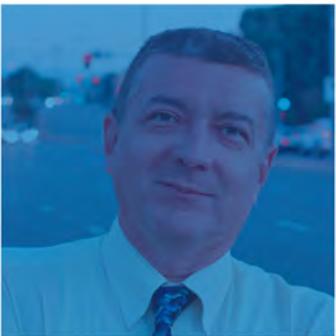


# DIABETES PREVENTION PROGRAMS: EQUITY TAILORED RESOURCES





# QUICK START GUIDE

**Racial and ethnic minority populations bear a disproportionate burden and risk of diabetes;**<sup>1-3</sup> however, type 2 diabetes can be prevented or delayed through a structured, evidence-based lifestyle intervention. The National Diabetes Prevention Program (National DPP), led by the Centers for Disease Control and Prevention (CDC), supports a lifestyle change program to prevent or delay the onset of type 2 diabetes in adults with prediabetes or at risk of developing type 2 diabetes. The National DPP lifestyle change program is founded on the science of the Diabetes Prevention Program (DPP) research study, and subsequent translation studies. Evidence from this study shows that making realistic behavioral changes helped participants with prediabetes lose 5% to 7% of their body weight and reduce their risk of developing type 2 diabetes by 58% (71% for people over 60 years old).<sup>4,5</sup>

The National DPP is a group-based program that is facilitated by a trained lifestyle coach who uses a CDC-approved curriculum. The curriculum supports regular interaction between the lifestyle coach and participants; builds peer support; and focuses on behavior modification through healthy eating, increasing physical activity, and managing stress. Lifestyle coaches may deliver the program in person, online, via distance learning, or through a combination of these delivery modes. The CDC also manages the Diabetes Prevention Recognition Program (DPRP), which is the quality assurance arm of the National DPP. The DPRP awards CDC recognition to organizations that deliver the lifestyle change program if they meet CDC's national quality standards and achieve the outcomes proven to prevent or delay onset of type 2 diabetes. Currently, there are over 1,600 participating organizations across the U.S., and over 300,000 individuals

at high risk for type 2 diabetes have enrolled in the program to date. Despite the success of this program, attendance among racial and ethnic minority populations continues to be a challenge.<sup>6,7</sup>

Adapting existing evidence-based interventions is a promising strategy for meeting the needs of diverse groups.<sup>8</sup> We identified researchers and public health practitioners who culturally and linguistically tailored type 2 diabetes prevention and other health-promotion materials. With their permission, this publication or resource inventory presents 16 sets of culturally and linguistically tailored materials developed to support specific communities in their efforts to prevent type 2 diabetes and improve overall health and wellness. For example, the Special Diabetes Program for Indians (SPDI) offers a toolkit and a CDC-approved curriculum tailored specifically for American Indians and Alaska Natives. In addition, we present one set adapted for the use of telehealth among rural populations. The materials presented in this resource inventory may be helpful in supplementing a CDC-approved curriculum for organizations that offer the National DPP lifestyle change program.

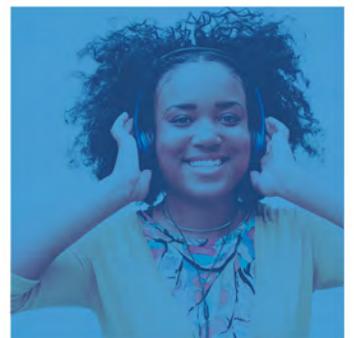
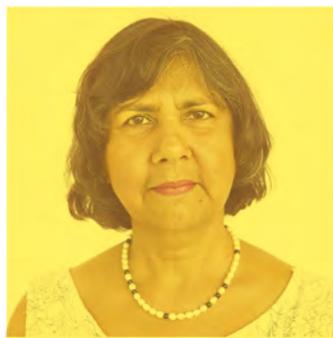
Exhibit 1 shows a complete listing of tailored materials included in this resource inventory organized by the target population. To access materials, users may use the links in the table below, or navigate to the chapter about each set of materials using the chapter page number in the right-hand column. Organizations that are CDC-recognized or seeking recognition must use a CDC-approved program curriculum.

**In addition to the materials featured in this resource inventory, additional translations of the CDC's National DPP lifestyle change curriculum PreventT2 may be found at: <https://coveragetoolkit.org/national-dpp-curriculum/>.**

CDC has approved translations of diabetes prevention program materials in the following languages:

- Chinese
- Vietnamese
- Spanish

In addition, CDC recognizes translations into several other languages, and these can be found on the CDC website linked above.



## Exhibit 1. Resource Inventory Contents

Name of Program	CDC-Approved	Links to Available Materials	Page
<b>African Americans</b>			
<b>Fit Body and Soul</b>		<ul style="list-style-type: none"> <li>• <a href="#">Fit Body and Soul Leader Guides Sessions 1-12</a></li> <li>• <a href="#">Fit Body and Soul Participant Handouts Sessions 1-12</a></li> <li>• <a href="#">Fit Body and Soul Additional Participant Handouts</a>, which include:               <ul style="list-style-type: none"> <li>o Ten Ways to Be a Good Group Member</li> <li>o Participant Values Assessment</li> <li>o Participant Certificate</li> </ul> </li> <li>• <a href="#">Group Lifestyle Balance Keeping Track Booklet</a></li> </ul>	<a href="#">12</a>
<b>Reach In Reach Out</b>		<ul style="list-style-type: none"> <li>• <a href="#">Weekly Booklets</a> <ul style="list-style-type: none"> <li>o Child</li> <li>o Parent</li> </ul> </li> <li>• <a href="#">Weekly Scripts</a> <ul style="list-style-type: none"> <li>o Child</li> <li>o Parent</li> </ul> </li> <li>• <a href="#">Weekly Evaluations</a> <ul style="list-style-type: none"> <li>o Child</li> <li>o Parent</li> </ul> </li> <li>• <a href="#">Weekly Script Activities and Trackers</a></li> </ul>	<a href="#">14</a>
<b>Weight-Wise</b>		<ul style="list-style-type: none"> <li>• <a href="#">Weight-Wise Leader's Guides</a> (participant materials are included within the Leader Guide for each session)</li> </ul>	<a href="#">17</a>
<b>The WORD (Wholeness, Oneness, Righteousness, Deliverance)</b>	X	<ul style="list-style-type: none"> <li>• <a href="#">The WORD Leader Guides and Participant Handouts</a></li> </ul>	<a href="#">19</a>
<b>American Indians and Alaska Natives</b>			
<b>Special Diabetes Program for Indians (SDPI) Diabetes Prevention</b>	X	<ul style="list-style-type: none"> <li>• <a href="#">SDPI Diabetes Prevention Program Toolkit</a></li> <li>• <a href="#">Native Lifestyle Balance</a></li> </ul>	<a href="#">21</a>
<b>Together on Diabetes</b>		<ul style="list-style-type: none"> <li>• <a href="#">Implementation Guide</a></li> <li>• <a href="#">Curriculum and Facilitator Guide</a></li> <li>• <a href="#">Participant Workbook</a></li> </ul>	<a href="#">23</a>
<b>Arab Americans</b>			
<b>Ahlah! [It's better!]</b>		<ul style="list-style-type: none"> <li>• <a href="#">Ahlah! Participant Handouts Sessions 1-12 (Arabic)</a></li> <li>• <a href="#">Ahlah! Additional Participant Handout on Ramadan (Arabic)</a></li> </ul>	<a href="#">27</a>
<b>Asian Indians</b>			
<b>Culturally Tailored Power to Prevent (P2P) Program for Asian Indian Americans</b>	X	<ul style="list-style-type: none"> <li>• Curriculum adapted based on the National Diabetes Education Program's (NDEP) <a href="#">Power to Prevent (P2P): A Family Lifestyle Approach to Diabetes Prevention</a></li> </ul>	<a href="#">29</a>
<b>Project RICE</b>		<ul style="list-style-type: none"> <li>• <a href="#">Project RICE Session 1-6 Slides (English)</a></li> <li>• <a href="#">Project RICE Session 1-6 Slides (Punjabi)</a></li> <li>• <a href="#">Project RICE Session 1-6 Handouts (Punjabi)</a></li> </ul>	<a href="#">31</a>

## Exhibit 1. Resource Inventory Contents

Name of Program	CDC-Approved	Links to Available Materials	Page
<b>Chinese Americans</b>			
<b>Chinese American Balanced Lifestyle Education (CABLE)</b>		<ul style="list-style-type: none"> <li>• <a href="#">CABLE Participant Handouts Sessions 1-16 and 22 (English and Mandarin Chinese)</a></li> <li>• <a href="#">CABLE Group Instructor Guides Sessions 1-12 (in English)</a></li> <li>• <a href="#">CABLE Additional Participant Handouts (English and Chinese), which include:</a> <ul style="list-style-type: none"> <li>o <a href="#">Weight Management (English and Mandarin Chinese)</a></li> <li>o <a href="#">Keeping Track Booklet (Traditional Chinese)</a></li> <li>o <a href="#">Participant Certificate (English and Mandarin Chinese)</a></li> </ul> </li> </ul>	<a href="#">34</a>
<b>Hispanics</b>			
<b>Dulce Mothers</b>		<ul style="list-style-type: none"> <li>• <a href="#">Dulce Mothers Outline of Materials (English)</a></li> <li>• <a href="#">Dulce Mothers Participant Handouts Sessions 1-12 (Spanish)</a></li> <li>• <a href="#">Dulce Mothers Participant Handouts Sessions 1-12 (English)</a></li> </ul>	<a href="#">36</a>
<b>Every Little Step Counts</b>		<ul style="list-style-type: none"> <li>• <a href="#">Weekly Session Materials</a></li> <li>• <a href="#">Weekly Handouts</a></li> <li>• <a href="#">Physical Activity Review Handout</a></li> </ul>	<a href="#">39</a>
<b>Nuestra Vida [Our Life]</b>		<ul style="list-style-type: none"> <li>• <a href="#">Nuestra Vida Outline of Materials (English)</a></li> <li>• <a href="#">Nuestra Vida Participant Handouts Sessions 1-12 (Spanish)</a></li> <li>• <a href="#">Nuestra Vida Participant Handouts Sessions 1-12 (English)</a></li> </ul>	<a href="#">42</a>
<b>Un Estilo De Vida Saludable [A Healthy Lifestyle]</b>		<ul style="list-style-type: none"> <li>• <a href="#">Un Estilo De Vida Saludable Leader Guides Sessions 1-8 (English)</a></li> <li>• <a href="#">Un Estilo De Vida Saludable Photonovela Template (English and Spanish)</a></li> </ul>	<a href="#">44</a>
<b>2011 DPP Group Lifestyle Balance™ Curriculum (Spanish) Tailored for Promotoras</b>		<ul style="list-style-type: none"> <li>• <a href="#">2011 GLB Leader Guides for Promotoras (Spanish)</a></li> </ul>	<a href="#">46</a>
<b>Mobility Impairment</b>			
<b>Group Lifestyle Balance Adapted for Individuals with Impaired Mobility (GLB-AIM)</b>	X	<ul style="list-style-type: none"> <li>• <a href="#">GLB-AIM Participant Handouts and Leader's Guide</a> [To be posted on this webpage soon; for more information, please contact Katherine Froehlich-Grobe, PhD (<a href="mailto:KFGrobe@BSWRRehab.com">KFGrobe@BSWRRehab.com</a>)]</li> </ul>	<a href="#">48</a>
<b>Telehealth for Rural Populations</b>			
<b>Telehealth Lifestyle Balance Program</b>	X	<ul style="list-style-type: none"> <li>• <a href="#">Telehealth Lifestyle Balance Program Training Manual</a></li> <li>• <a href="#">Telehealth Lifestyle Balance Program Administrative Materials and Worksheets</a></li> </ul>	<a href="#">51</a>

*The Centers for Medicare & Medicaid Services' Medicare Diabetes Prevention Program website offers a wealth of resources for organizations that are interested in enrolling as suppliers to deliver the program to eligible Medicare beneficiaries.*



## More Information for Organizations Seeking to Deliver the National DPP Lifestyle Change Program

Organizations interested in obtaining CDC recognition to deliver the National DPP lifestyle change program should review the [Diabetes Prevention Recognition Program Standards](#), complete a [capacity assessment](#), and visit the [National Diabetes Prevention Program Customer Service Center](#). Organizations that are seeking CDC recognition and want to use an alternate curriculum that has not been approved yet should include all of their curriculum materials when they submit their application for recognition to the [CDC's Diabetes Prevention Recognition Program \(DPRP\)](#). Alternate curricula should be similar in content, duration, and intensity to the [PreventT2 curriculum](#). Those interested in learning more about the use of alternate

curricula can contact [NationalDPPAsk@cdc.gov](mailto:NationalDPPAsk@cdc.gov). The Centers for Medicare & Medicaid Services' [Medicare Diabetes Prevention Program website](#) offers a wealth of resources for organizations that are interested in enrolling as suppliers to deliver the program to eligible Medicare beneficiaries.

## Acknowledgements

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# KEY STRATEGIES FOR CULTURALLY AND LINGUISTICALLY TAILORING TYPE 2 DIABETES PREVENTION EFFORTS

**We reviewed the research of those who contributed to this publication to understand how they culturally and linguistically tailored materials to engage participants.** Below, we summarize key strategies researchers used when developing materials and programs to address type 2 diabetes risk factors among minority populations.

## *Strategies employed during the tailoring process*

Many of the studies included in this resource inventory reported using a Community-Based Participatory Research (CBPR) approach for

the development and delivery of the adapted materials.<sup>9-14</sup> CBPR emphasizes the incorporation of community members and community-based organizations as equal partners in all stages of a research process.<sup>15</sup> Researchers used CBPR techniques such as:

- **Convening a community-based board or committee.** These committees commonly consisted of community members/lay persons, researchers, clinical staff, and local government agencies. Community-based committees helped with the development of the materials by reviewing them and providing valuable feedback.

