

## **Making a Difference: Nutrition and Fitness for Native Americans**

**Moderator: Colleen Bray, MS, RD, Food Stamp Program, Mountain Plains Regional Office, Food and Nutrition Service, U.S. Department of Agriculture, Denver, CO**

### **Environmental Interventions for Obesity and Diabetes Prevention Among American Indians: Early Results of the Apache Healthy Stores Study**

**Joel Gittelsohn, PhD, MSc, Associate Professor, Department of International Health, Johns Hopkins University, Baltimore, MD**

Thank you for this opportunity to speak about this topic and present some of the early results of a program called the Apache Healthy Stores Study. I will give a brief background on environmental approaches for obesity prevention and then talk about this program. I think that we can agree, based on the work that Dr. Anliker and many have done, that environmental approaches are very necessary.

When we look at many individual behavior change strategies, we find that the amount of time that you would have to spend to work with each individual person can often be quite labor intensive versus environmental approaches, which have the potential to modify the setting within which obesity or other chronic disease producing behaviors are made. Environmental approaches are potentially more sustainable because they could be institutionalized within different organizations, such as food stores. They do not require individual behavior change in some cases and/or they can actually compliment individual behavior change strategies.

There are a series of recent and less than recent literature reviews on environmental interventions to improve diet that look at different types of interventions in a variety of different types of institutions, including work sites, universities, restaurants, schools, and grocery stores. I will focus on the topic of working with food stores and give you some of the rationale of why it makes sense to do this.

First of all, you can reach the main food gatekeepers within a household. By working with food stores, you can increase the availability of affordable, culturally acceptable, healthy foods within a community. Often, in some settings, food stores are one of the very few community centers, especially in rural areas, where you can reach people and people are coming in on a regular basis. As I mentioned before, food store interventions have the potential for being sustainable since food stores are institutions that exist in virtually every community.

There are a number of limitations in the previous 15 to 20 trials that have been conducted with food stores. One of the first is that there has been very little or no formative research.

This means that there is very little information to help you plan the actual program. There has been limited use of theoretical frameworks and very little process evaluation has taken place, so there is less than an ideal understanding of whether a program was successful and why it was successful? Or, if a program was not successful, what went wrong? What were the pieces? So, process evaluations have been weak.

None of the trials have worked in small stores, like convenience stores or corner stores. Most of the previous intervention trials have focused on large supermarket chains or large supermarkets of one type or another. You know, from working in rural areas and/or inner cities and urban centers, that often what people have access to, on a regular basis or an easy basis, are small convenience stores, corner stores, or gas station stores.

Previous supermarket interventions have employed, in the past, relatively few intervention strategies affecting change and there has been little reinforcement or integration of activities. Often, the activities would take place only in the store and not, for instance, elsewhere in the community. There has been limited evaluation, so most of the time people who have done food store interventions have focused on impact or awareness of the problem, or psychosocial factors, like knowledge or food purchasing, but very little tracking has been done on the impact of a food store program on the actual diet of consumers. Also, I have not been able to detect any work on sustainability.

The goals of the Apache Healthy Stores Program were first, to implement a store-centered nutrition program on the White Mountain and San Carlos Apache reservations. A second goal was to increase sales of healthy foods. Any program that attempts to work with food stores to change the types of foods they are stocking has to face one additional barrier, which is the food stores themselves in terms of their willingness to support this kind of activity. If they see that they are going to lose money; if it is going to impact their bottom line negatively, then of course, they are going to be far less likely or willing to participate. The third goal was to increase the healthy food purchasing, preparation, and diets of community members.

We did extensive formative research in preparation for this program. In terms of the types of information that was gathered and the different types of people that we spoke to, the research included in-depth interviews with owners of both large and small stores, community leaders, and other community members; and included an assessment of diet to get a sense of what people were currently consuming. This helped us understand what foods we should be focusing on.

This formative research was followed by a multiple-day workshop where we involved community members, especially people on the health staff, who were already working in diet and food, and were from the White Mountain and San Carlos Apache reservations. The general strategy, plan, and approaches for this work emerged from this workshop.

The program itself took place in a series of six phases, from June 2003 through June 2004. The focus of each of these phases emerged from the formative work that was done and the community workshop. In terms of the materials that were developed, there were some initial posters and things that were posted in the stores. There were two or three large supermarkets on the two reservations, but there were many more small convenience-type stores, so we worked in both small and large stores. We also developed a logo for the project—it was included on a banner in one of the larger stores that announced the project when it was about to begin.

I have to acknowledge the Bashas' supermarket chain, which represented the large supermarkets that were part of this program. They were tremendously collaborative and, in fact, they did all of the printing for this project, which was substantial. If anyone has tried to price out doing a 3-by-4-foot poster at Kinko's, it is not cheap, and Bashas' covered all of the printing using their own graphics department.

We also developed very simple shelf labels. We tested earlier labels that included the number of teaspoons of sugar or the amount of fat in a particular food, and found that this was too complicated. It was better to just say: this is a better choice; it is lower in fat; it is lower in sugar; or it is a healthy food choice. These labels went up in association with the different foods that were being promoted in each phase. We developed recipes—some were lifted from previously developed efforts. But, we decided to focus on foods that were already commonly consumed in the community on the basis of a dietary recall. We tried to develop healthier alternative recipes for some of these foods.

