

# INDIAN HEALTH DIABETES BEST PRACTICE

## Physical Activity for Diabetes Prevention and Care

Revised April 2011

**Note!** Please review the Best Practice Addendum, which provides the most current information on the Required Key Measures along with examples of ways to obtain the measures. The Best Practice Addendum can be found here: [http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Tools/BestPractices/BP\\_2011\\_Table\\_RKM\\_508c.pdf](http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Tools/BestPractices/BP_2011_Table_RKM_508c.pdf)

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# Instructions for Using This Best Practice

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The Best Practices are organized into topics on how to plan for and successfully implement a Best Practice in your community.

- **Part 1** provides background information on planning for your program and evaluation, Key Recommendations, and Key Measures.
- **Part 2** provides details on implementation of the Key Recommendations.
- **Part 3** includes appendices, tools, and resources.
- **Part 4** provides a list of references.

As you prepare to select, implement, and evaluate a Best Practice, consider these planning guidelines:

- Meet with your diabetes team to discuss which Best Practice(s) is best suited for your situation and resources.
- Use data from your *Diabetes Care Outcomes and Audit* and/or from a community needs assessment to guide your selection of the Best Practice(s).
- Determine your program goal(s) as a team. For example, your team may decide to work toward increasing the number of people who receive eye exams.
- Print out at least Part 1 of the Best Practice(s) your team feels is most appropriate to implement.
- Work with your diabetes team to review and discuss the Best Practice(s). You may choose to read it together as a team.
- Choose at least one Best Practice after carefully considering your goals and resources (funding, staff, and time).
- **Review the entire Best Practice(s) you have selected with your diabetes team.**
  - Confirm that you have selected a Best Practice(s) appropriate for your community needs and resources and that you are confident that your team can successfully implement, evaluate (measure), and document progress and outcomes.
  - Target the population your team wants to improve outcomes for with the Best Practice(s). Remember, you probably do not have resources to do everything for everyone.
  - Carefully consider the Key Recommendations. The recommendations are based on evidence and have been proven to be effective. You may already be doing some of the recommendations and can easily fit these into your plan, or you may want to consider some new recommendations to enhance and strengthen your program. Identify those your team can implement.
  - Carefully review the Key Measures. Choose those that best fit with your goals and the Key Recommendations you have chosen to implement.
  - If one Best Practice does not fit, then review another Best Practice until you find one that fits.

**Throughout the document you will find links** that draw your attention to important items within this Best Practice PDF document:

- **Action!** Indicates a **link**. Please use the link to access more detailed descriptions.
- **Note!** Indicates an **important** item. Pay special attention to this **important** item.

# Summary of Key Recommendations and Key Measures

**Key Recommendations for Physical Activity for Diabetes Prevention and Care Best Practice.** These are evidence-based actions that will lead to improved outcomes in the community.

**Action!** See [Part 2](#) for details on the implementation of each key recommendation.

1. Objectively assess the individual's current level of physical activity at every visit and make recommendations appropriate to age and ability.
2. Include appropriate fitness testing pre- and post-physical activity intervention.
3. Provide diabetes self-management education (DSME) to prevent and reduce adverse health outcomes.
4. Provide ongoing support and community programs for lifestyle and behavior changes.

**Key Measures for Physical Activity for Diabetes Prevention and Care Best Practice.** These are specific measures that can be used to document changes in outcomes related to implementing the Best Practice.

**Note!** All SDPI grant programs that choose this Best Practice must report **as required in the terms and conditions attached to the notice of award on indicated \* Measures.** Programs may report on other measures as well.

1. \*Percent of people in the target population who have had their level of physical activity assessed and documented in the past twelve months.
2. \*Percent of people enrolled in a fitness intervention who showed improvement in their fitness levels in the past twelve months.
3. \* Percent of people in the target population who met one or more of their physical activity behavioral goals in the past twelve months.
4. Percent of people enrolled in fitness interventions who have their percent body fat assessed before and after the intervention.
5. Percent of people in the target population who show improvement in annual cardiometabolic risk factor assessment: fasting blood glucose, blood pressure, blood lipids, and waist circumference.
6. Number of active partnerships that enhance the physical activity education and fitness opportunities.
7. \*Number of policies implemented by the organization's leadership for the promotion and expansion of opportunities for physical activity.

# **PART 1 Essential Elements of Implementing This Best Practice**

## Purpose

This document provides guidance for programs that seek to improve and/or increase physical activity behaviors among community members at risk for diabetes and people with diabetes. The recommendations in this document will assist communities with developing a structured physical activity program to produce measurable outcomes relevant to the needs of their particular community.

## Target Population

This best practice describes physical activity recommendations for any individual with diabetes or at risk for diabetes.

**Action! See** the *IHS Diabetes Best Practice Youth and Type 2 Diabetes Prevention and Treatment* for recommendations for health care that serves youth who are at risk for type 2 diabetes.

**Action! See [Part 3](#)** – Appendix A. Supplemental Information for discussion of the Importance of Physical Activity for Diabetes Prevention and Care.

## Intended Users of This Best Practice

- Primary health care teams
- diabetes care teams
- community workers who provide physical activity and diabetes education services
- leaders of health care organizations, and
- policymakers.

**Action! See [Part 3](#)** – Appendix A. Supplemental Information for discussion of the benefits and risks of implementing this Best Practice.

## Definition of Physical Activity for Diabetes Prevention and Care

Physical activity is anything that gets a person's body moving. There are two main types of physical activity that can improve a person's health status: aerobic activity that increases heart rate and muscle-strengthening activity such as lifting weights (2008 Physical Activity Guidelines for Americans). Both types of physical activity, if performed on a regular basis and with the right intensity, can have a positive effect on body composition, cardiovascular fitness, flexibility, balance, muscle endurance, and strength. Most importantly, physical activity can have a direct impact on improving the management of blood glucose, blood pressure, and blood lipids.

A wide range of studies provide the scientific evidence base that physically active people have higher levels of health-related fitness, a lower risk profile for developing a number of disabling medical conditions, and lower rates of various chronic diseases than do individuals who are not active. According to the *2008 Physical Activity Guidelines for Americans*, **some activity is better than none for all individuals** and is safe for almost everyone. (2008 Physical Activity Guidelines for Americans)

## Goals of This Best Practice

The overall goals of this Best Practice are:

- Implement Best Practice approaches to physical activity for individuals with diabetes or at risk for diabetes Increase the percentage of people with diabetes or at risk for diabetes who follow the recommended guidelines for physical activity.
- Reduce the risk of type 2 diabetes and comorbidities associated with physical inactivity.
- Provide effective strategies for clinical and community programs to integrate and expand physical activity and fitness education services, to prevent and treat type 2 diabetes in AI/AN communities.

## Key Recommendations

These are evidence-based actions that can lead to improved outcomes for individuals with diabetes or at risk for diabetes.

**Key Recommendations for Physical Activity for Diabetes Prevention and Care Best Practice. These are evidence-based actions that will lead to improved outcomes in the community.**

1. Objectively assess the individual's current level of physical activity at every visit and make recommendations appropriate to age and ability.
2. Include appropriate fitness testing pre- and post-physical activity intervention.
3. Provide diabetes self-management education (DSME) to prevent and reduce adverse health outcomes.
4. Provide ongoing support and community programs for lifestyle and behavior changes.

**Action! See [Part 2](#) for details on the implementation of each Key Recommendation.**

# Planning for Your Program and Evaluation

## *Key Action Steps*

1. **Identify your program's goal(s).** There are many program goals consistent with the Key Recommendations of this practice. Examples of Program Goals include:
  - Increase the percent of people with diabetes who have their level of physical activity assessed at each clinic visit.
  - Increase the percent of people with diabetes who receive fitness interventions appropriate for their age and ability.
  - Increase the percent of people with diabetes who show improvement in their fitness levels.
2. **Define program objectives** that will be met to reach the program goal(s) in the **SMART format** (specific, measurable, action-oriented, realistic, and time-bound).

Examples of SMART objectives for this Best Practice:

- To increase the percent of people with diabetes with level of physical activity assessed and documented in the past twelve months from 50% to 70% by the end of the current year.
  - To increase the percent of people with diabetes enrolled in fitness intervention who show improvement in their fitness levels in the past twelve months from 25% 40% by the end of the current year.
  - To increase the percent of people with diabetes who met one or more of their physical activity behavioral goals in the past twelve months from 20% to 30% by the end of the current year.
3. **Use Key Measures.** The following Key Measures can be used to monitor progress and the effectiveness of implementing this Best Practice. Results of measures will indicate the degree of success in implementing the **Key Recommendations** and meeting program goals.

Measures of progress need to occur before the intervention (baseline) and at designated times thereafter. Measurement needs to be frequent enough to provide meaningful information for planning and evaluation.



## Key Measures

**Key Measures for Physical Activity for Diabetes Prevention and Care Best Practice.** These are specific measures that can be used to document changes in outcomes related to implementing the Best Practice.

**Note!** All SDPI grant programs that choose this Best Practice must report **as required in the terms and conditions attached to the notice of award on indicated \* Measures.** Programs may report on other measures as well.

1. \*Percent of people in the target population who have had their level of physical activity assessed and documented in the past twelve months.
2. \*Percent of people enrolled in a fitness intervention who showed improvement in their fitness levels in the past twelve months.
3. \* Percent of people in the target population who met one or more of their physical activity behavioral goals in the past twelve months.
4. Percent of people enrolled in fitness interventions who have their percent body fat assessed before and after the intervention.
5. Percent of people in the target population who show improvement in annual cardiometabolic risk factor assessment: fasting blood glucose, blood pressure, blood lipids, and waist circumference.
6. Number of active partnerships that enhance the physical activity education and fitness opportunities.
7. \*Number of policies implemented by the organization's leadership for the promotion and expansion of opportunities for physical activity.

4. **Collect, record, and analyze data** on an ongoing basis; share with the team and the organization leadership.
5. **Use creative ways to display data and measure outcomes, such as graphs or charts.** This helps the team understand the data and know whether there are improvements.
6. **Think about what the data are telling you.** What changes are you seeing? Are they improvements? Use data for planning next steps.

**Action! See [Part 3](#) – Appendix D. for more information on Monitoring Progress and Outcomes for this Best Practice.**

**Action! See** the following resources to help your program improve.

See [Part 3](#) – Appendix B. *Key Measures Example* to assist you with identifying ways to choose Key Measures that incorporate your community data.

See [Part 3](#) – Appendix C. *Improving Physical Activity and Diabetes Prevention and Care Programs Example* to assist you with applying Key Recommendations and Key Measures to a program plan.

**Action! See** an online training and a workbook to get more ideas about setting goals and objectives and developing a program plan. Available from: (see pages 23-28.)

<http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Training/WebBased/Basics/Creating/Workbook.pdf>

**Team Notes:**

# **PART 2 Key Recommendations**

**Note! Part 2 provides important detail on the “why?” and “how?” of implementation of each Key Recommendation.**

## **Key Recommendation 1. Objectively assess the individual's current level of physical activity at every visit and make recommendations appropriate to age and ability.**

### **Why?**

It has been suggested that even brief counseling during any health care visit may lead to modest activity changes that could affect the individual's health and ultimately the health of a community. **Note!** The five A's (Assess, Advise, Agree, Assist, Arrange) model can help physicians and other health care providers deliver brief, individually tailored physical activity messages to individuals. (Meriwether, 2008).

**Action!** This model is available at: <http://www.aafp.org/afp/2008/0415/p1129.html>

Regular exercise has been shown to improve blood glucose control, improve insulin sensitivity, reduce cardiovascular risk factors, contribute to weight loss and prevention of weight regain, and improve overall well-being. (ADA, 2011) Cardiometabolic health measures a person's risk for heart disease and diabetes, and is an indicator of the overall health of an individual. Cardiometabolic risk factors (weight, blood glucose, blood pressure, blood lipids, inflammatory markers, level of physical activity, and misuse of tobacco) can be measured to determine cardiometabolic health.

**Action!** More information about cardiometabolic health is available at: <https://prd-ada-app01.imc2.com/for-health-professionals-and-scientists/cardiometabolic-risk.jsp>.