Investigators utilized this feedback to further adapt the materials and determine how to best deliver the program.<sup>9,10,14,16–18</sup>

- **Conducting focus groups to gather feedback from community members on the adapted materials and how to best deliver the program.** Focus groups with community members from the priority population not only allowed researchers to seek input on cultural and linguistic adaptations to the materials prior to program implementation, but also allowed researchers to test group facilitation techniques among a sample of community members in order to help determine the best format and structure for delivering the program.<sup>9,10,16,18,19</sup> Additionally, post-study focus groups were carried out in three studies to assess participant satisfaction with the program and obtain feedback on the curriculum content for adaptations in future studies.<sup>12,13,20</sup>
- **Engaging leaders and members of religious groups as partners when designing materials to reach a faith-based community.** For example, researchers working with African Americans adapted materials to include specific religious references that would resonate with their audience. This was achieved by obtaining input from religious leaders and members during the material development phase<sup>9,10,21</sup> and incorporating Bible study activities into the curriculum.<sup>10</sup> Faith leaders and members of the community also participated in focus groups and were members of community-based boards and committees.<sup>9,10</sup> Additionally, different programs held educational sessions at places of worship that served a large number of African Americans and Hispanics.<sup>22,23</sup>

### ***Strategies employed to deliver programs in more culturally and linguistically sensitive ways***

**Lifestyle Coaches.** Researchers found that it was important to engage lifestyle coaches:

- **With similar backgrounds to program participants.** Community members with similar backgrounds may be able to connect with participants better and deliver the curriculum in a culturally tailored way. Of note, one researcher found that in devout communities (i.e., faith communities), it was important to use a lay health worker from a similar but different community (i.e., different place of worship) to ensure participant openness.<sup>21</sup>
- **Through networks and organizations that serve the population of interest.** Working with community-based organizations to recruit lifestyle coaches can be particularly helpful in communities that are generally cautious of outsiders or researchers.<sup>18</sup> Some researchers had success in working with leaders in these networks (e.g., faith leaders) to identify and recruit lifestyle coaches who have good communication skills, have a willingness and ability to commit to the role, and are racially and culturally similar to participants.<sup>9,10</sup>

**Recruitment.** In order to better recruit participants, researchers:

- **Cast a broad net to first identify eligible participants.** Davis-Smith et al. (2011) administered a screener to a large group of people of faith and then performed targeted outreach to those deemed likely to be eligible.<sup>21</sup>
- **Found face-to-face outreach helpful when trying to engage hard-to-reach populations, like men.**<sup>24</sup> Previous studies used health fairs, community centers, and health clinics as venues to recruit these populations.<sup>11,12,18,20,22,23,25</sup>

- **Used introductory sessions to build trust among prospective participants.** One study offered those declining to participate the opportunity for an alternative month-long education-only intervention during which the researchers introduced individuals to the program goals. After this introductory session, many participants who initially declined, decided to enroll in the full program.<sup>16</sup>
- **Posted materials translated to the language of the target population in community hubs to attract participants.** Researchers translated recruitment materials to distribute them at local community events and post them in places of worship and grocery stores.<sup>16,20,22</sup>

**Retention.** Researchers identified several strategies for improving retention, such as:

- **Delivering the programs to groups of the same gender to make participants feel more comfortable and willing to share.** *Power Up for Health* used this strategy among minority men and found that men were more willing to discuss sensitive issues.<sup>24</sup> Jaber et al. (2012) also found that this was helpful among Arab American women who might feel less comfortable sharing among their male counterparts.<sup>16</sup>
- **Addressing structural barriers among low socioeconomic status (SES) groups.** Providing access to child care, or assistance with transportation, can be important for individuals who need these services in order to participate.<sup>12,14</sup> For participants who do not have easy access to a gym, Rosas et al. (2016) provided exercise videos.<sup>17</sup>
- **Emphasizing storytelling to maintain engagement.** Rosas et al. (2016) used a tool, called Photovoice, which allowed American Indian and Alaska Native participants to tell their own stories through videos, and organized talking circles as a way of incorporating traditional storytelling into the delivery of a type 2 diabetes prevention program.<sup>17</sup>
- **Engaging physicians in recruitment.** Physicians are able to track the program's impact on participants' weight and blood glucose levels and can communicate these changes to participants, reinforcing the value of their continued engagement in the program. One National DPP master trainer who has trained nearly 150 lifestyle coaches shared that "a formal physician referral is the most important determinant of participant retention."<sup>25</sup>
- **Including close family member or other trusted individual in one or more sessions to sustain participants' interest.** If feasible, asking participants to bring a close family member to at least one session can help participants' family members better understand the program and support the participants in making lifestyle changes.<sup>14,16-18,22,25</sup> This is particularly important for family members who do the majority of shopping and cooking for the participant's household.<sup>16</sup>

### ***Strategies for tailoring type 2 diabetes prevention for additional populations***

#### **Sexual and Gender Minority Populations.**

Data on the prevalence of diabetes among lesbian, gay, bisexual, and transgender (LGBT) populations is lacking; however, sexual and gender minorities disproportionately experience risk factors associated with diabetes, including tobacco use, being overweight or obese, and poor access to care.<sup>26</sup> The Healthy Weight in Lesbian and Bisexual Women Study shows that tailoring approaches to the needs of this population can be successful in reducing weight gain.<sup>27</sup> Though this study is not Type-2-diabetes-prevention-specific, its strategies for tailoring weight loss interventions to LGBT populations may apply to diabetes prevention interventions. Strategies from this study and others that are focused on enhancing access to health care among LGBT populations include:

- **Ensuring an inclusive environment.**

Organizations can signal openness toward and acceptance of sexual and gender minority populations by incorporating brochures and signage that have images of diverse family types in terms of size, gender composition, etc., and providing resource materials from local LGBT organizations.<sup>28</sup> Lifestyle coaches can also create an inclusive environment by avoiding gender-specific terms until participants have had an opportunity to indicate which terms they prefer.<sup>29</sup> Lifestyle coaches can also create an environment of respect by ensuring that they know the preferred names/pronouns of participants.<sup>30</sup> Some organizations may even give participants a sticker or pin to highlight their preferred pronouns.

- **Recruiting a lifestyle coach who is from the LGBT community.** Recruiting lifestyle coaches who share similar backgrounds as participants is a best practice for culturally tailoring lifestyle change programs. Lifestyle coaches who may not be LGBT can increase their knowledge of LGBT identities and terminology by using learning modules and webinars available from The National LGBT Health Education Center. In late summer 2019, the Medicare Learning Network (MLN) hosted a training called, “Improving Health Care Quality for LGBTQ,” which may also be a helpful resource to lifestyle coaches.
- **Engaging with members from the community.** Forging partnerships with local LGBT organizations as well as key LGBT stakeholders and community leaders can facilitate the recruitment of LGBT lifestyle coaches, signal openness to LGBT populations, and help organizations and lifestyle coaches understand the needs of LGBT individuals.<sup>28</sup>
- **Emphasizing overall health improvement and improved physical fitness over weight loss.** Organizations can draw on the Healthy Weight in Lesbian and Bisexual Women Study by promoting increased physical activity, decreased consumption of sugar-sweetened beverages, and increased fruit and vegetable intake, rather than focusing primarily on BMI reduction through weight loss.<sup>31</sup>

**Persons with Disabilities.** Adults with disabilities have a higher prevalence of diabetes than those without,<sup>32,33</sup> and experience multiple challenges that may impede diabetes prevention, including barriers to care access<sup>34</sup> as well as lower levels of physical activity.<sup>35</sup>

To tailor diabetes prevention efforts to these populations, organizations may consider:

- **Adapting educational material for individuals who are blind or visually impaired.** The American Council for the Blind offers a listing of diabetes resources for individuals visually impaired and blind.
- **Improving accessibility for hard of hearing and deaf individuals.** By offering assistive listening devices and employing a lifestyle coach fluent in American Sign Language (ASL), organizations can ensure that hard of hearing and deaf individuals are able to access lifestyle change programs.
- **Tailoring the delivery of materials to individuals with intellectual and developmental disabilities.** Offering information in a clear, concrete, and visual format; avoiding jargon; and breaking down activities into small sequential steps may help lifestyle coaches engage persons with developmental challenges.<sup>36</sup> In addition, training on sensory integration therapy – methods for working with participants

experiencing sensory overload – can help lifestyle coaches engage individuals who may not be able to participate in large-group activities. Regardless of the type of disability participants have, it is a best practice to ensure that lifestyle coaches and group members use people-first language, emphasizing the person first and not the disability.<sup>35</sup>

- **Identifying barriers to physical activity and recommending alternative approaches.** To engage individuals with mobility impairment, organizations may consider using strategies similar to those of the Group Lifestyle Balance Adapted for Individuals with Impaired Mobility (GLB-AIM) included in this resource inventory

The National Center on Health, Physical Activity and Disability (NCHPAD) offers numerous resources on physical activity for adults with disabilities, including Prevent T2 for All, a CDC-approved lifestyle change program curriculum adapted from the CDC's National DPP lifestyle change curriculum, Prevent T2.

To access this curriculum, organizations can contact NCHPAD by phone (800-900-8086) or by email ([email@nchpad.org](mailto:email@nchpad.org)).



# RESOURCES BY POPULATION

## Brief Description

### African Americans *Fit Body and Soul*

Fit Body and Soul (FBAS) is an intervention, adapted and modified from the 2008 Group Lifestyle Balance (GLB) Curriculum<sup>37</sup> for African American Christians. It was administered in faith-based settings.



## AVAILABLE MATERIALS

- o [Fit Body and Soul Leader Guides Sessions 1-12](#)
- o [Fit Body and Soul Participant Handouts Sessions 1-12](#)
- o [Fit Body and Soul Additional Participant Handouts](#), which include:
  - Ten Ways to Be a Good Group Member
  - Participant Values Assessment
  - Participant Certificate
- o [Group Lifestyle Balance Keeping Track Booklet](#)



## HOW TO USE THESE MATERIALS

- o Church health advisors (CHAs) should deliver the curriculum across 12 weekly, group, one-hour core sessions in a faith-based setting.
- o CHAs should schedule six monthly post-core sessions after the conclusion of the 12 core sessions. These post-core booster sessions are intended to help participants maintain weight loss.



## CITATION FOR MATERIALS

- o The Fit Body and Soul curriculum, funded by National Institutes of Health Grant #R18DK082401, is a cultural adaptation of the Group Lifestyle Balance (GLB) Program<sup>37</sup> materials (2008) found at [www.diabetesprevention.pitt.edu](http://www.diabetesprevention.pitt.edu). Researchers at Augusta University, Augusta, Georgia, adapted the GLB Program specifically for African American churches.



## CONTACT PERSON

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## Development and Use of Available Materials

Dodani S, Kramer MK, Williams L, Crawford S, and Kriska A. (2009). Fit Body and Soul: A Church-Based Behavioral Lifestyle Program for Diabetes Prevention in African Americans. *Ethnicity & Disease*, 19(2), 135.

Dodani S, Fields, JZ. Implementation of the Fit Body and Soul, a Church-Based Life Style Program for Diabetes Prevention in High-Risk African Americans: A Feasibility Study. *Diabetes Educ.* 2010;36(3):465-472. <https://doi.org/10.1177/0145721710366756>.

- o As part of a pilot trial, four faith leaders received a two-day training on the program and implemented it over the course of 12 sessions to 40 members of a Baptist church in Augusta, Georgia.

Williams LB, Sattin RW, Dias J, Garvin JT, Marion L, Joshua T, Narayan KMV. (2013). Design of a Cluster-Randomized Controlled Trial of a Diabetes Prevention Program within African-American Churches: The Fit Body and Soul Study. *Contemporary Clinical Trials*, 34(2), 336-347. <http://doi.org/10.1016/j.cct.2013.01.002>

Sattin RW, Williams LB, Dias J, Garvin JT, Marion L, Joshua TV, and Narayan KV. (2016). Community Trial of a Faith-Based Lifestyle Intervention to Prevent Diabetes Among African-Americans. *Journal of Community Health*, 41(1), 87-96.

- o This single blind, clustered community trial consisted of 20 predominantly African American churches in both rural and urban areas. Churches were randomized to deliver FBAS or a health education curriculum.

## Description of Cultural & Linguistic Tailoring

- **Community based advisory board.** Recommendations to launch a type 2

diabetes prevention effort were originally made by the Georgia Health Sciences University Community Advisory Board after it identified diabetes as a community priority. Faith leaders on the board expressed a desire to deliver the program through local churches.

- **Church participation.** Researchers worked with faith leaders to design the content and manual, selecting spiritual themes and verses to frame sessions. Researchers sought feedback from focus groups on the materials.
- **Church health advisors (CHAs).** Four health professional members (e.g., nurses, pharmacists, physicians) from each church implementing the FBAS intervention were trained by a master trainer. In addition to being trained on the curriculum, CHAs received training on motivational interviewing, integration of faith concepts, and group facilitation techniques, such as building group cohesion.
- **Culturally concordant examples.** Cultural tailoring included incorporating more pictures of African Americans into the curriculum and including examples of exercises that were more common among this population (e.g., replacing kayaking with gardening).

## Sample Size

- **Number of Participants.** 604 (52% of these individuals received the FBAS curriculum, while 48% received the control health education curriculum).<sup>38</sup>
- **Retention.** 100% of participants enrolled in the study received the full intervention.

## Outcomes

- **Weight Loss.** Participants receiving the FBAS program had lost an average of 5.27 pounds at 12 weeks, which was more statistically significant than the weight loss for participants in the health education curriculum (p=.005).<sup>38</sup>

## African Americans Reach In Reach Out

Reach-Out is a family-based diabetes prevention program for overweight African American youth between the ages of nine and 12 offered in a community setting.