In the stores themselves, we did a series of cooking demonstrations and taste tests associated with each phase. We had standing end-cap educational displays and, if any of you have worked with supermarkets before, you know that the end-cap is the “prime real estate territory” of any supermarket. It is like beachfront property at Waikiki! So, the fact that they were willing to donate this space to us over the year of the program is a good indication of how collaborative and supportive the store was.

We also developed flyers and brochures, giveaways, and a series of cartoons that appeared in local tribal newspapers. We took a basic family motif and dealt with many of the concepts that were being covered in each particular phase. We also did culturally themed radio announcements. Both reservations have local radio stations and most people actually keep their radio tuned to that station on a regular basis; it is there in the background. So, we had things happening within the stores and at the community level.

Regarding the evaluation and results of the program, the study design was quasi-experimental. We divided the White Mountain and San Carlos Apache tribes into intervention areas and comparison areas. All of the stores in the intervention areas received the program and the comparison areas were delayed in receiving the program. We sampled, at baseline, 270 households. We went to these households and identified and interviewed the main food preparer and shopper.

A little more than a year later, after the program was completed, we went back to those same respondents and we reinterviewed them, using the same instruments, to get a sense of change. We had an intervention group and a comparison group but there was no brick wall between the intervention and comparison areas. There was no way to keep people who lived in the comparison areas from shopping at the intervention areas. I want to address this by looking at information about exposure to the program. After the program was completed, we assessed 176 postintervention respondents who had leveled exposure to different components of the program.

Respondents in the intervention areas were significantly more exposed to the program than people in the comparison areas. They were far more likely to shop in an intervention store than in stores in the comparison areas. They were more likely to have attended a cooking demonstration or a taste test, to have heard about the program on the radio, or to have purchased the food due to one of our shelf labels. They were more likely to have seen a cartoon in the newspaper, seen one of our posters or educational displays, received a flyer, or received one of the several different giveaways. Exposure was definitely higher in the intervention area than in the comparison area.

I want to present some of the results, which are fairly preliminary. In fact, these are so hot off the press that I was working on them yesterday. Based on these results, we can say that knowledge increased according to the scales that we developed. These are all food-related areas. We found no difference in label reading. We saw an increase in terms of self-efficacy for making healthy food choices, although this difference was not significant. There was improvement in food-related intentions for making healthy food choices or for preparing healthy foods. Again, this difference was not significant, but trended in the direction we had hoped to see.

To judge the frequency of purchasing the promoted foods, we asked how many times people purchased the foods in the previous 30 days. We saw increased frequency of purchasing—now, this has nothing to do with the quantity; we just asked if they purchased it more frequently or not. We saw an increased frequency of purchasing baked chips and what I call “good” cereals, which are cereals that are lower in sugar and/or higher in fiber. We also saw an increased frequency in the purchase of lower-fat milk, fruits, vegetables, and cooking oil spray. This is encouraging to see—that at least frequency of purchase of some of these foods that we were promoting increased in the intervention area as opposed to the comparison area.

Regarding consumption, the main instrument that we used to assess consumption was a quantitative food frequency instrument developed for this particular setting by Dr. Sangita Sharma at the Cancer Research Center of Hawaii. The food frequency instrument included almost all of the foods that people consume. There were 166 different foods. Now, did we get every single one? No, and we did combine some of them. The results that I am going to present from the food frequency are changes in frequency of consumption.

I have not done the analysis yet on change in gram consumption, which would be a much cleaner way to look at this because somebody might be eating food more frequently, but they are eating less each time or vice versa. These are analyses that will have to wait until the future. We didn't see any impact on fresh fruits. In fact, there is a slight decrease in the frequency of consumption of fresh fruits. But, in terms of all vegetables or green vegetables, we see that there is a trend toward a higher frequency of consumption of those foods in the intervention areas versus the comparison areas.

If we look at cereals, we see no difference in the sugary cereals, we were hoping it would go down in terms of frequency of consumption, but we did not see any change between the two groups in terms of low-sugar cereals. We did a small, but significant, increase in consumption of higher-fiber cereals and the difference was significant between the intervention and the comparison. In fact, comparison area respondents actually decreased a little bit. There were no significant differences in milk consumption, but we had promoted lower-fat milk consumption as an alternative to whole milk consumption. We did see higher mean frequencies of consumption of 2 percent and 1 percent, or skim milk, in the intervention areas versus the comparison, but this was not significant by our statistical analyses.

In terms of impact on beverage consumption—for the analysis of beverage consumption, I placed the healthier beverages—and some people I know will argue about this—water, diet soda, 100 percent juice in one category, and then the less healthy beverages, regular soda and other sugary drinks, in another category. The significant change is very positive. There was a very large mean decrease in frequency of consumption of the unhealthy beverages. We tried to reduce consumption of soda because it contributes a very high proportion of dietary sugar intake in this population.

