The Effects of a Nutritional Intervention on Healthy Eating Habits and Body Mass Index

Kelley Eshenaur

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THE EFFECTS OF A NUTRITIONAL INTERVENTION ON HEALTHY EATING HABITS AND BODY MASS INDEX

by

KELLEY ESHENAUER

EVIDENCE-BASED PRACTICE PROJECT REPORT

Submitted to the College of Nursing and Health Professions

Of Valparaiso University,

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in partial fulfillment of the requirements

For the degree of

DOCTOR OF NURSING PRACTICE

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ACKNOWLEDGMENTS

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ABSTRACT

In the US, overweight and obesity are growing concerns, as both can have life altering consequences if not prevented or treated. Since 2000, there has been nearly a 10% increase of adults who are obese, from 30.5% (85.8 million) to 39.8% (93.9 million) in 2016 (CDC, 2017). These conditions are preventable with early intervention and motivation. Obesity statistics are especially of interest during the transition to young adulthood. The purpose of this project was to improve student outcomes by identifying barriers, effective strategies, and healthy choices that would ultimately impact weight, increasing healthy food choices, and decreasing overall BMI in overweight and obese students. The Model for Evidence-Based Practice Change provided the framework and guidance of the intervention for this project. A literature search was conducted using six databases, which yielded 11 relevant articles. Levels and quality of evidence were determined by the rating scales of JHNEBP and ranged from level I to V, all of high-quality rating. The literature search revealed best practice to support behavior change. For this project, students within the college health setting were initially screened to determine their BMI. Those having a BMI of ≥ 25 kg/m² received an invitation to participate in a 12-week NP-led program nutrition program. The *New Leaf* (UNC CHPDP, 2013), a comprehensive tool (focused on increasing nutritional consumption, improving dietary behavior, and decreasing caloric intake) with established efficacy, was used as the foundation for educational sessions. Participating students completed pre-intervention *New Leaf* questionnaires which identified their dietary habits; then, those consenting to participate received an initial in-person educational session which lasted 30-45 minutes. Follow-up sessions, scheduled weekly, lasted lasting 15-30 minutes and addressed various healthy eating topics (e.g., consuming less sweets and selecting healthier choices when eating out). BMI was collected at each session, and there was no charge for the office visits correlating with participation in the project. Dependent t-tests were used to evaluate the effect of the intervention on the primary outcomes of this project: (a) the adoption of healthy eating habits (measured through the *New Leaf* questionnaires) and (b) BMI.
CHAPTER 1
INTRODUCTION

Implementing evidence-based practice (EBP) provides patients with the highest level of care and improves patients' outcomes. When health care professionals utilize EBP, they can feel confident that they are delivering care to their patients using the highest level of knowledge available (Melnyk & Fineout-Overholt, 2015). The focus of this EBP project is to implement the best practice for screening and treating college students that are overweight or obese. To determine whether this EBP project was essential, an analysis of the literature focusing on the population of interest was conducted.

Background

In the United States, overweight and obesity are growing concerns, as both can have life altering consequences if not prevented or treated. Overweight is defined as a body mass index (BMI) of 25 kg/m² to 29.9 kg/m², and obesity is defined as a BMI of ≥ 30 kg/m² (Centers for Disease Control and Prevention [CDC], 2017). These conditions are preventable with early intervention and motivation (Jensen et al., 2014). Yet, in recent years there has been a nearly 10% increase in the number of adults in the United States who are obese, from 30.5% (85.8 million) in 2000 to 39.8% (93.9 million) in 2016 (CDC, 2017).

Obesity statistics are especially of interest during the transition from adolescence to young adulthood. Overall, the national prevalence of being overweight is 17.8%, and obesity prevalence is 20.2% among adolescent boys (12–19 years); but, these statistics rise to 39.9% for overweight and 34.8% for obesity in men aged 20–39 years (CDC, 2017). Among adolescent girls (12–19 years), the prevalence of being overweight is 20.3% and obesity prevalence is 20.9%; but, these rates rise to 29.5% for overweight and 36.5% for obesity in women aged 20–39 years. The nationwide data of overweight and obesity in adults are also reflected in Indiana
statistics; in 2016, the State of Indiana reported that 34.7% of Hoosier adults were overweight and 32.5% were obese (CDC, 2017).

The CDC has noted the importance of addressing the prevalence of overweight and obesity because obesity-related conditions including heart disease, stroke, type 2 diabetes and certain types of cancer are the leading causes of preventable death (CDC, 2017). In 2012, approximately one-half of adults in the United States (49.8%, 117 million) had one or more chronic diseases; 24.3% of adults had one chronic disease; 13.8% of adults had two diseases; and 11.7% of adults had three or more chronic diseases (Ward, Schiller, & Goodman, 2014). Associated with the increase in chronic disease is an increasing cost of health care. Obesity increases the annual health care cost by more than $1,400 per person (Office of the Surgeon General, 2017). Yet, with early prevention and treatment options, overweight and obesity can be decreased. Young adult college students can decrease their risk of chronic disease; and ultimately, there will be a decrease in the nationwide financial burden of obesity.

Data from the Literature Supporting Need for the Project

Evidence supports the premise that a single solution to cure overweight and obesity does not exist. Yet, young adult college students face a great risk if they are not (a) taught healthy lifestyles and (b) educated on how to incorporate healthy nutritional food habits and healthier life choices.

In their Fall 2017 Executive Summary, the American College Health Association and National College Health Association (ACHA-NCHA, 2017) published findings from the ACHA-National College Health Assessment II (ACHA-NCHA II). The ACHA-NCHA II was a national research survey organized by ACHA, in collaboration with college health providers and educators, that collected data about students’ habits, behaviors, and perceptions on health topics. The ACHA-NCHA 2017 data were comprised of responses from 31,463 college student respondents, a response rate of 18.4% (ACHA-NCHA, 2017). Within the executive summary, it
was noted that 23.2% of college students were considered overweight, and an additional 14.6% of college students were obese.

Also included within the ACHA-NCHA executive summary report (2017) was information on the daily consumption of fruits and vegetables. Only 4.6% of student reported eating the recommended five or more fruits and vegetables per day; while, 24.8% noted that they ate three or four fruit and vegetable servings per day, 62.3% reported consuming only one or two servings of fruits and vegetables per day, and 8.3% reported consuming no fruits and vegetables per day (ACHA-NCHA, 2017).

Compounding this issue is the fact that the lack of healthy food intake is often associated with adoption of unhealthy behaviors. Yahia, Wang, Rapley, and Dey (2016) found that 38% of male and 30% of female college students reported consuming one to two sweets/cakes in one week, while 20% of males and 33% of females reported consuming three to four sweets/cakes in one week; not surprisingly, the consumption of high caloric, low nutritious foods was linked weight gain. Although Yahia et al. found that 78% of female college students and 52% of male college students were within healthy weight range, the authors noted that even when considering healthy weight, only 4% of college students (female and male combined) had adequate nutritional knowledge that could help them make informed decisions about food selection.

To address the impact of overweight and obesity on society, clinical practice guidelines have been developed that focus on healthy eating for disease prevention (Gonzalez-Campoy et al., 2013; Jensen et al., 2014). Recommendations and guideline summaries are also available for health care providers to follow. Although evidence has not demonstrated that one diet is superior to all others, specific recommendations are threaded throughout the literature: decreasing caloric intake; increasing consumption of fruits, vegetables, high-fiber bread, and fish; and journaling daily caloric intake (Ball, Leveritt, Cass, & Chaboyer, 2015; Mitchell, Ball,
Ross, Barnes, & Williams, 2017; Moyer & U.S. Preventive Services Task Force [USPSTF], 2012; Ritten, Waldrop, & Kitson, 2016; Thabault, Burke, & Ades, 2016; Wadden, Butryn, Hong, & Tsai, 2014). Understanding these general principles, it is also important to recognize that dietary adherence is more important than type of diet. Young adults can choose which healthy diet works best for their success (Kushner, & Ryan, 2014; Ryan & Kahan 2018). Health care providers may tailor interventions to the students' learning needs and styles of engagement while addressing foreseeable barriers to lifestyle changes (Laska et al., 2016; Plotnikoff et al., 2015).

Data from the Clinical Agency Supporting Need for the Project

Located in Northwest Indiana, Clinic X is a health center which serves undergraduate and graduate students at a faith-based institution. The health center provides primary care services focusing on health and wellness for the student population of more than 3,500. The health center is staffed with one physician, two nurse practitioners (NPs), one registered nurse (RN), and a medical assistant (MA). The clinic has regular operating business hours, Monday through Friday 8:00 am to 4:30 pm.

In September 2017, an increased provider concern was confirmed by biometric data trends collected within the Clinic X which identified overweight and obese young adult college students. Biometric screening consisted of measuring a student's height, weight, BMI, and other hemodynamic vital signs. During the month of September, the health center recorded 493 student visits. Of the 493 visits, 312 students had biometric screenings completed prior to seeing the provider. Of the 312 students screened, 81 students were overweight (25.96%) and 45 students were obese (14.42%). Thus, the percentage of overweight students seen within the health center was slightly higher than the national average of college students (23.2%) and approximated the national average (14.6%) for obesity (ACHA-NCHA, 2017).
Purpose of the Evidence-Based Practice Project

The purpose of this EBP project was to improve patient outcomes by identifying barriers and effective strategies to improve healthy choices that would ultimately impact weight: (a) increasing healthy nutritional food choices and (b) decreasing overall BMI in overweight and/or obese college students. Ultimately, the accomplishment of these short-term goals would be considered the start of prevention for the development of future chronic diseases for students that were identified as overweight or obese.

Compelling Clinical Question

This EBP project was designed to answer the following compelling clinical question: “What are the best practice strategies for addressing overweight and obesity in young adult college students?” Given the target population, it was determined that an intervention that enhanced motivation for sustained behavior change to increase healthy nutritional choices and decrease overall BMI, lessening the health risk and preventing the development of future chronic diseases, was imperative.

PICOT Question

Following the development of the compelling clinical question, a preliminary search for evidence resulted in the formation of a PICOT question. Components of PICOT questions are as follows: population of interest (P), issue or intervention of interest (I), comparison group (C), outcome to be measured (O), and timeframe of the intervention (T) (Melnyk, & Fineout-Overholt, 2015). The PICOT question for this project was “At Clinic X, what is the effect of participation in a 12-week multifaceted nutritional healthy lifestyle program at (a) improving healthy eating habits and (b) reducing BMI as compared to baseline data, for young adult college students that are overweight or obese?”

Each of these components was defined as follows:
(P) – The participants were non-pregnant undergraduate college students, aged 18 to 26 years old, seen in the health center setting (Clinic X) with a BMI score $> 25 \text{ kg/m}^2$.

(I) – The intervention was the integration of a multifaceted NP-led nutritional healthy lifestyle program.

(C) – The comparison was reported dietary habits and baseline BMI for the participants electing to participate.

(O) – The primary outcomes were to reduce the participants’ BMI score and improve adoption of healthy eating habits as measured by increased intake of fruits and vegetables and decrease intake of calories, saturated fats, carbohydrates, and sugar.

(T) – The participants were followed for a period of 12-weeks after the initial intervention.

**Significance of the EBP Project**

College students are commonly known for gaining the “freshman fifteen” or the extra pounds after leaving their parents’ homes to start living on their own (Gow, Trace, & Mazzeo, 2010). The adoption of unhealthy eating habits, and associated weight gained during college years, can contribute to the increased rates of obesity and overweight in young adults. Yet, these young adults have many resources available to them during their college years. Researchers have noted that higher learning institutions are an appropriate environment for targeting health behaviors (Plotnikoff et al., 2015).
CHAPTER 2

EBP MODEL AND REVIEW OF LITERATURE

Chapter 2 focuses on the evidence-based practice model and appraisal of literature for this EBP project. The Model for Evidence-Based Practice Change (MEBPC) provided guidance for the implementation and sustained the framework of the EBP intervention for this project. The MEBPC provided imperative guidance for answering the PICOT question: At Clinic X, what is the effect of participation in a 12-week multifaceted nutritional healthy lifestyle program at (a) improving healthy eating habits and (b) reducing BMI as compared to baseline data, for young adult college students that are overweight or obese?

Strategies were utilized for a comprehensive literature search, which included search engines, keywords, and limiters; an evidence summary is included. Within this chapter, the appraisal of literature is also discussed, and a table provided. The evidence collection for this project is synthesized and best practice explained. Furthermore, recommendations for the use of screening tools and follow-up nutritional weight loss interventions that improve food habits and address overweight or obese students’ BMI are also contained within this chapter.

Evidence-based Practice Model

Overview of EBP Model

Rosswurm and Larrabee’s Model for Evidence-Based Practice Change (MEBPC) guided the implementation and provided the framework of this EBP project’s intervention (Melnyk & Fineout-Overholt, 2015). The MEBPC contains six steps that integrate quality improvement with teamwork and use an evidence-based focus to advance through the processes to obtain improved outcomes. The six steps were as follows: (1) assess the need for change in practice, (2) locate the best evidence, (3) critically analyze and synthesize of the evidence, (4) design practice change, (5) implement and evaluate change in practice, and (6) integrate and maintain change in practice (Melnyk & Fineout-Overholt, 2015).
Step 1: Assess the need for change in practice. In this step, (a) a problem was identified and the need to change practice existed; (b) key stakeholders were gathered for support and buy-in; (c) data were collected about current practice and compared with external information; (d) the problem was linked with interventions and desired outcomes; and (e) a PICOT question was created (Melnyk & Fineout-Overholt, 2015; Rosswurm & Larrabee, 1999).

Step 2: Locate the best evidence. In this step, the (a) types of evidence and sources were identified; (b) concepts for the best evidence were reviewed; (c) search for the evidence was planned; and (d) search was carried-out (Melnyk & Fineout-Overholt, 2015; Rosswurm & Larrabee, 1999).

Step 3: Critically analyze and synthesize of the evidence. In this step, the (a) evidence was appraised and synthesis of the evidence was conducted; (b) assessment for the best evidence was completed; and (c) benefits and risks for the new practice were weighed out (Melnyk & Fineout-Overholt, 2015; Rosswurm & Larrabee, 1999).

Step 4: Design practice change. In this step, (a) change was defined; (b) needed resources were identified and listed; (c) a plan was designed and evaluated; (d) an implementation process was planned; and (e) outcomes were defined (Melnyk & Fineout-Overholt, 2015; Rosswurm & Larrabee, 1999).

Step 5: Implement and evaluate change in practice. In this step, the (a) plan was implemented; (b) processes, outcomes, and costs were evaluated and (c) a decision was made to adopt the change in practice, based on EBP project data and recommendations from stakeholders (Melnyk & Fineout-Overholt, 2015; Rosswurm & Larrabee, 1999).

Step 6: Integrate and maintain change in practice. In this step, the (a) change was communicated to stakeholders; (b) standards were integrated into practice; (c) progression and outcomes were monitored; and (d) results of the project were celebrated (Melnyk & Fineout-Overholt, 2015; Rosswurm & Larrabee, 1999).
Application of EBP Model to EBP Project

The MEBPC’s six steps of practice change were applied to this EBP project. The integration of each of the steps within Clinic X and among the young adult college students is detailed below.

Step 1: Assess the need for change in practice. A problem was identified within Clinic X, as there had been an increase of students seen with elevated BMI calculations. In September 2017, this provider concern was confirmed by biometric data trends collected, as noted in Chapter 1. The providers also reported students requesting information on ways to decrease their weight. Thus, within Clinic X, overweight and obesity were one of the problems that needed to be addressed. In addition, the lack of a protocol or guideline for screening and treating overweight and obesity within Clinic X warranted intervention. Therefore, it was determined that there was a definitive need for evidence-based practice change.

Step 2: Locate the best evidence. To locate the best evidence, an initial electronic search was completed within five databases. To ensure the literature search was defined, a meeting with a professional research librarian was completed. After the librarian meeting, a thorough, systematic database search for evidence was completed. Inclusion and exclusion criteria were used, along with a comprehensive search term and phrase list.

Step 3: Critically analyze and synthesize the evidence. The evidence was analyzed, appraised, and synthesized for the best evidence. Eleven high quality pieces of evidence were in the final selection for this EBP project. The evidence provided support for practice change. The feasibility, benefits, and risks of project implementation were evaluated during planning sessions with Clinic X staff.

Step 4: Design practice change. The design of practice change included (a) defining the change, (b) identifying and listing the needed resources, (c) designing and evaluating the plan, (d) planning the implementation process, and (e) defining the outcomes (Melnyk &
Fineout-Overholt, 2015; Rosswurm & Larrabee, 1999). The implementation for best practice and focused practice changes consisted of a motivational, flexible, and tailored programming intervention for improvement of student health behavior. The resources needed to initiate this practice change were identified and secured (i.e., screening/educational tools and personnel support).

**Step 5: Implement and evaluate change in practice.** Implementation and evaluation took place within Clinic X, a health center, located in Northwest Indiana, which served undergraduate and graduate students at a faith-based institution. Clinic X provided primary care services focusing on health and wellness for the student population of more than 3,500. The health center was staffed with one physician, two NPs, one RN, and one MA with regular operating business hours, Monday through Friday 8:00 am to 4:30 pm. The practice change implemented is further detailed in Chapter 3; evaluation of the practice change will be undertaken in Chapter 4 and Chapter 5.

**Step 6: Integrate and maintain change in practice.** Integration of the change into practice was key for sustainability of this project. This step, or process, included the staff and providers within the health center. Flowcharts of the screening process and guidelines were created for the health center staff to follow during the screening and referral process. Communicating frequently and monitoring everyone’s level of understanding and confidence, before, during, and after the screening and referral process was key for success during the change process. A timeline was discussed with staff to insure the students were referred at the proper time and had enough time to complete the full intervention for this project. Written and oral feedback was also welcomed to ensure that the staff and providers had a clear understanding of the change in practice and were able to maintain the practice change after the EBP project was completed.

**Strengths and Limitations of EBP Model for EBP Project**
The anticipated strength to using the MEBPC model was the broad design which allowed the project to improve on 1-step screening with the support of evidence-base practice to improve patient care. The MEBPC was deemed to be essential in helping guide Clinic X through the clinic change needed to be successful. A possible limitation of this MEBPC model was that change outside of the individual setting was not well described in this model. Therefore, adoption of this intervention in a large system of colleges, within college health facilities across the nation, or within organizational systems caring for the young adult population would not necessarily be supported. For example, the effects of social and environmental influence of change were not addressed within the MEBPC, and the steps fail to define the model’s application among the social and environmental influence a young college student might be experiencing.

**Literature Search**

**Sources Examined for Relevant Evidence**

A literature search was completed with a focus on primary care within the young adult population. The evidence was researched for best practice on guidelines and screening for overweight and obesity, as well as developing a nutritional intervention educational programing for those students who were identified as overweight or obese. As a result of this literature search, 11 pieces of evidence provided the foundation for this project (see Table 2.1).

**Search engines and keywords.** With the assistance of the professional research librarian, the databases utilized for this EBP project were Cochrane, Joanna Brigs Institute (JBI), and via EBSCOhost: CINAHL, MEDLINE, and Health Source. The key search terms utilized in CINAHL, MEDLINE and Health Source databases were: "primary care" or "primary health care" or "primary practice"; screen* or intervention* or "clinical practice guidelines" or "treatment guidelines"; weight* or "weight loss" or "weight maintenance" or "weight management" or "weight loss program" or obes* or "unhealthy weight" or overweight; diet* or nutrition* or calor*. 
In EBSCOhost the advance search or search mode for the Boolean phrases, when available, were chosen. In JBI, the search terms were utilized without the quotation marks. In the Cochrane database, the search included the MeSH headings primary health, adult, screen, weight, and nutrition. In addition, a hand search using the key words was conducted, citation chasing was completed, and national guidelines were accessed via web search (e.g., Google Scholar). Results of this systematic search is represented in Tables 2.1 and 2.2.

**Inclusion and exclusion criteria.** Initial inclusion and exclusion criteria were chosen to find and utilize the most recent and relevant evidence for this EBP project. Inclusion criteria were scholarly or peer reviewed, English language, human subjects, and published 2013-2018. The exclusion criteria were participants under 18 years of age, pregnant, underweight or BMI < 18 kg/m², and preexisting co-morbidities. Studies were also excluded if the research did not include a nutritional focused weight prevention or intervention. A hand search of the reference list of selected articles was undertaken; during citation chasing, the publication date was extended to 2011. Additionally, a search for supportive evidence was undertaken on the web pages of well-recognized national organizations (e.g., CDC, US Department of Health and Human Services [HHS], American Heart Association [AHA], and American College of Cardiology [ACC]).
Table 2.1

Review of Literature Search

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Levels of Evidence

The evidence level and quality guide utilized for this EBP project was the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP, 2017). Level of evidence was graded in a system used in evidence-based practice to describe the level of strength of the results in a research study. There are five levels of evidence in the table of hierarchy ranging from Level I, the highest, to Level V, the lowest. Level I evidence includes experimental studies, randomized controlled trials (RCTs), and systematic review of RCTs, with or without meta-analysis; Level II evidence includes quasi-experimental studies and systematic reviews of a combination of RCTs and quasi-experimental, or quasi-experimental studies only, with or without meta-analysis (JHNEBP, 2017). Level III evidence is non-experimental studies and systematic reviews of a combination of RCTs, quasi-experimental and non-experimental studies, or non-experimental studies only, with or without meta-analysis, and qualitative studies or systematic reviews with or without a meta-synthesis (JHNEBP, 2017). Level IV evidence includes opinions of respected authorities and/or nationally recognized expert committees/consensus panels based on scientific evidence, including clinical practice guidelines and consensus panels. Level V evidence is based on experiential and non-research evidence including literature reviews, quality improvement or program/financial evaluation, case reports, and opinion of nationally recognized experts(s) based on experiential evidence (JHNEBP, 2017). The highest level of evidence for this project were three Level I systematic reviews, two Level III studies (two pilot studies), followed by three Level IV guidelines. The lowest level of evidence for this project was three Level V pieces of evidence, guideline recommendations based on nationally recognized experts’ experiential evidence (see Table 2.2). A summary of evidence from each piece of literature is included (see Appendix A).
Table 2.2

*Levels of Evidence*

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<td>Kushner &amp; Ryan (2014)</td>
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Appraisal of Relevant Evidence

The quality appraisal tool that was utilized for evidence Levels I, II, and III for this EBP project was the Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal Tool (JHNEBP). The JHNEBP allows the researcher to rate the quality of a study as “A” high quality, “B” good quality, or “C” low quality or major flaws (Dang & Dearholt, 2017).

For Level I-III research, evidence rated as “A” high quality has consistent, generalizable results, a sufficient sample size for the study design, adequate control, definitive conclusions, and consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence (JHNEBP, 2017). Evidence rated as “B” good quality has reasonably consistent results, a sufficient sample size for the study design, some control, fairly definitive conclusions, and reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence (JHNEBP, 2017). Evidence rated as “C” low quality or major flaws provides little evidence with inconsistent results, has an insufficient sample size for the study design, or conclusions cannot be drawn (JHNEBP, 2017).

For Level IV evidence, clinical practice guidelines and consensus panels, evidence is also rated as “A” high quality, “B” good quality, and “C” low quality or major flaws (JHNEBP, 2017). Evidence rated as “A” high quality is developed or revised (within the last five years) by individuals/groups with clearly evident national expertise, sponsored by a private, public, professional organization, or government agency, with documentation of a systematic literature search and results supported by well-designed studies with sufficient numbers (JHNEBP, 2017). Evidence rated as “B” good quality has the same features, but the systematic literature search can be labeled as “reasonably thorough” and appropriate with findings among studies to be reasonably consistent and fairly definitive conclusions (JHNEBP, 2017). Level IV evidence rated as “C” low quality or major flaws is not sponsored by an official agency or organization and has
an undefined, poorly defined, or limited search strategy resulting in studies that have insufficient evidence with inconsistent results and conclusions cannot be drawn; low quality guidelines have also not been revised within the last five years (JHNEBP, 2017).

The JHNEBP rating for Level V evidence, expert opinion, is ranked in a more streamlined approach. Level V evidence is rated “A” high quality when thought leader(s) in a field (with clearly evident expertise) provide their scientific rationale and draw definitive conclusions (JHNEBP, 2017). Evidence is rated “B” high quality when the expertise appears to be credible and the author draws fairly definite conclusions and/or provides logical argument for opinions (JHNEBP, 2017). Level V evidence is rated as “C” low quality or major flaws when the author’s expertise is not discernable or is dubious or conclusions cannot be drawn (JHNEBP, 2017).

Permission to use the JHNEBP tools was obtained from the organization (see Appendix B). Using the JHNEBP tools, three systematic reviews, two pilot studies, three guidelines, and three expert opinions received an “A” high quality rating.

**Level I evidence.** The Level I evidence consisted of three systematic reviews. The dependent variables for improving dietary behavior and weight loss were decreased caloric intake; increasing nutritional consumption of fruit, vegetables, high-fiber bread, and fish; and journaling daily calories. These systematic reviews and guideline may have included other recommendations; however, only the data that were weight-related and dietary/nutritional were extracted from the studies.

*Increasing nutritional consumption and improving dietary behavior counseling.*

*Ball et al., 2015.*

Ball, Leveritt, Cass, and Chaboyer (2015) systematically reviewed 21 studies that focused on improved dietary behavior changes of nutrition care by primary health professionals. Nutritional care in this study was described as the support of a patient to improve his or her
dietary behavior that included a nutritional assessment, advice, and counseling in addition to a referral to nutritional health professional (Ball et al., 2015). Primary health professionals were clinicians that provided first point of care, general practitioners (physicians or nurse practitioners), nurses, dietitians, nutritionists, health counsellors, and exercise professionals (Ball et al., 2015).

The interventions for the studies (a) involved the support of nutritional care that was provided by primary health professionals; (b) included patients eighteen years or older; (c) included multiple consultations; and (d) were delivered by general practitioners (Ball et al., 2015). Nutritional care included nutrition assessment, nutrition advice, and nutrition counselling, as well as referrals to other nutrition-focused health professionals and services (Ball et al., 2015).

Most of the studies were RCTs \( n = 13 \), with fewer cluster-RCTs \( n = 5 \) and longitudinal pretest-posttest studies \( n = 3 \) (Ball et al., 2015). Fourteen of the studies included both men and women; five include women only, and two included men only. Nearly all of the studies included individuals with at least one risk factor for a chronic disease, but not a diagnosis of disease. The participants were recruited by letter or verbal invitation when at the clinic (Ball et al., 2015).

All 21 studies included a food outcome measure related to fruit and/or vegetable consumption, with three investigating fish intake, three investigating breads/cereal and dairy intake, and one investigating alcoholic beverage consumption. Eleven studies measured food intake through a general questionnaire, eight utilized a food frequency questionnaire, one utilized a food diary, and one utilized a dietary recall. Dietary recall was a detailed report of information about all the food and beverage a person consumed within 24 hours. None of the studies compared the food outcome measure to clinically meaningful changes, such as minimum consumption associated with reduced chronic disease risk. Twelve of the studies
observed significant improvements in the participants’ dietary behaviors. Examples of improvements within the studies included documented increase in daily fruit and vegetable intake, an increase in proportion of high-fiber bread, and an increase in daily fish consumed. Seven studies did not observe any improvement in dietary behaviors of participants after the intervention; one study observed equal improvements in fruit and vegetable intake among participants in the intervention and the control groups, and one study observed a reduction in participants’ daily fruit and vegetable consumption after the intervention (Ball et al., 2015).

In review, Ball et al. (2015) noted the following findings: (a) significant improvements in dietary behaviors were observed of the participants in the studies; (b) there is a potential for primary health professionals to facilitate improvements in patients’ dietary behaviors; and (c) nutrition care provided by primary health professionals has the potential to improve patients’ dietary behaviors. Yet, despite statistical improvements in measures of dietary behavior, the clinical significance of the improvements was not considered in any study. Therefore, it is unclear whether the improvements in dietary behaviors were sufficient to result in weight loss or an improvement in health outcomes associated with chronic disease. The researchers recommended that future interventions include measures of dietary behaviors, as well as biomarkers of chronic disease (Ball et al., 2015).

According to the JHNEBP tool, this systematic review was rated as “A” high quality. The body of evidence included within the Ball et al. (2015) systematic review supported the improvement of patients’ dietary behavior (a primary outcome of this EBP) when primary health professionals provide nutrition care. The evidence from this systematic review also provided support for the recruitment strategy (verbal invitation at the clinic) designed for this EBP project.

Mitchell et al., 2017.

Mitchell, Ball, Ross, Barnes, and Williams (2017) authored a systematic review (SR) of 26 RCTs that evaluated the effectiveness of individual consultations provided by dietitians in
primary care to help adult patients modify their dietary intake and improve their health outcomes. The majority of studies included in the SR were conducted in a single-site outpatient primary health care setting and recruited participants with at least one risk factor for chronic disease (Mitchell et al., 2017). Four of the studies included only women, while none of the studies only included men. Ten of the studies consisted of control groups receiving no intervention. Nine of the studies reported control groups receiving only the usual medical care with no nutritional care intervention. The control groups within the remaining seven studies received minimal care including attendance at a general nutrition session or a diet sheet of information given to the patient (Mitchell et al., 2017).

The intervention duration length varied from less than three months to twelve months; and in some studies, the duration was not specified. The number of dietitian consultations received per participant was reported in all but two studies, ranging from 1 to 19 (Mitchell et al., 2017). The total time spent in consultations per participant for 13 reporting studies ranged from 25 to 600 minutes (Mitchell et al., 2017).

A statistically significant between-group difference was used to indicate intervention effectiveness for dietary intake, anthropometric measurements, and clinical indicators ($p < .05$) (Mitchell et al., 2017). The measured outcomes included body weight in 14 studies, BMI calculations in 11 studies, measurement of waist circumference in four studies, and waist-to-hip ratio in one study (Mitchell et al., 2017). Mitchell and colleagues (2017) reported that seven of fourteen studies measuring body weight reported the primary focus of weight management; three of the fourteen aimed to reduce weight (two studies demonstrated significant benefit of the intervention); two studies aimed to prevent unwanted weight gain as a result of medical treatment (neither demonstrated significant differences between the groups); and two studies aimed to limit gestational weight gain (both studies showed significant benefit of the intervention).
Twelve of 26 RCTs included measures of dietary intake, using a variety of methods, with some studies using multiple methods. In seven of the studies, food records were used for three, four, and seven days (Mitchell et al., 2017). Two of the studies used the food frequency questionnaires (i.e., calcium 81-item and modified Block-National Cancer Institute Food Frequency Questionnaire), while a 24-hour recall method was used in another six studies (Mitchell et al., 2017). Eight of twelve studies focusing on measures of dietary intake showed significant improvements in intervention groups compared with control groups in at least one dietary variable (Mitchell et al., 2017). There were no significant differences between groups in any dietary intake variables for the other four studies that measured diet (Mitchell et al., 2017). Energy intake was evaluated in ten of the twelve studies; in these, researchers of three studies reported significant differences between groups (Mitchell et al., 2017). Fat intake was assessed in seven of the twelve studies; in these, authors of four studies revealed a significant decrease in fat intake in intervention groups compared with the control group; but, interestingly, one study showed a significantly more favorable decrease in the control group (Mitchell et al., 2017). Protein intake was evaluated in seven studies with a significant difference for the intervention group compared with control group were reported in two of the studies. Carbohydrate intake was assessed in five studies, with significant improvement in the intervention group in three studies. Fiber intake was assessed in five studies; results revealed significantly improved intake in the intervention group in two of these studies (Mitchell et al., 2017).

This review was the first synthesis of evidence evaluating individualized nutrition care provided exclusively by dietitians to adults in primary health care settings. Eighteen of the 26 studies demonstrated a positive effect of dietetic intervention, resulting in statistically significant differences in diet or clinical findings (e.g., weight, BMI, or waist circumference) in the intervention groups (Mitchell et al., 2017). The effectiveness of the dietetic consultation was demonstrated (a) in 11 of 21 studies for at least one clinical finding improvement with a nutrition-
related symptoms or mini nutrition assessment; (b) for 7 of 21 reporting biometric data improvement of weight, BMI, and waist circumference; and (c) for 8 of 12 studies reporting dietary data improvement of energy, carbohydrate, protein, fat, sodium, calcium, vitamin C, and carotenoids (Mitchell et al., 2017). Thus, Mitchell and colleagues concluded that consultations for adults in primary care settings appear to be effective for improvement in diet quality and weight loss outcomes with changes in weight (Mitchell et al., 2017).