### AVAILABLE MATERIALS

- o [Weekly Booklets](#)
  - Child
  - Parent
- o [Weekly Evaluations](#)
  - Child
  - Parent
- o [Weekly Scripts](#)
  - Child
  - Parent
- o [Weekly Script Activities and Trackers](#)



### HOW TO USE THESE MATERIALS

- o Reach Out was implemented in a community-based setting for 14 weeks, followed by monthly meetings for another 8.5 months, with three cohorts of nine to 10 families each.
  - Lay health leaders and their connection to the families were key in motivating families to make changes.
  - Each family set weekly behavioral goals in the areas of nutrition and exercise, anticipating obstacles, and assessing their ability to achieve goals. Session leaders coached participants in concrete goal setting by asking participants to be specific (e.g., “20 minutes of walking together after child comes home from school each day”), to identify both the child’s role and the parent’s role in each goal or activity and to increase participants’ self-efficacy. Participants were encouraged to set modest, realistic goals to maximize likelihood of success.
- o Power-Up, adapted from Reach Out, was used in an elementary school setting for 14 weeks with 40 students and 28 parents.<sup>39</sup>
  - Teachers led 14 weekly sessions on nutrition and physical activity after school at Woodlawn Community School. Students (of all weight categories) were between the ages of five and twelve. Pre- and post-data on body mass index (BMI), blood pressure, dietary measures, and health knowledge and beliefs were collected from children and participating parents.



## CITATION FOR MATERIALS

o Burnet, D. L., Plaut, A. J., Wolf, S. A., Huo, D., Solomon, M. C., Dekayie, G., Quinn, M. T., Lipton, R., & Chin, M. H. (2011). Reach-Out: A Family-Based Diabetes Prevention Program for African American Youth. *Journal of the National Medical Association*, 103(3), 269-277. [https://doi.org/10.1016/S0027-9684\(15\)30290-X](https://doi.org/10.1016/S0027-9684(15)30290-X)

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## Development and Use of Available Materials

Burnet, D. L., Plaut, A. J., Wolf, S. A., Huo, D., Solomon, M. C., Dekayie, G., Quinn, M. T., Lipton, R., & Chin, M. H. (2011). Reach-Out: A Family-Based Diabetes Prevention Program for African American Youth. *Journal of the National Medical Association*, 103(3), 269-277. [https://doi.org/10.1016/S0027-9684\(15\)30290-X](https://doi.org/10.1016/S0027-9684(15)30290-X)

- o Reach Out is a family-based nutrition and exercise program led by community lay health leaders for overweight African American youth (9-12 years old) and their families.
- o Reach Out was originally conducted on the South Side of Chicago and sessions focused on skills building, problem solving, and setting goals.
- o 14 weekly sessions were hosted at the local YMCA and/or the Hyde Park Community Kitchen.
- o Monthly “booster” sessions allowed families to develop healthy nutrition and physical activity behaviors.
- o Key program strategies included behavioral goal setting; skills building, group problem solving; and engaging family activities, e.g., cooking, karate, and dance.
- o Lay health leaders were recruited from the community and included interested parents.
- o This paper describes the pre-post intervention study of Reach Out comparing BMI, blood pressure, waist circumference, glucose, insulin, and lipid levels, and behavioral data among participants before the intervention and at one year.

## Description of Cultural & Linguistic Tailoring

- Focus groups were performed in the community to assess weight-related beliefs and concerns of the African American children and parents on the South Side of Chicago, as well as community leaders.<sup>40</sup>
- Based on these focus groups, program leaders identified family and community strengths and challenges to shape the intervention.
- The curriculum used language and food and activity preferences expressed by the participants in the focus groups, e.g., dance, basketball, and martial arts.
- Program leaders aimed to incorporate motivational interviewing, shopping, and cooking demonstrations to adjust preferred foods.
- The focus groups also led to continuous community involvement through a Community Advisory Board to benefit from educational and financial resources, dispel mistrust, and develop a sense of community ownership in the project.

## Sample Size

- **Recruitment**
  - Participants were recruited through flyers in community sites and local pediatric practices. Twenty-nine families (30 children and 32 guardians) enrolled in the pilot study.
  - Participants were African American youth ages 9-12 years with BMI in the 85th percentile or higher, family history of type 2 diabetes, and a parent/adult family member willing to participate; participants also completed a three-day food diary as evidence of motivation for change.

- **Retention**

- Two families dropped out before group sessions began and two additional families dropped out during weekly sessions.

## Outcomes

- **Weight Loss**

- BMI remained stable after the 14-week intervention and marginally increased after one year. However, BMI z-score (measure of relative weight adjusted for a child's age and sex) decreased significantly at the end of the intervention and after one year (2.46 at baseline to 2.38 at 14 weeks and 2.39 at 1 year;  $p=0.01$ ).

- **Other Outcomes**

- Participating children reported increased walking ( $p=0.07$ ), and exhibited a corresponding rise in mean serum high-density lipoprotein cholesterol from 49.4 to 54.2 ( $p<0.2$ )
- Parents reported significantly improved eating habits and lower fat food choices.
- Parents reported walking more and doing more vigorous exercise at one year.

## African Americans Weight Wise

The Weight-Wise Program is a weight loss program that incorporates elements of hypertension management for low-income, middle-aged women. It is based on the PREMIER program, which focused on hypertension prevention.



### AVAILABLE MATERIALS

- o [Weight-Wise Leader Guides](#) (participant materials are included within the Leader Guide for each session)



### HOW TO USE THESE MATERIALS

Please see the [Introduction to Weight-Wise](#)



### CITATION FOR MATERIALS

The Weight-Wise Leader's Guides were adapted from the intervention materials and strategies used in the Diabetes Prevention Program,<sup>41</sup> the PREMIER Program, and the Weight Loss Maintenance (WLM) Trial. The University of North Carolina at Chapel Hill Center for Health Promotion and Disease Prevention Revised edition © 2008



### CONTACT PERSON

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## Development and Use of Available Materials

Samuel-Hodge CD, Johnston LF, Gizlice Z, Garcia BA, Lindsley SC, Bramble KP, and Keyserling TC. (2009). Randomized Trial of a Behavioral Weight Loss Intervention for Low-Income Women: The Weight Wise Program. *Obesity*, 17(10), 1891-1899.

- o The program was initially piloted at a community health center and nearby church; for this study, participants were randomized to an intervention or control group. The control group intervention consisted of two health-related newsletters that were mailed to participants. The materials included in this resource inventory were tested in this 2009 pilot.

Samuel-Hodge CD, Garcia BA, Johnston LF, Kraschnewski JL, Gustafson AA, Norwood AF, and Stearns SC. (2012). Rationale, Design, and Sample Characteristics of a Practical Randomized Trial to Assess a Weight Loss Intervention for Low-Income Women: The Weight-Wise II Program. *Contemporary Clinical Trials*, 33(1), 93-103.

- o Researchers later expanded to a randomized control trial implemented across six county health departments in North Carolina.

## Description of Cultural & Linguistic Tailoring

- **Low Literacy Adaptation.** While the researchers did not seek to alter the behavior change strategies presented in the curriculum, they did seek to alter the curriculum to suit a low literacy population. To do this, they adapted the sessions to include less writing, reduced the reading level of materials, and included more small-group, as opposed to individual, activities.
- **Tailoring Dietary Session Topics.** Cultural tailoring included incorporating diet and nutrition examples specific to the Southern diet, including commonly eaten fruits, vegetables, and beans that were nutritious but could be purchased at a low cost from stores accessible to participants.

## Sample Size

- **Number of Participants.** 143 (72 were randomized to the Weight-Wise Program and 71 to the control group).<sup>23</sup>
- **Retention.** 88% percent of participants (n=126) completed follow-up weight measurement.<sup>23</sup>

## Outcomes

- **Weight Loss.** At the five-month follow-up point, Weight-Wise program participants had an average weight loss of 8.16 pounds, which was significantly more than the control group (P<0.001).<sup>23</sup>

## African Americans

### THE WORD

The WORD (Wholeness, Oneness, Righteousness, Deliverance) is an evidence-based weight loss and maintenance intervention intended for African American Christians. It is designed to be delivered in a small-group format by lay health leaders in faith-based settings.



## AVAILABLE MATERIALS

- o [The WORD Leader Guides and Participant Handouts](#)



## HOW TO USE THESE MATERIALS

These materials were developed for Christian faith groups and should be delivered to those comfortable with Christian faith-based materials. The researchers who originally developed these materials recommend that a church organize a group of 8-10 persons and designate two of them to be leaders of the group. The leaders are to use the Leadership Manual, whereas the participants are to use the Participant Manual. The leaders are to lead the group through a weekly lesson for 16 weeks. Each session is intended to last approximately 90 minutes.



## CITATION FOR MATERIALS

Yeary KH, Cornell C, Turner J, Prewitt E, Bursac Z, Tilford M, Harris K, Eddings K, Love SJ, Whittington E (2015) The WORD (Wholeness, Oneness, Righteousness, Deliverance): Design of an Evidence-Based Weight Loss and Maintenance Intervention Translated for a Faith-Based, Rural, African American Population Using a Community-Based Participatory Approach. *Contemporary Clinical Trials* 40:63-73.

This study was funded by National Institutes of Health Grant #2P20MD002329-06.



## CONTACT PERSON

Karen Yeary, PhD, Roswell Park Comprehensive Cancer Center  
([karen.yeary@roswellpark.org](mailto:karen.yeary@roswellpark.org))

## Development and Use of Available Materials

Yeary KH, Cornell CE, Moore P, Bursac Z, Prewitt TE, West DS, and Turner J. (2011). Feasibility of an Evidence-Based Weight Loss Intervention for a Faith-Based, Rural, African American Population. *Preventing Chronic Disease*, 8(6).

- o The study team conducted a feasibility study among rural, African American adults from three churches across the Lower Mississippi Delta (LMD). The intervention consisted of 16 sessions delivered across 16 weeks (January-May 2010). Lay leaders conducted the intervention to small groups of faith community members through weekly 90-minute sessions.

Yeary KHCK, Cornell CE, Prewitt E, Bursac Z, Tilford JM, Turner J, and Harris K. (2015). The WORD (Wholeness, Oneness, Righteousness, Deliverance): Design of a Randomized Controlled Trial Testing the Effectiveness of an Evidence-Based Weight Loss and Maintenance Intervention for a Faith-Based, Rural, African American Population Using a Community-Based Participatory Approach. *Contemporary Clinical Trials*, 40, 63-73.

- o Yeary and colleagues worked with 30 churches across the LMD region to implement The WORD and test the effectiveness of a 12-session weight loss maintenance phase.

## Description of Cultural & Linguistic Tailoring

- **Engaging Stakeholders in the Development of Materials.** Academic and community partners collaborated to culturally adapt the curriculum from the original DPP research trial<sup>39</sup> using a weight loss intervention called The WORD, a lay advisor-led intervention for African Americans in faith-based settings in North Carolina. Some key adaptations to the original WORD intervention include additional scriptures and religious imagery in the materials, a broader focus on chronic disease prevention, and the incorporation of walking as a group exercise.
- **Use of Lay Leaders.** This intervention utilized trained community members. For the feasibility study, WORD leaders received

an initial training that lasted 20 hours. The training promoted knowledge on healthy weight, weight-related health behaviors, faith and health, experiential learning strategies, group facilitation skills, and behavior change promotion. For the randomized control trial, the WORD leader training expanded to include 28 hours of an initial training over a six-week time period, in addition to booster trainings.<sup>42</sup>

## Sample Size

- **Number of Participants.** 26
- **Retention.** 85% of participants (n=22) provided 16-week follow-up data.

## Outcomes

- **Weight Loss.** Participants experienced a mean weight change of -2.7%.<sup>10</sup>
- **Participant Satisfaction.** Participants reported that they enjoyed the religious and group-based components of the program but noted that monitoring food consumption could be challenging.
- **Physical Activity.** Total and moderate physical activity during the intervention period increased significantly.
- **Healthy Eating.** Participants described increased social support from family and friends for healthy eating and increased social support from family for increasing physical activity. Actual changes in dietary intake, however, were not significant from baseline to 16 weeks.
- **Impact of Participant Engagement.** Engaged participants (individuals who attended at least eight of the 16 group sessions) lost 4.51% of their initial weight on average and reported significantly more moderately vigorous physical activity, more support for healthy eating from family and friends, and more support to be physically active from family at follow-up than less engaged participants (individuals who attended fewer than eight group sessions).

## American Indians & Alaska Natives Special Diabetes Program for Indians Diabetes Prevention

The Special Diabetes Program for Indians Diabetes Prevention (SDPI-DP) demonstration project-supported grantees who implemented a culturally adapted version of the curriculum that was used in the original DPP research trial,<sup>39</sup> the Native Lifestyle Balance curriculum. Many of these grantees created culturally tailored supplemental materials, which are available in the Diabetes Prevention Program Toolkit. This curriculum was approved by CDC's Diabetes Prevention Recognition Program for organizations participating in the National DPP.



### AVAILABLE MATERIALS

- o [SDPI Diabetes Prevention Program Toolkit](#)
- o [Native Lifestyle Balance](#)



### HOW TO USE THESE MATERIALS

- o The SDPI-DP toolkit includes modules for identifying, recruiting, and retaining participants; implementing the program; and building a sustainable program based on the lessons learned from SDPI-DP grantees. Included as appendices to these toolkits are materials developed and used by the grantees to deliver type 2 diabetes prevention programs.
- o The Native Lifestyle Balance curriculum is included as part of the SDPI toolkit. It includes participant and coach handouts for 16 core sessions and six post-core sessions, in addition to session outlines and prompts and a toolbox of optional handouts.



### CITATION FOR MATERIALS

- o Indian Health Service, Special Diabetes Program for Indians. Diabetes Prevention Program Toolkit. Retrieved from: <https://www.ihs.gov/sdpi/sdpi-toolkits/diabetes-prevention-program-toolkit/>
- o Native Lifestyle Balance. Retrieved from: <http://nlb.hncpartners.org/>



### CONTACT PERSON

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## Development and Use of Available Materials

Jiang L, Manson SM, Beals J, et al. Translating the Diabetes Prevention Program into American Indian and Alaska Native Communities: Results from the Special Diabetes Program for Indians Diabetes Prevention Demonstration Project. *Diabetes Care*. 2013; 36(7): 2027-2034.

