

Weight-Wise Program

Center for Health Promotion and Disease Prevention
University of North Carolina at Chapel Hill

INTENT OF THE INTERVENTION

Weight-Wise is a research-tested, behavioral weight management program designed to help women lose weight safely by:

- Moderately restricting calories
- Improving healthy eating behaviors
- Increasing physical activity
- Self-monitoring diet and physical activity behaviors

The Weight-Wise program primarily addresses the individual and inter-personal levels of the socio-ecologic model.

OVERVIEW

Weight-Wise is a 16-week, group-based weight loss program that focuses on changing lifestyle behaviors to promote weight loss. Weight-Wise builds on theories of behavior change that emphasize setting achievable goals, building self-efficacy or confidence, and providing opportunities for problem-solving and group social support. The program emphasizes the DASH eating plan¹, moderate caloric restrictions to promote 1-2 lb/week weight loss, and 150 minutes/week of physical activity. A session leader guides the group sessions using principles of motivational interviewing.

Weight-Wise was adapted from the intervention materials and strategies used in the Diabetes Prevention Program (DPP)², and the PREMIER³ and Weight Loss Maintenance Programs⁴ to address the needs of midlife and lower-income women. The behavior change strategies were kept intact, and the educational component was adapted so that the format would accommodate women with lower literacy levels and writing skills. Additionally, activities and food items were selected that would be culturally acceptable for southern women.

Intended Population: The Weight-Wise program is designed for use with low-income, midlife women who are overweight.

Setting: The program is designed for use in community-based organizations, such as community health centers, public health departments, or churches.

Length of time in the field: The program was developed and pilot-tested from 2005-07. The Weight-Wise intervention materials were updated in 2008.

CORE ELEMENTS

This section outlines the aspects of an intervention that are central to its theory and logic and that are thought to be responsible for the intervention's effectiveness. Core elements are critical features of the intervention's intent and design and should be kept intact when the intervention is implemented or adapted.

1. **Multiple contacts:** The intervention consists of multiple sessions. Multiple contacts offer more opportunities for skill-building and providing feedback, which facilitate behavior change. (It is recommended that the weight loss intervention include at least 10-12 weekly sessions, which would enable sufficient time for most women to lose approximately 5% of their initial body weight [about 1 pound per week], and thus achieve a clinically meaningful weight loss.)
2. **Social support via group interaction:** Group sessions provide opportunities for peer support and reinforcement; participants can discuss their progress toward behavior changes and receive support and suggestions from other members of the group. Social bonds formed among participants also encourage attendance at future sessions.
3. **Motivational interviewing skills:** Session leaders are trained in the use of motivational interviewing techniques to engage participants and guide problem-solving.
4. **Goal-setting & action-planning:** At the end of each session, participants engage in goal-setting and action-planning activities. They set SMART (Specific, Measurable, Attainable, Realistic, Timely) goals to work on over the next week and identify the strategies they will adopt to reach their goals.
5. **Self-monitoring:** Participants are encouraged to routinely monitor behavior change goals between weekly sessions by daily recording key dietary and physical activity behaviors.

RESOURCES REQUIRED

Staff: Two key staff positions are recommended for successful program implementation. Staff positions could be full- or part-time, depending on the scope of your project.

- A session leader who is trained in motivational interviewing techniques and familiar with conducting group-based lifestyle interventions can facilitate the sessions. In the past, Weight-Wise session leaders have included health educators, nurses, and dietitians.
- A program assistant helps the session leader with program implementation. Job responsibilities may include making reminder or follow-up phone calls to participants, photocopying participant handouts for sessions, preparing foods for taste-testing, arranging the meeting room, recording each participant's weight at sessions, and other related support duties.