Regarding the impact on frequency of both sweet and fast-food snacks, I was somewhat disappointed not to see any significant differences in consumption of healthier snacks. We spent a lot of time trying to get people to eat baked chips and pretzels instead of the regular potato chips. However, I will say that, in the intervention group, there was a nonincrease over time in the consumption of sweets and fast foods. In other words, it remained about stable. But, what appears to be going on is a trend, at least in the comparison group, for increased frequency of consumption of these sweets: donuts, cakes, fast foods, etc. So hopefully, they bucked the trend. We tried to cut down on fast food as part of the program.

So, what are the next steps? The next steps include making this program sustainable in the community. We have received some funding from the USDA to do this and we are currently in the stages of transferring this program to the local diabetes programs there. We are also expanding the program to the Navajo Nation in a program that may be called Navajo Healthy Stores. We are in the process of obtaining approvals from local communities, the agency area councils, and the Navajo Nation to do this.

I want to acknowledge many collaborators, including Jean Anliker, the next speaker, and invite you to visit the website for the project, [www.healthystores.org](http://www.healthystores.org). Thank you very much.

## **Pathways, An Obesity Prevention Program for Native American School Children**

**Jean A. Anliker, PhD, RD, LDN, Research Associate Professor, University of Massachusetts, Amherst, MA**

First of all, I am here as the presenter, but I am really representing countless individuals from seven American Indian Nations, five universities, and the National Heart, Lung, and Blood Institute (NHLBI) who worked on this project. Although I couldn't list their names individually, I want to acknowledge their great work.

"Pathways" was a comprehensive school-based obesity prevention program for American Indian children in grades three through five. It was an NHLBI collaborative study. We did the feasibility study from 1993 to 1996 and then did a full-scale study from 1996 to 2001. Even though this is a few years old, I did a quick review of the literature on obesity prevention for American Indian children and there hasn't been much done since this study.

As all of you know, who have experience with American Indian Nations, there has been a dramatic rise in obesity, heart disease, and diabetes in the past few decades. In addition, there have been many lifestyle changes, including decreased physical activity and increased consumption of calories and high-fat foods. The primary aim of "Pathways" was to evaluate a comprehensive, culturally appropriate program for the primary prevention of obesity in school-age children, using percent body fat as the primary outcome variable.

Our secondary aims were to see if we could make changes in the children's diets and physical activity behaviors, and their knowledge, intentions, and attitudes about foods and physical activities. We also wanted to assess the efficacy of and safety of program components because this was school-wide and not just targeted to obese or overweight individuals. Finally, we wanted to identify constraints for future school-based prevention programs.

I also want to acknowledge Joel Gittelsohn, who is here today talking about another project with the Apache. Joel was very involved in "Pathways" and contributed some great work. The universities that were involved included Johns Hopkins, the University of Arizona, the University of Minnesota, and the University of New Mexico; the University of North Carolina was the coordinating center. Again, this was supported by the National Heart, Lung, and Blood Institute.

Whenever I talk about any cross-cultural intervention, there are two things I like to emphasize. One is the importance of forming a strong partnership at all levels of the planning, development, pilot testing, intervention, and evaluation. This is critically important and we worked in concert with all of the American Indian communities. The other thing I like to focus on is the importance of not only conducting the research, but also giving back to the community. So as we planned, delivered, and tested our program, we wanted to make sure that we were designing a program that could benefit the community. We followed a history of research that didn't always do that and I think it is critically important.

**Partnerships.** The American Indians were involved in this project in several ways. First, an extensive approval process involving the tribal leaders and all levels of the tribal community was developed. We formed local American Indian advisory groups and involved the tribal members in many types of formative assessment. We also hired them as our research project staff, so they conducted interviews with other tribal members and helped deliver the interventions. The training that we provided to them is another way we hope we have contributed to their communities.

Members of these American Indian tribes were represented on every single "Pathways" committee. In addition, they had their own Seven Nations Committee, which had final approval over absolutely everything we planned. This includes all of the interventions, all of the assessment instruments, and any changes that were proposed to those. Lastly, the tribes were involved in contributions to their communities through "Pathways."

**Formative Assessments.** We conducted formative assessments of children, schools, community leaders, parents, and their environments:

- ◆ We interviewed the children in pairs, to make them more comfortable and more verbal during the interviews. We also observed them in food stores.
- ◆ We conducted interviews in the schools with school teachers, staff, food service personnel, and anyone else who might be involved.
- ◆ We observed school meals and looked at the school environment, including such things as vending machines, and the use of foods in the classrooms.
- ◆ We conducted interviews and focus groups with community leaders and parents.
- ◆ We visited local grocery stores, corner stores, and restaurants near the schools where kids would often buy items.

The foundations for all of the interventions were these: first, the priority risk behaviors that we identified through that formative research; second, the cultural and traditional concepts of these Seven Nations; and third, social learning theory. Our formative research revealed primary risk behaviors that could be grouped according to type of behavior (physical activity and eating behaviors) and location (in-school behaviors and out-of-school behaviors). As examples of eating behaviors, we found that the kids were eating a lot of high-fat foods in school meals and not enough fruits and vegetables, both at home and at school. They were drinking a lot of whole milk and a lot of high-sugar drinks. For physical activity, they simply weren't doing enough at home or at school.