According to the JHNEBP tool, this systematic review was rated as “A” high quality. Of particular pertinence to this EBP project, Mitchell et al.’s (2017) findings support consultations in primary care to improve diet quality and weight loss. Although within this SR, education was provided by a dietician; there is no reason to believe that the consultations could not be completed by an advanced practice provider.

*Decreasing caloric intake and improving dietary behavior counseling.*

*Wadden et al., 2014.*

A systematic review conducted by Wadden, Butryn, Hong and Tsai (2014) included 12 studies on behavioral counseling for overweight and obese patients in the primary care setting. Behavioral counseling for this review included (a) diet; (b) behavioral strategies; and (c) physical activity (Wadden et al., 2014). For the purpose of this EBP project, only the diet and behavioral strategies evaluated by Wadden and colleagues will be discussed.

Wadden and colleagues (2014) included types of studies with a combination visits including the primary care practitioner and counseling sessions with a trained interventionist over six months and compared them to studies with primary care practitioner visits alone. Wadden and colleagues also noted that, in multiple studies, behavioral counseling was guided principally by motivational interviewing or stages of change. Overall, the participants of the studies followed traditional behavioral counseling that included a decreased caloric diet, behavioral counseling strategies, and reported weight losses at six months.
Wadden and colleagues (2014) found that more treatment sessions, delivered in person or by telephone by trained interventionists, were associated with greater weight loss and likelihood of patients losing 5% or more of baseline weight. They found that quarterly or less frequent behavioral counseling by a primary care practitioner alone induced mean losses of only 0.6 to 1.7 kg in six to 24 months, while the interventions from the combination studies produced a mean weight loss of 4.4 kg to 3.5 kg. But, the greater number of counseling sessions (15 sessions) were associated with weight loss, ranging from 3.5 kg with eight sessions to 6.6 kg with 15 total sessions (Wadden et al., 2014). Of particular importance to this EBP project was the study conducted by Christian et al. (2011) in which the primary care practitioners delivered the behavioral counseling. The practitioners in the study utilized usual medical care or a computer-based assessment that (a) obtained diet and physical activity histories, (b) assessed patients’ motivations for weight loss, and (c) provided a tailored report for patients that was reviewed during two counseling visits. A tailored report was described as a computer-generated report addressing barriers to making lifestyle changes that was provided for patients. At 12 months, the control group gained a mean of 0.2 kg (only 8.5% in the control group lost at least 5% of their baseline weight) as compared to the intervention group which lost a mean of 1.5 kg, with 26.3% losing at least 5% of their baseline weight ($p = .002$ for weight loss; $p < .01$ for 5% of baseline weight loss) (Wadden et al., 2014).

In review, Wadden et al. (2014) determined that the interventions that reported reduction of patients’ daily caloric intake by 500 kcal/d, increased patient’s physical activity by 150 minutes a week of walking, and included traditional behavioral therapy reported larger weight loss than interventions without all three specific components. A mean of 6-month weight changes were reported from the baseline; in the intervention groups, weight loss ranged from 0.3 kg to 6.6 kg; and in the control group, weight change ranged from a gain of 0.9 kg to a loss
of 2.0 kg. In both groups, weight loss changes generally declined with longer time between follow-up sessions, typically 12 to 24 months (Wadden et al., 2014).

Wadden and colleagues (2014) concluded that primary care providers continue to play a critical role in diagnosing overweight and obesity; evaluating, assessing, and treating weight-related conditions; and monitoring changes in health that occur with weight control. Primary care providers can be trained to provide intensive behavioral counseling, but increasing demands on the providers’ time may favor their referring patients for behavioral counseling (Wadden et al., 2014).

According to the JHNEBP tool, this systematic review was rated as “A” high quality. Of particular pertinence to this EBP project was that primary care providers render a critical role in diagnosing overweight and obesity: evaluating, assessing, and treating weight-related conditions; and monitoring changes in health that occur with weight control. Obtaining diet and physical activity histories, (b) assessing patients’ motivations for weight loss, and (c) providing a tailored plan that addresses potential barriers is essential. These components are integral components of the intervention within this EBP project.

**Level III evidence.** The Level III evidence supporting the intervention for this EBP project contained two pilot studies. These studies may have included other recommendations; however, only the data that were weight-related and dietary/nutritional were extracted from each study.

*Increasing nutritional consumption and improving dietary behavior counseling.*

*Ritten et al., 2016.*

Ritten, Waldrop, and Kitson (2016) evaluated the feasibility and outcomes of a nurse practitioner delivered program, which targeted obesity, in a primary care setting (Ritten et al., 2015). A convenience sample was recruited by distributing recruitment brochures within the clinic and among other programs of the organization. Patients that expressed interest were
scheduled to meet with the primary investigator to obtain informed consent and assure congruence with the inclusion criteria (Ritten et al., 2016).

Inclusion criteria for this study consisted of participants that were (a) uninsured or low income; (b) adults, age 18 years old or greater; (c) women, not pregnant or lactating; (d) literate in speaking and reading English; and (e) BMI of 30kg/m² or greater (Ritten et al., 2016). The study, utilizing the FLIP-FLOP program, took place in a small primary care clinic serving low-income, uninsured patients in the southeastern United States and was part of a large faith-based organization that provided a variety of services for the poor (Ritten et al., 2016). The FLIP-FLOP program consisted of five individual primary care office visits that were scheduled every two weeks over a 12-week period during September through December 2012 (Ritten et al., 2016). The family nurse practitioner provided 15 minutes of one-on-one high-intensity behavioral counseling, at each of the five primary care office visits (Ritten et al., 2016). The nurse practitioner providing the care followed a general template at each primary care visit which included (a) provision of visit specific New Leaf materials, (b) use of pre-scripted motivational interviewing (MI), (c) assistance with SMART (specific, measurable, attainable, realistic, timely) goal setting, (d) participation in a brief learning activity and specific phrases of encouragement; and (e) goal setting with participants, assisted by use of the New Leaf tip sheets that corresponded with each module (Ritten et al., 2016). The visit specific toolbox was created for each of the five primary care office visits to enhance the patient experience during activity. Contents of each of the five toolboxes were selected based on relevance to the topic (Ritten et al., 2016).

Twenty participants enrolled in the study, 16 attended all five primary care office visits associated with the FLIP-FLOP program and completed all consenting and data collection activities pre- and post-program (80%) (Ritten et al., 2016). Data collected included use of the 52-item, Health Promotion Lifestyle Profile II (HPLP-II) to examine the domains of health
responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships, and stress management. Each response was scored as 1 = never; 2 = sometimes; 3 = often; 4 = routinely. Psychometric evaluation demonstrated content validity of the tool, via a literature review and appraisal by content experts. Participants were also asked to rate their perception of personal motivation towards healthy living in the past two weeks on a scale 0 (no motivation) to 10 (100% motivated).

The overall mean of the (HPLPII) for the participant group prior to participation in the FLIP-FLOP program was 2.27 ($SD = 0.31$), indicating that participants tended to rate their health promoting behaviors prior to intervention as “sometimes” to “never” (Ritten et al., 2016). Post-intervention, these scores significantly increased to a mean of 2.89 ($SD = 0.49$, $p < .001$), reflecting a more positive participant perception of their health promoting behaviors.

Examination of subscales of the HPLPII revealed significantly positive changes in all of the subscales ($p < .05$), except interpersonal relationships (Ritten et al., 2016). Motivation scores increased linearly as intervention visits progressed. For perception of personal motivation towards healthy living, the participants’ pre-intervention mean was 7.0 (70% motivated) (Ritten et al., 2016), but increased to a maximum mean of 9.2 (92% motivated) by the last intervention visit ($p < .01$) (Ritten et al., 2016). Participants reported improvement in health responsibility, physical activity, nutrition, spiritual growth, stress management, and motivation for healthy living ($p < .05$) (Ritten et al., 2016).

Over the course of the study, the number of participants who reported eating vegetables and/or fruits in the previous 24 hours increased to a statistically significant level ($p < .01$); HPLP-II subscale for nutrition $M = 2.15$ (16.4%) pre-intervention as compared to $M = 2.95$ (28.3%) post-intervention (Ritten et al., 2016). And, 50% of the participants decreased their BMI ($p = 0.15$); however, the change in BMI, $M = 45.0 \text{ kg/m}^2$ pre-intervention to $M = 44.5 \text{ kg/m}^2$ post-intervention was not statistically significant (Ritten et al., 2016).
In review, these researchers reported (a) an increase in health promoting behaviors in areas of health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships and stress management; (b) a decrease in diastolic blood pressure and body mass index values; and (c) an increase in the motivation for healthy living over the 12-week study period (Ritten et al., 2016). This study demonstrated that nurse practitioners can successfully deliver planned, meaningful, evidence based, high-intensity behavioral interventions focusing on weight reduction, diet and physical activity to patients who were obese during primary care office visits, even if the results do not achieve statistical significance (Ritten et al., 2016).

According to the JHNEBP tool, this pilot study was rated as “A” high quality. Of particular pertinence to this EBP project was the increase in health promoting behaviors in areas of health responsibility and nutrition. Also pertinent to this EBP project was the interventions’ positive impact on dietary intake of fruits and vegetables (an outcome that will be measured in this EBP project), and the percentage of participants who decreased their BMI as a result of participating in health promoting behaviors. But, of primary importance was the use of New Leaf educational materials in multi-visit sessions, scheduled every other week, provided by a family nurse practitioner.

Thabault et al., 2016.

Thabault, Burke, and Ades (2016) conducted a pilot study evaluating the feasibility and acceptability of an intensive behavioral treatment (IBT) program implemented in primary care practice. The convenience sample for this study consisted of 38 obese adults, 18 years of age and older, covered by Medicare, Medicaid, or commercial insurance who were primary care patients of a patient-centered adult internal medicine practice in New England; a region in which the prevalence rate of obesity was 25% (Thabault et al., 2016). Before the intervention, a presentation was provided to the practitioners; the presentation outlined (a) current obesity data for the practice population, (b) insurance coverage requirements for IBT in the primary care
setting, and (c) the planned program design (Thabault et al., 2016). All providers agreed to implement and support the program with appropriate referrals. Staff informed patients about the availability of a weight loss program and encouraged patients to ask their providers about the program; posters and brochures were placed in the exam rooms (Thabault et al., 2016).

Inclusion criteria for participants were: (a) have a BMI of at least 30mg/kg², (b) be able to understand, read, and write English, (c) be mentally alert and able to understand and participate in counseling, and (d) be able to participate in some form of physical exercise, such as walking or use of a stationary bike (Thabault et al., 2016). The exclusion criteria were: (a) patients on medications known to cause significant weight gain; or (b) patients who had a medical diagnosis that was known to cause weight gain (Thabault et al., 2016). No participants were excluded on the basis of other medications or other medical diagnoses.

The IBT program protocol consisted of an initial 30-minute visit and up to fourteen 15-minute follow-up visits over six months (Thabault et al., 2016). At the first visit, (a) weight, blood pressure (BP), and waist circumference were measured; (b) BMI was calculated and explained; (c) initial motivation for weight loss was explored; and (d) initial weight loss goals with individual daily caloric intake targets for weight loss were identified (Thabault et al., 2016). A standard basal metabolic rate calculator was used, and decreasing caloric intake by 500–1000 calories per day was recommended, for a one to two pound weight loss per week (Thabault et al., 2016). An information packet was reviewed by the NP and given to the patient; the packet contained (a) information and resources about the benefits of a healthy weight and physical activity; (b) a diet and activity journal; (c) a pedometer; and (d) a patient questionnaire that addressed weight loss goals, readiness to change, and a nutritional assessment (Thabault et al., 2016). The follow-up visits were arranged for brief interventions utilizing a motivational interviewing (MI) approach to support lifestyle changes to promote weight loss and assist in individual goal setting (Thabault et al., 2016). Education about reading food labels, nutrition recommendations, portion
guides, and activity benefits was incorporated into the visits (Thabault et al., 2016). In-person sessions were scheduled in accordance with Medicare coverage with visits every week for the first month, every other week for two to six months, and once per month during seven to twelve months of the program (Thabault et al., 2016).

During the first twelve weeks, a total of 36 adults participated in the IBT program: 61% (n = 22) were female and 39% (n = 14) were male (Thabault et al., 2016). The average weight for males entering the IBT program was 250 (range 189–311) pounds and the average weight for females was 217 (range 174–269) pounds. The mean BMI for males entering the program was 36.8 kg/m², range 30–42 kg/m². The average BMI for females was 37.9 kg/m², age range of 30–48 kg/m² (Thabault et al., 2016). Using a paired t-test, mean weight loss after four visits (4 weeks) was statistically significant at 6.6 pounds (p < .05) in aggregate; males (n = 14) lost an average of 8.9 pounds (p < .05), while mean weight loss for females (n = 22) was 5.2 pounds (p < .05). At eight visits (12 weeks), the mean weight loss was statistically significant at 10.77 pounds (p < .05) in aggregate; males (n = 14) lost an average of 11.73 pounds (p < .05), while mean weight loss for females (n = 22) was 10.16 pounds (p < .05). The range of percent body weight lost was −1.42% to 11.96%, with 39% of participants losing 5% or more of body weight in 12 weeks (Thabault et al., 2016).

In review, this study indicated that a NP-led IBT program for obesity in primary care practice was feasible, effective, and highly accepted by patients and providers. The patients experienced statistically significant weight loss at four weeks and twelve weeks and highly rated the individual lifestyle approach that was calorie based with integrated accountability and health care provider support (Thabault et al., 2016). Importantly, the weight loss results were clinically significant because patients lost more than 5% of body weight, an amount recognized as effective for reducing health risks (Thabault et al., 2016). Providers utilized the program by referring obese patients for treatment and observed positive results in their patients (Thabault et
al., 2016). Opportunities for improving the program were in the areas of increasing ease of scheduling and increasing feedback for providers (Thabault et al., 2016). The conclusion of this study was that an NP-delivered IBT program in an adult primary care practice using a MI counseling approach was effective for weight loss and was well received by patients and providers.

According to the JHNEBP tool, this pilot study was rated as “A” high quality. Of particular pertinence to this EBP project was an NP-led program for obesity in primary care practice that was feasible, effective, and highly accepted by patients and providers, with weight loss achieved at twelve weeks (timeframes for evaluation included in this EBP project).

**Level IV evidence.** The Level IV evidence contains three clinical practice guidelines and two recommendations from nationally recognized experts in the management of obesity. The authors from the recommendations sat on the panel of the Task Force for the Guidelines for Managing Overweight and Obesity in Adults (2013). The guidelines may have included other recommendations; however, only the data that were weight-related and dietary/nutritional were extracted.

*Guidelines for screening and treating for overweight and obesity.*

Gonzalez-Campoy et al., 2013.

Gonzalez-Campoy and colleagues (2013) reviewed 35 RCTs published from 2008-2012 and used the findings of those studies to develop their clinical practice guideline. They co-chaired The American Association of Clinical Endocrinologists (AACE) and The Obesity Society (TOS) and had noted there was no evidence-based clinical practice guideline to define the standards of care for healthy eating in the management and prevention of metabolic and endocrine disorders. To address this deficit, Gonzalez-Campoy and colleagues focused on primary, secondary, and tertiary prevention strategies to create guidelines that centralized an approach to behavior modification that addressed consistent healthy eating and physical
activity. The guideline consists of prevention strategies which included the following recommendations: (a) all patients should be educated on meal planning and healthy eating by qualified health care professionals; (b) calorie-controlled meal plan should be recommended; and (c) essential nutritional foods (healthy macronutrient intake) and water should be integrated within a healthy eating plan (Gonzalez-Campoy et al., 2013). Gonzalez-Campoy and colleagues (2013) included the following recommendations within a healthy eating meal plan: (a) carbohydrates should provide 45 to 65% of ingested energy; (b) simple sugars should be limited; (c) protein should provide 15 to 35% of calories; (d) fruits and vegetables intake should be at least 4.5 cups per day; and (e) unsaturated fats should replace high-saturated fat foods, providing 25 to 35% of daily calories. When creating a meal plan for a patient, Gonzalez-Campoy and colleagues noted that an important fact to remember was the total caloric intake must be appropriate for the individual weight management goals.

Gonzalez-Campoy and colleagues (2013) also included nutritional recommendations for secondary and tertiary prevention on how to approach overweight and obesity; these included that obesity and overweight should be managed as a long-term chronic disease. Gonzalez-Campoy et al. noted that (a) a multidisciplinary team approach should be used to address the issue; (b) interventions should target decreasing fat mass and correcting adipose tissue dysfunction through the use of nutrition counseling; (c) there should be a focus on adult feeding behaviors to counsel in healthy eating behaviors; and (d) individualized nutritional counseling should be provided (e.g., culture, educational, and linguistically for each patient). For overweight or obese patients, Gonzalez-Campoy and colleagues noted that the goal is lose 5 to 10% of current body weight over 6 to 12 months, with the goal continuing until an acceptable BMI is achieved. Gonzalez-Campoy and colleagues suggested the following strategies when counseling overweight and obese patients on low-calorie meal plans: consider (a) maintaining a healthy meal plan and avoiding fad diets, while including food choices from all major food
groups; (b) implementing a low-calorie meal plan with a deficit of 500 to 1,000 kilocalories per day (kcal/d) to help achieve a total weight-loss rate of 1 to 2 pounds per week; and (c) selecting a meal plan that ensures that all nutrient requirements were met.

In review, Gonzalez-Campoy and colleagues (2013) encouraged overweight and obese patients to consider themselves successful with weight management when they sustained behavior modification and food recordkeeping. The authors of this guideline opined that healthy eating must be maintained over a long period and should clearly be separated from fad diets, which were usually short-lived and often unhealthy. The authors of the guideline also addressed the importance of encouraging patients to avoid excessive amounts of foods and beverages that may have a negative impact on health (Gonzalez-Campoy et al., 2013). Encouraging the patients to learn new healthy nutritional habits, such as reading and understanding nutritional labels, proper meal planning, avoiding the term “diet”, and maintaining a caloric balance, will be important components to provide life-long durability (Gonzalez-Campoy et al., 2013).

According to the JHNEBP tool, this clinical practice guideline was rated as “A” high quality. Of particular pertinence to this EBP project are Gonzalez-Campoy and colleagues’ assertions of patient support and education that includes avoiding excessive calorie intake, avoiding fad diets, maintaining life-long healthy eating, avoiding the term “diet”, and reading and understanding nutrition fact labels.

Jensen et al., 2014.

In 2014, Jensen and colleagues, representing the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society, created guidelines for the management of overweight and obesity in adults. Their goals were to prevent diseases; improve the management of people who have these diseases through professional education and research; and develop guidelines, standards, and policies that promote optimal patient care and health (Jensen et al., 2014).
The summary of recommendations for overweight and obesity guidelines focused on identifying patients who need to lose weight (Jensen et al., 2014). These steps included biometrics measurements: (a) measuring height and weight and calculate BMI at every visit; (b) using the cut-off points for overweight as BMI 25.0–29.9 kg/m² and obesity as BMI > 30 kg/m² to identify adults; (c) advising overweight and obese adults that higher BMIs were linked with chronic diseases (i.e., cardiovascular disease [CVD] and type 2 diabetes); and (d) measuring waist circumference at annual visits or more frequently in overweight and obese adults (Jensen et al., 2013). Jensen and colleagues (2014) also noted the importance of advising adults that the greater the waist circumference, the greater the risk of CVD and type 2 diabetes. The authors of the practice guideline also recommended counseling and educating young adults about overweight and obesity and their associated cardiovascular risk factors. Jensen and colleagues noted that although lifestyle changes that produce a loss of only 3%–5% result in significant health benefits, sustained weight loss of 3%–5% has been shown to decrease the risk of developing CVD and type 2 diabetes.

In review, Jensen and colleagues (2014) recommended providers initiate three main dietary strategies to achieve a reduced calorie intake for obese or overweight individuals: (a) reducing caloric intake to 1,200–1,500 kcal/day for women and 1,500–1,800 kcal/day for men; (b) reducing caloric intake to 500 kcal/day or 750 kcal/day energy deficit, consuming fewer calories than the body’s needed caloric requirement; or (c) following one of the evidence-based diets that restricts certain food types (e.g., high-carbohydrate foods, low-fiber foods, or high-fat foods) in order to create an energy deficit by reduced food intake. For comprehensive lifestyle intervention and counseling, Jensen and colleagues recommended (a) educating patients on the use of behavior modification strategies to help the overweight and obese patient with the behavior change; (b) using on-site face-to-face interventions, high-intensity, individual or group sessions by a trained interventionist (e.g., more than 14 sessions in six months); and (c)
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initiating a weight loss program delivered electronically, including by phone, with personalized feedback from a trained interventionist. Jensen and colleagues noted that the electronically-delivered programs may result in lower weight loss than on-site face-to-face interventions, high-intensity, individual or group sessions by a trained interventionist.

According to the JHNEBP tool, this clinical practice guideline was rated as “A” high quality. Of particular pertinence to this EBP project was the guideline’s support of reducing caloric intake, educating on behavior modification, and multiple face-to-face individual interventions sessions.

_Moyer and USPSTF, 2012._

Moyer and other members of the U.S. Prevention Services Task Force (2012), updated the 2003 recommendations on screening, intervention, and treatment for obesity (defined as a BMI of > 30 kg/m²) and overweight (defined as a BMI of 25 to 29.9 kg/m²) in adults, reviewing the current state of the evidence and identifying new evidence to address previously identified gaps. The USPSTF members examined the benefits of screening and reviewed weight loss interventions with a primary focus to update overweight or obese nonsurgical interventions for adults aged 18 years or older (Moyer & USPSTF, 2012). During this time, the task force members also identified interventions that were deemed feasible to be initiated in primary care, as well as additional referable weight loss interventions (Moyer & USPSTF, 2012).

Within the evidence examined for the updated guideline, the mean BMI of participants ranged in the evidence examined ranged from 25 to 39 kg/m² with an average of 31.9 kg/m² (Moyer & USPSTF, 2012). No new trials were identified that compared screening for obesity in adults with no screening. A total of 58 trials of weight-loss interventions were identified. Of these, 38 trials (13,495 participants) involved behavioral interventions. In comparison with studies reviewed for the 2003 recommendation, there were 33 new trials of behavioral
interventions (Moyer & USPSTF, 2012). The majority of behavioral intervention trials were rated as high quality, with 24% rated as good quality (Moyer & USPSTF, 2012).

The intensive behavioral (IB) interventions for obese adults include the following components: (a) setting weight loss goals; (b) improving nutritional behavior; (c) addressing barriers to behavior change; and (d) self-monitoring (Moyer & USPSTF, 2012). The higher-intensity behavioral (HIB) interventions included multiple behavioral management activities, the IB interventions components plus (a) participating in group sessions; (b) scheduling individual sessions; and (c) maintaining lifestyle changes.

The USPSTF members found lifestyle change interventions were more effective and weight-loss improved if comprehensive HIB was involved (Moyer & USPSTF, 2012). In 12 to 18 months, most of the trials showed statistically significant effect on weight loss. The intervention groups lost 1.5 to 5 kg (3.3 to 11 pounds), or 4% of baseline weight, as compared to the control group participants’ minimal to no weight loss (Moyer & USPSTF, 2012). Even though a minimum number of 12 sessions was essential for weight loss, Moyer and colleagues (2012) noted that an increased number of sessions was associated with greater weight loss. Participants who attended 12 to 26 intervention sessions in the first year generally lost 4 to 7 kg (8.8 to 15.4 pounds; 6% of baseline weight) compared with 1.5 to 4 kg (3.3 to 8.8 pounds; 2.8% of baseline weight) in those who participated in fewer than 12 sessions.

In review, the evidence reflected that intensive behavioral interventions for obese adults could lead to weight loss (Moyer & USPSTF, 2012). The findings of the USPSTF were that the harms of screening and behavioral interventions for obesity were small, and the benefit of screening for obesity was moderate. Therefore, USPSTF has recommended screening all adults for obesity (Moyer & USPSTF, 2012). The task force has also recommended that clinicians offer intensive behavioral interventions to patients with a BMI of 30 kg/m² or higher. Intensive behavioral interventions include behavioral management activities: (a) setting weight-
loss goals; (b) improving diet and nutrition; (c) addressing barriers to change; (d) continuously self-monitoring; and (e) strategizing how to maintain lifestyle changes. The behavioral strategies should be combined with a reduced-calorie nutritional plan (Moyer & USPSTF, 2012).

Using the JHNEBP tool, this clinical practice guideline was rated as “A” high quality. Of particular pertinence to this EBP project were Moyer and the USPSTF’s (2012) support of setting weight-loss goals, improving diet and nutrition, addressing barriers to change, self-monitoring, and strategizing how to maintain lifestyle changes. It is also important to note that the American Academy of Family Physicians has endorsed the USPSTF’s recommendation on screening for obesity in adults in practice (Moyer & USPSTF, 2012).

**Decreasing caloric intake.**

*Kushner and Ryan, 2014.*

As a foundation for their expert opinion, nationally-recognized Kushner and Ryan (2014) identified recent systematic reviews from 1999-2011 that addressed five criteria. These five criteria were reported as RCTs having six months or more of observation, an intention-to-treat analysis, 80% study participant retention, less than 15% differential in treatment group dropout rate, and identical background intervention across treatment groups. The Guidelines for Managing Overweight and Obesity in Adults (2013) was based on systematic evidence and recommended that clinicians offer treatment to patients. Kushner and Ryan described current best practices for assessment and lifestyle management of obesity that can be applied to an individual patient. In this publication, patients were defined as healthy with a BMI of 18.5-24.9 kg/m², overweight with a BMI of 25-29.9 kg/m², and obese with a BMI of > 30 kg/m². Kushner and Ryan reviewed the five treatment recommendations for overweight and obesity treatment of adults: (a) risk assessment; (b) weight loss benefits; (c) diets for weight loss; (d) comprehensive lifestyle intervention approaches; and (e) bariatric surgery and provided expert opinion on their findings.
Kushner and Ryan (2014) stressed that the first step in obesity management is to screen all adults for overweight and obesity. Kushner and Ryan recommended that health care providers measure the patient’s waist circumference at each annual visit, more frequently if the patient is overweight or obese. Kushner and Ryan noted that the second step is obtaining the patient medical history, assessing for the multiple determinants of obesity (including diet and physical activity, psychosocial behavior, medications, and familial traits). The authors noted that next step is to advise overweight and obese adults with a BMI > 25 kg/m² that they were at greater risk of disease (Kushner & Ryan, 2014).

Kushner and Ryan (2014) opined that identifying obese patients who were at higher risk for developing complications was more useful than using BMI alone for treatment decisions; thus, Kushner and Ryan recommended matching treatment benefits with risk profiles of patients. For example, the authors noted that it was appropriate to counsel overweight and obese adults with cardiovascular risk factors that (a) lifestyle changes that produce even modest, sustained weight loss of 3% to 5% produces clinically meaningful health benefits and (b) greater weight loss produces greater benefits. However, patients that had a BMI > 25 kg/m² with a risk factor or a BMI > 30 kg/m² with or without comorbidities would benefit from an intensive behavior intervention (Kushner & Ryan, 2014). Furthermore, Kushner and Ryan reported that the goal is a weight loss of 5% to 10% of the patient’s current body weight; the authors reported that it was not necessary for patients to attain a BMI of less than 25 kg/m² to achieve a health benefit (Kushner & Ryan, 2014).

Kushner and Ryan suggested that treatment can be implemented either in a clinician’s office or by referral to a registered dietitian or commercial weight loss program. Kushner and Ryan noted that practitioners should provide encouragement and education on reducing calorie intake for obese or overweight individuals who would benefit from weight loss as part of a comprehensive lifestyle intervention. Comprehensive lifestyle interventions included counseling
and advising overweight and obese individuals to participate in a six-month program that used behavioral strategies to assist participants in adhering to a lower calorie diet and increasing physical activity (Kushner & Ryan, 2014). An example would be an on-site, high-intensity (14 sessions in six months) comprehensive weight loss intervention provided in individual or group sessions by a trained interventionist. The authors reported that any one of the following methods could be used to reduce food and calorie intake (a) 1200-1500 kcal/day for women and 1500-1800 kcal/day for men; (b) 500-kcal/day or 750-kcal/day energy deficit; or (c) evidence-based diets that restricts certain food types (such as high-carbohydrate foods, low-fiber foods, or high fat foods) to create an energy deficit Kushner and Ryan (2014) also reported that diet tracking, to enhance monitoring and accountability, helps (a) reduce caloric intake, with a goal of consuming 1200 to 1400 kcal/d, limit foods with a high glycemic index. The authors also recommended that patients could incorporate meal replacement products (bars, shakes, or frozen entrees) for additional portion and calorie control; and utilize cognitive behavioral therapy to address emotional eating and stress reduction.

In review, Kushner and Ryan (2014) recommended screening and assessment of patients for overweight and obesity should be started in primary care settings, followed by initiation of or referral for treatment. Kushner and Ryan opined that primary care practitioners have an opportunity and a challenge to provide care for their patients who were overweight or obese and assisting them with weight loss. This opportunity is to address the cause of many comorbidities and to have a major effect on the patient’s health (Kushner & Ryan, 2014). The challenges clinicians face is learning how to implement the behavioral intervention into the office setting, but guidelines provide a tool for clinicians in primary care and must be incorporated into the treatment plan of the clinician for patients who need to lose weight (Kushner & Ryan, 2014).
According to the JHNEBP tool, this expert opinion was rated as “A” high quality. Of particular pertinence to this EBP project was dietary adherence to patients’ preference diets of choice to help improve success.

*Ryan and Kahan (2018).*

Ryan and Kahan (2018) authored an expert opinion addressing guideline recommendations for primary care provider’s knowledge and skills for managing obesity. The areas Ryan and Kahan (2018) addressed within their publication consisted of (a) identification of the diagnosis and stages of obesity and overweight; (b) recognition and treatment of obesity-related comorbidities; (c) determination of appropriate patient-centered therapy; (d) management of weight loss intervention (diet, physical activity, and behavior modification); (e) consideration of obesity pharmacotherapy (avoiding medications that promote weight gain); (f) utilization of appropriate prescription of medications approved for chronic weight management; (g) referral to specialty care (bariatric procedures); and (h) prevention of weight regain in patients who were successful with weight loss. The US National Institutes of Health and the American Heart Association (AHA), American College of Cardiology (ACC), and The Obesity Society (TOS) were the three organizational guidelines discussed within this publication. The guidelines were reviewed in a systematic method to develop a recommendation on the inclusion of intensive behavioral therapy for weight management as a part of medical practice. Ryan and Kahan noted that intensive behavioral therapy included (a) setting weight-loss goals; (b) improving diet and nutrition; (c) addressing barriers to change; (d) self-monitoring; and (e) strategizing how to maintain lifestyle changes. As Ryan and Kahan noted that, the medical advice “just eat less and exercise more” was not effective for most patients to lose weight (Ryan & Kahan, 2018).

Based on their review of the literature and professional expertise, Ryan and Kahan (2018) recommended that behavioral therapy for weight loss should consist of face-to-face
(group or individual) sessions, with at least 14 sessions over six months. Continued monthly follow-up thereafter, then average weight loss of 8% of baseline weight at one year is expected.

Ryan and Kahan (2018) noted that society may believe in a magic diet, focused on various nutritional compositions including low-fat diets, low carbohydrate or high-protein diets, vegetarian, vegan, and various diets based on dietary patterns and eliminating or major food groups), but the evidence reveals dietary adherence is the best predictor of a patient’s success (Ryan & Kahan, 2018). In review, all of the diets that were studied (a systematic evidence review of 17 dietary patterns), the best predictor of success was dietary adherence (Ryan & Kahan, 2018). Thus, Ryan and Kahan advised all providers to recommend diets according to patient preference to improve adherence to achieve reduced caloric intake and weight loss. The authors noted that this expert opinion does not mean that diet composition is not important, but merely that negative energy balance is the key factor in promoting weight loss (Ryan & Kahan, 2018).

