



INDIAN HEALTH DIABETES
BEST PRACTICE

**Adult Weight and
Cardiometabolic Risk
Management and
Diabetes Guidelines**

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Instructions for Using This Best Practice

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 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 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 conduct a community needs assessment of interest in diabetes education and/or providing community education to increase awareness of risks for diabetes.
- 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 the Best Practice pdf. Here is a list of the items:

- **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 Adult Weight and Cardiometabolic Risk Management and Diabetes 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. Ensure providers have a full understanding of the complexity of obesity prevention and care.
2. Assess for overweight, obesity, and overall cardiometabolic risk.
3. Provide nutrition approaches to treat overweight and obesity, and reduce cardiometabolic risk.
4. Implement a systematic approach to increasing daily physical activity.
5. Provide behavior change approaches to treat overweight and obesity, and reduce cardiometabolic risk.
6. Provide medications and supplements as appropriate.
7. Consider weight loss surgery as appropriate.
8. Provide long-term support to address weight loss maintenance.

Key Measures for Adult Weight and Cardiometabolic Risk, 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 are **required to report **as required in the terms and conditions attached to the notice of award** on the **indicated Measures**. Programs may report on other measures as well.**

1. *Percent of diabetes patients with a documented assessment for overweight or obesity in the past twelve months.
2. *Percent of diabetes patients with documented nutrition and physical activity education by a Registered Dietitian or other provider in the past twelve months.
3. *Percent of all participants who achieved both their nutrition goal(s) and physical activity goal(s) in the past twelve months.
4. *Percent of all participants who achieved their weight loss goal in the past twelve months.
5. Percent of diabetes patients who had, in addition to measurement of body weight, BMI, and blood pressure, documented laboratory measures of cardiometabolic risk including all of the following in past twelve months: non-HDL-cholesterol, triglycerides, LDL- and HDL-cholesterol, fasting glucose, and/or A1C.

PART 1 Essential Elements of Implementing This Best Practice

Purpose

This Best Practice describes recommendations to achieve and maintain a healthy weight and reduced cardiometabolic risk.

The primary focus of these guidelines is adult body weight management. However, because therapeutic lifestyle changes, e.g., better dietary choices and increased physical activity, can reduce cardiometabolic risk (CMR) with or without significant changes in body weight, this document introduces a parallel focus on CMR reduction. For this reason lifestyle behaviors themselves should be principal measures of success as long as there is consistent improvement in laboratory and anthropometric based measures of cardiometabolic risk. This in no way lessens the importance of reducing body weight particularly for those who are in higher body mass classes, e.g., BMI > 35. Adult CMR and weight management require similar systematic approaches to instituting therapeutic lifestyle changes which is underscored in this document (La Forge, 2011).

Target Population

The target population of this Best Practice is adults who have, or are at risk for, diabetes (regardless of duration of diabetes), and are overweight or obese.

Action! See [Part 3 – Appendix A](#). Supplemental Information for discussion of the Importance of an Adult Weight and Cardiometabolic Risk Management Program.

Intended Users of this Best Practice

- Primary health care teams
- educators
- diabetes prevention outreach teams/health promotion services
- community workers who provide education and/or services, and
- leaders of health care organizations.

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

Definition of Cardiometabolic Risk

According to a Consensus Conference report published by the American Diabetes Association (ADA) and the American College of Cardiology Foundation, cardiometabolic risk refers to a high lifetime risk for cardiovascular disease (CVD). The specific factors that can cause this increased risk include obesity (particularly central), hyperglycemia, hypertension, insulin resistance, and dyslipoproteinemia. When patients have one or more risk factors and are physically inactive or smoke, the cardiometabolic risk is increased even more. In addition, when these risk factors occur in clusters, they can greatly increase the risk of CVD. Medical conditions that often share the above characteristics, such as type 2 diabetes, can also increase cardiometabolic risk. As such, the term can be applied to persons already diagnosed with chronic disease (Brunzell et al., 2008).

Goals of This Best Practice

- To increase the use of evidence-based weight and cardiometabolic risk management approaches for overweight and obese individuals who have type 2 diabetes, pre-diabetes, and/or the metabolic syndrome.
- To reduce the risk of type 2 diabetes and comorbidities associated with overweight and obesity, and overall cardiometabolic risk.
- To increase use of cardiometabolic risk measures including elevated plasma glucose, triglycerides, LDL-cholesterol, non-HDL cholesterol, and blood pressure.
- To increase use of evidence-based practical strategies for healthier dietary behavior.
- To increase percent of people who participate in daily physical activity.
- To increase use of effective strategies for clinical and community programs to promote healthy weight in American Indian and Alaska Native communities.

Key Recommendations

These are evidence-based actions that can lead to improved outcomes for adults who have, or are at risk for, diabetes, and are overweight or obese.

Key Recommendations for Adult Weight and Cardiometabolic Risk Management and Diabetes Best Practice. These are evidence-based actions that will lead to improved outcomes in the community.

1. Ensure providers have a full understanding of the complexity of obesity prevention and care.
2. Assess for overweight, obesity, and overall cardiometabolic risk.
3. Provide nutrition approaches to treat overweight and obesity, and reduce cardiometabolic risk.
4. Implement a systematic approach to increasing daily physical activity.
5. Provide behavior change approaches to treat overweight and obesity, and reduce cardiometabolic risk.
6. Provide medications and supplements as appropriate.
7. Consider weight loss surgery as appropriate.
8. Provide long-term support to address weight loss maintenance.

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

Planning For Your Program and Evaluation

Key Action Steps include:

1. **Identify your program's goal(s).** There are many program goals consistent with the Key Recommendations of this practice. Choose program goals that fit with the Key Recommendations and your resources. Examples of Program Goals include:
 - Increase the number of adults who are assessed for overweight, obesity, and risk of cardiovascular disease.
 - Increase the number of adults who are engaged in healthy eating and physical activity behavior.
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:

- Increase the percent of adults with diabetes, or at risk for diabetes, with documented BMI in the past twelve months from 50% to 75% by the end of the fiscal year.
- Increase the percent of adults with diabetes, or at risk for diabetes, with documented achievement of both their nutrition and physical activity goals in the past twelve months from 40% to 60% by the end of the fiscal 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 Adult Weight and Cardiometabolic Risk Management and Diabetes 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 are **required** to report **as required in the terms and conditions attached to the notice of award** on the **indicated** Measures. Programs may report on other measures as well.

1. *Percent of diabetes patients with a documented assessment for overweight or obesity in the past twelve months.
2. *Percent of diabetes patients with documented nutrition and physical activity education by a Registered Dietitian or other provider in the past twelve months.
3. *Percent of all participants who achieved both their nutrition goal(s) and physical activity goal(s) in the past twelve months.
4. *Percent of all participants who achieved their weight loss goal in the past twelve months.
5. Percent of diabetes patients who had, in addition to measurement of body weight, BMI, and blood pressure, documented laboratory measures of cardiometabolic risk including all of the following in past twelve months: non-HDL-Cholesterol, triglycerides, LDL- and HDL-cholesterol, fasting glucose, and/or A1C.

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! Link to 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 Adult Weight and Cardiometabolic Risk Management and Diabetes Programs Example** to assist you with applying Key Recommendations and Key Measures to a program plan.

Action! You can also link to 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. Ensure providers have a full understanding of the complexity of obesity prevention and care.

Why?

It does not take a lot of weight loss to make a big difference in one's health. There are multiple factors that play a role in obesity, and this makes it a complex area to address. Even **modest** weight loss can prevent or delay diabetes and reduce cardiometabolic risk. The Diabetes Prevention Program (DPP) demonstrated that losing approximately 5% of total body weight (goal was 5-7%) as a result of making lifestyle changes including improved nutrition and physical activity, can help reduce the incidence of diabetes. (Knowler et al., 2002)

Often patients have much larger goals. A weight loss of 5-10% of body weight by making changes in eating and physical activity is a realistic goal. (Franz et al., 2010) Modest weight loss of 5% has been shown to prevent diabetes, reduce insulin resistance, and improve health indicators (triglycerides, blood glucose, HDL, and BP). Decreasing energy intake may improve glycemic control, but it is unclear whether weight loss by itself will improve blood glucose management (Franz et al., 2010).

The challenge for providers is to convey to the patient that even **modest** weight loss can make a big difference in their overall health. Many factors influence a person's decision to lose weight – the media, family members, and sometimes health care providers imply that individuals have to lose a large amount of weight to be healthier. Losing weight gradually over time and maintaining weight loss by making lifestyle changes is important. Slow, steady weight loss with continuous support for lifestyle changes is better than losing weight too fast that will be easily regained.