**Cultural and Traditional Concepts.** American Indians have a holistic view of health and health practices and a strong concept of community. They have respect for individual worth, so when we were planning activities that would challenge the kids, we tried to challenge them in groups and not pit one individual against another. They also have a wonderful heritage of healthful traditional foods and physical activities, even though a lot of this has been lost as these Nations have adopted more of the popular American culture. We promoted this heritage as a way of honoring both their health and their culture.

**Social Learning Theory.** You are all familiar with social learning theory, which says that environmental factors, personal factors, and behavioral factors all come together to impact health-related behaviors.

**Intervention.** I will explain the overall design of the “Pathways” full-scale intervention and then highlight some of our findings. We involved seven tribes and reached a total of over 1,700 students in grades three through five in a longitudinal study. We involved 41 schools, divided into intervention and control schools, in the selected Nations. Our primary outcome was percentage body fat, but we looked at a variety of other related variables. The interventions included four prongs: physical activity, food service, classroom curriculum, and family involvement. They were all tied tightly together so that as much as possible, we could use one to reinforce the others.

**Classroom Curriculum.** There were separate curricula for grades three, four, and five. Grades three and four each included 24 lessons, but in grade five, to allow time for final assessments, there were 16. We provided a teacher’s manual, student materials, and teacher training. Each year, the curriculum was closely coordinated with the other “Pathways” components of family, food service, and physical education. For example, when the teachers taught their students about foods and healthy snacks, the students would prepare a healthy snack in the classroom. Food service would order these foods for the classrooms and also promote them at lunchtime. Then for the family component, the students would take home a packet with a sample of that snack for their families. An example of this was small baby carrots with a low-fat dressing, which was served in the classroom and sent home to the families. The families were asked to taste this snack and return a feedback comment card. All of these components were tied together to reinforce each other in the school, in food service, and at home.

Classroom activities included snack preparations, taste-testing, and exercise breaks. Students set personal, individual goals and practiced skills to build self-efficacy. Since story-telling was a part of the American Indian culture, we used stories as a teaching strategy. These stories, especially for the younger grades, included a pair of children who modeled the activities that we were promoting.

**Physical Activity.** The physical activity component included four parts: physical education, exercise breaks, American Indian games, and recess. SPARK was the core of the physical education program. We provided equipment, mentor support, and training for the physical

education staff, and even provided physical activity teachers in some schools that didn't have them. The goal of the physical education component was to have daily physical activity for at least 30 minutes and to increase the time spent in moderately vigorous physical activity. The exercise breaks were short energizers to increase physical activity in the classroom. The American Indian games were real traditional games, modified to increase the activity of the students and to ensure safety. These games were used in physical education, the classroom and recess. Finally, we encouraged more active play during recess.

We culminated the program with a great race, which was really exciting. We engaged all of the students in a wonderful race through the town, based on a storybook written by an American Indian author.

**Family.** The family component was also broken into four parts, which included family fun nights for any family relatives of the children, family packs and challenge sheets, family events, and year-end celebration events. We worked hard to get families involved, even going door-to-door to recruit for events. The family fun nights included fun activities, tastings, and an opportunity for parents to see what their children were learning in school. Family packs and challenge sheets were packets we sent home with the students. Some, like the carrot sticks and low-fat dressing that I mentioned, were “snack packs”; others, focused on the physical activities that the students learned, were “action packs.” Each week they also included stories, recipes, or other information from the classrooms. Parents were asked to complete response cards saying that they had reviewed these with their children.

**Food Service.** The fourth component was food service, where we worked with the school lunch and breakfast programs. We started with the USDA nutrient guidelines, but we translated these into behavioral objectives, so the food service staff had a real grasp of what we wanted them to do behaviorally. We provided materials and activities, training, and kitchen visits where we actually worked side-by-side with the food service staff at least once every month. As an aside, I have to say that I washed a lot of pots and pans in order to be accepted as a partner in the food service area. I felt it was a great day, after many months of pot and pan washing, when I was allowed to stand with them on the serving line and serve peas. This was part of the respect and partnership that we tried to show so we could also work with them as equals to implement the behavioral guidelines.

Some of the behavioral guidelines included offering only skim or 1-percent milk; using cooked, drained, and rinsed ground meat; purchasing lower-fat vendor products; using lower-fat cheese; and using less butter and other fats in food preparation and service. They also included using appropriate serving sizes for all menu items; removing butter and other fats from the serving line; offering choices of fruits and vegetables; and, if seconds were served, offering only fruits, vegetables, bread, and skim or 1-percent milk. These were designed to help food service lower the fat within the USDA guidelines for school meals because it was a school-based and not an individual-based program.

**Measurements.** Now let me tell you about measurements and results. We took a lot of measurements, but didn't have the budget to measure everything annually, as we would have liked. We measured body composition, diet, and physical activity. For diet and physical activity, we used both objective and subject measures, so we collected data by TriTrac and survey questionnaire for physical activity; and by direct observation and 24-hour recall for diet. We also conducted food service menu and recipe analysis; a knowledge, attitude, and behavior assessment; and process evaluation.