### **How to Implement the Key Recommendation**

- A. **Encourage all health care providers to assess for level of physical activity at every visit and to emphasize the importance of being physically active.**

**Action!** Assess the individual's current level of physical activity using one of the many tools available:

- **Review the recommendations on the IHS Division of Diabetes website in the *Physical Activity Quick Guide Card Section*:**  
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAHowto>

#### **Or use another assessment tool:**

- The *Rapid Assessment of Physical Activity (RAPA)*:  
<http://depts.washington.edu/hprc/publications/rappa.htm>
- The *Physical Activity Assessment Tool (PAAT)*:  
<http://www.aafp.org/aft/2008/0415/p1129.html>
- The *Physical Activity Readiness Questionnaire (PAR-Q and You)*:  
<http://www.csep.ca/communities/c574/files/hidden/pdfs/par-q.pdf>
- PARmed-X for Pregnancy:  
<http://www.csep.ca/communities/c574/files/hidden/pdfs/parmed-xpreg.pdf>
- PARmed-X for the Evaluation of Medical Problems that Require Special Consideration: <http://www.csep.ca/communitites/c574/files/hidden/pdfs/parmedx.pdf>

- Patient-Centered Assessment and Counseling for Exercise and Nutrition (PACE): [http://www.sandiegochi.com/pace\\_written\\_materials.html](http://www.sandiegochi.com/pace_written_materials.html) (Meriwether, 2008)
- A tool specific for youth is available at the IHS Division of Diabetes website in the *Physical Activity Quick Guide Card Section: The Youth Daily Physical Activity Assessment* tool is available at: <http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAHowtoYouthAssessment>

A tool for assisting providers in facilitating the discussion about physical activity was developed as part of the *Move VA Weight Management* program:

**Table 1. Physical Activity Decision Aid.**

<b>Physical Activity Decision Aid</b>	
<b>1. Acutely ill?</b> No ↓	<b>Yes</b> → <b>Delay discussion of physical activity until condition improved/resolved</b> <small>Acute infection, illness, or injury. For example: acute low back pain, active retinal hemorrhage, shortness of breath at rest, undiagnosed chest pains, symptomatic hernias. Uncontrolled or unstable chronic conditions. For example: hyper or hypoglycemia, heart failure exacerbation, COPD exacerbation, rheumatoid arthritis flare, severe anemia, symptomatic hyper or hypothyroidism.</small>
<b>2. Known Cardiovascular or Pulmonary Disease?</b> No ↓	<b>Yes</b> → <b>Refer for medical evaluation prior to beginning moderate or vigorous physical activity</b> <small><i>Heart Disease:</i> heart attack (MI), CABG/open heart surgery or angioplasty, angina, valvular heart disease, congestive heart failure, arrhythmias, pacemaker or implantable defibrillators  <i>Peripheral Artery Disease:</i> bypass surgery in lower extremities, claudication, ischemic foot ulcers or amputation due to ischemia  <i>Cerebrovascular Disease:</i> stroke, transient ischemic attack (TIA), carotid artery surgery  <i>Pulmonary Disease:</i> COPD or emphysema, asthma, shortness of breath</small>
<b>3. Diabetes, HTN or ≥ 2 Cardiac Risk Factors?</b> No ↓	<b>Yes</b> → <b>Moderate aerobic activity okay, refer for medical evaluation prior to vigorous activity</b> <small>Smoking, high cholesterol or taking cholesterol lowering medication or special diet, family history of early heart disease (age &lt; 50).</small>
<b>4. Limiting Musculoskeletal or Joint Condition?</b> No ↓	<b>Yes</b> → <b>Moderate aerobic activity okay, refer for medical evaluation prior to vigorous activity or strength and flexibility training</b> <small>Chronic low back pain, symptomatic arthritis, amputation, spinal cord injury, osteoporosis</small>
<b>5. Man ≥45 y or Woman ≥55 y?</b> No ↓	<b>Yes</b> → <b>Moderate aerobic, strength and flexibility training activity okay; refer for medical evaluation prior to vigorous aerobic activity</b>
<b>May participate in moderate or vigorous aerobic, strength, and flexibility activities</b>	

**Definition of Moderate Exercise:** Activities that are the equivalent of brisk walking at 3-4 miles/hour (i.e., a 15-20 minute mile pace). This may be considered "hard" or "very hard" by some sedentary or older individuals so moderate can alternatively be defined as intensity within the individual's capacity to sustain for a prolonged period of time (~ 45 minutes), which has a gradual initiation and progression and is noncompetitive. Some increase in heart rate and breathing, and light sweating.

**Definition of Vigorous Exercise:** Exercise intense enough to represent a substantial cardiorespiratory challenge (hard breathing, fast heart rate, large sweating).

[ Table 1 is an image of the Physical Activity Decision Aid. ]

Source: *Move! VA Weight Management Program*, VHA National Center for Health Promotion and Disease Prevention (NCP)

- B. Definitions for moderate and vigorous physical activity in terms of aerobic capacity and/or METS (metabolic equivalent) are available on the IHS Division of Diabetes *Physical Activity – Quick Guide Cards* website:**  
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAQuickGuides>

- C. Regular exercise improves cardiometabolic health and reduces cardiovascular morbidity and mortality. However, individuals with, or at high-risk for CVD or diabetes, have up to a ten-fold increase in cardiovascular events during exercise, as compared to healthy persons. Individuals with CVD should be identified by screening, evaluated, and counseled before beginning a moderate to vigorous exercise program. **Providers are encouraged to use clinical judgment as to the patient's level of cardiovascular disease risk and the anticipated level of physical activity.****

**Action!** Guidelines for when to consider ECG testing and the *Decision Tree Figure* are available on the IHS Division of Diabetes website in the *Physical Activity Quick Guide Card Section*:

<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAHowtoECGScreeing>

- D. In addition, **providers should assess individuals with diabetes for conditions that might contraindicate certain types of exercise or predispose them to injury** such as recent myocardial infarction uncontrolled hypertension, severe autonomic neuropathy, severe peripheral neuropathy or history of foot lesions, hypoglycemia, and unstable proliferative retinopathy. The individual's age and previous physical activity level should be considered. Identification of areas of concern will allow the design of an individualized exercise prescription that can minimize risk to the person with diabetes (ADA, 2011).
- E. **Advise and encourage people at risk for diabetes, with prediabetes or diabetes to work towards meeting the recommendations for physical activity established for their particular age group.** Encourage providers to write a prescription for physical activity for each individual.

**Action!** A ready-to-use form is available at: <http://www.exerciseismedicine/>.

### **Note! Recommendations per age group:**

**Infants, Toddlers, and Preschoolers (ages 0-5 years).** Offer the opportunity for infants and young children to be physically active at least 60 minutes per day by offering active, unstructured play time. (PAK, 2009)

Work with parents to provide opportunities for movement and active play for infants, toddlers, and young children. This will help instill a lifelong preference for being physically active.

**Action!** Information and guidelines for infants and young children are available in *PAK Book #5: Young Children*. ([http://www.ihs.gov/hdp/documents/PAK\\_Book\\_5.pdf](http://www.ihs.gov/hdp/documents/PAK_Book_5.pdf))

**Action!** Additional resources for children ages 0-5 can be found at <http://www.f5ac.org/files/Nutrition%20and%20Physical%20Activity%20Report.pdf> or at <http://www.cfc.ca.gov/Help/nutrition.asp>

**Children and Adolescents (ages 6-17 years).** 60 minutes per day of at least moderate-intensity aerobic activity *plus* vigorous-intensity activity, muscle-strengthening activity, and bone strengthening activity on at least three days per week. (2008 Physical Activity Guidelines for Americans)

For children and adolescents, encourage parents to play together as a family, promote active play time for their youth, limit "screen" time, and explore organized physical activity opportunities in the community.

**Action!** Examples of ways for children and adolescents to meet recommendations are available at the *2008 Physical Activity Guidelines for Americans*: <http://www.health.gov/paguidelines/guidelines/default.aspx>,

IHS Division of Diabetes Youth Curricula:

<http://www.ihs.gov/medicalprograms/diabetes/index.cfm?module=toolsCurricula>

and PAK: <https://www.hncp.org/wst/hdp/PAK/default.aspx>

**Adults (ages 18-64 years)** at risk for diabetes, with prediabetes, or with type 2 diabetes – work towards at least 150 minutes per week of moderate-intensity aerobic physical activity (50-70% of maximum heart rate). Aerobic activity is most beneficial performed in episodes of at least ten minutes each and preferably spread throughout the week - *plus* in the absence of contraindications, do muscle-strengthening activities that involve all major muscle groups at least two times per week and work towards three times per week. (2008 Physical Activity Guidelines for Americans; ADA, 2011)

For Adults, work with the Exercise Specialist or Educator to individualize the exercise prescription and keep it varied and enjoyable. *PAK* is another useful resource for working with adults: <https://www.hncp.org/wst/hpdp/PAK/default.aspx> .

Here are some possible physical activity routines adapted from the *2008 Physical Activity Guidelines for Americans*. These are ways for adults to get the equivalent of 150 minutes (two hours and thirty minutes or about 1000 kcal) of moderate-intensity aerobic physical activity a week plus muscle strengthening:

1. Thirty minutes of brisk walking (moderate intensity) on five days, exercising with resistance bands (muscle strengthening) on two or three days;
2. Fifteen minutes of walking (moderate intensity) on six days, lifting weights on two or three days (muscle strengthening);
3. Thirty minutes of brisk walking on two days, sixty minutes (one hour) of social dancing (moderate intensity) on one evening, thirty minutes of mowing the lawn (moderate intensity) on one afternoon, heavy gardening (muscle strengthening) on two or three days; or
4. Thirty minutes of biking to and from work on three days (moderate intensity), playing softball for sixty minutes on one day (moderate intensity), using weight machines (muscle strengthening) on two or three days.

**Elders (ages 65 and older)** can follow the adult guidelines, and if this is not possible they are encouraged to be as physically active as their abilities allow. (2008 Physical Activity Guidelines for Americans; ADA, 2011)

For a group program designed specifically for Native American elders using exercise, information, and social interaction to help elders remain active and independent in their own homes as long as possible visit: <http://ruralhealth.und.edu/projects/nrcnaa/wellbalanced.php>

**Action! See** link for additional ideas visit:

<http://www.health.gov/paguidelines/guidelines/default.aspx> or *Healthy Weight for Life: A Vision for Healthy Weight Across the Lifespan of American Indians and Alaska Natives* at: [http://www.ihs.gov/healthyweight/documents/HW4L\\_TeamsLeaders.pdf%20-%202011-02-02](http://www.ihs.gov/healthyweight/documents/HW4L_TeamsLeaders.pdf%20-%202011-02-02)

**Note!** Printer friendly charts detailing how to get the recommended amount of physical activity for individuals can be found at

<http://www.cdc.gov/physicalactivity/everyone/getactive/index.html> or [http://www.cdc.gov/physicalactivity/downloads/pa\\_examples.pdf](http://www.cdc.gov/physicalactivity/downloads/pa_examples.pdf).

### Team Notes:

## **Key Recommendation 2. Include appropriate fitness testing pre- and post- physical activity intervention.**

### ***Why?***

The value of exercise intervention on glycemic control, cardiovascular risk reduction, and weight loss has been well documented in the literature (Sigal et al., 2004; Winnick et.al., 2008). Exercise interventions of at least eight weeks duration have been shown to lower A1C by an average of 0.66% (Boule et al., 2001).

### **How to Implement the Key Recommendation**

**Pre- and post- physical activity intervention measures may include:**

- A. Hemoglobin A1C
- B. “Current activity” health factor measures:
  - **cardiometabolic risk measures**, e.g., nonHDL-C, LDL-C, HDL-C, triglycerides, waist circumference (and/or BMI and select skinfold measures), and blood pressure.
  - **field measures** (e.g., sit-ups, push-ups, and ‘sit and reach’).
  - ***Six-Minute Walk Test*** (also referred to as *6-Minute Walk Test*, or 6MWT) (Enright et al., 1998).
  - **Fitness testing tools** are available for specific age groups and disabilities.

**Action! See [Part 3](#) – Tools and Resources** section for tools for assessing fitness levels for all age groups.

**Team Notes:**



### **Key Recommendation 3. Provide diabetes self-management education (DSME) to promote incorporating physical activity into lifestyle and to prevent and reduce adverse health outcomes.**

#### ***Why?***

Physical activity recommendations should be a component of prevention counseling at every visit for individuals with type 2 diabetes (Marwick et al., 2009). Two to three hours of moderate intensity walking per week has been shown to reduce the risk of developing diabetes by approximately 20% to 40% and to reduce the risk of mortality by 40% to 55% in individuals with diabetes (Caspersen et al., 2008). To prevent injury or other adverse outcomes, individuals should receive guidance on proper footwear, clothing, protective eyewear, and other safety strategies.

#### **How to Implement the Key Recommendation**

The first physical activity education for individuals with diabetes is provided by the physician, physician's assistant, advance practice nurse, registered dietitian or diabetes educator. Alternatively, the provider can refer to an exercise specialist for the initial education session. Follow-up advice, including phone contacts, should occur at one, three, six, and nine months (Marwick et al., 2009).

- A. **Review criteria with the individual for a medical evaluation prior to starting a new program of physical activity.** The level of medical assessment is based on the presence of CVD risk factors and the level of anticipated physical activity. Based on results of the medical evaluation make appropriate recommendations for level of physical activity.

**Action! See** the IHS Division of Diabetes website in the *Physical Activity Quick Guide Card Section*: <http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAHowto#>

- B. **Promote safety during physical activity by providing appropriate education based on the assessed needs of the individual.** Topics may include: the importance of wearing diabetes identification; choosing proper socks and shoes; starting slowly and increasing exercise intensity gradually to avoid injury; monitoring blood glucose; carrying water and snacks; preventing hypoglycemia; knowing signs of overexertion, and avoiding hyperthermia in hot weather.

- C. **Use educational materials developed from guidelines that are supported by the scientific literature, are culturally relevant, and at an appropriate literacy level.**

**Action! See** Materials for use with individuals are available from: IHS Division of Diabetes website in the *Physical Activity Quick Guide Card Section*:

<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAResources>;

DPP Lesson Plans: [http://www.bsc.gwu.edu/dpp/lifestyle/dpp\\_part.html](http://www.bsc.gwu.edu/dpp/lifestyle/dpp_part.html);

the American Diabetes Association:

<http://www.diabetes.org/assets/pdfs/6-be-active-but-how.pdf> - Tip Sheet #6 - Get Active

#### **Team Notes:**

## Key Recommendation 4. Provide ongoing support and community programs for lifestyle and behavior changes.

### *Why?*

Physical activity must be sustained over the long term to have an impact on the health status of people at risk for diabetes and people with diabetes. For example, people with prediabetes in the Diabetes Prevention Program (DPP) lifestyle intervention who did not meet the year one weight loss goal, but did achieve the 150-minute per week activity goal had a 46% decrease in the incidence of diabetes (Hammon, et al., 2006). It is important to understand that physical activity reduces cardiometabolic risk with or without significant weight loss owing to numerous exercise-induced metabolic mechanisms (Carey, 2009; LaForge, 2011).

### **How to Implement the Key Recommendation**

Engage individuals and help them to be an active participant in their plan for increasing physical activity. Effective self-management is essential for people to successfully care for their chronic conditions (Battersby, et al, 2010).

- A. **Provide information to individuals in a neutral, nonjudgmental way that indicates that they have a choice, not that they “should” or “must” exercise** (Battersby, et al, 2010). Use the “5 A’s”, level of activation, stages of change, goal-setting, motivational interviewing, cognitive restructuring, empowerment, and other strategies to facilitate behavior change (Bodenheimer, et al, 2008). **Resources for some of these tools are:**

- **The 5 A’s (Assess, Advise, Agree, Assist, Arrange) model** can help physicians and other health care providers deliver brief, individually tailored physical activity messages to individuals.

