness Leaders program (contact: Monica McCorkle) training community members to lead classes
- Body composition analyses – any method – shows change even if weight not lost
- Fitness testing
- Walking clubs/Fun runs
- Fitness trails around indigenous plant gardens
- Fitness classes– aerobics, exercise—including classes for seniors

- Employee health
- Wellness centers as adjunct to clinic/hospital
- Weight training
- Traditional games and relays
- Bicycle rodeos/rodeo activities without the horse
- Prenatal/postnatal exercise programs
- Youth sports – intramural teams, "Rez ball"
- Open gym nights at community gyms, school gyms, church gyms
- Water exercise (community pool)
- Blackfeet 10000 program (pedometer steps) – good idea but unsure about present implementation

Nutrition and Fitness (combined):

- Pathways NIH NHLBI obesity prevention study, Grades 3-5 in 7 Indian nations – results in April 2001 - Level is comprehensive
- Head Start Obesity and Diabetes Prevention Initiative called "Healthy Children, Healthy Families and Healthy Communities" in 5 pilot communities (Winnebago - (Deb Parker) is one of the pilot communities)
- Strong Women Stay Slim (Level: comprehensive)
- Diabetes camps – Cherokee Nation Youth Fitness Camp
- Healthy Eating Learning Program (Zuni) and modifications by other tribal programs
- After school program for kids (contact: Deb)
- School-based walking program for kids that incorporated nutrition (Gwen Hosey)
- Health fairs
- Kids 'n Health diabetes prevention program–First Nations community in Saskatchewan Canada; telephone (204) 957-5057
- Strong in Body and Spirit – NA Diabetes Project (www.laplaza.org)

What level of program should you propose?

The following chart presents examples of best practices, goals, and target audiences for three levels of nutrition and fitness programs: basic, intermediate, and comprehensive.

Nutrition

Best Practice	Basic Level	Intermediate	Comprehensive
1. commodities Goal: improve nutritious use of commodity foods Target: people who prepare food in family	Recipes provided at distribution site Objective: Client will get new ideas of ways to cook commodity foods.		Cooking demo at distribution site Objective: clients will have opportunity to try new recipes; this will be a stronger inducement to try them at home.

2. stories Goal: increase diabetes awareness Target: school age children	Develop skit for kids at Head Start – use one already completed by another site. Objective: Kids will be able to verbalize what diabetes is.		Take the skit to all area schools; use kids as actors; invite parents to attend. Objective: To increase diabetes awareness in 75% of children aged X to X in X school.
3. Food access Goal: improve access to fresh & nutritious foods Target: person who procures food for family	Have fresh produce available at diabetes clinic – from local farm, grocery Objective: client will use fresh produce in a meal at home.	Add recipes to use produce Objective: client will introduce new foods to family.	Do recipe/cooking demo using the fresh produce; taste testing; get produce from tribal community gardens. Objective: same as intermediate level
4. Strong Women Stay Slim Goal: to help women with diabetes begin a light handweight lifting program and continue past the first 10 wks of the program Target: women between. 18 and 60 years of age	--	--	Objectives: 1.Program will be staffed by at least a nurse and an RD 2.SWSS group will meet 1 hour weekly to exercise together, provide group support and receive nutrition sample & recipe. 3.Assessmt of wt, ht, % body fat, #lean, #fat, waist hip ratio, %IBW, BMI, lipid panel & HbA1c (in diabetes) will be completed at recruitment, 10 wk class and ___, 6 mo reunion and 1 yr reunion 4.Participants will increase wt lifted by 1# each wk or 2 wks
5. Cooking for Good Health classes Goal: 1 to provide a hands on opportunity to experience great tasting foods that are high in fiber and lower in fat, calories and sodium 2.to establish a non-threatening atmosphere in which participants can taste alternative versions of familiar recipes with encouragement to try them at home. Target: family cooks and family members (as young as 5th grade); training for staff (Head	Objectives: 1) Fix the food ahead and offer a sample to taste and pass out a recipe.		Objective: 1) Hold a 2-1/2 hr class in which everyone in class has a chance to work and taste all recipes. 2) Provide nutrition education to emphasize why these recipes are healthy.