The results of the school menu and recipe analysis indicated that, with the school meals, we made a significant reduction in the percentage of kilocalories from total fat and saturated fat. Since this was school-based, we didn't want to go below the USDA recommendations for calories, so this was compensated by an increase in carbohydrates. The 24-hour recalls reflected a similar trend between intervention and control groups: the intervention group consumed significantly fewer kilocalories from fat and saturated fat, and significantly fewer calories overall. Both school lunch observation and out-of-school data showed a significantly lower percentage of kilocalories from total fat and saturated fat.

For physical activity, we did not find a significant difference in TriTrac measurements. There were differences in three of the four sites, but not a combined significant change. We did find changes in several psycho-social behaviors, including knowledge of nutrition and physical activity in grades three, four, and five. This included the children's intentions to choose healthy foods and the reported physical activity behaviors, but not in the knowledge of which foods were high in fat. I think this was partly because we didn't specifically match the foods that we discussed in the classrooms to the foods we used in the knowledge assessments. But, I am sorry to say that there was no significant difference in overall body composition between the intervention and control group students. One factor that may have contributed to this result was the school-based focus of the intervention. Since we targeted all children and not just the overweight, energy restriction was not really an option.

**Discussion.** We did show that "Pathways" was able to lower the percentage of fat and saturated fat in school meals while still meeting Federal guidelines for overall calories and micronutrients. However, indicators of total calorie intakes and physical activity levels were less clear. The reduction in energy intake seen in the 24-hour recalls of intervention children might have been due to reporting bias. The TriTrac data showed no significant differences but were highly variable and collected for only one day. And because the TriTrac data showed no significance, the significant findings for self-reported physical activity might also have been due to reporting bias.

There are other possible reasons why there were no significant differences in body composition between the intervention and control groups. Since "Pathways" was a school-based program, children may have regained some weight during the summer months. Also, changes take time. It's possible that more intensive or longer-term interventions are needed to really make a difference.

We did learn many lessons, however. It is important to engage the communities through formative research and partnerships. It is also important to reinforce messages and skills at many levels, involve entire families, and allow time for the interventions to take hold.

We learned that is important to make the benefits clear and to give something back to the communities where we work. Our final results were all published in a special issue of Preventive Medicine in December, 2003. You can find more information about Pathways at <http://hsc.unm.edu/pathways>. Thanks to everyone.

### **Fresh Is Best! A Fruit and Vegetable Initiative Conducted for Native American Food Distribution Programs in New Mexico and Oklahoma**

**Louise (Lou) Hankins, MS, Nutritionist, Food Distribution Programs on Indian Reservations, U.S. Department of Agriculture, Food and Nutrition Service, SWRO, Oklahoma Field Office, Oklahoma City, OK**

Good morning, everyone. I will be talking about an initiative we carried out in the Southwest Region for our ITOs (Indian Tribal Organizations) that participate in the Food Distribution Program on Indian Reservations (FDPIR). In the Southwest Region, we have 19 ITOs that are providing food to Native Americans that live either on reservations or in service areas, as is the case in Oklahoma.



In the beginning, the foods (commodities) which were offered to FDPIR participants were only available in generic-type containers, and all the food provided was either in a canned or dried state—this was because the food had to last a long time and not require refrigeration. There were few stores for folks to shop in and therefore food stamps were not a viable option. So, the Food Distribution Program brought the food to the reservations. The way that commodities have been distributed in the past was either over the counter or tailgated. For the over-the-counter delivery, you came to a warehouse or an office, did your paperwork and, when you were ready to get your food package, someone would ask what you wanted, and then you received it over the counter. In remote areas, deliveries were tailgated—they

were delivered by truck to the various areas, and distributed to participants from the back of the truck in a tailgate fashion.

Fortunately with time comes change and commodities have changed—now everything offered is not dried or canned. We have made significant improvements in the program. We now have frozen products available. We started out with frozen ground beef and then added frozen cut-up chicken. There are bonus items available such as frozen buffalo and bison in the ground state or as stew meat, and we also have had canned chili made from buffalo and bison. In addition to adding the frozen meat products, other improvements in the program include reducing the amount of sugar, salt, and fat in the canned items provided in the program.

Some products are still under a generic USDA label, but many of our current products are under commercial labels—this is a trend we expect to continue in the future. Also, the fruit and vegetable items included in the food package have changed. We still have a wide variety of canned vegetables, canned juices, canned fruits, and, of course, dried fruit products that are provided. In 1997, however, we took it to another level and added fresh fruits and vegetables. To make sure that all the fresh items available in FDPIR reach the end user in optimal condition, it is important for you to know that we deliver fresh produce to the ITOs on a weekly basis.