**Action!** Information on this approach is available at:  
<http://www.aafp.org/aft/2008/0415/p1129.html> (Meriwether, 2008).

- **Individual activation level is linked to success in self-management.** The Patient Activation Measure (PAM) approach to diabetes coaching has been used specifically for people with diabetes with good results (Hibbard, 2009).

**Action!** To assess an individual’s Stage of Change or readiness for behavior change, consider this tool: <http://www2.medicine.wisc.edu/home/naa/readinessstages>

**Action!** To assess confidence level for setting goals, use the *Ultra-Brief Person Action Planning* tool (UB-PAP). <http://lphi.org/CMSuploads/IV.-CMI-Interview-Guide-96658.pdf>

**Action!** To assess individual behavior using the National Heart, Lung, and Blood Institute’s brief behavioral assessment (see page 32) in *The Practical Guide Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*:  
[http://www.nhlbi.nih.gov/guidelines/obesity/prctgd\\_c.pdf](http://www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf)

**Action!** For additional information refer to the behavior change recommendations in the *Indian Health Diabetes Best Practice Adult Weight Management* at the website:  
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsBestPractices>

- B. **Work with the individual to collaboratively set priorities and goal(s) for physical activity;** practice problem solving and working through barriers to being successful. Encourage small, incremental changes over time.
- C. **Assess the individual's confidence in achieving their goal;** encourage their success in making the change and applaud successes to build confidence and facilitate future change and the achievement of goals.
- D. **Target entire families and communities for physical activity lifestyle change,** not just individuals. Link individuals and families to helpful resources within the community and in the greater regional area, such as healthy weight programs, stress management training, youth fitness opportunities, and elder exercise/recreation programs. Connect individuals and families with wellness centers where they can find ongoing support for implementing lifestyle changes. (Battersby, et al, 2010)

**Action!** For additional information utilize the publication *Healthy Weight for Life: A Vision for Healthy Weight Across the Lifespan of American Indians and Alaska Natives* available at: [http://www.ihs.gov/healthyweight/documents/HW4L\\_TeamsLeaders.pdf%20-%202011-02-02](http://www.ihs.gov/healthyweight/documents/HW4L_TeamsLeaders.pdf%20-%202011-02-02)

## Working Together with your Community and Organization

Programs need to work on broader community and organizational support of the goals they are trying to achieve.

**Note!** Communities can take action to ensure that regular physical activity is an easy choice for their members. Communities can provide many opportunities for physical activity, such as walking trails, bicycle lanes on roads, fitness centers, sidewalks, and sports fields; partnerships can be established between organizations to share space for providing physical activity opportunities. Organizations or agencies such as early childhood programs, schools, places of worship, worksites, and community centers can provide opportunities and encouragement for physical activity as part of their wellness policies or to promote the health of their membership.

To be effective, physical activity promotion efforts should use an approach that is supported by the scientific literature. The IHS Division of Diabetes *Physical Activity Quick Guide Card Section* is updated and expanded regularly. Check the site often for new additions:

<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAQuickGuides>

The *Guide to Community Preventive Services* (often shortened to as 'Community Guide') published by the Centers for Disease Control and Prevention (CDC) reviews many community-level approaches to promote physical activity. Four strongly recommended strategies for physical activity are described: <http://www.thecommunityguide.org/index.html>

**Use** the 2011 publication *Healthy Weight for Life: A Vision for Healthy Weight Across the Lifespan of American Indians and Alaska Natives* as a resource that provides guidance for taking action and refers to the companion booklet, *Healthy Weight for Life: A Vision for Healthy Weight Across the Lifespan of American Indians and Alaska Natives, Actions for Communities, Individuals, and Families* for additional information.

[http://www.ihs.gov/healthyweight/documents/HW4L\\_TeamsLeaders.pdf%20-%202011-02-02](http://www.ihs.gov/healthyweight/documents/HW4L_TeamsLeaders.pdf%20-%202011-02-02)

### Team Notes:

## Community Recommendation

### Provide programs that emphasize learning lifelong skills for increased physical activity.

#### *Why?*

Research indicates that programs are most effective in achieving good diabetes management when they are sustained and focus on *both* nutrition *and* physical activity (Pate et al., 1995). Results from the Diabetes Prevention Program (DPP) show that weight loss, due to changes in food intake and physical activity, was the primary factor responsible for fewer new cases of diabetes among participants enrolled in the intensive lifestyle intervention (Hamman, et al., 2006).

Individuals can incorporate more physical activity into their daily activities. Housekeeping and yard work can be arranged to be a *Household-Domestic Chore Circuit Rx* or pedometers can be given to individuals, and *Pedometer Trekking* can be encouraged.

**Action!** These activities are described on the IHS Division of Diabetes website in the *Physical Activity Quick Guide Card Section*:

<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAQuickGuides>

#### **How to Implement the Recommendation**

##### **A. Program Planning:**

- A. **Conduct a community needs assessment** to find out what kinds of programs community members want and will attend.
- B. **Offer both individual and group programs in a variety of settings** (e.g., home, school, and community settings).
- C. **Develop employee wellness programs**, preferably team-based programs. Investigate employee benefits for wellness (e.g., exercise time during the workday and healthy living incentives), arrange programs around work schedules, and include an evaluation component (e.g., basic health screening, fitness testing, attitude surveys, and workplace satisfaction surveys).
- D. **Consider mindful exercise programs** such as *restorative yoga* and other forms of *yoga, gigong exercise, tai ch'i, Nia, meditation, and spiritual walking*. Mindful exercise programs couple low-moderate level exercise with a meditative/mindful component and are ideally suited for anyone, but particularly for those who are less ambulatory and/or who have multiple chronic conditions. (LaForge 2011b).
- E. **Action! Ideas for working with families with young children**, and for youth of all ages are available in *PAK*: <https://www.hncp.org/wst/hpdp/PAK/default.aspx>. Games and activities for youth ages eight-twelve and teens are included in the Youth Curricula from IHS/ Division of Diabetes:  
<http://www.ihs.gov/medicalprograms/diabetes/index.cfm?module=toolsCurricula>.

- F. **Promote *Native Pedometer Trekking* in your community or pueblo.** *Pedometer Treks* are premeasured trails ranging from 0.5 to 6 miles (1000 – 12,000 steps) through Native lands. The purpose of pedometer trekking is to provide short, medium, and longer distance walking/hiking treks so that your community has a wide variety of choices. Brief stops and activities along the *Trek* can be added and specific to Tribal heritage; *Treks* can traverse sacred sites and integrate incorporate spiritual teachings with physical activity. Each course would ideally include variable terrain (hills) to increase energy expenditure.

**Action! See** *Division of Diabetes Quick Guide Card Section on Physical Activity – Native Pedometer Trekking*:

<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAHowtoPedTrek>

- G. **For people at risk for diabetes, base the program on a curriculum** such as the National Institutes of Health (NIH) Diabetes Prevention Program *Lifestyle Balance* curricula, available at: <http://www.bsc.gwu.edu/dpp/manuals.htmlvdoc>, or the *IHS Physical Activity Kit (PAK): Staying on the Active Path in Native Communities... A Lifespan Approach* available at . <https://www.hncp.org/wst/hpdp/PAK/default.aspx>
- H. **For people with diabetes, use a curriculum** such as the *IHS Balancing Your Life and Diabetes Curriculum*. Pregnancy and nutrition information supplements for this curriculum are available. The curriculum and supplements can be accessed through the IHS Division of Diabetes Treatment and Prevention website: <http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsCurricula>

## B. Cultural Considerations and Resources

- 1) **Use storytelling, talking circles, and support groups** to increase awareness and offer opportunities for sharing experiences and successes related to physical activity (Hodge et al., 2002; Struthers et al., 2003).
- 2) **Use peer educators to strengthen links** with the community and expand local outreach.
- 3) **Action! A resource for traditional games and other activities** is the *IHS Physical Activity Kit (PAK): Staying on the Active Path in Native Communities...A Lifespan Approach* available at: <https://www.hncp.org/wst/hpdp/PAK/default.aspx>
- 4) **Indian Running: Native American History and Tradition** by Peter Nabokov (1981). This book provides a motivational and historical heritage of American Indian running stories and events from the 1800's to present.

## C. Partnering

- 1) **Form coalitions with all like-minded groups or organizations.**
- 2) **Work with the community** to develop youth teams for activities such as soccer and basketball.

- 3) **Work with local businesses**, Tribal programs, and departments, United National Indian Tribal Youth (UNITY) groups, early childhood programs, boys and girls clubs, schools, and after school programs to set wellness goals and the steps for accomplishing them.
- 4) **Partner with local schools** and work with physical education programs and the school wellness policy committee to encourage the development of lifetime fitness skills.

#### **D. Program Strategies**

- 1) **Develop community-based programs** that are innovative, informative, fun, adapted to the audience, focused on prevention, and culturally appropriate.
- 2) **Offer fitness programs** such as walking clubs, fun runs, bike rides, traditional games, exercise classes, community events, traditional dancing groups, and organized aerobic fitness and weight training programs. Ensure that programs represent various levels of intensity.
- 3) **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 as outlined the IHS Health Promotion and Disease Prevention's *Physical Activity Kit (PAK): Staying on the Active Path in Native Communities...a Lifespan Approach!* The goal of this comprehensive kit is to promote age and culturally appropriate physical activities across the lifespan in Native American communities to increase each person's time spent in moderate to vigorous physical activity. The kit has been successfully received in field testing in Tribal communities. <https://www.hncp.org/wst/hpdp/PAK/default.aspx>
- 4) **Start new activity classes and programs** to keep interest and participation levels high. Try classes for tai chi, chi gung, yoga, Pilates, traditional dancing, hip-hop dancing, and more. Recruit people to schedule and lead outdoor activities such as weekend hiking, tennis programs, canoeing, backpacking, snowshoeing, and cross-country skiing.
- 5) **Offer community events and projects** such as health fairs, youth wellness camps, diabetes camps, and Tribal community gardens to encourage and support active participation in physical activities.
- 6) **Focus on increasing healthy lifestyle behaviors** to promote good health, and do not limit focus to weight loss.
- 7) **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.

#### **Team Notes:**

## Organization Recommendations

### Organization Recommendation 1. Leadership identifies physical activity as a key priority for the organization.

#### *Why?*

Leadership can support measures to increase the amount and variety of physical activity available in the organization. Thirty minutes of moderate intensity physical activity on most days of the week can result in significant health benefits. A variety of physical activities (for flexibility, strength, and endurance) can be offered to improve health, mood, and productivity (2008 Physical Activity Guidelines for Americans).

#### **How to Implement the Recommendation**

- A. **Leadership acknowledges the importance of physical activity and accepts responsibility to plan for opportunities to increase movement in the community;** allocates necessary funding and resources; and supports, promotes, evaluates, and sustains programs in the community.
- B. **Physical activity initiatives are incorporated into objectives for** community wellness and performance standards for leadership.
- C. **Leadership communicates the priority of physical activity to community members** by establishing a multi-disciplinary team whose responsibility is health promotion and the implementation of wellness interventions and activities in the community.
- D. **Leadership sets example** of physical activity's importance through personal actions.

#### **Team Notes:**

## **Organization Recommendation 2. Leadership implements and coordinates programs that support and promote physical activity in the community.**

### ***Why?***

The support, involvement, and participation of leadership in physical activity programs and events are key elements for successful implementation of a physical activity best practice. This 'top-down' approach provides an essential example of leadership commitment to the physical activity best practice recommendations and helps maintain program sustainability, participant morale, and consistent attendance (CDC – NCHM, 2001).

### **How to Implement the Recommendation**

- A. **Have leaders become role models** through personal participation in community physical activity programs.
- B. **Promote physical activity by inviting community participation** through newsletters, Tribal newspapers, posters, flyers, blogs, internet communications, public service announcements (PSAs), etc.
- C. **Enlist the support of mid-level managers** to lead physical activity teams.
- D. **Invite friendly competition** for individuals and teams. Sponsor healthy rewards for all participants.
- E. **Hold high profile public meetings and celebrations** to commemorate your physical activity program.
- F. **Designate a lead employee or team who is willing and eager to plan and promote a community physical activity program.** Encourage assignment of specific roles and responsibilities for physical activity team members.
- G. **Facilitate training and continuing education opportunities** for health care providers, so they may assist and encourage physical activity prescriptions and ongoing patient education.
- H. **Provide community education to raise awareness** of the importance of increased physical activity in preventing or delaying the onset of diabetes or complications of diabetes.
- I. **Support the physical activity program** with the structure, coordination, time, budget, resources, and supplies needed to implement program activities:
  - 1) Identify a variety of funding sources.
  - 2) Promote general goals and specific objectives.
  - 3) Arrange venues for program activities.
  - 4) Provide organizational tools for program staff.
  - 5) Assist in acquisition of equipment.



6) Develop incentives and awards for program participants and for individuals who take initiative in starting up new fitness activities.

J. **Ensure availability of the physical activity program to all community members.**

K. **Target all age groups** (children/youths/adults/elders) for physical activity promotions.

L. **Promote your physical activity program in a variety of locales** throughout the community, such as schools, churches, clinics, Tribal centers, workplaces, and senior centers.

M. **Promote infrastructure development to ensure that regular physical activity is an easy choice** for people to make in the community. Help to create opportunities for physical activity in the 'built environment,' for example, walking trails, bicycle lanes, sidewalks, playgrounds, and team sporting areas such as soccer fields and basketball courts.