- o The SDPI-DP demonstration project funded 36 grantees serving 80 tribes to deliver the Native Lifestyle Balance curriculum in group settings within 16-24 weeks after baseline assessment by a health educator, health professional, lay health worker, or dietician. Participants were assessed at baseline, post-program, and annual intervals thereafter.

## Description of Cultural & Linguistic Tailoring

- **Community-based participatory research.** Grantees had a planning year during which they worked closely with local organizations, community stakeholders, and tribal leaders.
- **Incorporating tribal cultural elements.** Grantees translated the curriculum to tribal languages and incorporated other elements such as indigenous foods and talking circles.

## Sample Size

- **Number of Participants.** 2,553
- **Retention.** 74% of participants (n=1,891) completed the post-curriculum assessment.

## Outcomes

- o **Weight Loss.** Participants had a mean weight loss of 9.6 pounds immediately after completing the 16 sessions, equating to 4.4% weight loss.
  - 22.5% of participants achieved the 7% weight loss goal by the end of the program; 17.5% had maintained this weight loss after three years.
- o **Diabetes incidence.** The crude incidence of diabetes was 4% per year among participants, which was lower than in the placebo group (12.9%).
- o **Participants' physical activity.** Physical activity increased significantly from baseline, with participants reporting 181 minutes of physical activity per week at the end of the program. At the time of post-program assessment, 56% had achieved the physical activity goal of 150 minutes/week, significantly more than baseline.
- o **Fasting glucose blood (FGB) levels.** FGB levels decreased significantly from baseline, decreasing approximately 4mg/dL on average from baseline to post-program assessment.

Brief  
Description**American Indians & Alaska Natives  
*Together on Diabetes***

Together on Diabetes (TOD) is a 12-month intergenerational, home-visiting diabetes prevention and management program for Native American youths (ages 10 to 19 years) and their adult caregiver(s).

**AVAILABLE MATERIALS**

- o [Implementation Guide](#)
- o [Curriculum and Facilitator Guide](#)
- o [Participant Workbook](#)

**HOW TO USE THESE MATERIALS**

- o TOD consists of a six-month program and a six-month maintenance period.
- o The TOD program curriculum consists of 12 lessons for youth and four for caregivers; caregivers are encouraged to attend all youth lessons.
- o The program is delivered by Native American paraprofessional family health coaches (FHCs) in the home of participants. Most materials are adapted from the DPP and TODAY (Treatment Options for type 2 Diabetes in Adolescents and Youth) studies and some were developed by the research team. In addition to youth at risk for diabetes, the program enrolled some youth who had type 2 diabetes, and included two optional lessons focused on diabetes management.

**CITATION FOR MATERIALS**

- o Chambers RA, Rosenstock S, Neault N, Kenney A, Richards J, Begay K, Blackwater T, Laluk O, Duggan C, Reid R, Barlow A. A Home-Visiting Diabetes Prevention and Management Program for American Indian Youth: The Together on Diabetes Trial. *Diabetes Educ.* 2015 Dec;41(6):729-47. doi: 10.1177/0145721715608953. Epub 2015 Oct 8. PMID: 26450222.

**CONTACT PERSON**

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([rstrom3@jhu.edu](mailto:rstrom3@jhu.edu))

## Development and Use of Available Materials

Chambers RA, Rosenstock S, Neault N, Kenney A, Richards J, Begay K, Blackwater T, Laluk O, Duggan C, Reid R, Barlow A. A Home-Visiting Diabetes Prevention and Management Program for American Indian Youth: The Together on Diabetes Trial. *Diabetes Educ.* 2015 Dec;41(6):729-47. doi: 10.1177/0145721715608953. Epub 2015 Oct 8. PMID: 26450222.

- This article presents the results of a study that tested the feasibility of delivering the Together on Diabetes (TOD) program, which The Johns Hopkins Center for American Indian Health designed, implemented, and evaluated in partnerships with four tribal communities in the Southwest.
- The program was delivered in four American Indian (AI) communities in rural and isolated reservation lands. The program consisted of a 12-month home visiting program delivered by a Native American family health coach (FHC) to youth ages 10-19 with or at risk for diabetes and their caregivers. FHCs were local AI paraprofessionals (community health workers).
- The baseline results confirmed the need for, and feasibility of delivering, this family-based youth diabetes prevention intervention among at-risk youth in rural AI communities.

Kenney A, Chambers RA, Rosenstock S, et al. The Impact of a Home-Based Diabetes Prevention and Management Program on High-Risk American Indian Youth. *The Diabetes Educator.* 2016;42(5):585-595. doi:10.1177/0145721716658357

- This multi-site pre- and post-evaluation design was used to evaluate the efficacy of the TOD intervention on improving youths' knowledge, behavioral, physiological, and psychosocial outcomes at baseline and three, six, and 12 months post-enrollment.

- The TOD intervention included three components: (1) home-based education and support, (2) collaboration with medical providers, and (3) referrals to community resources and wellness events. The youth curriculum included 12 lessons (45-60 minutes in duration) delivered biweekly during a six-month intervention phase and six monthly maintenance lessons (20 minutes in duration) delivered during a six-month follow-up phase. The curriculum covered nutrition, physical activity, and life skills education. The intervention for support persons consisted of four lessons (20-30 minutes in duration) delivered over 12 months.

Chambers, R., Rosenstock, S., Walls, M., Kenney, A., Begay, M., Jackson, K., Nelson, L., Neault, N., Goklish, N., Van De Mheen, D., & Barlow, A. (2018). Engaging Native American Caregivers in Youth-Focused Diabetes Prevention and Management. *Preventing Chronic Disease*, 15(6), 170521. <https://doi.org/10.5888/pcd15.170521>

- This article describes the results of a second pre-post design study that assessed the feasibility and acceptability of enrolling adult caregivers in the program, because youth and adult caregivers often share risk factors for diabetes. Engaging caregivers in youth diabetes prevention programs may positively affect adults while increasing program effectiveness for youth.

## Description of Cultural & Linguistic Tailoring

- The TOD program drew on lessons from the literature about the needs of AI youth at risk for diabetes and combined components of successful diabetes prevention and management interventions with an evidence-based home-visiting model (“Family Spirit”) that was previously implemented in participating communities.<sup>43</sup>
- During the formative phase of TOD, strengths and protective factors were identified by the community and carefully woven throughout the intervention. Community advisory boards selected local paraprofessionals to serve as FHCs. FHCs had deep cultural roots and played a critical role in delivering lesson content, providing social support, and connecting youth with additional community resources. The FHCs could navigate language, social, and cultural norms.<sup>44</sup>
- The program served rural, reservation-based Navajo and Apache youth and caregivers. The program was delivered in English, and all children and their parents spoke English even if it was not their primary home language. Grandparents were most likely to not speak English. At least one staff person at each site spoke the Native language.<sup>45</sup>
- The program was adapted for AI youth to include formal engagement of parents and significant persons who influence youths’ mental and emotional health, diet, physical activity, and medication management. Due to the importance of the home environment, transportation challenges, and stigma associated with clinical settings, the home was identified as the most effective setting for delivery.<sup>43</sup>

- The program used a holistic approach that is suited for Native American populations. It focused on a healthy, balanced life more than on weight loss.<sup>45</sup>

## Sample Size

### o Recruitment

- Youth were referred to TOD by a health care provider based on diagnosis of prediabetes or type 2 diabetes, or identified as “at risk” for type 2 diabetes based on body mass index (BMI) and a qualifying laboratory test result.<sup>43</sup>
- The study had a rolling enrollment for 20 months, with 12-13 youth and caregivers enrolled each month.<sup>45</sup>
- Of the 509 youth referred to TOD, 408 met the study’s eligibility criteria, and 256 enrolled. 226 support persons enrolled in the TOD study.<sup>44</sup>

### o Retention

- Youth participants completed an average of 9.35 lessons out of 12, with 73.4% of youth completing  $\geq 8$  lessons. Evaluation completion rates were high: 77.7% at three month follow-up, 81.6% at six-month follow-up, and 84.8% at 12-month follow-up.<sup>44</sup>
- The 226 support persons/caregivers completed, on average, 1.91 out of 4 lessons.<sup>44</sup> Caregivers of youth with diabetes attended significantly more youth lessons than caregivers of youth at risk for diabetes (6.5 vs 3.79;  $p=.01$ ). Additionally, youth age and number of youth lessons the caregiver attended were positively correlated; the younger the youth, the more lessons the caregiver attended ( $R^2=.0193$ ;  $p=.04$ ).<sup>45</sup>
- Retention was linked to supervision and support of interventionists, flexibility in scheduling visits, and consistent involvement of relatives.<sup>43</sup>

## Outcomes

### o Weight Loss.

- Among youth, mean age- and sex-specific standardized body mass index (zBMI) scores decreased from baseline to six months (2.19 vs 2.17,  $p=.024$ ); changes were sustained through 12 months (2.19 vs 2.16,  $p=.004$ ).<sup>44</sup>
- A subset of adult caregivers reduced their BMI (weight in kilograms divided by height in m<sup>2</sup>) significantly from the start to the end of the program, a 12 month period ( $p=.02$ ).<sup>45</sup>

### o Other Outcomes.

- Outcome measures were selected across four domains (knowledge, behavioral, physiological, and psychosocial) and were collected at baseline and three, six, and 12 months.<sup>43,44</sup>
- At 12 months post-enrollment, improvements were observed in youths' quality of life ( $p<.001$ ), depressive symptoms ( $p<.001$ ), knowledge related to TOD content ( $p<.001$ ), standardized body mass index scores ( $p=.004$ ), and hypertension ( $p=.026$ ). Improvements in mean A1C were observed among diabetic youth with baseline A1C  $>6.5\%$  ( $p=.036$ ).<sup>44</sup>
- Caregiver satisfaction was high. Caregivers reported that they liked the knowledge they gained through the TOD program and TOD program activities and liked that the FHC came to their home. Some said they did not like the program's time commitment.<sup>45</sup>

Brief  
Description

## Arab Americans *Ahlah! [It's better]*

Investigators culturally and linguistically tailored the Group Lifestyle Balance (GLB) curriculum<sup>37</sup> for Arab American Muslims aged 30 and older. A trained, Arabic-speaking educator led the intervention in community settings.



### AVAILABLE MATERIALS

- o [Ahlah! Participant Handouts Sessions 1-12 \(Arabic\)](#)
- o [Ahlah! Additional Participant Handout on Ramadan \(Arabic\)](#)



### HOW TO USE THESE MATERIALS

- o Sessions should be offered more than once a day to accommodate different schedules, and participants should be invited to bring their families to the sessions. Physical activity sessions conducted at community centers may be subdivided by gender, and the intervention should target women because they are a major influence on a family's medical care and diet.
- o Individuals who do not agree to participate in the lifestyle intervention should be given the option to participate in a four-week-long educational intervention, after which they may decide if they want to participate in the lifestyle intervention.



### CITATION FOR MATERIALS

- o A Modification of the Diabetes Prevention Program's Lifestyle Change Program. Copyright © 2010 Wayne State University. Linda A. Jaber, Pharm.D. Supported by the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health.
- o This study was funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the National Institutes of Health (Grant #R34 DK076663). Support for the Biostatistics and Economic Modeling Core and the Behavioral, Clinical, and Health Systems Intervention Research Core of the Michigan Diabetes Research and Training Center from the National Institutes of Health (Grant #P60 DK20572).for the Biostatistics and Economic Modeling Core and the Behavioral, Clinical, and Health Systems Intervention Research Core of the Michigan Diabetes Research and Training Center from the National Institutes of Health (Grant #P60 DK20572).



### CONTACT PERSON

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## Development and Use of Available Materials

Jaber LA, Pinelli NR, Brown MB, Funnell MM, Anderson R, Hammad A, and Herman WH. (2011). Feasibility of Group Lifestyle Intervention for Diabetes Prevention in Arab Americans. *Diabetes Research and Clinical Practice*, 91(3), 307–315.

Jaber and colleagues conducted a prospective, non-randomized, feasibility demonstration trial among Arab Americans in Dearborn, Michigan. The intervention consisted of weekly sessions for 12 weeks, lasting 60-90 minutes, and monthly meetings for the following 12 weeks.

## Description of Cultural & Linguistic Tailoring

- **Engaging Stakeholders in the Development of Materials.** Investigators formed a board comprised of community members, clinical staff, and researchers, who reviewed the curriculum. Some of the key adaptations to the original GLB<sup>37</sup> materials include condensing the core component of the program from 16 to 12 weeks, translating the materials to a 5th or 6th grade reading level of Arabic, modifying the food booklet for more culturally relevant recommendations, adding cooking demonstrations and grocery store trips, adding Islamic verses based on suggestions from the community, and including two physical activity sessions per week.

- **Group Structure.** The intervention was delivered in a group format with 10-12 participants per group. Participants were given the option to be a part of either a mixed gender or all-female group. Once in these groups, group members chose a leader who was responsible for organizing all unsupervised group activities (i.e., taking walks for physical activity).
- **Self-Monitoring Requirement.** Participants were instructed to record weight; physical activity minutes; and types of food eaten, including portion sizes; and to identify high-fat foods.

## Sample Size

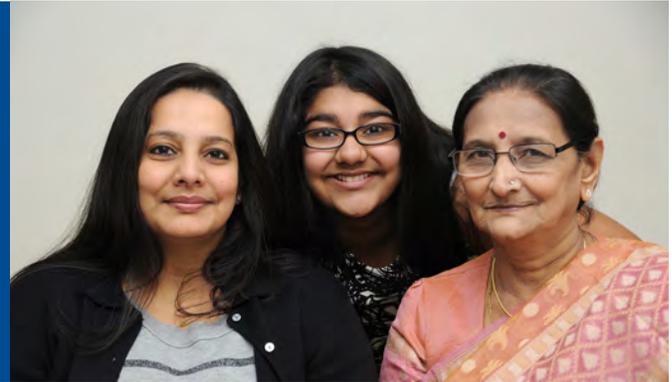
- **Number of Participants.** 71
- **Retention.** 86% of participants (n=61) completed the 24-week lifestyle intervention.