Each program decides what to order based on the preferences of their participants. We have many vegetables to offer, and they are all hardy, longer shelf-life fruits and veggies. All are available on a year-round basis; except for peaches and corn-on-the-cob which are seasonal items offered in the program. As many of you may have experienced, when you offer something new, you have a whole new set of problems to deal with. Do our programs have cooler space for the fresh produce? Do they have adequate space in the warehouse? Some items are large; others are small. Can they keep it at the right temperatures? Sometimes employee turnover is a problem in our programs—you just train people and they leave, then you've got to start over with a new warehouse person and train them.

Our programs receive good produce and we wanted them to have the expertise to keep it in optimal condition until it reaches our program participants. So we decided that, since fresh is best, we would provide training to our FDPIRs. Cecilia Henson, with the Southwest Region, had already conducted a fruits and vegetables initiative for the school programs in the Southwest Region on proper produce storage and handling techniques. She asked if I would like to work with our ITOs on a similar initiative. That is how we got started with this project for FDPIR in Oklahoma and New Mexico. ITOs order their produce from the Department of Defense, through their produce buying offices, and have it delivered to them. So, they were significant and important partners in this workshop.

It was important to work with a vendor on a local level that has a fresh fruit and vegetable company and a meeting room that we could use. So, we had partners on the industry level as well as the government level working together on this.

Our workshop took place in May of 2005 and we started the workshop with an overview of fruits and vegetables, presenting basic information. Why do we need to eat fruits and vegetables? What benefits do we get from them? How do they fit into *MyPyramid*? How do we safely handle fruits and vegetables? Where can we find out more information about fruits and vegetables on the Internet? We had 40 representatives attend the workshop representing 17 of the 19 ITOs that we work with. This was a full day, jam-packed with information.

The second component that we talked about in our workshop was receiving, storing, and handling of the fruits and vegetables. What should it look like when you get it into your shop? How you should take care of it? Where should it go? How long will it last? All the ins and outs of fresh produce were covered. This presentation was divided into two parts—an hour in the morning and another hour in the afternoon. Since we had a captive audience at this workshop, for lunch we had a product sample and evaluation activity and provided samples of items containing the produce we were promoting.

The spinach and chicken quesadillas we prepared were a hit! We utilized many of our fresh and canned fruits and vegetables, as well as other commodity foods provided in the program, and everybody received the recipes for these dishes. We prepared and served an olive and onion quick bread, green chili dipping sauce, Mediterranean bean dip called humus, and peanut butter stickies. In addition, a wide variety of raw fruits and vegetables were available to munch on.

We also wanted to introduce some new products. These may not be items that are in the program at this time, but who knows what the future may bring! Since we are constantly encouraging people to try new foods, shouldn't we introduce new items to our folks, too? This way we were able to show them how to introduce new foods and also give them an opportunity to experience new foods. Some of the new foods we had were Asian pears, star fruit, blood oranges, and jicama. We also had kabobs that included the star fruit, grape tomatoes, and kiwi. We had them taste the new items. Then, we passed around the products, talked about fresh produce storage and handling, and provided handouts for them to use and refer to.

Often if you put information in a nice neat notebook, it gets put on a shelf and is never referred to again. We wanted the information we were stressing to be available on a daily basis in a format that staff could easily see and refer to. So we developed a poster depicting all the fresh produce items available in FDPIR. The poster can be placed where it will do the most good, will be easy to see/refer to, takes up little space, and provides the staff with the information they need to ensure that the produce is properly received and stored. Now with just a glance, staffers can quickly check out what they are supposed to do when a certain product comes in. What temperature is the product supposed to be stored at? How long can it be stored? All the basic facts.

After we completed the session on receiving, storing, and handling of the produce, we went into a series of small group activities. The activities were rotated on a 15- or 20-minute time frame. This allowed people to practice what they had been taught during the day. One of the activities was a cooler storage activity. Not everything is stored at the same temperature. A lot of the produce goes into the cooler, but some items need to be in the coldest part of the cooler; others in a warmer part of the cooler. So that was one of our hands-on activities. The folks got to practice placing fresh produce items where they thought they would go in the cooler.

Another activity, which came from the Produce for Better Health Foundation, was the 5-A-Day board game. Our participants really enjoyed this activity! They had to answer questions based on 5-A-Day and eating your colors facts and could move so many steps or paces based on a roll of the dice. We had little prizes for those who won; things like little clips, rulers, pens, and magnets. Not only did they have fun, but it reinforced that everyone needs to eat fruits and vegetables plus the benefits of each color.

We talked about *Fight Bac* in another activity. The *Fight Bac* website includes information about the safe handling of fresh fruits and vegetables which we discussed. We used a wheel to select the different topics to be discussed. We reinforced the produce food safety topics by giving each person a bag of goodies to take back. The bags contained two magnets—one emphasizing *Fight Bac*'s steps for safe handling of fresh produce and one from "Thermy" depicting proper cooking temperatures for various products, a vegetable brush so they could clean their fruits and vegetables, a refrigerator thermometer so that they know it is set at the right temperature, a flyer (to reinforce "when in doubt, throw it out"), and two cutting boards—one for fruits and vegetables and the another for fresh meat products.