**Team Notes:**

## **Organization Recommendation 3. Leadership develops clear improvement goals, policies, and effective improvement strategies.**

### ***Why?***

For effective development, implementation, and sustainability, a best practice physical activity program should incorporate participation of organization leadership into policy development. Leadership can support and advocate for physical activity practice and guideline implementation, improve community access to resources, facilitate training, and function as a liaison between participating organizations. These leadership elements will ensure a broader base of support for physical activity program acceptance and integration into community functions. These elements—goals, policies, and other standards—also create a framework that promotes a cycle of continuous quality improvement (CQI) for the physical activity best practice program (Alberta Centre for Active Living, 2003, Partnership for Prevention, 2008).

### **How to Implement the Recommendation**

- A. **Leadership supports practice guidelines and recommendations** that are supported by scientific literature to improve diabetes outcomes.
- B. **Leadership ensures implementation of registries and systems** for follow-up that foster development of personal relationships and consequently improve participation in and adherence to physical activity prescriptions and counseling.
- C. **Leadership helps improve community access to physical activity programs and resources.**
- D. **Leadership provides and promotes training** and support for physical activity program maintenance.
- E. **Leadership establishes or enhances community liaison services** to help facilitate physical activity program delivery.

### **Team Notes:**

# **PART 3 Appendices, Tools, and Resources**

## Appendix A. Supplemental Information

### 1. Importance of a Physical Activity for Diabetes Prevention and Care Program

The epidemic of type 2 diabetes, which has spread around the globe, and includes American Indian and Alaska Native (AI/AN) communities, is associated with decreasing levels of activity and an increasing prevalence of obesity. Promoting physical activity is a crucial component of the prevention and management of type 2 diabetes and many other chronic diseases (2008 Physical Activity Guidelines for Americans; Grim, 2006; IHS, 2008).

For people with diabetes, a physically active lifestyle is a primary component of diabetes self-management. Physical activity improves strength and physical work capacity, improves insulin action, lowers blood glucose levels, improves body mass index (BMI), reduces depression, and reduces several risk factors for cardiovascular disease (CVD) (Colberg, 2010).

Exercise training in individuals with type 2 diabetes is feasible, well tolerated, and beneficial. An individualized exercise prescription offers an ideal opportunity to account for both cardiac and non-cardiac considerations in diabetes (Marwick et al., 2009).

For people at risk for developing diabetes, physical activity plays an important role in type 2 diabetes prevention. The Diabetes Prevention Program (DPP) demonstrated that lifestyle changes in adults, including improved nutrition and regular physical activity that resulted in approximately 5% weight loss (goal was 5-7%), can help prevent or delay the onset of diabetes with a 58% reduction in diabetes incidence. Results for participants ages 60 and older showed a reduction in risk for diabetes of 71%. Participants in the DPP lifestyle intervention group received intensive training in physical activity, diet, and behavior modification; they exercised at moderate intensity, usually by walking an average of thirty minutes a day, five days a week for a total goal of 150 minutes a week (Knowler et al., 2002). Results from the recent Strong Heart Study also indicated that even modest amounts of physical activity were associated with a significantly lower risk of diabetes with a study group of 1,651 American Indians (Fretts, 2009).

The greatest health benefits are likely to accrue when inactive persons begin even moderate amounts of regular activity or progress from low to moderate levels of fitness (Shiroma, 2010; Church, 2005).

### 2. Benefits and Risks of Implementing This Best Practice

**Health benefits of implementing this best practice** include strong scientific evidence of the following improvements (2008 Physical Activity Guidelines for Americans; Marwick et al., 2009; Sigal et al., 2004; Colberg, 2010):

- improvement in insulin sensitivity and glucose control, including A1C and estimated average glucose (eAG)
- reduced atherogenic lipoproteins, e.g., non HDL-C, LDL-C particle number, and VLDL-cholesterol
- improved cardiovascular and metabolic health biomarkers
- reduced risk of developing type 2 diabetes and metabolic syndrome
- reduced risk of all-cause mortality in men (with diabetes) and women, regardless of their BMI category

- increase in muscle mass and decrease in percent body fat (possibly without changes in total body weight)
- maintenance of body weight
- prevention of weight gain and regain after weight loss
- improved cardiorespiratory and muscular fitness
- reduced depression
- better thinking and problem solving function (in older adults)
- reduced risk of osteoporosis
- prevention of falls

**Potential harms of implementing this best practice:**

- People with diabetes who have high-risk complications should consult their health care provider and/or diabetes team before increasing usual patterns of physical activity or starting an exercise program.
- Providers should assess individuals for conditions that might contraindicate certain types of exercise or predispose them to injury, such as uncontrolled hypertension, recent acute coronary syndrome or myocardial infarction, hypoglycemia, severe autonomic neuropathy, severe peripheral neuropathy or history of foot lesions, and unstable proliferative retinopathy.
- Regular exercise improves overall health and reduces cardiovascular morbidity and mortality, however, individuals with, or at high-risk for CVD or diabetes, have up to a ten-fold increase in cardiovascular events during exercise, as compared to healthy persons. A statement on the assessment of cardiovascular risk factors prior to beginning a program of exercise is included under “Clinical Recommendations” in this document. The person’s age and previous physical activity level should be considered. Identification of areas of concern will allow the design of an individualized exercise prescription that can minimize risk to the person with diabetes (ADA, 2011).
- Depending on the individual’s level of CVD risk and the anticipated level of physical activity they should have a medical exam and, if necessary, an exercise ECG prior to engaging in higher levels of physical activity (ACSM, 2009). *See the Division of Diabetes website Quick Guide Card Section on Physical Activity - Exercise ECG Screening:*  
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAHowtoECGScreening> which details the requirements for a medical exam and exercise testing with ECG.
- All participants should be advised to stop physical activity/exercise immediately and seek medical attention as soon as possible if they experience chest pain, faintness, discomfort, or extreme shortness of breath during physical activity.

### **3. Health Questions Addressed by Best Practice**

This best practice addresses the following questions:

1. What are effective objective methods for assessing physical activity?
2. What are the effects of using evidence-based lifestyle approaches to prevent and treat diabetes?
3. What are the recommendations for physical activity across the lifespan?
4. What physical activity interventions effectively prevent and treat diabetes?
5. What are effective behavior change strategies for promoting self-care behaviors related to being physically active?
6. Why is it important to develop partnerships and engage community advocacy groups where people can work together to improve opportunities for physical activity in the community and effectively address diabetes prevention and care?

### **4. Sustaining a Physical Activity Programs for Diabetes Prevention and Care Program.**

It is common for new initiatives to require a certain level of maturity before care goals can be achieved. This maturational process may require more than a few years to produce the desired outcomes in a stable and self-sustaining fashion. Sustainability is a critical issue for programmatic success, and can be an elusive target. Here are some helpful tips for sustaining your program:

- Document all visits in RPMS or facility's data collections system. Develop spreadsheets and databases to efficiently collect, and evaluate measure data.
- Bill for diabetes self-management education (DSME); physical activity recommendations are a component of prevention counseling and are encouraged at every visit for individuals with type 2 diabetes.
- Collect participation data and exercise program results to support requests for future funding from available sources.
- Solicit Tribal funding to support physical activity programs and to ensure continuity of program if alternate funding sources are no longer available.
- Build partnerships with other wellness centers and physical activity programs within the Tribe, local communities, and region.
- Establish community advocacy efforts for physical activity.
- Incorporate traditional elements when designing fitness and sporting activities.

- Create and maintain safe and accessible facilities for physical activity both indoors and outdoors.
- Target different groups with age-appropriate programs for children, youth, adults, and elders. Likewise, get people exercising together in groups of women, men, couples, etc.
- Commit Special Diabetes Programs for Indians (SDPI) funds to establishing or expanding physical activity programs.
- Invest in physical activity resources and infrastructure by hiring certified fitness specialists.
- Have certified fitness specialists train or other fitness program leaders train other staff on technique, programs, and promotion and support of physical fitness.
- Ensure ongoing administrative support for committing personnel, resources, time, and space to physical activity education and exercise opportunities.
- Help Tribal leadership and community members understand the effectiveness of physical activity in delaying the onset or complications of diabetes. Obtain their commitment to physical fitness and establish Tribal wellness policies to encourage member participation.
- Report outcomes to stakeholders on a routine and regular basis.
- Have fun! When people enjoy doing healthy activities, they are more likely to continue.

## Appendix B. Key Measures Example.

**Remember—this is an example! Apply this process to your community using your data.**

**Physical inactivity is increasing.** Our health care center and community are concerned about the increasing number of people in the community who are sedentary and are not meeting their physical activity goals.

**Diabetes team takes action.** Our diabetes team talked about addressing this problem and how the diabetes team could be more involved. We read the Physical Activity for Diabetes Prevention and Care Best Practice and talked about the Key Recommendations.

**Identified sources of data.** Local data included:

- Audit data
- RPMS data
- Medical record data
- Activity attendance logs
  - o Data indicated:
    - 30% of people with diabetes were having their physical activity level assessed at each clinic visit.
    - 20% of people had documentation of specific physical activity interventions planned or in progress.
    - 50% of people with diabetes enrolled in fitness interventions were improving their fitness levels.

**Selected suitable Best Practice.** After thinking carefully about our goals and resources, and reviewing data, we decided the Physical Activity for Diabetes Prevention and Care Best Practice was a good fit for us. We chose to work on two of the Key Recommendations: 1) Assess physical activity level of all people with diabetes, and 2) Provide fitness interventions for all people with diabetes.

**Identified Target Population.** We decided to start implementing this Best Practice with all people with diabetes listed in our diabetes registry.

**Identified Program goals:**

- To increase the number of people with diabetes who have their physical activity level assessed.
- To improve the fitness level in people with diabetes.

**Identified SMART objectives based on our resources and data:**

- The percent of people with diabetes who had their level of physical activity assessed and documented in the past twelve months will increase from 30% to 50% by the end of the fiscal year.
- The percent of people with diabetes enrolled in a fitness intervention who showed improvement in fitness levels in the past twelve months will increase from 50% to 60% by the end of the current year.



- The percent of people who have met one or more of their physical activity behavioral goals in the past twelve months will increase from 20 to 40%.
- To increase the number of policies implemented by our program leadership for the promotion and expansion of opportunities for physical activity from baseline (0) to 2 policies by the end of the current year.

**Selected Key Measures.** We chose the corresponding Key Measures for these Objectives and Key Recommendations. Data will be collected and reviewed at baseline and mid-year.

**Table 2. Selected Key Measures**

	<b>A. Measure</b>	<b>B. Baseline or beginning value and date (collected prior to starting activities)</b>	<b>C. Most recent value and date (if applicable)</b>	<b>D. Data source</b>
1	* Percent of people with diabetes who had their physical activity level assessed and documented.	30% as of 1/01/2011	35% as of 4/05/2011	RPMS, Medical Records
2	* Percent of people with diabetes enrolled in a fitness intervention who improved their fitness levels.	50% as of 1/01/2011	56% as of 4/5/2011	RPMS, Medical Records, Activity Logs
3	*Percent of people with diabetes who met one or more of their physical activity behavioral goals in the past twelve months.	20% as of 1/1/2011	28% as of 4/05/2011	RPMS, Medical Records, Activity Logs
4	* Number of policies implemented by our program leadership for the promotion and expansion of opportunities for physical activity.	0 as of 1/1/2011	1 as of 4/05/2011	Meeting notes

\* Required Key Measure

## Appendix C. Improving Physical Activity Programs for Diabetes Prevention and Care in the Indian Health System

**Remember—this is an example! Ask these questions in your community, thinking about your local needs, resources, and tracking systems.**

There are four fundamental questions to ask as you plan and implement your best practice. These questions (and sample answers) are:

### 1. Who is the target population?

- Individuals at risk of diabetes or those with diabetes

### 2. What are you trying to accomplish by implementing this best practice?

- Improve physical activity programs and services for people with diabetes and at risk for diabetes to improve health outcomes.
- Increase the number of individuals living with diabetes or at risk for diabetes who participate in a minimum of 150 minutes of moderate-intensity physical activity each week.

### 3. How will you know if what you do makes things better?

- Collect and display data on an ongoing basis. Analyze the data and use it to plan next steps.
- Improved data results suggest that things are getting better. Examples:
  - Over one year, 85% of people with diabetes have received exercise education as evidenced in the annual *IHS Diabetes Care and Outcomes Audit*.
  - Within six months, there is a 10% increase in the number of people with diabetes or people at risk for developing diabetes who participate in an exercise program in the community and perform at least 150 minutes a week of moderate-intensity physical activity.
  - Within six months there is a 20% increase in the number of people with diabetes or prediabetes who have increased their daily walking step count by at least 50%, e.g., from 5,000 steps per day to at least 7500 or who have at least added 2500 steps per day to their previous daily average.

### 4. What can you do to make things better?

- Receive management support to improve access to physical activity services and programs for people with diabetes and at risk for developing diabetes.
- Diabetes team works together to increase the number of annual physical activity diabetes self-management education (DSME) visits.
- In a talking circle, ask how the community feels about an issue related to physical activity and diabetes prevention and care; ask what members think needs to be done about it before developing the “project.”
- Establish partnerships with organizations who share a common vision about diabetes prevention and care.

- The diabetes clinical and community health care team will provide community organizations and coalitions with technical assistance and support in identifying and securing resources as needed, and at all phases of the physical activity project.

## Appendix D. Monitoring Progress and Outcomes

The following strategies are examples of how results can be used to monitor the effects of implementing this best practice. Percentages can be used for measurement as long as a baseline number has been established. Baseline data can be established from the previous year's registry for people with diabetes or prediabetes.