Training: Training is highly recommended for the session leader and the program assistant. In the first two Weight-Wise programs, the staff attended four 5-hour training sessions over a four-week period, completed two hours of homework/week for the 4 weeks, and also completed 4-6 hours of online instruction about nutrition and physical activity science. In-person training session topics included: weight management guidelines, behavior change in

adults, behavior change for weight loss, motivational interviewing principles, group counseling strategies, and practice sessions for group facilitation.

Materials: The session leader will need to obtain a copy of the Weight-Wise Leader's Guides (described in the "Intervention Materials" section), which can be downloaded free-of-charge at <http://www.hdpd.unc.edu/research/wwlg>. Within the Leader's Guides is a supply checklist for specific materials used at each session.

Participants receive the following materials:

- A calorie counter booklet for estimating calories of most foods (estimated cost of \$9/book)
- Food and Fitness Diaries (see "Intervention Materials" section for description)
- Pedometer (estimated cost \$10/each)
- Stretch (resistance) band (estimated cost \$2/each)
- *New Leaf* Manual (see "Intervention Materials" section)

Other program costs include:

- Foods for taste-testing at each group session
- Physical activity DVDs for group-based exercise
- Small incentives or door prizes (optional, but highly recommended)

Other Costs: A "one time" equipment cost may include the purchase of a high-quality scale for taking participants' weekly weights.

IMPLEMENTATION

Group sessions are facilitated by a trained session leader. Sessions are designed to last two hours and include the following program components:

- Weigh-in (10 minutes): At the beginning of the session, each participant is weighed in private by the session leader or program assistant.
- Check-in (30 minutes): Opening segment of the group session that involves group sharing and problem-solving. Participants generally talk about what happened during their time away from the group, including their successes and failures. The Check-in serves as a form of accountability to the group.
- Weight Control Topic (60 minutes): The group discusses a weight management topic related to nutrition, physical activity, or behavior change. The discussion is designed to foster self-awareness about what participants do (behaviors) and how their thinking influences what they do. Educational content is also covered on a particular topic to help participants change their behavior(s). The group discussion is followed by a demonstration and practice activity related either to nutrition (Taste It!) or physical activity (Move It!).
- Next Steps (20 minutes): At the end of each group session, participants focus on goal-setting and action-planning activities. They set SMART (Specific, Measurable, Attainable, Realistic, Timely) goals and identify the strategies they will adopt to reach their goals. This generally involves writing down a plan of action, followed by group

sharing of goals to promote accountability. In conclusion, the session leader summarizes what happened in the current session and provides a preview of the next week's session.

Keys to Success:

- It is recommended that prospective participants be pre-screened prior to enrolling in the program to determine if they are ready and willing to commit to an intensive weight management program.
- To accommodate participants' schedules, it is recommended that group sessions be offered at least twice a week on different days and at different times of the day (e.g., one morning session and one early-evening session).
- To bolster session attendance throughout the 16 weeks, participant reminder calls are made just prior to each group session and follow-up calls are made immediately afterwards to participants who missed the session.
- It is recommended that each participant receive a personalized feedback report summarizing weight loss progress, minutes of physical activity, and number of completed daily food diaries approximately every five weeks during the program.
- Small incentives or door prizes related to each week's weight management topic (e.g., lunch bags, water bottles, hand weights, PA videos, reflective arm bands) can be distributed at the end of weekly sessions. Incentives are always appreciated by participants and can help support session attendance and behavior change.

Barriers to Implementation:

- Identification of a regular meeting space that is available for 16 consecutive weeks and large enough to accommodate group-based exercise can often be problematic, especially in a busy, health care setting. It might be wise to find a meeting space elsewhere in the community, such as at a church or senior center.

EVIDENCE REVIEW SUMMARY

Underlying Theory: Theoretical constructs are taken from a number of theories, with the main theories being Social Cognitive Theory and the Transtheoretical (Stages of Change) Model. Because this is a behavioral weight loss program, principles of motivational interviewing were also included.

