Segmenting Audiences to Promote Energy Balance

Resource Guide for Public Health Professionals

Department of Health and Human Services
Centers for Disease Control and Prevention
Division of Nutrition, Physical Activity, and Obesity

Segmenting Audiences to Promote Energy Balance

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Part 1
Background and Methods

Background

Obesity has taken center stage as one of the greatest threats to the health of adults and children both in the United States and globally. At the same time, little information is available to designers of social marketing and communication programs on finding audience segments appropriate for messages to help prevent obesity and other chronic diseases.

The Division of Nutrition, Physical Activity, and Obesity at the Centers for Disease Control and Prevention (CDC) is helping to address the problem through the Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases. This project includes providing state programs with technical assistance in the use of effective communication and social marketing strategies to facilitate development of appropriate interventions.

Because defining audience segments (audience segmentation) is an integral part of the social marketing approach, the Division of Nutrition, Physical Activity, and Obesity; the National Cancer Institute; and Porter Novelli conducted analyses to identify audience segments to help inform planning for obesity prevention programs. This work resulted in five "energy balance" segments that categorize U.S. adults according to attitudes and behaviors concerning nutrition, physical activity, and weight control.

Purpose

This resource guide was developed to help you use and apply audience segmentation in program development. The guide is designed to perform two functions:

1) Describe a set of specific energy balance segments by providing vivid and insightful profiles of habits, needs, and wants.

2) Provide a how-to guide on audience segmentation, by using the energy balance segments as an example.

While this guide demonstrates how you could use specific energy balance segments in your work, you must first decide whether this method of segmentation is appropriate and meets your needs.

Audience Segmentation for Health Promotion

In the world of social marketing and communication, the "general public" doesn't exist, and one approach or message does not fit all. Demographic characteristics, attitudes, behaviors, and personal experiences all affect how we see and respond to the world around us and to communication messages.

Because it is impossible to cater to each person, social marketers often group people by audience segments based on common characteristics.[1–3] These characteristics allow development of a standardized program that can be tailored to meet the specific needs of the segment.

Audience segmentation can be based on many characteristics, including demographic characteristics, psychographic factors (e.g., attitudes, values, interests, and opinions), behavior,

life stage, and lifestyle. The sharper the targeting, the greater is the potential impact. For example, in developing effective health promotion strategies, it is more instructive to move beyond demographic variables (e.g., sex, age, and income) and to consider other variables that differentiate segments (e.g., unique needs, risk factors, propensity to change, and role as an influence on others).

Targeting audiences boils down to understanding the audience. Which characteristics will influence their participation in and benefit from a program? Which approaches are appropriate for their needs and preferences? Such characteristics should drive the processes of setting objectives and selecting promotional strategies and methods for each audience.

Audience Segmentation

Audience segmentation is a powerful tool to help health practitioners and policy makers facilitate planning for obesity prevention programs. For example, audience segmentation offers the ability to achieve the following aims:

- Identify a spectrum of potential audiences defined by commonalities (e.g., attitudes, behaviors, or how they would relate to program components).
- Understand the beliefs, attitudes, and behaviors of these audiences related to lifestyle issues (e.g., weight control, nutrition, and physical activity).
- Select one or more target audiences based on a variety of perspectives, such as degree of health risk, likelihood to respond to a program or strategy, and short- versus long-term goals.
- Tailor behavior change programs or create “offers” most salient to interests and concerns of target audiences.
- Identify appropriate channels (e.g., media channels, personal communications, and social support networks) for promotion and dissemination of programs and strategies.

Energy Balance Segmentation

Overview

The energy balance audience segmentation described here categorizes U.S. adults in one of five segments according to attitudes and behaviors concerning nutrition, physical activity, and weight control. In creating the audience segments, the factors assessed were physical activity and eating behaviors known to influence weight, internal personal factors, and external social and environmental factors affecting physical activity and eating practices.

Many of these variables were selected according to social cognitive theory.[4] This theory explains how people acquire and maintain certain behavioral patterns, and provides the basis for intervention strategies. According to the theory, a learner acquires knowledge as the environment converges with personal characteristics and experience.

Once segments were defined, each segment was profiled to better understand the audience in the context of their daily lives. For example, their media habits and sources of health information were examined.

Objectives

The energy balance audience segmentation had two primary goals:

1) Identify audience segments defined by similar motivations and better understand their beliefs, benefits, and barriers related to energy balance behaviors and achievement of healthy weight.

2) Assess promising or high priority target audience(s) most likely to benefit from adopting evidence-based approaches to improve energy balance (e.g., healthy eating and increased physical activity).

Methods

Porter Novelli's 2003 Styles© research database provided the 25 variables used to create energy balance audience segments (Appendix A). This database is built each year from two national consumer surveys: ConsumerStyles© and HealthStyles©.

The ConsumerStyles survey is a comprehensive examination of what the U.S. public is buying, where they shop, what they eat, their attitudes toward products and services, and how to reach them through the media. In 2003, this mail survey was sent to 10,000 consumers and included over-sampling of low-income and minority groups and households with children. ConsumerStyles obtains an average response rate of about 60%; 5,873 persons completed the survey in 2003. Data are weighted by age, gender, race, income, and household size to more accurately represent the national population.

The HealthStyles survey gives a comprehensive look at the U.S. public's health orientations and practices. One of two versions of the survey is sent to participants who completed the ConsumerStyles survey. This approach allows combination of the data from the two surveys and

increases understanding of the lifestyle habits of respondents to HealthStyles. The HealthStyles database is designed to map health beliefs, attitudes, social norms, and behaviors related to important public health concerns (e.g., smoking, alcohol use, nutrition, and physical activity). In 2003, 4,035 participants responded to HealthStyles.

In 2005, all necessary variables for analysis were included in the ConsumerStyles survey. This survey was sent to 20,000 consumers with 12,639 returns (a response rate of 63%).

To perform audience segmentation, principal component analysis was used to standardize the variables in the 2003 Porter Novelli Styles database and reduce the number of variables in the cluster analysis. A directed *k*-means cluster analysis was then conducted to identify the five energy balance segments. To validate the segments, the variables from the 2003 and 2005 databases with information from 16,674 respondents were merged. A total of 4035 of these respondents completed both the ConsumerStyles and HealthStyles surveys in 2003, while 12,639 completed the ConsumerStyles survey which included all the necessary variables in 2005. The segmentation was validated by multiple discriminant analysis, using the 2003 data as the analysis sample and the 2005 data as the hold-out sample.

Each resulting audience segment was profiled by using all variables included in the cluster analysis, as well as an extensive set of data on demographic characteristics, psychographic factors, and other consumer attitudes drawn from the Porter Novelli Styles database. (For data tables, see Appendix B. For a detailed description of cluster segmentation and validation methods, see Appendix C.)

What is Principal Component Analysis?

In statistics, principal component analysis is used to identify patterns in data and to highlight similarities and differences. Once data patterns are identified, data can be compressed for analysis without significant loss of information.

What is Cluster Analysis?

Cluster analysis is a set of techniques for discovering structure (groupings) within a complex body of data, such as data on energy balance in the Porter Novelli Styles database. The purpose is to discover a system of organizing observations, usually related to people, into groups with common characteristics.

Examination of Energy Balance Audience Segments

Overview

Five distinct audience segments emerged from energy balance segmentation. The segments varied substantially in involvement with and behaviors related to nutrition, physical activity, and weight control. A quick overview of each of the five segments based on the 2005 data with 12,639 respondents is below (Table 1). (For detailed profiles, see "Profiles of Energy Balance Audience Segments" on pages 10-14.) A visual representation of variations in weight status and energy balance behaviors and attitudes can be seen in Figure 1.

Table 1. Energy Balance Audience Segments

1. **Balance Seekers** (approximately 24% of population): This group is highly motivated. They are dissatisfied with their weight, actively trying to lose weight, and are confident in their ability to engage in dietary and physical activity behaviors to achieve this goal. Well informed about healthy eating and physical activity behaviors, they have social support networks in place that help keep them motivated. Despite their motivation and confidence, 39% were overweight, and 19% were obese.

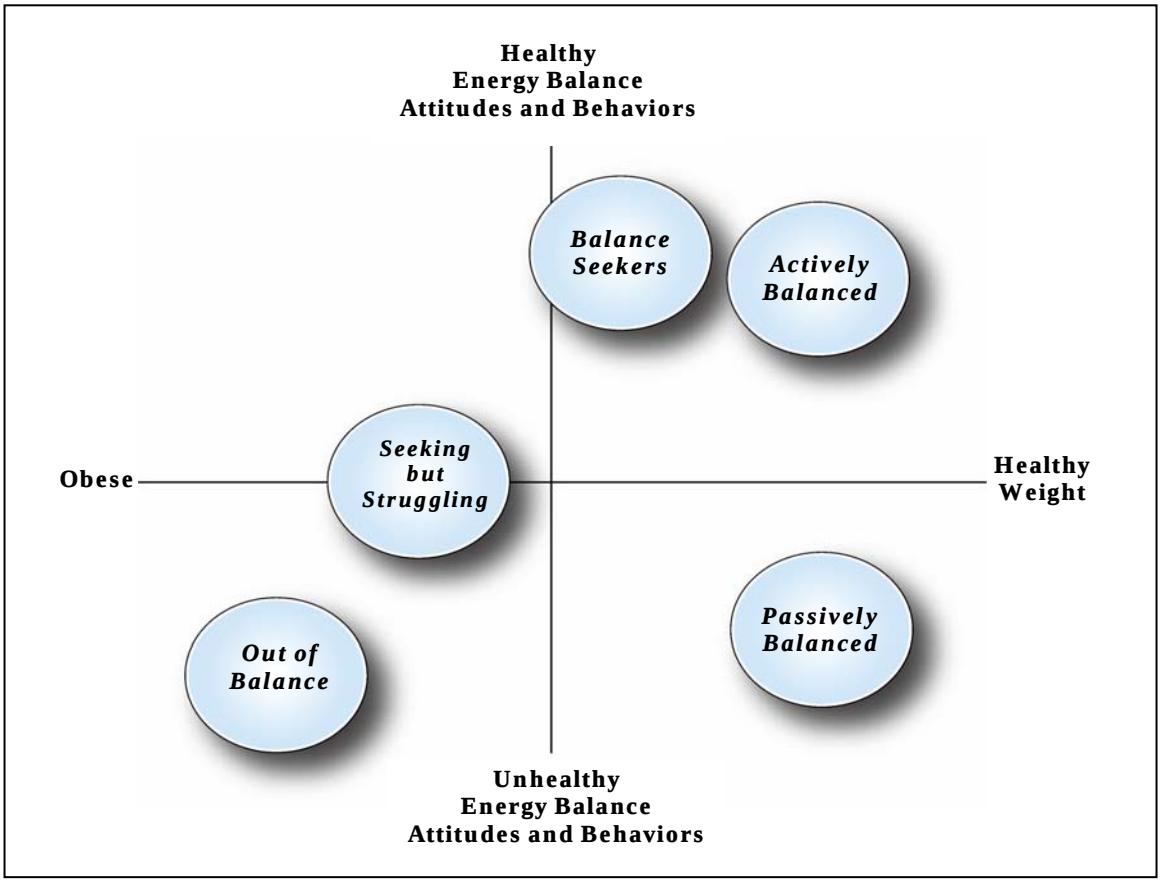
2. **Seeking but Struggling** (approximately 23% of population): Approximately one-half of this segment were obese (53%) and another 35% were overweight. Members of this group are dissatisfied with their weight and recognize the threat to their health. They are trying to eat a healthy diet but often eat when they are stressed or upset. They don't like to exercise but are pleased with themselves when they do. Motivated to eat well and exercise more, they have confidence in their ability to engage in physical activity behaviors but have low self-efficacy for making dietary changes.

3. **Actively Balanced** (approximately 13% of study population): This audience was among the two segments with the highest proportion of participants with healthy weight according to body mass index measures (63%). Group members are generally satisfied with their weight and are not trying to lose weight. They actively engage in healthy eating behaviors and regular exercise. Health is a priority in making lifestyle choices.

4. **Out of Balance** (approximately 22% of population): More than one-half of the respondents in this segment were obese (56%), and about one-third were overweight (31%). They are dissatisfied with their weight and recognize the threat to their health. But, unlike the *seeking but struggling* and *balance seeker* segments, they are unmotivated to make healthy lifestyle changes. They are the least physically active group, don't get any satisfaction from physical activity, and have no intention to limit calorie intake to lose weight. They are not confident they can be more physically active, eat less, or lose weight, and they have less social support for these behaviors.

5. **Passively Balanced** (approximately 18% of population): This segment had the second highest proportion of persons with healthy weight (56%). Although they tend to be at a healthy weight, they make no conscious or active effort to maintain healthy weight. Unlike the members of the a*ctively balanced* audience, members of the *passively balanced* audience have low motivation and little interest in healthy eating habits. They are the most physically active group and are very confident they can stay thin or lose weight but are generally not trying to lose weight.

Figure 1: Energy Balance Segments



Balance Seekers: healthy attitudes and behaviors but overweight.

Seeking but Struggling: less healthy attitudes and behaviors and overweight to obese.

Actively Balanced: healthy attitudes and behaviors and healthy weight.

Out of Balance: unhealthy attitudes and behaviors and overweight to obese.

Passively Balanced: less healthy attitudes and behaviors, but healthy weight.

Detailed Profiles of Energy Balance Audience Segments

A detailed profile of each energy balance audience segment is presented here. Details include demographic characteristics; attitudes toward nutrition, physical activity, and health; and media habits. (For data tables with more comprehensive information on each audience's attitudes and behaviors, see Appendix B.)