How to Implement the Key Recommendation

- A. In essence, **our biology is geared to protect more strongly against weight loss than against weight gain** (Hill, 2006; Melanson et al., 2009; American Dietetic Association, 2009). It is important to know that there are biologic factors that defend body weight and that weight loss provokes a number of counter-regulatory metabolic responses (Campfield et al., 1998; Aronne, 2003). Thus, patients (or their providers) do not have complete willful control of their body weight. **Patients have more control over dietary and physical activity behaviors that directly impact their cardiometabolic risk via mechanisms that are not exclusively linked to changes in body weight** (Telford, 2007; Waller et al., 2010).
- B. **Understand the complexities of energy balance.** Total daily energy expenditure (kcal) has to be increased over total daily energy intake in order for weight loss to occur. This sounds obvious, but most of us do not really understand its implications. Remember that total daily energy expenditure includes: physical activity, resting metabolic rate, and non-exercise thermogenesis all of which are influenced by a consortium of genetic and environmental factors (Schoeller, 2009; Hill, 2006). When an energy deficit is created, i.e., expend more calories than one consumes, there is significant improvement not just in body fat reduction but also by increased insulin sensitivity and adiponectin, and reduced inflammatory biomarkers, fasting insulin, non-HDL, and c-reactive protein (Black et al., 2005).

- C. **Psychological and social factors, principally food insecurity and poverty, are strongly associated with obesity** (American Dietetic Association, 2010).
- D. **It is essential that providers understand that there are many factors that influence exercise-generated weight loss beyond the energy expenditure of the physical activity** (Boutcher, 2009). Two major factors that have a significant impact on exercise-generated body weight loss are *energy compensation and energy conservation*. For example, many individuals starting an exercise program compensate by increasing energy intake and/or conserving more physical activity energy throughout the day than they would have otherwise had they not exercised. These factors are quite difficult to assess and control for but should at least be taken into consideration before projecting how much weight should be lost in response to an exercise program (Donnelly, 2005; Turner, 2010; Westerterp, 1998).
- E. **Research has shown that there are gender differences in exercise program generated weight loss with women being somewhat less responsive to a given exercise energy expenditure compared to men** (Donnelly et al., 2003, 2005; Westerterp, 1998). However, this in no way should be interpreted that women do not reduce cardiometabolic risk which they do – at least as well as men in response to sufficient physical activity programming.
- F. **A number of medications including sulfonylureas, thiazolidinediones, and insulin are associated with weight gain**, particularly when used in combination, whereas metformin and amylin analogs are weight neutral or associated with modest weight loss. Corticosteroids, beta-adrenergic blockers, tricyclic antidepressants, selective serotonin reuptake inhibitors (SSRIs), and antihistamines can also cause weight gain. DPP-4 inhibitors are weight neutral whereas GLP-1 analogs are associated with weight loss.
- G. **Body fat loss may or may not be reflected in total body weight loss**. Not all body weight loss is fat. When a patient does not lose scale-weight, it does not necessarily mean that they did not lose fat weight owing to some increased muscle weight as seen with some exercise programs. Competent assessment of body composition changes with clinical calipers or even bioelectrical impedance may better differentiate weight loss from fat loss (Ross et al., 2004; Velthuis et al., 2009).
- H. **Providers should understand that the *genetic heritability of obesity phenotypes*** (how and where obese individuals express their body fat) accounts for up to 50% of the age and gender-adjusted phenotypic variances. This means that there are wide ranges of individual differences in response to chronic alterations in energy balance. These differences are observed for a variety of individual physical and physiological traits including body weight, body fat content, subcutaneous fat, visceral fat, postprandial energy expenditure, resting metabolic rate, adipose tissue metabolism, and insulin, glucagon, and thyroid hormone levels (Bouchard, 2007, 2008; Chung et al., 2008).

- I. **Generally “spot” weight reduction (i.e., targeting a certain area of the body for weight loss) does not occur in response to diet and exercise programming.** However, when addressing the issue of preferential fat loss (abdominal vs. peripheral, and subcutaneous vs. visceral fat loss) in response to caloric restriction and/or exercise programs the literature shows a relatively clear trend for preferential oxidation of visceral abdominal fat compared with upper extremity (arms, chest) or lower extremity (thigh-legs) fat loss (Paré et al., 2001; Chaston et al., 2008). Most body fat regions are metabolically active in response to diet and exercise programs; however there appears to be a preference for visceral abdominal fat utilization. Similarly, when comparing subcutaneous fat vs. visceral (i.e., deep tissue) fat loss, visceral fat is preferentially utilized in response to both dietary and/or exercise programs.

Team Notes:

Key Recommendation 2. Assess for overweight, obesity, and overall cardiometabolic risk.

Why?

Assessing clients for overweight and obesity will help determine risk for associated diseases and health problems, set cardiometabolic risk (CMR), and weight management goals, and measure outcomes (National Heart, Lung, and Blood Institute, 1998; American Dietetic Association, 2009).

How to Implement the Key Recommendation

A. Take body (anthropometric) measurements using appropriate equipment that accommodates a wide range of body sizes to make accurate measurements.

1. **Obtain height and weight without shoes.** Use the following instruments to obtain accurate measurements:
 - wall-mounted stadiometer to measure height
 - calibrated balanced beam scale to measure weight

Action! A tutorial is available:

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

The primary outcome measure is the BMI. Height and weight, in light indoor clothes without shoes, are measured using a wall-mounted stadiometer, and a balance beam scale, respectively. All scales are calibrated quarterly by trained study personnel using standard weights. BMI is calculated as the Quetelet index (kg/m^2).

2. **Calculate Body Mass Index (BMI) from height and weight measurements.**
 - The IHS electronic health record and RPMS automatically calculate BMI.
 - BMI can be used for most men and women, but it does have limitations. BMI may overestimate body fat in athletes and others who have a muscular build, and underestimate body fat in older persons or others who have lost muscle mass.
 - Use the following BMI criteria to identify the severity of obesity (National Heart, Lung, and Blood Institute, 1998):

Table 1. Classification of Overweight and Obesity by BMI and Associated Disease Risk (*)

Classification	BMI (kg/m²)	Disease Risk* (Relative to normal weight and waist circumference) Men ≤ 102 cm (≤ 40 in) Women ≤ 88 cm (≤ 35 in)	Disease Risk* (Relative to normal weight and waist circumference) Men > 102 cm (> 40 in) Women > 88 cm (> 35 in)
Underweight	< 18.5	-	-
Normal weight**	18.5–24.9	-	-
Overweight	25.0–29.9	Increased	High
Obesity class I	30.0–34.9	High	Very High
Obesity class 2	35.0–39.9	Very High	Very High
Obesity class 3	≥ 40.0	Extremely High	Extremely High
Obesity class 4	≥ 50.0	Extremely High	Extremely High
Obesity class 5	≥ 60.0	Extremely High	Extremely High

* Disease risk for type 2 diabetes, hypertension, and CVD.

** Increased waist circumference can also be a marker for increased risk even in persons of normal weight.

Note: The American Heart Association classification schema includes Obesity class 4; BMI ≥ 50, and Obesity class 5; BMI ≥ 60 (Poirier et al., 2009). The most rapidly growing segment of the obese population is the severely obese. Between 1986 and 2000, those with a BMI greater than 30, 40, and 50 kg/m², are reported to have doubled, quadrupled, and quintupled, respectively, in the United States (Poirier 2011).

3. **Measure waist circumference.** Waist circumference is most useful when BMI is < 35 kg/m², **however when skillfully measured you may assess up to BMI 40 as long as the tape is applied to the correct anatomical landmarks.** High risk is associated in men with a waist circumference > 40 inches and in women with a waist circumference > 35 inches. Use a Gulick tape measure (a scaled tape measure that applies a standard consistent tension). To measure correctly, have the person stand up and place the tape measure around the waist, just above the hipbones. For best measurement accuracy for where you should place the measuring tape mark the anatomical landmarks, i.e., each iliac crest border, lightly with a black dry-erase marker. Measure the waist just after the person breathes out.

Action! See Division of Diabetes Quick Guide Card anthropometric instructions on using Gulick tape measures
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsAnthroWC>

4. **Optional skinfold measures.** Establish a baseline measure of subscapular and/or triceps skinfold with Lange calipers. This measure for adults does not yet have standardized norm comparisons, but it should be used as a measure of change in total

body adiposity with or without changes in BMI or body weight. Skinfold measure must be made proficiently and by experienced staff (Heyward, 2010).

Action! See Division of Diabetes Quick Guide Card section on anthropometry – skinfold assessment.

B. Conduct medical and laboratory assessment.

1. This document provides Best Practices **guidelines for adult weight management for adults with diabetes and/or at risk of diabetes with the following exclusions:**
 - pregnant and lactating women
 - serious uncontrolled psychiatric illness (e.g., major depression, post-traumatic stress disorder, addictions, and anxiety)
 - a serious illness and for whom caloric restriction would exacerbate the illness
 - a history of anorexia nervosa and bulimia, and
 - active substance abuse.
2. **Identify other specific, but rare, identifiable causes of overweight** (e.g., endocrine problems, neurological problems, medications, and genetics).
3. **Identify obesity-associated disorders** (e.g., polycystic ovarian syndrome) and medical complications (e.g., metabolic syndrome, degenerative, anatomic, neoplastic complications, sleep apnea, and musculoskeletal disorders, e.g., joint problems).
4. **Identify and document, if any, medications which cause weight gain** (fluid or fat weight gain).
5. **Measure at baseline and at least annually a cardiometabolic risk laboratory panel** including: elevated plasma glucose, triglycerides, non-HDL cholesterol, LDL-cholesterol, and blood pressure.
6. **Refer for medical clearance** to begin weight loss program.
7. **Screen for depression.** Refer to appropriate behavior health provider as needed.