Using the JHNEBP tool, this expert opinion was rated as “A” high quality. Of particular pertinence to this EBP project was the authors recommendation of multiple face-to-face visits, inclusion of patients’ preference of dietary restrictions that result in a negative energy balance, of development of a prolonged plan of monitoring success.

**Level V evidence.** Level V evidence also contains the opinion of nationally recognized experts at the University of North Carolina’s Center for Health Promotion and Disease Prevention (UNC CHPDP, 2013). These pieces of evidence may have included other recommendations; however, only the information pertaining to weight and dietary/nutritional intake was extracted from the literature.

**Decreasing caloric intake.**

*UNC Center for Health Promotion and Disease Prevention, (2013).*
University of North Carolina (UNC) Center for Health Promotion and Disease Prevention (CHPDP), Center for Training and Research Translation (TRT), (2013) developed an evidenced-based comprehensive program known as *New Leaf…Choices for Healthy Living*. This program was designed for identifying dietary behavior, assessing physical activity, assessing barriers to change, facilitating goal-setting and self-monitoring, guiding health care counseling, and serving as a guide for discussion. *New Leaf*, an assessment and counseling tool used for making healthy behavior changes, contains modules with evidence-based recommendations on nutrition and healthy weight. Experts within the center have noted that core elements of *New Leaf* (assessment, goal-setting, self-efficacy, strategies, tailored feedback, and social support) are critical features of the interventions and should be kept intact (UNC CHPDP, 2013).

Thought leaders within the UNC CHPDP’s Center for Training and Research Translation have reported that one-on-one counseling is a delivery strategy that has been research-tested. These leaders included previously published research conducted by Keyserling and colleagues (2008), in which the researchers reported a significantly greater fruit and vegetable intake in an enhanced intervention group (92% follow-up at 6 months; $p = .05$). Keyserling and colleagues reported that although Dietary Risk Assessment scores (*New Leaf tool*) improved in both groups, the dietary improvement in the enhanced intervention groups was statistically greater than the minimal intervention group at both 6 and 12 months (90% follow-up at 6 months and 74% at 12 months; $p < .001$) (UNC CHPDP, 2013).

In review, Center for TRT used evidence-based strategies to develop the *New Leaf* tools to guide individual counseling about healthy eating and individually-tailored health behavior change programs. Social support for healthy eating was incorporated into the program to help the participates with understanding the why, where, and how to generate and sustain a successful support network (UNC CHPDP, 2013).
According to the JHNEBP tool, this expert opinion was rated as “A” high quality. Of particular pertinence to this EBP project was the reported greater fruit and vegetable intake reported from previous research utilizing an enhanced intervention, and the evidence supporting one-on-one counseling delivery strategies to improve patients’ intervention outcomes and overall success.

Construction of Evidence-based Practice

Synthesis of Critically Appraised Literature

A synthesis of the current literature must be performed in order to determine the best practice. Many interventions for nutrition and weight-related behavior in the literature focused on co-morbidities or adolescent population. The evidence reviewed reflects that poor diet and increased weight effects the adult’s risk of developing chronic disease and the associated lifetime of health concerns. A theme throughout the evidence reviewed has an effect on this project intervention, focused on dietary and/or weight-related behaviors and is essential to determine best practice to address the question: At Clinic X, what is the effect of participation in a 12-week multifaceted nutritional healthy lifestyle program at (a) improving healthy eating habits and (b) reducing BMI as compared to baseline data, for young adult college students that are overweight or obese?

*Increasing nutritional consumption and improving dietary behavior.* In this review, two systematic reviews and one guideline recommended increased consumption of healthy nutritional foods such as fruits, vegetables, high-fiber grains, and fish (Ball et al., 2015; Gonzalez-Campoy et al., 2013; Mitchell et al., 2017). Also within this project all studies (three systematic reviews, three guidelines, two pilot studies, and two expert opinions) recommended nutritional meal plans for the overweight and obese adult as an improved dietary behavior (Ball et al., 2015; Gonzalez-Campoy et al., 2013; Jensen et al., 2014; Kushner & Ryan, 2014; Mitchell et al., 2017; Moyer & USPSTF, 2012; Ritten et al., 2016; Ryan & Kahan, 2018; Thabault
Evidence has not demonstrated that one diet is superior to all others; specific recommendations are threaded throughout the literature: decreasing caloric intake; increasing consumption of fruits, vegetables, high-fiber bread, and fish; and journaling daily caloric intake (Ball et al., 2015; Mitchell et al., 2017; Moyer & U.S. Preventive Services Task Force [USPSTF], 2012; Ritten et al., 2016; Thabault et al., 2016; Wadden et al., 2014). The evidence reviewed for this EBP project reflected that incorporating meal planning within behavioral interventions provides nutritional guidance while allowing individuals the independence to pick foods that were liked, and still make healthy choices. Furthermore, the meal planning process should be sustainable after implementation has ended since the knowledge gained can initiate lifelong behavioral change in young adult college students.

**Decreasing caloric intake.** One systematic review, three guidelines, one pilot study, and two expert opinions identified that decreasing daily caloric intake would improve weight loss among overweight or obese adults (Gonzalez-Campoy et al., 2013; Jensen et al., 2014; Kushner & Ryan, 2014; Moyer & USPSTF, 2012; Ryan & Kahan, 2018; Thabault et al., 2016; Warren et al., 2014). One systematic review, three guidelines, one pilot study, and two expert opinions recommended caloric decrease range from 500-1000 kcal/d (Gonzalez-Campoy et al., 2013; Thabault et al., 2016), 1200-1400 kcal/d (Kushner & Ryan, 2014), to 1200-1500 kcal/d for women and 1500-1800 kcal/d for men (Jensen et al., 2014; Moyer & USPSTF, 2012; Ryan & Kahan, 2018; Warren et al., 2014). With decreasing the caloric intake, a recommended one to two pound of weight loss per week was preferred (Gonzalez-Campoy et al., 2013; Jensen et al., 2014; Kushner & Ryan, 2014; Moyer & USPSTF, 2012; Ryan & Kahan, 2018; Thabault et al., 2016; Warren et al., 2014).

**Nutritional journaling and tracking.** One systematic review, one guideline, one pilot study, and one expert opinions in this review identified nutritional journaling, recordkeeping, or
tracking as being useful in the success of weight loss among adults who were overweight or obese (Ball et al., 2015; Gonzalez-Campoy et al., 2013; Kushner & Ryan, 2014; Thabault et al., 2016). Encouraging young adult college students to track food consumed is an appropriate strategy for ensuring accountability for the caloric intake; journaling daily caloric intake was a specific recommendation throughout the literature (Ball et al., 2015; Mitchell et al., 2017; Moyer & U.S. Preventive Services Task Force [USPSTF], 2012; Ritten et al., 2016; Thabault et al., 2016; Wadden et al., 2014).

**Dietary behavior counseling and education.** Two systematic reviews, three guidelines, two pilot studies, and two expert opinions encouraged nutritional counseling or education for the overweight or obese adult as an important interventional component (Ball et al., 2015; Gonzalez-Campoy et al., 2013; Jensen et al., 2014; Kushner & Ryan, 2014; Moyer & USPSTF, 2012; Ritten et al., 2016; Ryan & Kahan, 2018; Thabault et al., 2016; UNC CHPDP, 2013; Warren et al., 2014). One guideline and one expert opinion considered this process as a greater benefit when there was a greater health risk to the overweight or obese adult (Jensen et al., 2014; Kushner & Ryan, 2014).

Understanding these general principles, it is also important to recognize that dietary adherence is more important than type of diet. Young adults can choose which healthy diet works best for their success (Kushner & Ryan 2014; Ryan & Kahan 2018). Health care providers may tailor interventions to the students’ learning needs and styles of engagement while addressing foreseeable barriers to lifestyle changes (Laska et al., 2016; Plotnikoff et al., 2015). Overall, gaining knowledge about nutrition is a motivator and a good way to improve an individual’s self-empowerment; also important is the ability to encourage the individual to continue to make lifelong healthy nutritional choices.

**Best Practice Model Recommendation**
The best practice recommendations, from the appraised evidence-based literature, was that all patients should be screened for obesity and overweight at each office visit, recording height and weight and calculating BMI. Patients who screen positive should have an intense multisession intervention initiated within the primary care setting. The motivational behavioral intervention should provide support and education, targeting improving dietary behavior (i.e., increasing consumption of healthy foods, decreasing caloric intake, journaling daily caloric intake) and last at least 12 weeks.
CHAPTER 3

IMPLEMENTATION OF PRACTICE CHANGE

Chapter 3 presents the fourth step of the MEBPC Model: design practice change. This step involves defining the change, listing the needed resources, designing and evaluating the plan, and implementing the plan (Melnyk & Fineout-Overholt, 2015). The focused practice change consisted of a motivational, multisession intervention program (that allowed flexibility based on patients’ preferences) for improvement of young adult college students’ healthy eating behavior that would ultimately impact BMI. Data were collected before and after the intervention to help answer the PICOT question: At Clinic X, what is the effect of participation in a 12-week multifaceted nutritional healthy lifestyle program at (a) improving healthy eating habits and (b) reducing BMI as compared to baseline data, for young adult college students that are overweight or obese?

Participants and Setting

The setting of this EBP project, Clinic X, was a health center in Northwest Indiana, which served undergraduate and graduate students at a faith-based institution. The health center provided primary care services focusing on health and wellness for the student population of more than 3,500. The health center was staffed with one physician, two NPs, one RN, and one MA and had regular operating business hours, Monday through Friday 8:00 am to 4:30 pm. The population of interest was young adult, undergraduate college students, aged 18 to 26 years old, seen in the health center with BMI scores $> 25 - 29 \text{ kg/m}^2$ (overweight) or BMI $> 30 \text{ kg/m}^2$ (obese). Pregnant women and individuals with a history of eating disorders were excluded from the project.

Pre-Intervention Group Characteristics

Prior to the initiation of this EBP project, clinic X providers were already reviewing students’ BMI scores and providing medical information to students that requested information
about eating healthy or losing weight, but a consistent approach to addressing overweight and obese patients had not been adopted. A sample survey revealed that 25.96% of students were overweight, and 14.42% were obese.

**Intervention**

In the pre-implementation phase, the post-master’s DNP student (PM DNP student) evaluated the needs of Clinic X and obtained support from supporting staff and providers. The EHR system was programmed to track students referred into the nutritional program, as well as to send reminders to the supporting staff to schedule the students per the program’s outline. Brochures were created to explain the nutritional program to students and serve as an informational tool for the supporting staff and providers. Approved materials for the nutritional program from the *New Leaf* toolbox were copied and stored at the nurse’s station. Writing journals were ordered for students to encourage positive behavior practices. A workflow was developed for supportive staff, to minimize any negative impact on the time required for patient care. A designated cabinet within the director’s (PM DNP student) office was used to store patient questionnaires. This locked cabinet was only accessible by the director (PM DNP student). An appointment type was added to the EHR to distinguish the existing clinic patients from the nutritional program patients. Students were assigned the special appointment type when scheduling nutritional visits. After the Institutional Review Board approval, implementation began September 1.

The intervention included routine screening for overweight and obesity in all students who had a provider visit (scheduled or walk in). Upon being brought back to the examination area by support staff (the MA or RN), patients’ biometric results (height and weight) were entered into the EHR, which calculated BMI. If the BMI was $\geq 25 \text{ kg/m}^2$, the patient received a verbal invitation from the support staff to participate in the complementary Valpo Fit and Well program. Data were collected and logged within the EHR for all patients, both those electing to
participate and those declining the recommendation. When the patients provided verbal consent to participate, they were given an information brochure by support staff, explaining the program and the expectations for participation. Consenting patients were then scheduled for their first session with the PM DNP student to begin the nutritional program; then a note and nutrition referral indication marker was placed within their EHR.

The Valpo Fit and Well was initially designed as a 12-week program, including weekly one-on-one counseling sessions per patient with the PM DNP student. All sessions were provided at no cost to the participant. To encourage continued participation and fit within the students’ busy schedules, Valpo Fit and Well sessions were designed to be scheduled on the same day and time each week. Students were able to confirm their next appointment prior to leaving the clinic, but were afforded the flexibility of scheduling an appointment at an alternative, convenient day and time. The initial 30- to 45-minute counseling sessions were conducted in-person in a private room within the health center. The 11 follow-up counseling sessions (also conducted in a private room within the health center) lasted 15 to 30 minutes, with BMI being collected at each session. Throughout the sessions, the focus remained on enhancing nutritional consumption, improving dietary behavior, and decreasing caloric intake.

Two different counseling cohorts were added after the PM DNP student noted a low number of enrolled participants. The first cohort consisted of a group of participants who met weekly on the same day each week. The counseling sessions for the group support cohort contained the same weekly educational content as the one-on-one cohort. The second added cohort was a self-study cohort, which allowed the participants (that had a challenging academic schedule, which prevented them from otherwise participating) to complete the Valpo Fit and Well program. Participants in the self-study cohort completed the pre-questionnaires and biometrical measurements during the initial session; then, they received all of the New Leaf educational materials electronically at one time, with guidance on how to complete each of the
12 weekly sessions. To conclude the nutritional program, the self-study cohort followed-up after
12 weeks to complete the post-questionnaire and biometrical measurements.

*New Leaf*, a comprehensive tool designed to be used in health care settings, was
incorporated throughout this intervention. The core elements of the intervention were used to
assess, set goals, build confidence, guide, provide feedback, and support. Permission to use
the *New Leaf* tools was obtained from the organization (see Appendix C).

During the first intervention session, the expectations for participation were reviewed,
written consent was obtained by the PM DNP student (see Appendix D), for those electing to
continue with the program. For the purposes of comparing pre-intervention and post-intervention
data, students electing to participate were asked to complete pre-participation questionnaires
(a) a number-identified (e.g., 001, 002, 003) “What Makes It Hard to Eat Healthy” (see Appendix
E), (b) a number-identified “My Weight” (see Appendix F), and in addition (c) a number-identified
“Dietary Risk Assessment” (see Appendix G). These forms were completed by the participant
and collected, by the PM DNP student, during the first scheduled intervention visit; the PM DNP
student then completed the patient identifier sheet (see Appendix H). Within the identifier sheet,
a correlating participant number was linked with the patient’s name so that individual data could
later be evaluated and aggregated. The patient identifier sheet was kept in a designated drawer
within the office of the PM DNP student. The office was occupied solely by the PM DNP student
and was locked when not in use.

Also, during the first intervention session, a detailed dietary health history was collected,
past barriers were reviewed, goals were set, and “Healthy Eating Tip Sheets” (see Appendix I)
were reviewed. A patient journal (see Appendix J) was given to the patient for nutritional
journaling/tracking. The student’s biometrics were collected, and the calculated BMI was
recorded in the EHR.
For intervention sessions two through twelve, biometrics were also collected, and a calculated BMI was recorded in the EHR. The second session was the intervention of the tip sheet titled “What is A Healthy Weight” (see Appendix K). The third session addressed “A Healthy Eating Plan for Life” and “New Leaf Cookbook” (see Appendices L & M). The fourth session was the review of the tip sheet “Healthy Weight Tip Sheet” (see Appendix N). The “Hot Tips for Healthy Eating” (see Appendix O) was the topic of review for session five. The sixth session was the tip sheet that addressed “Keeping Your Bones Healthy Tip Sheet” (see Appendix P). Within the seventh session “How Much Can I Eat”, “Fast Food Facts”, and “Read the Label” were the topics of discussion (see Appendices Q, R, & S). During the eighth session, “Eating Healthy on a Budget”, “Cooking for One or on the Run”, and “Shifting the Balance” (see Appendices T, U, & V) were reviewed with each student. The ninth session included “The Keys to Success”, “Success Stories”, and “Helping Others Make Food Choices” (see Appendices W, X, & Y). The tenth session reviewed “The ‘Skinny’ on Diets and Weight Loss” (see Appendix Z). During session eleven, “Thoughts, Feelings, and Weight: Break the Cycle” and “How to Deal with Stress” were reviewed (see Appendices AA & BB). During the final session, the participant completed a post-participation questionnaire that included items assessed at baseline (see Appendices D, E, & F). Each participant was also provided an individualized plan of care for follow-up based on results, and future goals were discussed.

Comparison

The participants served as their own comparison group for the evaluation of dietary changes. To compare the effect of the intervention on weight loss and BMI, in addition to participants serving as their own comparison group (pre- and post-intervention), changes in BMI (measured at approximately 12 weeks after invitation) of patients who were invited to participate, but declined, were compared to those of participants in the intervention.

Outcomes
The primary outcomes of this EBP project were (a) the adoption of healthy eating habits as measured by increased intake of fruits and vegetables and decrease intake of calories, saturated fats, carbohydrates, and sugar and (b) a corresponding reduction of overweight or obese students’ BMI scores. The improvement of healthy eating habits was measured by a pre-and post-intervention self-report, using Dietary Risk Assessment, My Weight Assessment, and What Makes it Hard to Eat Healthy risk assessment questionnaires (UNC CHPDP, 2013). The reduction of students’ BMI scores was calculated at each visit, collected from students’ medical record, and the data were calculated.

Secondary outcomes included a provider adoption rate. As an intention was to increase providers’ rates of screening for and initiating plans that addressed overweight and obesity, it was important to evaluate the entire practice’s adoption of the intervention. Thus, analyses were undertaken to evaluate provider adherence to scheduling student for an evidence-based nutritional intervention program. A comparison of patients eligible for invitation to participate based on BMI vs. those actually approached for invitation (referred to the nutritional program) was undertaken. Data to calculate this compliance ratio were retrieved from the students’ EHR.

Measures

Paired t-tests were used to evaluate the additional primary outcome: change in dietary habits, as measured by scores of New Leaf’s Dietary Risk Assessment, My Weight Assessment, and What Makes it Hard to Eat Healthy. Pre- and post-intervention data for each of these questionnaires, and the subcategories within the questionnaires, were calculated separately.

Reliability and validity of the New Leaf questionnaires have been established through previous research (UNC CHPDP, 2013). Materials from the A New Leaf (UNC CHPDP, 2013) modules A (Food Assessment and Tips), B (Healthy Eating), D (A Healthy Weight), and E (Healthy Weight Assessment and Tips) were used for this project. The Dietary Risk
Assessment, Weight Assessment, and What Makes it Hard to Eat Healthy (UNC CHPDP, 2013) were the questionnaires measured for this project.

A paired $t$-test was used to evaluate the additional primary outcome: mean participating students’ BMI scores of the pre-intervention to post-intervention. The comparison evaluated individual participants’ BMI scores pre- and post-intervention, and also compared groups of individuals (by gender, class rank, number of sessions attended, etc.) when feasible.

The PM DNP student obtained student acceptance rate by generating a report, accessible only to staff with access to the password protected computer, that identified (a) students within the EHR who had a calculated BMI of $\geq 25$ kg/m$^2$, and (b) those who elected to participate. Data was also collected on the number of visits that students did attend, and this data was used to compare to dietary changes and BMI reduction in secondary analyses.

An additional outcome measurement involved measurement of provider participation rate: the percentage of students who were screened for obesity and overweight (using BMI) and subsequently received referral or follow-up scheduling to the NP-led nutritional weight loss program, Valpo Fit and Well. Data were collected from the EHR system and analyzed.

**Time**

This project had a rolling enrollment, from September 2019 through February 2020, for initiation of the 12-week intervention. Project implementation began on September 5, 2019 to coincide with the students’ fall semester for the convenience of the student schedule and ended after the program completion of 12-weeks.

**Protection of Human Subjects**

The PM DNP student was aware that it was essential and mandatory to provide protection of all human subjects when implementing an intervention. Various methods were utilized to protect the rights of the participants for this EBP project. The project manager completed the Institutional Review Board (IRB) training through the National Institutes of Health
before planning and initiating this project (see Appendix X). As this intervention was based on strong evidence (not designed as primary research and not involving vulnerable populations) and part of the DNP program at the university, university IRB approval was not required. Student participation in this project was strictly voluntary. To assure confidentiality, the questionnaires were number-identified then assigned to the patient and did not include personal identifying information. All paper data were stored in a locked office cabinet and transferred to a computer by the PM DNP student. The computer was encrypted, password protected, and only the PM DNP student had access to the computer. The PM DNP student had authorized access to the EHR through employment status at the health center.
CHAPTER 4

FINDINGS

The purpose of this EBP project was to improve patient outcomes by identifying barriers and effective strategies to positively impact the health of college students. This EBP project was designed to answer the following PICOT question: “At Clinic X, what is the effect of participation in a 12-week multifaceted nutritional healthy lifestyle program at (a) improving healthy eating habits and (b) reducing BMI as compared to baseline data, for young adult college students that are overweight or obese?” The outcomes of this EBP project were identified as (a) a positive change in scoring between pre- and post-questionnaire answers and/or (b) a decrease in participants’ BMI scores. Ultimately, the collected data would also allow a comparison between students who participated in each of the three types of educational sessions: one-on-one, group support, and self-study.

Participants

The population of participants were young adult, undergraduate college students, aged 18 to 26 years old with initial BMI scores ≥ 25 - 29 kg/m² (overweight) or BMI ≥ 30 kg/m² (obese) who were seen in the health center September 2019 through February 2020. Overall, 64 students met the inclusion criteria and were invited to participate in the project; 18 consented to participate (15 completed the intervention); 46 elected not to participate.

Size and Characteristics

Participant group characteristics. Students who completed the Valpo Fit and Well intervention were largely female, 87% (n = 13); only 13% (n = 2) were male (see Table 4.1). The vast majority of participants were domestic students, 80% (n = 12); only 20% (n = 3) were international students. The housing status of participants was more equally balanced between residential and commuter students: residential 33% (n = 5), commuter 67% (n = 10). The class ranking of the participants were as follows: freshman 7% (n = 1), sophomore 13% (n = 2), junior
33% \((n = 5)\), and senior 47% \((n = 7)\). The completion rate was 83% \((15/18)\) of students electing to participate in the intervention.

The participants for this EBP project were self-divided into one of three types of sessions based on student preference and academic calendar: one-on-one, group support, and self-study. Based on self-selection, each session type ultimately consisted of five participants. The mean BMI \((\text{kg/m}^2)\) for the entire cohort of 15 participants was \(M = 31.81\): one-on-one cohort \(M = 31.44\), group study cohort \(M = 28.58\), and self-study cohort \(M = 35.42\).

**Non-participant group characteristics.** A group of ten students who met inclusion and exclusion criteria, but declined participation, were systematically selected (based on the ability to track follow-up BMI at approximately 12 weeks) to serve as an additional comparison for the interventions impact on BMI. The non-participants were all female and had a similar baseline BMI \((\text{kg/m}^2)\) of \(M = 29.42\).

**Changes in Outcomes**

For statistical analyses, the participants served as their own comparison group in the evaluation of dietary changes. To compare the effect of the Valpo Fit and Well intervention on weight loss and BMI, participants also served as their own comparison group (pre- and post-intervention), but a second comparison evaluated changes in BMI of patients who participated in the intervention (i.e., participant group) to those who declined to participate (i.e., non-participant group).

**Statistical Testing and Significance**

Descriptive and inferential statistics were used to evaluate the effectiveness of the intervention and significant outcomes. Paired \(t\)-tests were used to evaluate the primary outcome, change in dietary habits, as measured by scores of *New Leaf's* Dietary Risk Assessment (UNC CHPDP, 2013). Pre- and post-intervention data for each of the items on this
questionnaire (items 1-19) were calculated individually. Reliability and validity of the *New Leaf* questionnaires had been established through previous studies (UNC CHPDP, 2013).

A paired *t*-test was used to evaluate the additional primary outcome: mean participating students’ BMI scores pre-intervention to post-intervention. A paired *t*-test was also used to compare BMI scores of participants from those who elected not to participate.

Statistical testing was completed using IBM® SPSS Version 25. Statistical significance for all analyses was established at *p* < .05.

An adoption rate of 89% was calculated by the 64 participants were invited to participate by the 72 participants who qualified for the multifaceted nutritional program.

**Findings**

**Descriptive statistics.** A descriptive comparison of the students completing the intervention is provided in Table 4.1. Table 4.1 also allows for a graphic depiction of the characteristics of participants within each of the three types of educational sessions.

**Inferential statistics.** Paired *t*-tests were used to compare pre- and post-intervention data for the primary outcomes of this EBP project: changes in eating habits and BMI. Raw data and a summary of statistical analyses are presented in the narrative below and within Tables 4.2 and 4.3.

**Primary outcomes.**

A paired-sample *t*-test was calculated to compare the mean scores on questionnaire items 1 through 19, pre-intervention to post-intervention. The intervention was shown to positively impact a number of individual questionnaire items. For questionnaire item 1, daily servings of dark green or orange vegetables consumed, a significant increase pre-intervention, \( M = 1.67 \) (\( SD = .62 \)), to post-questionnaire, \( M = 2.07 \) (\( SD = .80 \)), was found (\( t = -2.45, \ p < .028 \)). For questionnaire item 3, a statistically significant increase in the daily servings of other vegetables (e.g., okra, zucchini, turnips, onions, cabbage, green beans, or tomatoes) consumed
was also noted: pre-intervention $M = 1.80$ ($SD = .56$) vs. post-intervention $M = 2.07$ ($SD = .59$) ($t = -2.26, p < .041$). For questionnaire item 6, targeting a decrease in the weekly servings of doughnuts, sweet rolls, pies, cakes, candy bars, chocolates, or other sweets consumed, a significant positive change was found: pre-questionnaire $M = 2.13$ ($SD = .62$), post-questionnaire $M = 2.67$ ($SD = .74$) ($t = -2.48, p < .027$). The positive change in scoring reflected a decrease in the unhealthy eating habit. For questionnaire item 9, aiming for a reduction in weekly servings of snack chips or pretzels consumed, a statistically significant positive change was noted: pre-questionnaire $M = 2.13$ ($SD = .83$), post-questionnaire $M = 2.60$ ($SD = .74$); this positive change in scoring also reflected a decrease in unhealthy eating habits ($t = -2.82, p < .014$). For questionnaire item 12, limiting the number of times in which the students ate out at a restaurant or carry-out (deep-fried or fried foods), the mean score increased from pre-intervention $M = 1.87$ ($SD = .83$), post-intervention $M = 2.47$ ($SD = .74$) ($t = -3.15, p < .007$); this positive change in scoring also reflected a significant change in unhealthy eating habits.

Dietary changes made in a positive direction, but that did not reach statistical significance included the following: (a) item 4, daily servings of fresh fruit; (b) item 5, daily servings of canned fruit in syrup; (c) item 7, weekly servings of ice cream; (d) item 8, weekly servings of ice milk, sherbet, or frozen yogurt; (e) item 11, weekly times eating a restaurant meal; (f) item 13, daily servings of whole grain breads; (g) item 16, weekly servings of white rice or pasta; and (h) item 17, weekly servings of whole grain cereal. An analysis of each item is reflected in Table 4.2.

Other dietary changes, item 2, daily serving of starchy vegetables; item 10, weekly servings of trans fats; item 14, daily serving of breads with whole grain or whole wheat flour; item 15, weekly servings of grains; and item 19, weekly servings of biscuits and cornbread, were not found to be positive changes. An analysis of these items is also reflected in Table 4.2.
A paired-samples t-test was calculated to compare the mean pre-intervention BMI of the entire cohort of participants to their mean post-intervention BMI. Although the intervention was intended to positively impact BMI (kg/m²), no significant change was noted among the cohort; mean pre-intervention BMI 31.81 (SD = 6.77), as compared to mean BMI post-intervention 31.46 (SD = 6.60). The BMI reduction of .35 kg/m² was not statistically significant (t = .681, p < .507).

A paired-sample t-test was also used to calculate the group and the self-study data. Within the group participants, the mean BMI (kg/m²) pre-intervention 28.58 (SD = 2.34) decreased to a mean BMI of 27.68 (SD = 2.19) group post-intervention; this BMI reduction of .15 kg/m² was found to be statistically significant (t = 5.69, p < .005). Within the self-study participants, the pre-intervention mean BMI (kg/m²) 35.42 (SD = 9.99) decreased to a mean BMI of 35.22 (SD = 9.81) post-intervention; but, this reduction of .18 was not statistically significant (t = 1.58, p < .189). The analysis of these items is reflected in Table 4.3.

A paired-samples t-test was also calculated to compare the mean baseline BMI 29.42 kg/m² (SD = 2.61) of the non-participants to their mean follow-up BMI 29.44 kg/m² (SD = 2.79). The BMI actually increased in this group, but the increase of .02 was not statistically significant (t = -.54, p < .958). Although there was not a significant difference between the participants and non-participants, the data supports the overall BMI reduction of .35 in the participant group, as compared to the BMI increase of .02 in the nonparticipant group to be notable.

**Secondary outcomes.**

A secondary outcome was the provider adoption rate. During the implementation phase there were 72 participants who qualified for the multifaceted nutritional program and 64 participants were invited to participate, an adoption rate of 89%.
Table 4.1

Project Participants Completing the Intervention

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>One-on-One</th>
<th>Group</th>
<th>Self-Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>13 (87%)</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Male</td>
<td>2 (13%)</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Domestic</td>
<td>12 (87%)</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>International</td>
<td>3 (13%)</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Resident</td>
<td>5 (33%)</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Commuter</td>
<td>10 (67%)</td>
<td>2</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Freshman</td>
<td>1 (7%)</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sophomore</td>
<td>2 (13%)</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Junior</td>
<td>5 (33%)</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Senior</td>
<td>7 (47%)</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 4.2

Summary of Dietary Risk Assessment Questionnaire Evaluation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th>Post</th>
<th>t-score</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vegetables and fruits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dark green/orange veggies (+)</td>
<td>1.667</td>
<td>2.067*</td>
<td>-2.45</td>
<td>.028</td>
</tr>
<tr>
<td>Starchy veggies (-)</td>
<td>2.933</td>
<td>2.867</td>
<td>.44</td>
<td>.670</td>
</tr>
<tr>
<td>Other veggies (+)</td>
<td>1.800</td>
<td>2.067*</td>
<td>-2.26</td>
<td>.041</td>
</tr>
<tr>
<td>Healthy fruits (+)</td>
<td>1.533</td>
<td>1.600**</td>
<td>-56</td>
<td>.582</td>
</tr>
<tr>
<td>Canned Fruits, in syrup (-)</td>
<td>2.733</td>
<td>2.800**</td>
<td>-.44</td>
<td>.670</td>
</tr>
<tr>
<td><strong>Sweets, snacks, and restaurants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baked goods/sweets (-)</td>
<td>2.133</td>
<td>2.667*</td>
<td>-2.48</td>
<td>.027</td>
</tr>
<tr>
<td>Ice cream (-)</td>
<td>2.467</td>
<td>2.733**</td>
<td>-1.74</td>
<td>.104</td>
</tr>
<tr>
<td>Frozen dessert (-)</td>
<td>2.800</td>
<td>2.867**</td>
<td>-1.00</td>
<td>.334</td>
</tr>
<tr>
<td>Snack chips/pretzels (-)</td>
<td>2.133</td>
<td>2.600*</td>
<td>-2.82</td>
<td>.014</td>
</tr>
<tr>
<td>Trans fats (-)</td>
<td>1.867</td>
<td>1.800</td>
<td>.37</td>
<td>.719</td>
</tr>
<tr>
<td>Eating out (-)</td>
<td>2.467</td>
<td>2.600**</td>
<td>-1.00</td>
<td>.334</td>
</tr>
<tr>
<td>Fried foods (-)</td>
<td>1.867</td>
<td>2.467*</td>
<td>-3.15</td>
<td>.007</td>
</tr>
<tr>
<td><strong>Breads, grains, and cereals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole grain breads (+)</td>
<td>2.067</td>
<td>2.267**</td>
<td>-.76</td>
<td>.458</td>
</tr>
<tr>
<td>White flour (-)</td>
<td>2.333</td>
<td>2.333</td>
<td>0.00</td>
<td>1.000</td>
</tr>
<tr>
<td>Other whole grains (+)</td>
<td>1.800</td>
<td>1.667</td>
<td>.62</td>
<td>.546</td>
</tr>
<tr>
<td>Other white rice/pasta (-)</td>
<td>2.333</td>
<td>2.667**</td>
<td>-2.09</td>
<td>.055</td>
</tr>
<tr>
<td>Whole grain cereals (+)</td>
<td>1.467</td>
<td>1.667**</td>
<td>-.76</td>
<td>.458</td>
</tr>
<tr>
<td>Sugar cereals (-)</td>
<td>2.733</td>
<td>2.600</td>
<td>1.00</td>
<td>.334</td>
</tr>
<tr>
<td>Biscuits/cornbread (-)</td>
<td>3.000</td>
<td>3.000</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note. (+) = an increase in positive behavior results in a higher post-intervention score, (-) = a decrease in negative behavior results in a higher post-intervention score

*statistically significant
**dietary changes made in a positive direction but not statistically significant
Table 4.3

*Summary of Body Mass Index Evaluation*

<table>
<thead>
<tr>
<th>Session Type</th>
<th>BMI</th>
<th>BMI</th>
<th>t-score</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-on One (n = 5)</td>
<td>31.44</td>
<td>31.48</td>
<td>-.25</td>
<td>.982</td>
</tr>
<tr>
<td>Group Support (n = 5)</td>
<td>28.58</td>
<td>27.68*</td>
<td>5.69</td>
<td>.005</td>
</tr>
<tr>
<td>Self-study (n = 5)</td>
<td>35.42</td>
<td>35.22**</td>
<td>1.58</td>
<td>.189</td>
</tr>
<tr>
<td>Participants (n = 15)</td>
<td>31.81</td>
<td>31.46**</td>
<td>.68</td>
<td>.507</td>
</tr>
<tr>
<td>Non-participants (n = 10)</td>
<td>29.42</td>
<td>29.44</td>
<td>-.54</td>
<td>.958</td>
</tr>
<tr>
<td>Total (n = 25)</td>
<td>30.86</td>
<td>30.65</td>
<td>.60</td>
<td>.555</td>
</tr>
</tbody>
</table>

*Note.* *statistically significant; **value changes made in a positive direction but not statistically significant.*
CHAPTER 5
DISCUSSION

This EBP project was designed to answer the question: At Clinic X, what is the effect of participation in a 12-week multifaceted nutritional healthy lifestyle program at (a) improving healthy eating habits and (b) reducing BMI as compared to baseline data, for young adult college students that are overweight or obese? The project was implemented at a health center located in Northwest Indiana. It was expected that the implementation of best practice (with focused practice changes consisting of a motivational, flexible, and tailored programming intervention) would improve healthy eating habits. The multifaceted implementation was comprised of (a) screening, (b) educational tools, (c) pre- and post-intervention questionnaires, and (d) pre- and post-intervention biometric measurements. This chapter will include an explanation of project findings, evaluation of key factors that contributed to the success of this project, and discussion of project limitations and implications for future projects of this nature.