## Outcomes

- **Weight Loss.** Of the 71 participants: 44% achieved  $\geq 7\%$  weight loss; 59% achieved  $\geq 5\%$  reduction in weight. At 24 weeks, the participants had a mean weight loss of 11.46 pounds.
- **Physical Activity.** Of the 71 participants, 78% reached the physical activity goal of  $\geq 150$ -minutes/week.
- **Healthy Eating.** Fat intake decreased by 5.6% in participants.

## Asian Indians *Culturally Tailored Power to Prevent (P2P) Program for Asian Indian Americans*

The program is a group-based diabetes prevention program tailored for Asian Indians using the Power to Prevent (P2P) DPP curriculum in a faith-based setting in Houston, Texas.



### AVAILABLE MATERIALS

- o Curriculum adapted based on the National Diabetes Education Program's (NDEP) Power to Prevent (P2P): A Family Lifestyle Approach to Diabetes Prevention. <http://www.adph.org/diabetes/assets/powertoprevent2007.pdf>



### HOW TO USE THESE MATERIALS

- o Sessions were held in local Hindu temples (mandir).
- o Temple volunteers helped with room set-up and collecting participants' weekly food logs and body weights.
- o The bilingual lifestyle coach verbally translated materials into Gujarati as needed. Most participants spoke English. She used a similar approach as P2P, minimizing medical terminology and using culturally and religiously sensitive and appropriate analogies throughout.
- o Participants were incentivized with a weekly \$25 gift card drawing to a local grocery store for attending sessions and submitting the weekly logs.



### CITATION FOR MATERIALS

- o Patel, R. M., Misra, R., Raj, S., & Balasubramanyam, A. (2017). Effectiveness of a Group-Based Culturally Tailored Lifestyle Intervention Program on Changes in Risk Factors for Type 2 Diabetes among Asian Indians in the United States. *Journal of Diabetes Research*, 2017, 1-13. doi:[10.1155/2017/2751980](https://doi.org/10.1155/2017/2751980).



### CONTACT PERSON

Rupal M. Patel, PT, PhD, Texas Woman's University, ([rpatel@twu.edu](mailto:rpatel@twu.edu))

## Development and Use of Available Materials

Patel, R. M., Misra, R., Raj, S., & Balasubramanyam, A. (2017). Effectiveness of a Group-Based Culturally Tailored Lifestyle Intervention Program on Changes in Risk Factors for Type 2 Diabetes among Asian Indians in the United States. *Journal of Diabetes Research*, 2017, 1-13.

<https://doi.org/10.1155/2017/2751980>.

- o This study used a pre- and post-test control group to evaluate the effectiveness of a community-based DPP (Power to Prevent) that was culturally tailored for Gujarati Asian Indians in the greater Houston area. The program ran for 12 weeks and consisted of a follow up at 24 weeks.

## Description of Cultural & Linguistic Tailoring

- o Sessions were hosted by volunteer community health workers in the temple.
- o Sessions were facilitated and translated by the lifestyle coach with examples of Gujarati colloquialisms, customs, traditions, and faith adaptations.
- o Barriers to healthy behaviors were addressed through cultural messaging and visuals.
- o Exercise and cooking demonstrations were included. Traditional recipes were adapted using healthy ingredients, participants were given a tour of both Indian and American grocery stores, and a healthy recipe potluck party was included at the end.
  - Most of the participants were vegetarian, so there was an emphasis on adapting a recipe to be vegetarian and/or vegetarian with an Indian or Gujarati twist.
  - The coach adapted the USDA MyPlate to a Gujarati MyPlate for the participants.

## Sample Size

### o Recruitment

- 70 participants were enrolled and participated in the project.

### o Retention

- 34 participants were randomly assigned to the intervention group and 36 were randomly assigned to the control group.
- Retention rate at post-test (12 weeks) was 80% for the intervention group and 83% for the control group.
- Retention rate for the follow-up test (24 weeks) was 72% for the intervention group and 59% for the control group, for a total sample across both groups of 46 participants.

## Outcomes

### o Weight Loss

- Over the course of the intervention from baseline to follow up, 35 of 46 participants in both the intervention and control group (76.1%) lost 5% or more of their total body weight. BMI changes were seen in both the control and treatment group.

### o Other Outcomes

- While a significant decline in weight and increase in physical activity was observed in all participants, the intervention group lowered their HbA1c and waist circumference significantly as compared to the control group.
- The intervention group also sustained this outcome six months after program completion.
- Long-term sustainability was observed in some of the traditional practices at the temple (community level) such as serving healthier food options during events and services as well as gifting healthier baskets to visitors/guests.

## Asian Indians *Project RICE*

Project RICE (Reaching Immigrants through Community Empowerment) was a diabetes prevention intervention study for Sikh Asian Indian adults at-risk for diabetes and living in New York City that used community based participatory methods to culturally adapt the DPP, among other curricula.



### AVAILABLE MATERIALS

- o [Project RICE Sessions 1-6 Slides \(English\)](#)
- o [Project RICE Sessions 1-6 Slides \(Punjabi\)](#)
- o [Project RICE Sessions 1-6 Handouts \(Punjabi\)](#)



### HOW TO USE THESE MATERIALS

- o The program consisted of six Community Health Worker (CHW)-facilitated group sessions that were culturally adapted to the South Asian Sikh community over a six-month period and ten follow-up phone calls every two weeks in between group sessions.
- o Each session was approximately two hours in length and followed a curriculum that adapted the Diabetes Prevention Program and included the following topics: diabetes prevention, nutrition, physical activity, diabetes complications and other cardiovascular diseases, stress and family support, and access to health care.
- o Sessions were held every three weeks during weekend and early afternoon hours to accommodate participant schedules, particularly women with childcare obligations.
- o Sessions were held in community settings, either at the neighborhood gurdwara (Sikh religious institution) or education center.
- o Training of CHWs was considered critical; the study's community partner, UNITED SIKHS, was instrumental to recruiting and supervising respected CHWs.

Project RICE included a similar pilot targeting Korean Americans; publication of results from a complete trial are forthcoming, and do not appear in this profile.



### CITATION FOR MATERIALS

- o Islam NS, Zanowiak JM, Wyatt LC, Kavathe R, Singh H, Kwon SC, Trinh-Shevrin C. Diabetes prevention in the New York City Sikh Asian Indian community: a pilot study. *Int J Environ Res Public Health*. 2014 May 19;11(5):5462-86.



### CONTACT PERSON

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## Development and Use of Available Materials

Lim, Sahnah; Wyatt, Laura; Chauhan, Harmanpreet; Zanowiak, Jennifer M.; Kavathe, Rucha; Singh, Hardayal; Kwon, Simona; Trinh-Shevrin, Chau; and Islam, Nadia S. (2019) "A Culturally Adapted Diabetes Prevention Intervention in the New York City Sikh Asian Indian Community Leads to Improvements in Health Behaviors and Outcomes," *Health Behavior Research: Vol. 2: No. 1.* <https://doi.org/10.4148/2572-1836.1027>.

- o This publication describes a quasi-experimental two-arm intervention among Sikh Asian Indian adults at-risk for diabetes and living in New York City (n=160) conducted in 2013–2014.
- o Project RICE was a five-year community-driven initiative to promote diabetes prevention among people of Korean American and South Asian American heritage in New York City using a CHW approach. Funded by the Centers for Disease Control and Prevention (CDC), it was the core research project of the New York University Health Promotion and Prevention Research Center (PRC). It was conducted in partnership with local health providers and community and faith-based organizations, including UNITED SIKHS.
- o The treatment group received six monthly CHW group education sessions and 10 follow-up phone calls; the control group received the first session. Main outcomes included weight, body mass index (BMI), blood pressure (BP), physical activity (PA), diet, and health self-efficacy.
- o The intervention curricula was previously piloted, and described in the 2014 publication (below). It differed from the DPP in the number of sessions in a six month time period (DPP's 16 vs. six sessions; the length of each session (DPP's were 30

minutes to one-hour long compared to approximately two-hour long sessions); the mode of delivery (DPP's individual sessions compared to group sessions); staffing (DPP used case managers or "Lifestyle Coaches" compared to trained CHWs); follow-up (DPP had biweekly calls and six follow-up sessions compared to weekly phone call follow-ups); and provision of supplemental sessions (DPP's optional group exercise sessions and regular group/individual sessions after the six-month curriculum compared to no supplemental sessions).

Islam NS, Zanowiak JM, Wyatt LC, Kavathe R, Singh H, Kwon SC, Trinh-Shevrin C. Diabetes prevention in the New York City Sikh Asian Indian community: a pilot study. *Int J Environ Res Public Health.* 2014 May 19;11(5):5462-86.

- o This paper describes the Project RICE pilot study about cultural adaptations of diabetes prevention programs for Sikh Asian Indian Americans.
- o The intervention was based on multiple curricula that had been validated in minority communities, National Heart, Lung, and Blood Institute's Healthy Heart Healthy Family, the DPP, the National Diabetes Education Program's Power to Prevent (PTP) and Road to Health curricula, and a diabetes management curriculum used in the NYC Bangladeshi population.
- o This publication includes a table describing examples of community engagement in the study's research process, and a table describing the specific ways it adapted and culturally tailored the DPP curriculum.
- o Project RICE included a similar pilot targeting Korean Americans; publication of results from a complete trial are forthcoming.<sup>46</sup>

## Description of Cultural & Linguistic Tailoring

- o The program culturally tailored the DPP curriculum in numerous ways (detailed in the 2014 publication) including:<sup>47</sup>
  - Cultural tailoring involved tying prevention to Sikh core values, e.g., concept of the “Saint-Soldier” in Sikhism promoting discipline in spiritual practice and social responsibilities.
  - Photos of Punjabi/North Indian foods, and other culturally appropriate images and language.
  - Healthy versions of popular Indian recipes.
  - Adapting the Plate Method and images with traditional Punjabi foods.
  - Managing expectations for eating at the gurdwara.
  - Discussing physical activity as essential (e.g., encouraging discipline in physical activity as if it were prayer).
  - Discussion of Naam Simran, a meditation practice in Sikhism.
  - Discussion of diabetes among Asians and Sikhs specifically.

## Sample Size

- o **Recruitment**<sup>48</sup>
  - Study participants self-identified as Sikh South Asian; were between 18 and 75 years of age; and were determined to be at-risk for diabetes by an interviewer-administered diabetes risk assessment tool adapted from the American Diabetes Association (at-risk scores based on family history of diabetes, BMI, and other factors).
  - The intervention’s treatments and control groups were recruited at health fairs in two different neighborhood gurdwaras.
  - 250 individuals were screened for eligibility and 174 were enrolled.

## Outcomes

### o Weight Loss<sup>48</sup>

- 73.5% of the treatment group lost weight compared to 42.1% of control group ( $p < 0.001$ ) over the intervention period.
- 23.5% of the treatment group lost >5% of initial body weight compared to 12.5% in control group ( $p = 0.071$ ); among female participants only, 23.6% lost >5% of their body weight compared to 7.5% in control group ( $p = 0.022$ ); no difference among male participants.
- Individuals in the treatment group were also more significantly likely to lose >7% of their initial body weight compared to the control group (16.2% vs. 4.5%,  $p = 0.015$ ).

### o Other Outcomes<sup>48</sup>

- Treatment group participants were more likely to increase total physical activity ( $p < 0.001$ ), more likely to have increased physical activity self-efficacy ( $p < 0.001$ ), and more likely to have increased social interaction ( $p < 0.001$ ) than the control group.
- Treatment group participants were more likely to have decreased barriers to exercise but the adjusted intervention effect was not significant ( $p = 0.054$ ).
- For diet, treatment group participants showed improved portion control ( $p < 0.001$ ) and decreased barriers to healthy eating ( $p < 0.001$ ).

## Chinese Americans

### *Chinese American Balanced Lifestyle Education (CABLE)*

Chinese American Balanced Lifestyle Education (CABLE) is a cultural adaptation of the Group Lifestyle Balance (GLB) curriculum<sup>37</sup> for Chinese Americans. It is designed to be delivered in English and Mandarin Chinese to groups of first- and second-generation Chinese immigrants.



## AVAILABLE MATERIALS

- o [CABLE Participant Handouts Sessions 1-16 and 22 \(English and Mandarin Chinese\)](#)
- o [CABLE Group Instructor Guides Sessions 1-12 \(in English\)](#)
- o [CABLE Additional Participant Handouts \(English and Chinese\), which include:](#)
  - Weight Management (English and Mandarin Chinese)
  - Keeping Track Booklet (Traditional Chinese)
  - Participant Certificate (English and Mandarin Chinese)



## HOW TO USE THESE MATERIALS

- o The materials from Session 22 should be included in Session 16.
- o The Keeping Track Booklet is first introduced in Session 1, when participants are asked to record everything they ate, but not asked to record calories and fat. The Keeping Track Booklet is introduced in greater detail in Session 2. Additional instructions for the Keeping Track Booklet can be found in the Instructor Guides (Session 2, pages 6-9).
- o The weight management handout should be given to people when they reach their weight goal.
- o The patient handouts are translated in both English and Mandarin Chinese, which can be understood by both Mandarin and Cantonese speakers. These materials may be best for Mandarin or Cantonese speakers who can read some English.
- o Although the study team used the full GLB protocol in its translations, it translated only the participant materials. It did not translate the group Instructor Guides. The Instructor Guides do, however, include the cultural changes suggested by the research team.
- o Those implementing CABLE may consider recommendations from the research participants in this study, including more information on disease characteristics of diabetes (symptoms, severity, and health risk); information on carbohydrates and proteins; more examples of different types of physical activities; and more detailed nutrition facts specifically for traditional Chinese meals.