Action! See the Indian Health **Diabetes Best Practice Depression Care**

C. Assess readiness to learn and to change.

The decision to lose weight and/or sufficiently engage in the lifestyle behaviors that reduce cardiometabolic risk must be made as an **active collaborative partnership** between the clinician and patient. The patient may choose not to lose weight but rather to prevent further weight gain as a goal. The clinical team, together with the patient, should reach shared decisions regarding the treatment program. The patient's family/caregiver may participate in the treatment process and should be involved in assisting the patient with changing lifestyle, diet, and physical activity patterns (National Heart, Lung, and Blood Institute, 2000; Prochaska, 1994).

1. Readiness to **increase physical activity and improve dietary behavior** and lose weight should be assessed by direct inquiry **and documented**. Those indicating an adequate readiness to **increase healthy lifestyle behaviors** and lose weight should proceed to treatment. Those not yet ready should receive motivational counseling.
2. What is the patient's current attitude about making a lifelong commitment to **increasing regular physical activity and improving dietary behavior**?
3. **Document patient's previous history of successful and unsuccessful weight loss attempts**—What factors were responsible for previous dietary and physical activity failures and successes at weight loss or maintenance of normal body weight, and what barriers now may be challenges to weight loss.
4. **Employ tools** such as Stages of Change, Readiness for Behavior Change, or a Importance of Change Ruler (Scale 1-10) (Huffman, 2009).

Team Notes:

Key Recommendation 3. Provide nutrition approaches to treat overweight and obesity, and reduce cardiometabolic risk.

Why?

Strong evidence suggests that healthful dietary changes result in moderate weight loss **and reduced risk of diabetes and cardiovascular disease** (Katcher et al., 2009; Klein et al., 2004).

How to Implement the Key Recommendation

A. Make a referral to a registered dietitian for Medical Nutrition Therapy (MNT).

Make a referral to a registered dietitian for nutrition assessment and diagnosis, and to plan for nutrition intervention, monitoring, and evaluation (ADA, 2011). The evidence is strong that medical nutrition therapy provided by registered dietitians is an effective and essential therapy in the management of diabetes (Franz et al., 2010).

Most individuals in community and clinical settings **lose 4-5% of their initial body weight** during a weight loss program; although this weight loss seems modest, it significantly improves cardiometabolic risk indicators (ADA, 2011).

B. Goals of MNT.

Primary goals of MNT that apply to individuals with diabetes (ADA, 2011, 2008; Bantle et al., 2008).

1. The best mix of carbohydrate, protein, and fat may be adjusted to meet the metabolic goals and individual preferences of the person with diabetes.
2. Monitoring carbohydrate, whether by carbohydrate counting, choices, or experience-based estimation, remains a key strategy in achieving glycemic control.
3. For individuals with diabetes, the use of the glycemic index and glycemic load may provide a modest additional benefit for glycemic control over that observed when total carbohydrate is considered alone.
4. Saturated fat intake should be < 7% of total calories.
5. Reducing intake of *trans* fat lowers LDL cholesterol and increases HDL cholesterol, therefore intake of *trans* fats should be minimized.

Nutrition Recommendations for Pre-diabetes and the Metabolic Syndrome.

Action! See:

- **IHS Guidelines for Care of Adults with Pre-diabetes and/or the Metabolic Syndrome in Clinical Settings**, 2008 at the Division of Diabetes Clinical Guidelines page:
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsClinicalGuidelines>
- **Indian Health Diabetes Best Practices on Nutrition and Physical Activity 2011**
- **ADA**, 2011 <http://www.diabetes.org/>

C. Recognize that there is not one best type of diet.

1. **Use an individualized approach** when working with patients or clients. The best predictor of weight loss is not the type of diet, but sticking with the diet, regardless of the diet used (Dansinger et al., 2005). A comparison of weight loss diets with different compositions of fat, carbohydrate, and protein, showed that reduced calorie diets result in weight loss regardless of macronutrients (Sacks et al, 2009; Larsen et al., 2010; Foster et al., 2010).
2. **For weight loss, either low-carbohydrate (CHO), low-fat calorie-restricted, or a Mediterranean diet plan may be effective in the short term** (up to two years) (ADA, 2011). Comparatively, low CHO diets have been shown to reduce weight more in the short-term, e.g., six months, but generally are more difficult to comply with in the long-term. (Shai et al., 2008).
3. **Mediterranean type dietary behavior* has the largest body of scientific evidence** over the last fifteen years with demonstrable efficacy for modest levels of weight loss but more importantly improved cardiometabolic risk factors, reduced metabolic syndrome incidence, reduced oxidative stress, and increased insulin sensitivity. (Esposito et al., 2011, 2010, 2004; Romaguera et al., 2010; Rumawas et al., 2009; Brill, 2009).

*The traditional Mediterranean diet is characterized by a high intake of vegetables, legumes, fruits and nuts, and cereals, and a high intake of olive oil but a low intake of saturated lipids, a moderately high intake of fish, a low-to-moderate intake of dairy products (and then mostly in the form of cheese or yogurt), and a low intake of meat and poultry.

D. Create an individualized healthy eating plan.

1. **Work with the client to develop a healthy eating plan** that is low in total, saturated, and *trans* fats, cholesterol and salt. This will help lower risk for heart disease. Cutting down on fats and added sugars also can help in consuming fewer calories and losing weight. Choose a variety of nutrient-dense foods.

2. Consider plant-based Mediterranean dietary approaches because of its integration of plant-based, lower fat, but reasonable carbohydrate and fat intake (Brill, 2009). The NHLBI DASH diet is very similar to a Mediterranean style diet with the exception of the emphasis on olive oil (National Heart, Lung, and Blood Institute, 2006).

3. Nutrient-dense foods include:

- fat-free and low-fat dairy products such as yogurt, cheese, and milk,
- lean meat, fish, poultry, cooked beans, and peas,
- whole grains foods such as whole wheat bread, tortillas, pasta, oatmeal, brown rice, cereals, and crackers,
- fruits that are canned, frozen, fresh or dried,
- vegetables that are canned (without salt), frozen and fresh.
- Canola or olive oils and soft margarines made from these oils are heart healthy but should be used in small amounts because they are high in calories.

4. Limiting foods and drinks with added sugars is important.

5. Water is the calorie-free drink and important for weight loss.

Action! See Indian Health Diabetes Best Practice Nutrition 2011, 2010 US Dietary Guidelines, USDA Food Guide, and the DASH (Dietary Approaches to Stop Hypertension) Eating Plan (National Heart, Lung, and Blood Institute, 2006).

E. Develop an objective tool to score dietary behavior change.

Adult CMR and weight management programs should develop several tools to measure dietary behavior change over the course of care, e.g., twelve months, in order to evaluate patient and group progress. These do not need to be research/academic quality tools but a method to gauge change in healthy dietary choices between RD or provider visits.

Example tools:

- Simple *Start the Conversation* (STC) 8-item instrument (Paxton et al., 2011)
- Fast food encounters/week
- Mediterranean diet score
- *Game Plan Food and Activity Tracker* and *Game Plan Fat and Calorie Counter* (National Diabetes Education Program, 2006)
- AADE7™ Self-Care Behaviors Handout, *Healthy Eating* (AADE7™ Self-Care Behaviors are now incorporated into the IHS Electronic Health Record Template)
- Individualized RD-developed objective dietary assessment culturally-specific to the Tribe

- Fruit and vegetable servings/day

F. Consider using non-diet approaches.

Non-diet approaches such as the “A New You: Health for Every Body” program provide a health-centered versus weight-focused approach.

Note! For more information see **Part 3** – [Tools and Resources](#).

Consider commercial weight loss programs that might be appropriate for some individuals. Maintenance of weight loss on very low energy diets (liquid formulations of 800 calories per day, containing high biological value protein, at least 100% daily values (DV) of essential vitamins and minerals, requiring close medical monitoring) has been shown to be problematic with varying levels of weight regain based on differences in weight maintenance strategies (American Dietetic Association, 2009).

Team Notes:

Key Recommendation 4. Implement a systematic approach to increasing daily physical activity.

Why?

Physical activity programs are part of weight loss therapy and maintenance. Diet and exercise together provide the best approach for weight loss and maintenance. Physical activity has other benefits: it improves insulin sensitivity (with or without weight loss), helps lower non HDL-cholesterol, total cholesterol, low-density lipoprotein (LDL) cholesterol, and triglycerides, and it decreases abdominal fat and increases cardiorespiratory fitness (Colberg et al., 2010; Donnelly et al., 2009).

Most initial weight loss occurs as a result of decreased calorie intake, rather than increased physical activity (National Heart, Lung, Blood Institute, 1998). For long-term weight loss, however, increased physical activity is essential (Catenacci et al., 2008).

The optimal volume of exercise to achieve sustained major weight loss is probably much larger than the amount required achieving improved blood glucose control and cardiometabolic health (Donnelly et al., 2009; Colberg et al., 2010).

In randomized control trials, about one hour of daily moderate aerobic exercise produces at least as much fat loss as equivalent caloric restriction, with resultant greater insulin action (Ross et al., 2004; Colberg et al., 2010).