- Documentation of assessment of physical activity and fitness levels:
  - Percentage of individuals from a chart audit who had their level of physical activity assessed and the appropriate exercise recommendation was made by multi-disciplinary care team members and documented using the IHS Patient Education Protocols and Codes or other method of documentation:
    - Results from the annual audit may be obtained from the local diabetes program or IHS health care facility. This information can be utilized as a “snapshot” of the level of diabetes in your community and provide data on the number of people with diabetes who received exercise instruction.
    - Results can be compared from year to year.
  - Documentation of changes in levels of physical activity by individuals:
    - Utilize *IHS Diabetes Care and Outcomes Audit* results for physical activity/exercise codes. Results of the diabetes audit are compared to results from the previous audit:
      - Results from the annual audit may be obtained from the local diabetes program or IHS health care facility.
      - Results from the previous year can be utilized to show changes in the number of people with diabetes participating in physical activity.
    - Data may also be collected and recorded in a database or on a spreadsheet developed by the community program. Examples of data that can be used to demonstrate the effects of an intervention include: an individual's total number of minutes per week of physical activity; documentation of contact hours and participant numbers for each activity that is provided; pre- and post-fitness testing results for strength, endurance and flexibility measures; changes in anthropometric measures, like waist circumference, or laboratory values; the number of people participating in physical activity programs at your facility, etc.:
      - Additional information on the development of spreadsheets and the collection and recording of data can be found in *Tools and Resources*, by contacting a Best Practice program listed under *Current Best Practice Programs* in this document, or by utilizing the services of the Area Diabetes Consultant.
- The incorporation of robust objective physical activity measures that can demonstrate change in individual and community physical activity:
  - Utilize records of minutes of moderate activity per week, or number of physical activity encounters/week, and/or functional achievements.
  - Use of *Pedometer Step Counts* or the *Household Circuit Activity Prescription Forms*.

**Action! See** IHS Division of Diabetes website in the *Physical Activity Quick Guide Card Section*:

<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAHowto>

- The incorporation of objective measures that demonstrate changes in an individual's body composition or fitness levels:
  - o Measures of change in percent body fat as evidenced by decrease in select skinfold measures, e.g., subscapular and/or tricep sites, for those who are overweight or obese.
  - o Monitor changes in laboratory/anthropometric measures for cardiometabolic risk factors: blood lipids, fasting plasma glucose, triglycerides, waist circumference, and blood pressure.
  - o Changes in fitness assessments for strength, flexibility, and/or aerobic capacity.
  - o Comparison of an individual's pre/post walking miles, pedometer steps or exercise minutes.
  - o Documentation as to participation in the number of exercise encounters, i.e., classes or events.

**Action!** For more information on how to assess body composition or fitness levels visit the IHS Division of Diabetes website in the *Physical Activity and Anthropometry Quick Guide Card Sections*:

<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsQuickGuides&nav=1>

- Participant and staff experiences with physical activity activities or programs and diabetes education services:
  - o These may be tracked using Individual/Group PCCs, Computerized Public Health Activities Data System (CPHAD – learn more in listing in the *Tools and Resources* section) chart audits, surveys, evaluations, questionnaires, pre-/post-assessments, targeted interviews, and documented on spreadsheets or in other written records. Tribes who have developed spreadsheets and data collection tools are listed under *Examples of Current Best Practice Programs* in this document.
  - o Examples:
    - Percentage of individuals at risk for diabetes, with prediabetes or diabetes who participated in a physical activity intervention program or event.
    - Percentage of individuals at risk for diabetes, with diabetes or prediabetes who achieved their self-identified physical activity -related clinical and/or behavioral goal(s).
- Presence and effectiveness of a functioning referral system between primary care providers and physical activity program team members (e.g., wellness center staff and fitness specialists):
  - o May be tracked using chart reviews or referral documents.

- Written documentation demonstrating evidence of the number of partnerships with facilities or providers that enhance the physical activity education and fitness opportunities being offered to individuals, families, and communities:
  - o This may include both formal and informal memorandums of agreement, attendance records, meeting minutes, media releases, documentation of work in the community promoting fitness, etc.:
    - Document the number of partnerships for physical activity programs at the beginning of the year (baseline data).
    - Set objectives for maintaining/increasing partners each year.
    - Compare the number of partnerships at the end of the year with the number from the beginning of the year.
  - o Number of health care team members providing physical activity education who receive training in appropriate interventions.
  - o Documentation of attendance at training and level of competency achieved.
- Written documentation of meeting minutes, policy and procedure changes, budget allocations, grant applications or other records that demonstrate accessing of additional funds, building of facilities, policy changes, planning for changes in the physical environment, accruing staff, etc that demonstrate commitment to support for increasing physical activity in the community.

# Tools and Resources

## Tools

### Pedometers

The following are three representative companies selling more reliable pedometers that can be used effectively in clinical settings:

Accusplit (<http://www.accusplit.com/>)

NewLifestyles (<http://www.new-lifestyles.com> )

Walk4Life (<http://www.walk4life.com> )

## Web-based Resources

**2008 Physical Activity Guidelines for Americans** (for health professionals and policymakers). The U.S. Department of Health and Human Services (DHHS) issued its first-ever comprehensive physical activity guidelines for Americans across the lifespan in 2008. The guidelines describe the types and amounts of physical activity that offer substantial health benefits to Americans from age six on:

<http://www.health.gov/paguidelines/guidelines/default.aspx>

**2008 Physical Activity Guidelines for Americans Toolkit for Organizations and Communities.** The toolkit resources include a user's guide and printed and CD-rom versions of fact sheets, posters, and FAQ sheets for organizations and communities. U.S. DHHS:

<http://www.health.gov/paguidelines/toolkit.aspx>

**5-2-1-0 Pediatric Obesity Clinical Decision Support Chart.** Flipchart and resources from the American Academy of Pediatrics provide health care team members practical support and guidance to help improve care and outcomes for overweight children.

[https://www.nfaap.org/netforum/eweb/dynamicpage.aspx?webcode=aapbks\\_productdetail&key=3ffed110-2471-40f3-9547-61666fa5b6ed](https://www.nfaap.org/netforum/eweb/dynamicpage.aspx?webcode=aapbks_productdetail&key=3ffed110-2471-40f3-9547-61666fa5b6ed)

**Administration on Aging.** The AoA Evidence-Based Disease Prevention Program provides examples of how community-based organizations deliver low-cost evidence-based physical activity programs that benefit older adults and help them to thrive in their communities.

<http://www.aoa.gov/>

[http://www.aoa.gov/AoAroot/Press\\_Room/Social\\_Media/Widget/Statistical\\_Profile/2010/5.aspx](http://www.aoa.gov/AoAroot/Press_Room/Social_Media/Widget/Statistical_Profile/2010/5.aspx)

**Alliance for a Healthier Generation.** The American Heart Association and the William J. Clinton Foundation have joined together to form this alliance to combat the spread of childhood obesity and the serious diseases associated with it, such as heart disease and diabetes.

<http://www.healthiergeneration.org>

**American Academy of Pediatrics.** *A Parent's Guide to Childhood Obesity: A Roadmap to Health* book provides solutions and resources for parents and other caregivers who are concerned about childhood obesity and overweight children and for those parents and others who simply want to learn how to help children lead healthier, more active lives.

<http://ebooks.aap.org/product/parentss-guide-to-childhood-obesity-road-map-health>

<http://www.aap.org>

**American Alliance for Health, Physical Education, Recreation, and Dance.** AAHPERD's mission is to promote and support leadership, research, education, and best practices in the professions that support creative, healthy, and active lifestyles. Many resources on integrating physical activity into the school day and a *Teacher Toolbox* archive. <http://www.aahperd.org> AAHPERD is home to the *Head Start Body Start National Center for Physical Development and Outdoor Play (HSBS)* which is dedicated to promoting physical activity, outdoor play, and healthy lifestyles for young children and their families. This website is full of resources and ideas to help bring active play and meaningful movement to Head Start or early childhood programs. Parents will also find activities and tools to inspire creative, movement-based play and healthy food choices at home. <http://www.aahperd.org/headstartbodystart/>

**American College of Sports Medicine.** ACSM's Guidelines for Exercise Testing and Prescription. (6th ed., Whaley MH senior editor). Philadelphia: Lipincott Williams & Wilkins, 2009.

**American Council for Exercise. Professional and consumer education.** Accredited exercise specialist certification programs. <http://www.acefitness.org>

**American Council for Fitness and Nutrition.** The American Council for Fitness and Nutrition (ACFN) is a nonprofit organization that brings together food and beverage companies, associations, and health and nutrition advocates to work toward viable long-term solutions to the nation's obesity epidemic. ACFN represents a diverse group of organizations and is guided by an Advisory Board of experts in the fields of nutrition, physical activity, and behavior change. The council offers some quick tips for individuals making lifestyle changes. <http://www.acfn.org>

**American Diabetes Association (ADA).** The mission of the ADA is to prevent and cure diabetes and to improve the lives of all people affected by diabetes. To fulfill this mission, the ADA funds research, publishes scientific findings, provides information and other services to people with diabetes, their families, health care professionals, and the public, and advocates for scientific research and for the rights of people with diabetes. The ADA is the nation's leading nonprofit health organization and conducts programs in all 50 states and the District of Columbia, reaching more than 800 communities. Resources on physical activity are available at: <http://www.diabetes.org/food-and-fitness/> and DSME materials: <http://www.diabetes.org/assets/pdfs/1-getting-started.pdf>; <http://www.diabetes.org/assets/pdfs/2-getting-motivated.pdf>; <http://www.diabetes.org/assets/pdfs/6-be-active-but-how.pdf>

**Bam! Body and Mind.** Designed for kids 9–thirteen years old, BAM! Body and Mind gives them the information they need to make healthy lifestyle choices from the CDC. <http://www.bam.gov>

**The Cardiometabolic Risk Initiative.** A national effort to encourage health care providers to focus on the prevention, recognition, and treatment of all risk factors for type 2 diabetes and heart disease. Cardiometabolic risk factors are good indicators of your patients' overall risk of developing heart disease and type 2 diabetes. <https://prd-ada-app01.imc2.com/for-health-professionals-and-scientists/cardiometabolic-risk.jsp>

**CATCH PE.** - Coordinated School Health is a process which brings a school and community together to teach children to be healthy for a lifetime. Effective coordinated school programs reinforce positive healthy behaviors throughout the day and makes clear that good health and learning go hand in hand. <http://www.catchinfo.org/index.asp>



**CDC - Division of Nutrition, Physical Activity, and Obesity (DNPAO).** The DNPAO physical activity Website provides resources for program planners, health professionals, and other community members. Links to the U.S. National Physical Activity Plan, and *Growing Stronger – Strength Training for Older Adults*, and *Physical Activity for a Healthy Weight*. <http://www.cdc.gov/nccdphp/dnpa/physical/index.htm>

**Center for Weight and Health.** The Center at UC Berkley conducts research on the prevention of childhood obesity. The website has a number of relevant reports on research conducted by the Center and useful tools for those working on the issue of children’s weight. <http://www.cnr.berkeley.edu/cwh/>

**Computerized Public Health Activities Data System (CPHAD)** - program for documenting public health activities by clinicians and other staff involved with public health activities; uses standard RPMS package and GUI interface; can be tied in with GRPA. Reports can be generated regarding productivity, communities served, number of people served, what was taught, chronic disease education given, etc. Mary Brickell is the contact person - work phone# 503-326-7434 or [mary.brickell@ihs.gov](mailto:mary.brickell@ihs.gov)

The **Community Guide** from The Centers for Disease Control and Prevention (CDC) provides information on evidence-based recommendations for programs and policies to promote community health. includes systematic reviews of interventions in the following areas: campaigns and informational approaches, behavioral and social approaches, and environmental and policy approaches. <http://www.thecommunityguide.org/index.html>

The **Community Health Promotion Handbook: Action Guides to Improve Community Health, 2008**. CDC's Healthy Communities Program, in collaboration with Partnership for Prevention® has developed step-by-step Action Guides that provide communities with “how-to” guidance for implementing the following four effective community-level health promotion strategies—identified in *The Guide to Community Preventive Services*—related to diabetes self-management and physical activity:

1. *Establishing a Community-Based Diabetes Self-Management Education Program for Adults with Type 2 Diabetes to Improve Glycemic Control.*
2. *Facilitating Development of a Community Trail and Promoting Its Use to Increase Physical Activity Among Youth and Adults.*
3. *Working with Schools to Increase Physical Activity among Children and Adolescents in Physical Education Classes.*
4. *Establishing a Community-Based Walking Group Program to Increase Physical Activity among Youth and Adults.*

<http://www.cdc.gov/healthycommunitiesprogram/tools/index.htm#chph>

**The Community Tool Box - 2009.** This online tool kit is the “gold standard” for community-based skill-building information. Created and maintained by the Kansas Work Group on Health Promotion and Community Development, the core of the site is the “how-to tools,” including practical information for community building – for example, community action and intervention, leadership skills, and program evaluation. Available online at: <http://ctb.ku.edu/en/tablecontents/>

**The Cooper Institute.** The Cooper Institute (CI), established in 1970, is a 501.c.3. nonprofit research and education organization dedicated globally to preventive medicine. The Institute's founder, Kenneth H. Cooper, M.D., M.P.H., the "Father of Aerobics," was an Air Force physician who became interested in the role of exercise in preserving health. When he published his first best seller, *Aerobics*, in 1968, he introduced a new word and was the spark for millions to become active. <http://www.cooperinstitute.org>

**Creating Strong Diabetes Programs: Plan a Trip to Success** from the IHS Division of Diabetes Treatment and Prevention (DDTP) is a workbook (with online training course) on effective program planning and evaluation. [Internet]. [July 2009]. Available from: <http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Training/WebBased/Basics/Creating/Workbook.pdf>

**Diabetes Education in Tribal Schools (DETS) Program** – a curriculum for use by teachers and other educators working with children and youth in grades K–12. This curriculum is part of a national effort to decrease the incidence and improve the care of type 2 diabetes among American Indians and Alaska Natives. The curriculum was developed through collaboration with the National Institutes of Health (NIH), the Centers for Disease Control (CDC), American Indian Tribal Colleges and the IHS Division of Diabetes (DDTP), 2008. <http://www.ihs.gov/medicalprograms/diabetes/index.cfm?module=toolsCurricula>

The **Diabetes Prevention Program (DPP)** website contains study documents on the research aspects of the DPP. <http://www.bsc.gwu.edu/dpp/> In addition, the site provides access to the comprehensive *Lifestyle Balance* curriculum that was used for people with prediabetes enrolled in the DPP. <http://www.bsc.gwu.edu/dpp/manuals.htmlvdoc>