## CITATION FOR MATERIALS

CABLE: Chinese American Balanced Lifestyle Education. Catherine Chesla, RN, PhD; Kevin Chun, PhD; Yulanda Kwong, MSW; Caryl Gay, PhD; Han-Lin Chi, RN, PhD; Yunzi Gu, RN, MN; Lenore Hernandez, RN, CDE, PhD; Peggy Huang, RN, CDE. School of Nursing, University of California, San Francisco. 2016.

This project was funded by a UCSF Academic Senate Research Award and the Shobe Endowed Chair.



## CONTACT PERSON

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## Development and Use of Available Materials

Chesla CA, Chun KM, Kwong Y, Gay CL, Chi HL, Through Gu Y, Ma J. (2016). Cultural Adaptation of the Group Lifestyle Balance Program for Chinese Americans. *Diabetes Educ.*, 42(6), 686–696.

<https://doi.org/10.1177/0145721716666679>

- o The study team conducted a pilot study (single-group pre-post design) among first- and second-generation Chinese Americans at risk for type 2 diabetes due to prediabetes, metabolic syndrome, or being overweight. The intervention consisted of 16 sessions delivered over six months to subgroups of Mandarin Chinese and English speakers. The sessions were delivered by nurse research assistants, who were first-generation Chinese, bilingual, and trained in using the GLB curriculum.

## Description of Cultural & Linguistic Tailoring

- **Tailoring Nutritional Guidance and Examples.** Key adaptations to the GLB curriculum included the substitution of food examples to focus on culturally-appropriate foods and dietary practices, simplified language in participant handouts, and the replacement of U.S. phrases/expressions with Mandarin Chinese phrases/expressions. Changes to diabetes prevention protocols in the curriculum (like the substitution of dietary examples) were based on published clinical guidelines specific to Asian Americans and the study team’s existing clinical knowledge and experience working with this population.
- **Linguistic Adaptation of participant materials.** The participant handouts were translated by three nurse research assistants who were first-generation Chinese, bilingual, and trained in using the GLB curriculum. These translations were then reviewed

for clinical accuracy by a Certified Diabetes Educator employed by a health center that primarily serves Chinese immigrants. Additionally, or the evaluation, self-report questionnaires were available in both English and Mandarin Chinese.

## Sample Size

- **Number of Participants.** 25
- **Retention.** 84% of participants (n=21) finished the intervention and completed the post-curriculum satisfaction questionnaire.

## Outcomes

- **Weight Loss.** Over the span of the study (six months), participants lost an average of 5.4% body weight and had a mean weight loss of 11.4 pounds.
- **Total cholesterol.** Significant improvement was observed ( $p < .001$ ; from 199.3 mg/dL at baseline to 180.4 mg/dL at six months).
- **LDL cholesterol.** Significant improvement was observed ( $p < .001$ ; from 114.5 mg/dL at baseline to 98.8 mg/dL at six months).
- **Diastolic blood pressure.** Slight improvement was observed ( $p < .05$ ; from 82.2 mmHg at baseline to 78.4 mmHg at six months).
- **Hemoglobin A1c (A1C).** No statistically significant changes were observed (from 5.91% at baseline to 5.89% at six months).
- **Fasting plasma glucose.** No statistically significant changes were observed (from 96.4 mg/dL at baseline to 93.1 mg/dL at six months).
- **Physical activity (self-report).** Significant improvement was observed in weekly metabolic equivalent of tasks ( $p < .01$ ).
- **Social support (self-report).** Insufficient social support decreased over the course of the study.
- **Participant satisfaction (self-report).** On the participant satisfaction questionnaire, all participants reported that the program was helpful, and the majority of participants agreed that the intervention aided them in understanding and managing their diet. During the focus groups, participants noted that the most helpful elements of the sessions were pedometer readings, tracking time spent exercising, and learning how to self-monitor their diet.

## Hispanics

### *Dulce Mothers [Sweet Mothers]*

Dulce Mothers is an intervention to reduce type 2 diabetes and cardiovascular risk intended for low-income Latinas with a history of gestational diabetes mellitus (GDM). It is designed to be delivered in a small group format (5-12 women) by a peer educator in community clinic setting.



## AVAILABLE MATERIALS

- o [Dulce Mothers Outline of Materials \(English\)](#)
- o [Dulce Mothers Participant Handouts Sessions 1-12 \(Spanish\)](#)
- o [Dulce Mothers Participant Handouts Sessions 1-12 \(English\)](#)



## HOW TO USE THESE MATERIALS

- o Each session handout is tailored for Latina women with a history of GDM and complements specific PreventT2<sup>49</sup> curriculum sessions. Each handout outlines different topics and activities, but they have the same final two sections: “weekly SMART goal-setting” and “to-do next week.” This final section of each session handout reminds participants what they need to consider and prepare for in the following week to support them in meeting their goals. A detailed description of which T2 curriculum sessions are supported by each Dulce Mothers session handout is outlined in the “handout cover page” linked above.
- o The authors note that it is difficult to recruit the participants right after delivery, and recommend beginning recruitment while they are still pregnant (as they are focused on their well-being and that of their babies during this time). While women are still pregnant, project team members could provide some information about what it means to have GDM and provide an orientation session to the program.
- o The authors noted that it is difficult to determine eligibility weight since most participants are likely to still be losing post-baby weight.



## CITATION FOR MATERIALS

Research supported by:

- o NIH/NLBI R56 HL081604-01A1 (Gallo)
- o NCR-1U54RR025204-01 (Topol)
- o NCR-ARRA UL1 RR025774 (Topol)
- o Scripps Clinic Medical Group



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## Development and Use of Available Materials

Philis-Tsimikas A, Fortmann AL, Dharkar-Surber S, et al. Dulce Mothers: An Intervention to Reduce Diabetes and Cardiovascular Risk in Latinas After Gestational Diabetes. *Transl Behav Med.* 2014;4(1):18–25. <http://dx.doi.org/10.1007/s13142-014-0253-4>.

- o Philis-Tsimikas and colleagues conducted a pilot study (single-group pre-post design) among low-income Latina women with a history of GDM. The intervention consisted of eight, two-hour weekly sessions delivered across three months. Peer educators conducted the intervention in Spanish to groups of 5-12 women in a community clinic setting.

## Description of Cultural & Linguistic Tailoring

- **Tailoring Content for Latinas with a History of GDM.** Key adaptations include emphasis of the importance of interpersonal relationships; discussion of culturally-based beliefs about diabetes, income-driven barriers to healthy lifestyles, and cultural values of family caretaking; and topics specific to motherhood, including breastfeeding, childhood obesity, and nonfood rewards for children.
- **Post-Pilot Adaption of Dulce Mothers Curriculum.** After the cessation of the pilot study, the researchers decided to expand the Dulce Mothers curriculum from eight sessions to 12 sessions. This was based on the finding that women who attended more sessions lost more weight; additionally, during the post-study focus groups, there was an expressed interest from participants for more information on weight loss and maintaining lifestyle changes.
- **Spanish Language.** All sessions were conducted in Spanish since that was the primary language spoken by all participants. In addition, the researchers utilized Spanish language versions of data collection tools for the self-report measures.
- **Use of Peer Educators.** Building off of the Project Dulce model, Dulce Mothers is delivered by culturally and linguistically-aligned “promotoras.” The promotoras are “peer educators” trained by a lead health educator with five or more years of experience administering peer-led programs. The promotoras receive 40 hours of didactic training covering topics such as disease content, group management, motivational interviewing skills, and Health Insurance Portability and Accountability Act (HIPAA). Before moving to a teaching environment, certain competencies must be met. Before being eligible to teach the class on their own, peer educators must first co-teach a class series with an experienced peer and then teach their own series under the observation of a mentor. Peer educators are compensated for their time.

## Sample Size

- **Number of Participants.** 84
- **Retention.** 90% of participants (n=76) completed the program.

## Outcomes

- **Weight Change.** Participants experienced an average weight gain compared to baseline of 1.15 pounds; weight did not change significantly in response to the intervention. (Of note, being overweight was not an inclusion criterion for the study of mothers who experienced gestational diabetes.)
  - A time-by-attendance interaction effect was detected for weight ( $p=0.07$ ). This interaction suggests that participants who attended more sessions lost more weight.
- **Hemoglobin A1c (A1C).** A statistically significant increase over time was observed in A1c ( $B=0.01$ ,  $p<0.05$ ).
- **Blood Pressure.** A statistically significant improvement across the six-month follow-up period was observed in diastolic blood pressure ( $B=-0.32$ ; all  $p<0.05$ ).
- **Physical Activity (Self-Report).** Statistically significant improvements were observed for aerobic exercise ( $B=0.02$ ).
- **Diabetes-Specific Cultural Beliefs (Self-Report).** Statistically significant improvements were observed for supporting culturally driven diabetes beliefs ( $B=-0.11$ ; all  $p<0.05$ ).
- **Participant Satisfaction.** In focus groups conducted after the completion of the study, women expressed enthusiasm for Dulce Mothers and conveyed an interest for continued participation via monthly support groups. Women also reported that they wanted additional content related to dietary change and losing weight.

## Hispanics

### *Every Little Step Counts*

Every Little Step Counts (ELSC) is a culturally grounded, community-based diabetes prevention program for Latino youth with obesity. This adaptation of the DPP was developed through an academic-community collaboration.



## AVAILABLE MATERIALS

- o [Weekly Session Materials](#)
- o [Weekly Handouts](#)
- o [Physical Activity Review Handout](#)



## HOW TO USE THESE MATERIALS

- o The ELSC three-month intervention trial involved weekly nutrition and health education classes (one day/week) and exercise classes (three days/week) delivered to groups of eight to 10 male and female adolescents. Participants were followed for 12 months post-intervention.
- o The program was delivered by bilingual and bicultural health educators.
- o Parent/guardians were required to attend the nutrition classes, and siblings were encouraged to attend.
- o One of the program's approaches was to educate parents and youth on the roles and responsibilities in feeding and eating. Families worked together to plan a healthy and balanced meal using local supermarket ads. They were encouraged to make meals that fit their traditions, culture, and explore new foods. At the end, they were able to share their recipes and discuss how to build a healthy meal for the family as a group. The activity is meant to create awareness that healthy meals can be affordable and still be delicious.



## CITATION FOR MATERIALS

- o Every Little Step Counts Diabetes Prevention Program (ELSC-DPP) was developed through a partnership between Arizona State University (ASU), St. Vincent De Paul Virginia G. Piper Medical and Dental Clinic, and the Lincoln Family Downtown YMCA. The project was funded by the ASU Southwest Interdisciplinary Research Center through a grant from the National Institutes of Health, National Center on Minority Health and Health Disparities (P20MD002316).



## CONTACT PERSON

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## Development and Use of Available Materials

Shaibi GQ, Greenwood-Ericksen MB, Chapman CR, Konopken Y, Ertl J. Development, implementation, and effects of community-based diabetes prevention program for obese Latino youth. *J Prim Care Community Health*. 2010 Oct 1;1(3):206-12. doi: 10.1177/2150131910377909. PMID: 21461141; PMCID: PMC3068841.

- o This paper describes the development and cultural factors that represent the origins of a culturally informed, community-based diabetes prevention program for Latino youth with obesity.

Allison N Williams, Yolanda P Konopken, Colleen S Keller, Felipe Gonzalez Castro, Kimberly J Arcoleo, Estela Barraza, Donald L Patrick, Micah L Olson, Gabriel Q Shaibi (2017). Culturally-grounded diabetes prevention program for obese Latino youth: Rationale, design, and methods. *Contemp Clin Trials* (54), 68-76. DOI: 10.1016/j.cct.2017.01.004.

- o This paper describes the rationale, design, and methods of a culturally-grounded diabetes prevention program for Latino youth with obesity.
- o The program, ELSC, is a comprehensive lifestyle intervention that addresses nutrition and health education, exercise, and behavior change developed by St. Vincent de Paul Ivy Center for Family Wellness in partnership with Arizona State University's Southwest Interdisciplinary Research Center and Lincoln Family YMCA.
- o The intervention included weekly nutrition and health classes delivered to groups of families and exercise sessions (three days/week) delivered to groups of adolescents. Comparison youth received laboratory results and general health information by mail.

- o Primary outcomes included labs on insulin sensitivity (how effectively the body secretes insulin and reduces blood sugar; higher insulin sensitivity is better) and a survey measuring weight-specific quality of life (QoL).
- o Secondary outcomes of included body mass index percentile (BMI%), waist circumference, and percent body fat.

Soltero, E. G., Olson, M. L., Williams, A. N., Konopken, Y. P., Castro, F. G., Arcoleo, K. J., Keller, C. S., Patrick, D. L., Ayers, S. L., Barraza, E., & Shaibi, G. Q. (2018). Effects of a Community-Based Diabetes Prevention Program for Latino Youth with Obesity: A Randomized Controlled Trial. *Obesity*, 26(12), 1856-1865. <https://doi.org/10.1002/oby.22300>.

- o This paper describes the results of the randomized control trial examining the short-term (three months) and long-term (12 months) effects on insulin sensitivity and quality of life in Latino adolescents with obesity.

## Description of Cultural & Linguistic Tailoring

- Community stakeholders within the partnership have worked collaboratively since 2010 to develop a diabetes-prevention program that integrates Latino cultural values such as familismo (familism) and respeto (respect).<sup>50</sup>
- o The construct of familismo is leveraged by encouraging the entire family, including extended members living in the household, to attend the program and make healthy lifestyle changes as a family. Activities included family grocery planning, identifying family roles and responsibilities related to parent and child, improving decision-making for healthy eating, physical activity and self-care, and setting individual and family goals for health.