Explanation of Findings

The findings of this EBP project are reflective of key concepts identified in the supportive literature: (a) the need for identifying barriers to change and (b) the need to identify and implement effective strategies to address healthy eating and decreasing weight. Implementation of the multifaceted nutritional program required the buy in of key stakeholders and voluntary enrollment of qualified participants. One group of stakeholders, the support staff, was chosen to facilitate the collection of the participants’ biometrical measurements and to invite the qualifying students to join the program.

After a few weeks into the project, it was apparent that the previously designed intervention of individualized educational program sessions needed to include more flexibility for this student population. Time commitment was one reason for the lack of enrollment into the program, and the second reason was the academic calendar; these two were key barriers to
project success. Initially, the program design was intended for the student to meet weekly for 12 sessions; but due to the lower enrollment numbers, the design had to be adjusted. The PM DNP student went back to the literature, noting that researchers had previously documented the need for flexibility in educational format to meet participants’ learning needs and preferred styles of engagement (Laska et al., 2016; Plotnikoff et al., 2015).

To meet the need for flexibility, two different session types were added to the program: group support and self-study. Those categorized as “group support” participants self-selected and recruited their peers to participate; they received the same educational content in a group environment and provided support to other members. Those categorized as “self-study” participants, who self-selected this educational option (most commonly due to reported difficulty in maintaining a weekly schedule of sessions), received all educational materials electronically after the first face-to-face educational session.

The PM DNP student also anticipated that those enrolled in the program would face a barrier in maintaining healthy food habits over the 4-week holiday break, which would impact project success. The decreased face-to-face time, change in routine, and increased availability of high-caloric food while away from campus was reported to be the cause of added weight or no weight change when the participants returned from holiday break. Despite this impact, all participants stated that they viewed food differently over the holiday and reported choosing healthier foods or eating less unhealthy food than they would have if they were not enrolled in a nutritional program.

A barrier related to weight loss in the “one-on-one” cohort was that the individual sessions were designed to be as flexible as possible to accommodate the participants’ schedule; but even with this flexibility, sessions were missed or rescheduled due to workload or examinations. Unfortunately, this flexibility may have actually attributed to less accountability for a few participants in the individual sessions. Those who had were less stringent in following up
had less success with their weight loss. Anecdotal data from three of the five “one-on-one” participants’ BMI increased was obtained during follow-up sessions; these individuals reported that life circumstances were a challenge for them to stay on track with their healthy eating. For example, one participant, a fall graduate, was enjoying her last months of college celebrating, with eating out and desserts. A second participant, an international student, found the unlimited ice cream bar on campus hard to pass-up each time she went to the university café; and a third participant volunteered at community meal gatherings at a local church, where they served donated sweets, which he was unable to resist.

Anecdotal information from follow-up sessions also revealed some insight into members in the one-on-one cohort who were successful in the efforts of eating healthier and losing weight. One participant started the program with a BMI of 27.8 kg/m² and finished the program at 26.2 kg/m² (a weight loss of 4.8 pounds); she was a sophomore, on-campus resident who reported decreasing portion sizes and increasing vegetable and fruit intake to curb her hunger. Another participant started the program with a BMI score of 40.8 kg/m² and finished the program at 35.5 kg/m² (a weight loss of 14.4 pounds) she was a junior, on-campus resident who reported that learning what to stay away from (e.g., white bread and rice) was helpful for her. This student also mentioned the meeting each week with the PM DNP student held her accountable.

Even though there was not a statistical significance in BMI changes within those participating in individual sessions, all those within the one-on-one cohort reported the program was educational and life changing. Not unanticipated, consistent food journaling and appointment attendance appeared to be linked to individual outcomes. The participants within the one-on-one cohort who failed to journal all foods they consumed throughout the program had fewer positive results than those participants who journaled on a regular basis. Those who didn’t document their intake may have been more successful if they were to keep up with their weekly journaling as the research indicated (Ball et al., 2015; Gonzalez-Campoy et al., 2013;
Kushner & Ryan, 2014; Thabault et al., 2016). For those with inconsistent appointment attendance, making up the appointments later in the week, rather than cancelling the scheduled appointment completely, may have been helpful. Even though the appointments were the same time each week, an email reminder of scheduled appointment times may have been helpful for the individual session participant. When the participants returned for their individual sessions, a discussion about their current life events and the challenges they were facing (as well as the nutritional education and consultation) was undertaken. With current life events impacting attendance, three individual session participants switched to self-study sessions; the noted reason for the switch was due to the time commitment the weekly one-on-one sessions required.

Two factors are thought to be linked to the success of those self-selecting to participate in group sessions: (a) the additional social support provided by group members and (b) the frequency of feedback. The group support cohort, like those electing to participate in the individual sessions, had twelve biometrical measurements (which provided timely reinforcement of positive changes). Students self-selecting as group support participants were five female commuting seniors. The group support cohort (a) made all meetings as scheduled, (b) showed support for one another during the meetings, (c) journaled in their food diaries, and (d) planned healthy meals over the holiday break. As research has indicated, if the key elements were present (i.e., dietary behavior counseling and education, nutritional journaling or tracking, decreased caloric intake, and meal planning to include improving dietary behavior), the participants would have greater chance of positive outcomes (Gonzalez-Campoy et al., 2013; Kushner & Ryan, 2014).

A number of barriers could have impacted the outcomes for those self-selecting the self-study sessions. The frequency of follow-up was a factor that could have impacted the lack of effectiveness seen within this cohort. Those participating in the self-study sessions completed
pre- and post-intervention questionnaires (like the other two cohorts), but completed only two biometric measurements (while other groups had weekly assessments of their BMI and weight). Although members of the self-study cohort could have obtained biometric measurements on their own, the lack of regular evaluation at the health center could have factored into the outcomes. In addition to limited biometric measurement to reinforce positive changes, for those in the self-study cohort, all educational materials, along with a recommendation schedule for weekly review, were electronically sent after the first session. Three of the participants in this cohort actually started in the individual sessions but were invited to join the self-study cohort when they noted that their academic schedule would impact their ability to attend weekly sessions at the health center. All self-study participants found the *New Leaf* educational information to be helpful although the participants gave little to no feedback on their perspective of the EBP project implementation process.

Given that the self-study participants did not attend weekly sessions or receive support from their peers or the PM DNP student, it was anticipated that those who participated in the self-study cohort would have less success in reducing BMI than those participating in the one-on-one and group support cohorts. Within the self-study cohort there was little change in the weight from the pre- to the post-weights. The one-on-one cohort had two participants that decreased BMI scores, two participants that increased BMI scores, and one who had no change in BMI score. All the participants in the group support cohort had a decrease in BMI score, which may have led to the statically significant findings.

Within the *New Leaf* tools, the importance of (a) increasing vegetable and fruit consumption, (b) decreasing consumption of sweets and chips, and (c) decreasing take-out and fried foods was discussed multiple times. Thus, it was not surprising to note statistically significant positive changes on questionnaire items 1, 3, 6, 9, and 12. Although content related to whole grains, rice, and breads was introduced, the level of reinforcement did not approximate...
that of increasing vegetables and fruits, decreasing sweets and chips, and decreasing take-out and fast-food consumed. Thus, it was anticipated that the intervention could have less impact on those behavior changes. Interestingly, students did report that eating starchy vegetables, although not ideal in comparison to green leafy vegetables, was still viewed as an improvement over selecting a bag of chips.

Within the entire cohort of 15 participants, additional factors could have impacted project success, especially the residential students. Participants from all cohorts that resided on campus and had a university meal plan noted that having access to the unlimited ice cream bar in the café proved to a challenge to their intent to adopt healthier eating habits. It was also noted that the limited number of on-campus dining options led students to find other choices of foods on the weekends, which was noted to be linked to unhealthy eating.

For all participants, the length and timing of the project could have limited their ability to achieve weight loss and changes in BMI. As some researchers within the supportive evidence followed participants for a longer period of time to evaluate intervention effectiveness (Mitchell et al., 2017; Ritten et al., 2016; Moyer & USPSTF, 2012; Thabault et al., Wadden et al., 2014), if the PM DNP student was able to monitor the participants for a longer period of time, it is anticipated that better outcomes would have been achieved. This EBP project was implemented with a rolling enrollment from September 2019 through February 2020; this time period included a 1-week fall break and 4-week winter break. The implementation period included three major holidays; during those breaks, participants often went home to spend time with family and friends, which was commonly associated with meals together. Providing a longer follow-up would allow the opportunity to reinforce the positive changes in eating habits which could be maintained during tempting times away from campus. Establishing weekly follow-up emails, text messages, or phone calls, as part of the intensive intervention, over breaks may have improved outcomes and decreased temptation.
In evaluating the secondary outcome, it was determined that the provider adoption rate was high due to the active participation of the PM DNP student, who worked full time at the health center; therefore, the PM DNP student was physically present as a reminder. This success was linked to the buy in from the key stakeholders, the RN and MA, who served to invite participants regardless of who the primary care provider was for the day. There were two main reasons that qualifying students were not invited to participate (leading to the less than 100% adoption rate): (a) the potential participants were more seriously ill and seen at the health center for an acute care visit (the reason for visit took precedence over the invitation to participate); and (b) the usual workflow was altered (e.g., the participant used the restroom to leave a specimen, rather than being immediately roomed or a higher census required the provider [other than the PM DNP student] to room his/her own patients, thus limiting contact with the MA or RN). These were deemed to be valid rationale and reflective of the anticipated barriers faced in primary care.

**Strengths and Limitations of the EBP Project**

**Strengths**

A number of strengths were apparent within the planning and implementation of this EBP project. The strengths are outlined within the following narrative.

Within the planning, the MEBPC proved to be a strength of this project. The model had established efficacy in supporting change within individual settings the benefit of the MEBPC model was the broad design, which guided the EBP process through six easily followed steps. The guidance was especially helpful for the PM DNP student, who had not undertaken a systematic EBP project within this setting. Step 6 of the MEBPC proved to be a significant strength as the model’s broad concepts of integrating and maintaining change in practice were essential to project planning, implementation, evaluation, as well as the development of a plan
for sustainability. The MEBPC processes were threaded through the additional strengths of this project noted within the following paragraphs.

Planning the project within the practice setting of the PM DNP student was key to the project’s success. The PM DNP student had a close working relationship with the health center’s staff. Thus, staff were aware of the problem and were willing to provide input into the plans for adopting change that would positively impact the patients that they served. The collaboration and support received from the health center’s staff (the key stakeholders), during the planning phases, were viewed as essential to the project’s success. In addition to key stakeholder support, having planning a project to be completed in the PM DNP student’s workplace was a strength; project planning benefitted from the student’s knowledge of the day-to-day workflow and the potential impact that implementing any practice change could have within the setting.

The benefits of utilizing the practice setting of the PM DNP student were apparent within the implementation phase of the project and likely contributed to an adoption rate of 89%. The PM DNP student had previously gained the trust of students, through her work as a family nurse practitioner within the health center. This led to students being more likely to participate when invited. The PM DNP student was able to identify resources that were used during implementation; the lack of need for additional funding or staffing during the implementation of this project was also viewed as a strength. Additionally, familiarity with the existing computer system (electronic health record) allowed the staff to readily identify students who qualified to participant and the PM DNP to monitor participants’ biometric measurements. Another strength, was the implementation tool, *New Leaf*, that had an already established efficacy value. Within the implementation phase, a significant component was the PM DNP student’s ability to gain feedback regarding the barriers to participating and then use that knowledge to develop flexible learning formats that supported an increased enrollment of participants.
Within the evaluation phase of the project, the PM DNP student’s relationship with the participants supported open communication, which provided insightful anecdotal information from those who were successful, as well as those who were unsuccessful in their weight loss journey. This was viewed as a strength of this project. Another strength within the evaluation phase of the project, was the development of a plan for sustainability. The ability to develop this plan for sustainability was linked to the project being undertaken at the practice setting of the PM DNP student. During evaluation, the PM DNP student was able to readily share project success with the key stakeholders and is in a position to cement protocols that will ultimately lead to continued screening and implementation of EBP guidelines for adopting healthier eating habits and achieving weight loss goals.

Limitations

The main limitation encountered during the implementation of this EBP project was the limited buy-in within the population, which initially and ultimately created a small cohort. The evidence reviewed for this project revealed that the most successful projects were those that had intense sessions that were implemented over a 12-week period of time (Ritten et al., 2016; Thabault et al., 2016). Yet, the need for prolonged, intensive support was a challenge within this population and likely led to limited buy-in. Even though efforts were made for flexibility and a consistent schedule was developed to limit missed sessions, the weekly time commitment from the college-age participants proved to be challenging. Overweight and obese students initially appeared interested in participating but would elect not to participate once the time commitment was reviewed. This was determined to be the rationale for low enrollment, as only 18 of the 64 qualifying students (28.13%) initially agreed to participate, even when the implementation was adapted to provide more flexibility within the delivery of the education sessions. The limited number of participants could have impacted the ability to attain statistical significance, even
when positive changes were noted. A larger cohort would have enabled the PM DNP student to more accurately evaluate the project’s success.

Another limitation of the project was the limited time for implementation. As noted previously, the time for project implementation could have impacted the ability to demonstrate the intervention’s effectiveness on reducing BMI. The limitation of evaluating BMI and dietary behaviors after only 12 weeks of initiating any change, does not necessarily reflect the potential for long-term success. Research has demonstrated that those adopting healthy dietary behaviors may sustain additional weight loss over a 6- to 12-month period of time (Jensen et al., 2014; Mitchell et al., 2017; Ritten et al., 2016; Ryan & Kahan, 2018; Thabault et al., 2016; Wadden et al., 2014).

Implications for the Future

Practice

This project demonstrated the instrumental value of the DNP-prepared advanced practice nurse in incorporating evidence-based strategies to improve patient outcomes. Substantial evidence links overweight and obesity to other health conditions including heart disease, stroke, type 2 diabetes and certain types of cancer are the leading causes of preventable death (CDC, 2017). To address the impact of overweight and obesity on society, clinical practice guidelines have been developed that focus on healthy eating for disease prevention (Gonzalez-Campoy et al., 2013; Jensen et al., 2014). Experts have noted that healthy eating behaviors need to be established early in life and reinforced in young adulthood (CDC, 2017). APNs within family practice settings can use the knowledge gained from this EBP project to address the barriers to establishing healthy eating behaviors that will impact weight changes within their population. The use of well-established tools (e.g., New Leaf resources) may serve as an adjunct to the education that FNPs routinely incorporate within office visits. Ultimately, a goal of FNPs working in clinical practice is to monitor the impact of these changes
over a prolonged period of time. The results of this EBP project, although limited, support the premise that a multifaceted approach with intensive education on healthy eating improves healthy eating. The findings from the group support cohort lend credence to the benefits of social support within primary care settings.

Primary care providers caring for college age students should consider practice changes that incorporate the strategies utilized within this EBP into the routine care for those who are overweight or obese. Advance practice nurses, who are often employed in leadership positions within college health settings, are well positioned to implement these changes, employing systematic processes that are grounded by evidence.

Theory

The MEBPC model provided guidance to implement this EBP project. The MEBPC framework provided a 6-step systematic approach, which allowed an integration of evidence into practice. This project supported the effectiveness of using MEBPC to guide change, because communication and monitoring of progress (step 6 within the MEBPC) was especially important for success. Based on the success of implementing the six steps of the EBP within this project, it is anticipated that the MEBPC can guide further EBP projects that relate to health promotion in the college age population, because the model allows for a broad design (step 4) which allowed the support of evidence-base practice to improve patient care.

Research

Future research studies should include a larger sample size and focus on the college age group and nutrition apart from the integration of physical activity. In most previous research, there has been a focus on the combination of healthy meal planning and physical activity to reduce a person’s overall BMI; but establishing healthy eating behaviors is necessary, even in those unwilling or unable to participate in physical activity. Future research is needed that addresses methods to enhance college students’ engagement within their busy academic
schedules; additional EBP projects can also evaluate strategies to overcome barriers to change within this population. EBP projects with larger cohort sizes will add to the knowledge base. As college students participate more in on-line education, there is a potential for virtual educational sessions to address healthy eating behaviors; telemedicine within this population may overcome the barrier of physical attendance within a student’s busy academic schedule. A telemedicine approach would provide the benefit of flexibility, while still affording opportunities to obtain social support through their connection with the health care provider. Research and EBP projects focusing on telehealth to address this clinical problem should also be considered.

**Education**

As overweight and obesity has reached epidemic proportions in young adults, continued education on healthy eating is imperative. The role of the health center is to (a) promote healthy lifestyles enrolled in a learning environment, (b) support students living away from home for the first time to provide support and establish healthy eating habits, and (c) follow evidence-based practice guidelines as a part of a higher educational institution. One of the most essential positive outcomes of this EBP project was its effectiveness at educating students on making healthy dietary choices that could be incorporated within their daily routines. At the end of the intervention, students provided positive feedback on the *New Leaf* educational materials. They also noted that, although they did not always follow the recommended dietary changes, they had gained knowledge that would help them in their lifelong journey to eat healthier and obtain an ideal body weight. To address the national obesity epidemic, education on the benefits of preventive care is needed for future health care leaders, so that APRNs and other providers have the knowledge and skills to empower patients to make healthy food choices.

**Conclusion**

In conclusion, the 12-week multisession motivational behavioral intervention provided support and education, targeting improved dietary behavior within the primary care setting. This
EBP project answered the question as posed by the PICOT: At Clinic X, what is the effect of participation in a 12-week multifaceted nutritional healthy lifestyle program at (a) improving healthy eating habits and (b) reducing BMI as compared to baseline data, for young adult college students that are overweight or obese? Although the screened obese and overweight patients’ BMI results did not greatly decrease over the 12-week period, changes in dietary behavior that will ultimately impact overall health and BMI were initiated. It was important to note that the health center is essential to promoting wellness and is a necessary campus resource for students; thus, the title of Valpo Fit and Well was quite appropriate. A relationship between the providers at health center and the students they serve is based on trust and communication; these two factors can guide students in incorporating evidence-based strategies to improve their eating habits. Based on the established trust and open lines of communication, students are more likely to see the APRN as an advocate for their health and well-being; they are more apt to return to the health center for illness, injury, and wellness visits.
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KELLEY ESHENAUR

Mrs. Eshenaur graduated from Valparaiso University (VU) with a Bachelor of Science in Nursing degree in 1997. She worked as a registered nurse in various emergency care settings before returning to VU for her Master of Science in Nursing with a post-master’s Family Nurse Practitioner (FNP) certificate in 2010. Mrs. Eshenaur is a board certified FNP through AANP, and has practiced as an FNP since 2011. She is also the Director of the Health Center at VU where she continues to provide patient care as an FNP. Mrs. Eshenaur is currently attending VU to earn a Doctor of Nursing Practice degree in May, 2020. She is a member of American Association of Nurse Practitioners (AANP) and American College Health Association (ACHA). Kelley became interested in the concept of nutrition during her practice within the health center. She noted that college students can prevent lifetime complications and decrease their risk of chronic disease by learning good health behaviors during their college years.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AACE</td>
<td>American Association of Clinical Endocrinologists</td>
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<tr>
<td>ACHA</td>
<td>American College Health Association</td>
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<tr>
<td>ACC</td>
<td>American College of Cardiology</td>
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<td>AHA</td>
<td>American Heart Association</td>
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<td>APA</td>
<td>American Psychological Association</td>
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<td>BMI</td>
<td>Body Mass Index</td>
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<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<tr>
<td>EBP</td>
<td>Evidence-based practice</td>
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<tr>
<td>HIB</td>
<td>Higher-Intensity Behavior</td>
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<tr>
<td>IBT</td>
<td>Intensive Behavioral Treatment</td>
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<td>JBI</td>
<td>Joanna Briggs Institute</td>
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<tr>
<td>JHNEBP</td>
<td>John Hopkins Nursing Evidence Based Practice</td>
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<tr>
<td>MEBPC</td>
<td>Model for Evidence-Based Practice Change</td>
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<tr>
<td>MI</td>
<td>Motivational Interviewing</td>
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<tr>
<td>NCHA</td>
<td>National College Health Association</td>
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<td>NHLBI</td>
<td>National Heart Lung and Blood Institute</td>
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<tr>
<td>PICOT</td>
<td>Population, Intervention, Comparison, Outcome, Timeframe</td>
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<tr>
<td>RCT</td>
<td>Random Control Trial</td>
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<tr>
<td>SMART</td>
<td>Specific, Measurable, Attainable, Realistic, Timely</td>
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<tr>
<td>SR</td>
<td>Systematic Review</td>
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<tr>
<td>TOS</td>
<td>The Obesity Society</td>
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<tr>
<td>UNC CHPDP</td>
<td>University of North Carolina’s Center for Health Promotion and Disease Prevention</td>
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<tr>
<td>USPSTF</td>
<td>United States Prevention Service Task Force</td>
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## Appraisal of Evidence Table

<table>
<thead>
<tr>
<th>Citation</th>
<th>Design/Level &amp; Appraisal</th>
<th>Purpose</th>
<th>Sample/Setting</th>
<th>Intervention &amp; Measurement Outcomes</th>
<th>Results/Findings &amp; Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball (2015)</td>
<td>Systematic Review</td>
<td>Review studies that focused on improved adult food-related dietary behaviors changes of nutrition care by primary health professionals</td>
<td>21 studies focused on improved dietary behavior</td>
<td>The interventions for the studies (a) involved the support of nutritional care that was provided by primary health professionals; (b) included patients eighteen years or older; (c) included four or fewer multiple consultations; and (d) was delivered by multidisciplinary teams (n = 6), nurses (n = 8), dietitians (n = 3), general practitioners (n = 2), or health counsellor (n = 1)</td>
<td>Findings: (a) significant improvements in dietary behaviors were observed of the participants in the studies; (b) there is a potential for primary health professionals to facilitate improvements in patients’ dietary behaviors; and (c) nutrition care provided by primary health professionals has the potential to improve patients’ dietary behaviors.</td>
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<td></td>
<td>Level I</td>
<td>Quality A</td>
<td>Primary health professionals: nurses, general practitioners, dietitians, nutritionists, exercise professionals, and their assistants who provided first point of care.</td>
<td>Nutrition care included nutrition assessment, nutrition advice, and nutrition counselling, as well as referrals to other nutrition-focused health professionals and services.</td>
<td>Statistical improvements in measures of dietary behavior, the clinical significance of the improvements was not considered in any study.</td>
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<td>Nutrition care: support to improve dietary behaviors included nutrition assessment, advice and counselling, and referral to other nutrition-focused health professionals and relevant services.</td>
<td>Most of the studies were RCTs (n = 13), with fewer cluster-RCTs (n = 5) and longitudinal pretest-posttest studies (n = 3). 14 studies included both men and women; 5 include women only and 2 included men only.</td>
<td>It is unclear whether the improvements in dietary behaviors were sufficient to result in weight loss or an improvement in health outcomes associated with chronic disease.</td>
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<td></td>
<td>Nearly all of the studies included individuals with at least one risk factor for a chronic disease, but not a diagnosis of disease. The participants were recruited by letter or verbal invitation when at the clinic.</td>
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To define the standards of care for healthy eating and prevention of metabolic and endocrine disorders as well as addressing this defect.

American Association of Clinical Endocrinologists, American College of Endocrinology and The Obesity Society organizational evidence-based practice guidelines

The encouraged overweight and obese patients to consider themselves successful with weight management when they sustained behavior modification and food recordkeeping.

The authors of this guideline opined that healthy eating must be maintained over a long period and should clearly be separated from fad diets, which were usually short-lived and often unhealthy.

The authors of the guideline also addressed the importance of encouraging patients to avoid excessive amounts of foods and beverages that may have a negative impact on health.

Encouraging the patients to learn new healthy nutritional habits, such as reading and understanding nutritional labels, proper meal planning, avoiding the term “diet”, and maintaining a caloric balance, will be important components to provide life-long durability.
To prevent diseases; improve the management of people who have these diseases through professional education and research; and develop guidelines, standards, and policies that promote optimal patient care and health.

Jensen (2014) Guideline

Level IV Quality A

National Heart Lung and Blood Institute (NHLBI) initiated collaboration with the American College of Cardiology (ACC) and American Heart Association (AHA) to work with other organizations to complete and publish the four guidelines.

Recommended 3 provider-initiated dietary strategies for obese/overweight individuals: (a) reducing caloric intake to 1,200–1,500 kcal/day for women and 1,500–1,800 kcal/day for men; (b) reducing caloric intake to 500 kcal/day or 750 kcal/day energy deficit; and/or (c) following one of the evidence-based diets that restricts certain food types (e.g., high-carbohydrate low-fiber, or high-fat foods).

Comprehensive lifestyle intervention and counseling recommendations: (a) educate patients on use of behavior modification strategies; (b) use on-site face-to-face interventions, high-intensity, individual or group sessions by a trained interventionist (e.g., >14 sessions in 6 months); and (c) initiating a weight loss program delivered electronically, including by phone, with personalized feedback from a trained interventionist (which may result in lower weight loss than on site, face-to-face interventions).
Review and describe current best practices for assessment and lifestyle management of obesity that can be applied to an individual patient; sponsored by the (NHLBI).

Systematic evidence was review conducted for the Guidelines (2013) for Managing Overweight and Obesity in Adults supports treatment recommendations in 5 areas (risk assessment, weight loss benefits, diets for weight loss, comprehensive lifestyle intervention approaches, and bariatric surgery); for areas outside this scope, recommendations are supported by other national guidelines for obesity and physical activity; a PubMed search identified recent systematic reviews covering depression and obesity, motivational interviewing for weight management, metabolic adaptation to weight loss, and obesity pharmacotherapy.

Recommended screening and assessment of patients for overweight and obesity should be started in primary care settings, followed by initiation of or referral for treatment.

Primary care practitioners have an opportunity and a challenge to provide care for their patients who were overweight or obese and assisting them with weight loss. This opportunity is to address the cause of many comorbidities and to have a major effect on the patient’s health.

The challenges clinicians face is learning how to implement the behavioral intervention into the office setting, but guidelines provide a tool for clinicians in primary care and must be incorporated into the treatment plan of the clinician for patients who need to lose weight.
EFFECTS OF NUTRITIONAL INTERVENTION

Mitchell (2017) Systematic Review

Evaluate the effectiveness of individual consultations provided by dietitians in primary care to support adult patients to modify dietary intake and improve health outcomes.

26 RCTs eligible for inclusion

Majority of the studies were conducted in single-site outpatient primary health care settings

Four studies recruited women only, while none recruited men only.

Ten of the studies consisted of included control groups receiving no intervention

Nine studies included medical care that did not include nutrition care from any health professional

Seven studies included minimal care, including attendance at general nutrition session or a diet sheet of information

Intervention duration varied. The durations were categorized as < three months, three months, four to five months, six months, twelve months, or not specified.

The number of dietitian consultations received per participant was reported for all but two studies and ranged from one to nineteen.

The total time spent in consultations per participant for the thirteen studies reporting these data ranged from 25 to 600 minutes.

All studies delivered at least one dietitian consultation, it was not possible to calculate a total dose of dietitian time due to the number of studies that failed to report the consultation length or total number of consultations

Outcomes included the effectiveness of dietetic interventions in terms of anthropometry, clinical indicators, and dietary intake.

A statistically significant between-group difference was used to indicate intervention effectiveness ($p < .05$).

Measured outcomes, including weight (fourteen studies) BMI (eleven studies) waist circumference (four studies) and waist-to-hip ratio (one study).

18 of 26 included studies demonstrated a positive effect of dietetic intervention through statistically significant differences in dietary, anthropometric, or clinical indicators between intervention and comparator groups.

Effectiveness of the consultation in 11 out of 21 studies for at least one clinical finding improvement with a nutrition-related symptoms or mini nutrition assessment, for 7 of 20 studies reporting biometric data improvement of weight, BMI, and waist circumference, and for 8 of 12 studies reporting improvement in dietary data (energy, carbohydrate, protein, fat, sodium, calcium, vitamin C, and carotenoids).

Effectiveness was demonstrated among studies with a primary focus on weight management, in particular regarding reducing weight or limiting gestational weight gain, with two out of three and two out of two, respectively, showing significant benefits of intervention.

This review concludes individualized nutrition care consultations provided to adults in primary health care settings appears to be effective for improvement in diet quality and weight loss outcomes with changes in weight.
To update 2003 recommendation on screening for obesity and overweight in adults, the USPSTF reviewed the current state of the evidence and identified new evidence addresses previously identified gaps. Adults aged 18 years or older. The USPSTF uses the following terms to define categories of increased BMI: overweight is defined as a BMI of 25 to 29.9 kg/m², and obesity is defined as a BMI ≥ 30 kg/m² or higher. The evidence reflected that intensive behavioral interventions for obese adults could lead to weight loss. The findings of the USPSTF were that the harms of screening and behavioral interventions for obesity were small, and the benefit of screening for obesity is moderate. Therefore, USPSTF has recommended screening all adults for obesity.

The task force has also recommended that clinicians offer intensive behavioral interventions to patients with a BMI of 30 kg/m² or higher. Intensive behavioral interventions include behavioral management activities: (a) setting weight-loss goals; (b) improving diet and nutrition; (c) addressing barriers to change; (d) continuously self-monitoring; and (e) strategizing how to maintain lifestyle changes. The behavioral strategies should be combined with a reduced-calorie nutritional plan.
Evaluate the feasibility and outcomes of a nurse practitioner delivered program, which targets obesity, in a real-world primary care setting.