Merchandising was the last activity station. Today many of our food distribution centers are set up like stores, and in this activity we brainstormed various techniques to make the centers not only inviting but a place to promote both active and passive nutrition education. The methods discussed included the use of posters, signage, balloons, static clings, written materials, displays, cooking classes, etc.—any and everything we can think of to reinforce our message that "Fresh is best!"

## Update: Nutrition and Physical Activity Practices of Older American Indians and Alaska Natives

**Yvonne Jackson, PhD, RD, Director, Office for American Indian, Alaskan Native, and Native Hawaiian Programs, Administration on Aging. U.S. Department of Health and Human Services, Washington, DC**

I will be telling you what is happening with the Older American Indian, Alaska Native, and Native Hawaiians. I probably have the longest title in the Federal Government. Half my staff can't remember our office name, but I make them say it all, that is the Office for American Indian, Alaska Native, and Native Hawaiian Programs. We are in the Administration on Aging, an agency of the Department of Health and Human Services. Our mission is "to ensure that older Americans have the opportunity to age with dignity, have choices in managing their own lives, and remain active and productive members of their families and communities."

I am often amazed with the news coverage of older Americans because it seems like the only programs are Medicare, Medicaid, and Social Security. This is not true. Our programs fund the Congregate Meals Program, the home-delivered meals program, many in-home health services, a lot of the chore services, and many of the services that keep elderly people in their homes.

Just a little background information: The aging of the country begins when the baby boom generation starts turning 60 on January 1st, 2006. In the 2000 census, about 16.2 percent of the U.S. population, or 45.7 million people, were age 60 or over. In that same 2000 census, 10.1 percent of the American Indian and Alaska Native population, or about 200,000 people, were over age 60. The Indian population is younger than the U.S. population as a whole. The projections for the year 2050 are that about 20.4 percent of the U.S. population will be age 60 and over, and 12.6 percent of the American Indian and Alaska Native population will be age 60 and over. This is good news. We are living longer. We also want to live healthier.

That is what I am here to talk about today. Following a diet that is appropriate in nutrients and calories, combined with increased physical activity, will help achieve the goal of a long, healthy life. Part of the requirements for my program is that tribes must do a needs assessment on their elders every 3 years as a part of their application process for our grants. This was established by Congress—in order to get a grant you have to do the needs assessment.

I have been with the Administration on Aging almost 14 years and, when I started, the big question that tribes would ask was, "What will we do in the needs assessment and what information do we need to collect?" My response was, "Design a needs assessment that will tell you what the needs of your community are." Most people didn't know what that meant.

So in 1994, we founded two Native American Resource Centers. One, at the University of North Dakota, was very interested in helping us design a needs assessment for the tribes to use. It is voluntary; if they want to use it they can, but they don't have to.

In developing the needs assessment, we wanted not only to help the tribes identify their needs, but we wanted to have them answer questions that would give them some comparison data with national data. So, if they were writing grant applications for other programs, they would be able to tell their story as well as compare it with national data.

The population for the needs assessment survey is American Indian, Alaska Native, and Native Hawaiian elders, age 55 and older. For my program, tribes are able to define the age they consider an elder. In the other program, the non-Indian program, the law says that age 60 and over is an elder, but because of the different life experiences of the tribes, the tribes themselves are able to identify at what age they consider a person an elder. Most of our tribes identify age 55. We have a few tribes that say age 50 and we have one tribe that says, due to the conditions in our reservation, an elder is age 45 and older, but for our needs assessment, we focus primarily on age 55 and older.

The population in this survey is primarily elders living on or near reservations or native lands in Oklahoma, Alaska, and Hawaii. For tribes with small populations of elders, usually less than 200, we recommend surveying the entire population and that is about three-fourths of the tribes. About three-fourths of the tribes have fewer than 200 elders. For larger populations, we recommend using a sample; although, we do have a couple of larger tribes, that say no, we want to survey every elder. In most tribes, the tribal senior services have a list of elders. We help them if they want to use us.

Our needs assessment collects data on general health status. It is all self-reported with these types of questions: This is how you rate your health? Have you ever been diagnosed with x? We ask for information on the activities of daily living and the instrumental activities of daily living, indicators of chronic diseases, tobacco and alcohol use, nutrition risks, diet and exercise, weight and weight control, and social supports. As of January 31, 2005, we have data from 244 tribes that have collected the information on 9,416 elders.

I am not going to go over very much of the needs assessment, except the nutrition and physical activity part of it. The major nutrition questions are asked to determine nutrition risks, using the "Determine Your Nutritional Health Checklist" developed by the Nutrition Screening Initiative and I expect that many of you use the 10 questions on that list. For those that don't know, these 10 questions give warning signals of the risks for nutritional health. It is a yes/no questionnaire. A score of zero to two is considered good (i.e., you are not at nutrition risk). Three to five indicates that you are at moderate nutrition risk and six or greater indicates that you are at high nutrition risk and need to be referred to a nutritionist or dietitian for a further assessment.