Balance Seekers

At a Glance	• Are actively trying to lose weight and are confident in their ability to eat less and be more physically active to lose weight. • Are highly motivated, knowledgeable, and surrounded by a similarly motivated and supportive social network. • Weight Profile: 41% normal/healthy weight, 39% overweight, 19% obese, and 1% underweight.
Demographics	• Are similar to the general study population but slightly more likely to be women, be college-educated, have a higher household income, and be age 45 years or older.
Food and Diet	• Are actively trying to eat a healthy diet and prioritize health benefits in making food choices and managing weight. • Enjoy cooking, trying new foods and recipes, and are eating a healthy diet for personal reasons and to set an example for others.
Physical Activity	• Enjoy getting regular exercise and get personal satisfaction from it. • Are the most physically active group and are among the more likely to belong to a health club or the YMCA.
Weight Loss	• Are the most likely group to be limiting calorie intake and trying various strategies to lose weight, such as exercising more and eating smaller food portions and less fat.
Social Support and Influence	• Are the most likely group to have friends who are also trying to eat a healthy diet, exercise regularly, and stay thin or lose weight. • Are more likely than the general study population to say people who matter most to them are pleased when they eat well and exercise regularly.
Health and Health Information	• Are in good health and want to look and feel healthy. • Believe being informed about health issues is important and make it a point to read and watch stories about health. • Have a good relationship with their physicians and rely on them, the Web, and magazines for health information.
Media Habits	• Watch television less often than the general study population, read a newspaper more often, and listen to the radio an average amount of time.

Seeking but Struggling

At a Glance	• Are actively trying to lose weight and are aware of the health threat overweight poses. • Are motivated to lose weight, have social support to do so, but lack confidence in their to eat less food and eat more healthfully. • Weight profile: 12% healthy weight, 35% overweight, and 53% obese.
Demographics	• Are similar to the general study population but slightly more likely to be women and age 45 years or older.
Food and Diet	• Are actively trying to eat a healthy diet but don't necessarily prefer healthy foods and are sometimes confused about which foods are healthy. • Eat when stressed or upset and are more likely than the general study population to eat high-fat foods and to prefer to eat on the go.
Physical Activity	• Do not enjoy getting regular exercise but get personal satisfaction from doing so. • Have levels of physical activity slightly lower than those of the general study population but are among the more likely to belong to a health club.
Weight Loss	• Are actively trying to lose weight but are not confident in their ability to do so. • View counting calories and eating a little less each day as somewhat difficult and are not confident in their ability to do so.
Social Support and Influence	• Have friends who are also trying to eat a healthy diet, exercise regularly, and lose weight, and say people who matter most to them are pleased when they eat well and exercise regularly.
Health and Health Information	• Are more likely than the general study population to have some health problems, such as high cholesterol and high blood pressure but report good-to-average health overall. • Are no more likely to be actively trying to prevent disease or stay healthy but are slightly more likely to want to understand health risks and be informed about health issues. • Turn to sources of health information similar to those used by the general study population, such as physicians and the Web.
Media Habits	• Are slightly more likely to read a newspaper, but watch television and listen to the radio an average amount of time.

Actively Balanced

At a Glance	• Are satisfied with their weight and confident in their ability to stay thin or lose weight. • Eat well and exercise regularly as part of healthy lifestyle. • Weight profile: 63% healthy weight, 27% overweight, 7% obese, and 3% underweight.
Demographics	• Are similar to the general study population but slightly more likely to be men and older (aged ≥65 years).
Food and Diet	• Are actively trying to eat a healthy diet, prioritize health benefits in making food choices, and actively avoid cholesterol, salt, and fat. • Are less likely than the general study population to eat when under stress or on the go and are slightly more likely to eat dinners made at home.
Physical Activity	• Enjoy getting regular exercise and, on average, are more physically active than the general study population.
Weight Loss	• Are not actively trying to lose weight and are more confident than the general study population in their ability to stay thin, eat a low-fat diet, and be physically active.
Social Support and Influence	• Have friends who are also trying to eat a healthy diet, exercise regularly, and stay thin or lose weight.
Health and Health Information	• Are in good health and want to look and feel healthy. • Are actively trying to prevent disease and enjoy learning about health issues. • Have a good relationship with their physicians and often rely on them for health information.
Media Habits	• Listen to the radio less often than the general study population, read a newspaper more often, and watch television an average amount of time.

Out of Balance

At a Glance	• Are dissatisfied with their current weight and are aware of the health threat overweight poses. • Have low interest in and knowledge of healthy eating and physical activity behaviors and are less likely than the general study population to have social support for these behaviors. • Weight profile: 13% healthy weight; 31% overweight; 56% obese; and 1% underweight.
Demographics	• Are similar to the general study population but have slightly lower household income and lower level of education.
Food and Diet	• Are not actively trying to eat a healthy diet and do not view having healthy eating habits as important. • Do not avoid cholesterol, salt, fat, or sugar and are less likely than the general study population to prioritize health benefits in food choices. • Eat when stressed or upset, prefer to eat food on the go, and are the most likely to eat at a fast-food restaurant.
Physical Activity	• Do not enjoy getting regular exercise and do not get personal satisfaction from it. • Are the least physically active and are not confident in their ability to be more active.
Weight Loss	• Want to lose weight but are not confident in their ability to do so. • Do not, and do not intend to, limit daily calorie intake.
Social Support and Influence	• Are the least likely to have friends who are also trying to eat a healthy diet, exercise regularly, and lose weight.
Health and Health Information	• Are more likely than the general study population to have some health problems, such as high cholesterol and high blood pressure but report good-to-average health overall. • Do not actively make health a priority and do not enjoy learning about health issues. • Are less likely than the general study population to have a good relationship with their physician, and use fewer sources for health information.
Media Habits	• Spend the most time watching television, listen to the radio for an average amount of time, and are less likely than the general study population to read a newspaper or magazine.

Passively Balanced

At a Glance	• Are satisfied with their current weight and are confident in their ability to stay thin or lose weight. • Are not concerned with health as part of daily lifestyle. • Are not actively trying to lose weight but have an active lifestyle and are more likely than the general study population to have healthy weight. • Weight profile: 56% healthy weight, 29% overweight, 10% obese, and 5% underweight.
Demographics	• Are similar to the general study population but much more likely to be younger (aged 18-34 years) and slightly more likely to be men.
Food and Diet	• Are not actively trying to eat a healthy diet and do not view having healthy eating habits as important. • Do not view a high-fat diet as a threat to health and are not confident in their ability to eat a low-fat diet.
Physical Activity	• Are more physically active than the general study population, on average, and are confident in their ability to be more physically active.
Weight Loss	• Are not actively trying to lose weight but are confident in their ability to stay thin or lose weight.
Social Support and Influence	• Are least likely to have social support for eating a healthy diet or exercising regularly.
Health and Health Information	• Are in good health and are much less likely than the general study population to have conditions such as high cholesterol or high blood pressure. • Do not enjoy learning about health issues and are less likely to have a good relationship with their physicians.
Media Habits	• Listen to the radio more often than the general study population, read a newspaper less often, and watch television and average amount of time.

Part 2

Application

Application to Program Development

Overview

This section demonstrates how energy balance audience segmentation can be useful in developing and implementing a tailored social marketing program. In phases 1 and 2 of the planning process for social marketing (problem description and formative research), you can use secondary data, such as the data tables on attitudes and behaviors in Appendix B. However, final interventions need to be customized to your own target audience. Thus, in the later phases of planning, decisions about strategy and implementation must be specific to the population with which you are working. Then, you will begin to rely more on the data you collect directly from that population.

The purpose of this section of the tool kit is to provide information on how to use audience segmentation in planning a social marketing program. The material presented here is organized to show how audience segmentation fits within each phase of the social marketing process. This process has six phases:

- Phase 1: Problem Description
- Phase 2: Formative Research
- Phase 3: Strategy Development
- Phase 4: Intervention Design
- Phase 5: Evaluation
- Phase 6: Implementation

For a full description and tutorial on the social marketing process, consult the CDCynergy Social Marketing Edition (a CD-ROM planning tool). It can be ordered online at http://www.turningpointprogram.org/Pages/socialmkt.html.

This tool kit focuses on the steps most closely related to audience segmentation. The CDCynergy Social Marketing Edition CD-ROM includes steps in the social marketing process that are not included here because they do not relate to audience segmentation. Most of the segmentation work is done in phases 1–3. For these phases, this tool kit includes three elements:

1) Short description of the phase.
2) General description of how audience segmentation fits within that phase.
3) Detailed description of how to apply data on energy balance segmentation in that phase.

Phases 4–6 are then described briefly. At the end of this section is a hypothetical example of an intervention planned by using information from the energy balance audience segmentation and data tables.

Phase 1—Problem Description

In phase 1, to describe the problem, you identify the difference between what should be occurring and what is occurring, the major direct and indirect causes of the problem, and who is affected and to what degree. The sources for this process are existing data or statistics (secondary data) and readily available literature. Gaps in information from these sources can be filled during phase 2 formative research. Using the available data and information, you can start to identify and choose a target audience. You should also begin thinking about which behavior you want your audience to change or adopt. Because the information gathered is likely to be broad and incomplete, the choices of audience and behavior are also likely to be broad. In phase 2, as you learn more about the audience from formative research, you will identify audience segments and refine and narrow the behavior to be targeted.

Identifying and Selecting Audiences

Because of individual differences among those affected by a health problem, you must identify and select potential target audiences for your program and consider possible ways to segment that broad audience into smaller groups. The key in selecting a target audience is to identify the factors influencing the behavior you want to change. For example, if increased physical activity in a population is the goal, your planning team may decide to address physical activity in adults because you have limited access to schools or other locations where children gather. In your secondary data collection you may find that adults who have social support networks are more motivated to be physically active, regardless of race or ethnicity. In this case, segmenting by availability of social support may be more effective than segmenting by race or ethnicity. Segmenting by factors relevant to the targeted behavior will enable you to design a program that more effectively meets the needs of your audience and increases the chances of success.

Much of the secondary data and information you gather to describe the problem is likely to focus on differences in the prevalence of overweight and obesity or their contributing behaviors, according to demographic characteristics (e.g., race or ethnicity, age, or socioeconomic status). As the previous example illustrates, data on demographic characteristics are important and easy to collect, although they may not be the most important factors in segmenting the audience to change behavior. Consequently, in gathering data in phase 1, you should pay attention to information on alternative factors, such as attitudes, perceptions, self-efficacy, and motivation to change.

Possible ways to segment an audience include the following:

- *Current behavior.* Those who are physically active on 4–5 days per week may be different from those who are active 1–2 days per week.
- *Common perceived barriers.* Those who think they don't have time to be physically active may be different from those who think they don't have anyone with whom to be active.

Meaningful Segmentation Factors

Which factors are meaningful will depend on your audience and the behavior you are asking of them. In choosing an audience segment, you should consider who is most affected by the health problem; who is most likely to change behavior; and who can be most easily reached. Also, your choice of the segment to be targeted will depend on your organization's priorities.

- *Common perceived benefits.* Those who believe physical activity is a good way to lose weight may be different from those who want to be active because they believe it gives them more energy.
- *Stage of change.* Those who are thinking about being more physically active soon may be different from those who are already somewhat physically active.
- *Level of self-efficacy.* Those who think that they are able to be more physically active may be different from those who doubt their ability to be more active.
- *Attitudes.* Those who like the idea of being more physically active may be different from those who dislike physical activity.
- *Skills.* Those who recognize steps they can take to fit in physical activity may be different from those who don't know how they can make time.

You will gain more insight into these factors during phase 2, formative research.

Using This Energy Balance Segmentation

This energy balance audience segmentation and the data tables on attitudes and behaviors (Appendix B) are useful as secondary data sources for describing the problem. The national information in the data tables is specific to energy balance and weight control. Two approaches can be used to define the problem: 1) use energy balance segmentation as an example of how to segment your audience or 2) choose one of the five energy balance segments as your broad audience.

Option 1—Use This Energy Balance Audience Segmentation as an Example

Energy balance audience segmentation is one approach for planning interventions to prevent obesity and other chronic diseases. In the design of this method, elements of social cognitive theory were used to define the segments. The segments are determined according to a series of questions in three general areas:

1) Physical activity and eating behaviors known to influence weight and energy balance.
2) Internal personal factors related to energy balance.
3) External social and environmental factors that influence physical activity and eating practices.

The survey questions used to develop the segments assessed factors such as behavior, motivation, self-efficacy, and perception of risk (Appendix D). The energy balance segments can help you find ways to segment your audience. Factors such as motivation, current behavior, and confidence in making a behavior change can be more effective methods of segmenting an audience than are demographic characteristics or disease burden.

Option 2—Choose an Energy Balance Segment as a Broad Target Audience

Another way to use energy balance segmentation is to focus on one or more of the energy balance audience segments as the target audience for your program planning. If you choose to narrow down one or more of the five audience segments, this can be done during phase 2, formative research. In phase 1, consider which energy balance segment will give you the most "bang for your buck." You should select the segment most affected by the health problem that is also motivated to change and accessible.

One critical consideration is whether the audience segment is adequately represented in your state or community. For example, *balance seekers* are a promising segment due to their high prevalence of overweight and obesity, and their high motivation to make behavior changes. However, if they make up only a small proportion of your general study population, they may not be the best target audience for the program.

This resource guide includes a survey instrument to assess the proportion of people in your population who fall into each of the five energy balance segments. If it is not feasible to administer the survey in your community or state, you may be able to assume that the proportions of the segments in your population are similar to those in the general U.S. population. Either way, this information can help you to choose an energy balance audience segment on which to focus. This broad segment will then be refined according to your findings in the formative research phase.

Identifying Energy Balance Audience Segments

The energy balance survey tool (Table 2) uses 10 survey questions to help you categorize individuals by energy balance segments. The instrument has two potential uses:

1) Administer the survey in your population to assess which energy balance audience segments are represented and in what proportion. The survey results should facilitate choice of a broad segment on which to focus your efforts. This evaluation should be the first step in phase 2, formative research.
2) Use the 10-question survey as a screening tool for recruitment of participants for formative research. Once you choose for your focus a broad segment from the energy balance audience segments, you should ensure that the persons you recruit for formative research are members of this target segment. You can ask potential participants the 10 survey questions, input their responses into the Excel spreadsheet provided, and instantly see their assignment to a segment.

Regardless of how you use the survey instrument, you need to tease out the context for the behaviors characteristic of the segment by using qualitative research. (For additional information and complete instructions on administering the survey questions and analyzing the results, see Appendix D.)