How to Implement the Key Recommendation

A. How much physical activity for overweight and obese patients?

The latest American College of Sports Medicine Guidelines on Physical Activity and Weight Loss based on many recent trials supports moderate intensity physical activity between 150 and 250 minutes per week to be effective to prevent weight gain. This is equivalent to 1,200 to 2,000 kcal/week. There is also a dose-response effect of physical activity on weight loss, with physical activity of less than 150 minutes per week resulting in minimal weight loss. Greater amounts of physical activity (> 250 minutes/week) have been associated with clinically significant weight loss (e.g., 5 kg) (Donnelly et al., 2009).

Overall, the amount of physical activity required for long-term weight control is 200-300 minutes/week of moderate physical activity or 2,000 kcal/week. This volume may be accumulated with repeated exercise bouts of ten minutes. Two-thousand kcal/week is approximately equivalent to 20-25 miles a week of walking or approximately 36,000 - 44,000 step counts at ~2,000 steps per mile on a reliable well-engineered pedometer.

Action! See the Indian Health Diabetes **Best Practice Physical Activity**

B. How much physical activity for overweight and obese patients with diabetes?

The above ACSM guidelines appear to be appropriate for adults in general including type 2 diabetes patients. However the only large and most applicable study on weight loss and type 2 diabetes to date is the 5,145-patient Look AHEAD (Action for Health in Diabetes) randomized clinical trial. The 4-year results of the Look AHEAD trial demonstrated a 6.15% reduction in body weight (vs. -0.88% in control group) plus significant reduction in CMR risk factors and related biomarkers. The exercise goal was 175 minutes of moderate-level physical activity per week which was mostly but not exclusively walking. Activities of \geq ten minutes duration counted toward the 175 min goal. Caloric restriction and dietary portion control were also employed as weight loss strategies in the Look AHEAD trial (Look AHEAD Research Group, 2010).

A complete description of the Look AHEAD lifestyle intervention is published by the Look AHEAD Research Group (Look AHEAD Research Group, 2006).

C. Assess medical and motivational readiness for physical activity.

Action! Refer to the Division of Diabetes **Quick Guide Card section on Physical Activity Screening tools**

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

In general the Physical Activity Readiness Questionnaire (Par-Q) is a good tool for screening people who may need a medical clearance before beginning a physical activity program.

Action! You can also access the Par-Q at <http://www.shapeup.org/fitness/assess/parq1.php>.

Depending on the number of cardiovascular disease risk factors and the level of anticipated exercise the patient may also first require a medical exam and an exercise ECG test.

Action! See IHS Division of Diabetes **Quick Guide Card section on ECG testing criteria**
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsPAHowtoECGScreening>

D. Assist in making an individualized exercise plan.

1. Assess the patient's preference for the mode of activity after having exemplified a number of activities appropriate for improved fitness and weight loss.

Action! See IHS Division of Diabetes **Quick Guide Card Section on Physical Activity** for example activities

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

For example: walking, hiking, cycling, walk-jog, swimming, select supervised aerobic and resistance training classes.

Specific activities described in detail on Quick Guide Cards:

- Household circuit chores
- Pedometer walking
- Pedometer trekking
- Exercise equipment utilization
- Resistance training
- Indian running/walking
- Youth pedometer activity assessment

2. Estimate the total amount of physical activity (in terms of minutes, steps, kcal expenditure) of daily moderate physical activity that the patient will require to reduce cardiometabolic risk and eventual body weight loss.

- **Note:** the weekly physical activity energy expenditure to reduce CMR is generally less than that required for weight loss.
- Ranges of 1,000 to 3,000 kcal per week of physical activity are required depending on goals and initial level of health and fitness. This range translates to about two to seven hours a week of moderate level exercise or approximately 20,000 to 60,000 pedometer step counts per week.

3. Describe and illustrate what low, moderate, and vigorous level (exercise intensity) physical activity is.

- Low-level: 20-40% of aerobic capacity or physical effort max*
- Moderate: 40-60% of aerobic capacity or physical effort max
- Vigorous: > 60% of aerobic capacity or physical effort max

*note that these percentages do not reflect percentage of predicted maximum heart rate which is a somewhat higher range.

Table 2. Standards for Physical Activity*

	Significant Weight Loss	Reduce Risk of Diabetes**
Type of Activity	Aerobic	Aerobic
Intensity	Moderate	Moderate
Frequency	5-7 days/week	5 days/week
Duration	30-60+ minutes/day, progress to 300 minutes/week***	≥ 30 minutes/day, ≥ 150 minutes/week***
kcal expenditure	2,000 to 3,000 kcal/week 40,000 to 60,000 pedometer steps counts/week***	1,000 to 1,500 kcal 20,000 to 30,000 pedometer step counts/week***

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

** May be accompanied with a small to very moderate weight loss.

***These minutes, kcals, and step counts are in addition to activities of daily living.

4. **Suggest starting a physical activity program slowly and build up the intensity a little at a time such as short ten- to fifteen-minute walks once a day or three days a week.** Other examples to increase activity include doing household chores, yard work or gardening, parking farther than usual from work or shopping, and walking up stairs instead of taking the elevator.
5. **Suggest setting a short-term goal with specific measurable objectives to reach the goal.** Establish a plan for monitoring progress such as keeping a daily physical activity log. Next, set a longer-term goal and include strategies to sustain physical activity to prevent weight regain. **Note!** See [Key Recommendation 8: Section A](#). *Provide long-term support to address weight loss maintenance.*

F. Assist with problem solving.

Identify barriers that could disrupt or change the physical activity regimen such as weather, safety issues, equipment, holidays, job, sick days, medications, cultural activities, or religious duties, etc., and identify ways to overcome them.

G. Provide success stories.

Contact health staff and participants from the Special Diabetes Program for Indians using examples of current Best Practices.

H. Use the Physical Activity Kit (PAK) in Tribal sites.

Action! See [Part 3 – Tools](#).

I. Use support groups.

Use interpersonal support groups (e.g., a weight loss or walking club) to encourage and provide support and guidance to make healthful choices.

J. Refer to a certified exercise or fitness specialist.

K. Develop and employ objective physical activity outcomes reporting measures and tools.

All adult CMR and weight management programs should employ one or more tools to report change in physical activity behavior.

For example:

- Pedometer step counts per day and/or per week
- Self-report physical activity encounters per day and per week
- Number of minutes per day and per week of moderate level activity
- Household chore physical activity circuits per week

Action! See the [2011 Indian Health Diabetes Best Practice Physical Activity](#)

Team Notes:

Key Recommendation 5. Provide behavior change approaches to treat overweight and obesity, and reduce cardiometabolic risk.

Why?

Behavior change is an important part of any comprehensive weight loss program. Strategies that focus on specific behavior changes, rather than global psychosocial issues, produce more sustained lifestyle changes (Berkel et al., 2005; DiLillo et al., 2003, Miller et al., 1995).

How to Implement the Key Recommendation

A. Provide ongoing, culturally appropriate individual and group counseling, interventions, and case management. Consider cultural perceptions about weight and encourage individual to discuss how overweight or obesity has affected his or her life. Recognize that individuals must want to lose weight, change their eating and activity patterns, and keep the changed eating and activity patterns for a lifetime. Focus on changing current behaviors related to physical activity and food intake to achieve weight loss.

B. Match behavioral tools with each individual's unique set of characteristics:

- self-monitoring
- stress management
- goal setting
- stimulus control
- problem solving
- contingency management
- motivational interviewing
- cognitive restructuring
- relapse prevention
- stages of change
- social support
- body image therapy

C. Consider implementing new behavior modification approaches, such as Internet-based interventions and telephone interventions such as text messages.

D. Refer clients for additional behavioral health services for psychosocial issues as necessary.

Team Notes:

Key Recommendation 6. Provide medications and supplements as appropriate.

Why?

Pharmacotherapy is appropriate for some patients as an adjunct to lifestyle interventions to facilitate weight loss and prevent weight regain. In randomized trials of FDA-approved medications combined with changes in lifestyle, the reduction in initial weight was 3-5% greater with the medications (Eckel, 2008). Medications can lead to modest weight loss at one to two years, but data are not available on long-term effectiveness and safety (American Dietetic Association, 2009).

How to Implement the Key Recommendation

- A. Consider pharmacotherapy that may be helpful for eligible high risk patients and should be used only under medical supervision.**
- B. Current criteria for the use of pharmacologic therapy for obese patients are a BMI > 30 or a BMI > 27 in the presence of one or more coexisting conditions.**
- C. Use prescription weight loss medications as part of a comprehensive program that also includes healthy eating, physical activity, and behavioral therapy.**
- D. Use caution or avoid non-prescription supplements or herbal therapies.** Seek medical consultation before use.
- E. Currently FDA approved weight loss drugs** (National Institute of Diabetes and Digestive and Kidney Diseases, 2010).

Two classes of weight-loss agents are currently available by prescription: noradrenergic agents for short-term weight loss and a lipase inhibitor for long-term weight loss:

- Phentermine
- Diethylpropion
- Benzphetamine and Phendimetrazine
- Orlistat (gastrointestinal and pancreatic lipase inhibitor)

- F. Become familiar with medications that increase body weight.**

Some medications increase body weight and should be considered in the initial clinical evaluation.