**Dietary Guidelines for Americans, 2005.** This document supplies the background and basis for the 2010 recommendations. Chapter 4 - *Physical Activity* provides an overview of physical activity in the US and the groundwork for the 2008 Physical Activity Guidelines for Americans. <http://www.health.gov/dietaryguidelines/dga2005/document/>

**Dietary Guidelines for Americans, 2010.** This website provides the complete report of the Report of the Dietary Guidelines Advisory Committee. *PART D Science Base Section 1: Energy Balance and Weight Management* provides an extensive review of dietary intake and physical activity in the United States. <http://www.cnpp.usda.gov/DGAs2010-DGACReport.htm>

**Exercise is Medicine** is a nationwide campaign initiated by the American College of Sports Medicine (ACSM) whose objective is "To make physical activity and exercise a standard part of a disease prevention and treatment medical paradigm in the United States." The site offers resources for health care providers, health and fitness professionals, and the general public. You can access these resources at: <http://www.exerciseismedicine.org>

### **Federal Highway Administration**

The Bicycle and Pedestrian program provides resources to help promote bicycle and pedestrian transportation use, safety, and accessibility. Resources include a listing of State Pedestrian and Bicycle Coordinators and information on funding sources and legislation. This website also links to the Pedestrian and Bicycle Information Center, which provides information on engineering, advocacy, education, and enforcement topics. <http://www.fhwa.dot.gov/environment/bikeped/index.htm>

**Fitnessgram.** Is a fitness assessment and reporting program for youth, first developed in 1982 by The Cooper Institute in response to the need for a comprehensive set of assessment procedures in physical education programs. The assessment includes a variety of health-related physical fitness tests that assess aerobic capacity; muscular strength, muscular endurance, and flexibility; and body composition. Scores from these assessments are compared to Healthy Fitness Zone(r) standards to determine students' overall physical fitness and suggest areas for improvement when appropriate. <http://www.fitnessgram.net/home>

**First 5. Nutrition & Physical Activity Resources for Ages 0-5 and Their Families.** This resource for ages 0-5 physical activity programs from a California state initiative. Strengths, limitations and implementation strategies are given for several different curriculums and resources. They also provide links to several organizations serving this age group. <http://www.f5ac.org/files/Nutrition%20and%20Physical%20Activity%20Report.pdf> Resources on Nutrition and Exercise for children 0-5 are also available at <http://www.cafc.ca.gov/Help/nutrition.asp>

**Healthier Worksite Initiative.** This CDC initiative provides health promotion program planners with information on a variety of health promotion programs, including physical activity promotion and fitness center design and management. The website also links to resources from other nonprofit and educational organizations through the Quick Resources section. <http://www.cdc.gov/nccdphp/dnpao/hwi/index.htm>

**HealthyPeople.gov.** *Healthy People* is a set of goals and objectives with ten-year targets designed to guide national health promotion and disease prevention efforts to improve the health of all people in the United States. The Physical Activity objectives for Healthy People 2020 reflect the strong state of the science supporting the health benefits of regular physical activity among youth and adults, as identified in the 2008 PAG. The Physical Activity objectives for 2020 highlight how physical activity levels are positively affected by structural environments, such as the availability of sidewalks, bike lanes, trails, and parks, and legislative policies that improve access to facilities that support physical activity. New to Healthy People 2020 are objectives related to policies targeting younger children through physical activity in childcare settings, television viewing and computer usage, and recess and physical education in the Nation's public and private elementary schools. This site is a useful tool for finding evidence-based information and recommendations for Physical Activity: <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=33>

**Healthy Start Company.** The Healthy Start Company was founded in 2001 to provide early educational solutions that promote positive healthy behaviors to help prevent childhood obesity and other risk factors for long-term illnesses later in life. These timely and exemplary programs are extensively researched, evaluated, and published in over 20 professional journals. The programs are designed to be engaging and fun for young children with stories, games, songs, and rhymes. They are adaptable to a variety of preschool environments and easy to integrate into any early childhood education curriculum. This curriculum is currently being used in over 21 states throughout the nation. <http://www.healthy-start.com>

**Healthy Weight for Life: A Vision for Healthy Weight Across the Lifespan of American Indians and Alaska Natives** - Actions for Health Care Teams and Leaders, IHS, 2011. This resource provides guidance for taking action and refers to the companion booklet, "Healthy Weight for Life: A Vision for Healthy Weight Across the Lifespan of American Indians and

Alaska Natives, Actions for Communities, Individuals, and Families,” for additional information. [http://www.ihs.gov/healthyweight/documents/HW4L\\_TeamsLeaders.pdf](http://www.ihs.gov/healthyweight/documents/HW4L_TeamsLeaders.pdf)

**Healthy Youth!** The physical activity section of the CDC’s Division of Adolescent and School Health website provides resources that can increase the capacity of the nation’s schools to promote lifelong physical activity. <http://www.cdc.gov/HealthyYouth/physicalactivity>

**Healthy Youth for a Healthy Future.** The Office of the Surgeon General promotes this HHS childhood overweight and obesity prevention initiative. The website provides resources to help caregivers, schools, and communities keep youth active and to make healthy choices. <http://www.surgeongeneral.gov/obesityprevention/index.html>

**Human Kinetics.** Senior Fitness Test manual - Up until now, most physical fitness tests have been geared to younger audiences. The Senior Fitness Test is an answer to the need for a simple, easy-to-use battery of test items that assess the functional fitness of older adults. The test is safe and enjoyable for older adults, it meets scientific standards for reliability and validity, and it has accompanying performance norms based on actual performance scores of over 7,000 men and women between the ages of 60 and 94. The Senior Fitness Test Manual provides the theoretical base for the test. It also includes the developmental procedures and provides complete information on administering and scoring the test and providing feedback to test participants about their results. It also includes instructions on organizing and testing groups of older adults.

The appendix has reproducible sample forms, charts, tables, and posters for instructors to use in their programs. <http://www.humankinetics.com/products/all-products/senior-fitness-test-manual>

**IHS Division of Diabetes Curricula** were written and reviewed by health care professionals from IHS, Tribal, and Urban Indian health care settings with expertise in diabetes treatment, prevention and education. They include teaching outlines and lessons, visual aids and resource directories, and are easily adaptable to suit individual patient and local community needs. <http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsCurricula>

***Youth Staying Healthy: A Diabetes Prevention Curriculum for Youth Ages 8-12*** – A curriculum for health professionals working in American Indian and Alaska Native Communities that provides a framework for diabetes prevention education for children ages eight to twelve who are at risk for diabetes. It also includes ideas for engaging parents and caregivers. The curriculum provides basic information about health and wellness, not about diabetes.

***Youth Staying Healthy: A Type 2 Diabetes Curriculum for Teens*** – This curriculum provides health professionals working with American Indian and Alaska Natives with a framework for diabetes education for adolescents, ages 13-18; can be used one-on-one or in group settings. It provides basic information about type 2 diabetes and general wellness for adolescents.

***Balancing Your Life and Diabetes Curriculum*** – This core diabetes curriculum, developed by the IHS Division of Diabetes, provides information and lessons plans about type 2 diabetes, diabetes self-management, and general healthy lifestyle practices. This

comprehensive curriculum addresses the National Standards for Diabetes Self-Management Education

***Balancing Your Food Choices: Nutrition and Diabetes*** – A supplement to the Balancing Your Life and Diabetes (BYLD) Curriculum that addresses nutrition and diabetes. This supplement is intended for use with the BYLD Curriculum.

***Beautiful Beginnings: Pregnancy and Diabetes*** – A supplement to the Balancing Your Life and Diabetes (BYLD) Curriculum that addresses pregnancy and diabetes, including pre-gestational and gestational diabetes. This supplement is intended for use with the BYLD Curriculum.

### **Curricula Developed in Collaboration**

***Honor the Gift of Food*** – This workbook can help individuals and their families choose food for good health, save money when buying foods, and try recipes that are low in fat and sugar. Note: originally developed by the Portland Area Diabetes Program in cooperation with the Northwest Indian College Nutrition Assistant Program and recently updated by the Division of Diabetes. The material was originally adapted from *Eating Right is Basic* Program materials, Washington State Cooperative Extension Services, USDA.

**IHS/ Division of Diabetes Website – Quick Guide Card Sections on Physical Activity and Anthropometry.** The set includes an overview, resources, and several 'How To' short video tutorials at <http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsQuickGuides>

**IHS Standards of Care for Adults with Type 2 Diabetes.** Updated clinical guidelines for providers. Revised March 2009. <http://www.ihs.gov/MedicalPrograms/Diabetes>

**IHS RPMS Health Factor Physical Activity Levels.** To access documentation guide for RPMS Health Factor and Exam Codes: [http://www.ihs.gov/RPMS/PackageDocs/bjpc/bjpc0200.05o\\_aum.pdf](http://www.ihs.gov/RPMS/PackageDocs/bjpc/bjpc0200.05o_aum.pdf)

**Just Move It!** This is a national campaign to promote physical activity for American Indians and Alaska Natives. Use this website to learn how to start an activity in your own community, share information about ongoing programs, contribute stories, and enter information in Just Move It's calendar. <http://justmoveit.org/jmi/home.htm>

**Let's Move!** A comprehensive initiative, launched by the First Lady, dedicated to solving the problem of obesity within a generation so that kids born today will grow up healthier and able to pursue their dreams. This website contains tools, resources, and action steps to increase activity levels, improve nutrition, and more at <http://www.letsmove.gov/>

**Move!** A national weight management program designed by the VHA National Center for Health Promotion and Disease Prevention (NCP), a part of the Office of Patient Care Services, to help veterans lose weight, keep it off, and improve their health. Great source for educational materials <http://www.move.va.gov/>

**National Association for Sports and Physical Education** - NASPE's mission is to enhance knowledge, improve professional practice, and increase support for high quality physical education, sport, and physical activity programs. <http://www.aahperd.org/naspe>

**National Resource Center on Native American Aging (NRCNAA).** The mission is to identify and increase awareness of evolving Native elder health and social issues. The NRCNAA's vision is to empower Native people to develop community based solutions. *Well-Balanced* is a group program designed specifically for Native American elders that combines exercise, information, and social interaction to help elders remain active and independent as long as possible. <http://ruralhealth.und.edu/projects/nrcnaa/>

The **National Diabetes Education Program (NDEP)** is a partnership of the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and more than 200 public and private organizations. NDEP provides many resources and tools tailored for American Indian and Alaska Native communities, including “We have the power to prevent diabetes” public service ads, posters, and fact sheets and the “Move It!” toolkit to promote physical activity in American Indian and Alaska Native (AI/AN) schools. The toolkit encourages increased physical activity in the school setting to help reduce diabetes risk among American Indian and Alaska Native teens. The kit features customizable resources, along with an extensive CD-rom with supporting materials and references. The kit highlights AI/AN youth engaging in physical activity and includes posters, fact sheets, resource lists, and stories from schools that have used the materials to start “Move It!” programs. [http://www.ndep.nih.gov/media/moveit\\_school\\_kit.pdf](http://www.ndep.nih.gov/media/moveit_school_kit.pdf)

**National Diabetes Information Clearinghouse, NIDDK.** The Clearinghouse offers an easy-to-read publication, “What I need to know about Physical Activity and Diabetes.” March 2008 [http://diabetes.niddk.nih.gov/dm/pubs/physical\\_ez/](http://diabetes.niddk.nih.gov/dm/pubs/physical_ez/)

**National Initiative for Children’s Healthcare Quality (NICHQ).** This action-oriented organization is dedicated to achieving a world in which all children receive the health care they need. NICHQ’s current initiatives focus on prevention and treatment of childhood obesity and improving perinatal care. <http://www.nichq.org>

**NIH Senior Health.** The National Institutes of Health provides aging-related health information for seniors on a variety of topics, including exercise and the causes, and prevention of balance problems and falls. This website also contains a training tool for teaching elders how to help older adults find reliable, up-to-date online health information on their own. <http://nihseniorhealth.gov/>

**National Park Service.** The Rivers, Trails, and Conservation Assistance Program has helpful tools that provide resources and information on trail and greenways programs, and trail development. The site has a toolbox of materials on how to turn a community dream of building a trail or revitalizing a park or open space into reality. [http://www.nps.gov/ncrc/programs/rtca/helpfultools/ht\\_publications.html](http://www.nps.gov/ncrc/programs/rtca/helpfultools/ht_publications.html)

**National Society of Physical Activity Practitioners in Public Health.** The mission of the society is to elevate physical activity as a public health priority through engagement, education, and expansion of partnerships. <http://www.nspapph.org>

**Nike N7 - Native American Business Program.** Contact: Tessa Sayers, US Business Manager, NIKE N7 Programs, Phone: 503-532-1375, Email: [tessa.sayers@nike.com](mailto:tessa.sayers@nike.com)

***Physical Activity Evaluation Handbook.*** This CDC resource outlines the six basic steps of program evaluation and illustrates each step with physical activity program examples. Appendices provide information about physical activity indicators, practical case studies, and additional evaluation resources.