FLIP-FLOP program consisted of 5 individual primary care office visits, scheduled every 2 weeks over a 12-week period.

FNP provided 15 minutes of one-on-one high-intensity behavioral counseling.

FNP followed a general template at each visit which included (a) provision of visit specific toolbox with New Leaf materials, (b) use of pre-scripted MI, (c) assistance with SMART goal setting, (d) participation in a brief learning activity and specific phrases of encouragement; and (e) goal setting, assisted by use of the New Leaf tip sheets that corresponded with each module.

20 participants enrolled in the study, 16 attended all 5 office visits and completed all consenting and data collection activities pre- and post-program (80%).

Data collected included use of Health Promotion Lifestyle Profile II (HPLP-II) to examine domains of health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships, and stress management. Participants also rated their perception of personal motivation towards healthy living in the past 2 weeks.

Number of participants who reported eating vegetables and/or fruits in the previous 24 hours increased; HPLP-II subscale for nutrition $M = 2.15$ (16.4%) vs. $M = 2.95$ (28.3%) ($p < .01$).

Motivation scores increased linearly as intervention visits progressed: $M = 7$ to $M = 9.2$ ($p < .01$).

50% of participants decreased their BMI from $M = 45.0 \text{ kg/m}^2$ to $M = 44.5 \text{ kg/m}^2$ ($p = 0.15$).

NPs can successfully deliver evidence based, HIB interventions focusing on weight reduction, diet and physical activity during primary care office visits.
Ryan (2018)  

**Guideline**  
Level IV  
Quality A

Primary care providers need knowledge and skills in the following areas:  
- Diagnosis of obesity and overweight, and staging of disease  
- Recognition and treatment of obesity-related comorbidities  
- Determining which therapy or therapies is or are appropriate for an individual patient  
- Management of weight loss, including: Effective delivery of lifestyle intervention (diet, physical activity, and behavior modification)

Three obesity guidelines are discussed in this article. Targeting primary care providers, the US National Institutes of Health and the American Heart Association, American College of Cardiology, and The Obesity Society (AHA/ACC/TOS) sponsored systematic evidence reviews and guidelines around 5 critical questions on assessment and management of obesity.  

Based on a systematic review of the evidence included in the AHA/ACC/TOS guidelines, the following recommendations have been developed: (a) intensive behavioral therapy for weight management should be included as a part of medical practice, (b) no diet type is superior in terms of ability to produce and sustain weight loss; many pathways to successful weight loss regardless of which diet is chosen, (c) the best predictor of success was dietary adherence.

Providers are advised to recommend diets according to patient preference to improve adherence to achieve reduced caloric intake and weight loss. This does not mean that diet composition is not important but merely that negative energy balance is the key factor in promoting weight loss.
Convenience sample consisted of 38 obese adults, 18 years of age and older with Medicare, Medicaid, or commercial insurance who were primary care patients of a patient-centered practice in adult internal medicine in New England.

Before the intervention, a presentation was provided to the practitioners, outlining (a) current obesity data for the practice population, (b) insurance coverage requirements for IBT in primary care, and (c) the planned program design. All providers agreed to implement and support the program with appropriate referrals.

IBT protocol consisted of an initial 30-min visit and up to 14 15-min follow-up visits over 6 months. At the first visit, (a) weight, BP, and waist circumference were measured; (b) BMI was calculated and explained; (c) initial motivation for weight loss was explored; and (d) initial weight loss goals with individual daily caloric intake targets for weight loss were identified.

A standard basal metabolic rate calculator with a recommendation of decreasing by 500–1000 calories per day for a 1-2 lb. weight loss/week. An introductory information packet, reviewed by the NP and given to the patient, contained (a) information and resources about benefits of a healthy weight and physical activity; (b) a diet/activity journal; (c) a pedometer; (d) a patient questionnaire that addressed weight loss goals, readiness to change, and a nutritional assessment.

Follow-up visits were arranged for brief interventions utilizing an MI approach to support lifestyle changes to promote weight loss and assist in individual goal setting. Education about reading food labels, nutrition recommendations, portion guides, and activity benefits was incorporated into visits.

In-person sessions were scheduled in accordance with Medicare coverage with visits every week for the first month, every other week for months 2 to 6, and once per month during months 7 to 12. Patients must have met the 6.6 lb. weight loss requirement at 6 months to continue sessions for a maximum of 22 visits in 12 months.

Findings from this study indicated that an NP-led IBT program for obesity in an adult primary care practice was feasible, effective, and highly accepted by patients and providers.

Patients experienced statistically significant weight loss at 4 and 12 weeks and highly rated the individual lifestyle approach that was calorie based with integrated accountability and provider support.

Using a paired t-test, mean weight loss after four visits (4 weeks) was statistically significant at 6.6 pounds ($p < .05$) in aggregate; males ($n = 14$) lost an average of 8.9 pounds ($p < .05$), while mean weight loss for females ($n = 22$) was 5.2 pounds ($p < .05$). At eight visits (12 weeks), the mean weight loss was statistically significant at 10.77 pounds ($p < .05$) in aggregate; males ($n = 14$) lost an average of 11.73 pounds ($p < .05$), while mean weight loss for females ($n = 22$) was 10.16 pounds ($p < .05$). The range of percent body weight lost was −1.42% to 11.96%, with 39% of participants
During the first twelve weeks, a total of 36 patients participated in the IBT program. 61% (n = 22) were female and 39% (n = 14) were male. The average weight for males entering the IBT program was 250 (range 189–311) pounds and the average weight for females was 217 (range 174–269) pounds. The average BMI for males entering the program was 36.8 (range 30–42). The average BMI for females was 37.9 (range 30–48).

Importantly, the weight loss results are clinically significant because patients lost over 5% of body weight, an amount recognized as effective for reducing health risks. Providers utilized the program by referring obese patients for treatment and observed positive results in their patients. Opportunities for improving the program were in the areas of increasing ease of scheduling and increasing feedback for providers.

Conclusion from this study is that an NP delivered IBT program in an adult primary care practice using a MI counseling approach is effective for weight loss and is well received by patients and providers.
University of North Carolina Center for Health Promotion and Disease Prevention (2013)

Research-tested Intervention Tool: Level V Quality A

To achieve a successful program that emphasize practical strategies for making changes in dietary behaviors, 236 women, enrolled in one community health center, were randomized to receive the Enhanced Intervention (EI) or Minimal Intervention (MI). The EI consisted of an intensive phase (6 months) including 2 individual counseling sessions, 3 phone calls from a peer counselor followed by a maintenance phase (6 months) including 1 individual counseling session and 7 monthly phone calls from a peer counselor. The MI consisted of American Heart Association pamphlets on diet and physical activity mailed to participants.

A New Leaf includes several different types of materials: risk assessments, tip sheets with behavior change suggestions, general information, an exercise module, and a recipe book. Risk assessments with corresponding tip sheets include:

- Dietary Risk Assessment
- What Makes It Hard to Eat Healthy?
- My Weight

Tip Sheet:
- Healthy Eating Tip Sheets
- Hot Tips for Healthy Eating
- Healthy Weight Tip Sheets
- Keeping Your Bones

Dietary results: Diet measured by serum carotenoid levels: greater fruit and vegetable intake in the Enhanced Intervention (EI) group, with statistically significant results (92% follow-up at 6 months; \( p = .05 \))

Self-report diet results: though DRA* (Dietary Risk Assessment) scores improved in both groups, the dietary improvement in the Enhanced Intervention group compared to the Minimal Intervention (MI) group was statistically significant at both 6 months and 12 months (90% follow-up at 6 months and 74% at 12 months; \( p < .001 \))

The Dietary Risk Assessment (DRA) is a validated instrument.
Conduct a systematic review of behavioral counseling for overweight and obese patients recruited from primary care, as delivered by primary care practitioners working alone or with trained interventionists (e.g., medical assistants, registered dietitians), or by trained interventionists working independently.

Twelve studies were identified. Included types of studies with a combination visits including the primary care practitioner and counseling sessions with trained interventionist over six months and compared them to studies with primary care practitioner visits alone. In multiple studies, behavioral counseling was guided principally by motivational interviewing or stages of change.

Studies followed traditional behavioral counseling that included a decreased caloric diet, behavioral counseling strategies, and reported weight losses at six months.

More treatment sessions, delivered in person or by telephone by trained interventionists, were associated with greater weight loss and likelihood of patients losing 5% or more of baseline weight.

Quarterly or less frequent behavioral counseling by a primary care practitioner alone induced mean losses of only 0.6 to 1.7 kg in six to 24 months but the interventions from the combination studies produced a mean weight loss of 4.4 kg to 3.5 kg. But, the greater number of counseling sessions (15 sessions) were associated with weight loss, ranging from 3.5 kg with eight sessions to 6.6 kg with 15 total sessions.

Primary care practitioners delivered the behavioral counseling. The practitioners in the studies utilized usual medical care or a computer-based assessment that (a) obtained diet and physical activity histories, (b) assessed patients’ motivations for weight loss, and (c) provided a tailored report for patients that was reviewed during two counseling visits.

A tailored report was described as a computer-generated report addressing barriers to making lifestyle changes that was provided for patients.

Combined three interventions (reduction of caloric intake by 500 kcal/d, increased physical activity by 150 minutes a week, and traditional behavioral therapy) resulted in larger weight loss than interventions without all 3 components.

In the intervention groups, weight loss ranged from 0.3-6.6 kg vs. 0.9 kg gain to 2.0 kg loss in control groups over 6 months; weight loss changes generally declined with longer time between follow-up sessions, typically 12 to 24 months.

Primary care providers continue to play a critical role in diagnosing overweight and obesity; evaluating, assessing and treating weight-related conditions; and monitoring changes in health that occur with weight control.

Primary care providers can be trained to provide intensive behavioral counseling, but increasing demands on the providers’ time may favor their referring patients for behavioral counseling.
Appendix B

Thank you for your submission. We are happy to give you permission to use the JHNEBP model and tools in adherence of our legal terms noted below:

- You may not modify the model or the tools without written approval from Johns Hopkins.
- All reference to source forms should include “©The Johns Hopkins Hospital/The Johns Hopkins University.”
- The tools may not be used for commercial purposes without special permission. If interested in commercial use or discussing changes to the tool, please email ijhn@jhmi.edu.

Downloads:

**JHNEBP Tools-Printable Version**

**JHNEBP Tools-Electronic Version**

Do you prefer hands-on learning?

We are offering a 5-day intensive Boot Camp where you will learn and master the entire EBP process from beginning to end. Take advantage of our retreat-type setting to focus on your project, collaborate with peers, and get the expertise and assistance from our faculty. Click HERE to learn more about EBP Boot Camp. Group rates available, email ijhn@jhmi.edu to inquire.
Before You Download...

This intervention has been carefully developed and tested. In order for it to be as effective for you as it has been for others, it is important that you follow implementation guidelines carefully and limit adaptation to just those things that can be adapted without sacrificing the quality of the intervention.

Before you download the New Leaf materials, please take a moment to read through the usage agreement.

Agreement for Users

We agree not to make any changes to the New Leaf materials without express written permission in advance from the UNC Center for Health Promotion and Disease Prevention (HPDP). Our intent is to use these materials for educational and/or research purposes.

We will include UNC copyright information when reproducing New Leaf in the original or in an adapted form.

We understand that technical assistance for culturally tailoring New Leaf is available from the Center of Excellence for Training and Research Translation.

You have already accepted this agreement.

Intervention Materials

In 2007, the New Leaf materials were updated to incorporate the latest U.S. federal guidelines on nutrition and exercise science.

In addition to nutrition, physical activity and tobacco cessation, the New Leaf program includes content on achieving a healthy weight, diabetes prevention and management, osteoporosis prevention, and dealing with stress and depression. A New Leaf includes several different types of materials: risk assessments, tip sheets with behavior change suggestions, general information, an exercise module, and a recipe book.

Intervention Implementation

Health Counselor Instructions for A New Leaf

Participant Notebook

Option 1: Complete New Leaf Notebook
Option 2: New Leaf Notebook (by sections)
Front Section
Section A: Food_Assessments & Tips
Section B: Health Eating
Appendix D

Project Title: **THE EFFECTS OF A NUTRITIONAL INTERVENTION ON HEALTHY EATING HABITS AND BODY MASS INDEX**

I understand I am being asked to participate in an EBP project that will require weekly collection of my biometrical data (height and weight) and 30 to 45 minute one-on-one weekly educational sessions for 12 weeks. The purpose of this EBP project is to improve patient outcomes by (a) identifying barriers and effective strategies to improve healthy choices that would ultimately impact weight, (b) increasing healthy nutritional food choices, and (c) decreasing overall BMI in college students.

Your participation in this EBP project is entirely voluntary and there is no financial cost to you. Your decision whether or not to participate will not interfere with your care or treatment at Valparaiso University Health Center. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time.

If you decide to participate, you will be asked to participate in weekly one-on-one educational sessions regarding healthy eating and healthy weight. The entire EBP project is 12-weeks. During the first and last sessions, you will be asked to complete pre- and a post-questionnaires’. There are no risks for this EBP project. Participants in the EBP project may not have any changes to their lifestyle choices or BMI score. However, you may benefit from the enhanced ability to recognize and manage healthy eating habits and a healthy weight with the completion of this program.

All data collected as part of this EBP project will be kept confidential by the Project Facilitator and will not contain identifying information. Although, this information may be used in aggregate form in future publications or presentations, no participants will be identified.

You can contact Kelley Eshenaur at (219) 464-5352, e-mail Kelley.eshenaur@valpo.edu or Dr. Julie Koch DNP, faculty advisor, Valparaiso University College of Nursing and Health Care Professions, at Julie.koch@valpo.edu, any time during the EBP project. For any questions regarding the protection of human subjects may be directed to Office of Sponsored and Student Research, ValpoIRB@valpo.edu.

Your signature indicates that you have decided to participate. A copy of this informed consent form will be provided. Please sign, indicating you have read, understood, and agree to participate in this EBP project.

Signature of Student_________________________________ Date_____________________

Print Name_______________________________________ Student ID # _______________

Signature of Project Facilitator_______________________ Date______________________
Appendix E

What Makes It Hard to Eat Healthy? (Assessment)

Lots of things make it hard for people to eat healthy. Some situations tempt people to eat more foods that are high in sugar, salt, trans fats, and/or saturated fats, including regular soda, ice cream, cookies, candy, deep-fried foods, chips, and non-lean meats or processed meats.

**How tempted would YOU be to eat these foods (that is, foods high in sugar, salt, trans fats, and/or saturated fat) when...**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong></td>
<td>You are at a party, picnic, covered dish dinner, or restaurant.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not tempted at all</td>
<td>Somewhat tempted</td>
</tr>
<tr>
<td><strong>2.</strong></td>
<td>You are on the road.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not tempted at all</td>
<td>Somewhat tempted</td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>You are cooking or cleaning up.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not tempted at all</td>
<td>Somewhat tempted</td>
</tr>
<tr>
<td><strong>4.</strong></td>
<td>You are eating meals or snacks at work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not tempted at all</td>
<td>Somewhat tempted</td>
</tr>
<tr>
<td><strong>5.</strong></td>
<td>You are stressed out, bored, tired, angry, or depressed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not tempted at all</td>
<td>Somewhat tempted</td>
</tr>
</tbody>
</table>
6. You see unhealthy foods **around your home** or **available at work**.

- [ ] Not tempted at all
- [ ] Somewhat tempted
- [ ] Very tempted

7. **A friend or family member** offers you one of these foods.

- [ ] Not tempted at all
- [ ] Somewhat tempted
- [ ] Very tempted

8. You want to **reward yourself**.

- [ ] Not tempted at all
- [ ] Somewhat tempted
- [ ] Very tempted

### My Weight (Assessment)

Which of the following describes you?
- I know I need to lose weight but I’m not quite ready to start.
- I’m ready to lose weight and I need some help.
- I want to maintain my weight and I need some help.
- I can manage my weight on my own.

<table>
<thead>
<tr>
<th>Check one box for each statement.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> I eat when I am upset or stressed.</td>
</tr>
<tr>
<td>Hardly ever</td>
</tr>
<tr>
<td><strong>2.</strong> I skip meals.</td>
</tr>
<tr>
<td>Hardly ever</td>
</tr>
<tr>
<td><strong>3.</strong> I can’t control how much I eat.</td>
</tr>
<tr>
<td>Hardly ever</td>
</tr>
<tr>
<td><strong>4.</strong> I feel guilty after eating.</td>
</tr>
<tr>
<td>Hardly ever</td>
</tr>
<tr>
<td><strong>5.</strong> I eat more than I should.</td>
</tr>
<tr>
<td>Hardly ever</td>
</tr>
<tr>
<td><strong>6.</strong> I snack on “junk” foods.</td>
</tr>
<tr>
<td>Hardly ever</td>
</tr>
</tbody>
</table>
**7.** I have gained weight in the last 6-12 months.

- [ ] Not at all
- [ ] A little
- [ ] A lot

**8a. I have tried to lose weight.**

- [ ] Never (go to question 9)
- [ ] Once or twice (go to question 8b)
- [ ] Many times (go to question 8b)

**b. When I tried to lose weight, I:**

- [ ] Lost some weight and kept most of it off
- [ ] Lost some weight but gained it all back
- [ ] Did not lose any weight

**9. I have lost weight without trying.**

- [ ] No
- [ ] Yes, a little weight
- [ ] Yes, a lot of weight

**10. I spend a lot of time sitting each day (watching TV, working).**

- [ ] Rarely
- [ ] Most days
- [ ] Every day

**11. I do about 60 minutes of physical activity (like brisk walking) on most days of the week.**

- [ ] Almost always
- [ ] Sometimes
- [ ] Hardly ever

See Healthy Weight Tip Sheets, page E-3.
### Vegetables & Fruits

**On an average DAY, how many servings of VEGETABLES do you eat?**
(A serving is 1/2 cup cooked vegetables or 1 cup green leafy vegetables.)

<table>
<thead>
<tr>
<th>1. Dark-green or orange vegetables like collard greens, broccoli, tossed salads made with dark-green leafy lettuces, sweet potatoes, butternut squash, or carrots</th>
<th>2+</th>
<th>1</th>
<th>0</th>
<th>goals ↓</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Starchy vegetables like corn, green peas, lima beans, or white potatoes</td>
<td>0-1</td>
<td>2</td>
<td>3+</td>
<td></td>
</tr>
<tr>
<td>3. Other vegetables like okra, zucchini, turnips, onions, cabbage, green beans, or tomatoes (including tomato sauce)</td>
<td>2+</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**On an average DAY, how many servings of FRUIT do you eat, not including fruit juice?**
(A serving is one small piece of fruit, 1/2 cup cut-up fresh or canned fruit, or 1/4 cup dried fruit.)

<table>
<thead>
<tr>
<th>4. Fresh, canned, or frozen fruit in unsweetened juice, or dried fruit like raisins</th>
<th>3+</th>
<th>2</th>
<th>0-1</th>
<th>goals ↓</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Do you eat fruit canned in syrup?</td>
<td>Rarely or never</td>
<td>Sometimes</td>
<td>Often</td>
<td></td>
</tr>
</tbody>
</table>

### Sweets, Snacks, & Restaurant Foods

**In an average WEEK, how many servings of non-frozen SWEETS do you eat?**
(A serving is 1 doughnut, 1 sweet roll, 1 small slice of cake or pie, 4 small cookies, or 1 regular candy bar.)

<table>
<thead>
<tr>
<th></th>
<th>Doughnuts, sweet rolls, pies, cakes, cookies, candy bars, chocolate, or other sweets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
</tr>
</tbody>
</table>

**In an average WEEK, how many servings of FROZEN DESSERTS do you eat?**
(A serving is 1/2 cup ice cream, sherbet, or frozen yogurt.)

<table>
<thead>
<tr>
<th></th>
<th>Regular ice cream</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Ice milk, sherbet, or frozen yogurt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
</tr>
</tbody>
</table>

**In an average WEEK, how many servings of processed SNACK FOODS do you eat?**
(A serving is a small handful.)

<table>
<thead>
<tr>
<th></th>
<th>Snack chips (like potato chips, corn chips, tortilla chips, or cheese puffs), crackers (like &quot;Habs&quot; or other butter crackers), or pretzels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Do you try to buy snack products that have <strong>no trans fat?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All or most of the time</td>
</tr>
</tbody>
</table>

**How many times a WEEK do you eat out at RESTAURANTS or eat restaurant CARRY-OUT at home? Include food from fast-food restaurants.**

<table>
<thead>
<tr>
<th></th>
<th>Restaurant meals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>How many times a week do you eat deep-fried or fried foods (like hush puppies, french fries, or chicken nuggets) at restaurants?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

### Breads, Grains, & Cereals

<table>
<thead>
<tr>
<th>On an average DAY, how many servings of BREAD do you eat?</th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A serving is 1 slice of bread, 1 small tortilla, or 1 roll.)</td>
<td>2+</td>
</tr>
<tr>
<td><strong>1a.</strong> Bread, rolls, or tortillas (wheat or corn) made with <strong>whole grain</strong> (label will list “whole grain” or “whole wheat flour” first)</td>
<td></td>
</tr>
<tr>
<td><strong>1b.</strong> Bread, rolls, or tortillas made all or mostly with <strong>white flour</strong> (label will usually list “enriched wheat flour” or “wheat flour” first)</td>
<td>0</td>
</tr>
</tbody>
</table>

| Now, think about things you eat every week. In an average WEEK, how many servings of GRAINS or CEREALS do you eat? | goals |
| (A serving is 1/2 cup of rice, pasta, or oatmeal; 1 biscuit; or one 2” square slice of cornbread. Serving sizes for cereals are usually between 1/2 cup and 1 cup, depending on the cereal.) | 3+    | 1-2 | 0    |      |
| **2a.** Brown rice, whole grain pasta, or other whole grains, like barley |      |    |      |      |
| **2b.** White rice or regular pasta, like noodles, spaghetti, or macaroni | 0-1   | 2   | 3+   |      |
| **3a.** Cold or hot whole grain cereals, like bran flakes or oatmeal | 3+    | 1-2 | 0    |      |
| **3b.** Regular cold or hot cereals, like sugar frosted flakes, cocoa cereals, grits, or cream of wheat | 0    | 1-2 | 3+   |      |
| **4.** Biscuits (including canned) or cornbread | 0    | 1-2 | 3+   |      |

## Red Meat

**In an average WEEK, how many servings of BREAKFAST and LUNCH MEATS do you eat?**

(A breakfast serving is 2 strips of bacon or 2 sausage patties or 2 sausage links. For lunch meats, a serving is 2 slices of bologna or other lunch meats, or 1 hot dog.)

<table>
<thead>
<tr>
<th></th>
<th>Bacon or sausage</th>
<th></th>
<th></th>
<th></th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Hot dogs or lunch meats like bologna, salami, or Spam</th>
<th></th>
<th></th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>0-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3+</td>
</tr>
</tbody>
</table>

**In an average WEEK, how many times do you eat RED MEAT? This means cuts like roasts, steaks, stew meat, ribs, chops, BBQ, or ham; or hamburger, either alone or in dishes like meatloaf and spaghetti sauce.**

(A serving is 3 ounces—about the size of a deck of cards.)

<table>
<thead>
<tr>
<th></th>
<th>Red meat</th>
<th></th>
<th></th>
<th></th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>3a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Is the fat usually trimmed or drained?</th>
<th></th>
<th></th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, or do not eat red meat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Is your portion smaller, the same as, or larger than a deck of cards?</th>
<th></th>
<th></th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>c</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smaller, or do not eat red meat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The same</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Larger</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>What type of ground beef do you usually eat?</th>
<th></th>
<th></th>
<th></th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extra lean ground beef or sirloin (10% or less fat) or no ground beef</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lean ground beef or ground round (11% - 19% fat)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ground beef or chuck (20%+ fat)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Milk & Dairy Foods

Now, think about what you eat every day. On an average DAY, how many servings of these foods do you drink or eat, including on cereal?

(A serving of milk or yogurt is 1 cup (8 ounces); a serving of heavy cream or half & half is 1 tablespoon.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>2+</th>
<th>1</th>
<th>0</th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Whole milk, regular sweet milk, or whole milk yogurt</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>b.</td>
<td>2%, 1%, 1/2% or skim (nonfat) milk, buttermilk, low-fat/nonfat yogurt, or soy milk</td>
<td></td>
<td>2+</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Heavy cream or half &amp; half (for example, in coffee)</td>
<td>0-1</td>
<td>2</td>
<td>3+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On an average DAY, how many servings of CHEESE do you eat (either plain or in foods like sandwiches, pizzas, or casseroles)?

(A serving of hard cheese is 1 ounce (1/3 cup grated or 1 slice processed cheese); cottage cheese is 1/2 cup; ricotta cheese is 1/4 cup; cream cheese is 2 tablespoons.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>2+</th>
<th>1</th>
<th>0</th>
<th>goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a.</td>
<td>Hard cheeses (like cheddar, swiss, or jack) or cream cheese</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>b.</td>
<td>Mozzarella, cottage cheese or light cream cheese</td>
<td>0-1</td>
<td>2</td>
<td>3+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See Milk and Dairy Food Tips, page A-16.

---

score
### Toppings, Oils, Seasonings, & Salt

**Now, let's go back to weeks. In an average WEEK, how many servings of SOUR CREAM or WHIPPED TOPPINGS do you eat?**
(A serving is 2 tablespoons.)

<table>
<thead>
<tr>
<th>1.</th>
<th>Sour cream or whipped toppings</th>
<th>0</th>
<th>1-2</th>
<th>3+</th>
<th><strong>goals</strong></th>
</tr>
</thead>
</table>

**How many times a WEEK do you eat GRAVY or meat drippings?**

<table>
<thead>
<tr>
<th>2.</th>
<th>Gravy or meat drippings</th>
<th>Hardly ever or never</th>
<th>Once a week</th>
<th>Two or more times a week</th>
<th><strong>goals</strong></th>
</tr>
</thead>
</table>

**What BUTTER or MARGARINE do you usually use?**

<table>
<thead>
<tr>
<th>3.</th>
<th>Butter or margarine</th>
<th>Trans-fat-free margarine spread or no butter or margarine</th>
<th>Regular tub margarine</th>
<th>Butter or stick margarine</th>
<th><strong>goals</strong></th>
</tr>
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</table>

**What kind of OIL or SEASONING do you usually use at home:**

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<tr>
<th>4.</th>
<th>For frying</th>
<th>Vegetable oil or trans-fat-free margarine spread or do not fry</th>
<th>Regular tub margarine</th>
<th>Meat fat, vegetable shortening, butter, or stick margarine</th>
<th><strong>goals</strong></th>
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<th>5.</th>
<th>For baking</th>
<th>Vegetable oil or trans-fat-free margarine spread or do not bake</th>
<th>Regular tub margarine</th>
<th>Lard, vegetable shortening, butter, or stick margarine</th>
<th><strong>goals</strong></th>
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<th>6.</th>
<th>For vegetables such as greens or potatoes</th>
<th>Vegetable oil, trans-fat-free margarine, vinegar or lemon juice, low sodium bouillon, herbs, spices, dash of salt and pepper, or nothing</th>
<th>Regular tub margarine or lean ham</th>
<th>Fatback, bacon, side meat, butter, or stick margarine</th>
<th><strong>goals</strong></th>
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**When you buy foods like canned soups or beans, bottled salad dressings, or crackers, do you usually get products that are LOW-SODIUM or have NO ADDED SALT?**

<table>
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<tr>
<th>7a.</th>
<th>Buy low-sodium or no added salt foods</th>
<th>All or most of the time</th>
<th>Sometimes</th>
<th>Rarely/never</th>
<th><strong>goals</strong></th>
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<tr>
<th>7b.</th>
<th>How often do you use the salt shaker at the table?</th>
<th>Rarely/never</th>
<th>Sometimes</th>
<th>All or most of the time</th>
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### Beverages

**On an average DAY, how many 8-oz servings of sugar-sweetened beverages do you have with meals or in between meals?**

(A beverage serving is 8 ounces. A canned drink is usually 1 1/2 servings [12 ounces]. A bottled or medium-size drink is often more than 2 servings.)

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<tr>
<td>a.</td>
<td>Regular non-diet sodas like Coke™, Pepsi™, or Sprite™</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2+</td>
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<td>b.</td>
<td>Bottled fruit drinks (like Snapple™, lemonade, or fruitade), sports or energy drinks</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2+</td>
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<td>c.</td>
<td>Kool-Aid™ or iced tea sweetened with sugar</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2+</td>
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<td>d.</td>
<td>Hot tea or coffee drinks sweetened with sugar</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2+</td>
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**On an average DAY, how many 8-oz servings of 100% fruit juice, like orange, apple, grapefruit, or grape juice, do you have?**

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<td>2.</td>
<td>Fruit juices</td>
<td>☐ 0-1</td>
<td>☐ 2</td>
<td>☐ 3+</td>
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See Beverage Tips, page A-20.
### Poultry & Fish

**In an average WEEK, how many servings of CHICKEN or TURKEY do you eat?**  
(A serving is 3 ounces—about the size of a deck of cards.)

| 1. | Chicken or turkey, including ground or sliced | □ 3+ | □ 2 | □ 0-1 | goals |

**In an average WEEK, how many servings of FISH or SHELLFISH do you eat?**  
(A serving is 3 ounces—about the size of a deck of cards.)

| 2a. | Fish with higher amounts of **healthy fats**, like canned light tuna, sardines, herring, salmon, or lake trout (including fresh, frozen, or canned) | □ 3+ | □ 2 | □ 0-1 | goals |
| b. | Other fish (like catfish or whitefish) or shellfish (like shrimp) | □ 3+ | □ 2 | □ 0-1 |


### Beans & Nuts

**In an average WEEK, how many servings of dried or canned BEANS or PEAS do you eat?**  
(A serving is 1/2 cup cooked beans.)

| 1. | Beans or peas like pinto beans, kidney beans, lentils, or black-eyed peas | □ 3+ | □ 1-2 | □ 0 | goals |

**In an average WEEK, how many servings of NUTS do you eat?**  
(A serving of nuts is 1 ounce or a small handful (1/4 cup). For peanut butter or other nut butters, a serving is 2 tablespoons.)

| 2. | Peanut or other nut butters or whole plain nuts (like peanuts, almonds, pecans) | □ 3+ | □ 2 | □ 0-1 | goals |

### Appendix H

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Appendix I

Healthy Eating Tip Sheets

Vegetable and Fruit Tips

Check the goals you want to work on for the next contact.

1. Eat more dark green and orange vegetables.
   - Make your plate colorful! Enjoy lots of dark-green and orange vegetables:
     - Collards, mustard or turnip greens, kale, broccoli
     - Tossed salads with spinach, romaine, or other dark-green leafy lettuces
     - Sweet potatoes, butternut or acorn squash, carrots
   - Dark green and orange vegetables are rich in potassium (see Good Sources of Potassium, page B-4.)
   - A serving may not be as large as you think. A serving of cooked carrots or broccoli is just 1/2 cup (about the same as one cupped hand).
   - To keep costs down:
     - Buy fresh vegetables in season (look for a farmer’s market).
     - Buy seasonal vegetables in bulk and freeze some for later.
     - Grow your own.
   - Use onions, garlic, vinegar, herbs, and spices to season and add flavor to fresh greens and other vegetables. (See Fresh Greens, Southern Style and other healthy ways of preparing vegetables on pages 43-55 of the New Leaf cookbook.)
   - Make your own oil and vinegar dressing for green salads (see cookbook, page 103). Avoid bottled dressings with a lot of salt and high fructose corn syrup (sugar) (see Read the Label, page B-17.)
   - Use broccoli, carrots, or squash in place of white rice or pasta in your favorite soup or casserole.