Action! For a list of medications associated with weight change go to <http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsQuickGuides&nav=1>

Action! See [Appendix E](#). Drug-associated Weight Change Reference

Team Notes:

Key Recommendation 7. Consider weight loss surgery as appropriate.

What and Why?

Weight loss is achieved by reducing the size of the stomach with an implanted medical device (gastric banding) or through removal of a portion of the stomach (e.g., sleeve gastrectomy) or by resecting and re-routing the small intestines to a small stomach pouch, i.e., gastric bypass surgery. Long-term studies show the procedures cause significant long-term loss of weight, recovery from diabetes, improvement in cardiovascular risk factors, and a reduction in mortality of 23% from 40% (Robinson, 2009).

Surgery should be reserved for clients with severe disease who have failed to find less invasive interventions successful and are at high risk for obesity-related morbidity and mortality (American Dietetic Association, 2009; Poirier et al., 2011).

Patients who undergo bariatric surgery must also commit to a lifetime of healthy eating and regular physical activity. These health habits help ensure that the weight loss from surgery is successfully maintained (Weight-control Information Network, 2009, Longitudinal Assessment of Bariatric Surgery (LABS) Consortium, 2009).

How to Implement the Key Recommendation

ADA 2011 Clinical Practice Recommendations

1. **Bariatric surgery may be considered for adults with BMI > 35 kg/m² and type 2 diabetes**, especially if the diabetes or associated comorbidities are difficult to control with lifestyle and pharmacologic therapy.
2. Patients with type 2 diabetes who have undergone bariatric surgery need **lifelong lifestyle support and medical monitoring**.
3. Although small trials have shown **glycemic benefit of bariatric surgery in patients with type 2 diabetes and BMI of 30–35 kg/m²**, there is currently insufficient evidence to generally recommend surgery in patients with BMI < 35 kg/m² outside of a research protocol.
4. The **long-term benefits, cost effectiveness, and risks of bariatric surgery in individuals with type 2 diabetes should be studied** in well-designed controlled trials with optimal medical and lifestyle therapy as the comparator.

All procedures require lifelong medical follow-up and monitoring after surgery to avoid and manage possible complications, promote behavioral change and adjustment to post-surgery dietary and supplement requirements (American Dietetic Association, 2009).

Weight loss therapy is more effective when accompanied by pre- and post-operative comprehensive therapy to modify eating, smoking, and exercise behavior.

As for all other interventions for obesity, **an integrated program should be in place that will provide guidance concerning the necessary dietary regimen, appropriate physical activity, and behavioral and social support** both prior to and after the surgical procedure (Snyder-Marlow et al., 2010).

One recently developed tool, the **'bariatric food pyramid'** can be used as a tool to **help both therapists and patients to understand nutrition recommendations** to promote a healthy long-term post-op dietary pattern (Moize' et al., 2010).

Team Notes:

Key Recommendation 8. Provide long-term support to address weight loss maintenance.

Why?

Evidence suggests that over 80 percent of persons who lose weight will gradually regain it. Patients who continue on weight maintenance programs have a greater chance of keeping weight off. Maintenance consists of continued contact with the health care practitioner for continued education, support, and medical monitoring (National Heart, Lung, and Blood Institute, 2000).

Lifestyle interventions involving diet, exercise, and behavior modification may produce clinically significant weight reductions. Studies show, however, that one-third to one-half of lost weight is regained during the year following treatment. If lost weight is not maintained, the associated health benefits also may not be sustained (Perri et al., 2008). It takes a lifelong commitment by clients to constantly maintain a lower energy intake or a combination of lower energy intake and increased physical activity. It is not clear which maintenance strategy is best for all individuals (American Dietetic Association, 2009; Donnelly et al., 2009).

How to Implement the Key Recommendation

- A. Provide long-term support such as a program or a monitoring system.** This is critical to maintaining weight loss and preventing weight regain. The Diabetes Prevention Program's Lifestyle Balance curriculum includes materials for beyond the initial sixteen Core sessions, called "After Core".

Action! See http://www.bsc.gwu.edu/dpp/lifestyle/dpp_acor.html.

Consider using the weight maintenance strategies practiced by successful weight loss maintainers in the *National Weight Control Registry* (Thomas, 2011).

Note! See Part 3 – Tools for information about the National Weight Control Registry.

Weight loss maintenance appears to get easier over time; the chance of longer term success greatly increases after maintaining the weight loss for two to five years (Wyatt et al., 2005).

Frequent clinical encounters during the initial six months of weight reduction appear to facilitate reaching the goals of therapy (National Heart, Lung, and Blood Institute, 2000).

Keys to Maintaining Weight Loss and CMR Reduction

Eat a healthy balanced diet void of excess calories.

Self-monitor exercise and dietary behavior, body weight and food intake frequently.

Have a cardiometabolic risk laboratory panel performed at least annually for those with type 2 diabetes.

Engage in moderate physical activity on a daily basis.

Follow-up/long term support (Experience of the Special Diabetes Program for Indians (SDPI) Healthy Heart Project registered dietitians, and Diabetes Prevention Program lifestyle coaches is that patients are seen monthly after the “intervention” or more often (individualized); this is critical for maintaining weight loss and CMR risk.)

- B. Provide ongoing follow-up care such as telephone calls to monitor and support action plan.** Ask for ongoing support from the community, health care system, and providers (e.g., resources, staff time, equipment, space, etc.).
- C. Smoking and obesity together increase cardiovascular risk, but fear of weight gain upon smoking cessation is an obstacle for many patients who smoke.** All smokers, regardless of their weight status, should quit smoking. Prevention of weight gain should be encouraged and if weight gain does occur, it should be treated through dietary therapy, physical activity, and behavior therapy, maintaining the primary emphasis on the abstinence from smoking (National Heart, Lung, and Blood Institute, 2000).

Team Notes:

Additional Recommendations

Working Together with your Community and Organization

In addition to implementing the Key Recommendations, programs need to work on broader community and organizational support of the goals they are trying to achieve.

Community Recommendation

Develop and implement culturally appropriate adult weight and cardiometabolic risk management messages.

Why?

Adult weight and CMR management education messages that are culturally appropriate and use culturally appropriate formats can have a positive effect (Chino et al., 2007).

How to Implement the Key Recommendation

Community and Tribal focus on the specific lifestyle behaviors to reduce CMR and weight – i.e., better dietary choices and daily physical activity versus overemphasizing body weight as the main goal.

- **First focus on the lifestyle behavior** to reduce cardiometabolic risk and the corresponding cardiometabolic risk factors particularly non-HDL-cholesterol, triglycerides, and blood pressure.
- **Then** focus on body composition (fat weight loss) changes.
- **Then** focus on body weight!

Provider – Patient Goal Priorities

1. Lifestyle behavior
 2. Laboratory markers of CMR – especially non-HDL-C, triglycerides, blood pressure
 3. Body composition changes (skinfold, waist circumference)
 4. Body weight
- A. Use culturally appropriate approaches** such as talking circles and forums to increase knowledge of the link between overweight and obesity and risk of diabetes, and diabetes complications (Struthers et al., 2003).
- B. Work with Tribal government** and local business leaders to provide adequate and affordable healthy foods and healthy food public policy in the community.
- C. Offer cooking classes and food demonstrations.**
- D. Offer support groups.**

- E. Conduct community campaigns** that increase knowledge about effective approaches to attain and manage a healthy weight in adults with diabetes and at risk for diabetes by:
- **featuring successful participants** in a lifestyle change program telling his or her story on a local radio show or interview for a Tribal newsletter article, and
 - **featuring local people or family members being physically active** and participating in traditional activities such as harvesting traditional food and running races.

Team Notes:

Organization Recommendation

Provide support to members of the diabetes team.

Why?

Health care systems that provide medical support and resources to make and sustain healthy choices can result in effective prevention and treatment of overweight and obesity and decreased CMR (IHS, 2011; Neisner et al., 2003; ADA, 2011).

How to Implement the Key Recommendation

A. Create an environment that promotes healthy lifestyles by supporting environmental and policy changes. For example:

1. **Conduct community campaigns to increase awareness** that weight management is a lifelong process.
2. **Create opportunities for physical activity at worksites** by giving employees 30 minutes to exercise, posting nutrition content of meals, and providing non-sugary beverages and low-calorie foods in vending machines.
3. **Make community facilities available and accessible** for physical activity for all ages, including the elderly (e.g., open schools and/or wellness centers on weekends and evenings).
4. **Encourage environmental changes** for increasing access to healthful foods, including neighborhood gardens, and healthy food and beverage choices in grocery stores and farmers' markets where possible.
5. **Expand coalitions and partnerships** within IHS through the Healthy Weight for Life Initiative and with other Federal agencies to build a dynamic Indian Health Network for healthy weight management.
6. **Develop tools for local programs to assess existing resources** and assets, and to identify the gaps and needs for local healthful eating and physical activity services.
7. **Disseminate information about successful weight loss programs** to American Indian and Alaska Native communities through the IHS network (e.g., email, list-serves, and online messages).
8. **Encourage partnerships** between health care providers/facilities and schools, faith-based groups, traditional healers, cultural divisions, and other organizations regarding prevention efforts.