Start cooks for ex.)			
6. Grocery store tours Goal: To teach lowfat, high fiber, nutrient dense food choices at the point of purchase Target: adults; program staff; school age	Objective: 1) Purchase supermarket savvy slide series and present it to a client or group	Objective: 1) With an RD as leader, tour a local grocery store with participants handling foods & calculating % calories from fat	Objective: 1) Families grow gardens, attend classes and sell excess in farmers markets 2) Emphasis in mode of energy expenditure 3) Education on garden & its products at local schools
7. Community coalitions Goal: Community members with like minds will form a coalition based on a perceived need (nutrition, fitness, wellness, diabetes) which will provide a method of information & community events sharing and will provide a body fo volunteers to support programs & provide education Target: adult community members; could be a high school committee also	Objective: Coalition formed to meet and network	Objective: Coalition formed as advocacy group to increase awareness & host educational activities	Objective: Members form a community mobilization group. To develop & complete interventions that are ongoing
8. Gestational Diabetes Nutrition Tool/Keychain Goal: Women w/DM in pregnancy can utilize this culturally relevant tool to follow a diet plan which results in good blood sugar control Target: patients with diabetes during pregnancy	Objective: 1) Nutrition aides can be trained to use tool with Food Guide Pyramid (each bead represents a food group with at least 4 groups/meal and 3 for snack	Objective: Developed w/ the patient following a diet pattern devised by RD and adjusted for the individual patient based on the quality of blood sugar control	

FITNESS

BEST PRACTICE	BASIC LEVEL	INTERMEDIATE	COMPREHENSIVE
Body composition Goal: Perform body composition analysis on participants to obtain realistic wt goals Target: 5 yrs old and up; comprehensive program is for adults only	Objective: Complete training to perform girth meas. & skinfold calipers method	Objective: Use more "expensive" method (electrical impedance) and computer printout capability w/ girth meas.	Objective: Body comp analysis with expanded exercise & dietary consultations and fitness testing
Fitness testing Goal: Perform fitness testing on participants to use as pre & post evaluation for programs and individual progress Target: 5 years on up	Use tests that require minimal equipment: flexibility, cardiovascular (walk test), muscle. Strength (pushups), muscle. Endurance (curl ups)	Use tests that utilize equipment or additional tests so modifications can be made.	Use certified fitness specialist so all fitness components can be tested w/ accurate results with specific modifications and follow-up consultations
Walking clubs Goal: Encourage community to participate in walking as their physical activity Target: families	Develop short term (6-8 wk) walking program that will impact all ages either as individuals or a team option	Expand programming into a year-round exercise option with special events to require consistent "training" i.e. fun runs, mileage clubs	Series of events that require consistent training, seminars, involve other communities, all age events: school, family, etc.
Employee Health Goal: Develop wellness programs tailored around employee groups	Develop health promotion one time event or 6-8 wk. Program that would require employees to form a team. Basic health screening.	Investigate employee benefit option for wellness: time during workday, alternative schedule, incentives. Arrange programs around work schedules. Expand programming.	Add evaluation component – fitness testing, attitude survey, workplace satisfaction. Programming expands to special events and on-going individual programming.

General comments/ideas:

- Consider use of technology; e.g., videoconferencing, telemedicine to improve access to health education and intervention, particularly in remote populations.
  Ref: J Dietetic Assoc Feb 2001 ("Interative videoconferencing improves nutrition intervention in a rural population")
- See IHS Nutrition program, *Nutrition Strategic Planning for FY 2001* report
- Other references:
  Diabetes in American Indian Communities conference agenda, October 1999
  Conquering Diabetes: A Strategic Plan for the 21st Century. A report of the congressionally-established Diabetes Research Working Group

What kinds of assessments should you carry out in setting up a program?

Assessment of clinical/community settings:

- Determine what other agencies (e.g., WIC, tribal programs, schools, local coalitions) are doing in the areas of nutrition and fitness in order to avoid duplication of services and to fill whatever niche required.
- Community needs assessments to determine what your community wants. Also check previous surveys.
  - In nutrition look for: where people buy food, where people eat (restaurants, etc.), # of restaurants, groceries, and fast food, income levels of population, who is teaching nutrition and fitness at the current time, where do people get their information on these topics (e.g. healers, magazines, TV, etc.).
  - For fitness look for: environmental factors, facilities available (indoor and outdoor), whether there is rapport with school system; programs available in peripheral area (e.g. basketball league in nearby community) – 50 mile radius.
  - For both, look at demographics of community.
- Assessments can be oral interviews, written questionnaires, group meetings, focus groups, talking circles, telephone interviews, interview clinic outreach people such as CHRs to get past history of activities.
- Samples: select samples that represent your community (age groups, gender, Indian/non-Indian); can use census data for demographics (tribal planning departments often have census data); RPMS system through IHS (#s of people presenting with specific health problems)