Table 2. Survey Tool for Assigning Energy Balance Audience Segment

Question Items	Response Items
1. I am satisfied with my current weight.	Agreement on 5-point scale: 1 = Strongly disagree 5 = Strongly agree
2. I enjoy getting regular exercise.	Agreement on 5-point scale: 1 = Strongly disagree 5 = Strongly agree
3. When choosing foods to eat and drink, I actively try to avoid high salt.	1 = Yes 0 = No
4. When choosing foods to eat and drink, I actively try to avoid high total fat.	1 = Yes 0 = No
5. When choosing foods to eat and drink, I actively try to avoid high saturated fat.	1 = Yes 0 = No
6. Assuming that you want to, how confident are you that you can stay thin or lose weight and keep it off for at least 1 month?	Rated on 10-point scale: 1 = Not at all confident 10 = Extremely confident
7. How would you describe your weight?	1 = Very underweight 2 = Slightly underweight 3 = About the right weight 4 = Slightly overweight 5 = Very overweight
8. Are you currently trying to lose weight?	1 = Yes 0 = No
9. Thinking about ways to lose weight, how easy or difficult do you think it is to eat a little less each day?	Rated on 10-point scale: 1 = Very difficult 10 =Very easy
10. Do you consistently limit your daily calorie intake to maintain your current weight or to lose weight?	1 = Yes, I have been for 6 months or longer. 2 = Yes, I have been, but for less than 6 months. 3 = No, but I intend to in the next 30 days. 4 = No, but I intend to in the next 6 months. 5 = No, and I do NOT intend to in the next 6 months.

Phase 2—Formative Research

Once you describe the health problem, list the causes, and decide on a broad target audience, it is time to move to phase 2 of the planning process, formative research. During this phase, you conduct research to fill in some of the gaps identified in phase 1, confirm key preliminary findings, and gather practical data to inform the marketing strategy. Now, you need to learn about the benefits of and barriers to the desired behavior. For example, do people have confidence in their ability to perform the behavior, or do they have the social support to help them? After reviewing the secondary data needed to describe the problem, you may think you know the answers to these and other such questions, but formative research is usually necessary to test those assumptions and gather additional insights. You can also find out how these answers vary for different audience segments. This knowledge will help you narrow down the broad audience segment chosen in phase 1.

> **Making Assumptions**
>
> You will assume things about your audience as you plan your intervention. The formative research phase is the time to test those assumptions to see if they are correct. Many times they are, but sometimes they are not.

You can conduct formative research in-house or seek outside assistance. Even if your budget is limited, do not skip this phase. Basing your planning decisions on research will make your program more effective and save you time and money in the long run.

Refining Target Audience Segments

One goal of conducting formative research is to refine your final target audience segments. When you conduct formative research with the broad audience you chose in phase 1, subgroups are likely to emerge. This is your opportunity to gather detailed information about those subgroups, for help in choosing a final narrow segment. Examples of this process are discussed here.

Selecting one segment does not necessarily mean excluding others. Rather, selection helps you establish specific goals and objectives for your program. In addition, your program should be evaluated against your chosen segment, not the entire community.

Using This Energy Balance Segmentation

Energy balance audience segmentation can be used as a guide, or you may decide to focus on one of the five identified segments. Regardless of the approach, formative research can help you refine the target audience and your understanding of this audience.

Option 1—Use This Segmentation as an Example

If you choose not to focus on one of the five energy balance audience segments, information from Appendix B can still be used during formative research to identify gaps you want to fill, and to obtain more detail on your potential segments. In the tables in Appendix B, the "Total" column contains data from a nationally weighted survey sample, which is not broken down by segment. These data generally reflect the benefits, barriers, attitudes, perceptions, and behaviors for the U.S. population. You can use this information to determine the additional details you need on your potential segments. For example, only 20% of the total population report that most

of their friends exercise regularly (see Appendix B, Table 16). This finding may lead you to wonder whether the people in your population have social support for physical activity and how this support influences their physical activity behaviors. You may also want to know whether levels of social support for physical activity differ for different segments, such as men versus women or people who enjoy being physically active versus those who do not like physical activity. These issues can be explored in formative research.

Option 2—Choose an Energy Balance Segment as a Broad Audience

If you choose as a preliminary audience one of the five broad audiences defined by energy balance segmentation, you will probably have to work to further segment that audience according to factors that may be revealed in formative research. Data from the segment descriptions and the tables in Appendix B can be used to develop formative research questions to help in refining your segments. For example, if you choose *balance seekers* as a target audience, you know from the data tables in Appendix B that members of this group are motivated to eat healthfully and be physically active and have a high level of confidence in their ability to perform these behaviors. However, if you find literature that suggests differences in a person's perceived ability to make dietary changes depending on whether he or she has young children at home, you may want to explore whether there are different benefits to and barriers for balance seekers who are parents versus those who are not parents.

After learning as much as possible about your broad audience segments through formative research and identifying ways to narrow these segments, you can move to the next phase where you will choose a final segment and proceed to develop your program strategy.

Phase 3—Strategy Development

The purpose of phase 3 is to use knowledge gained during phases 1 and 2 to choose an audience segment and the behavior you want them to adopt, and develop concrete intervention strategies for achieving behavioral change. Data collected in phases 1 and 2 is used to plan *how* behavior change can occur. This plan should include the 4 Ps of social marketing—product, price, place, and promotion. (For more information on the 4 Ps, see box under "Developing Intervention Strategies.")

During phase 3, you can take into account the data in Appendix B that you reviewed during phase 1, but you should rely most heavily on the data collected from your specific population during phase 2.

Choosing an Audience Segment

Your final decision about which audience segment to target with a program is based on your research and other factors, such as wishes of your partners, political climate, and availability of resources. Either you will decide on an energy balance audience segment and refine it through consideration of the data you gathered, or you will use your own segmentation scheme. For example, your formative research may have revealed that it is more difficult for *balance seekers* who have young children at home than for those who do not have this responsibility to make dietary changes and to be physically active. Thus you might choose to concentrate your efforts

on changing dietary and physical activity behaviors of *balance seekers* who are parents or guardians of young children.

Profiling and Naming the Audience Segment

To profile a segment, you can describe it by using the information gathered in phases 1 and 2, including demographic characteristics, as well as current behaviors, attitudes, perceptions, motivators, and benefits of and barriers to adopting the desired behavior. You should specify possible ways to reach the target audience and record any other information about the selected segment that you can use in planning. It is also important to reach an understanding of the key characteristics that distinguish your chosen segment from the other segments you identified.

These characteristics should be identified and then documented in a brief summary you can continue to work on as you plan an intervention. This approach will help you and your partners keep the audience in mind while you develop the intervention.

The "Detailed Profiles of Energy Balance Audience Segments" earlier in this document are good examples. You can also make your segment come to life by writing a brief narrative describing major characteristics of an individual who personifies the segment. When you are making decisions about the intervention strategy, keep this individual in mind and make sure your strategies would work for him or her. Also, give your segment a name that provides a snapshot description of important characteristics, as was done in the energy balance segmentation project described here.

Profiles of Energy Balance Audience Segments

The five energy balance audience segments were profiled in detail by using data from the Porter Novelli Styles research database. The data tables in Appendix B show all of the variables on which the energy balance profiles are based. From these detailed tables, the characteristics that most distinguish the segments from one another were identified and used to create the section on "Detailed Profiles of Energy Balance Audience Segments."

The five energy balance audience segments were also named on the basis of their profiles. The name chosen for each segment was meant to briefly describe that segment with regard to energy balance. For instance, *actively balanced* describes adults who tend to engage in energy balance behaviors and make a conscious effort to do so. The *passively balanced* segment differs from the *actively balanced* group in that, even though the group engages in energy balance behaviors, they do not make a particular effort to do so.

Developing Intervention Strategies

To create strategies for encouraging behavior change in your audience segment, you can use your knowledge about the audience and the 4 Ps of social marketing. You need to look at the work done in phases 1 and 2 in light of the audience segment you selected. This information can be used to identify a product or behavior to promote, barriers to or the price of adopting behavior can be performed or the product promoted, and promotion strategies relevant to the audience. Your strategy could address individual behavior or focus on making policy or environmental changes that will affect the behavior. Every decision you make during phase 3 should be supported by the data collected in phases 1 and 2.

4 Ps of Social Marketing

To "sell" healthy behavior, target audience segments can be reached with a mix of intervention strategies informed by the 4 Ps of marketing:

1. **Product**: what the audience is asked to "buy," often a behavior.
2. **Price**: the actual cost or something the audience must give up or do to obtain the product.
3. **Place**: how and where the audience performs the desired behavior, accesses products or services, or is thinking about the problem.
4. **Promotion**: messages, materials, channels, and activities to promote behavior change and describe features of a program.

For example, possible strategic approaches for two energy balance audience segments were developed by examining the data gathered from the Porter Novelli Styles research database (Table 3).

This process is creative. Examination of evidence-based strategies for ideas is appropriate. However, decisions about the final package of strategies must be driven by what you have learned about barriers, incentives, motivators, key influences, partner resources, and other factors unique to your community and audience segment. You should not expect to find a bundle of strategies sitting on a shelf that will fit all of these criteria. Your project team will need to work together to creatively bundle the strategies into a cohesive program or intervention. If time and resources allow, you should go back to your audience segment for their reaction to these strategies before implementing the intervention.

Table 3. Strategic Approaches for Two Energy Balance Audience Segments

Segment	What the Data Tell Us	Possible Approaches
Balance Seekers	• Motivated and actively trying to lose weight but may need help to sustain these behaviors. • Most likely segment to be limiting calorie intake and using various strategies to lose weight. • Most likely segment to have friends trying to eat a healthy diet, exercise regularly, and stay thin or lose weight. • More likely than the general study population to say that people who matter most to them are pleased when they eat well and exercise regularly.	• Reinforce healthy behaviors and provide incremental steps for further improvement. • Start peer-group activities to provide social support and reinforcement for maintaining healthy behaviors. • Emphasize benefit of pleasing people who matter most. • Initiate changes in the environment to support access to healthier options (e.g., make healthy options available and less expensive in food-service areas) • Explore key environmental and attitudinal barriers as part of formative research.
Seeking but Struggling	• Eager to lose weight but without confidence in their ability to do so. • More likely than the general study population to have health problems such as high cholesterol and high blood pressure. • Slightly more likely to want to understand health risks and be informed about health issues. • Lack confidence in their ability to eat well or exercise regularly and tend to eat when stressed or upset. • Do not enjoy getting regular physical activity but are satisfied when they do so.	• Build skills and confidence by instruction on how to make small, incremental changes in energy balance behaviors that are easy to do. • Build on desire to lose weight by enhancing perception of overweight as a health threat. • Incorporate program elements that model healthy behaviors to build confidence. • Start changes in the environment to support access to healthier options (e.g., make healthy options available and less expensive in food-service areas). • Explore other key environmental and attitudinal barriers as part of formative research.

Final Phases—Intervention Design Through Implementation

After you segment your population, choose an audience segment, and develop a marketing strategy, you must continue the planning process for social marketing. This process consists of designing the intervention (phase 4); evaluation (phase 5); and implemention (phase 6).

The work on audience segmentation is essentially finished, but you must continue to focus on your chosen audience segment as you design, evaluate, and implement the program. It is equally important that you continue to consult the audience as you finish planning and implementing the

intervention. You may need to tweak or modify aspects of the program on the basis of this feedback. (For a detailed tutorial on phases 4, 5, and 6, see the CDCynergy Social Marketing Edition.)

Phase 4—Intervention Design

In phase 4, you create a detailed plan of the intervention program you will use to change behavior. Once your strategies are developed, the next step is to choose program components or activities for use in implementing the intervention strategies. The key to developing appropriate program components and activities is to relate them to your knowledge of the audience and their wants and needs. A logic model or flowchart often helps to demonstrate how you expect each program component to relate to the overall objectives of the intervention. You should also pretest intervention components with members of the target audience to determine whether the intervention meets their needs. One option is to conduct focus groups with the audience; another is to pretest by piloting the intervention. Your choice of methods and intensity for pretesting depend on the project. The intervention should be revised according to the results of this pretesting.

Phase 5—Evaluation

Phase 5 involves developing a plan for monitoring and evaluating the intervention. You will likely be developing such a plan in phase 4 while you are designing the intervention. In this phase, you should identify which components of the intervention to track, select key evaluation questions, and make a plan for collecting, analyzing, and reporting data. The information gathered about your target audiences in previous phases will help you develop evaluation questions. These questions can help to measure your results against intermediate goals that signal progress toward behavior change, or they may help to explain a lack of behavior change. For example, your goal may be to increase the number of days of physical activity. In phases 1 and 2, you found that improving self-efficacy in the audience segment is the key to behavior change. Therefore, you will want to evaluate whether there has been a change in self-efficacy due to the intervention and whether this change influenced the behavioral outcome.

Phase 6—Implementation

Congratulations! It is now time to put all of your hard work and planning into action. In phase 6, you will simultaneously implement the intervention and the evaluation plan. With this strategy, you will get timely feedback on whether your program is being implemented as planned, is reaching the target audience, and is addressing the goals you designed it to address. This information allows you to modify the program to fix any components that don’t seem to be working as intended. Although your program may reach beyond the target audience, its success will be judged by its influence on the target audience.

Hypothetical Work Site Example

This example was developed to help you see how audience segmentation by energy balance can be used in your intervention planning and implementation. This example illustrates how this method can be used in planning an intervention at a work site of a medium-sized company. The example assumes that a team was invited to help the company plan a work site intervention to help prevent obesity and related chronic diseases.

Phase 1: Problem Description

The company owner is concerned about rising health care costs and wants to develop a program for the company's employees. Healthier employees can lead to fewer sick days and increased productivity. The owner wants the program to help the employees who are overweight or obese to lose weight and those who are not overweight to maintain healthy weight. Approximately 65% of the employees are overweight or obese. At the start of planning, all employees are considered potential targets for the intervention.

The team invited to help plan the intervention reviewed existing data and literature on the problem of obesity for several weeks before they started to work on the intervention. This review identified factors that contribute to the problem and existing interventions aimed at behavior change to improve nutrition and physical activity. To evaluate existing interventions with similar goals, the planning team also contacted several companies in the area with successful work site interventions.

On the basis of this research, the planning team chose to focus the work site intervention on encouraging energy balance through the broad behaviors of physical activity and healthy eating. They reviewed the energy balance audience segments described in this resource guide, and identified two promising segments to explore and possibly target: *seeking but struggling* and *balance seekers*. These segments were selected because they are motivated to change and in need of change, because of their weight and energy balance behaviors. The team planned to administer the 10-question survey to determine the proportion of the company's employees who fall into these and the other energy balance audience segments.