2. Go easy on starchy vegetables.
   - Eat fewer starchy vegetables like corn, white potatoes, green peas, and lima beans, which are healthy but higher in carbohydrates.
   - Choose colorful vegetables! Bake a vegetable dish with sliced potatoes, carrots, and green beans drizzled with vegetable oil and herbs or other low-salt seasonings (see cookbook, pages 43-55).
   - Eat potatoes baked or boiled—or fry them in about a tablespoon of vegetable oil. Season potatoes with onions and green peppers instead of bacon grease, or try the recipe on page 43 in our cookbook for oven fries that taste just like French fries.

A-11
3. Add variety to meals with vegetables.
- Eat vegetables instead of foods high in trans fat and saturated fat (see Know Your Fats, page B-11, and Read the Label!, page B-17.)
  - Use less cheese and more onions or mushrooms in your omelets.
  - Make sandwiches, wraps, or burritos with lots of lettuce, tomatoes, onions, or other sliced vegetables.
  - Bring cut-up vegetables to work instead of eating vending machine snacks.
- Steam, fry or sauté vegetables in a small amount of olive, canola, or other vegetable oil. Avoid breading.
- Buy frozen/canned vegetables or canned beans and peas that have low or reduced salt (sodium). Rinse canned beans and peas that have added salt. Stay away from vegetables with fancy sauces. (See Spice It Up without Salt, page B-15, for more tips on avoiding salt.)

4. Eat more fruit—aim for 4 or more servings a day.
- A serving of fruit makes a tasty snack or dessert. One serving could be 1 small apple or 1/2 cup of sliced strawberries.
- Buy fruit in season or pick your own: eating more fruit doesn’t have to be expensive.
- Add fruit, like bananas, berries or peaches, to your cereal.
- Use very ripe fruit to make a blender smoothie (see pages 86–91 and 95 in cookbook for smoothie and other fruit recipes).
- Whole fruit gives you a bigger size snack than dried fruit—for the same number of calories you can eat 1 cup of grapes but just 1/4 cup of raisins.
- Eat whole fruit (fresh, frozen, canned) instead of drinking a lot of fruit juice—whole fruit gives you more fiber, which also can help you feel full.

5. Eat whole fruit without added sugar.
- Avoid canned or frozen fruits with added sugar or syrup (look for canned fruit labeled “in its own juice”).
- If you do get canned fruit in light or heavy syrup, drain off the syrup and eat the fruit without it.
Bread, Grain, & Cereal Tips

1. **Choose more whole grain breads.**
   - Pick whole grain bread instead of white bread—look for whole wheat flour or whole grain as the first ingredient on the food label.
   - Check the label and choose breads with at least two grams of fiber per slice. (See Fiber—Are You Getting Enough?, page B-7.)
   - Choose brown breads that feel firm—they are probably made with more whole grain.

2. **Try other whole grain foods.**
   - Whole grains are foods like brown rice, oats, and whole wheat pasta.
   - Whole grains are good ways to get fiber and B vitamins.

3. **Eat whole grains for breakfast.**
   - Choose whole grain cereals (ready-to-eat or cooked). Cereals like shredded wheat, bran flakes, or old-fashioned oatmeal are high in fiber.
   - Stay away from cereals with lots of added sugar (like frosted flakes) (see Read the Label!, page B-17.) Top your cereal with bananas, strawberries, or peaches instead.
   - Munch on whole grain cereals for a healthy snack any time of the day!
   - Avoid instant grits and other cereals with added salt (sodium).

4. **Go easy on biscuits and cornbread.**
   - Regular biscuits, cornbread, and croissants are often high in trans fat, saturated fat, and salt (sodium) (see Know Your Fats, page B-11, and Spice It Up without Salt, page B-15.)
   - See cookbook (pages 67–68 and 73) for biscuit and cornbread recipes with whole wheat flour that have less trans fat and saturated fat.
Red Meat Tips

1. **Cut down on bacon and sausage.**
   - Eat smaller amounts.
   - Try having breakfast without meat.
   - Don’t add bacon to sandwiches.
   - Try turkey bacon and turkey smoked sausage, but not too often—these are still high in salt (sodium).
   - Use small pieces of lean ham for seasoning or in recipes calling for bacon or sausage.

2. **Pick healthier lunch foods.**
   - For sandwiches, try these instead of hot dogs, bologna, salami, or Spam:
     - sliced lean beef, ham, chicken or turkey
     - water-packed canned light tuna (low salt/sodium)
     - low-fat cheese
     - peanut butter and jelly or banana
   - Try these other lunch ideas:
     - healthy leftovers
     - soups (low salt/sodium)
     - salads with oil and vinegar dressing

3. **Cut down on beef or pork high in saturated fat.**
   - Trim off extra fat.
   - Buy lean cuts like:
     - Beef: round, sirloin, loin
     - Pork: trimmed pork chops, fresh ham, shoulder, neckbone
   - Make it interesting: mix in vegetables, beans, brown rice, or whole grain pasta.
   - Cook with olive, canola, or other vegetable oils.
   - Keep servings the size of a pack of cards (3 ounces).

4. **Pay attention to how you prepare hamburger.**
   - Choose extra lean or lean hamburger—darker red means leaner.
   - Try great-tasting ground turkey, which often has less saturated fat.
   - Grill hamburger patties, or brown the meat and drain off the fat.
   - S-t-r-e-t-c-h your hamburger meat by mixing it with vegetables, beans, brown rice, or whole grain pasta. See cookbook, pages 27–52.
   - Stay away from hamburgers with sauces and lots of cheese.
Poultry & Fish Tips

1. **Eat more chicken and turkey.**
   - Bake, broil, or barbecue chicken. (See recipe for crispy baked chicken on page 16 in our cookbook.)
   - Add a little olive oil to keep the meat moist.
   - If you fry chicken, use olive, canola, or other vegetable oils.
   - Eat turkey instead of beef or pork.
   - Try using lean ground turkey or chicken (or lean ham) to season your vegetables.

2. **Choose fish more often.**
   - Try baked, broiled, or grilled fish. See cookbook, pages 19–25, for tasty ways to cook fish.
   - When frying fish, use olive, canola, or other vegetable oils instead of shortening or lard.
   - Try some of the fish that have healthy fats, like canned light tuna, sardines, herring, canned or fresh salmon, or lake trout.
   - When you eat canned tuna, choose low-salt (low sodium) light tuna packed in water.
   - Some fish contain mercury, which can be harmful if large amounts are eaten. Eat fish with low levels of mercury, such as salmon, catfish, shrimp, and sardines. See *A Healthy Eating Plan for Life*, page B-5 for more facts about mercury in fish.

Bean & Nut Tips

1. **Eat more beans and peas.**
   - Eat peas or beans instead of meat (or with a little meat for flavoring). See pages 34-42 in our cookbook for tacos and other bean dishes.
   - Soak beans overnight to shorten the cooking time.
   - Use onions and garlic for seasoning, or season with small pieces of lean meat like ham, turkey, or beef.
   - Make a quick, healthy meal with canned beans. Get the low-salt (low sodium) kind, or drain and rinse canned beans. (See *Cooking for One or On the Run*, page B-25).

2. **Choose nuts and nut butters more often.**
   - Nuts (pecans, peanuts, walnuts, almonds, cashews) and nut butters are good sources of healthy fats.
   - Remember that nuts are high in calories—a handful of nuts (1/4 cup) or two tablespoons of nut butter count as one serving.
   - Choose unsalted or lightly salted nuts. Avoid nuts with added sugar, like honey-roasted or chocolate-covered peanuts.
   - A peanut butter sandwich on whole grain bread makes a tasty lunch!
Milk & Dairy Food Tips

Use lower fat milk and yogurt.

- If you do OK with milk, drink some each day. Work your way down from whole or 2% milk to 1%, 1/2% or skim (nonfat).
- Buttermilk has no butter—it can also be a healthy choice.
- Cook with whole milk or 2% milk instead of cream. Then try 1%.
- Mix whole fruit (sliced banana, strawberries, or peaches) into plain low-fat or nonfat yogurt for a healthy snack.
- Avoid creamers in coffee. Instead, choose reduced fat milk or try evaporated skim milk for a creamy taste without saturated fat.

Go easy on high fat cheeses.

- Try sharp cheeses like sharp cheddar or Parmesan—you get more taste with smaller amounts. Slice it thin or grate it.
- For snacks, cut a small piece of cheese and put the rest away. It’s easy to eat too much!
- Don’t add a lot of cheese to meat sandwiches—regular cheese is high in saturated fat and adds extra salt (sodium).
- Ask for pizza with half the cheese and more vegetables.
- Go easy on the cream cheese toppings for sandwiches and bagels.
- Make lasagna and casseroles with cottage cheese or mozzarella. See cookbook, pages 29, 39, and 56.
- Choose cheeses that are low in salt (low sodium).
Topping, Oil, Seasoning, & Salt Tips

Try different toppings.

1. In recipes that call for sour cream, use buttermilk or plain yogurt instead.
2. On baked potatoes, skip the sour cream and gravy—instead, try plain yogurt or a little butter or trans-fat-free margarine.
3. Plain yogurt makes a great topping for fruit and other desserts.

Use less gravy.

4. Make healthier gravy—pour off the fat, thicken the meat juices, and go easy on the salt. See page 101 in our cookbook.
5. Instead of gravy on your meat, try using tomato, barbecue, Worcestershire or steak sauces—but be careful of sauces high in salt. Try to buy sauces labeled no salt added or low sodium.
6. Use a little trans-fat-free margarine or gravy on brown rice or mashed potatoes.

Choose trans-fat-free margarine.

7. When you use margarine, look for tub or squeeze margarines that say trans-fat-free. (See Know Your Fats, page B-11.)
8. Don't use regular stick margarines or shortening, which are high in trans fats.
9. Stay away from lard (high in saturated fat).

Use vegetable oil for frying.

10. Vegetable oils are better for your heart than bacon grease or shortening. (See Know Your Fats, page B-11.)
11. When you fry, use vegetable oil—just enough to keep the food from sticking.
12. See cookbook, pages 16 and 19, for crispy oven-fried chicken or fish baked with vegetable oil. See oven fries recipe on page 43.

Get creative when you bake.

13. Use vegetable oil instead of margarine, lard, butter, or shortening for baking. Two teaspoons of oil can replace one tablespoon of hard shortening.
14. For muffins and cakes, replace some of the margarine or butter with buttermilk, applesauce, or pureed prunes (see cookbook, page 10).
Use healthy seasonings for vegetables and salads.

- Instead of fatback, side meat, or stick margarine, season your vegetables with these:
  - A small amount of lean ham
  - Onions and garlic with vegetable oil
  - Vinegar or lemon juice
  - Low sodium bouillon (see page 44 in the cookbook for "Fresh Greens, Southern Style")
  - Fresh or dried herbs
  - A little trans-fat-free margarine

- Make your own olive oil and vinegar dressing for tossed salads (see cookbook, page 103)—stay away from bottled dressings with a lot of salt (sodium) and watch out for dressings with high fructose corn syrup or other sugars (see Read the Label, page B-17.)

Go the low salt way.

- Buy foods that say low or reduced salt (sodium) or no salt added (see other shopping tips in Spice It Up without Salt, page B-15.)
- Eat out less often at restaurants—even healthy restaurant meals often have a lot of salt.
- Keep the salt shaker away from where you cook and eat.
- Taste your food first, before salting. You’ll get used to the taste of less salt.
- Use seasonings like pepper, lemon juice, vinegar, herbs and spices. (See Spice It Up without Salt, page B-15 for other cooking tips.) Mix your favorite herbs or spices in a handy shaker.
- Watch out! Packaged meals with noodles can be high in salt (sodium) and trans fats (see Read the Label, page B-17.)
Sweets, Snacks, & Restaurant Food Tips

1. Watch out for sweets.
   - Fill up on healthy foods so that you are not as hungry for sweets.
   - Try fruit for dessert.
   - Save sweets for special occasions (birthdays and holidays), not every day! Try making angel food cake or other desserts (see pages 76-91 in the cookbook).
   - When you do eat sweets, eat small amounts.
   - Stay away from doughnuts, sweet rolls, pies, cakes, cookies, candy bars, milk chocolate, caramel candies, and cream-filled desserts—these are often full of saturated and trans fats as well as sugar and empty calories (see Read the Label!, page B-17).
   - Small amounts of dark chocolate (more than 50% cacao (cocoa) solids) are okay 2–3 times a week. A small amount is 1/2–1 oz. (or 1/4 of a standard-sized candy bar).
   - Stay away from added sugar in other foods when you can. Many processed foods contain high fructose corn syrup—foods like salad dressings, spaghetti sauces, ketchup, baked goods, and even bread.

2. Choose cold and frozen desserts with care.
   - For a refreshing summer dessert, have a chilled slice of watermelon or a bowl of fresh berries with plain yogurt.
   - Popsicles can be a tasty treat. Be sure store-bought popsicles are made with 100% fruit juice, or make your own! Freeze 100% fruit juice in small cups with popsicle sticks.
   - Try making homemade sherbet or fruit ice. See cookbook, page 91.
   - Eat a small amount of ice milk, sherbet, or frozen yogurt instead of ice cream, but not too often—they still have added sugar and can be high in calories.

3. Go easy on snack chips and crackers.
   - Snack chips and crackers can be high in trans fats, which are NOT good for you. Check the ingredients list for partially hydrogenated vegetable oil or look for trans fat on the food label (see Read the Label!, page B-17).
   - Choose whole grain crackers with no trans fats. (See Know Your Fats, page B-11.)
   - Look for snack foods that are unsalted or only lightly salted.
   - Have raw vegetables or fruit, a small handful of nuts, or unbuttered popcorn.
**Make good choices when you eat at restaurants.**

- Eat out less often—a lot of restaurant food is unhealthy and costs more.
- If you eat at fast food places, choose carefully (see *Fast Food Facts*, page 15-19.)
- Choose healthy menu items—for example, grilled or baked red meat, poultry or fish, tossed salads with oil and vinegar dressing, lightly steamed or seasoned vegetables, fruit plates, whole grain breads, and water with a twist of lemon.
- Stay away from fried foods. Most restaurants use partially hydrogenated vegetable oils (trans fats) for frying.
- Drink a glass of water before the meal so you are not as hungry. Avoid drinks with lots of sugar (see *Sugar-sweetened Drinks*, page 15-19).
- Order small portions, split an order with a friend, or take leftovers home with you.

**Beverage Tips**

**Choose healthy drinks.**

- Stay away from sodas, bottled fruit drinks, sports drinks, and other sugary beverages—they are full of sugar, which means lots of empty calories!
- Avoid drinks that list high fructose corn syrup, corn syrup, or corn sweetener on the ingredients list—these sugars are not good for you.
- Instead of Kool-Aid or sweet tea, drink water with a twist of lemon or lime, sparkling water with a splash of 100% fruit juice, or iced tea with lemon (see *Sugar-sweetened Drinks*, page 15-19, for other suggestions).
- Try a little skim milk in your hot or cold tea or coffee instead of sugar.

**Choose 100% fruit juice, but not too much!**

- Go easy on the fruit juice. Aim for 8 ounces or less each day.
- Check the label to make sure you drink 100% fruit juice.
- Choose whole fruit instead of juice whenever possible.
**What Is A Healthy Weight?**

Your weight can affect your health and the way you feel about yourself. How much you weigh mainly depends on your lifestyle and your genes. A **healthy** weight is a weight that does not create health or other problems for you.

Many people think this means they need to be thin or skinny. But being as “skinny” as a fashion model may not be what is healthy for you. Not everyone can or should be thin. But with the right choices, everyone can be healthier.

**Is my weight healthy?**

Use the chart below to find the maximum weight that is healthy for your height.

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</table>
Track your progress

It's good to keep track of how you're doing, but don't get hung up on numbers—the most important thing is to make some progress, even if it is just a little.

Watch your measurements.

Using a ribbon, start at your belly button and wrap the ribbon around your waist until one end meets the other, then mark it with a marker or dark pen. Repeat over time. As the marks on the ribbon get closer together, you will be able to see how you're doing.

If you are trying to lose weight, weigh yourself—but not too often.

Don't weigh yourself more than once a week. Weighing yourself every day is not helpful because:

1) Your weight will not change much from day to day, and
2) Weighing yourself a lot can make you feel more pressure.

If you are trying to maintain your weight, weigh yourself more often.

Weighing yourself more often can give you the information that you need to stay on track. It's easier to get back on track after 2 pounds of weight gain than after 5 pounds. The numbers on the scale can remind you to ask yourself these questions:

❖ Are my portions right for me? (Maybe you are eating more than you think when you snack between meals.)
❖ Am I eating mostly healthy foods? (Maybe you are eating too many salty foods and your body is holding on to more water.)
❖ Do I need to step it up a notch? (Maybe you need to go for longer walks or walk at a faster pace now that you are in better shape.)

Stick to your eating plan and physical activity goals. The results you want will come with time.
Setting Goals

If you want to lose weight or control your weight, set the right goals and think SMART! Your goals should be:

1. **Specific**: Think about what activity you will do, and when or how you will do it. Setting a goal to “be more active” sounds good, but it is not specific.

2. **Measurable**: How will you know when you reach your goal? Instead of just planning to lose weight, decide how many pounds you would like to lose, and by when.

3. **Achievable**: Pick a goal that you know you can reach—don’t try to lose 20 pounds in one week. Remember, slow and steady wins the race!

4. **Realistic**: Don’t make your goal too hard. Is it realistic to decide to “walk for 60 minutes, seven days a week”? What happens if you have to work late or it rains? “Walk for 60 minutes, five days a week” may be more realistic for your situation.

5. **Time-bound**: Pick a time frame: Do you want to meet your goal next week or in three months? Setting a time limit will help you take action.

**Write down your goal**

Think about the goals you want to set. Do you want to **lose weight** or **stay at the same weight**? It might be helpful to fill out a weight loss or weight maintenance goal statement like the example below.

**SMART weight loss goal:**

My goal is to lose 4-5 pounds (**specific**, **measurable**, **achievable**) in 1 month (**time-bound**) by cutting 500 calories a day (**achievable**). I will cut 500 calories by drinking 4 cups of water instead of the 3 regular sodas that I have every day (**specific**, **realistic**). I will also do 60 minutes of brisk walking every day (**specific**).

**SMART weight maintenance goal**

(for a 5’5” woman):

My goal is to maintain my weight at 140 pounds (**specific**, **measurable**, **achievable**). I will do this by checking my weight once a week (**time-bound**), eating at least 7 servings of vegetables and fruits each day (**specific**, **realistic**), and by doing 60 minutes of brisk walking on most days (**specific**, **realistic**).

Write down your own SMART weight loss or weight maintenance goal below. Keep it Specific, Measurable, Achievable, Realistic, and Time-bound.

**My goal is:**

________________________________________________________________________

________________________________________________________________________
Cutting 500 calories a day is as simple as 1, 2, 3!

1. Drink water at lunchtime instead of a 12-oz can of soda. – 140 calories
2. Eat a medium apple (81 calories) for dessert instead of a fudge nut brownie (340 calories). – 259 calories
3. Take a 15-20 minute brisk walk after dinner. – 100 calories

Total: – 499 calories

<table>
<thead>
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<th>Tip the balance this much:</th>
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</thead>
<tbody>
<tr>
<td>1 pound per week</td>
<td>3,500 calories per week (or 500 each day for 7 days)</td>
</tr>
<tr>
<td>1 1/2 pounds per week</td>
<td>5,250 calories per week (or 750 each day for 7 days)</td>
</tr>
<tr>
<td>2 pounds per week</td>
<td>7,000 calories per week (or 1,000 each day for 7 days)</td>
</tr>
</tbody>
</table>

See *Healthy Eating*, page B-1 for information on making healthy food choices.
Tip the Calorie Balance

When you eat food, you take in calories.
Calories in food come from fat, carbohydrates (starches and sugars), and protein. Alcohol also has calories. Fat and alcohol have the most calories per gram.

Calories measure the energy you use up or "burn."
You use some calories just by breathing. You use even more calories when you are physically active. For example, one mile of brisk walking (15-20 minutes) burns about 100 calories.

Your weight is the balance between the calories (energy) you:

- Take in by eating, and
- Use up by being active

Remember:
- To lose weight, use more energy (by being more active) than you take in with the foods you eat.
- Slow, steady weight loss (1 or 2 pounds a week) is the best way to lose body fat.
- Make the changes part of your lifestyle...and you will keep the weight off.

Your weight can stay the same.
You can gain weight.
You can lose weight.
You can reach a new balance at a new weight.
Getting Started

I am ready to lose weight. Where do I begin?

- Look at the Maximum Healthy Weight chart on page F-1. If you weigh more than the maximum healthy weight for your height, try to lose 5-10% of your body weight. (See the Easy Math Chart below.)
- For example, if you are 5’6” and you weigh 170 pounds, you could start by trying to lose 9-17 pounds.

Why 5-10%?

- Losing just 5-10% of your body weight can lower your chances of getting heart disease and diabetes.
- Losing 5-10% is a goal you can reach.
- Losing 5-10% can give you the confidence to lose even more.
- Best of all, it can help you feel better!

What if I want to lose more?

- If you want and need to lose more weight after losing 5-10%, go for it!
- Take things one step at a time. It’s easier than trying to lose a lot of weight all at once.

How much should I lose each week?

- It’s safe to lose 1-2 pounds a week. (That’s about 4-8 pounds a month.)
- It’s unhealthy to lose more than 2 pounds a week, and also harder to keep the weight off.

Easy Math Chart

To figure out 10% of your current weight, take your weight and drop the last number:

220 pounds = 220 pounds
22 ÷ 2 = 11 or 5%
5% - 10% goal = 11 to 22 pounds

To figure out how much 5% of your weight is, divide the 10% number by 2:

22 pounds ÷ 2 = 11 pounds

So if Sally weighs 220 pounds, her 5-10% goal would be to lose 11-22 pounds.
Bananas, Pears, and Apples

What are the three body shapes?

People are born with one of three basic body shapes: Bananas, Pears, and Apples.

Bananas are tall, thin and have low percent body fat. They may have trouble gaining weight or muscle.

Pears are larger at the bottom than the top. They have low to moderate body fat. They tend to gain and lose weight more easily.

Apples are larger on top than on the bottom. In other words, they have more weight around their waist and chest than in their hips. They tend to have big bones and medium to large percent body fat. They have a harder time losing weight.

What does my body shape have to do with my health?

Your health is not only affected by how much body fat you have, but by where it is. Apple-shaped people (with more fat around their waists) have a greater chance of having heart disease, diabetes, and other related diseases than people shaped like pears or bananas.

You can't change the basic body shape that you were born with. But that doesn't mean that you can't help prevent heart disease and other health problems. If you know your shape, you can stay healthy by eating healthier and being physically active. Apple-shaped people especially need to stay at a healthy weight.

What's MY body shape?

Look in the mirror. If you can't tell what shape you are, here's how to find out:

- Use a cloth tape measure. Wrap it around your waist, above your belly button. Write down the number in inches.
- Next, wrap the tape measure around the largest part of your hips. Write down the number in inches.
- Compare the two numbers:
  - Waist size greater than hip size = apple shape.
  - Waist size smaller than hip size = pear shape.
  - Waist, hips, and shoulders all about the same size = banana shape.

- If you have a waist size of more than 35 inches, you may be more likely to have future health problems like type 2 diabetes, high blood pressure, and heart disease.
What is Body Mass Index (BMI)?

Body Mass Index (BMI) adjusts your weight for your height. The maximum healthy weights shown in the chart on page F-1 are based on BMI. The higher your BMI is, the greater your chances of heart disease, stroke, high blood pressure, diabetes, osteoarthritis, some cancers, and/or sudden death.

Do I have a healthy BMI?

With a calculator, it is easy to figure out your BMI. Use this simple formula (using pounds and inches).

\[
\text{BMI} = \frac{\text{Your weight} \times 703}{\text{Your height} \times \text{your height}}
\]

The example below shows the BMI for Sarah, who is 5’3” (63”) and weighs 150 pounds.

**Step 1:** Multiply Sarah’s weight by 703: 150 \(\times\) 703 = 105,450

**Step 2:** Multiply Sarah’s height (in inches) by itself: 63 \(\times\) 63 = 3,969

**Step 3:** Divide 105,450 (Step 1) by 3,969 (Step 2): 105,450 \(\div\) 3,969 = 26.56

**Step 4:** Round up the number in Step 3: Sarah’s BMI is 27 (overweight).

What does my BMI mean?

You are **underweight** if you have a BMI **less than 18**.

- Take note! You have a lower chance of getting heart disease and diabetes, but being underweight can also be unhealthy.
- Talk to your doctor if you recently have lost a lot of weight without trying: sudden weight loss can be a warning that you have a health problem.

You are at a **healthy weight** if you have a BMI **between 18 and 24**.

- Good job! Your weight does not increase your chances of having heart disease and other related health problems.
- Talk to your doctor: your cholesterol and triglyceride levels, your blood pressure, and your family history may still increase your chances of heart disease. Your doctor can help you figure out how to lower the risk.

You are **overweight** if you have a BMI **between 25 and 29**.

- Attention! Your weight increases your chances of having health problems such as heart disease, diabetes, stroke, osteoarthritis, and some cancers.
- Make eating well and being active part of your daily routine: you can get back to a healthy weight and live life to the fullest.

You are **obese** if you have a BMI of **30 or above**.

- Watch out! Your weight means you have a greater chance of getting heart disease, diabetes, stroke, osteoarthritis, and some cancers and/or you could die suddenly.
- Take steps now to change your lifestyle and lose weight: bringing your weight down can help you avoid serious health problems. Make eating well and being active part of your daily routine.
Appendix L

A Healthy Eating Plan for Life

Eating in a healthy and balanced way means choosing a variety of foods: vegetables, fruits, beans, whole grains, dairy products, lean red meat, poultry, fish, eggs, and nuts. Eating healthy also means limiting unhealthy fats and avoiding added sugars and salt.

Choosing well from each food group

Vegetables

Vegetables have important vitamins, minerals and fiber with few calories. Eating lots of vegetables may lower your risk of heart disease, diabetes, and some cancers. Vegetables that are high in potassium (a mineral) can help you control or lower your blood pressure (see Good Sources of Potassium, next page).

- Vary your vegetable choices to keep meals interesting (see Healthy Eating Tip Sheets, page A-11.)
- Include dry beans and peas often.
- Try to eat 5 or more servings of vegetables each day (at least 2 1/2 cups). Fill half of your plate with vegetables.

Fruits

Fruits are important sources of potassium (see Good Sources of Potassium on the next page), dietary fiber, vitamin C, and folic acid. Dietary fiber from fruit, as part of a healthy diet, may lower your risk of heart disease.

- Vary your fruit choices to keep snacks and desserts interesting.
- Try to eat about 4 servings of fruit (2 cups) each day.

Grains

Bread, tortillas, rice dishes, pasta, and hot and cold breakfast cereals are made from grains like wheat, rice, and rye. Cornmeal-based products also are part of this group. Eating whole grain foods is a good way to get fiber and B vitamins. Fiber may reduce your risk of developing heart disease and diabetes, and can help prevent constipation.

- Try to eat only or mostly whole grains (see Know Your Grains, next page).
- The amount of overall grains that you need depends on how physically active you are.
Stressful situations cannot always be avoided. Here are 8 ways to **cope with stress:**

1. Help your body handle stress by **eating well.**
2. Be **physically active** every day. When you are active, your body releases hormones (called endorphins) that make you happy and give you energy.
3. Take a 10-minute **“time out.”** Go for a walk or do some stretches at your desk or workstation, or pamper yourself for a few minutes.
4. Learn different ways to **relax**, such as deep breathing.
5. **Get support** from friends. Talk about what’s bothering you. Friends can give you a different point of view. (See **Getting Support**, page J-6.)
6. Give yourself **positive messages** every day. Tell yourself, “I’ve done it before and I can do it again.” This will boost your spirits and give you the encouragement you need to face the day.
7. **Pray, meditate** or **worship**.
8. Learn how to **problem-solve** (see **Got Problems?**, page J-5).

---

### Changing Stressful Situations and Avoiding Stress

- **Plan ahead.** Making a plan of what needs to be done can help you handle or work around a lot of day-to-day stress.
- **Set goals** you can reach.
- **Take charge** of your time.
- **Be realistic** with your schedule.
- **Let others help!** Share some of your work with others.
- **Walk away** from people and things that make you tense.
- **Say “NO”** when you’ve reached your limit. Say “Yes” only when it is important to you.

---

### Relaxation Exercise

To relax, try this simple breathing exercise:

1. Take a full, deep breath.
2. Count to five.
3. Let go of your breath slowly.
4. Let the muscles in your face, arms, legs, and body go completely loose.
Appendix M

A New Leaf

Choices for Healthy Living

Southern Style Recipes
Healthy Weight Tip Sheets

Check the goals you want to work on for the next contact.

1. Cut back on emotional eating.
   - Don't let strong feelings turn into weight gain.
   - Figure out what your eating triggers are.
   - Pay attention to how much and what you are eating.
   - See Thoughts, Feelings and Weight (page P-15) for tips on how to break the stress and eating cycle!
   - For other tips on problem-solving and dealing with stress, see Got Problems? (page J-5).

2. Don't skip meals.
   - Skipping meals does not help you lose weight!
   - Your body needs a certain amount of calories every day. If you skip a meal, you probably will snack or eat more later.
   - Try to eat breakfast, lunch and dinner every day.

3. Understand binge eating.
   - Most of us eat more than we need to (overeat) from time to time. When someone feels that they can't control their overeating, it is called binge eating.
   - Binge eaters tend to:
     - eat an unusually large amount of food, even when they are not really hungry
     - eat more quickly than usual when binging
     - eat until they are uncomfortable
     - eat alone because they are embarrassed by how much they eat
     - feel badly about themselves (disgusted, depressed, or guilty)
     - gain weight
   - If this describes you, you may have a problem with binge eating. To stop binge eating you must understand what feelings and situations make you overeat. See Thoughts, Feelings and Weight (page P-15).
   - If you need more help, talk to a doctor.
Understanding Cholesterol

Your body needs a little cholesterol to be healthy, but too much cholesterol can be bad for your heart. Heart disease and stroke are the leading causes of death in this country and are more likely to occur in people who have high blood cholesterol levels. The food you eat can make a difference in the amount of cholesterol in your blood.

What are LDL and HDL cholesterol?

There are two main types of cholesterol:

- LDL is the "bad" cholesterol. LDL cholesterol should be below 130 mg/dL, and for those who have heart disease, below 70 mg/dL.
- HDL is the "good" cholesterol. HDL cholesterol should be above 40 mg/dL.
- A good total cholesterol level is below 200 mg/dL, and for those who have heart disease, below 150 mg/dL.
- Triglycerides are another fatty substance in the blood; they should be less than 150 mg/dL.

What happens if my cholesterol is too high?

If there is too much cholesterol in your blood, the walls of your blood vessels may enlarge with cholesterol deposits. These can clog the blood vessels and lead to heart attacks and strokes.

What can I do to lower my cholesterol?

Cut down on the amount of trans fat, saturated fat, and cholesterol that you eat (see Know Your Fats, page B-11). This will help lower your LDL or "bad" cholesterol and may reduce your chances of getting heart disease.

It also helps to be active, get rid of extra weight and, if you smoke, quit!
Unsaturated fats

The unsaturated fats (mono- and polyunsaturated) are better for your heart. These fats are softer, more liquid fats that are found mostly in plant foods and some oily fish. Foods like...

- Vegetable oils—olive, canola, safflower, peanut, corn, and soybean oils
- Salad dressings made with these oils
- Trans-fat-free margarine spreads
- Fish—salmon, tuna, and sardines
- Peanut butter and other nut butters
- Nuts—almonds, pecans, peanuts, and walnuts

To keep your heart healthy and lower your chances of getting heart disease...

Choose foods that are LOW in trans and saturated fats

- Fruits and vegetables*
- Beans*
- Whole grain breads and cereals*
- Lean meats, chicken, turkey, and fish
- 1%, 1/2%, or skim (nonfat) milk, low-fat cheese, and low-fat or nonfat yogurt
- Watch out for foods made with coconut, palm, and palm kernel oils, which are high in saturated fat.

* These foods are also high in fiber.

Eat more of these other kinds of fat

- Use liquid vegetable oils and trans-fat-free margarine spreads for cooking and seasoning instead of animal fats like lard, bacon grease, side meat, or fatback.
- Eat a small amount of nuts for a healthy snack.
- Choose fish more often.