[http://www.cdc.gov/nccdphp/dnpa/physical/health\\_professionals/interventions/handbook.htm](http://www.cdc.gov/nccdphp/dnpa/physical/health_professionals/interventions/handbook.htm)

**Physical Activity for Everyone.** This CDC online source for credible information includes information on amount of physical activity, guidelines for adding more and a chart detailing how to get the recommended amount of activity in a week. A video on getting started is also included. <http://www.cdc.gov/physicalactivity/everyone/getactive/index.html>

***Physical Activity Kit (PAK): Staying on the Active Path in Native Communities...a Lifespan Approach!*** Developed by the IHS Health Promotion and Disease Prevention program and the University of New Mexico, Albuquerque, New Mexico, 2009. The goal of the comprehensive kit is to promote age and culturally appropriate physical activities across the lifespan in Native American communities to increase each person's time spent in moderate to vigorous physical activity. The kit has been successfully received in field testing in Tribal communities. <https://www.hncp.org/wst/hpdp/PAK/default.aspx>

**Physical Activity Kit (PAK) Training** is intended for practitioners and facilitators of health promotion in American Indian and Alaska Native communities to learn how to implement, evaluate, and disseminate the evidence-based physical activity interventions in PAK. The training explains and demonstrates several physical activity programs developed by the University of New Mexico Prevention Research Center, such as Pathways (Prevention of Obesity in American Indian School Children), which includes modified American Indian games, exercise breaks, mountain pathways challenge, a race, Healthy Body Awareness, and Native American Dance Overview. The programs cover strength-building, flexibility, and aerobics and are geared for all ages across the lifespan (such as Head Start youth, elementary through high school youth, young adults, adults, older adults, and families).

<http://www.cdc.gov/prc/training/practitioners/physical-activity-kit-facilitator-training.htm>

The **President's Challenge Program Adult Fitness Test.** The fitness test is for adults eighteen years and older who are in good health. The test measures aerobic fitness, muscular strength and endurance, flexibility, and body composition. <http://www.adultfitnessstest.org/>

The **President's Council on Fitness, Sports, and Nutrition (PCFSN).** This volunteer committee acts as a catalyst to promote healthy lifestyles through fitness, sports and nutrition programs and initiatives that educate, empower, and engage Americans of all ages, backgrounds and abilities. <http://www.fitness.gov/about-us/index.html>

***Preventing Falls among Older Adults.*** This resource from the CDC promotes physical activity as part of the approach to reducing falls and fall-related injuries among older adults.

<http://www.cdc.gov/HomeandRecreationalSafety/Falls/preventfalls.html#Compendium>

***Quick Guide to Healthy Living.*** This U.S. DHHS website includes physical activity information and tools for consumers on making physical activity a regular part of daily life. Topics include "The Basics" of physical activity, tips to help them "Get Active" and information about how to "Stay Active". <http://www.healthfinder.gov/getactive>

**Rapid Assessment of Physical Activity (RAPA)** physical activity assessment tool from the University of Washington Health Promotion Research Center, Seattle, 2009.

**Robert Wood Johnson Foundation.** Leadership for Healthy Communities Action: Advancing Policies to Support Healthy Eating and Active Living Strategies Toolkit. May 2009. The toolkit includes strategies for policymakers to increase opportunities for physical activity by creating a built environment that supports active transportation (walking, biking), open space, and parks, and quality physical activity in and around schools.

[http://www.leadershipforhealthycommunities.org/images/stories/toolkit/lhc\\_action\\_strategies\\_toolkit\\_0900504final.pdf](http://www.leadershipforhealthycommunities.org/images/stories/toolkit/lhc_action_strategies_toolkit_0900504final.pdf)

**Small Step.** This U.S. Department of Health and Human Services website provides information about the small steps that adults and children can take to discover a healthier self.

<http://www.smallstep.gov>

**SPARK PE.** "SPARK is a research-based, public health organization dedicated to creating, implementing, and evaluating programs that promote lifelong wellness. SPARK strives to improve the health of children and adolescents by disseminating evidence-based physical activity and nutrition programs that provide curriculum, staff development, follow-up support, and equipment to teachers of Pre-K through 12th grade students."

<http://www.sparkpe.org/physical-education>

**Top End Sports.** This resource offers a wide range of information for sports-minded people and/or exercise professionals who work with athletes, including fitness testing and fitness training. Access these resources at: <http://www.topendsports.com>

**The Tribal School Zone Safety Video and Toolkit** from the U. S. Department of Transportation (DOT) -. A "walkable" environment naturally supports children as they play, exercise, and go to school. Two videos and pedestrian safety materials educate children and adults on safe walking on sidewalks, along roads and streets, at bus stops and through parking lots. "Safety Doesn't Happen by Accident" — the eight minute video primarily targets AI/AN children nine to twelve years old in classroom or community settings. "Pedestrian Safety: A New Tradition" — The ten minute video produced by Tribal leaders is for Tribal/community elders, parents/guardians of school-aged children, school board members, policymakers and older teens. Use for a general audience or through the media and public service announcements.

<http://flh.fhwa.dot.gov/programs/irr/safety/school-zones.htm>

This **U.S. Department of Agriculture (USDA)** site provides physical activity information for families. [http://www.nal.usda.gov/fnic/foodstamp/Topics/physical\\_activity.html](http://www.nal.usda.gov/fnic/foodstamp/Topics/physical_activity.html)

**USDA TEAM Nutrition.** *Team Nutrition* is an initiative of the USDA Food and Nutrition Service to support the Child Nutrition Programs through training and technical assistance for foodservice, nutrition education for children and their caregivers, and school and community support for healthy eating and physical activity. <http://www.fns.usda.gov/tn>

This **U.S. Department of Health and Human Services/Office of Disease Prevention and Health Promotion** website provides information and resources about many topics on health for youth. <http://www.healthfinder.gov/kids>



**U.S. National Physical Activity Plan.** The Plan is a comprehensive set of policies, programs, and initiatives that aim to increase physical activity in all segments of the American population. The Plan aims to create a national culture that supports physically active lifestyles. Its ultimate purpose is to improve health, prevent disease and disability, and enhance quality of life. Recommendations are organized in eight societal sectors: Business and Industry; Education; Health Care; Mass Media; Parks, Recreation, Fitness and Sports; Public Health; Transportation, Land Use, and Community Design; Volunteer and Non-Profit.  
<http://www.physicalactivityplan.org/>

The **VERB Campaign** developed by the Centers for Disease Control and Prevention is designed to encourage 'tween-aged American Indian and Alaska Native youth to participate in regular physical activity. <http://www.cdc.gov/YouthCampaign/>

**Walkable Communities, Inc.** provides policy information for improving the physical activity environment. <http://www.walkable.org>

**Walk Your Way to Health.** This fifteen week pedometer tracking sheet illustrates how to establish a baseline (average daily steps), and then how to gradually increase steps. The sample log sheet to track progress can be accessed at: <http://lancaster.unl.edu/FOOD/walk.pdf>

**We Can! (Ways to Enhance Children's Activity and Nutrition)** is a national movement designed to give parents, caregivers, and entire communities a way to help children eight to thirteen years old achieve and stay at a healthy weight. The National Heart, Lung, and Blood Institute (NHLBI) provides this website. <http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/>

**Zero to Three.** Movement, dance, and active play can support infants and toddlers growing physical awareness and excitement about the world. Physical activity of all kinds stimulates young children's development in many ways. Learn more by downloading this free resource: *On the Move: The Power of Movement in Your Child's First Three Years* at <http://www.zerotothree.org/child-development/play/>

## Examples of Current Best Practice Programs

### Bay Mills Indian Community

Bay Mills Community College  
12214 West Lakeshore Drive  
Brimley, Michigan 49715  
Contact: John Krentz, Health & Fitness Department Chair  
Phone: (906)-248-9009 or -9010 Email: [jkrentz@bmcc.edu](mailto:jkrentz@bmcc.edu)

This Tribal Community College Fitness Center provides services for the students and community members. Strength and aerobics training equipment, classes and weight management program combined with a community gardening project.

- ✓ Fitness and Wellness Centers
- ✓ Gardening

### Eastern Band of Cherokee Indians

North Carolina  
Contact: Jeff Bachar, Program Manager  
Phone: 828-497-1970  
Email: <JEFFBACH@nc-chokeee.com>

The Cherokee Choices program includes three main components: elementary school mentoring, worksite wellness for adults, and church-based health promotion. Participants in the worksite wellness program have met dietary and physical activity goals, had reductions in body fat, and expressed enthusiasm for the program. A sub-coalition has been formed to expand the worksite wellness component and link prevention efforts to health care cost reduction.

- ✓ Employee Wellness
- ✓ School-based Programs
- ✓ Working with Groups/Large Activity Planning

### Indian Health Care Resource Center of Tulsa

**550 S. Peoria**  
Tulsa, OK 74120  
Contact: Nancy O'Banion, MS, Director, Health Education & Wellness  
Phone: 918-382-2220 Email: <http://www.ihcrc.org/>

The Indian Health Care Resource Center of Tulsa provides School-Based Programs, including after School programs at two school sites, which provide at least 45 minutes of physical activity plus nutrition lessons, and CATCH (Coordinated Approach to Child Health) in twelve Tulsa elementary schools.

- ✓ After School Programs
- ✓ School-based Programs
- ✓ Youth Camps

### Kayenta Health Center, Inscription House Health Center & Dennehotso Health Station

Contact: Molly-Jayne Bangert, BSN RN CDE,  
Kayenta Service Unit Diabetes Coordinator  
Betty Redhair, Fitness Specialist  
Phone: (928) 274-3245 (24/7 cell w/voice mail)  
Fax: (928) 697-4145 E-mail: [Molly-Jayne.Bangert@ihs.gov](mailto:Molly-Jayne.Bangert@ihs.gov)

This program has boxing and after school aerobics programs. It has coordinated many group events and activities, including fitness walks, team challenges and fun runs. This center is currently in the process of starting a walking program. Their approach is to view the community and employee wellness as a network, and the development of the employee wellness program as a process. Basic exercise classes are offered at worksites and for the community.

- ✓ After School Programs
- ✓ Employee Wellness
- ✓ Fitness and Wellness Centers
- ✓ Walking/Pedometer Trekking
- ✓ Working with Groups/ Large Activity Planning

### **Muscogee (Creek) Nation Diabetes Program**

800 Forest Avenue

Eufala, OK 74432

Contact: Kimberlee Little MS, Exercise Programs Coordinator

Phone: 918-637-9684 Email: [kimberlee.little@creekhealth.org](mailto:kimberlee.little@creekhealth.org)

The Muscogee (Creek) Nation Diabetes Program offers a variety of community health and wellness programs focusing on diabetes prevention and management, including camps for adults, diabetes prevention youth camp, and school-based programs (School Wellness Policy and After School Jump Rope Program).

- ✓ Adult Wellness / Camps for Adults
- ✓ Diabetes Prevention
- ✓ Elder Wellness Programs
- ✓ Gardening
- ✓ School-based Programs
- ✓ Walking/Pedometer Trekking
- ✓ Working with Groups/Large Activity Planning
- ✓ Youth Camps

### **Navajo Nation Special Diabetes Project (NNSDP) and Kayenta Community School (KCS)**

P.O. Box 2269

Kayenta, AZ 86033

Contact: Marlene Valentine, Health Education Technician

Email: [m.valentine@nnsdp.org](mailto:m.valentine@nnsdp.org) or [mexhat.mvalentine@yahoo.com](mailto:mexhat.mvalentine@yahoo.com)

Contact: John Axline, Counseling Technician

Kayenta Community School, B.I.E.

P.O. Box 188

Kayenta, AZ 86033

Email: [John.Axline@BIE.EDU](mailto:John.Axline@BIE.EDU)

SPARKS Program - This is an example of a Tribal program working with the local school to benefit children's health and diabetes awareness among school-age children.

- ✓ School-based Programs

### **Navajo Special Diabetes Project**

Contact: Betti Delrow, LMSW

Phone: (928) 871-6532

Doing the Zumba - New dance-exercise craze becoming popular on rez

<http://navajotimes.com/entertainment/health/index.php>

- ✓ Adult Wellness / Camps for Adults

### **Northern Navajo Medical Center**

Health Education Center for Wellness

PO Box 160

Shiprock, NM 87420.

Contact: Evangeline Natachu, RS, Fitness Technician

Phone: 505-368-6332 Email: [Evangeline.natachu@ihs.gov](mailto:Evangeline.natachu@ihs.gov)

This program provides community wellness and fitness centers, after school programs, community swimming pools, a challenge course, group activities, and a youth camp.

Contact: Dr. Kim Mohs

Phone: 505-368-6843;

Email: [kim.mohs@ihs.gov](mailto:kim.mohs@ihs.gov)

Contact: Mamie Denetclaw RN, CDE

Phone: 505-368-6843

Email: [mamie.denetclaw@ihs.gov](mailto:mamie.denetclaw@ihs.gov)

Contact: John Liesse

Email: [john.liesse@ihs.gov](mailto:john.liesse@ihs.gov)

Camp Dibe Ni Tsaa - the Diabetes Education and Counseling Center (DECC) recognized the increased risk of diabetes due to increased weight and decreased activity in our adolescents. As a result, DECC created an adolescent wellness camp to teach life changing skills, in an attempt to improve the lifestyle of our youth. The camp has changed in many different aspects in the last ten years. The camp has been held in two locations here on the reservation and two off the reservation. It has been a day camp here at Shiprock and is now a five-day camp in the mountains of southern Colorado. The goal of our camp is to teach our adolescents life changing skills they can use to prevent diabetes.

Contacts:

Susan R. Jones MS, RD, LD, CNSD, CPS;

Miranda Oshida, RD, Supervisory

Dietitian; Kari Wato, RD

Phone: 505-368-6209 Email: [susan.jones@ihs.gov](mailto:susan.jones@ihs.gov)

The Northern Navajo Medical Center provides a Pediatric Obesity Clinic that offers a multidisciplinary team approach to helping children who are over the 95% BMI for growth using evidence-based guidelines.

- ✓ After School Programs
- ✓ Fitness and Wellness Centers
- ✓ Working with Families
- ✓ Working with Groups/Large Group Planning
- ✓ Youth Camps

## **Pueblo of Zuni**

Kathy Natachu

DIPS Program Coordinator

Phone: 505-782-3091 Email: [knatachu@osogrande.com](mailto:knatachu@osogrande.com)

Dive Into Prevention (DIPS) Program - In 2006, the Pueblo of Zuni began using Special Diabetes Program for Indians (SDPI) grant funds to implement a diabetes prevention strategy that could leverage the Pueblo's community swimming pool. The Zuni Healthy Lifestyles Program and the DIPS (Dive Into Prevention Strategies) Program work together to offer aquatic exercise activities and swimming sessions for children, adults, and seniors. The programs also use swimming activities to enhance physical education classes in the Zuni public schools. Each month, these swimming activities reach between 1,100 and 1,800 community members.