Phase 2: Formative Research

The planning team administered the 10-question survey to all employees, adding questions about current behaviors and environmental and policy barriers.

Survey results showed that approximately 40% of employees were in the *out of balance* segment, which had not been identified as a promising segment. Another 30% were in the *seeking but struggling* segment; the rest were evenly split among *balance seekers, passively balanced,* and *actively balanced* groups. The survey also showed that the majority of employees spent most of the day working at a desk. Only about 25% reported leisure-time physical activity before or after work, and only 5% said they are active during the lunch hour. One-third of the employees picked up food from the company cafeteria, one-third brought lunch from home, 10% reported buying

lunch at restaurants, 10% said they eat from vending machines, and the remaining employees typically skipped lunch.

The team made a key decision based on the survey results. Even though most of the office staff were in the *out of balance* audience segment, the program planners decided that because of limited resources, targeting the *seeking but struggling* segment provided the best opportunity for success in influencing some individuals at this work site. Individuals in the *out of balance* group were not health involved, and their motivation to make lifestyle changes was low. Changing their behavior was likely to require more resources than the company was willing to provide at the time. The planners decided that starting with the *seeking but struggling* segment would be most likely to demonstrate success because this group was already motivated to make behavior changes. At some future time, the company may request an additional intervention for the *out of balance* audience.

To better understand this audience segment and fill in gaps in the information gathered in phase 1, the planning team conducted in-depth interviews with several persons in the *seeking but struggling* group. These interviews provided the opportunity to identify attitudes toward physical activity, healthy eating behaviors, and key environmental barriers. One insight revealed that men and women did not feel comfortable participating in events related to nutrition or physical activity in mixed company.

The planning team then conducted focus groups with the *seeking but struggling* audience segment to explore some issues raised in the key informant interviews, to understand attitudes and beliefs about health and the potential for a health promotion program at the work site, and to test possible programmatic concepts. Because of the low comfort level of discussing weight-related matters in mixed company, separate focus groups were conducted for men and women.

Key findings from the focus groups included the following:

- Employees were interested in being healthy, but because of demands and routines, found it difficult to incorporate healthy behaviors into their lifestyle:
  - Many employees spent long hours in front of their computers.
  - Heavy rush-hour traffic discouraged employees from attending events before or after work.
- A variety of insights on employee perceptions of programs designed to promote better eating habits were identified:
  - Most employees were receptive to the idea of eating more fruits and vegetables but were often not willing to eat less of certain foods because of bad experiences in the past with diets in which they avoided certain foods (e.g., high-carbohydrate foods).
  - Similarly, women were looking for quick and easy ideas applicable to the whole family and were not interested in “yet another diet program.” These women said hearing about strategies, successes, and failures of women who are like them helps them make and stick to dietary changes.
  - Men admitted feeling “silly” being the one guy ordering a salad at lunch, and they were more skeptical of making changes to their eating habits than were women.
- Several barriers to participating in work site programs were expressed:

  - Employees felt that managers did not support their taking full lunch hours to eat well or be physically active.
  - Women were willing to do physical activity during work hours if it could be a social event and was not too strenuous. They did not want to sweat intensely.
  - Men did not want to participate in the company's softball or basketball leagues for fear of being the person in the group who did not play as well as the others.
- Employees at this office had a personal support network based on close relationships and friendships, but men and women differed in their opinions on social support, particularly from co-workers:
  - Many women said being physically active with a group would help motivate them and keep them going. A smaller group of women felt strongly that they would rather exercise on their own and did not want to be obligated to a group.
  - Men said they would like to take advantage of nearby gyms and work out on their own.

Several conversations were conducted with managers to gauge their support for and obtain their input on potential programs. Key findings from these conversations include the following:

- Managers gave strong support to work site programs during the lunch hour but were concerned about the impact on work productivity during the afternoon. They also had reservations about the time commitment involved, because they reported feeling stressed by the demands of their work and thought employees might feel the same way.
- The managers thought such programs would provide opportunities to improve the health as well as the morale of employees.
- However, many managers reported feeling uncomfortable participating in the programs with employees, because of a desire to maintain a "professional" manager–employee relationship.

Finally, in addition to the interviews and focus groups conducted, the team performed an environmental scan of the office building and nearby surroundings. They reported the following findings:

- The office building had a cafeteria that sold food to employees. Many options were not healthy. The cafeteria manager was open to providing healthier options but only if overall sales were not affected.
- Most nearby places that sold lunch offered fast food or other high-calorie choices.
- One health club near the office was willing to partner with the company to provide discounts for company employees and opportunities for physical activity.
- The office space was not conducive to physical activity; stairwells were dark and relatively inaccessible. However, there were several possible walking routes around the work site's office park. Most of the roads had sidewalks that were fairly well maintained.

Phase 3: Strategy Development

The formative research revealed significant differences between men and women in the *seeking but struggling* audience segment. Even among the women, the appeal of social support networks differed. The majority of the women who participated in focus groups said that they would be motivated by social support.

On the basis of these findings from the formative research (phase 2), the planning team chose women in the *seeking but struggling* group who desired social support as the target audience for the first intervention. A separate intervention will be designed for men. Only the program developed for women is described here.

After analyzing the results of the formative research, the planning team decided to promote the following behavior changes for energy balance:

1) Substitute a serving of fruits or vegetables for a food item with higher fat or calories at lunch each day.
2) Take time at work to walk for approximately 30 minutes per day.

Phase 4: Intervention Design

In phase 4, the team's intervention plan evolved from a broad outline to a specific operational blueprint. The team developed a model to illustrate how they expected key insights from formative research to affect the activities for the intervention. Potential problems and solutions were also included. The models for the two behavior changes identified by the team in phase 3 are presented next.

Behavior Change #1: Substitute a serving of fruits or vegetables for a food item with higher fat or calories at lunch every day.

Strategy: Build skills and confidence by developing program elements that show how to make small, incremental changes in energy balance behaviors that are easy to do.
Strategy: Initiate environmental changes to support access to healthier options.

Key Insights from Data

- The data showed that women in the *seeking but struggling* audience segment were eager to lose weight but lacked confidence to make drastic lifestyle changes and were also concerned about their health and the health of their families.
- Formative research showed that the women did not try to eat less food because of previous difficulties with "diets" but would eat fruits or vegetables in addition to or in place of other foods.

Potential Activities and Rationale

- Create lunchtime brown-bag sessions that provide education and skills in the concept of volumetrics, including ideas for easy ways to add fruits and vegetables to prepared foods or to incorporate them into lunchtime meals, both in the office and when going out to eat. Women in the *seeking but struggling* audience need social support and encouragement, and these sessions provide opportunity to share successes and tips. Because these women care about their health and the health of their families, the program can be promoted with the additional benefit of being able to incorporate these skills into planning family dinners at home.
- Allow women easy access to one serving of healthy fruits and vegetables at lunchtime sessions.
- Work with management to make fruits and vegetables more readily available at the work site in the cafeteria and vending machines.

Potential Problems and Solutions

- Recruitment of women to stop their work and come to lunchtime session may be difficult. Enlist supervisors to encourage women to stop work and attend sessions.

Behavior Change #2: Take time at work to walk for approximately 30 minutes per day.

Strategy: Incorporate program elements that model healthy behaviors to build confidence.
Strategy: Initiate changes in the environment to support access to physical activity.

Key Insights from Data

- The data showed that women in the *seeking but struggling* audience segment needed role modeling and support.
- Formative research showed that the women had concerns about strenuous activity and sweating heavily while at work and that they would enjoy physical activities of a social nature.

Potential Activities and Rationale

- Create several walking groups. To provide role modeling and support, recruit popular employees to lead the first few tours. Because women in the *seeking but struggling* audience have concerns about sweating, the walking group can be promoted as an easy and "sweat-free" way to get daily activity, with no special skills required. Also, groups are social in nature, giving women a chance to relate to one another during work time.
- Provide maps with pleasant walking routes near the office.
- Work with management to pass a new policy allowing employees 30 minutes a day of free time for physical activity.

Potential Problems and Solutions

- Days of inclement weather could hinder regular participation in the walking group. Walking could be paired with an indoor activity that would sustain the group activity on days when walking would be difficult.

Phase 5: Evaluation

While designing the interventions, the planning team identified process measures for use in program evaluation. Important measures included in evaluation were attendance at brown-bag sessions and participation in lunchtime walking groups. The team also planned to design an evaluation survey, so employees could give feedback about their experiences with the program. Finally, the team decided to perform follow-up interviews with managers to assess their support for the program and hear their concerns.

Phase 6: Implementation

After planning was completed, the team developed materials to launch the program by announcing environmental and policy changes and inviting the target audience to attend brown-bag sessions on healthy eating and volumetrics and participate in the lunchtime walking group. The team then adhered to their planned strategy for using evaluation findings to inform and improve the program. In addition, they carefully documented the feedback obtained, to share it with others and incorporate it into future development of the work site programs.

Part 3

Conclusions

Future Directions

The concepts presented in this resource guide should facilitate your use of audience segmentation to define audiences by energy balance. Energy balance segmentation provides you with a possible starting point (1) for developing and implementing programs to promote healthy nutrition and physical activity and to prevent obesity and (2) for tailoring interventions to meet the needs of specific populations.

To provide more in-depth assistance for planning and evaluating public health programs, CDC developed a multimedia CD-ROM called CDCynergy Social Marketing Edition. (Learn more about this planning tool or order a copy of the CD for a nominal fee at http://www.turningpointprogram.org/Pages/socialmkt.html.)

Limitations

Energy balance segments are based on a nationally weighted but not nationally representative survey and thus may not apply to all groups. Researchers have historically viewed surveys based on panel research, such as the one used in this project, as inferior to surveys based on random-digit dialing. However, research findings suggest that technological advances in the telecommunications industry (e.g., caller ID) and increasing refusal rates in telephone surveys may have reduced or eliminated the reliability and validity gap between these survey methods.[6,7] For example, Pollard[8] examined the Behavioral Risk Factor Surveillance System and Porter Novelli's Styles mail panel survey and concluded that the results from the two methods were highly comparable. Nevertheless, some researchers may continue to be concerned about the use of mail panel surveys in research on health communication.

Finally, the framework of energy balance segmentation is potentially promising based on theory. However, it has not been tested in the development and evaluation of a program to prevent obesity.

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Part 4

Appendices

APPENDIX A: Porter Novelli Styles Variables Used in Cluster Segmentation

The following variables were used in the cluster segmentation. Variables that were used in the 10-item survey tool are in bold (See Appendix D).

- **Currently trying to lose weight (Yes/No). [LOSEWT]**
- Importance of the benefit of managing weight when choosing foods to eat and drink (7-point scale: 1 = not at all important, 7 = very important).
- Number of days doing moderate or vigorous physical activities for at least 10 minutes, and total number of minutes doing moderate or vigorous physical activities on those days (Number of minutes per day = sum of numbers from responses divided by 7).
- Number of days doing activities to increase muscle strength or tone.
- **Limiting daily calorie intake to maintain or lose weight. [LIMCAL]**
  - **Yes, I have been for 6 months or longer.**
  - **Yes, I have been but for less than 6 months.**
  - **No, but I intend to in the next 30 days.**
  - **No, but I intend to in the next 6 months.**
  - **No, and I do NOT intend to in next 6 months.**
- When choosing foods to eat and drink, actively avoid (Yes/No)
  - **High salt [AVOID2]**
  - **High total fat [AVOID3]**
  - **High saturated fat [AVOID4]**
  - High sugar
  - High calories
- Perceived ease or difficulty of counting calories each day (10-point scale: 1 = very difficult, 10 = very easy).
- **Perceived ease or difficulty of eating a little less each day (10-point scale: 1 = very difficult; 10 = very easy). [LWLESS]**
- **Respondent's description of weight (very underweight, slightly underweight, about the right weight, slightly overweight, very overweight). [WTDESC]**
- Confidence (10-point scale: 1 = not at all confident, 10 = extremely confident):
  - Can do moderate physical activity 3 days per week or more.
  - **Can stay thin or lose weight and maintain loss. [CONFTHI]**
  - Can eat a little less each day to control or lose weight.

- Agreement (5-point scale: 1 = strongly agree, 5 = strongly disagree).
  - Counting calories is an effective way to lose weight.
  - Eating a little less each day is an effective way to lose weight.
  - My current body weight is a threat to my health.
  - I really want to stay thin or lose some of my excess weight.
  - **I am satisfied with my current weight. [WTSAT]**
  - **I enjoy getting regular exercise. [ENJEXER]**
  - I feel pleased with myself if I exercise regularly.
  - Most of my friends are careful to stay thin or try to lose their excess weight.
  - The people who matter most to me are pleased if I exercise regularly.

APPENDIX B: Data Tables for Audience Profiles

Data in the tables were not used to make statistical comparisons. Statements are based on a difference in percentage points of 4% or more rather than a statistically significant difference.

Note: To avoid confusion between variables used in the clustering procedure and profile variables, all variables used in the clustering procedure are marked in the tables.

Demographic Characteristics

- *Balance Seekers*: This audience segment was similar to the general study population in region of residence and race. Respondents in this group were more likely than the general study population to be women (57%), aged 45 years or older (52%), and to have at least a college degree (39%), household income of at least $75,000 per year (34%) and a professional specialty occupation (20%). Similar to the general study population, 61% of this group were married but only one-third (33%) had a child under 19 years of age living at home.

- *Seeking but Struggling:* Members of this segment were more likely than the general study population to be women (61%) and aged 45 years or older (54%). Respondents in the group were similar to the general study population in education, household income, region, race, marital status, and employment.

- *Actively Balanced*: Respondents in this segment were similar to the general study population in education, income, region, race, and marital status. However, they were more likely to be men (55%) and aged 65 years or older (26%). Because this segment tends toward older age, respondents were least likely to have a child under 19 years of age living at home (28%) and to be employed (62%).

- *Out of Balance*: Audience members were similar to the general study population in sex, age, household income, region, race, and marital status. They were more likely than the general study population to have a high school education or less (36%) and to have a child under 19 years of age living at home (40%). These respondents were also less likely to have a household income of $75,000 or more per year (24%).

