



**Program:** Evidence-Based Disease Prevention: Nutrition

**Organization:** Alamo Area Council of Governments, San Antonio, TX  
**Project Title:** Evidence Based Prevention Program for Bexar County  
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**Evidence Base**

Bexar County Area Agency on Aging bases its intervention on the research conducted by the Diabetes Prevention Research Group. The study, *Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin*, was published in the February 7, 2002 New England Journal of Medicine. It was the first large American study to show that diet and exercise could effectively delay the onset of diabetes in a group of overweight adults already showing glucose intolerance. Researchers hypothesized that some risk factors for diabetes such as elevated plasma glucose concentration in a fasting state, overweight, and a sedentary lifestyle, are modifiable with lifestyle interventions or the administration of the drug metformin.

**Original Research Evidence**

Participants included 3234 non-diabetic persons with a mean age of 51 and mean body mass index (weight in kilograms divided by the square of the height in meters) of 34. Sixty-eight percent of participants were women and forty-five percent were of a minority group.

Researchers randomly assigned participants into three groups: placebo, metformin therapy (850 mg/day), or lifestyle modification. Lifestyle changes included a low-fat diet, 30 minutes of moderate physical activity on most days of the week (with a goal of 150 minutes per week), and a weight loss of 7%.

Researchers found that after 2 years of follow-up, results showed that the incidence of diabetes in the lifestyle intervention group was only 4.8 cases per 100 persons, compared to 7.8 in the metformin group and 11.0 in the placebo group. When compared with placebo, the lifestyle intervention group reduced the incidence of diabetes by 58%, while metformin reduced incidence by 31%.

This study showed that although both lifestyle interventions and the drug metformin can reduce the incidence of diabetes, lifestyle changes are significantly more effective.

### **Adaptation of Model**

Whereas original research required participants to go to a health center for the intervention, this program will be delivered in the community in places such as nutrition centers and churches. Medications, which were also part of the original study, will not be offered as part of this program.

### **Project's Overall Design**

The goal of this project is to prevent or delay the onset of Type 2 diabetes among Hispanic elders, or to mitigate its severity through a culturally sensitive nutritional program. The program combines low fat/low glycemic meals and nutrition education with health screening/monitoring and a physical activity program.

Seniors will be recruited through various nutrition centers in the local area. A health screening will be provided to participants that includes, blood glucose, cholesterol, and blood pressure measurements.

Special meals will be provided to participants of the program Monday through Friday for lunch that will be prepared with the local "tex-mex" flavor. Cooking sessions will be held to teach participants how to prepare foods in a way to reduce the risk of diabetes.

The physical activity promotion portion of the program will be based on a health education program developed by OASIS called HealthStages. Participants will receive education on physical activity, diet, and self-management at the nutrition centers 3 times per week.

Peer Educators will be trained and available at the nutrition sites as a way to encourage participants to continue with the nutrition and physical activity programs. This proposal also includes other activities such as providing incentives for participation and access to transportation.

### **Target Population**

The target population is low-income Hispanic elders who participate in the Title III nutrition program. Three centers are targeted in the first year, three additional in the second year, and two more in the third year for a total of 930 seniors served.

### **Anticipated Outcomes**

- A 7% weight loss and at least 150 minutes of physical activity per week during the first year of the program
- Maintenance of these changes (weight loss and physical activity) for 3 years.
- A replicable model of community-based diabetes risk reduction through an OAA supported Nutrition program.
- San Antonio Senior Diabetes Cookbook
- Dissemination at local, state and national levels -- through web, TV documentary, organizational channels and national conferences.

## **Evaluation Design**

The Impact Evaluation will include a comparison of self-reported health status and health screening data. Screenings will take place every six months and will include measures of body fat, in addition to blood glucose to identify participants with pre-diabetes or diabetes. Responses from 24-hour dietary recalls will be collected along with activity sign-up sheets to monitor participants' progress.

Results from this program will also be compared with another local program that focuses on health screenings and medication management. This alternate program does not include meals or physical activity components. Participants from each program who are in the pre-diabetic state will be compared to look for efficacy and efficiency of the comprehensive program versus the specific interventions of the alternative program.

The Process Evaluation will include activities such as regularly scheduled interviews with program staff to keep up with program activities and progress. Progress will be recorded for both clients and staff of the congregate meal sites. This evaluation will be conducted throughout the first year to identify positive or negative attitudes that may affect adherence to the program.

## **Partnerships**

- Bexar Area Agency on Aging (AAA) will be responsible for project management, ongoing evaluation of progress, oversight of the grant budget, preparation of reports, and communications with all partners.
- City of San Antonio Department of Community Initiatives (Title III-C Nutrition Centers) will oversee the nutrition portion of the program.
- The Texas Diabetes Institute will assist with health screenings and provide consultations to participants, make referrals to health care professionals, and provide a dietician and diabetic educator to train staff.
- University of Texas Health Science Center will conduct health screenings provided by nursing students.
- Metropolitan Health District will provide the supplies for the health screenings in addition to the hardware and software needed to develop participant health profiles.
- Our Lady of the Lake University is the research partner and is responsible for project evaluation.
- OASIS will provide physical activity at participating centers 3 times per week, in addition to education on physical activity, diet, and health self-management.
- The San Antonio Restaurant Association will provide the Family Kitchen sessions.