- ✓ Diabetes Prevention Programs

## **Seminole Tribe of Florida**

Hollywood Reservation

Contact: Suzanne Davis

Phone: 954 553-4011 Email: [sdavis@semtribe.com](mailto:sdavis@semtribe.com)

The Rez Rally is a 5K competition between the four largest Seminole reservations. It is the premier event in our Pathways Program for our Physical Activity Best Practice. The event is held in January, but each reservation hosts training events beginning in October which help participants through high calorie football and holiday season. In addition, we work with Native American Nike to offer shoes to inspire further walking and training once the event comes to an end. We provide DM educational signage around the course and encouraging words for those who are really working hard to make it to the finish. We conclude the event under a giant tent where we serve a brunch and provide an awards ceremony inclusive of a motivational health/fitness presentation.

- ✓ Working with Groups/ Large Activity Planning

## **Southcentral Foundation (SCF)**

Anchorage, AK

Contact: Laurie Wiese, Health Education Manager

Phone: (907) 729-8690 Email: [LWiese@scf.cc](mailto:LWiese@scf.cc)

The "75210" campaign is a good starting point for parents who want to help their children live healthier lives. Healthy changes involve the whole family, and "75210" focuses on small steps to wellness. Each of the numbers reflects an evidence-based approach to healthier lives:

- 7 – Eat breakfast seven days a week.
- 5 – Eat at least five servings of fruits and vegetables.
- 2 – Limit screen time after work/school to two hours or less daily.
- 1 – Participate in physical activity at least one hour a day.
- 0 – Zero soda and sugar-sweetened beverages on a typical day.

SCF Health Education plans to use the information gathered by "75210" surveys to offer more targeted education and to track changes.

- ✓ Working with Families

**Tohono O’odham Nation** – San Simon Health Center  
Sells, AZ

Contact: Marlene Saraficio, Public Health Educator  
Phone: 520-362-7050 Email: [marlene.saraficio@ihs.gov](mailto:marlene.saraficio@ihs.gov)

Taking Ownership Wellness Coalition (TOWC) was established in 2008 to address childhood obesity among the Tohono O’odham Nation. Goals include increasing physical activity and nutrition education, decreasing obesity and diabetes, and developing traditionally-appropriate projects. It supports Coordinated School Health (CSH) and in 2008, the Tohono O’odham Nation Legislative Council passed a Resolution to support the adoption of the Comprehensive School and Wellness Proposal for all schools on the Tohono O’odham Nation grades K-12. Other programs include *Just Move It—Putting Youths Best Foot Forward into Wellness*. This national physical activity campaign is implemented locally through community partnerships and fun fitness activities. It uses an intergenerational approach connecting individuals, families, elders, employees, and health care providers. Team fitness challenges are ongoing to increase physical activity and decrease weight.

- ✓ After School Programs
- ✓ Diabetes Prevention Programs
- ✓ Elder Wellness Programs
- ✓ Gardening
- ✓ School-based Programs
- ✓ Working with Groups/ Large Activity Planning
- ✓ Youth Camps

**Wewoka Indian Health Center** – Community Health Program

Contact: Scott Robison M Ed - Health Educator/Acting Community Health Director  
Phone: 405-257-7314 Email: [scott.robison@ihs.gov](mailto:scott.robison@ihs.gov)

Our Community Health Program offers a Comprehensive Community Wellness/Diabetes Prevention program offering programs for all ages throughout the lifespan, including after school jump rope programs. This program is an excellent resource for information on developing spreadsheets for data collection.

- ✓ Adult Wellness / Camps for Adults
- ✓ After School Programs
- ✓ Diabetes Prevention Programs
- ✓ Elder Wellness Programs
- ✓ Employee Wellness
- ✓ Gardening
- ✓ School-based Programs
- ✓ Walking/Pedometer Trekking
- ✓ Working with Groups/Large Activity Planning
- ✓ Youth Camps

## **Additional Contacts**

Contacting other people involved in diabetes and physical activity is important because they can help you get started. 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. This can help you avoid reinventing the wheel. Persons or programs that sites might contact for further ideas and assistance:

**Area Diabetes Consultants.** Contact information can be viewed at:

<http://www.ihs.gov/MedicalPrograms/diabetes/index.cfm?module=peopleADCDirectory>

- Contact the Indian Health Service (IHS) Division of Diabetes Treatment and Prevention for additional ideas and suggestions.

<http://www.ihs.gov/medicalprograms/diabetes/index.cfm?module=peopleDDTP>

# PART 4 References



## References

Active Start: A Statement of Physical Activity Guidelines for Children Birth to Five Years. National Assoc. for Sport & Phys. Ed., 2002, as endorsed by the American Academy of Pediatrics.

Alberta Centre for Active Living. Workplace physical activity framework [Internet]. 2003 [cited 2009 Jun 27]. Available from: [http://www.centre4activeliving.ca/publications/researchandreports/2003\\_workplace/program\\_standard.pdf](http://www.centre4activeliving.ca/publications/researchandreports/2003_workplace/program_standard.pdf)

ACSM's (American College of Sports Medicine) Guidelines for Exercise Testing and Prescription, Eighth Edition. Philadelphia: Lippincott Williams & Wilkins, 2009.

American College of Sports Medicine. ACSM's Exercise Management for Persons with Chronic Disease and Disability, 3rd edition. Durstine JL, Moore GE, Painter P, Roberts S. Champaign, IL: Human Kinetics, 2009.

American Diabetes Association. ADA Position Statement: Standards of Medical Care in Diabetes, 2011. Diabetes Care. 2011;34 (S1):S11-S61.

Battersby M, Von Korff M, Schaefer J, Davis, C, Ludman, E, Greene, SM, Parkerton, M, Wagner EH. Twelve Evidence-Based Principles for Implementing Self-Management Support in Primary Care. The Joint Commission Journal on Quality and Patient Safety December 2010 Volume 36 Number 12 561-570.

Bodenheimer T, Handley MA. Goal-setting for behavior change in primary care: An exploration and status report. Patient Education and Counseling 76 (2009) 174-180.

Boulé NG, Haddad E, Kenny GP, Wells GA, Sigal RJ. Effects of exercise on glycemic control and body mass in type 2 diabetes mellitus: a meta-analysis of controlled clinical trials. JAMA. 2001;286(10):1218-27.

Carey AL, Kingwell BA. Novel pharmacological approaches to combat obesity and insulin resistance: targeting skeletal muscle with 'exercise mimetics'. Diabetologia. 2009 (February) DOI 10.1007/s00125-009-1420-x

Caspersen CJ, Fulton JE. Epidemiology of walking and type 2 diabetes. Med Sci in Sports Exerc. 2008;40(7 Suppl):S519-28.

Centers for Disease Control and Prevention, National Center for Health Marketing. Guide to community preventive services, campaigns and informational approaches to increase physical activity: community-wide campaigns [Internet]. 2001 Oct [cited 2009 Jun 27]. Available from: <http://www.thecommunityguide.org/index.html>

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. MMWR 2001;50(RR18):1-16.

Church TS, LaMonte MJ, Barlow CE, Blair SN. Cardiorespiratory fitness and body mass index as predictors of cardiovascular disease mortality among men with diabetes. *Arch Intern Med*. 2005; 165:2114-2120.

Church TS, Cheng YJ, Earnest CP, Barlow CE, Gibbons LW, Priest EL, Blair SN. Exercise capacity and body composition as predictors of mortality among men with diabetes. *Diabetes Care*. 2004;27(1):83-88.

Colberg SR, Sigal RJ, Fernhall B. Exercise and Type 2 Diabetes. The American College of Sports Medicine and the American Diabetes Association: joint position statement. *Diabetes Care* 33:e147–e167, 2010

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

Church TS, Cheng YJ, Earnest CP, Barlow CE, Gibbons LW, Priest EL, Blair SN. Exercise capacity and body composition as predictors of mortality among men with diabetes. *Diabetes Care*. 2004;27(1):83-88.

Church TS, LaMonte MJ, Barlow CE, Blair SN. Cardiorespiratory fitness and body mass index as predictors of cardiovascular disease mortality among men with diabetes. *Arch Intern Med*. 2005;165:2114-2120.

DHHS Physical Activity Guidelines Advisory Committee. Physical Activity Guidelines Advisory Committee Report: Physical activity guidelines for Americans [Internet]. 2008. [cited 2009 Jun 27]. Available from: <http://www.health.gov/paguidelines/guidelines/default.aspx>

*Diabetes Spectrum* 2005;18 (2):67–127. This 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, De Feo P. Make your diabetic individuals walk: Long-term impact of different amounts of physical activity on type 2 diabetes. *Diabetes Care* 2005;28(6):1295–302.

Enright PL, Sherrill DL. Reference equations for the six-minute walk in healthy adults. *Am J Respir Crit Care Med* 1998;158(5 Pt 1):1384-7.

Farrell SW, Braun L, Barlow CE, Cheng YJ, Blair SN. The relation of body mass index, cardiorespiratory fitness, and all-cause mortality in women. *Obes Res* 2002;10:417-423.

Fretts AM, Howard BV, Kriska AM et.al. Physical Activity and Incident Diabetes in American Indians: The Strong Heart Study. *Am J Epidemiology*. 2009;170:632-640.

Grim CW. The Indian Health Service and Diabetes Prevention and Treatment at National Diabetes Conference August 21- 24, 2006 in Oklahoma City, Oklahoma. [accessed via internet February 2011]

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

Hamman R, Wing R, Edelstein S, Lachin J, Bray G, Delahanty L, Hoskin, M, Kriska A, Mayer-Davis E, Pi-Sunyer X, Regensteiner J, Venditti B, Wylie-Rosett J. Effect of weight loss with lifestyle intervention on risk of diabetes. *Diabetes Care* 2006;29:2102-2107.

Haskell WL, Lee I-M, Pate RR, Powell KE, Blair S, Franklin B, Macera C, Heath G, Thompson P, Bauman A. Physical activity and public health: Updated recommendation for adults for the American College of Sports Medicine and the American Heart Association. *Med Sci Sports Exerc* 2007;39:1423-1434.

Hibbard JH, Greene J, & Tusler M. Improving the Outcomes of Disease Management by Tailoring Care to the Patient's Level of Activation. *Am J Manag Care*. 2009;15(6):353-360

Hodge, FS, Pasqua, A, Marquez, CA, Geishirt-Cantrell, B. (2002). Utilizing traditional storytelling to promote wellness in American Indian communities. *J of Transcultural Nursing*, 13(1), 6-11.

Indian Health Service (IHS) Special Diabetes Program for Indians 2008. Type 2 Diabetes and Youth: Acting Now for Future Generations.

[http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=resourcesFactSheets\\_Youth08](http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=resourcesFactSheets_Youth08) [accessed February 2011]

Kaplan RM, Hartwell SL, Wilson DK, 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, 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:

<http://www.bsc.gwu.edu/dpp/>.

LaForge R. Instituting modest therapeutic lifestyle changes for those at high cardiometabolic risk. *IHS Primary Care Provider*. 2011 (January); 36:1-6.

La Forge R. *Mindful Exercise in Health and Disease*. Chapter 24 (in Howely (ed.) *Health and Fitness Instructor's Manual* 6th Edition. Human Kinetics. Champaign IL. 2011 (6th edition in revision process).

LaForge R. Lipid Luminations: Exercise and Dyslipidemia: How Much Exercise? *Lipid Spin* a publication of the National Lipid Association, March 2011; 14-15.

Marwick TH, Hordern MD, Miller T, Chynn DA, Bertoni AG, Blumenthal RS, Philippides G, Rocchini A. Exercise training for type 2 diabetes mellitus. Impact on cardiovascular risk. A scientific statement from the American Heart Association. *Circulation* [Internet]. 2009 Jun [cited 2009 Jun 28];119:3244-3262. Available from: <http://circ.ahajournals.org/cgi/reprint/119/25/3244>

Meriwether RA, Lee JA, LaFleur AS, Wiseman P. Physical Activity Counseling. *American Family Physician* 2008 Apr 15; 77(8): 1129-1136. Available at: <http://www.aafp.org/afp/2008/0415/p1129.html>

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. *JAMA* 1995;273:402–07.

Physical Activity Kit (PAK): Staying on the Active Path in Native Communities...a Lifespan Approach! Developed by the IHS Health Promotion and Disease Prevention program and the University of New Mexico, Albuquerque, New Mexico, 2009. <https://www.hncp.org/wst/hpdp/PAK/default.aspx> [accessed March 2011]

Plotnikoff RC, Fein A, Milton L, Prodaniuk T, and Mayes V. (2003). Workplace physical activity framework. Edmonton, AB: Alberta Centre for Active Living.

Polley DC, Spicer MT, Knight AP, 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.

Prochaska JO, Norcross J, 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, 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.

Shiroma EJ and I-Min Lee Physical Activity and Cardiovascular Health: Lessons Learned From Epidemiological Studies Across Age, Gender, and Race/Ethnicity. *Circulation* 2010;122;743-752

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

Shiroma EJ and I-Min Lee Physical Activity and Cardiovascular Health: Lessons Learned From Epidemiological Studies Across Age, Gender, and Race/Ethnicity. *Circulation* 2010;122;743-752

Struthers, R. and Lowe, J. (2003). "Nursing in the Native American Culture and Historical Trauma." *Issues in Mental Health Nursing*, Vol. 24, No. 3, pp. 257-72.

Winnick JJ, Sherman WM, Habash DL, *et al.* Short-term aerobic exercise training in obese humans with type 2 diabetes mellitus improves whole-body insulin sensitivity through gains in peripheral, not hepatic insulin sensitivity. *J Clin Endocrinol Metab* 2008;93(3):771–8