- *Passively Balanced*: Respondents in this group were more likely than the general study population to be men (63%) and under the age of 35 years (45%). They were also more likely to be employed (73%) and to have a household income under $50,000 per year (61%). However, they were less likely to be married (53%). The group was similar to the general study population in education, region, and race.

Table 1. Demographic characteristics for energy balance audience segments, 2005

	Energy Balance Segment					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
No. of respondents (un-weighted bases)	2,888	2,984	1,557	3,061	2,149	12,639
Sex (%)						
Women	57	61	45	53	37	52
Men	43	39	55	47	63	48
Age in years (%)						
18–24	9	9	10	14	23	13
25–34	17	17	16	19	22	18
35–44	21	19	18	23	21	21
45–54	20	21	16	20	15	19
55–64	13	16	12	13	8	13
≥65	19	17	26	12	11	16
Education (%)						
≥High school	24	31	32	36	34	31
Some college	37	38	34	40	39	38
≥College	39	31	34	24	27	31
Household income in $ (%)						
<25,000	23	28	30	28	31	28
25,000–49,000	26	28	24	28	30	27
50,000–74,000	18	18	19	19	18	18
>75,000	34	27	27	24	20	27
Region (%)						
Rural	16	19	18	19	19	18
Urban	34	34	35	32	34	34
Suburban	50	47	46	49	47	48
Race (%)						
White	77	75	74	74	73	75
Black	11	12	13	12	13	12
Hispanic	12	13	13	14	13	13
Married (%)	61	60	60	60	53	59
≥1 child under age 19 years living at home (%)	33	33	28	40	37	35

Table 1. Demographic characteristics, cont'd

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Employed (%)	68	66	62	70	73	68
Professional specialty	20	17	15	15	13	16
Executive, administrative or managerial	12	11	11	12	13	12
Administrative support, including clerical	9	11	7	9	8	9
Service	8	8	7	9	9	8
Operator, fabricator or laborer	6	5	7	9	11	7
Sales	5	6	5	7	5	6
Precision production, craft, or repair	4	3	5	5	8	5
Technician or related support	4	4	5	5	6	5
Farming, forestry, or fishing	1	1	0	1	1	1

Food and Diets

Attitudes on Healthy Diet

- Respondents in the *balance seekers*, *seeking but struggling*, and *actively balanced* segments were more likely than respondents in the *out of balance* and *passively balanced* segments to agree with many positive attitudes about healthy eating (Table 2). These three segments were all more likely than the general study population to say they were actively trying to eat a healthy diet, value having healthy eating habits, try to eat healthy to set an example for others, and buy cholesterol-lowering foods. In addition, they were more likely to say they choose fortified foods over nonfortified foods, and approximately one-fifth reported a preference for organic foods.
- In contrast, persons in *out of balance and passively balanced* segments were less likely than the general study population to agree to any of these healthy diet attitudes. Only about one-third of respondents in each of the two groups said that having healthy eating habits is personally important to them.

Table 2. Healthy diet attitudes in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
I am actively trying to eat a healthy diet.	86	71	67	35	35	59
Having healthy eating habits is very important to me.	83	72	67	33	37	58
When available, I choose foods that are fortified with vitamins and minerals over those that are not.	52	44	43	26	27	38
I try to eat healthy to set an example for others.	59	39	48	17	25	37
I specifically buy cholesterol-lowering foods.	30	27	24	12	9	20
When available, I choose all-natural organic foods.	22	17	17	8	11	15

Attitudes on Dieting and Weight-Loss

- Because many of the variables for diet and weight loss were used in the clustering procedure, the audience segments differed from the general study population on these items (Table 3). However, the segments also differed from the general study population on a variety of other attitudes and behaviors related to weight loss.

- *Balance Seekers*: Persons in this audience segment were more likely than the general study population to want to maintain healthy weight and eat a low-fat diet, and they preferred low-fat and low-calorie versions of foods. Members of this segment were one-half as likely as the general study population to view their weight as a threat to their health (15% vs. 30%) but more likely to view eating less and counting calories as effective means for losing weight.

- *Seeking but Struggling*: Almost all respondents (91%) in this group said they want to stay thin or lose excess weight. About one-half (52%) viewed their weight as a serious threat to their health. Members of this group were also more likely than the general study population to say they want to eat a low-fat diet and that they prefer low-fat and low-calorie foods. They were also more likely to view control of portion size as an effective way to lose weight, but they were no more likely to view counting calories as effective and less likely to view eating a little less each day as effective.

- *Actively Balanced*: Respondents in this group were most likely to be satisfied with their weight (66%), and only 8% saw their weight as a threat to their health. They were approximately one-half as likely as the general study population to want to achieve and maintain a healthy weight. These respondents were less likely to view eating less, counting calories, and controlling food portions as effective ways to lose weight.

- *Out of Balance*: Members of this segment were more likely than the general study population to see their own body weight as a personal health threat—one-half (50%) viewed their weight as a health threat. Four of five in this group also said they really want to lose weight, and only 8% were satisfied with current weight. Still, they were approximately one-half as likely to prefer low-fat or low-calorie versions of most foods.

- *Passively Balanced*: More than one-half (58%) of respondents were satisfied with their weight, and members of this group were less likely than the general study population to agree with any of the weight-loss attitudes posed in the survey.

Table 3. Dieting and weight-loss attitudes in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
My current body weight is a threat to my health.*	15	52	8	50	8	30
I am satisfied with my current weight.*	34	4	66	8	58	30
I really want to stay thin or to lose some of my excess weight.*	83	91	41	80	37	71
Eating a little less each day is an effective way to lose weight.*	78	53	41	55	47	56
Counting calories is an effective way to lose weight.*	65	47	36	43	30	46
Buying foods in portion-controlled serving sizes is an effective way to manage my weight.	47	46	29	34	22	37
I really want to eat a diet that is low in fat (30% or less calories from fat).	69	63	48	31	16	47
I prefer to eat low-fat versions of most foods.	59	46	38	16	12	35
I prefer to eat low-calorie versions of most foods.	48	38	27	12	9	28

*Variable used in clustering procedure.

Dieting and Weight-Loss Behaviors

- Of the 12,639 adults in the general study population, almost two-thirds (65%) were overweight or obese according to scores for body mass index, and 68% described themselves as slightly or very overweight (Table 4).

- The majority of *balance seekers* were overweight (39%) or had healthy weight (41%) according to body mass index.

- More than one-half (53%) of the *seeking but struggling* audience segment were obese and another 35% were overweight.

- Members of the *actively balanced* group were most likely to have healthy weight (63%), but 34% were overweight or obese.

- More than one-half (56%) of respondents in the *out of balance* segment were obese, and another 31% were overweight.

- Persons in the *passively balanced* group were most likely to have healthy weight (56%), but 39% were overweight or obese.

Table 4. Weight perception and body mass index in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Respondent's weight description (%)						
Very underweight*	0	0	2	0	3	1
Slightly underweight*	3	0	10	1	13	4
About the right weight*	30	3	63	4	57	27
Slightly overweight*	57	52	25	54	27	46
Very overweight*	10	44	1	41	1	22
Body mass index categories (%)						
Underweight	1	0	3	1	5	2
Healthy weight	41	12	63	13	56	33
Overweight	39	35	27	31	29	33
Obese	19	53	7	56	10	32

*Variable used in clustering procedure.

Weight-Loss Methods

- More than one-half of this study population (54%) said they were trying to lose weight (Table 5). Most were doing so by exercising more (61%) and eating smaller food portions (61%), more fruits and vegetables (58%), less fat (55%), and fewer calories (51%). Only one-fifth of the respondents (22%) reported consistently limiting daily calorie intake for 6 months or longer; 36% had no intention of limiting daily calorie intake in the next 6 months. In addition, approximately one-half of the population (52%) thought it difficult to lose weight by counting calories each day; only 10% reported counting calories as being easy. Still, almost a one-third (32%) believe it is easy to lose weight by eating a little less each day.

- *Balance Seekers*: In this audience segment, 77% of respondents reported trying to lose weight (more likely than the general study population). Respondents in this segment were more likely to report consistent maintenance of caloric intake for at least 6 months, to either maintain or lose weight. They are more likely than any other segment to report eating smaller portions of food, less fat, and eating to lose weight. These respondents were also most likely of all groups to say that counting calories and eating a little less each day to lose weight are easy.

- *Seeking but Struggling*: More members of this group (92%) were trying to lose weight than in any other group. These respondents were only slightly more likely than or are as likely as the general study population to be using the top six methods of weight loss (Table 5). Of all the groups, they were most likely to report that losing weight by counting calories or eating a little less each day is difficult.

- *Actively Balanced:* Respondents in this segment were least likely to report trying to lose weight (7%). Those trying to lose weight were less likely than the general study population to report eating smaller food portions, less fat, or fewer calories or skipping meals and more likely to be exercising more and eating more protein. More than one-half (58%) had no intention of trying to limit daily calorie intake in the next 6 months to maintain or lose weight.

- *Out of Balance*: Similar to the general study population, 52% of this audience was currently trying to lose weight. This group was substantially less likely than other groups (41%) to report exercising to lose weight and slightly less likely than the general study population to be using all the other methods to lose weight. Members of this segment were more likely to report skipping meals to lose weight (26%), among the least likely to report already trying to reduce caloric intake in the past 6 months or more, but most likely to report intentions to begin limiting daily calorie intake in the next 6 months (28%).

- *Passively Balanced*: Only 12% of these respondents were currently trying to lose weight. They were more likely than the general study population to report exercising to lose weight but less likely to be using other methods of weight loss in the top six methods (Table 5). More than three-quarters (79%) also had no intention of trying to limit daily calorie intake in the next 6 months to either maintain or lose weight.

Table 5. Weight-loss methods in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Currently trying to lose weight (%)*	77	92	7	52	12	54
Methods (%)						
Exercising more	70	65	65	41	69	61
Eating smaller food portions	69	61	52	52	46	61
Eating more fruits and vegetables	65	63	54	44	33	58
Eating less fat	65	61	41	37	18	55
Eating fewer calories	64	53	34	37	16	51
Eating fewer carbohydrates	38	37	35	24	14	33
Skipping meals	16	18	12	26	21	19
Eating less red meat	19	19	15	11	6	17
Eating more protein	20	18	26	12	9	17
Taking weight-loss pills	8	10	9	13	9	10
Using canned or powdered food substitutes	5	5	9	4	3	5
Vomiting or using laxatives	1	1	2	1	3	1
Not specified	0	0		1	3	1
Consistently limit daily calorie intake to maintain or lose weight (%)						
Yes, I have been for 6 months or longer.*	52	19	22	7	7	22
Yes, I have been, but for less than 6 months.*	24	23	6	10	3	14
No, but I intend to in the next 30 days.*	10	24	4	17	4	13
No, but I intend to in the next 6 months.*	6	20	10	28	8	15
No, and I do not intend to in the next 6 months.*	9	14	58	37	79	36
Ease of losing weight by counting calories each day (%)						
Difficult*	26	69	50	64	49	52
Moderate*	49	29	42	32	41	38
Easy*	25	2	8	4	9	10
Ease of losing weight by eating a little less each day (%)						
Difficult*	2	34	20	23	17	19
Moderate*	38	53	54	50	50	48
Easy*	60	13	26	26	34	32

*Variable used in clustering procedure.

Food Attitudes

- A majority of the general study population reported enjoying trying new foods (63%) and new recipes (65%) and cooking (63%) (Table 6). More than one-third said they eat when stressed or upset, and one-fifth said the amount of fat currently in their diet is a health threat and that they are among the first of their friends to try new food and nutrition products.

- Persons in the *balance seekers* and the *seeking but struggling* segments were more likely than those in the other three segments to report that they enjoy trying new foods and recipes and cooking. In addition, more persons in the *seeking but struggling* and *out of balance* groups reported overeating and binging. They were also more likely to say that the amount of fat in their diet is a health threat.

Table 6. Food attitudes in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
I enjoy trying new foods.	70	68	62	57	59	63
I enjoy trying new recipes.	73	69	66	58	57	65
I enjoy cooking.	70	66	61	59	56	63
I usually eat when I'm stressed or upset.	32	52	22	48	21	37
The amount of fat currently in my diet is a threat to my health.	13	27	8	33	10	20
I prefer food that I can eat when I am on the go.	26	32	25	34	33	30
I am usually among the first of my friends to try new food/nutrition products.	28	25	20	16	16	21

Food Behaviors

- The general study population reported eating dinner at home, on average, 5 nights per week (Table 7). Respondents also reported eating an average of 1 night per week at a fast-food restaurant and 1 night per week at a non–fast-food restaurant. The data showed no differences of 1 day or more across the groups but the *balance seekers* and *actively balanced* segments were more likely to eat dinner made at home and less likely to eat at a fast-food restaurant.

Table 7. Dinner locations and choices in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Dinner locations and choices (average No. of days per week)						
Eat dinner made at home.	5.1	4.9	5.2	4.7	4.8	4.9
Go out to a fast-food restaurant to eat.	0.8	1.0	0.9	1.2	1.1	1.0
Go out to a non–fast-food restaurant to eat.	1.1	1.1	1.0	1.0	0.9	1.0
Bring home take-out food or order food to be delivered.	0.7	0.9	0.8	1.0	0.9	0.8

Food-Choice Attitudes and Behaviors

- Feeling good about themselves and feeling better physically were the top two health benefits the general study population considered in making food choices (Table 8).

- In making food choices, respondents in the *balance seekers*, *seeking but struggling*, and *actively balanced* segments considered all benefits to be more important than did members of the other two groups. Conversely, persons in *out of balance* and *passively balanced* groups were less likely than the general study population to consider any of the health benefits listed to be important. In addition, only 47% of *out of balance* segment and 24% of *passively balanced* segment said managing their weight is an important health consideration in making food choices.

Table 8. Health benefits considered in making food choices in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Importance of health benefit (% who responded 6 or 7 on 7 point scale, with 1 indicating "Not at all Important and 7 indicating "Very Important")						
Feeling good about myself	85	79	77	57	51	70
Feeling better physically	86	82	76	54	48	69
Lowering risk of heart disease	74	72	74	50	40	62
Managing weight*	83	79	63	47	24	60
Building strong bones	72	67	68	44	41	58
Lowering risk of cancer	69	66	68	46	39	57
Lowering risk of diabetes	63	67	63	46	32	54
Lowering cholesterol	66	62	63	41	29	52

*Variable used in clustering procedure.