Strategies Used: The Weight-Wise intervention's approach is an adaptation of the Diabetes Prevention Program for which there is strong evidence of its effectiveness at improving health behaviors and reducing weight. Strategies included the following:

- Education on healthy dietary intake and the importance of engaging in physical activity for at least 150 minutes per week
- Facilitating behavior change through self-monitoring, feedback, problem-solving, and goal-setting

Research Findings or Evaluation Outcomes: In the initial test of the intervention's effectiveness, researchers recruited and enrolled women with a BMI of 25-45 in a randomized controlled trial comparing the intervention to a wait-listed control group. The

study sample included 143 women (71 in the intervention and 72 controls). The intervention was delivered at a single site by one individual who was employed by the research team. Researchers measured weight, body mass index, cholesterol, blood pressure, quality of life, depressive symptoms, social support, family functioning, dietary risk, and self reported minutes of physical activity. Findings were analyzed using an intention to treat analysis and analysis of covariance adjusting only for baseline weight. In addition, data were reported on attendance, whether women were keeping records of their physical activity and dietary intake, and program acceptability. Average session attendance for the weight loss phase was 65% (median of 14 sessions attended); 88% (126/143) completed follow-up weight measurement. In a subsequent translation study, the researchers are testing the effectiveness of Weight-Wise when it is implemented by existing staff in six North Carolina county health departments.

Intervention Effect: The initial test of the intervention's effectiveness in a single site found that the between group difference in weight loss was 9.5 lb (4.3 kg) ($p < .0001$), and over half of participants lost 8 or more pounds. When the relationship between attendance and weight loss outcomes were analyzed, data demonstrated a dose-response relationship (i.e., women who attended more sessions lost more weight). Participants in the intervention group, as compared to the control, also had greater reductions in body fat and blood pressure, improvements in dietary intake, and increases in moderate physical activity. Cost per participant in the intervention group was \$242, compared to \$976 per person for the Diabetes Prevention Program (Hernan et al. 2003). Although the goals of DPP are different from those of Weight-Wise; these findings demonstrate that when adapted from an individual level intervention to a group-format the intervention remained effective at reducing weight while also reducing costs per participant.

POTENTIAL PUBLIC HEALTH IMPACT

Reach: This program has the potential to reach an underserved population - low-income and African American women. The women who participated in the test of the intervention's effectiveness were low income, almost all lacked health insurance, and 38% were African American. Over 80% of participants were retained in the program.

Effectiveness: The findings from one study suggest that the intervention is effective at reducing weight, body fat, and blood pressure; improving dietary intake, and increasing moderate physical activity. The intervention is an adaptation of the Diabetes Prevention Program, which has strong evidence in support of its effectiveness.

Adoption: For the study testing the translation of the intervention across multiple sites, researchers invited all geographically accessible health departments to participate. Of the 43 eligible, 30 were interested in participating suggesting strong adoption potential. Rochester Prevention Research Center began its adaptation of the Weight-Wise intervention program for the deaf population in 2009.

Implementation: Implementation in the initial study (one site) was strong with high retention and good attendance and adherence to record keeping. A group intervention has promise as a feasible approach in health departments.

Maintenance: Only preliminary data is available about maintenance⁵; see Reference section.

INTERVENTION MATERIALS

The Weight-Wise curriculum (commonly referred to as the Weight-Wise Leader's Guides) includes the following materials bound in a loose-leaf notebook: an introduction to Weight-Wise, 16 Leader's Guides, participant handouts, a supply checklist, and resource materials. The Leader's Guides are detailed instructions that guide session leaders in the facilitation of the 16 weekly group sessions. Each Guide also includes a "Session at a Glance" which provides an overview of the session's content, plus an outline of the key behavioral strategies and objectives addressed in the session. The Weight-Wise curriculum can be downloaded free-of-charge at <http://www.hpdp.unc.edu/research/wwlg>.