- o The construct of respeto is leveraged to discuss roles and responsibilities of parents and children for making decisions about health; modeling healthy behaviors; selecting, preparing, and consuming healthy foods; communicating within and outside of the family; and honoring traditional gender roles as well as cultural and religious celebrations.
- Health educators demonstrated their appreciation of cultural norms within the local community and used examples from their lives to establish rapport, foster dialogue, and discuss challenges and opportunities around health.<sup>50</sup>

## Sample Size

### Recruitment<sup>1</sup>

- o 160 youth between 14-16 years of age were recruited from schools, community centers and health care organizations. They were randomized to a treatment group (67) and a control group (69). Youth who were identified with prediabetes (24) were automatically assigned to the intervention group.
- o Participants met the following enrollment criteria: (1) self-identification as Latino, (2) age 14 to 16 years at enrollment, and (3) obesity, defined as BMI  $\geq$  95th percentile for age and sex or BMI  $\geq$  30 kg/m<sup>2</sup>. Exclusion criteria included (1) taking medication(s) or diagnosed with a condition that influences carbohydrate metabolism, physical activity, or cognition; (2) diagnosed with type 2 diabetes; (3) currently enrolled (or within previous six months) in a formal weight loss program; or (4) diagnosed with depression or any other condition that may impact quality of life.

- o Recruitment occurred from October 2012 to July 2015. The last participant completed final data collection in August 2016.

### Retention<sup>50</sup>

- o Retention over the 12-month follow-up period for all youth was 82.5%.

## Outcomes

### o Weight Loss

Weight is not an intervention target as it may not be as relevant of a health outcome during the pediatric period

### Other Outcomes<sup>1</sup>

At three months, youth in the intervention group exhibited significant increases in insulin sensitivity ( $p < 0.05$ ) and weight-specific QoL ( $p < 0.001$ ), as well as reductions in BMI%, waist circumference, and percent body fat compared with controls. Increases in weight-specific QoL and reductions in BMI% and percent body fat remained significant at 12 months ( $p < 0.001$ ), while changes in insulin sensitivity did not.

- In a subsample of youth with prediabetes at baseline, insulin sensitivity ( $p = 0.01$ ), weight-specific QoL ( $p < 0.001$ ), and BMI% ( $p < 0.001$ ) significantly improved at three months.

## Hispanics

### *Nuestra Vida [Our Life]*

#### Brief Description

Nuestra Vida is an adapted Diabetes Prevention Program (DPP) intended for middle-aged Latina at high-risk for type 2 diabetes due to being overweight or obese. It is designed to be delivered in a group format over the course of 12 weekly sessions by a peer educator in a community setting.



## AVAILABLE MATERIALS

- o [Nuestra Vida Outline of Materials \(English\)](#)
- o [Nuestra Vida Participant Handouts Sessions 1-12 \(Spanish\)](#)
- o [Nuestra Vida Participant Handouts Sessions 1-12 \(English\)](#)



## HOW TO USE THESE MATERIALS

- o Each session handout is tailored for Latina women at high risk for type 2 diabetes and complements specific PreventT2<sup>49</sup> curriculum sessions. Each session handout outlines different topics and activities, but they have the same final two sections: “weekly SMART goal-setting” and “to-do next week.” This final section of each session handout reminds participants what they need to consider and prepare for in the following week to support them in meeting their goals. Session 10 includes a section on staying healthy during menopause. A detailed description of which PreventT2 curriculum sessions are supported by each Nuestra Vida session handout is outlined in the “handout cover page” linked above.
- o In post-study focus groups, women made suggestions for potential improvements to the adapted curriculum, including the following additional content: more examples of balanced meals, healthy recipes/cookbooks, physical activity and weight loss, stress, and more information related to menopause and aging.



## CITATION FOR MATERIALS

Research supported by:

- o NIH/NLBI R56 HL081604-01A1 (Gallo)
- o NCR-1U54RR025204-01 (Topol)
- o NCR-1U54RR025204-01 (Topol)
- o Scripps Clinic Medical Group



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## Development and Use of Available Materials

McCurley JL, Fortmann AL, Gutierrez AP, Gonzalez P, Euyoque J, Clark T, Gallo LC. (2017). Pilot Test of a Culturally Appropriate Diabetes Prevention Intervention for At-Risk Latina Women. *Diabetes Educ.*, 43(6), 631–640. <https://doi.org/10.1177/0145721717738020>

- o Researchers conducted a feasibility study (single-group pre-post design) among Latina women at high risk for type 2 diabetes due to either being overweight or obese in midlife (Nuestra Vida) or having a history of gestational diabetes mellitus (Dulce Mothers). The intervention consisted of 12, two-hour weekly sessions delivered across three months. Peer educators conducted the intervention in Spanish and English to groups of women in a community setting.

## Description of Cultural & Linguistic Tailoring

- **Tailoring Content for Middle-Aged Latinas.** In order to create the Nuestra Vida curriculum, the researchers adapted the Dulce Mothers curriculum by replacing new mother-specific content with mid-life-relevant content (e.g., weight gain, menopause/hormonal changes) while retaining aspects specific to Latino culture (e.g., foods, ethnicity-related risk factors, cultural beliefs), and womanhood.
- **Focus on Social Support.** The curriculum emphasizes inclusion of peers and family into lifestyle changes, cultivation of internal and social resources, social modeling for healthy behaviors, and “fun” as a motivator. Therefore, multiple session components involved experiential learning through the use of portion size modeling, cooking demonstrations, and group exercise (e.g., dancing, walking groups in participants’ neighborhoods).

- **Spanish Language.** The curriculum was offered in both English and Spanish. The curriculum was translated to Spanish via expert translation.
- **Use of Peer Educators.** Building off of the Project Dulce and Dulce Mothers models, Nuestra Vida is delivered by culturally and linguistically-aligned “promotoras.” The promotoras received extensive, standardized training in the intervention protocol. They were also involved in the adaption process and provided feedback about the curriculum content to ensure it was appropriately tailored to participants’ age, gender, language, culture, and socio-contextual factors.

## Sample Size

- **Number of Participants.** 61 (37 in the Nuestra Vida sample and 24 in the Dulce Mothers sample).
- **Retention.** 95% of participants (n=58) remained in the study.

## Outcomes

- **Weight Loss.** At the six-month mark, participants had a mean loss of 7.05 pounds (4.1 % body weight). This includes the combined sample of both Nuestra Vida (middle-aged overweight women) and Dulce Mothers (women with a recent history of GDM) participants.
- **Dietary Behaviors (Self-Report).** Dietary behaviors improved significantly from baseline to post-intervention ( $p < .05$ ).
- **Perceived Stress (Self-Report).** Perceived stress decreased significantly from baseline to post-intervention ( $p < .05$ ).
- **Depression Symptoms (Self-Report).** Depressive symptoms decreased significantly from baseline to post-intervention ( $p < .05$ ).
- **Participant Satisfaction.** Focus group participants reported that they would recommend the program to others and that the intervention content increased knowledge, was culturally-appropriate, and was highly valued. Many women noted that information on stress reduction, weight loss, and dietary recommendations was particularly useful.

## Hispanics

### *Un Estilo De Vida Saludable (A Healthy Lifestyle)*

Un Estilo De Vida Saludable is an adapted Diabetes Prevention Program (DPP) tailored to individuals aged 25 and older of Mexican descent. This 11 session program is designed to be delivered in a group format over the course of 20 weeks by community health workers and includes fotonovelas and an eight week session guide.



## AVAILABLE MATERIALS

- o [Un Estilo De Vida Saludable Leader Guides Sessions 1-8 \(English\)](#)
- o [Un Estilo De Vida Saludable Photonovela Template \(English and Spanish\)](#)



## HOW TO USE THESE MATERIALS

- o The investigators recommended that the sessions be held in a church setting, specifically Catholic churches, after Sunday services. The sessions should be group interventions that include child care and food to offer to participants and their children. The educator, preferably a peer educator or promotora, is to lead the group through the materials one lesson weekly, for eight weeks, with three additional monthly sessions. The educator should be able to connect with participants. Each session is intended to last approximately 2-2.5 hours.
- o To adapt the fotonovela template for use in your setting, please insert photos of individuals from the community you are serving where indicated in the template.



## CITATION FOR MATERIALS

- o Vincent D, McEwen MM, Hepworth JT, and Stump CS. (2014). The Effects of a Community-Based, Culturally Tailored Diabetes Prevention Intervention for High-Risk Adults of Mexican Descent. *Diabetes Educ.*, 40(2), 202-213.

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## Development and Use of Available Materials

Vincent D, McEwen MM, Hepworth JT, and Stump CS. (2014). The Effects of a Community-Based, Culturally Tailored Diabetes Prevention Intervention for High-Risk Adults of Mexican Descent. *Diabetes Educ.*, 40(2), 202-213.

- o Vincent and colleagues worked with Mexican Americans, in Arizona's Tucson metropolitan area, to implement a randomized control trial, Un Estilo De Vida Saludable. The intervention consisted of eight weekly 2-2.5 hour sessions and three monthly one-hour sessions. A bilingual (English/Spanish) and bicultural promotora conducted the intervention sessions.

## Description of Cultural & Linguistic Tailoring

- **Fotonovela.** This intervention used fotonovelas, or photo-stories. Each five-minute episode emphasized the take-home message for the week. The fotonovela was presented in a PowerPoint slide presentation consisting of pictures and simple language. The episodes told the story of a Mexican American family that is implementing lifestyle changes to improve the health of their grandmother who received a prediabetes diagnosis. After each episode, the promotora would emphasize and expand on the fotonovela's key points.
- **Use of a Promotora.** The promotora was the educator and could connect with members of the group. They would give a presentation, facilitate group discussions, lead a cooking demonstration, and guide participants through a relaxation/stress management exercise each week.
- **Cooking Demonstrations.** Each week, participants would learn how to cook low-

fat meals that reflected the flavors and smells of Mexican American cuisine and could be prepared in 20 to 25 minutes. The promotora would serve the food to participants to demonstrate proper portion sizes, and they would give participants the recipes to make the food at home.

- **Charla (Talks).** While participants were eating, the promotora would facilitate short informal discussions, or charlas, by asking participants about their week and any challenges they faced.
- **Take Home Activities.** Participants were given assignments (i.e., reading food labels) to reinforce the information from each session and share with family members.

## Sample Size

- **Number of Participants.** 58
- **Retention.** Nearly 93% of participants who attended the first intervention session completed the five-month study.

## Outcomes

- **Weight Loss.** At the conclusion of the five-month intervention, participants experienced a mean weight loss of 6.2 pounds, equating to approximately 3% of mean baseline body weight.
- **Improvement in Diet Self-Efficacy.** Intervention participants were engaged and interested in information about their diets. Intervention participants improved their eating habits by reducing the number of weekly servings of fatty foods and increasing their consumption of fruits and vegetables.
- **Increase in Physical Activity Self-Confidence.** Intervention participants were given a step counter and asked to keep activity logs. The promotora also encouraged increased physical activity. Both the intervention and control groups experienced an increase in physical activity self-confidence (the changes were not statistically significant).

## Hispanics

### 2011 DPP Group Lifestyle Balance™ Curriculum (Spanish) Tailored for Promotoras

Victor Alos translated the Group Lifestyle Balance (GLB) Leader Guides<sup>51</sup> to Spanish and modified them to be better suited for Spanish-speaking lay health workers. Currently Leader Guides for the GLB curriculum are available only for Sessions 1-12 (as opposed to the full 22 sessions) and have not been updated to reflect changes made in 2017 to the GLB curriculum.



## AVAILABLE MATERIALS

- o [2011 GLB Leader Guides for Promotoras \(Spanish\)](#)



## HOW TO USE THESE MATERIALS

Lay health workers may use these materials to supplement the Spanish language version of the GLB curriculum and materials available at: <https://www.diabetesprevention.pitt.edu/index.php/2011-dpp-group-lifestyle-balance-curriculum-spanish/>



## CITATION FOR MATERIALS

- o The Promotora-led Diabetes Prevention Program Materials were adapted by Victor Alos as described in: O'Brien MJ, Perez A, Alos VA, Whitaker RC, Ciolino JD, Mohr DC, and Ackermann RT. (2015). The Feasibility, Acceptability, and Preliminary Effectiveness of a Promotora-Led Diabetes Prevention Program (PL-DPP) in Latinas: A Pilot Study. *Diabetes Educ.*, 41(4), 485-494.

Financial support for this study was provided from the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health Grant #(K23-DK095981, O'Brien PI).

The materials are adapted from the Group Lifestyle Balance (GLB) curriculum, developed by the University of Pittsburgh Diabetes Prevention Support Center: Kramer MK, Kriska AM, Venditti EM, et al. (2009). Translating the Diabetes Prevention Program: A Comprehensive Model for Prevention Training and Program Delivery. *American Journal of Preventive Medicine*, 37(6), 505-511.



## CONTACT PERSON

Victor Alos, Temple University, ([victor.alos@temple.edu](mailto:victor.alos@temple.edu))

## Development and Use of Available Materials

O'Brien MJ, Perez A, Alos VA, Whitaker RC, Ciolino JD, Mohr DC, and Ackermann RT. (2015). The Feasibility, Acceptability, and Effectiveness of a Promotora-Led Diabetes Prevention Program (PL-DPP) in Latinas: A Pilot Study. *Diabetes Educ.*, 41(4), 485-494.

- o In this pilot study, researchers tested the delivery of the adapted GLB materials by promotoras through a single-arm pilot trial in which participants attended 24 sessions either bi-weekly or monthly over the course of a year.

## Description of Cultural & Linguistic Tailoring

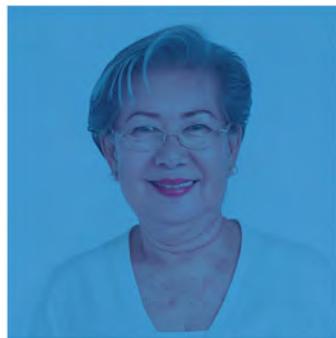
- **Tailoring leader materials for use by promotoras.** In collaboration with the University of Pittsburgh Diabetes Prevention Support Center, Alos translated the GLB leader materials to Spanish and replaced academic Spanish terms with those that would be more accessible to lay health workers.

## Sample Size

- **Number of Participants.** 20
- **Retention.** 95% of participants (n=19) completed 12-month follow-up.

## Outcomes

- **Weight Loss.** At 12 months, participants had achieved an average weight loss of 10.8 pounds or 5.6% weight loss.