Food-Choice Attitudes and Behavior, cont'd

- Respondents were most likely to say they try to avoid high-cholesterol, high-salt and high-fat food in choosing foods to eat (Table 9).

- Compared with persons in the o*ut of balance* and *passively balanced* groups, more persons in the *balance seekers*, *seeking but struggling*, and *actively balanced* groups report trying to avoid the first 14 categories of foods listed in Table 9.

- Only 28% of the *out of balance* segment and 10% of the *passively balanced* segment said they are actively trying to avoid a high amount of total fat in their diets.

Table 9. Food choices/avoidance in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
When choosing foods to eat and drink, actively try to avoid… (%)						
High cholesterol	78%	77%	81%	41%	29%	60%
High salt*	74%	78%	88%	49%	26%	62%
High total fat*	80%	79%	83%	28%	10%	55%
High saturated fat*	78%	74%	85%	26%	16%	54%
High sugar*	74%	74%	75%	34%	17%	54%
High calorie*	72%	73%	57%	19%	7%	46%
Pesticides	55%	53%	59%	38%	38%	48%
Processed foods	37%	32%	35%	13%	15%	26%
Food additives	36%	30%	38%	15%	15%	26%
Caffeine	34%	31%	32%	19%	17%	26%
Artificial sweeteners	34%	29%	40%	28%	35%	32%
Genetically modified foods	34%	33%	35%	23%	24%	29%
Red meat	22%	16%	18%	7%	8%	14%
All animal products	8%	6%	8%	2%	2%	5%
Low-fat/fat-free versions of foods	14%	14%	20%	20%	32%	19%

*Variable used in clustering procedure.

Attitudes about Alcohol Use and Related Behavior

- More than one-third of the general study population said they enjoy drinking alcoholic beverages, and approximately one-quarter (23%) of adults reported consuming alcoholic beverages at least a few times a week (Table 10). Another one-quarter (26%) said they never consume alcoholic beverages.

- Respondents in the *balance seekers* and *passively balanced* audience segments were more likely than members of the other three groups to agree that they enjoy drinking alcoholic beverages (40% and 45%, respectively). These two segments were also more likely to report drinking alcoholic beverages at least a few times a week (25% and 30%, respectively).

Table 10. Attitudes about alcohol use and related behavior in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Agree (%)						
I enjoy drinking alcoholic beverages.	40	35	36	36	45	38
People who drink alcoholic beverages are more fun to be with than people who don't.	9	7	9	9	11	9
My current use of alcohol is a threat to my health.	8	6	10	6	8	7
Frequency of consuming alcoholic beverages (%)						
Every day	8	5	9	7	11	8
A few times a week	17	13	16	13	19	15
A few times a month	22	19	18	19	20	20
About once a month	9	11	9	9	10	9
A few times a year	19	23	19	25	18	21
Never	26	28	28	27	22	26

Physical Activity

Understanding of Physical Activity

- When asked to select the minimum amount of moderate-intensity physical activity recommended by the government, more than one-quarter of the general study population (31%) said they didn't know recommended amount (Table 11). Only one-quarter (25%) were able to choose the correct response. Members of the *balance seekers* and *seeking but struggling* segments were most likely to select the correct response. More than one-third of persons in the *actively balanced*, *out of balance,* and *passively balanced* groups said they were unsure of the recommendation.

Table 11. Understanding of physical activity in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Minimum amount of moderate-intensity physical activity recommended by government (%)						
20 min/day, ≥3 days/week	36	35	33	33	32	34
30 min/day, ≥5 days/week	33	29	21	20	21	25
30 min/day, 7 days/week	8	7	7	5	6	7
60 min/day, 7 days/week	1	1	1	1	2	1
None of these	2	2	2	2	1	2
Don't know or not sure	19	26	36	39	39	31

Attitudes on Exercise

- More than two-thirds (67%) of the general study population reported being pleased with themselves if they exercise regularly (Table 12). Less than one-half (47%), however, said they enjoy regular exercise. More than one-quarter (27%) think their exercise habits or lack of exercise are a threat to their health.

- Persons in the b*alance seekers* and *seeking but struggling* segments were more likely than the general study population to feel pleased with themselves if they exercise regularly and to enjoy regular exercise.

- Compared with the general study population, the *actively balanced* group were as likely to feel pleased with themselves if they exercise regularly but more likely to enjoy regular exercise.

- The *out of balance* group were least likely to feel pleased with themselves if they exercise regularly, and only 13% said they enjoy regular exercise. Nearly one-half reported that their exercise habits are a threat to their health, more than in any other group.

- Approximately one-half of those in the *passively balanced* group agreed that they feel pleased with themselves if they exercise regularly, and like adults in the other four groups, approximately one-half said they enjoy doing it.

Table 12. Attitudes on Exercise in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
I feel pleased with myself if I exercise regularly.*	84	81	68	45	54	67
I enjoy getting regular exercise.*	71	51	60	13	46	47
My exercise habits or lack of exercise are a threat to my health.	16	35	14	45	13	27

*Variable used in clustering procedure.

Sports and Physical Activities

- Among the general study population, walking was by far the most popular sport or physical activity done regularly (55%). Lifting weights was second most popular (15%), followed by biking (13%), hunting or fishing (13%), and jogging or running (11%) (Table 13).

- *Balance seekers* were most likely to participate in a variety of activities. Nearly three-quarters reported walking regularly, one-quarter reported lifting weights, and almost one-fifth reported attending an exercise class.

- Members of the *seeking but struggling* and *actively balanced* groups were more likely than the general study population to walk for exercise but their engagement in the rest of the activities recorded was similar to that of those in the other three groups.

- The *out of balance* and *passively balanced* segments were less likely than the general study population to participate in most of the activities.

Table 13. Sports and physical activities in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Sports or physical activities done regularly (%)						
Walking	71	64	60	37	42	55
Lifting weights	25	14	19	4	15	15
Biking	19	12	16	6	14	13
Hunting or fishing	11	11	13	12	18	13
Jogging or running	19	9	13	3	13	11
Swimming	15	12	11	8	10	11
Exercise class	17	13	11	2	4	9
Bowling	10	7	7	7	9	8
Golf	9	7	10	6	10	8
Hiking	10	7	9	3	9	8
Baseball or softball	6	5	6	5	9	6
Basketball	6	4	6	4	10	6
Tennis	4	3	4	1	3	3
Volleyball	4	3	2	2	3	3
Soccer	1	2	2	1	2	2
Karate or martial arts	3	1	3	1	2	2
Skiing or snowboarding	3	2	2	1	3	2
None of these	11	20	19	44	28	25

Physical Activity Behaviors

- The general study population reported, on average, 44 minutes of physical activity per day for 3 days per week (Table 14). They reported doing activities to increase muscle strength and tone an average of 1.5 days per week. Analysis by time categories of physical activity per day showed that three-quarters of the general study population reported doing physical activity for less than 30 minutes per day.

- Compared with the general study population, *balance seekers* performed physical activity for a higher number of minutes per day and days per week and also engaged in strength training more often. One-third (35%) of this group performed physical activity for at least 30 minutes per day.

- The *actively balanced* and *passively balanced* segments were similar to the general study population in terms of physical activity, but the *passively balanced* segment reported exercising for the highest number of minutes per day (average, 58 minutes).

- *The seeking but struggling* and *out of balance* groups reported exercising for the lowest average number of minutes per day (39 and 33 minutes, respectively) and reported the lowest number of days per week for engaging in muscle strengthening and toning (1.3 and 0.6 days, respectively).

Table 14. Physical activity behaviors in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Average No. of minutes per day of moderate or vigorous physical activity*	47.8	38.9	45.5	32.8	57.7	43.8
Average No. of days per week of activities to increase muscle strength and tone*	2.3	1.3	1.8	0.6	1.5	1.5
Average No. of days per week of moderate or vigorous physical activity	4.1	3.2	3.8	2.2	3.5	3.3
Physical activity (%)						
<30 min/day	65	80	69	89	69	76
≥30 min/day	35	20	31	11	31	24

*Variable used in clustering procedure.

Health

Confidence in Making Changes to Improve Health

- Most adults in the general study population (86%) were confident they can limit alcohol consumption to two alcoholic beverages a day, but only 39% were confident they can eat a low-fat diet for at least 1 month. One-half or less were confident they can do moderate physical activity 3 days per week or more for at least 1 month (52%); eat a little less each day to control or lose weight for at least 1 month (45%); eat five fruits and vegetables every day (44%); or stay thin or lose weight and maintain the loss for at least 1 month (43%).

- *Balance Seekers*: This group was more confident in making changes to improve health than any other group was. More than three-quarters were confident in their ability to be physically active (79%) and to eat a little less each day to control or lose weight for at least 1 month (76%); almost three-quarters were confident they can stay thin or lose weight and maintain the loss for at least 1 month (69%) or can eat a low-fat diet for at least 1 month (68%).

- *Actively Balanced*: Members of this segment were also more confident than the general study population in making changes to improve health, but they were less confident than *balance seekers* were.

- *Seeking but Struggling*: Although this group was as confident as the general study population in their to be physically active, only one-quarter of the members were confident they can lose weight and maintain the loss, and only one-third were confident they can eat a little less each day or eat a low-fat diet for at least 1 month.

- *Out of Balance*: This group was much less confident in making changes to improve health than were all the other groups on most of the confidence categories. Only 17% said they were confident they can do moderate physical activity at least 3 days per week, and only 6% said they were confident they can stay thin or lose weight and maintain the loss.

Table 15. Confidence in making changes to improve health in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Confidence in ability to limit alcoholic beverages to ≤2 drinks per day for ≥1 month (%)						
Not confident	7	8	7	10	11	9
Somewhat confident	4	4	5	5	7	5
Very confident	90	88	88	84	82	86
Confidence in ability to stop or not start smoking cigarettes for ≥1 month (%)						
Not confident	9	11	14	20	22	15
Somewhat confident	6	5	7	6	9	6
Very confident	86	84	79	74	69	79
Confidence in ability to do moderate physical activity ≥3 days/week for ≥1 month (%)						
Not confident*	3	8	7	32	12	13
Somewhat confident*	19	40	28	51	30	34
Very confident*	79	52	65	17	58	52
Confidence in ability to eat a little less each day to control or lose weight for ≥1 month (%)						
Not confident*	1	11	11	20	17	12
Somewhat confident*	23	55	39	55	39	43
Very confident*	76	34	50	26	44	45
Confidence in ability to eat ≥5 fruits and vegetables every day for ≥1 month (%)						
Not confident	5	15	12	27	18	16
Somewhat confident	31	45	35	48	42	41
Very confident	64	40	53	25	40	44
Confidence in ability to stay thin or lose weight and maintain loss for ≥1 month (%)						
Not confident*	1	22	5	43	7	17
Somewhat confident*	29	56	26	51	30	40
Very confident*	69	23	69	6	63	43
Confidence in ability to eat a low-fat diet (<30% of calories from fat) for ≥1 month (%)						
Not confident	3	10	9	31	26	16
Somewhat confident	30	54	38	56	44	45
Very confident	68	36	52	13	30	39

*Variable used in clustering procedure.

Social Support and Influence

- One-half (50%) of the general study population agreed that the people who matter most to them are pleased if they exercise regularly (Table 16). Fewer respondents (30%) agreed that people are pleased if they eat a low-fat diet. Less than one-third (31%) reported that most of their friends eat a healthy diet, and only one-fifth (20%) agreed that most of their friends exercise regularly.

- The *balance seekers* and *seeking but struggling* groups were more likely than the general study population to agree that the people who matter most are pleased if they exercise regularly and eat a low-fat diet. *Balance seekers* were also more likely to agree that most of their friends try to eat a healthy diet, are careful to stay thin or lose excess weight, and exercise regularly.

- Respondents in the *out of balance* group were among the least likely to agree that the people who matter most are pleased if they exercise regularly. They were also least likely to agree that most of their friends try to eat a healthy diet, are careful to stay thin or lose excess weight, and exercise regularly.

- Compared with the general study population, members of the *passively balanced* segment were less likely to have social support for eating healthy or exercising and were more likely to have friends who drink alcoholic beverages regularly.

Table 16. Social support and influence in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
The people who matter most to me are pleased if I exercise regularly.*	63	65	45	36	36	50
The people who matter most to me are pleased if I eat a low-fat diet.	37	40	25	27	14	30
Most of my friends try to eat a healthy diet.	45	38	34	18	21	31
Most of my friends are careful to stay thin or try to lose their excess weight.*	33	26	28	14	16	23
Most of my friends drink alcoholic beverages regularly.	24	20	23	22	31	24
Most of my friends exercise regularly.	30	22	22	10	16	20
The people who matter most to me are pleased if I drink alcoholic beverages.	6	5	8	5	6	6

*Variable used in clustering procedure.

Health Problems

- Less than one-half (43%) of the general study population reported being in either very good or excellent health, and 3% said their health is poor (Table 17). The most commonly reported health conditions other than seasonal allergies were high blood pressure (26%), arthritis (23%), and high cholesterol (22%).

- The *balance seekers* and *actively balanced* groups were most likely to report being in very good or excellent health. The *seeking but struggling* and *out of balance* groups were most likely to say their health is fair or poor and were more likely than the general study population to have high blood pressure, arthritis, high cholesterol, and diabetes.

Table 17. Health problems in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Self-assessment of health (%)						
Excellent	13	3	14	2	11	8
Very good	47	28	47	21	41	35
Good	33	48	30	50	37	41
Fair	7	18	8	22	9	13
Poor	1	3	1	5	2	3
Health conditions: current or during past year (%)						
Arthritis	23	28	22	25	14	23
Asthma	9	11	7	11	7	9
Diabetes	9	14	7	12	3	10
High blood pressure	24	34	24	30	13	26
High cholesterol	23	30	20	24	12	22
Seasonal allergies	38	44	38	39	33	39

Attitudes on General Health

- Approximately three-quarters of the general study population agreed that living in the best possible health is important to them, as is looking healthy (Table 18). More than one-half (59%) reported actively trying to prevent disease and illness, and 47% said they are doing everything they can to stay healthy.