B. Use evidence-based guidelines to facilitate clinical decision-making and improve outcomes.

- C. Use a multidisciplinary team approach** and dedicate resources to a weight management program and build communication among members.
- D. Provide staff training to increase sensitivity and foster respect for overweight and obese clients.** It is important that health care providers be aware of their own biases regarding individuals who are overweight or obese (American Dietetic Association, 2009).
- E. Provide community education to improve understanding of weight management.**

Team Notes:

PART 3 Appendices, Tools, and Resources

Appendix A. Supplemental Information

1. Importance of an Adult Weight and CMR Management Program

In people who have diabetes, overweight, and obesity can complicate the management of diabetes by increasing insulin resistance and raising blood glucose levels. Weight loss is recommended for all overweight or obese individuals who have or at risk for diabetes (ADA, 2011). People who are overweight are more likely to develop type 2 diabetes, hypertension, dyslipidemia, and cardiovascular disease. In addition, excess body fat – especially abdominal fat – may produce substances that cause inflammation. Inflammation in blood vessels and throughout the body may raise heart disease risk (Weight-control Information Network, 2010).

Overweight and obesity can also worsen the long-term complications of diabetes (Magkos et al., 2009; Masuo et al., 2010). Obesity in people with diabetes is associated with poorer control of blood glucose levels, blood pressure, and dyslipidemia, placing them at higher risk for both cardiovascular and microvascular diseases. Obesity also increases the risk for renal disease, asthma, pregnancy complications, sleep apnea, and degenerative joint disease (Masuo et al., 2010).

Most adults with diagnosed diabetes are overweight or obese. During 1999--2002, the prevalence of overweight or obesity for U.S. all races was 85.2% (Eberhardt et al., 2004). The prevalence of obesity is high among American Indian and Alaska Native adults with diabetes. In 2010, IHS Diabetes Care and Outcomes Audit found the estimated rate of overweight or obesity for people with diabetes using BMI ≥ 35 was 81% (IHS, 2011).

Food insecurity (limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways) is associated with overweight and obesity (American Dietetic Association, 2010), and is a concern in American Indian and Alaska Native communities.

Consistent but limited evidence suggests that lower energy density diets (characterized by a relatively high intake of vegetables, fruit, and total fiber, and a relatively low intake of total fat, saturated fat, and added sugars, lower consumption of meat, processed meats, and energy-containing beverages) may be associated with lower risk of type 2 diabetes among adults (U.S. Dietary Guidelines Advisory Committee, 2010).

Action! See Indian Health Diabetes Best Practice Nutrition

There is strong evidence that physically active adults who are overweight or obese experience a variety of health benefits that are generally similar to those observed in people of ideal body weight. People of all body weight classification and regardless of age, sex, race/ethnicity, or socioeconomic status gain health and fitness benefits, including lower rates of various chronic diseases, by being habitually physically active. (U. S. Dietary Guidelines Advisory Committee, 2010)

Action! See Indian Health Diabetes Best Practice Physical Activity and the Quick Guide Cards: <http://www.ihs.gov/medicalprograms/diabetes/index.cfm?module=toolsPAQuickGuides>

All patients with diabetes are at high cardiometabolic risk particularly at high risk for coronary heart disease. 87% of patients with type 2 diabetes also have the metabolic syndrome (NIH definition of metabolic syndrome is three or more of five metabolic syndrome risk factors (see *Division of Diabetes website, Quick Guide Card section on dyslipidemia*) according to NHANES

III (Alexander, 2003). The metabolic syndrome is the principal driver of the high cardiometabolic risk state (Ervin, 2009).

Action! See IHS Guidelines for Care of Adults with Pre-diabetes and/or Metabolic Syndrome, 2008):
http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Tools/ClinicalGuidelines/PreDiabetes_Guidelines_0209.pdf

As body mass index (BMI) increases, the risk of developing new onset diabetes dramatically increases. People with a BMI > 35 kg/m² but less than 40 kg/m² (Class 2 Obesity) are twenty times more likely to develop diabetes than individuals with a lower BMI (Klein et al., 2004). For example, 60–90% of type 2 diabetes appears related to obesity or weight gain (Anderson et al., 2003).

On average, people who are considered obese pay \$1,429 (42 percent) more in health care costs than normal-weight individuals (Finkelstein, 2009). Medical expenses for people with diabetes are approximately 2.3 times higher than for those people who do not have diabetes, with approximately 10% of health care dollars in the U.S. spent on the condition and its complications (Huang et al., 2009).

IHS Annual Diabetes Audit 2010 All-Areas Summary

Relevant to the 2011 AWCRM Best Practice are the following recent statistics:

- 81% of patients with diagnosed diabetes seen in IHS system are overweight (BMI ≥ 85th %) and 59% are obese (BMI ≥ 95th %).
- 49% of patients with diagnosed diabetes received at least one diet education session by any provider; and only 26% (or one in 4) were seen by a registered dietitian for individualized medical nutrition therapy.
- 41% of patients with diagnosed diabetes received at least one exercise education session by any provider.
- 25% of all patients with diagnosed diabetes had their diabetes in good control (A1C ≤ 6.5).
- 39% of patients with diabetes had blood pressure in control ≤ 130/80.
- The mean fasting triglycerides was 197 mg/dL which is 47 mg/dL above the NIH National Cholesterol Education Program (NCEP) goal.
- The mean LDL-C for diabetes patients continues to decrease (approx. 95 mg/dL in 2010 audit); however, there were still an unacceptable number of diabetes patients who were not at NCEP ADA goal (< 100 mg/dL) and 20-25% of patients without any LDL-C measurement.

2. Benefits and Risks of Implementing This Best Practice

The potential benefits of implementing this Best Practice include:

- A decrease in insulin resistance, lower fasting blood glucose levels, and reduced need for diabetes medication with even a modest weight loss of ten to fifteen pounds (5% of body weight) in people with diabetes (Klein et al., 2004).
- Improved blood lipid and lipoprotein profile, e.g., reduced non-HDL cholesterol, triglycerides, and LDL-cholesterol and increased HDL-cholesterol (ADA, 2011).

Lipid and lipoprotein goals for those with diabetes are LDL-C < 100 mg/dL with an option of < 70 mg/dL in those with overt CVD; non-HDL-C < 130 mg/dL; and triglycerides < 150 mg/dL (ADA, 2011).

- Risk reduction of other chronic diseases such as coronary artery disease, hypertension, and renal disease (ADA, 2011).
- A reduced risk of developing type 2 diabetes by 58% in people with pre-diabetes who have a weight loss of 5-7% of initial body weight through an intensive lifestyle intervention program (Knowler et al., 2002; Diabetes Prevention Program Research Group, 2002, 2009).
- Lower costs associated with the above disorders and diabetes complications (Finkelstein et al., 2009).

Weight loss strategies may carry the following potential risks for some people.

1. This Best Practice should not be implemented for:

- pregnant and lactating women
- people with serious uncontrolled psychiatric illnesses
- people with a serious illness and for whom caloric restriction would exacerbate the illness
- people with a history of anorexia nervosa and bulimia, and
- people with active substance abuse.

2. Weight loss surgery may carry potential risks for some people, including:

- early complications such as bleeding, infection, leaks from the intestinal site, and blood clots in the legs that can progress to the lungs and heart,
- later complications such as malnutrition and hernias, and
- unsatisfactory weight loss or regain much of lost weight.
- Some patients may also require emotional support to help them through the postoperative changes in body image and personal relationships.

3. Rapid weight loss is associated with an increased risk of cholelithiasis, or gallstones.

4. Long-term weight loss drugs, including prescription and over-the-counter, to treat obesity may carry potential risks, including:

- potential for abuse or dependence,
- development of tolerance,
- reluctance to make behavioral changes while using prescription medications, and
- side effects such as gastrointestinal problems, and increased blood pressure and heart rate.

3. Sustaining a Adult Weight Management and CMR Program

- Organizational challenges of implementing the Best Practice may include funding, staffing, and competing priorities. These should be addressed in the organization's strategic plan.
- Implementing a Best Practice has cost implications. An organization needs to prioritize funding to include this Best Practice.
- There are critical issues that must be addressed in order to enhance program success and sustainability. A few of them include:
 - Strong leadership and/organizational support that includes funding for staff, training, and resources and establishing policies that support an effective adult weight and CMR management program.
 - Commit Special Diabetes Programs for Indians (SDPI) funds to adult weight and CMR management.
 - Primary care staff mentoring by adult weight management and CMR champions.
 - Active participation by adult weight management specialists with the diabetes care team and initiating an adult weight management workgroup within the diabetes team.
 - Use of multi-year audit results to identify the effectiveness of activities and to plan next steps.
 - Report outcomes to stakeholders on a routine and regular basis.
 - Ongoing assessment of patient satisfaction with level of care and the use of results to make improvements in program planning and implementation.

Appendix B. Key Measures Example

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

Overweight and obesity is increasing. Our health care center and community are concerned about the increasing number of people who are overweight and obese.

Diabetes team takes action. Our diabetes team talked about addressing this problem and whether the diabetes team could be more involved. We read the Adult Weight and Cardiometabolic Risk Management and Diabetes Best Practice and talked about the Key Recommendations.