How to assess readiness for the program:

- How many people interested as determined by your assessment?
- Do you have the staff to run the program and keep it ongoing?
- Do you have the space and facility for the program?
- Do you have the time to devote to the program (e.g., can you staff evening programs vs just daytime programs)?
- Do you have the resources (money, etc.) to adequately do the program? Can you get other agencies to donate resources (space, funding, materials, etc.)? This encourages community buy-in.
- Do you have the support and approval of your community (e.g. tribal council, clinic director, executive committee, funding agencies, tribal health board)?

What level or approach should you take?

If you are just beginning a new program, it is best to start small–look at basic levels first. Based on the community assessment process listed above, ask yourself what you can realistically achieve, based on your available resources. If your program is a first, start at the basic level. Better to achieve small success than to try to do too much and fail.

How should you evaluate your program?

Suggestions for minimum data elements:

Nutrition:

- Anthropometrics (weight, Body Mass Index (BMI))
- Weight change and BMI change over time
- Body composition analysis and change over time
  - changes in lean and fat mass
- Progression in nutrition program (e.g. meetings goals that were set)
- Baseline and ongoing data to assess change
- Laboratory values (lipid panels, HbA1c, blood glucose levels, BUN, creatinine, albumin, liver panel, etc.)
- # of classes or programs attended
- Diet analyses (calorie intake, % of carb,pro,fat, grams of nutrients, carbohydrate counting, etc.)
- Behavioral changes

Program/process indicators for nutrition:

- Contact hours for each program
  - #participants X duration of individual session X # days
  - collect cumulative data monthly
  - compare data month to month and program to program
  - gives idea of use of programs
- # of attendees at programs
- Client satisfaction surveys

Questions to ask:

- How are people changing their food buying and eating habits in the community?
- How are supermarkets changing? Are different foods available?
- Are tribal feeding program menus changing?
- How are food choices different at tribal potlucks, gatherings, employee functions, church activities?
- Is incidence of disease (diabetes, heart disease, kidney disease, hypertension, etc) decreasing?
- Are there places where people now meet to talk/do nutrition?

Fitness:

- Anthropometrics (weight, Body Mass Index (BMI))
- Body composition analysis
- Fitness levels
- Progression in exercise program (e.g., walking 1 mile, then 5 miles)
- Baseline and ongoing data to assess change
- Laboratory values (lipid panels, HbA1c, etc.)

Program/process indicators for fitness:

- Contact hours for each program
  - #participants X duration of individual session X # days
  - collect cumulative data monthly
  - compare data month to month and program to program
  - gives idea of use of programs

Questions to ask:

- Are people exercising more?
- How have types of exercise changed? Are there more places to exercise?
- Is there a place available for exercise now that wasn't available before?
- What do you see that tells you that people are exercising more?
- Is fitness changing the community's health? (e.g., less diabetes, fewer heart attacks?)
- Has perception of weight moved beyond the bathroom scale? What is "healthy weight"?
- How are the fitness goals of the community different?
- Has the perception of healthy exercise changed?
- Are more families exercising together than before?

Evaluation for both nutrition and fitness:

- Subjective indicators of success from Tufts University research (books: Strong Women Stay Slim, Miriam Nelson, PhD, author)
- Anthropometrics and other data elements from both nutrition and fitness

Questions to ask:

- Where do people learn or do fitness/nutrition that they didn't have before?
- What are observed changes in eating/fitness habits of your target population?
- Is incidence of disease (diabetes, heart disease, kidney disease, hypertension, etc) decreasing?
- The best results are seen in programs combining nutrition and fitness. How have exercise and nutrition been combined in your programs?

What issues should you consider in writing your proposal?

As you prepare your proposal, check to be sure you have covered the following issues:

- Does your proposal address diabetes care and prevention?
- Have you included information about your target population, its size, and its age group?
- Do you address the criteria discussed in this report?
- Do you list specific goals and programs in nutrition and fitness?
- Does your proposal demonstrate that it will have an impact on diabetes in your community?
- Does your proposal show adequate community resources?
- Do your goals meet the identified resources available for your program?

- Have you included information about staffing, including staffing needs, recruitment, and training?
- Are your program evaluation elements clearly defined?
- Have you identified collaborations/alliances/networks in your community and shown how they will be used?