- *Balance seekers* reported stronger agreement on all health attitudes than any other group. The *actively balanced* segment reported similar positive health attitudes, but agreement was not as strong as for *balance seekers*.

- Members of the *seeking but struggling* group were more likely than the general study population to agree that living life in the best possible health is important to them, but generally were as likely as the general study population to agree with the other health attitudes.

- The *out of balance* and *passively balanced* groups were less likely to agree with most of the health attitudes. Only 22% of *out of balance* responders and 39% of *passively balanced* responders said they do everything they can to stay healthy.

Table 18. Attitudes on general health in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Living life in the best possible health is very important to me.	86	77	82	50	57	70
It's important to me that I look healthy.	89	79	83	56	69	74
I actively try to prevent disease and illness.	76	63	74	39	48	59
I do everything I can to stay healthy.	69	46	66	22	39	47

Attitudes toward Physicians

- More than one-half of the general study population agreed that they have a good relationship with their health care provider, and that their physician provides them with practical health information (Table 19). Approximately one-half viewed the relationship with their physician as collaborative: 48% agreed that they work together with the physician to manage their health, and 45% said they discuss things they read or hear with the physician. One-third or less said they rely on their physician(s) to tell them everything they need to know and leave decisions up to them.

- Members in the *balance seekers*, *seeking but struggling* and *actively balanced* segments were more likely than the general study population to agree that that they have a good relationship with their physician(s), that their physician is a good source of information, and that they work together with their physician to manage their health.

- Conversely, the *out of balance* and *passively balanced* groups were less likely to report similar agreement with these statements. Still, these segments were no more likely to say they rely on their physician to tell them what they need to know or to say they leave health decisions to their physicians.

Table 19. Attitudes toward physicians in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
I have a good relationship with my health care provider(s).	69	64	67	54	50	60
My doctor provides me with practical health information.	68	64	65	52	50	59
My doctor(s) and I work together to manage my health.	57	54	52	39	36	48
When I read or hear something that's relevant to my health care, I bring it up with my doctor.	55	51	51	35	33	45
I rely on my doctor to tell me everything I need to know to manage my health.	35	35	36	33	29	33
I leave it up to my doctor to make the right decisions about my health.	27	25	28	29	26	27
I often don't understand the language my doctor uses.	13	14	14	15	15	14

Interest in Health

- Three-quarters (75%) of the general study population agreed that it is important to be informed about health issues (Table 20). Slightly fewer (69%) said that they need to know about health issues to keep themselves and their families healthy. Only one-half (50%) reported they enjoy learning about health issues, and 39% reported making a point to read and watch stories about health.

- Members of the *balance seekers*, *seeking but struggling,* and *actively balanced* segments were more likely to demonstrate interest in their health. They were more likely than the general study population to agree that it is important to be informed about health issues, that they need to know about health issues to keep themselves and their families healthy, that they enjoy learning about health issues, and that they make a point to read and watch stories about health. On the other hand, the *out of balance* and *passively balanced* respondents were less likely than the general study population to agree with these statements.

Table 20. Interest in health in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
It is important to me to be informed about health issues.	86%	82%	83%	63%	62%	75%
I need to know about health issues so I can keep myself and my family healthy.	81%	76%	77%	55%	56%	69%
I really enjoy learning about health issues.	64%	57%	61%	35%	35%	50%
I make a point to read and watch stories about health.	51%	46%	48%	26%	24%	39%
When it comes to new health information, I am tired of people telling me what to do.	20%	21%	21%	26%	26%	23%

Understanding Health Information

- Approximately three-fourths (71%) of the general study population agreed that they try to understand their personal health risks (Table 21). One-third reported knowing more about health and nutrition than most other people, but roughly one-fifth of the population said they have difficulty understanding health information in the following areas: determining which foods are healthy (19%); understanding health information they read (21%); comprehending most health issues, which they find too complex (18%); and finding adequate answers to health questions and concerns (22%).

- Members of the *balance seekers*, *seeking but struggling* and *actively balanced* groups, especially *balance seekers*, were more likely than the general study population to say that they understand their personal health risks and know more about health and nutrition than most other people. Responders in the *out of balance* and *passively balanced* segments were less likely than the general study population to agree with these statements. All groups, however, reported similar levels of difficulty in understanding health information and finding answers to health questions, as well as perceiving health information as being too complex to understand.

Table 21. Understanding health information in energy balance audience segments, 2005

	Energy Balance Segments					
Agree (%)	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
I try to understand my personal health risks.	82	78	80	59	56	71
I know more about health and nutrition than most other people.	48	35	38	23	27	34
I am confused about what foods I should eat to be healthy.	17	23	17	21	14	19
I have difficulty understanding a lot of the health information that I read.	20	22	23	20	20	21
Most health issues are too complex for me to understand.	17	19	19	18	18	18
It Is hard to find good answers to my health questions and concerns.	21	23	22	23	21	22

Health Care Visits

- In general, respondents reported visiting a primary care doctor 2.9 times, a specialist 1.6 times, and a mental health provider one time per year (Table 22).

- The *balance seekers*, *actively balanced*, and *out of balance* groups resembled the general study population in the number of visits to a primary care doctor, a specialist, or a mental health provider in the past year. Members of the *out of balance* group were slightly more likely to have seen a mental health professional in the last year.

- The *seeking but struggling* segment were slightly more likely than the general study population to have visited any of the three types of physicians in the past year, and the *passively balanced* segment were less likely to do so.

Table 22. Health care visits in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Average No. of visits to primary care doctor in past year	3.0	3.2	3.0	3.0	2.2	2.9
Average No. of visits to specialist doctor In past year	1.8	2.0	1.5	1.5	1.1	1.6
Average No. of visits to mental health provider in past year	0.6	1.1	0.5	1.0	0.3	0.7

Information Sources on Health and Nutrition

Use of Web

- More than one-third of the respondents reported looking for health information on the Web and were most likely to do so when they or a family member becomes ill or after hearing about a health issue from a friend or family member (Table 23). Most adults use search engines (81%), and more than half also use health information portals (58%).
- The *balance seekers* and *seeking but struggling* groups were more likely than the other three groups to look for information on the Web. They reported using the Web to locate health information for reasons similar to the general study population, but they were more likely to do so to stay healthy or as a part of a healthy lifestyle.
- Members of the *actively balanced* and *out of balance* segments reported Web use similar to that of the general study population, but the *out of balance* group were much less likely to use the Web to look for health information to stay healthy or as a part of a healthy lifestyle.
- The *passively balanced* group was less likely than the general study population and the other four groups to look for health information on the Web; only one-third (34%) reported doing so. In addition, they were less likely to do so in a variety of circumstances, such as after hearing about health issues or as a part of a healthy lifestyle.

Table 23. Use of Web for health information in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Use Web to find health information (%)						
Yes	48	48	39	39	34	42
No	52	52	61	61	66	58
Reason for using Web to find health information (%)						
When a family member becomes ill.	63	70	61	71	66	67
When I become ill.	67	66	68	64	68	66
After hearing about a health issue from a friend or family member.	59	63	57	54	46	57
To stay healthy or as part of healthy lifestyle.	52	43	40	23	22	38
After hearing about a health issue on television or radio.	40	43	32	36	26	37
After reading about a health issue in a newspaper, magazine, or brochure.	34	37	30	30	22	31
Following a routine visit to a physician.	24	30	23	24	25	26

Table 23. Use of Web for health information, cont'd

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Online sources used for health information (%)						
Search engines	79	85	83	79	82	81
Health information portals	56	61	58	60	56	58
Nonprofit organizations	36	41	34	30	27	35
Centers for Disease Control and Prevention	25	26	24	25	16	24
Other government agencies	27	25	23	20	15	23
Media sites	16	16	14	11	10	14

Use of Other Sources

- Three-fifths (59%) of the general study population reported frequently using their doctor as a source of information on health and nutrition; other sources reported were the Internet (41%), magazines (37%), and family (35%) (Table 24).
- *Balance seekers* reported higher use than the general study population for virtually every information source. The *seeking but struggling* segment also reported higher use of most information sources than the general study population, although in some instances, slightly less than *balance seekers*.
- The *actively balanced* group reported use of information sources similar to that of the general study population; use of information sources by the *out of balance* and *passively balanced* groups tended to be less than that of the other groups.

Table 24. Use of other sources of health information, by frequency, in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Source for health and nutrition information, in order of frequency (%):						
Your doctor	65	66	62	55	46	59
The Internet	47	44	40	35	36	41
Magazines	50	44	36	28	25	37
Your family	39	38	38	31	32	35
Your pharmacist	37	37	35	28	26	33
Television	33	33	28	25	23	29
Your friends	35	35	26	24	24	29
Newspapers	35	31	30	20	20	27
A dietitian/nutritionist	18	17	13	8	7	13
Radio	15	13	12	9	10	12
Chefs/cookbook authors	16	14	12	7	7	11
Government source*	14	12	11	7	8	10
Church or other religious group	9	8	9	5	5	7

*For example, Centers for Disease Control and Prevention or National Institutes of Health.

Media and Leisure

Radio

- The general study population reported 12 hours per week spent listening to the radio (Table 25). The two most popular types of stations are "country" and "oldies" (30% vs. 29%, followed by "classic rock" (26%), "pop/top 40" (25%), "easy listening" (24%), and "talk radio" or "call-in radio" (24%).

- *The passively balanced* group listened to radio the most, and the *actively balanced* group listened the least. The stations favored by the groups were similar, although each group ranked the top 6 stations slightly differently.

Table 25. Radio listening in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Average No. of hours spent listening to radio in past week	11.6	11.9	10.6	11.6	12.8	11.8
Type(s) of radio station(s) favored (%)						
Country	27	31	26	32	31	30
Oldies	30	31	28	30	24	29
Classic rock	26	25	22	26	30	26
Pop/top 40	26	24	23	26	27	25
Easy listening	29	27	23	21	17	24
Talk or call in radio	27	24	24	23	25	24
All news	22	19	22	13	14	18
Religious or gospel	17	17	17	13	11	15
Alternative or progressive rock	14	12	12	12	19	14
Rhythm and blues	14	13	13	13	14	13
Hard rock	10	10	11	11	16	11
Classical	12	9	12	7	8	9
Jazz	12	10	11	7	8	9
Sports	9	9	10	8	10	9
Urban contemporary	6	6	6	5	9	6
Spanish	4	5	4	5	3	4

Television

- On average, the study population watched 16 hours of television per week and 9 hours per weekend (Table 26). The top three program types were news, dramas, and sitcoms.
- The numbers of hours spent watching television were similar among the groups; the *out of balance* segment watched television the most and the *balance seekers* segment watched the least.
- Health shows were the least popular of all shows listed (9%), and the *out of balance* and *passively balanced groups* were least likely to watch health shows.

Table 26. Television watching in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Time spent watching television (average hours per week)	14.1	15.6	15.0	17.8	14.8	15.6
Time spent watching television (average hours per weekend)	7.5	8.2	8.0	9.8	8.6	8.5
Type of program(s) watched at least once a week (%)						
Local or national news	81	80	80	77	73	78
Crime or law dramas	51	57	49	56	50	53
Sitcoms	46	47	40	53	51	48
Weather	42	42	42	37	36	40
Medical dramas	34	36	29	36	25	33
Sports	31	30	36	29	37	32
Reality television	28	29	24	33	31	30
Game shows	30	29	30	30	26	29
Movies made for television	29	33	26	29	23	29
Entertainment news	27	31	24	26	25	27
Cooking shows	29	29	24	25	19	25
Entertainment talk shows	23	27	22	24	21	24
Other dramas	23	28	20	25	21	24
Home and garden shows	25	24	20	21	19	22
Soap operas	18	20	16	21	14	18
Music channels	17	18	16	20	20	18
Political and news talk shows	16	15	18	11	12	14
Community programming	13	13	14	12	12	13
Travel shows	13	13	14	12	10	12
Health shows	12	11	9	6	5	9

Magazines

- Most (79%) of the general study population reported reading at least one of the magazines listed in Table 27. The most popular magazines, read by more than 10% of responders are *AARP The Magazine*; *Reader's Digest*; *Better Homes and Gardens*; *Family Circle*; *Good Housekeeping;* and magazines on food and cooking.

- The *balance seekers*, *seeking but struggling* and *actively balanced* groups were most likely to read at least one of the magazines listed. *Balance seekers* were also more likely than the other groups to read magazines in health and fitness.

- The *out of balance* and *passively balanced* groups were less likely than the other three groups to read any of the magazines listed (73% vs.71%) (data not shown). They also were the least likely group to read magazines on food and cooking or health and fitness.

Table 27. Magazine reading in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Magazines read regularly (%)						
AARP The Magazine	23	23	24	16	10	19
Reader's Digest	19	21	21	16	13	18
Better Homes and Gardens	19	18	15	11	9	15
Family Circle	16	16	11	12	7	13
Other magazines on food and cooking	17	16	14	11	9	13
Good Housekeeping	16	16	11	11	7	12
Woman's Day	14	15	10	11	6	11
Consumer Reports	13	11	12	7	7	10
People	11	12	9	10	7	10
TV Guide	10	12	10	11	7	10
Other magazines on health and fitness	17	12	11	4	5	10
Ladies' Home Journal	12	12	9	8	4	9
National Geographic	11	10	10	5	8	9
Newsweek	8	6	6	4	4	6
Parenting	7	6	5	6	4	6
Playboy	5	5	6	6	9	6
Redbook	7	7	5	5	3	6
Time	9	7	9	5	4	6
Cooking Light	8	6	6	3	3	5
Cosmopolitan	6	4	5	4	5	5
Ebony	6	6	6	4	5	5

Table 27. Magazine reading, cont'd

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Entertainment Weekly	5	5	5	5	4	5
Jet	5	5	5	4	4	5
Men's Health	7	4	8	3	3	5
Prevention	8	7	5	3	2	5
Sports Illustrated	5	5	6	4	7	5
Car and Driver	3	4	5	3	7	4
Essence	4	4	4	4	3	4
Glamour	6	5	4	4	4	4
Maxim	4	3	4	4	6	4
National Enquirer	3	4	4	4	2	4
Oprah	5	5	3	3	2	4
Parents	4	4	3	5	3	4
Soap Opera Digest	4	5	4	4	2	4
Southern Living	7	4	5	3	2	4
Woman's World	4	5	2	4	2	4
In-flight airline magazines	6	5	5	3	3	4
Computer magazines	4	4	5	4	5	4
Field & Stream	3	3	3	2	4	3
Motor Trend	2	2	4	2	6	3
Popular Mechanics	4	3	4	2	3	3
Popular Science	3	3	3	2	4	3
Self	3	4	2	2	2	3
US News & World Report	5	3	4	3	3	3
US Weekly	3	3	2	3	3	3
Vibe	2	2	2	2	3	3
Black Enterprise	3	2	2	2	2	2
Bon Appetit	3	2	2	1	1	2
GQ	3	2	2	1	2	2
In Style	3	2	2	1	2	2
Rolling Stone	2	2	2	2	3	2
Vogue	2	2	2	1	2	2
Elle	1	1	1	1	2	1
Latina	1	2	1	1	1	1
Marie Claire	2	1	1	2	0	1
More	1	1	0	1	0	1

Newspaper

- On average, the general study population read a newspaper 4 days per week (Table 28). They were most likely to read the front page, local and metro news, advertising supplements for stores, and the national news.