Identified Sources of Data. Local data included:

- Audit data that includes BMI.
 - 87% of patients with diabetes were overweight or obese
- RPMS and medical record data.
 - 57% of patients with diabetes had physical activity and nutrition education by an RD in the past year

Selected Suitable Best Practice. After thinking carefully about our goals and resources, and reviewing data, we decided the Adult Weight and Cardiometabolic Risk Management and Diabetes Best Practice was a good fit for us. We chose to work on three of the Key Recommendations: Train providers so that they have a better understanding of the complexity of obesity prevention and care; assess patients with diabetes for overweight, obesity, and overall cardiometabolic risk; and provide nutrition approaches to treat overweight, and obesity and reduce cardiometabolic risk.

Identified Target Population. We decided to start implementing this Best Practice with the current adult patients listed in our diabetes registry. We will initiate a structured program for adult weight and cardiometabolic risk management, and recruit participants from our patients in the diabetes registry (including diabetes and pre-diabetes).

Identified Program Goals:

- To develop, have in place, and put into practice written guidelines for identification and recruitment of adults who are overweight or obese and have diabetes or pre-diabetes to a structured adult weight and cardiometabolic risk management program.
- To develop, have in place, and put into practice written protocols for adult weight and cardiometabolic risk management that includes intensive lifestyle intervention and support for maintenance of weight loss and physical activity.

Identified SMART Objectives Based on Our Resources and Data:

1. Increase the percent of adults with diabetes and pre-diabetes with a documented assessment for overweight or obesity from 87% to 95% within twelve months.
2. Increase the percent of adults with diabetes and pre-diabetes with documented nutrition and physical activity education by a Registered Dietitian or other provider in the past twelve months from 57% to 70% in the next twelve months.
3. Increase the percent of adults with diabetes and pre-diabetes who achieve both their nutrition and physical activity goals by 30% within the next twelve months.
4. Increase the percent of adults with diabetes and pre-diabetes who achieve their weight loss goal by 20% within the next twelve months.

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 3. Selected Key Measures

	A. Measure	B. Baseline or beginning value and date (collected prior to starting activities)	D. Most recent value and date (if applicable)	E. Data source
1	* Percent of diabetes patients with a documented assessment for overweight or obesity	87% as of 1/01/2011	90% as of 4/05/2011	AWCMRM Program logs, RPMS
2	* Percent of adults with diabetes with documented nutrition and physical activity education by a Registered Dietitian or other provider	57% as of 1/01/2011	65% as of 4/05/2011	AWCMRM Program logs, RPMS
3	* Percent of adults with diabetes who achieve both their nutrition and physical activity goals	No data as of 1/01/2011	12% as of 4/05/2011	AWCMRM Program logs, RPMS
4	* Percent of all participants who achieve their weight loss goal	No data as of 1/01/2011	5% as of 4/05/2011	AWCMRM Program logs, RPMS

* Required Key Measure

Appendix C. Improving Adult Weight Management Programs Example

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 your target population?

- The target population to be covered by this Best Practice is adults who are overweight or obese and have diabetes or pre-diabetes.

2. What are you trying to do?

- Improve adult weight and cardiometabolic risk management care and services for people with diabetes and at risk for diabetes to improve health outcomes.

3. How will you know if what we 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, 90% of people with diabetes have weight assessment as demonstrated in annual Diabetes Audit results.
 - Within six months, there is a 10% increase in the number of patients who participate in an adult weight and cardiometabolic risk management program offered by the SDPI grant program.

4. What can we do to make things better?

- Receive leadership support to improve effective adult weight and cardiometabolic risk management approaches.
- Diabetes team members identify gaps in assessing weight and cardiometabolic risk, and identify realistic solutions.
- Diabetes team works together to increase the number of patients with diabetes and pre-diabetes referred to the adult weight and cardiometabolic risk management program.

Appendix D. Monitoring Progress and Outcomes

The following measures can be used to monitor the effects of implementing this Best Practice:

1. **Body Mass Index (BMI) and body weight can be** tracked using the IHS Diabetes Care and Outcomes Audit data. (e.g., monitor the percentage of patients with diabetes that have height and weight measured and recorded in chart).
2. **Waist circumference measures at baseline and throughout the course of care** is an important evidence-based outcomes measure of CMR risk and progress. Waist circumference is best measured by a Gulick tape measure which is a weighted spring-loaded tape measure ensuring consistent tape tension with each measurement (see *Division of Diabetes Quick Guide Card Section on Anthropometry*).
3. **Optional skinfold measures.** Changes in total body fat (adiposity is the principal goal in weight loss programs) can be better evaluated by measuring serial changes in subscapular and/or triceps skinfolds with Lange calipers (see *anthropometric evaluation in Division of Diabetes Quick Guide Card Section on Anthropometry*).
4. **Laboratory measures of cardiometabolic risk should be tracked at least annually and preferably every six months.** These include (besides adiposity measures): A1C, fasting glucose, non-HDL-Cholesterol, triglycerides, and LDL- and HDL-cholesterol. The Strong Heart study found that both A1C plus fasting glucose were better predictors of CMR than one or the other (Wang et al., 2011).
5. **Objective changes in lifestyle behaviors** such as fewer fast food encounters/meals, increased steps per day and week, increased intake of nutrient-dense foods (whole grains, fruits and vegetables, lean meats, low-fat or fat-free dairy), decrease in energy-dense foods (soda, chips, candy), and reduced intake of fat and calories.

Appendix E. Drug-associated Weight Change Reference

[See chart on the following pages.]

Tools and Resources

Key Immediate Resources to get you started on inaugurating and maintaining a systematic approach to weight management and cardiometabolic risk reduction programs:

Division of Diabetes Quick Guide Cards.

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

National Institute of Diabetes and Digestive and Kidney Diseases. **Diabetes Prevention Program Lifestyle Balance Program Materials.** Participant handouts and lifestyle coach materials are available in PDF and RTF formats.

http://www.bsc.gwu.edu/dpp/lifestyle/dpp_part.html

The President's Challenge

<http://www.presidentschallenge.org/motivated/bmi-calc.php>

IHS. **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 and companion Action Guide; Actions for Communities, and Individuals, and Families.** Rockville, MD: U.S. Department of Health and Human Services, IHS, 2011. <http://www.ihs.gov/healthyweight>. Order Action Guides through the Division of Diabetes online resources catalog <http://www.ihs.gov/MedicalPrograms/Diabetes/>. Navigate on the left bar under "Resources", click "Online Catalog", then click #3. "Resources for Health Care Providers", then click "Healthy Weight for Life – Action Guides".

Let's Move In Indian Country

<http://www.bia.gov/idc/groups/public/documents/text/idc013028.pdf>

Provider Resources

Assessing Overweight and Obesity Tools

An online BMI calculator can be accessed at <http://www.nhlbisupport.com/bmi/>

Body Mass Index (BMI)
BMI < 18.5 is underweight
BMI = 18.5–24.9 is normal weight
BMI = 25.0–29.9 is overweight
BMI = 30.0–34.9 is obesity class 1
BMI = 35.0–39.9 is obesity class 2
BMI ≥ 40.0 is obesity class 3
BMI ≥ 50.0 is obesity class 4
BMI ≥ 60.0 is obesity class 5

Physical Activity Tools

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. A sample log sheet to track progress is located: <http://lancaster.unl.edu/FOOD/walk.pdf>

Physical Activity Kit (PAK). IHS Health Promotion/Disease Prevention and University of New Mexico Prevention Research Center, "Physical Activity Kit (PAK): Staying on the Active Path in Native Communities ... a Lifespan Approach!" Albuquerque, NM, 2009. The goal of the comprehensive kit is to promote age- and culture- 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.

http://www.ihs.gov/hpdp/index.cfm?module=dsp_hpdp_resources_physicalactivitykit

Readiness for Change and Behavior Tools

To assess stage of change or readiness for behavior change, consider this tool:

<http://www2.medicine.wisc.edu/home/naa/readinessstages>

To assess confidence level for setting goals using the Ultra-Brief Person Action tool.

http://coloradoguidelines.org/pdf/pcmh/resources/cafp-conference/handouts/sms-reims/Cole_UB-PAP.pdf

To assess behavior using the National Heart, Lung, and Blood Institute's Brief Behavior Assessment Tool (NHLBI, 2000):

http://www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf

http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/algorithm/algotext.htm

Effective Weight Loss Strategies and Approaches

The Diabetes Prevention Program (DPP) curriculum manuals may be downloaded, duplicated, transmitted, and otherwise distributed for educational or research purposes provided proper credit is given to the DPP Research Group.

<http://www.bsc.qwu.edu/dpp/manuals.htmlvdoc>

A New You: Health for Every Body is a ten-session multi-method, experiential learning program offers insights and tools for setting and achieving goals for health behavior changes in the areas of food, physical activity and body image. It incorporates principles of body-size differences and size-acceptance.

http://www.uwyo.edu/WINTHEROCKIES_EDUR/ANewYou.asp

For Communities

Khan L, Sobush K, Keener D, Goodman K, Lowry A, Kakietek J, Zaro S. **Recommended Community Strategies and Measurements to Prevent Obesity in the United States.** Morbidity and Mortality Weekly Report. July 24, 2009;58(RR-7). The 24 recommended community strategies represent a first step that communities can use to assess local policies and environments that support healthy eating and active living.