## Mobility Impairment

### *Group Lifestyle Balance Adapted for Individuals with Impaired Mobility (GLB-AIM)*

The Group Lifestyle Balance Adapted for Individuals With Impaired Mobility (GLB-AIM) curriculum targets individuals 18 years and older with impaired mobility, including those with severely impairing neurological conditions. This curriculum was approved by CDC's Diabetes Prevention Recognition Program for organizations participating in the National DPP.



## AVAILABLE MATERIALS

- o [GLB-AIM Participant Handouts and Leader's Guide](#) [to be posted on this webpage soon; for more information, please contact Katherine Froehlich-Grobe, PhD ([KFGrobe@BSWRehab.com](mailto:KFGrobe@BSWRehab.com))]
- o [The Group Lifestyle Balance Adapted for individuals with Impaired Mobility \(GLB-AIM\): Outcomes for six-month randomized controlled trial and combined groups at 12 months](#)



## HOW TO USE THESE MATERIALS

- o Conducting sessions over the phone once per month was a key strategy employed by Betts et al., 2018. Other strategies included providing participants with a physical activity tracker for their arm, mailing participants session materials ahead of each call, and providing pre-addressed/pre-paid envelopes to mail copies of their diet and activity logs.



## CITATION FOR MATERIALS

- o Betts AC, Froehlich-Grobe K, Driver S, Carlton D, and Kramer MK. (2018). Reducing Barriers to Healthy Weight: Planned and Responsive Adaptations to a Lifestyle Intervention to Serve People with Impaired Mobility. *Disability and Health Journal*, 11(2), 315-323.
- o Betts AC, and Froehlich-Grobe K. (2017). Accessible Weight Loss: Adapting a Lifestyle Intervention for Adults with Impaired Mobility. *Disability and Health Journal*, 10(1), 139-144.
- o Froehlich-Grobe, K, Betts, AC, Driver, S, Carlton, D, Lopez, AM, Lee, J, and Kramer, MK. The Group Lifestyle Balance Adapted for individuals with Impaired Mobility (GLB-AIM): Outcomes for six-month randomized controlled trial and combined groups at 12 months. *Am J Prev Med*. 2020 December; 59(6): 805-817.



## CONTACT PERSON

Katherine Froehlich-Grobe, PhD, Baylor Scott & White Institute for Rehabilitation, ([KFGrobe@BSWRehab.com](mailto:KFGrobe@BSWRehab.com))

## Development and Use of Available Materials

Betts AC, and Froehlich-Grobe K. (2017). Accessible Weight Loss Adapting a Lifestyle Intervention for Adults with Impaired Mobility. *Disability and Health Journal*, 10(1), 139-144.

- o Betts and colleagues worked with individuals with permanent physical disabilities from the Dallas-Fort Worth, Texas, area. The pilot intervention consisted of weekly conference call sessions for the initial 12 weeks lasting 60 minutes, and three additional calls over the next eight weeks.

Betts AC, Froehlich-Grobe K, Driver S, Carlton D, and Kramer MK. (2018). Reducing Barriers to Healthy Weight: Planned and Responsive Adaptations to a Lifestyle Intervention to Serve People with Impaired Mobility. *Disability and Health Journal*, 11(2), 315-323.

- o After the completion of the pilot study, Betts and colleagues formed an advisory board to lead the process of comprehensively adapting the DPP for people with impaired mobility. The advisory board devised both planned adaptations and responsive adaptations (i.e., modifications that addressed obstacles that occurred during program implementation).

Froehlich-Grobe, K, Betts, AC, Driver, S, Carlton, D, Lopez, AM, Lee, J, and Kramer, MK. The Group Lifestyle Balance Adapted for Individuals with Impaired Mobility (GLB-AIM): Outcomes for six-month randomized controlled trial and combined groups at 12 months. *Am J Prev Med*. 2020 December; 59(6): 805-817.

- o Froehlich-Grobe and colleagues conducted a randomized control trial of the GLB-AIM between 2015-2017. It offered 66 people with impaired mobility (mostly spinal cord injuries) a twelve-month weight loss program, and staggered the start time to allow for a comparison between people in the intervention and those who are not. They found that the GLB-AIM intervention was feasible and effective for teaching people with impaired mobility healthy lifestyle skills, and that participants in it achieved modest weight loss and more self-efficacy.

## Description of Cultural & Linguistic Tailoring

- **Tailoring Content and Delivery Mode.** Key adaptations to the original GLB<sup>37</sup> materials include convening group meetings by telephone rather than in person; adapting the physical activity content to include material specific to persons with impaired mobility; tailoring the nutritional and health materials for participants using wheelchairs; encouraging physical activity by providing participants with Garmin vívofit® arm-based activity tracker devices instead of pedometers; and providing additional content focused on injury prevention, caregiver support, and self-advocacy.<sup>14,52</sup>
- **Removal of Weigh-Ins.** The accuracy of the Garmin vívofit® in capturing physical activity for wheelchair users was unknown. This, in addition to the fact that participants were remotely calling in to sessions, led the investigators to omit regular weigh-ins from the intervention. However, lifestyle coaches did encourage participants to weigh in, and participants had access to wheelchair accessible scales.<sup>14</sup>

- **Home-Based Physical Activities.** Researchers included information about home-based physical activities, such as using resistance bands and other home equipment, neighborhood wheeling, and community activities, such as adaptive sports.<sup>14</sup>
- **Responsive Adaptations.** The research team addressed issues that arose during the implementation of the pilot through the development of responsive adaptations. Such responsive adaptations include supporting electronic self-monitoring; providing opportunities for make-up sessions; and adding content and activities related to goal-setting, planning, reflection, motivation, support from meetings, and problem-solving.<sup>52</sup>

## Sample Size

- **Number of Participants.** 10
- **Retention.** 70% of participants (n=7) completed the program.

## Outcomes

- **Weight Loss.** At 20 weeks, participants who completed the program had an average weight loss of 12.10 pounds, or 7.4% of their starting weight.<sup>14</sup>
- **BMI.** Individuals who completed the program reduced their BMIs ( $F[1,6] = 8.43, p < 0.05, d = 0.33$ ).

## Telehealth for Rural Populations

### *Telehealth Lifestyle Balance Program*

An urban interdisciplinary diabetes program delivered the DPP to multiple rural communities across Montana using telehealth technology for either 12 or 16 weeks.



## AVAILABLE MATERIALS

- o This program used the DPP Group Lifestyle Balance (GLB) curriculum, a CDC-approved DPP curriculum developed by the University of Pittsburgh<sup>37</sup>. It can be found at [www.diabetesprevention.pitt.edu](http://www.diabetesprevention.pitt.edu).
- o [Telehealth Lifestyle Balance Training Manual](#)
- o [Administrative Materials and Worksheets](#)



## HOW TO USE THESE MATERIALS

- o Participants in rural communities gathered in local health clinics to collectively join the telehealth diabetes prevention program. Multiple sites joined simultaneously.
- o The intervention sessions were taught by an interdisciplinary team consisting of a dietitian, nurse certified diabetes educator, health coach (social worker), and physical therapist/exercise physiologist. The interdisciplinary team was located at the urban hub and delivered the session via video-conference calls.
- o The urban hub site also used computers and electronic document stands to facilitate transmission of videos, PowerPoint presentations, and other educational documents. Telehealth connections were secure and compliant with the Health Insurance Portability and Accountability Act (HIPAA).
- o Each rural site had a coordinator who collected participants' daily exercise and diet diaries and measured body weight.



## CITATION FOR MATERIALS

- o Ciemins, E. L., Coon, P. J., Coombs, N. C., Holloway, B. L., Mullette, E. J., & Dudley, W. N. (2018). Intent-to-treat analysis of a simultaneous multisite telehealth diabetes prevention program. *BMJ Open Diabetes Research & Care*, 6(1), e000515. <https://doi.org/10.1136/bmjdr-2018-000515>



## CONTACT PERSON

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## Development and Use of Available Materials

Ciemins, E. L., Coon, P. J., Coombs, N. C., Holloway, B. L., Mullette, E. J., & Dudley, W. N. (2018). Intent-to-treat analysis of a simultaneous multisite telehealth diabetes prevention program. *BMJ Open Diabetes Research & Care*, 6(1), e000515. <https://doi.org/10.1136/bmjdr-2018-000515>.

- o This observational, prospective cohort study compared DPP interventions implemented in rural (via telehealth technology) and urban (face-to-face) communities using an intent-to-treat analysis. Participants were located in one urban and 15 rural communities across Montana. Rural community classes were held in their local health care clinics.
- o The primary objective was to determine whether an intervention delivered simultaneously to multiple communities via telehealth resulted in clinical outcomes comparable to a face-to-face intervention.
- o The program was a 16-week modified group-based DPP administered simultaneously to multiple rural communities from a single urban community. In addition, a 12-week program was evaluated. The 12-week program included all of the same content but with four sessions condensed and combined.
- o The program adhered closely to the CDC standards for DPP recognition, including use of the CDC-approved curriculum, participant eligibility, acquisition of data reflecting participant progress, safety and privacy of participant data, trained lifestyle coaches, and designated DPP coordinators.

- o Over the six-year study period, three interventions were implemented:
  - 16-week urban face-to-face program (Urban-16)
  - 16-week rural telehealth program (Rural-16)
  - 12-week rural telehealth program (Rural-12)
- o Close attention was paid to maintain the fidelity between the 12- and 16-week rural programs.

## Description of Cultural & Linguistic Tailoring

- This program served populations including Native Americans and farming/ranching communities. Similar to some racial and ethnic minority populations, farming/ranching communities face barriers that include a lack of familiarity with diabetes and self-management language. Their schedules are also constrained by their crop cycles.
- The program adhered closely to the CDC standards for DPP recognition, including use of the CDC-approved curriculum, and therefore did not adapt the curriculum significantly for the Native American communities.
- In Hardin, Montana, all the participants were Native American. The program was tailored to this population by introducing culturally appropriate food and inviting participants to share how they have been able to meet the program's requirements while maintaining their local traditions and customs. In addition, the program focused on transportation to weekly meetings, as this was identified as a barrier to participation. The 12-week program was a good fit for the Native American participants and helped them stay engaged.

## Sample Size

### Recruitment

- o Program eligibility criteria included patients with body mass index (BMI) >24 kg/m<sup>2</sup>; a diagnosis of pre-diabetes (International Classification of Diseases Ninth Revision (ICD-9) 790.29, ICD-10 R73.03) or at least one cardiovascular risk factor; and the physical ability to participate in the exercise component of the program.
- o Between 2010 and 2015, 667 participants were enrolled in the study.
  - Urban-16: n=278
  - Rural-16: n=191
  - Rural 12: n=198

### Retention

- o Lost to follow-up after enrollment:
  - Urban-16: n=94 (34%)
  - Rural-16: n=70 (37%)
  - Rural 12: n=68 (34%)
- o Lost to follow-up after completion of intensive core program.
  - Urban-16: n=41 (15%)
  - Rural-16: n=35 (18%)
  - Rural 12: n=29 (15%)
- o Participated in post-core maintenance program:
  - Urban-16: n=143
  - Rural-16: n=86
  - Rural 12: n=101

## Outcomes

Participants tracked daily consumption of fat grams and minutes of physical activity performed using a diary. This information was collected by site coordinators at each DPP session, along with participant body weight.

### Weight Loss

- o The Urban-16 and Rural-16 interventions were comparable; 33.5% and 34.6% of participants lost 7% body weight, respectively; 50% and 47% lost 5% ( $p=0.22$ ). However, Rural-16 participants achieved lower  $\geq 5\%$  weight loss (46.6% vs 56%).
- o Rural-12 groups did not perform as well as the Rural-16 and Urban-16 groups on the primary outcome measure of 7% overall weight loss ( $p<0.01$ ); 18.2% of participants lost 7% body weight.

### Other Outcomes

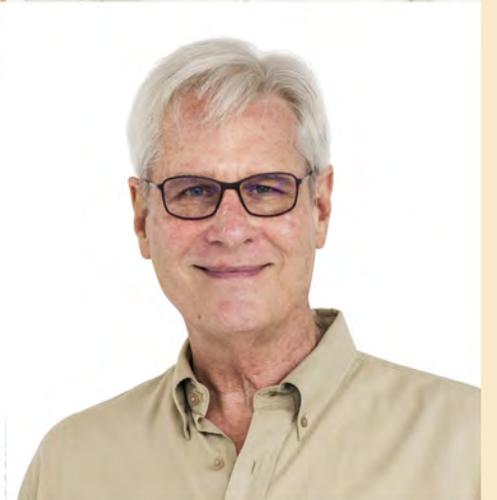
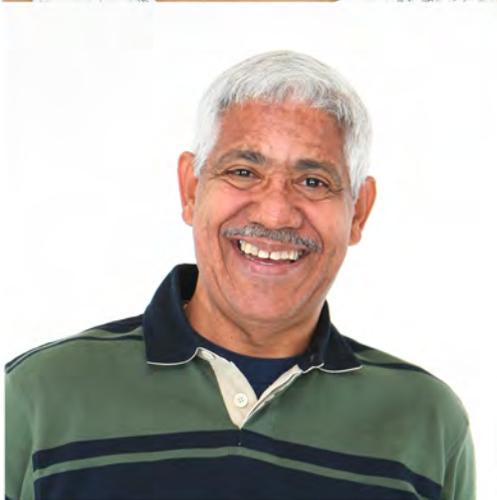
- o Secondary outcomes included participants meeting the following goals: engaging in at least 150 minutes of moderate physical activity per week and meeting individually defined daily fat gram intake goals.
- o Lifestyle activity outcomes (mean % time  $\pm$  SD):

#### Daily fat gram goal met:

- Urban-16: 59.5 $\pm$ 40.3
- Rural-16: 60.1 $\pm$ 38.9
- Rural 12: 45.1 $\pm$ 40.8

#### Weekly activity goal met:

- Urban-16: 51.4 $\pm$ 40.8
- Rural-16: 47.4 $\pm$ 38.8
- Rural 12: 39.2 $\pm$ 39.7



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