Become a smart shopper

- The list of ingredients can tell you whether a food has “partially hydrogenated vegetable oil” (trans fat) in it.
- The food label shows how much saturated fat is in the foods you buy. (See Read the Label on page B-17.)
Know Your Fats

What are the types of fat?

Fats are an important part of what we eat. Our bodies need fats to carry out many functions. It is important to know which fats are best for you.

There are several different types of fat in the foods we eat. They are:

- trans fats or trans fatty acids
- saturated fats
- unsaturated fats (monounsaturated and polyunsaturated)

Trans fats

Trans fats (or trans fatty acids) are made when liquid vegetable oils are turned into solid fats for margarine, shortening, or deep-fat frying. Trans fats can increase your chances of developing heart disease and diabetes, even if you do not eat a lot of them (see Avoiding Trans Fats, below). To avoid health problems, it is best to eat no trans fats at all or almost none! Trans fats are found in foods like...

- Baked goods, packaged snack foods, doughnuts, crackers and chips
- Greasy, shiny, or greasy-crisp fried foods and biscuits from fast food places and restaurants
- Hard stick margarine
- Shortening

Avoiding Trans Fats

Even a small amount of trans fat can be bad for your health. For most adults, as few as 2 to 7 grams of trans fat a day can be harmful. Be aware that food labels can say “zero trans fat” when a food has less than 0.5 grams (500 mg) of trans fats per serving, so you could be eating trans fats even when you see “zero” on the label! Looking at the ingredients list for “partially hydrogenated vegetable oil” or “hydrogenated vegetable oil” is the ONLY way to know for sure whether something has trans fats in it.

Note the trans fats in this list of ingredients from a food label:

- **Ingredients**: Enriched flour, sugar, vegetable oil, whey (from milk), **partially hydrogenated soybean oil**, salt, baking soda, calcium lactate, malic acid, high fructose corn syrup.

Saturated fats

Eating too much saturated fat can also increase your chances of having heart problems. Try to eat less than 20 grams of saturated fat per day. Saturated fats are mostly hard or solid fats. They are the main fats found in foods from animals. Foods like...

- Fatty meats—ribs, ground beef, steak, barbecue, salt pork, and fatback
- Processed meats—bacon, sausage, bologna, and hot dogs
- Cheese
- Whole milk (regular sweet milk)
- Ice cream
- Cream
- Butter
- Lard
Watch out for high fructose corn syrup!

The main sugar product added to most drinks is high fructose corn syrup. Watch out for drinks and processed foods with high fructose corn syrup! But be careful—added sugars have many other names too (see Types of Added Sugar, previous page).

What About Alcohol?

You may have seen news reports saying that regularly drinking small amounts of alcohol can lower heart disease risk. This is probably true but most health experts would not tell someone to start drinking alcohol or to drink more often as a way to avoid heart disease. Drinking large amounts of alcohol regularly (or even once in a while) has harmful health effects. Also, some experts think that even small amounts of alcohol may increase a woman's chances of getting breast cancer.

The bottom line: If you choose to drink alcoholic beverages, drink alcohol wisely and in small amounts. This means:

- No more than 1 drink per day for women, or 2 drinks per day for men.
- A drink is 4 ounces of wine, 12 ounces of beer, or 1 ounce of liquor.
Sugar-sweetened Drinks

Why should we limit sodas and other sugar-sweetened drinks?

Sodas and other sugar-sweetened drinks have lots of added sugar. These are sugars and syrups that are added to foods or beverages during processing or preparation.

- Added sugars provide lots of extra calories but nothing else!
- Drinking one or more sugar-sweetened drink each day can increase your risk of becoming overweight and developing diabetes.
- Added sugar and sodas can lead to tooth decay.

What is a sugar-sweetened drink?

Drinks with added sugar include:

- regular sodas (soft drinks)
- fruit punches and fruitades
- lemonade
- sports and energy drinks
- other sweetened drinks, like iced tea, Kool-Aid™, or sweetened coffee drinks

Types of Added Sugar on Food and Drink Labels

- High fructose corn syrup
- Fruit juice concentrates (or "concentrated juice" or "juices from concentrate")
- Corn syrup or corn sweetener
- Other syrups like malt syrup or sucrose syrup
- Sugar, invert sugar, cane sugar
- Fructose, glucose, dextrose, maltose, lactose, sucrose
- Honey
- Molasses

What can I drink instead?

Try these...

- Plain water, add a twist of lemon or lime for a fresh taste
- Sparkling water mixed with a splash of 100% fruit juice
- Unsweetened or sweetened ice tea, hot or herbal tea, or coffee—but go easy on the sugar!
- 1%, 1/2%, or skim (nonfat) milk products
- A small amount of 100% fruit juice (4 oz.), no more than twice a day.

If you drink diet soda, be sure not to drink too much. (Diet sodas have no nutritional value and can lead to bone loss. Some experts have concerns about the long-term health effects of large amounts of artificial sweeteners.)
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<th>Item</th>
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</tr>
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<td>Orange (1 medium)</td>
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<td></td>
<td>1/2% milk (1 cup)</td>
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<td><strong>Lunch</strong></td>
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<td>Apple with skin (1 medium)</td>
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<td><strong>Dinner</strong></td>
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Fiber—Are You Getting Enough?

Getting enough fiber is important. Fiber helps you feel full and keeps you regular. Eating high-fiber foods also can help lower your cholesterol and prevent heart disease and diabetes.

What is fiber?

Fiber (or “roughage”) is found in all vegetables, fruits, whole grains, beans, and nuts. There are two types of fiber. **Insoluble** fiber helps with constipation by keeping you regular. This type is found mostly in the tougher parts of foods like...

- the skins of fruits and vegetables
- leafy greens like turnips and collards
- the outer layer of beans and grains like wheat

**Soluble** fiber can help to lower your cholesterol, which is good for your heart. It is found mainly inside the softer parts of foods like...

- beans and peas
- fruits like apples, oranges and grapefruit
- vegetables like squash, sweet potatoes, and cabbage
- oatmeal and oat bran

How much fiber do I need?

Each day you should have at least 25 to 35 grams of fiber. If you choose foods that are good sources of fiber at each meal and snack, it’s easy to get enough (see sample menu, next page). To get the fiber you need...

- Eat 5 or more servings of vegetables and about 4 servings of fruit each day. Eat the skin or peel, when possible.
- Eat beans and peas (like pinto beans and split peas) at least 3 times a week.
- Choose whole grain breads. Be careful: Breads that look “brown” are not always made from whole grain! Read the ingredient list and make sure that it lists whole wheat flour or whole grain as the first ingredient. Pick a bread that has at least 2 grams of fiber per slice.
- Choose high-fiber cereals like bran flakes, shredded wheat, and old-fashioned oatmeal (not instant).
- Add a few nuts to your salads (or breakfast cereal) or have a small amount as a snack.
Focus on Fruits & Vegetables

Why should I eat more fruits and vegetables?

- There are many reasons to eat plenty of fruits and vegetables. Vegetables and fruit:
  - have lots of good nutrients
  - make good snacks and desserts
  - fill you up
  - have fiber, which is good for you

- Eat more servings of vegetables than fruits (vegetables usually have fewer calories). Aim for at least 5 servings of vegetables and about 4 servings of fruit each day.

- Try to eat vegetables from all five groups (and especially the first two) (see Types of Vegetables).

There are many ways to eat more fruits and vegetables every day. (See Healthy Eating Tip Sheets, page A-11, for suggestions.)

Types of Vegetables

**Dark green vegetables:** greens (collards, mustard or turnip greens, beet greens, kale, chard, leafy lettuces), spinach, broccoli

**Orange vegetables:** carrots, sweet potatoes, butternut squash, pumpkin

**Starchy vegetables:** corn, white potatoes, green peas, lima beans

**Other garden vegetables:** tomatoes, cabbage, celery, cucumber, onions, peppers, green beans, okra, zucchini, turnips, beets

**Dry beans and peas:** pinto beans, navy beans, lentils, chickpeas, black-eyed peas

Types of Fruit

**Citrus fruits:** oranges, grapefruit, tangerines, lemons, limes

**Berries:** strawberries, blueberries, blackberries, raspberries, cherries, cranberries

**Melons:** cantaloupe, honeydew, watermelon

**Tropical fruits:** bananas, mangos, papaya, pineapple, pomegranate

**Other fruits:** apples, pears, grapes, peaches, plums, apricots, nectarines, kiwi

**Dried fruit:** raisins, prunes, dried apricots, dried apple
**Milk, yogurt, and cheese**

Milk and milk products contain several important nutrients, including calcium, potassium, and Vitamin D. When you can, choose 1%, 1/2%, or skim (nonfat) milk, low- or nonfat yogurt, and low-fat cheese. If you are lactose intolerant, have fortified cereals or other foods high in calcium, or drink small amounts of orange juice fortified with calcium and vitamin D.

**Oils and seasonings**

Vegetable oils low in saturated fats (like olive oil and canola oil) and trans-fat-free margarines are good choices. Foods like fish, nuts, and avocados also have healthy oils.

- Stay away from processed foods with lots of trans fats or added salt.
- Mayonnaise is high in fat but it contains mostly healthy fats.
- Aim for 2-3 tablespoons of healthy oils, mayonnaise, or other spreads each day.

**For balanced healthy eating...**

- Eat a variety of foods to get the nutrients you need.
- How much you eat is important to stay at a healthy weight. Avoid overeating and large portions.
- Watch out for foods that have a lot of trans fat, saturated fat, sugar, salt, and empty calories—go easy on sweets, sodas, and sports drinks!

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**Fish Facts**

These fish are high in the healthy fats (omega-3 fatty acids) that our bodies need:

- Tuna
- Sardines
- Herring
- Salmon
- Lake trout

Some fish contain mercury. Mercury is harmful to everyone if eaten at high levels (and especially harmful for pregnant/nursing women and children). Use the following guidelines to plan the types and amounts of fish you eat:

- Eat as many as 1–2 servings per week of canned light tuna (packed in water), catfish, sardines, shrimp, salmon, trout, anchovies, Atlantic mackerel, and herring—these fish are low in mercury.
- Eat no more than 6 ounces per week of king mackerel, tile fish, shark, or swordfish—these fish contain high levels of mercury. (Serve even smaller portions of these fish to children.)
- Albacore tuna has more mercury than canned light tuna. Don’t eat more than 6 ounces per week of albacore tuna.
Good Sources of Potassium

Vegetables
- Dark-green vegetables (like spinach and beet greens)
- Orange vegetables (like sweet potatoes and butternut squash)
- Starchy vegetables (like white potatoes and lima beans)
- Tomatoes and tomato products (like tomato sauce and paste)
- Cooked dry beans and peas (like lentils, kidney beans, and split peas)

Fruits
- Bananas
- Cantaloupe and honeydew melon
- Dried fruit (like raisins, prunes, and dried apricots)

Red meat, poultry, fish, eggs, nuts, and beans

These foods are good sources of protein and have important vitamins and minerals. Lean red meat and poultry are okay in moderate amounts. Fish and nuts have healthy fats that your body needs.

- Eat some red meat and poultry but keep your portions small (about 3 ounces—the size of a deck of cards). Trim the fat from meats.
- Eat at least two servings of fish and shellfish a week, especially fish that have lots of “omega-3 fatty acids”—healthy fats that many Americans don’t get enough of (see Fish Facts, next page).
- Use nuts or beans to replace fatty meat or cheese in snacks, salads, or main dishes.
- Don’t forget about eggs. Eggs are a good source of low-cost, high-quality protein. Eating an average of one egg a day does not affect most people’s cholesterol levels.
- On a typical day, you might eat two 3-ounce servings of red meat, poultry, or fish: 1 egg; and 2 tablespoons of peanut butter.

Know Your Grains

- Whole grains (like whole wheat flour, whole oats, brown rice, and whole cornmeal) have the entire grain kernel—make sure the list of ingredients says “100% whole wheat.” Foods that say “multigrain,” “seven grain,” “100% wheat,” “cracked wheat,” or “bran” are probably not whole grain foods.
- Grains that have been refined (like white flour, white rice, and regular pasta) are missing fiber, iron, and many B vitamins.
Hot Tips for Healthy Eating

Check the goals you want to work on for the next contact.

1. goal

At parties, picnics, covered dish dinners, and restaurants.
- Plan ahead. Eat a handful of nuts or raw vegetables before you go so you are not as hungry.
- Check out the food choices first. Decide what and how much you are going to eat before you order or fill your plate.
- Ask for small portions of foods that are high in saturated fat, and stay away from foods high in trans fats (for example, fried foods and processed baked goods).
- Bring a healthy covered dish—use the New Leaf cookbook for ideas.
- Take a friend who will help you stick to your new way of eating.
- If you eat cake or pie, split a small piece with a friend—3 or 4 bites.
- Check out the tips in Fast Food Facts (page B-19) when you eat out at fast food places or other restaurants.

2. goal

When you're on the road.
- Pack healthy snacks to bring along—foods like carrots and celery sticks, fruit, or a small handful of nuts.
- If you stop at fast food places, stay away from foods with trans fat and try to pick items that do not have lots of salt, sugar, and calories. (See Fast Food Facts, page B-19.)
- Chew gum to stay awake instead of snacking.
- Drink water or unsweetened iced tea or coffee to keep your mind off food.

3. goal

When you're cooking a meal or cleaning up.
- If you are hungry, eat a small healthy snack before you start cooking.
- Chew something like gum or a toothpick while cooking, or drink a glass of water or unsweetened iced tea so you don't nibble.
- Fix the same food for everyone—you will spend less time in the kitchen.
- Have someone else help clean up the leftovers—that way you won't be tempted to eat them!
4. When you're eating meals or snacks at work.
   - Instead of buying snacks at vending machines and snack bars, bring your own healthy snacks from home and keep them handy—a small amount of nuts or fruit are good choices.
   - When a snack bar or vending machine is your only choice, choose fruit, low-fat yogurt, or small amounts of animal crackers or fig bars.
   - If you are bored, get up and stretch or get a drink of water.
   - If your office has a party, try the tips for eating "at parties, picnics, covered dish dinners, and restaurants."

5. When you are stressed out, bored, tired, angry, or depressed.
   - Do something else instead of eating, like:
     - Go for a walk
     - Work on a hobby
     - Read a magazine or book
     - Call a friend
     - Play with your kids or grandkids
     - Take a warm bath
   - Keep healthy snacks handy—raw vegetables, fruit, nuts, or popcorn (store it in an airtight container to keep it fresh).
   - If you end up eating unhealthy foods, don't give up. Try again!

6. When you see unhealthy foods around your home or at work.
   - Out of sight, out of mind! Don't bring unhealthy foods into the house.
   - If you must buy some unhealthy foods for your family, choose foods that don't tempt you. Talk to your family about healthier choices.
   - Keep unhealthy snacks like chips, candy and cookies out of sight.
   - Put tempting foods in containers you can't see through in the refrigerator.
   - Avoid the snack food area at work, especially at day's end when you are tired!

7. When someone offers you something unhealthy.
   - Learn how to politely refuse. You can say:
     - "No thank you, I just ate."
     - "I'm trying to watch what I eat."
     - "Thanks, I'd love a cup of coffee."
     - "It looks great, but, no thanks."
   - Ask friends and family members not to offer you unhealthy foods.

8. When you want to reward yourself.
   - Take some time for yourself—go for a walk or spend some time doing something you enjoy.
   - Use the money you would spend on a food reward to buy yourself or a loved one something special, or donate it to a good cause.
Think about whether you have lost weight without trying.

- If you recently have lost a lot of weight for no apparent reason and you feel weak or tired, talk to a doctor.
- Losing a lot of weight without trying can be a warning sign of a serious illness.

Be active while sitting.

- If you spend a lot of time sitting, either watching TV or working at a desk, get more active!
- See *Keeping Active*, page D-1, for tips on how to be active even when you’re sitting down.

Aim for 60 minutes of physical activity on most days.

- See *Becoming More Active* (page D-1) and *Your Daily Routine* (page D-5) for creative ways to add physical activity to your routine.
- If you already are physically active at least 30 minutes a day, give yourself a pat on the back!
- Now, why not try for 60 minutes a day? You will definitely see and feel the results!
- Physical activity not only can help you lose weight or stay at a healthy weight, it can:
  - improve your blood pressure and cholesterol
  - lower your risk of developing heart disease, cancer, and diabetes
  - relieve stress
4. Get rid of guilt.
   - Feeling guilty about eating a “bad” food or eating too much isn’t helpful. Guilt is a type of negative thinking, and you can overcome it! (See Negative Thoughts, page F-17, for tips on stopping negative thinking.)
   - Instead, make a list of the foods that you feel most guilty about eating.
     - Replace them with healthier foods or eat them less often and in smaller amounts.
     - Stop buying the foods that make you feel guilty. You can’t eat them if you don’t have them in the house!

5. Eat when you are hungry and stop eating when you’re full.
   - Sit at a table to eat.
   - Slow down! Eating slowly lets you enjoy your food and gives your brain a chance to figure out when you’re full.
   - Put your fork down between most bites to help you slow down.
   - Pay attention to portion size (see How Much Can I Eat?, page E-14).

6. Try healthy snacking instead.
   - Snacking is not always a bad thing. It just depends on what the snack is!
   - Prepare healthy snacks ahead of time and keep them handy when you’re on the go.
   - Healthy snacks include raw vegetables, fruit, a small handful of nuts, or unbuttered popcorn. Look at snacks as a way to eat more fruits and vegetables!

7. Understand recent weight gain.
   - Sometimes people gain weight in a short period of time because they are going through hard times (death, divorce, or job changes). They don’t have the time or energy to watch what they eat or to do regular physical activity.
   - If you have gained weight because of stress, see Thoughts, Feelings and Weight (page F-15) and Stress and Depression (page J-1) for tips.
   - Are you gaining weight because you are trying to quit smoking? Quitting smoking can be tough. See the Smoking and Quitting Tip Sheets (page l-3) for tips on how to quit smoking while controlling your weight.

8. Understand how weight loss works.
   - If you have tried losing weight but weren’t able to keep it off, don’t feel bad! Most diets lead to some weight loss, but keeping the weight off is much harder.
   - Think about when you tried to lose weight.
     - What worked and what didn’t work?
     - A New Leaf can help you keep weight off and have a healthy lifestyle. See the Healthy Eating Tip Sheets (page A-11), Physical Activity Tip Sheets (page C-9), and A Healthy Weight (page F-1).
Appendix P

Keeping Your Bones Healthy (Tip Sheets)

Check the goals you want to work on for the next contact.

1. Choose low-fat milk, soy milk, and other drinks fortified with calcium and vitamin D.
   - Have 3 or more servings of milk or other dairy foods daily. Drink low-fat milk.
   - Milk is a good source of calcium and vitamin D.
   - Add low-fat or powdered nonfat milk to casseroles and soups.
   - Cook oatmeal or other hot cereals with low-fat milk instead of water.
   - If milk doesn’t agree with you, try lactose-free products or drink half a glass at a time with a meal. Or try yogurt and cheese, which can be gentler on your stomach (they have less lactose).
   - Some lactose-free drinks are Lactaid®, and soy milk or orange juice fortified with calcium and vitamin D.

2. Choose low-fat yogurt and other low-fat dairy products.
   - If you do not drink milk, have low-fat yogurt or other low-fat dairy foods daily.
   - Yogurt and cheese are good sources of calcium but not vitamin D.
   - Cottage cheese and cream cheese are not very good sources of calcium or vitamin D.
   - Plain yogurt has more calcium than fruit-flavored yogurt.
   - Unless they are labeled as low-fat or made from skim milk, hard cheeses (cheddar, Colby, Swiss) are usually high in calories and saturated fat. Limit high-fat cheeses to no more than 1 serving per day.
   - Add a small spoonful of shredded parmesan cheese to your soup, salad, or whole grain.

3. Enjoy more vegetables.
   - Eat at least 5 servings (2 1/2 cups) of vegetables a day.
   - Dark green leafy vegetables like spinach, collards, and broccoli have lots of calcium and other nutrients that are good for bone health.
   - Try the recipe for "Fresh Greens, Southern Style" in the New Leaf cookbook, page 44.
Enjoy more fruit.

- Eat about 4 fruit servings (2 cups) a day.
- A fruit salad with some plain yogurt makes a healthy lunch. Mix oranges, melons, and berries—or apples, grapes, and pears. Add some whole grain crackers and fresh vegetable sticks for a satisfying meal.
- If you drink fruit juice, get 100% juice—but try not to drink more than 8 oz. a day.
- Try the Banana Pudding recipe in the New Leaf cookbook, page 90.

Avoid or cut back on soft drinks.

- Some research shows that drinking soft drinks (sodas) can cause weaker bones.
- Drink more water, low-fat milk, or fortified soy milk.

Plan for ways to get enough calcium.

- Low-fat dairy products and dark green leafy vegetables (like spinach, collards and broccoli) are rich in calcium.
- Eat sardines (not the boneless kind)—they have a lot of calcium.
- Use leftover bones to make old-fashioned chicken, fish, or beef broths. Add 1-2 tablespoons of vinegar to the pot when you make the broth—this will help the calcium come out of the bones and into the broth. Use the broth to make soups or to cook grains.
- If you’re not getting enough calcium through the foods you eat or drink, see your doctor to check your kidney function and talk about whether you need a calcium supplement.
- If you take calcium supplements, take them throughout the day so your body can absorb them better.
- Taking calcium can cause constipation for some people. To help prevent this, be sure to stay active, drink lots of water, and get plenty of fiber.
- Aim for 1200 mg of calcium a day if you are over 50 years old.
- Aim for 1000 mg of calcium a day if you are between 19 and 50 years old.

Plan for ways to get enough vitamin D.

- High fat fish is a major source of vitamin D. Salmon, Atlantic mackerel and sardines are good choices.
- Some beverages are fortified with vitamin D and calcium—low-fat milk, soy milk, and orange juice.
- Our bodies can make some of the vitamin D we need if we expose our skin to sunlight. Walk outdoors or spend time working in your garden 3 or 4 times a week—expose your hands, face, and arms for at least 15 minutes.
- If you think you are not getting enough vitamin D, see your doctor to check your kidney function and talk about whether you need a vitamin D supplement.
Be physically active.

- Physical activity helps build strong bones and improves balance. Aim for at least 30 minutes a day. Try these activities:
  - Walking
  - Jogging
  - Stair-climbing
  - Gardening
  - Dancing
  - Aerobics

- Use a stretch band to make your muscles strong and more flexible.

- If you have osteoporosis, be careful with activities that put lots of stress on the spine, like bending forward or twisting. Talk with your doctor before starting new activities.

Stop smoking.

- Smoking cigarettes can make your bones weak.

- For help on quitting smoking, see page 1-3 (Smoking and Quitting Tip Sheets), or talk with your health department nurse or health educator.

Prevent falls.

- Keep stairwells and halls well-lit. Use a night light.

- Keep walking paths clear.

- Tape loose cords to the floor or wall.

- Put nonskid strips in the tub and use a handrail to get in and out.

- Put nonskid backing on rugs.

- Put heavy items on low shelves and ask for help with items out of your reach.
Appendix Q

How Much Can I Eat?

It's not just what you eat that counts. Controlling how much you eat is very important if you want to lose weight or maintain your weight. Learn how to eat the right amount...

1. Read food labels.
   - Most packaged foods come with a label that tells you how much one serving is. (See Read the Label!, page B-17.)
   - Look for the serving size on the food label. Ask yourself: "Is this how much I usually have?"

2. Put the right amount on your plate.
   - Use measuring cups and spoons to measure portions.
   - If it's hard to measure your food every day, see Be Serving Size Wise at the beginning of this notebook, for an easy way to serve the right amount of food.

3. Use these general guidelines:
   - For foods such as meat, fish, or chicken, use a food scale to measure the right amount (about 3 ounces). A 3-ounce serving is about the size of your palm or a deck of cards.
   - For breakfast cereals, soups, and salads, a serving size is usually one cup, which is about the size of your two hands cupped together.
   - For whole grain pasta, brown rice, old-fashioned oatmeal, or fruit salad, a serving size is 1/2 cup, or about the size of one hand cupped.
   - For butter or trans-fat-free margarine, one teaspoon is one fingertip.
   - For salad dressing and sour cream, a serving size is two tablespoons, which is about the size of a ping-pong ball.
   - For hot and cold beverages, a serving size is 8 fluid ounces, about the size of your fist.

Remember—When you fix a plate, don't pile the food high!
Fast Food Facts

Fast food is convenient, may taste good, and doesn’t cost a lot, but most fast food is unhealthy. It is best to stay away from fast food restaurants because most fast foods are high in trans and saturated fats, salt, sugar, and calories, and they use a lot of white breads and noodles. Make careful menu choices at other restaurants too!

If you eat at fast food restaurants, remember...

- Eat out only once in a while.
- Eat small portions, or try a kids’ meal—stay away from “supersized” food and beverage portions!
- Beware of “Market Fresh” or “Premium” menu items—they may sound healthy but they often are not.
- Ask for the Nutrition Facts sheet to make the best choices.
- Foods that are lower in trans fat and saturated fat can still be loaded with salt.

How do I make better fast food and restaurant choices?

**Breakfast**

- Avoid biscuits, hash browns, or fried potatoes, which usually have a lot of trans fat.
- Choose lean meat or plain eggs.
- Try fruit and yogurt.
- Unsweetened cereal with 1%, 1/2%, or skim (nonfat) milk can be a good choice.
- If you order toast, English muffins, pancakes, or waffles, ask for butter or trans-fat-free margarine on the side. Use 1/2 or less of the syrup packet.

**Salads**

- Salads can be a good way to eat more vegetables—but avoid toppings like fried or crispy chicken, other fried meats, croutons, tortilla strips, cheese, macaroni salad, or potato salad.
- Use a small amount of Italian or oil and vinegar salad dressing—stay away from the ranch, caesar, thousand island, and other creamy dressings.
**Sugars**
These include naturally occurring sugars (like those in fruit and milk) but also sugars added to foods or drinks. Read the ingredients list and avoid foods that contain high fructose corn syrup or other added sugars (such as fruit juice concentrate, sugar, maltose, dextrose, or sucrose) as one of the first few ingredients (see *Sugar-sweetened Drinks*, page B-9).

**Protein**
Most Americans get more than enough protein. Animal proteins often come with a lot of saturated fat and cholesterol.

**Vitamins and Minerals**
Your goal should be to get 100% of the Vitamin A, Vitamin C, calcium, and iron that you need each day. Eat a variety of foods, especially fruits, vegetables, and low-fat or nonfat dairy products to reach this goal.

---

**% Daily Value (DV)**
The percent daily value shows you what percent of your daily goals are contained in one serving of a given food. A few nutrients, like trans fat, sugars, and protein, do not have a % DV. Try to eat almost no trans fats. Note that the % daily values are based on a 2,000 calorie diet—your own values may be higher or lower depending on your calorie needs.

**In general, 5% DV or less is low and 20% DV or more is high.**

Aim for these daily values:
- **Low %DV of:**
  - saturated fat
  - cholesterol
  - sodium
- **High %DV of:**
  - dietary fiber
  - Vitamins A and C, calcium, and iron

---

**Now You Try It! Food Label Quiz**
Use the information in the food label to answer the following questions:

1. How many grams of **saturated fat** would you get if you ate only ½ a cup (½ a serving size) of this food?
2. With 1 cup (1 serving) of this food, how many grams of **trans fat** would you be eating?
3. What is the total amount of **dietary fiber** you would get if you ate 2 servings (2 cups) of this food?

   ![Food Label Quiz Answer]
Appendix S

Read the Label!

It’s easier to make good choices when you know how to read food labels. Everything on the label is based on ONE serving. Here’s what to look for:

**Food label**

### Nutrition Facts

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>1 cup (228g)</th>
<th>Servings Per Container</th>
<th>8</th>
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</thead>
<tbody>
<tr>
<td><strong>Amount Per Serving</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calories</td>
<td>280</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calories from Fat</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Daily Values*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fat</td>
<td>8g</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>4g</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Trans Fat</td>
<td>1.5g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td>60mg</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td>350mg</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>33g</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>4g</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Sugars</td>
<td>2g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>4g</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin A</strong></td>
<td>4%</td>
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<td></td>
</tr>
<tr>
<td><strong>Vitamin C</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Calcium</strong></td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Iron</strong></td>
<td>15%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

### Serving Size

Look at the serving size and ask yourself, “How many servings am I eating?” Here, a serving is one cup. If you ate two servings (2 cups), you would have 16g of fat (8*2), 1160mg of sodium (350*2), and 560 calories (280*2).

### Calories

Eating too many calories per day is linked to overweight and obesity. Looking at the calories in a serving can help you manage your weight. In general, 40 calories per serving is low-calorie, 100 calories per serving is moderate, and 400 or more is high.

### Saturated Fat

Too many saturated fats are not good for your heart. Try to eat less than 20 grams of saturated fat per day. This food has 20% of the saturated fat you should have in a day (see %DV). Balance this food with others that are lower in saturated fat.

### Trans Fat

These are some of the worst fats for your heart. Try not to eat any! Be careful: The food label may say “trans fat—0 grams” but if the ingredient list shows “partially hydrogenated vegetable oil” then eating lots of servings still could add up to lots of trans fat! (See *Know Your Fats*, page 511.)

### Cholesterol

Keep this number as low as you can.

### Sodium (salt)

Salt can be a problem for people with high blood pressure. Keep sodium at less than 2,500 mg (about 1 level teaspoon of salt) a day. One serving of this food would give you 26% (one fourth) of the sodium that you should get for the whole day.

### Total Carbohydrate

Whole grain breads, fruits, and vegetables are some of the best kinds of carbohydrates because they are high in fiber. The more physically active you are, the more carbohydrates you can eat without gaining weight.

### Dietary Fiber

Try to get at least 25-35 grams each day. Fiber lowers your cholesterol and keeps you regular. Here, you get 4 grams of fiber per serving.
For pork: Use thyme, basil, sage, pepper, curry, or garlic or onion powder.

For fish: Use lemon or lime juice, dill, or garlic or onion powder.

Try Mrs. Dash® or make your own herb and spice mixture. Keep it in a shaker and use when cooking or at the table.

Be careful! Some seasonings and sauces have lots of salt: garlic and onion salts, poultry seasoning, soy sauce, barbecue sauce, ketchup, some hot sauces, and spaghetti and tomato sauces.

**Added Salt Adds Up!**

Watch out for the salt in snack and convenience foods. Compare the salt (sodium) in a baked potato versus 1 serving of potato chips:

<table>
<thead>
<tr>
<th>Food/Amount</th>
<th>Calories</th>
<th>Salt (Sodium)</th>
<th>Saturated Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 baked potato</td>
<td>60</td>
<td>2.5 mg</td>
<td>0 g</td>
</tr>
<tr>
<td>20 potato chips (1 serving)</td>
<td>150</td>
<td>555 mg</td>
<td>2 g</td>
</tr>
</tbody>
</table>
Spice It Up Without Salt

Too much salt (also called sodium) causes high blood pressure in some people. High blood pressure is bad for your heart. Most of the salt that Americans eat comes from the salt that is added to processed and restaurant foods. To keep your heart healthy and your blood pressure normal, use the following tips.

1. **Check food labels for salt or sodium.**
   - One level teaspoon of salt is about 2,500 milligrams of sodium. Try not to go over this amount with ALL your foods in one day—that means the salt already in processed foods as well as the salt that you add to food you cook.
   - Look for foods that have less than 300 milligrams of sodium in a serving (see Added Salt Adds Up!, next page).
   - A food is pretty HIGH in salt if a serving has over 400 milligrams of sodium.
   - Look for foods that say no salt added or low or reduced sodium.

2. **Watch out for salty foods.**
   - Boxed dinners (like macaroni & cheese or Hamburger Helper®), canned soups and vegetables, frozen vegetables with sauces, and cheese sauces are often HIGH in salt (sodium). Look for foods that have less sodium.
   - If you eat frozen dinners, buy low salt or low sodium meals or have regular frozen dinners no more than once a week. Better still, make your own frozen dinners—cook larger amounts of food and freeze the extra in containers to reheat later. (You'll save money too!)
   - Go easy on hot dogs, lunchmeats, and cured meats like bacon, ham, sausage, and beef sticks.
   - Don't overdo fast foods and salty chips and snacks (these may also have a lot of trans fats).
   - Choose carefully at restaurants—even “healthy” menu items often have lots of salt.