Food and Fitness Diaries are provided to participants to facilitate self-monitoring of weekly minutes of physical activity, calories consumed, and number of fruit and vegetable servings. A sample Food and Fitness Diary can be downloaded at http://www.hpdp.unc.edu/media/wwlg/Food&Fitness_Diary.pdf

The Weight-Wise Leader's Guides make many references to dietary and physical activity educational materials in *A New Leaf...Choices for Healthy Living (2007)*. Each participant receives a copy of the *New Leaf* manual at the first group session. *New Leaf* can be downloaded free of charge at <http://www.center-trt.org/index.cfm?fa=wwinterventions.download&intervention=newleaf>

TRAINING AND TECHNICAL ASSISTANCE

Information about Weight-Wise training is described in the "Resources Required" section. Limited telephone technical assistance is available from the Program Contact listed in the "Additional Information" section below.

ADDITIONAL INFORMATION

Web links:

Information about the Weight-Wise Pilot Study is found at <http://www.hpdp.unc.edu/research/current-projects/weight-wise-pilot>

The Weight-Wise Leader's Guides can be downloaded at <http://www.hpdp.unc.edu/research/wwlg>

Program Contact(s):

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Related Resources:

A New Leaf...Choices for Healthy Living intervention materials can be downloaded at <http://www.center-trt.org/index.cfm?fa=wwinterventions.download&intervention=newleaf>

Publications:

Samuel-Hodge CD, Johnston LF, Gizlice Z, Garcia BA, Lindsley SC, Bramble KP, Hardy TE, Ammerman AS, Poindexter PA, Will JC, Keyserling TC. Randomized trial of a behavioral weight loss intervention for low-income women: the Weight-Wise program, *Obesity* 2009; 17:1891-1899.

Gustafson A, Khavjou O, Stearns SC, Keyserling TC, Gizlice Z, Lindsley S, Bramble K, Garcia B, Johnston L, Will J, Poindexter P, Ammerman AS, Samuel-Hodge CD. Cost-effectiveness of a behavioral weight loss intervention for low-income women: The Weight-Wise program, *Preventive Medicine* 2009; 49:390-395.

Kraschnewski JL, Keyserling TC, Bangdiwala SI, Gizlice Z, Garcia BA, Johnston LF, Gustafson A, Petrovic L, Glasgow RE, Samuel-Hodge CD. Optimized Probability Sampling of Study Sites to Improve Generalizability in a Multisite Intervention Trial, *Prev Chronic Dis* 2010;7(1):1-8.

References:

¹The DASH eating plan is found in: Sacks FM, Svetkey LP, Vollmer WM *et al.* Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet. DASH-Sodium Collaborative Research Group. *N Engl J Med* 2001;344:3-10. Information on the DASH Eating pattern can be found at the NHLBI website: <http://www.nhlbi.nih.gov>

²A description of the DPP trial is found in: The Diabetes Prevention Program (DPP) Research Group. The Diabetes Prevention Program (DPP): Description of lifestyle intervention. *Diabetes Care* 2002;25:2165-2171. DPP materials are archived at the George Washington University and may be accessed at this link: www.bsc.gwu.edu/dpp/lifestyle/dpp_part.html.

³The PREMIER program is described in this document: Svetkey LP, Harsh DW, Vollmer WM, *et al.* Premier: A clinical trial of comprehensive lifestyle modifications for blood pressure control: Rationale, design and baseline characteristics. *Ann Epidemiol* 2003;13:462-471.

⁴The Weight Loss Maintenance Program (weight loss phase) description and results are published in: Hollis JF, Gullion CM, Stevens VJ, *et al.* Weight loss during the intensive intervention phase of the weight-loss maintenance trial. *Am J Prev Med* 2008 Aug;35(2):118-26.

⁵Samuel-Hodge C*, Gizlice Z, Johnston L, Garcia B, Gustafson A, Keyserling T. Weight Loss Maintenance among Low-Income, Midlife Women. *Obesity* 2008 Oct;16 (Suppl 1):S308.

For more information on this intervention, visit www.Center-TRT.org.