- The *balance seekers*, *seeking but struggling* and *actively balanced* segments had similar reading patterns. The *balance seekers*, however, were slightly more likely than the *seeking but struggling* and *actively balanced* groups to read the food and health sections, and *Parade* magazine.

- The *out of balance* and *passively balanced* segments reported reading a newspaper slightly fewer days a week than the other segments and the general study population. These two groups were also least likely to read the front page, national news, and the health section.

Table 28. Newspaper reading in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Read newspaper (average No. of days per week)	4.3	4.2	4.3	3.8	3.5	4.0
Newspaper sections likely to be read (%)						
Front page	90	88	87	83	80	86
Local and metro news	74	76	73	70	64	71
Weekly retail advertisements	66	67	61	61	53	62
National news	60	58	58	46	45	53
Entertainment section	53	53	50	48	43	50
Comics	46	50	48	47	46	47
Food section	53	48	46	37	27	42
Parade	50	45	43	39	28	41
Health section	52	47	46	28	22	39
Sports section	34	33	37	29	39	34
Other Sunday magazine supplement	39	38	34	31	24	34
Business section	39	34	37	29	28	33
Editorial section	35	33	37	28	24	31
Travel section	36	35	32	27	23	31
Skim most sections	13	15	14	16	16	15

Table 28. Newspaper reading, cont'd.

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Newspaper typically read (%)						
Local Sunday newspaper	69	65	67	65	58	65
Local Daily newspaper	63	63	62	59	54	60
Other local newspaper	33	33	28	30	32	31
USA Today	8	6	8	5	6	6
The New York Times	4	3	4	2	2	3
Wall Street Journal	5	2	3	2	3	3
Washington Post	3	4	3	2	4	3
Other national newspaper	4	3	3	2	3	3

Leisure Activities

- Only 11% of the general study population belonged a health club, and only 2% belonged to Weight Watchers (Table 29).

- The top five leisure activities were similar among the five groups: listening to music (79%), reading (55%), going to or renting movies (49%), shopping for fun (42%), and gardening (41%).

- The *balance seekers* and *seeking but struggling* segments were most likely to report being a member of a health club and belonging to Weight Watchers. The *actively balanced* group was similar to the general study population for health club membership and most of the leisure activities.

- The *out of balance* and *passively balanced* groups are least likely among the five groups to be members of a health club.

Table 29. Leisure activities in energy balance audience segments, 2005

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Current member of organization(s) (%)						
Health club or YMCA	14	15	10	6	8	11
Country club or golf club	4	3	3	1	3	3
Weight Watchers	5	4	1	1	0	2
Regular leisure-time activities						
Listening to music	82	81	79	76	79	79
Reading	63	62	57	49	46	55
Going to or renting movies	51	53	44	48	49	49
Shopping for fun	49	47	38	38	34	42
Gardening	51	44	44	34	35	41
Do-it-yourself home projects	46	41	41	34	41	40
Playing cards	38	40	36	38	40	39
Cooking or baking for fun	47	42	40	36	29	39
Playing computer games	31	40	29	42	37	36
Going to beach or lake	37	33	31	24	29	31
Picnics or parks	35	33	30	24	27	30
Playing board games	30	30	26	28	28	29
Lottery tickets or scratch-offs	24	27	23	30	27	27
Religious activities	32	32	31	22	19	27

Table 29. Leisure activities in energy balance audience segments, 2005, cont'd.

	Energy Balance Segments					
	Balance Seekers	Seeking but Struggling	Actively Balanced	Out of Balance	Passively Balanced	Total
Attending sports events	28	27	27	21	27	26
Playing video games	16	18	18	22	28	21
Arts and crafts	26	25	18	20	16	21
Theme parks or water parks	23	22	18	20	21	21
Going to theater or symphony	27	22	22	14	14	20
Going to the zoo	23	21	20	17	18	20
Photography	20	20	20	16	17	19
Sewing or needlework	23	22	17	17	11	18
Going to nightclubs or bars	16	15	15	16	23	17
Gambling or casino	16	17	16	18	19	17
Making scrapbooks and photo albums	19	18	14	13	11	15
Collecting (e.g., dolls or cards)	14	15	11	15	13	14

APPENDIX C: Audience Segmentation and Validation Methods

Forming Audience Segments

The type of analysis used for classifying (clustering) persons by their attitudes is referred to in the statistical literature as a "*k*-means" procedure. In this type of analysis, the number of segments (*k*) is specified in advance, and *k* respondents are chosen as the initial starting points for the groups. The segments "drift" as successive respondents are added to the appropriate segment. Each new respondent is added to the group characterized by attitudes most closely matching his or her outlook. However, if the respondent's attitudes are further from those of any existing segment than the characteristics of two groups are from those of each other, the two most similar groups are merged and the respondent becomes the starting point for a new segment. Once all participants are classified, subsequent passes through the data are made, shifting respondents as necessary to ensure that the outlook of each person is closer to the average characteristics of his or her segment than to those of any other segment.

In any sequential clustering procedure, the order in which respondents are added to segments is critical, so this order was not left to chance. The "*directed k*-means" clustering procedure was used. The respondents classified early are true prototypes of the segments, and the final clusters are as different as possible. This process was repeated six times to create six options, from a minimum of three clusters to a maximum of eight. These potential solutions were reviewed, and a five-segment solution was chosen because of its stability, as well as the ability to classify respondents into meaningful and useful categories.

Preparing Data for Cluster Analysis

Since the variables selected for the segmentation process (Appendix A) were not measured on a common rating scale, the first step in preparing data for cluster analysis was to standardize all the variables.

Once the data were appropriately standardized, principal components (factor) analysis was used to eliminate the "overlap" inherent in the answers to similar statements by using the relationships among the responses to recover the underlying factors. Each person could then be given a score for each factor. Each factor was a weighted combination of *all* the original statements, and the factors are uncorrelated. Distance-based clustering algorithms generally *assume* that the scores used in the clustering process are uncorrelated. If they are not uncorrelated, the calculated distances are incorrect and the clusters may be invalid.

The number of factors to be used in the cluster analysis was then decided. This number is typically fewer than the number used if the purpose of the factor analysis were simply to summarize relationships among the attributes. Attempting to use too much information in this process can result in segments that are less stable and thus less replicable than if fewer factors were used. Taken to an extreme, if all or even one-half of the factors were retained, considerable random variation in the data would also be retained. The resulting segments would not be reproducible in another sample population.

Validating Segments

Discriminant function analysis is used to classify cases by calculating values for a categorical dependent variable. If this analysis is effective for a data set, the classification table of correct and incorrect estimates will yield a high percentage of correct estimates. Multiple discriminant analysis (MDA) is used to classify a categorical dependent that has more than two categories by using as predictors a number of interval or dummy independent variables. For this analysis, MDA was used to serve two purposes: (1) to classify cases into groups and (2) to test the validity of theory (segments) by observing whether cases were classified as predicted

The 2003 and 2005 Porter Novelli HealthStyles and ConsumerStyles datasets were merged. The 2003 data were used as the analysis sample for training the discriminant function, and the 2005 data were used as the hold-out sample. MDA validated the segments identified. This process ensured that the segmentation process was repeatable across years. Of the original grouped cases, 89.4% were classified correctly. To provide the most up-to-date information, the 2005 data were used in creating the data tables in Appendix B and the profiles of the audience segments presented in this resource guide.

APPENDIX D: Survey Instrument and Methods

The large number of survey items used to identify audience segments can be impractical in most survey situations. Consequently, statistical analysis was performed on the data to identify a reduced set of variables that can accurately identify members in each energy balance audience segment. The goal was to identify a set of variables small enough to be practical for a population survey but adequately predictive of assignment to an audience segment.

The10-item survey instrument developed can be used to classify respondents into audience segments by energy balance. Included with this resource guide is the survey instrument in two formats: SPSS and Microsoft Excel. The Microsoft Excel tool is programmed to immediately identify the appropriate audience segment after a person responds to the ten questions, and instrument can be used with a small number of respondents, that is, in recruiting for formative research. (See the Microsoft Excel file sent with this resource guide.)

The 10-question survey tool is followed by the detailed SPSS syntax for computing the energy balance segments. This version is appropriate for use with large populations to assess placement of respondents in an energy balance segment.

Survey Instrument for Energy Balance Audience Segmentation

1. I am satisfied with my current weight. **[WTSAT]**

Strongly Disagree				Strongly Agree
1	2	3	4	5

2. I enjoy getting regular exercise. **[ENJEXER]**

Strongly Disagree				Strongly Agree
1	2	3	4	5

3. When choosing foods to eat and drink, I actively try to avoid high salt. **[AVOID2]**

Yes	No
1	0

4. When choosing foods to eat and drink, I actively try to avoid high total fat. **[AVOID3]**

Yes	No
1	0

5. When choosing foods to eat and drink, I actively try to avoid high saturated fat. **[AVOID4]**

Yes	No
1	0

6. Assuming that you want to, how confident are you that you can stay thin or lose weight and keep it off for at least one month? **[CONFTHI]**

Not at all Confident									Extremely Confident
1	2	3	4	5	6	7	8	9	10

7. How would you describe your weight? **[WTDESC]**

Very Underweight	Slightly Underweight	About the Right Weight	Slightly Overweight	Very Overweight
1	2	3	4	5

8. Are you currently trying to lose weight? **[LOSEWT]**

Yes	No
1	2

9. Thinking about ways to lose weight, how easy or difficult do you think it is to eat a little less each day? **[LWLESS]**

Very Difficult									Very Easy
1	2	3	4	5	6	7	8	9	10

10. Do you consistently limit your daily calorie intake to maintain your current weight or to lose weight? **[LIMCAL]**

Yes, I have been for 6 months or longer.	Yes, I have been for less than 6 months.	No, but I intend to in the next 30 days.	No, but I intend to in the next 6 months.	No, and I do not intend to in the next 6 months.
1	2	3	4	5

Energy Balance Audience Segmentation
SPSS Syntax for Computing Energy Balance Segments

Details of the syntax that can be used in SPSS for computing the energy balance segments are presented here.

Notes:

- Refer to variable names in bold in the survey instrument to match variable names to questions.
- To label your new variable in SPSS, use the following scoring key to align the data point for the cluster variable with the name of the energy balance segment:

  1 = Balance Seekers
  2 = Seeking but Struggling
  3 = Actively Balanced
  4 = Out of Balance
  5 = Passively Balanced

Syntax:

```
COMPUTE FC1 = -60.67 + (WTSAT*2.67) + (ENJEXER*4.372) + (AVOID2*2.264) + (AVOID3*4.789) +
(AVOID4*3.563) + (CONFTHI *1.665) + (WTDESC *11.486) + (LOSEWT*10.872) + (LWLESS*1.437) +
(LIMCAL*1.353).
EXECUTE.

COMPUTE FC2 = -55.309 + (WTSAT *1.986) + (ENJEXER *4.189) + (AVOID2*2.493) + (AVOID3*4.404) +
(AVOID4*3.281) + (CONFTHI*1.356) + (WTDESC*12.14) + (LOSEWT *10.281) + (LWLESS *0.857) + (LIMCAL
*1.738).
EXECUTE.

COMPUTE FC3 = -63.918 + (WTSAT *3.326) + (ENJEXER *4.002) + (AVOID2*3.012) + (AVOID3*4.734) +
(AVOID4*4.233) + (CONFTHI *1.685) + (WTDESC *10.599) + (LOSEWT *14.143) + (LWLESS *0.93) + (LIMCAL
*2.042).
EXECUTE.

COMPUTE FC4 = -52.89 + (WTSAT *2.301) + (ENJEXER *2.886) + (AVOID2*1.309) + (AVOID3*2.35) +
(AVOID4*1.294) + (CONFTHI *1.054) + (WTDESC *12.287) + (LOSEWT *12.096) + (LWLESS *1.146) + (LIMCAL
*1.991).
EXECUTE.

COMPUTE FC5 = -58.363 + (WTSAT *3.16) + (ENJEXER *3.653) + (AVOID2*0.18) + (AVOID3*1.196) +
(AVOID4*1.114) + (CONFTHI *1.614) + (WTDESC *10.681) + (LOSEWT *13.936) + (LWLESS *1.147) + (LIMCAL
*2.243).
EXECUTE.

IF (FC1 > FC2 & FC1 > FC3 & FC1 > FC4 & FC1 > FC5) CLS1 = 1.
EXECUTE.
IF (FC2 > FC1 & FC2 > FC3 & FC2 >FC4 & FC2 > FC5) CLS2 = 2.
EXECUTE.
IF (FC3 > FC1 & FC3 > FC2 & FC3 > FC4 & FC3 > FC5) CLS3 = 3.
EXECUTE.
IF (FC4 > FC1 & FC4 > FC2 & FC4 > FC3 & FC4 > FC5) CLS4 = 4.
EXECUTE.
IF (FC5 > FC1 & FC5 > FC2 & FC5 > FC3 & FC5 > FC4) CLS5 = 5.
EXECUTE.

COMPUTE EBALSEG = SUM (CLS1,CLS2,CLS3,CLS4,CLS5).
EXECUTE.
```