3. **Break the salt shaker habit.**
   - ALL the salt you have in one day should fit in one level teaspoon. Remember that most of your salt is in the foods already, so only add a very small amount.
   - Taste your food first, before adding salt.
   - If a recipe calls for salt, add less than half the amount.
   - Keep the salt shaker away from where you cook and eat.

4. **Try herbs and spices.**
   - Try herbs and spices to bring out the flavor in your foods without adding salt.
   - For beef: Use sage, garlic, thyme, pepper, or turmeric.
   - For chicken: Use paprika, rosemary, curry, or garlic or onion powder.
Appendix T

**Eating Healthy on a Budget**

Healthy foods don't have to cost more. By choosing carefully you can eat healthy AND keep your food costs down. You will have more money to buy healthy foods because you will save money for buying unhealthy foods!

**Shop wisely.**
- Compare prices and ingredients—store brands are often cheaper and just as good.
- Look for day-old whole wheat bread or reduced price fruits and vegetables—but only buy what you will use quickly!
- Do the work yourself—trim the fat from meat and debone chicken at home. Wash and cut fruits and vegetables instead of buying them prewashed or precut.
- Eat before you go shopping to avoid impulse buying!

**Buy a larger amount for less money.**
- Buy big bags of inexpensive fruits and vegetables like apples, oranges, and carrots—but don’t let them go to waste.
- Get a bushel of produce from a farmer (pick-your-own, roadside stand, or someone you know), then can or freeze it in smaller servings. (Your local Cooperative Extension Service can tell you how to do this.)
- Stock up on healthy foods when they are on sale—foods like canned fish, canned beans, nuts, brown rice, and whole grain pasta.
- Shop with a friend and split larger packages of food when you get home.
- Buy a large container of yogurt or cottage cheese and use it all week (instead of several small containers).

**Buy fruits and vegetables in season.**
- Fruits and vegetables cost more (and don’t taste as good) when they’re out of season. Enjoy seasonal fruits and vegetables over the year.
- Watch for produce sales at the supermarket, or look for roadside stands or farmers markets where you may get better prices.
- Try a “pick-your-own” farm. You can get fresh produce at a good price, and some exercise too! (Call your local Cooperative Extension Service for a list of farms near you.)
- When you can’t find what you want in season, buy canned or frozen—but stay away from added sugars, syrups, salt, and sauces.
Food bars

- Enjoy a large salad with plenty of dark leafy greens and other vegetables like broccoli or carrots. Add a small amount of sunflower seeds or almonds. Go easy on the cheese and use oil and vinegar dressings.
- Vegetable soups can be good choices if they don’t have lots of added salt or sugar.
- Choose vegetables without sauces.

Drinks

- Have a glass of water with a refreshing twist of lemon or lime.
- Order unsweetened iced tea or coffee, or sweetened—but go easy on the sugar!
- Ask for 1%, 1/2%, or skim (nonfat) milk.
- Avoid sugar-sweetened drinks like sodas, fruitades, or powerades.
- Order a small (4-oz.) orange or apple juice.

Desserts

- Choose low-fat yogurt instead of milkshakes, apple turnovers, and cookies.
- Bring a piece of fresh fruit from home.

Salt

- Avoid dipping sauces, like “chipotle” or “bbq.” Most dipping sauces are loaded with salt.
- Go easy on extra meats like bacon or sausage.

Choose carefully—fast foods have lots of trans fats, salt, and sugar!
French fries and other fried side dishes

- Skip the fries, onion rings, fried cheese sticks, and fried jalapeños—they are usually cooked in partially hydrogenated vegetable oil (trans fat).
- Instead, order a baked potato with just a little bit of butter, soft margarine, or cheese.
- If you do order fries, share a small order with a friend instead of eating them all yourself.

Burgers and sandwiches

- Subway sandwiches on whole wheat bread can be a healthy choice. Ask for lean meats like turkey breast and plenty of vegetables. Avoid meatballs.
- Try a grilled chicken sandwich.
- Order burgers and sandwiches plain or with lettuce and tomato. Add your own mustard or ketchup, and skip the "special sauces" and cheese!
- Burgers have less trans fat than fried chicken nuggets.

Chicken and fish

- Order grilled chicken instead of fried or "crispy."
- If you get fried chicken, ask for regular not crispy—"extra crispy" means "extra trans fat."
- Baked or oven-roasted chicken can also be good options.
- Order fish sandwiches with the cheese and tartar sauce on the side—and only use a little.
- Try fish with lettuce and tomato and a splash of lemon.

Tacos

- Order "Fresco Style" tacos—these use salsa instead of cheese and dressings.
- Avoid most tortillas, burritos, and chalupas, which have a lot of trans fats.

Pizza

- Don't eat more than 1-2 pieces of pizza for your meal. Add a side salad to fill you up!
- Ask for half the cheese.
- Order vegetable toppings like onions, green peppers, tomatoes, and mushrooms.
- Skip the high-salt meat toppings like sausage and pepperoni.
- Avoid stuffed crust pizza, which has lots of extra calories, unhealthy fat, and salt.
Cooking for One or on the Run

It might seem like a lot of trouble to make a regular meal when you’re the only one eating or when you’re rushing from one thing to the next. But even if you’re in a hurry, you can still choose a healthy eating plan (see A Healthy Eating Plan for Life, page B-3).

Here are five ideas for fixing quick, balanced meals:

1. Keep frozen or canned vegetables on hand for easy additions to soups, sauces, and stews.
   - Combine canned goods with fresh ingredients.
   - Buy low-salt canned goods when possible.
   - Buy frozen vegetables in bags, not boxes - it’s easier to take out a small amount.
2. Buy nuts and fresh fruit for quick and healthy snacks.
3. Cook large batches of food and freeze leftovers.
4. Use leftovers to save time and money. Toss leftover meat or vegetables in soups, spaghetti sauces, or homemade burritos.
5. Plan a week’s meals around a few main ingredients, like lean meats or fish, whole grains, vegetables, and beans (see Easy Balanced Meals, below and Making the Most of Beans, next page).

### Easy Balanced Meals

On Sunday, cook a pot of brown rice. Mix the rice with vegetables and lean meat, poultry, fish, or eggs to build your week’s meals...

<table>
<thead>
<tr>
<th>Monday</th>
<th>Add vegetables and some brown rice to low-salt chicken broth to make a hearty soup.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday</td>
<td>Sauté onion with two cups of fresh or frozen vegetables in vegetable oil, mix in brown rice, and stir in a beaten egg for quick and easy stir-fried rice. A little low-sodium soy sauce will make it taste like a real Chinese meal.</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Make your own hamburger helper: brown ground turkey or lean ground beef with onions and green pepper, then add a scoop of brown rice from your pot. Add extra sautéed or frozen vegetables.</td>
</tr>
<tr>
<td>Thursday</td>
<td>Open canned salmon, and eat with brown rice and steamed vegetables.</td>
</tr>
<tr>
<td>Friday</td>
<td>Make a quick &quot;stir-fry&quot; with mixed vegetables and cut-up chicken, and serve over brown rice.</td>
</tr>
</tbody>
</table>
Get creative with main dishes.

- Stretch your food dollar by using beans more often (see Making the Most of Beans on page B-26).
- Have eggs for dinner. Make a vegetable omelet and eat it with whole wheat toast.
- Eat a large salad. A yummy salad might include: romaine lettuce or spinach, tomatoes, other vegetables, hardboiled eggs, tuna, a small amount of cheese, sunflower seeds or nuts (see Lower-cost Ways to Eat More Nuts, below), and a homemade oil and vinegar dressing.
- Buy canned fish like salmon, tuna, and sardines, or freeze extra fish caught fresh. See salmon patty and tuna salad recipes in the New Leaf cookbook, pages 23-24.

Bring food from home (and eat out less often).

- Bring easy-to-pack sandwiches, soups, hardboiled eggs, fruit, or leftovers to work.
- Get a reusable plastic container or thermos for your drink.
- Store leftovers in clear containers so they won't spoil before you can take them for lunch.

Lower-cost Ways to Eat More Nuts

- Look for nuts and nut butters on sale.
- Buy nuts in bulk, when possible.
- Get pecans from a neighbor's (or your own) tree.
- Find local farmers who can sell you peanuts.
- Natural peanut butter (the kind with the oil on top) makes a good snack or lunch food.
Appendix V

**Shifting the Balance**

If you feel like it's hard to eat healthy, use these tips to remind yourself how easy it can be!

<table>
<thead>
<tr>
<th>Meal</th>
<th>Choose these foods more often</th>
<th>Choose these foods less often</th>
</tr>
</thead>
</table>
| **Breakfast** | • Whole grain cereal with 1%, 1/2%, or skim (nonfat) milk  
• Whole grain pancakes and fruit  
• A few spoonfuls of chopped almonds or walnuts added to cereal  
• An egg with whole grain toast  
• Vegetable omelet  
• Small piece of lean ham  
• Whole or cut-up fruit | • Bacon, sausage  
• Sugary breakfast cereals  
• Doughnuts, sweet rolls, white flour pancakes  
• Biscuits, hash browns, fried potatoes  
• Grits or potatoes with a lot of butter or gravy |
| **Lunch**     | • Whole grain sandwich with peanut butter and jelly, tuna, lean roast beef, grilled chicken, or turkey  
• Vegetable beef soup with barley  
• Plain hamburger  
• Low-fat or nonfat yogurt  
• Raw or cooked vegetables  
• Baked potato  
• Fresh or dried fruit | • Hot dog on white bun  
• Bologna and cheese sandwich on white bread  
• Hamburger with all the fixings  
• Snack chips and pretzels  
• Cookies, snack cakes  
• Sodas and other sugary drinks |
| **Dinner**    | • Baked or BBQ chicken (low-sodium sauce)  
• Baked or broiled fish, especially tuna or salmon  
• Lean beef or pork  
• Hoppin' John or vegetarian chili  
• Whole grain breads or pasta, brown rice  
• Vegetables seasoned with olive, canola, or other vegetable oils  
• Spinach or romaine salad with oil and vinegar dressing | • Chicken or fish fried in shortening  
• Fatty cuts of beef or pork ribs  
• French fries  
• Boxed macaroni and cheese  
• Canned biscuits with butter  
• Vegetables seasoned with bacon  
• Sodas and other sugary drinks |
| **Snack foods and desserts** | • Raw vegetables  
• Fruit  
• Unbuttered popcorn  
• Nuts (a small handful)  
• A small amount of frozen yogurt | • Snack chips and pretzels  
• Cookies and cakes  
• Candy  
• Sodas or other sugar-sweetened drinks  
• Ice cream, custard or cream pie |
Making the Most of Beans

Beans make a great-tasting, low-cost, healthy main dish, and have lots of fiber. There are many kinds of beans: pinto, kidney beans, black beans, navy beans, chickpeas (also called garbanzos), lentils, black-eyed peas, split peas, and others.

- If beans are hard on your system, use these cooking tips:
  - Soak the beans overnight, then rinse.
  - Change the water before cooking the next day and skim the foam off the top.
  - Make sure the beans are cooked completely.
  - Use onions, garlic, vinegar, or a taste of lean ham for seasoning instead of fatback.

- Serving beans with vegetables or a whole grain can help you feel full.

- Use canned beans to save time, but make sure you drain and rinse the beans several times to get rid of the added salt (sodium).

- Try cooking a pot of beans on Sunday and using the beans during the week. You can:
  - Spoon the beans over brown rice, whole grain noodles, or potatoes.
  - Mix beans and ground turkey or beef with spaghetti sauce to make hearty chili.
  - Add beans to canned or homemade vegetable soup.
  - Mix 3 kinds of beans with a healthy salad dressing for a cold 3-bean salad.
  - Spoon beans, lettuce, tomatoes, onions, and a little cheese onto a soft whole wheat tortilla and roll up into a burrito.
The Keys to Success

There are six keys to successfully losing weight and maintaining a healthy weight.

1. Know your food habits.
   ✷ Be aware of what you are eating.
     - Keep a food diary. Write down everything you eat or drink.
     - Read food labels. Know what you’re putting into your body!
   ✷ Be aware of how much you are eating.
     - Being full (no longer hungry) is not the same as being stuffed (eating more than you need). Eat slowly. Ask yourself, “If I stopped eating right now, would I still feel hungry?” If your answer is NO, stop eating. You can eat the leftovers later!
     - Don’t eat while you are driving, talking on the phone, watching TV, or reading. When you are doing other things, it’s easy to overeat.

2. Take charge of what you eat.
   ✷ Plan ahead.
     - Know what situations and places make you overeat or eat unhealthy foods and try problem-solving skills.
       For example:
       - Put fruit on your desk, not candy.
       - If you crave doughnuts when you walk past the store, change your route.
     - Plan meals and shop at the beginning of the week so you’re less tempted to eat out.
     - Shop from a list so you don’t buy foods you don’t need.
     - Stock your kitchen with healthy foods, and keep healthy snacks in your car or purse.
     - Have ingredients for quick meals on hand so that you can eat well even when you don’t have a lot of time to cook.
     - Make your lunch the night before.
   ✷ Measure portions.
     - Put snack foods into small, single-serving ziplock bags.
     - Measure grains like brown rice and whole wheat pasta with measuring cups.
   ✷ Eat in the kitchen or dining room.
     - Eat only when you’re hungry, not out of habit.
     - Don’t eat in front of the TV!
   ✷ Don’t go for seconds—serve your plate from the stove so you won’t be tempted to reach for more.
   ✷ Eat out less often—save yourself extra pounds and save $ too! When you do eat out, use the tips in Eating “smart” at restaurants, next page.
Appendix X

Success Stories

Most eating plans will help you lose weight in a short period of time (usually 15-25 weeks). But keeping the weight off (or maintaining your current weight) is a lifelong effort. The National Weight Control Registry (NWCR) talks to people who have lost at least 30 pounds and kept the weight off for a year or more. Here are the secrets to their success:

**Eating Plan:**
- Low-calorie and low in saturated and trans fats
- Breakfast every day
- Three meals and two snacks per day

**Physical Activity:**
- Very little TV watching
- At least 60 minutes of activity each day
- Favorite physical activities:
  - Walking
  - Cycling
  - Weight lifting
  - Aerobics
  - Running
  - Stair climbing

**Eating Out:**
- Less than once a week at fast food restaurants
- About 2-3 times a week at non-fast food restaurants

**Self-weighing:**
- At least once a week

Your past doesn’t have to be your future!

Most NWCR members had tried and failed to lose weight before, and almost half were overweight as a child or had family members who were obese.

You can feel better!

You will feel better when you lose weight and keep it off. Set aside time each day to do activities that you enjoy.

It’s better to maintain than to gain!

Whatever your weight is, you can stay healthier by not gaining any more.
Do I need to take vitamins?
Eating healthy and balanced foods is the best way to get the vitamins and minerals you need. However, you might want to take a multivitamin if you:
- are over 65
- are a postmenopausal woman
- are on a very low-calorie diet
- are on a low-carbohydrate diet
- eat a special diet
- cannot absorb nutrients well
- smoke
- drink a lot of alcohol

4. Do regular physical activity.
- Be aware of how active you are.
  - Write down minutes of daily physical activity.
- Do 60 minutes of physical activity most days.
  - Find an activity you enjoy. Try brisk walking or dancing to your favorite songs at home!
  - Increase your activity over time—work up to 60-90 minutes a day to keep weight off.
- Use a pedometer.
  - Wear a pedometer for a whole day and record how many steps you take. The next day, take a few more steps. Each day take more steps than the day before.
  - If you can, work your way up to 10,000 steps a day (between 4 and 5 miles).

5. Get support and learn to deal with stress.
- Build a circle of support.
  - Get support from people you know well who also want to lose or maintain weight.
  - Meet with your support group to talk about your weight loss goals and how you can help each other.
- Manage stress and negative thinking.
  - Stress can lead to emotional eating and weight gain. Learning to deal with stress and negative feelings can help you lose weight and keep it off.
  - When you are stressed out, don’t smoke, drink alcohol, or eat more than usual. You’ll only feel worse.

6. Plan for slips and lapses.
- Take it one day at a time.
  - Everyone has good days and bad days—don’t give up!
  - Don’t get upset about “blowing” your diet. If you start eating a lot of unhealthy foods again, remind yourself why you want to lose weight. You are worth the effort!

F-11
Eating “smart” at restaurants

Eating out can be fun, but if you’re trying to lose or maintain your weight, it can also cause problems. Use these tips:

- Avoid all-you-can eat restaurants. If you go, choose reasonable amounts of healthy foods.
- Don’t order super-sizes. Order smaller portions, or put half of what you order in a to-go box. Don’t be fooled—many items sold as a single portion or a “regular” size are actually 2 or more servings!
- Begin with a salad or broth-based soup—it will help fill you up with fewer calories. But remember: Cream soups have more calories, and a salad is only as healthy as the toppings on it. A serving of salad dressing is about 1-2 tablespoons.

3. Eat healthier foods.

- Make small changes.
  - Use your food diary to figure out what foods you can cut out and what foods you can replace with healthier options.
  - Make your own salad dressing with olive oil and vinegar or lemon juice.
  - Eat sharp cheeses—you get more flavor with smaller amounts.
  - Stay away from fried foods at fast food places and other restaurants—if you like fried foods, make your own at home with a small amount of vegetable oil.
  - Eat a small handful of nuts instead of snack chips, and have fresh fruit for dessert.
- Make water your beverage of choice.
  - Drink water or unsweetened tea instead of drinks with added sugars.
  - Instead of fruit juice, have fresh fruit.
  - Drink alcohol in moderation—wine and beer have calories, too! Try light beer instead of regular.

- Eat 5 or more servings of vegetables and about 4 servings of fruit a day.

Chew on this:
How many pounds would you gain by “supersizing” 3 times a week for 1 year at an average fast food restaurant?

Answer: 15 pounds!
Appendix Y

Helping Others Make Healthy Food Choices

Healthy eating is good for everyone, even people who don't have health problems. Here are some reasons why:

- If everybody eats the same thing, cooking is easier and nobody feels left out.
- Children learn healthy eating habits early in life.
- If heart disease, diabetes or high blood pressure run in the family, eating healthy can help everyone lower their risk.

Use the following tips to help your family or friends make changes.

Praise

- When others eat something that’s healthy, say “That’s great!”
- Give a pat on the back for small changes—every step is important.

Give

- Give hope, not fear. Don’t try to scare family or friends by nagging or pointing out their unhealthy eating habits. Focus on how good changes help.
- Give a gift of food that is good tasting and good for you, like fresh fruit in season, homemade soup, or garden vegetables (fresh, frozen, or canned).

Help

- Ask family and friends not to eat junk foods in front of you—explain why it’s even better not to eat them at all!
- When you eat out, go to restaurants with healthy choices. Avoid all-you-can-eat places.
- Keep foods high in sugar, salt, and saturated or trans fats out of sight.
- Better yet, don’t even bring unhealthy foods home.

Share

- Talk about changes that have made you feel better, like eating healthier, quitting smoking, or being more active.
- Trade recipes and good food ideas.
- Invite a friend over to eat—share what you have learned about healthy cooking!

Plan

- Think up fun things to do with family and friends that do not include food.
- Focus on activities that can help all of you be physically active—things like walking, washing the car, playing ball, going to the park, or raking leaves.
- Plan ways to avoid temptation—but if you slip, just get back on track!

**It’s easier to change when you do it together!**
Appendix Z

The “Skinny” on Diets and Weight Loss

Losing weight is hard for many people. Here are some questions and answers that can help you lose weight safely and keep it off.

Which diets are the best?

Today’s popular diets have many names but they basically all work the same way: by cutting calories. Balanced diets tell you how many calories to eat each day but let you eat most foods. Reduced-fat or low-carbohydrate diets have you cut calories either by eating fewer fats (especially saturated and trans fats) or fewer carbohydrates.

**Balanced diets**

These diets have you keep track of calories by reading labels on all foods and eating a moderate amount of fat. They:

**Pros:**
- Can help you lose weight and stay at a healthy weight.
- Make sure that you get important nutrients.
- May lower your “bad” cholesterol (LDL), raise “good” cholesterol (HDL) and lower your triglyceride levels.

**Cons:**
- Do **not** lead to dramatic weight loss during the first week(s), so people who want a big “jump start” may be disappointed.

**Reduced-fat diets**

These diets replace high-fat foods (fried foods, butter, high-fat cheese) with lower-fat versions (baked foods, imitation butter flavor, low-fat cheese). They:

**Pros:**
- Do not put many limits on your food choices.
- Lower your risk of heart disease because eating less saturated and trans fats helps lower cholesterol levels.

**Cons:**
- Do **not** lead to dramatic weight loss during the first week(s), so people who want a big “jump start” may be disappointed.
- May not work any better than higher fat diets. Higher fat diets can work just as well for weight loss; the key is to burn more calories (through physical activity) than your body takes in with the foods you eat.
Low-carbohydrate diets

These diets replace high-carbohydrate foods (breads, potatoes, fruit) with foods that are high in protein and fat (meat, nuts, eggs, cheese). They:

Pros:
- Help fill you up and cut your appetite so that you eat less and lose weight quickly.
- May raise your “good” cholesterol (HDL) and lower your triglyceride levels.
- May yield greater weight loss over 3 to 6 months.

Cons:
- Put a lot of limits on your food choices.
- Are missing some foods, so you may not get enough fiber and may need a daily multivitamin.
- Are difficult to stay on for more than 3 to 6 months.

The bottom line is that any diet (if followed correctly) can help you lose weight in the short term. But losing weight is easier than keeping the weight off. To stay at a healthy weight, you need to make changes in what you eat and how active you are, changes that can last for a lifetime. And that’s what A New Leaf is all about!

Can I take diet pills to lose weight?

Diet pills cut your appetite or make your body burn calories faster. But think twice before you take diet pills—the pills may help you lose weight but they can cause high blood pressure, water loss, poor food absorption, or stroke. You also have to keep taking the pills to keep the weight off, which is expensive and unsafe.

What about taking herbal weight-loss supplements?

We don’t know very much about whether herbal supplements can help people lose weight. Some weight loss supplements have bad side effects. This is especially true in people who have health problems or who are taking prescription or over-the-counter medicines. It is probably smart to stay clear of herbal supplements until we learn more about them.

Don’t be fooled!

If a diet or weight loss plan sounds “too good to be true,” it probably is. The only safe and healthy way to lose weight is to eat less (fewer calories) and move more (more physical activity).

What if I have always been heavy, or if I never get to a healthy weight for my height?

Your lifestyle (what you eat and how active you are) affects your body shape and your weight, but so do your genes. If your starting weight is about 200 pounds, you will get health benefits from losing as little as 10-20 pounds. No matter what your weight is, it helps to eat well and be active.
Thoughts, Feelings, And Weight: Break the Cycle!

Why do people overeat?

To lose weight, it helps to know why people overeat. For many people, food is a way to comfort themselves when they’re having a hard time. Read Janet’s story. Can you identify with her?

Janet’s busy day

Janet has been trying to lose weight for 3 weeks and has been doing very well. She has been staying away from cookies and chips and eating more fruits and vegetables instead. But today, she had a big project due at work. The project kept her so busy that she:

- Didn’t eat lunch.
- Felt stressed and anxious when her boss was critical.
- Came home tired, upset, and hungry.
- Went right to the kitchen.
- Saw cookies on the counter and ate some.
- Said to herself, “This diet is too hard and I have no willpower. I might as well forget it.”
- Ate more cookies and felt worse.

What went wrong?

Janet got stuck in a negative cycle. She was tired, hungry, and upset. After eating the first few cookies, she:

- Got mad at herself for using the cookies to feel better.
- Blamed the diet for being “too hard” and blamed herself for lacking willpower.
- Ate more cookies and felt worse.

How could Janet use problem-solving skills?

1. Understand the problem: Janet’s first step is to understand that she ate the cookies because she was frustrated, hungry, and kept cookies in an easy-to-reach place.

2. List options: Janet’s options include packing lunch the night before, keeping cookies in a hard-to-reach place (or not buying them), and putting fruit on the counter instead.

3. Pick an option: All of the options listed in #2 sound like good options!

4. Plan for roadblocks: If Janet doesn’t have time to take a lunch break, she could eat her packed lunch at her desk.

5. Try an option and continue to problem-solve.

To understand what makes YOU eat unhealthy foods, see the problem-solving worksheet on the next page. Also see Got Problems?, page J-5.
Positive Thinking and Stress Management Worksheet

Think about the kinds of negative thoughts you have. Do you see things as all or nothing? Do you make excuses or give up? Do you use “shoulds” or compare yourself to others?

It can take practice to learn how to problem-solve, plan ahead, change negative thoughts to positive thoughts, and manage your stress. But you CAN break the cycle! Just like Janet, you can learn to deal with stress, stop overeating, and meet your weight loss or weight maintenance goals (see Negative Thoughts, page F-17, and How Can I Deal with Stress?, page J-1).

What are some of your negative thoughts about losing weight or avoiding weight gain?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

How can you change them to positive thoughts?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Remind yourself why losing weight (or maintaining your weight) and getting healthier are important to you.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Write down some successes that make you proud. (For example: Being a good parent, keeping the commitment to lose weight and get healthier, eating a salad instead of a burger for lunch.)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
**Instead of these negative thoughts...**

<table>
<thead>
<tr>
<th>Thought</th>
<th>Try thinking positive thoughts...</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I can never eat dessert again.&quot; (All or nothing)</td>
<td>&quot;I can eat a little dessert and less of something else, or walk for 30 more minutes.&quot;</td>
</tr>
<tr>
<td>&quot;I ate those chips. I'll never lose weight!&quot; (All or nothing)</td>
<td>&quot;One slip-up isn't the end of the world. I can get back on track.&quot;</td>
</tr>
<tr>
<td>&quot;It's too cold to take a walk.&quot; (Excuses)</td>
<td>&quot;I can try going for a walk and stop if I get too cold.&quot;</td>
</tr>
<tr>
<td>&quot;I should have eaten less.&quot; (Should)</td>
<td>&quot;It was my choice. Next time I can decide not to eat as much.&quot;</td>
</tr>
<tr>
<td>&quot;Mary lost two pounds this week and I only lost one.&quot; (Not as good as)</td>
<td>&quot;It's not a race. Mary and I can both lose weight and even help each other out.&quot;</td>
</tr>
<tr>
<td>&quot;I'll never get it right.&quot; (Giving up)</td>
<td>&quot;I'll try something different next time. It will get easier.&quot;</td>
</tr>
</tbody>
</table>

**Janet's Experience**

Janet got into the cycle of negative thinking—she made **excuses**, and felt like **giving up**:

- "This diet is too hard." (Excuses)
- "I have no willpower." (Giving up)

Sticking to a healthy eating plan and being busy are challenging, but losing weight and being healthy are very important to Janet. Problem-solving, positive thinking, and stress management could help Janet handle a busy day differently.

**Janet's improved day**

- Janet packed lunch the night before.
- When her boss was critical, Janet took a 10-minute break to calm down. After her break, Janet was able to think more positively: "I am a good worker. I know that I'm doing my best, so I will not take my boss's comments too personally."
- When Janet came home, she was tired and ready for a snack, but not upset.
- She went to the kitchen and saw a bowl of fruit on the counter, so she ate an apple.
- Janet thought: "I made it through a tough day of work and stuck to my goals for eating healthy snacks. I can do it!"
- Janet rewarded herself by taking a relaxing hot bath.

To figure out how YOU can turn negative thoughts into positive thoughts, and manage your stress, see the worksheet on the next page.
Negative Thoughts

Everyone has negative thoughts. But negative thinking can make you feel bad, so that you may overeat or be less active. Overeating and inactivity can lead to more negative thinking and weight gain, creating a vicious cycle of self-defeat.

What are common types of negative thinking?

All or nothing
- Foods are either "good" or "bad."
- You feel like either a complete success or a total failure.
- You are either "on" or "off" your weight loss program.

Excuses
- You blame something or someone for your problems.
- You "can't help" not sticking to your healthy lifestyle goals.

Shoulds
- You expect yourself (and others) to be perfect and then feel disappointed, angry, or resentful when you (or they) fall short.

Not as good as
- You compare yourself to others.
- You feel bad because you don't "measure up."

Giving up
- You feel defeated.

How to change negative thoughts into positive thoughts

If you start down the path of negative thinking, take these steps:
1. Say "I'm doing it to myself."
2. Imagine shouting "STOP!" to yourself. Picture a huge stop sign.
3. Ask yourself, "Is this really true?"
4. Talk back with a positive thought (see box, next page).
Problem-solving Worksheet

Think about your own life and the way you eat. You can use the same problem-solving skills that Janet used to stop negative eating cycles (see Negative Thoughts, page F-17 and Got Problems?, page J-5).

1. **Understanding:** Many things can make you overeat or eat poorly:
   - Feeling stressed at work.
   - Fighting with your spouse or a friend.
   - Dealing with a sick friend or family member.
   - Feeling sad.

What makes you eat unhealthy foods?

2. **Listing:** What are your options? How can you avoid these problems? Or how can you make them easier to deal with so that you don’t eat unhealthy “comfort” foods?

3. **Choosing:** Which option(s) would be easiest for you to do?

4. **Planning:** What roadblocks might come up? What could you do to deal with them?

5. **Acting:** When will you try the option(s) you selected?
Appendix BB

How Can I Deal with Stress?

Stress is a part of life. We all have stress at some time or another. But stress can make it hard to eat well and be active. Living with a chronic disease can also add stress to your life. Here are some ways to deal with stress...

1. Know what stresses you out

Are any of these things worrying you?

- Money issues
- Your job (or not having a job)
- Your health
- Health care expenses
- Your children or family
- Problems in your marriage
- A sick family member or friend

2. Know how you react to stress

What feelings or signs of stress are common for you when you are stressed?

<table>
<thead>
<tr>
<th>Feelings and Thoughts</th>
<th>Behaviors</th>
<th>Physical Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worrying</td>
<td>Forgetting things</td>
<td>Tired</td>
</tr>
<tr>
<td>Feeling &quot;down&quot;</td>
<td>Unable to get things done</td>
<td>Can't sleep</td>
</tr>
<tr>
<td>feeling tense</td>
<td>Nagging</td>
<td>Headaches</td>
</tr>
<tr>
<td></td>
<td>Bad temper</td>
<td>Skin rashes</td>
</tr>
<tr>
<td></td>
<td>Avoiding your friends</td>
<td>Changes in appetite</td>
</tr>
<tr>
<td></td>
<td>Drinking or smoking more</td>
<td>Upset stomach</td>
</tr>
</tbody>
</table>

3. Choose healthy ways to deal with stress

When you’re stressed out, you may not feel like you have the time or energy to watch what you eat or be physically active. The good news is that **there are lots of healthy ways to deal with stress.**

When you know what stresses you out and how you react to stress, you can deal with the stress in your life (see *Changing Stressful Situations and Avoiding Stress*, next page). The choices you make will depend on what the stressful situation is and who is involved. Choose the best way for you.

**Don’t smoke, drink alcohol, or eat more than usual when you are stressed. You’ll only feel worse.**
Getting Physically Active

If you’re trying to lose or maintain your weight, the closer you can get to 60 minutes or more of physical activity a day, the better. It is easier to be physically active when you are having fun too! What types of activities do you enjoy? How can you make them a part of your day?

Below are some everyday activities and exercise activities that you can do to add physical activity to your day. Pick a few that you like. Try to work them into your daily routine. If you can talk but not sing while you are doing the activity, you are doing it “briskly” enough.

Everyday activity
- Walking
- Gardening
- Washing windows or floors
- Stair-walking
- Pushing a stroller
- Raking leaves
- Washing and waxing a car
- Shoveling snow

Exercise activity
- Brisk walking
- Dancing fast (socially or alone)
- Water aerobics
- Swimming laps
- Jumping rope
- Running
- Playing volleyball

Refer to *Keeping Active*, page D-1, for more physical activity ideas!