<http://www.cdc.gov/mmwr/PDF/rr/rr5807.pdf>. A companion manual, **Implementation and Measurement Guide**, shows how local governments can use community strategies and measures of environmental and policy change.

http://www.cdc.gov/obesity/downloads/community_strategies_guide.pdf

Web-based Resources

American Council for Fitness and Nutrition. The American Council for Fitness and Nutrition (ACFN) is a non-profit 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. <http://www.acfn.org>

American Diabetes Association (ADA). <http://www.diabetes.org>.
<http://www.diabetes.org/food-nutrition-lifestyle/lifestyle-prevention.jsp>

American Dietetic Association. <http://www.eatright.org>
<http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/nutrition.html>

Cardiometabolic Support Network. <https://www.cmsnonline.com/Home>

Centers for Disease Control and Prevention **BMI calculator.**
<http://www.cdc.gov/healthyweight/assessing/bmi/index.html>

Centers for Disease Control and Prevention. **Division of Nutrition, Physical Activity and Obesity.** <http://www.cdc.gov/nccdphp/dnpao/index.html>

Centers for Disease Control and Prevention – **Obesity: Halting the Epidemic by Making Health Easier, At-a-Glance 2010.**
<http://www.cdc.gov/chronicdisease/resources/publications/AAG/obesity.htm>

Centers for Disease Control and Prevention, **Weight Management Research to Practice Series.** <http://www.cdc.gov/nutrition/professionals/researchtopractice/>

Chronic Care Model. Improving Chronic Illness Care is dedicated to improving the United States health system through supporting providers who care for chronically ill patients with guidelines, specialty expertise, and information systems so that overall health care costs can be lowered through better care delivery. Here you will find a toolkit to improve clinical practice. <http://www.improvingchroniccare.org/>. At this site you will find “Integrating Chronic Care and Business Strategies in the Safety Net: Toolkit,”
<http://www.improvingchroniccare.org/index.php?p=Toolkit&s=244>

Council of State Governments Obesity Prevention Resources. Here you will find a toolkit that provides policymakers with resources, data, trends, and examples of solutions being

implemented or considered by states and legislators across the country that aim to reverse the childhood obesity epidemic. <http://www.healthystates.csg.org>,
<http://www.healthystates.csg.org/Public+Health+Issues/Obesity/Obesity+Resources.htm>

Dietary Guidelines for Americans 2010. The 2010 Dietary Guidelines are available at <http://www.health.gov/dietaryguidelines/>
IHS Division of Diabetes Treatment and Prevention. **Guidelines for Care of Adults with Pre-diabetes and/or Metabolic Syndrome in Clinical Settings.** Sept. 2008.
http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Tools/ClinicalGuidelines/PreDiabetes_Guidelines_0209.pdf

IHS Division of Diabetes Treatment and Prevention **Quick Guide Cards on anthropometry and physical activity.**
<http://www.ihs.gov/medicalprograms/diabetes/index.cfm?module=toolsAnthroQuickGuides>

IHS Division of Diabetes Treatment and Prevention. **Standards of Care for Adults with Type 2 Diabetes.** March 2009.
http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Tools/ClinicalGuidelines/Diabetes_Standards_Care_508Rev2.pdf

IHS Division of Diabetes Treatment and Prevention [Internet]. An online training course on effective program planning and evaluation. [Developed 2009 July] **Creating Strong Diabetes Programs: Plan a Trip to Success.**
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=trainingBasicsCreating>

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

Let's Move! First Lady's Initiative on Obesity. <http://www.letsmove.gov/>

The **Look AHEAD** (Action for Health in Diabetes) trial is studying whether strategies for weight loss in obese people with type 2 diabetes can improve health. This trial is also sponsored by other NIH Institutes and by the Centers for Disease Control and Prevention. For more information on the Look AHEAD trial, visit the website at <http://www.niddk.nih.gov/patient/SHOW/lookahead.htm>

Guide to Community Preventive Services. The Guide to Community Preventive Services is a free resource to help choose effective and proven programs and policies to improve health and prevent disease in your community. Here you will find more than 200 interventions that have been reviewed and the evidence base for their use.
<http://www.thecommunityguide.org/library/default.htm>

National Diabetes Education Program (NDEP). The NDEP is a partnership of the National Institutes of Health, the Centers for Disease Control and Prevention, and more than 200 public and private organizations. NDEP provides many free resources and tools for preventing type 2 diabetes, including the "Small Steps. Big Rewards. Prevent Type 2 Diabetes" awareness campaign that has PSAs, tip sheets, and posters tailored for American Indian and Alaska Native communities ("We have the power to prevent diabetes"). There is also a "Small Steps" health

care provider's toolkit with step-by-step guidance for counseling patients on weight loss and companion consumer brochures that include a fat and calorie counter, and food and physical activity tracker based on the materials used in the DPP. <http://www.ndep.nih.gov/>

National Heart, Lung, and Blood Institute **Clinical Guidelines and Identification, Evaluation, and Treatment of Overweight and Obesity in Adults**. The National Heart, Lung, and Blood Institute, in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases, provide guidelines on the identification, evaluation, and treatment of overweight and obesity. **The 2011 revision of the clinical guidelines are scheduled for release Fall 2011.** http://www.nhlbi.nih.gov/guidelines/obesity/ob_home.htm

National Institute of Diabetes and Digestive and Kidney Diseases **Weight-control Information Network**. The Weight-control Information Network provides the general public, health professionals, the media, and Congress with up-to-date, science-based information on weight control, obesity, physical activity, and related nutritional issues. <http://win.niddk.nih.gov/index.htm>

National Lipid Association. The National Lipid Association (NLA) is a nonprofit, multidisciplinary medical society focused on enhancing the practice of lipid and cardiometabolic risk management in clinical medicine. The NLA represents more than 3,500 members in the United States and provides continuing medical education for physicians and other health care professionals to advance professional development and attain certification in clinical lipidology. The NLA's public health mission is to help reduce deaths related to high cardiometabolic risk states especially dyslipidemia. <http://www.lipid.org>

Obesity is the official journal of The Obesity Society. Available in print and online, *Obesity* is dedicated to increasing knowledge, fostering research, and promoting better treatment for people with obesity and their loved ones. *Obesity* publishes important peer-reviewed research and cutting-edge reviews, commentaries, public health and medical developments. <http://www.obesityresearch.org>.

The Surgeon General's Vision for a Healthy and Fit Nation, 2010. <http://www.surgeongeneral.gov/library/obesityvision/obesityvision2010.pdf>

U.S. Department of Agriculture. **Food Pyramid for Adults.** <http://www.mypyramid.gov/>

Examples of Current Best Practice Programs

IHS Special Diabetes Program for Indians (SDPI) Diabetes Prevention Program (DP) and Healthy Heart (HH) Demonstration Projects

Diabetes Prevention Program (DP)

Kathy Natachu, Project Coordinator
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Susan Phillips, Data Coordinator
South East Alaska Regional Health Consortium (SEARHC) DP Program
susanp@searhc.org
907-364-4474

Barbara Pfeifer, Project Director/Coordinator
United Indian Health Services, Inc. DP Program
Barbara.pfeifer@crihb.net
707-825-4180

Jennie Smith, Project Coordinator
Warm Springs Health & Wellness Center Model Diabetes Program
541-553-2478
jennie.smith@ihs.gov

Healthy Heart Project (HH)

Robin John, Project Coordinator and Lead Case Manager
Yakama Indian Health Center – HH Project
robin.john@ihs.gov
509 865-2102 Ext. 277

Kristy Klinger, Acting Project Coordinator/Case Manager
Whiteriver IHS Service Unit – HH Project
Kristy.Klinger@ihs.gov
928-338-3612

Colleen Permann, Project Coordinator
Wagner Health Care Center IHS – HH Project
colleen.permann@ihs.gov
605-384-3621 Ext. 201

Janine Rourke, Project Director/Coordinator
St. Regis Mohawk Health Services – Lets Get Healthy Program - Healthy Heart
janine.rourke@srmt-nsn.gov
518-358-9667

Donald Vesper, Project Director/Executive Director
Northwest Washington Indian Health Board – HH Project
admin@indianhealthboard.org
360-647-9480 Ext. 200

Additional Contacts

Contacting other people involved in diabetes care 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.

IHS Area Diabetes Consultants

- Serve as project officers for the Special Diabetes Program for Indians Community-Directed Diabetes Program.
- Serve as liaisons between the Special Diabetes Program for Indians grant programs and clinical staff at IHS, Tribal, and Urban Indian health care facilities.
- Help to coordinate an extensive Indian health system diabetes network to facilitate bi-directional information flow from local to national levels.
- Provide diabetes orientation, training, and monitoring activities to health care professionals and paraprofessionals in the Indian health system.
- Work with the IHS Division of Diabetes (Division of Diabetes) to translate and disseminate the latest scientific findings on diabetes treatment and prevention to American Indian and Alaska Native communities.
- Contact information for the Area Diabetes Consultants:
<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=peopleADCDirectory>

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