The good news is that about half, or 46 percent, of the elders are at good nutritional risk, about 30 percent are at moderate risk, and 23.5 are at high risk. After further analysis of these questions, we find that age really isn't an indicator of risk. The major indicator is marital status. People who have not married at this time were at very high nutrition risk. In looking at our program, about a third of the people we serve do live alone, so this is a population to whom we really need to target efforts.

We also found that about 30 percent eat fewer fruits, vegetables, and milk products than the recommended intake. About 28 percent had an illness or a condition that affects their food intake. Not surprising, a quarter of them eat alone, 17.4 percent eat less than two meals a day, and 10.6 percent reported that they are not physically able to shop, cook, or feed themselves.

Here is the food insecurity definition we use: food insecurity "is a condition in which a person does not always have adequate food, cannot afford to buy enough food, or cannot get to the grocery store or food programs to obtain food, or cannot prepare food that they have in their household." For the elders participating in this survey, a little over 10 percent fit in that category of food insecurity. We expect that, with the high gasoline prices we are experiencing now, if we were to ask these questions today, there would be a lot more people unable to do that.

We are having to modify our program a bit. We serve five hot meals a week to people that are able to get out of their home. We provide in-home meals for people that aren't able to get out of their home. In the past month, I have had calls from program directors because elders can't afford to come to the program 5 days a week because they can't afford the gasoline. So, we are now doing more home-delivered meals for those people that aren't able to afford to come to the program.

We all know that breakfast is a good indicator of nutrition. It starts our day off right. In comparing the elders in our needs assessment to the NHANES III data, we find that a lot fewer of our elders eat breakfast every day. A few years ago, we had a breakfast program, a pilot program funded by Pillsbury, and we had a great deal of interest. I think we had 25 programs that participated in that pilot program. Only one program has been able to continue with tribal funding of the program—the Rosebud Sioux Tribe and they provide breakfast meals for diabetics. I hope that in the future we can get funding from another company that will allow us to expand that program and replicate it.

We all know this is one of our targets—obesity. The whole country is looking at weight and obesity and, in the American Indian population, obesity is a risk factor for many chronic conditions, including 4 of the 10 leading causes of death of our elders. These are coronary heart disease, type II diabetes, stroke, and several types of cancer. Obesity in the elderly not only affects their health, but it also affects their day-to-day life, including the ability to do everyday activities, such as walking up the stairs, walking to the post office, and doing things that keep them active in their community.

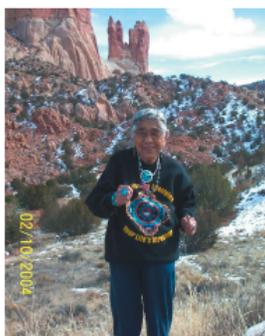
Our needs assessment asks for self-reported height and weight and then our Resource Center in North Dakota calculates the BMI. We found that American Indian, Alaska Native, and Native Hawaiian elders are less likely to be in the low and normal categories than the NHANES III population and more likely to be overweight and much more likely to be obese. Since this is self-reported height and weight, we expect that more people are actually in the overweight and obese categories. We did a further analysis of our 1995 National Nutrition Evaluation and discovered that people who self-report, older people just like younger people, underreport their weight. We found that older people also underreport their height, especially older men.

We asked questions about their attitude toward weight and found that many people who are overweight consider themselves to be all right. They are not concerned about being overweight. So, we know we have got some issues with self-image. How can you teach a person that they need to lose weight if they don't think they are overweight? We are going to be working with some focus groups to hopefully address that issue.

Our programs, even though they are primarily nutrition programs, are promoting physical activity. When asked about exercise habits over the past 30 days, we found that our elders reported that they were quite active and, in fact, many were engaged in more activities than the NHANES III population. In our exercise list, we have included some things that elders typically do, such as Pow-Wow dancing.



## Nutrition and Physical Activity Programs



Now, I will highlight some of our nutrition and physical activity programs that are producing a lot of good results. A very strong program, now in its fourth year, is the Wisdom Steps Program in Minnesota. This program was developed by the elders to focus on what they thought their needs were. Wisdom Steps encourages simple steps towards better health. It promotes activities, such as health screens, health education classes, and enjoying a healthy living activity. Participants have been given step calendars, so some of them walk a thousand steps a day and some walk 10,000 steps a day. Another healthy living activity is more fruits and vegetables--the program gives vouchers so they can get fruits and vegetables at their local stores. I think it is a \$10 per week voucher. As Wisdom Steps is

now starting its fourth year, they want to expand and enhance cultural health intervention models in the next couple of years.



There is a Medicine Talk Program that is teaching the elders how to talk to their health care providers. It teaches them not to just go there and listen to what they say; but actually engage in a conversation. We have one program called “Walk and Talk” where an elder is paired with an adolescent that is having problems. Often, it involves a court case and the Magistrate will pair this person with an elder and the elder will walk and talk with the adolescent–this promotes continuation of tribal traditions and cultures. One big program in Indian communities is the Senior Olympics. Elders work for months getting prepared for the Senior Olympics. One example is the aerobics dance group from San Carlos Apache.

To summarize, we have many good things going on in Indian communities. We have to continue to promote those and work with the communities that aren’t doing as much as they could to get the elders involved.

Thank you.