

DISSERTATION

DEVELOPMENT AND EVALUATION OF THE AMERICA ON THE MOVE PROGRAM  
FOR UNIVERSITY STUDENTS

Submitted by

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In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

Fall 2013

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## ABSTRACT

### DEVELOPMENT AND EVALUATION OF THE AMERICA ON THE MOVE PROGRAM FOR UNIVERSITY STUDENTS

#### *Background*

The prevalence of overweight and obesity in adolescents has more than tripled since 1960.<sup>1-3</sup> Overweight and obesity also significantly affect college students.<sup>4,5</sup> Multiple surveys suggest that the unhealthy dietary habits and low physical-activity patterns of many college students predispose them to weight gain.<sup>6</sup>

The college years can be an opportune time to prevent obesity by teaching young adults about eating healthy and being physically active.<sup>7</sup> Development of online approaches to weight management appears to be promising, given that college students are turning to the Internet for information about diet and physical activity.<sup>8,9</sup> Few studies have examined weight-gain prevention in college students using an internet approach. Therefore, evaluating this approach to promote healthy eating and activity behaviors to limit weight gain in college students is timely and important.<sup>10</sup>

#### *Objective*

The goal of this project was to design, evaluate, and disseminate an interactive, engaging, and effective weight-gain-prevention program for college students using the resources and educational materials of America On the Move (AOM). Also additional resources were developed and used to help improve dietary and physical activity behaviors of college students aimed at arresting weight gain.

## *Methods*

A minimum of eight separate focus groups were held for male first-year students ( $n = 2$ ), for female first-year students ( $n = 2$ ), for nonwhite female first-year students ( $n = 2$ ), and for nonwhite male first-year students ( $n = 2$ ). Full-time, first-year students ( $n = 122$ ) from 17 to 22 years of age through recruitment stations placed at dining hall entrances. We expected to have 8-12 students at each focus groups. However, only two of the focus groups met the minimum required participants.

Phase II, the CSU Weight Gain Prevention Program was a quasi-experimental, one-group, pretest-posttest project that was used to attenuate weight gain in first-year students, increase physical activity, and reduce energy consumption. The CSU Weight Gain Prevention Program is an enhanced America On the Move program for university students, available on a Facebook page that was based on the social-ecological model, findings from phase I, and an in-depth literature review. Eighty-eight first-year students were recruited during fall of 2011. Four assessments, two each semester, were scheduled during the 2011-2012 academic year.

*CSU Fit* (phase III) was an experimental pretest-posttest to attenuate weight gain in first-year CSU students with a primary focus on increasing their walking by 2000 steps/d, or decreasing their energy intake by 100 Kcal/d. *CSU Fit* included a Facebook page component, group sessions, and feedback designed to prevent weight gain in first-year students of CSU, with a 7-month follow-up. Two hundred twenty-five first-year CSU students were recruited at the beginning of fall semester of 2012. Three assessments in September 2012 (pre-test or baseline), January 2013 (midpoint), and April 2013 (post-test or final) were scheduled during the 2012-2013 academic year. Weight, body composition, body circumferences, blood pressure, and dietary intake were measured and recorded at each of the three time points. Participants

completed online surveys to provide data on self-reported physical activity, nutrition and physical activity knowledge and self-efficacy. They also recorded their steps by using pedometers. Two hundred sixteen students who completed baseline online surveys were randomly stratified based on their gender and residence halls into either the *CSU Fit* (intervention group) or the Association for Student Activity Programming (ASAP) at CSU (control group) Facebook page. The development of the *CSU Fit* page was guided by the social-ecological model, focus-group discussions with CSU first-year students (phase I), an in-depth literature review including American On the Move tools, and the CSU Weight Gain Prevention Program pilot study (phase II).<sup>11</sup> ASAP, which is funded by CSU's student fees, organizes and implements various entertainment events around campus including films, concerts, lectures, comedy shows, and special events.<sup>12</sup> The intervention, which targeted healthy eating and physical activity, was conducted through a Facebook page, group sessions, and feedback. SPSS 19 and SAS 9.3 software were used for descriptive data, and SAS 9.3 was used for inferential statistics (analysis of variance and correlation).

### *Results*

Twenty-five full-time, first-year CSU students (60% male and 64% non-White) aged 17 to 22 years ( $18.04 \pm 0.46$  years old) participated in phase I focus groups.

Students cited "all-you-can-eat" dining halls, unstructured/busy schedules, availability of unhealthy choices, and absence of monitoring parents as reasons that lead to weight gain among first-year students. Students suggested the posting of nutrition information on menu items, greater food variety with healthier options in dining halls, and coordination of university based activities as ways to improve healthy eating and physical activity. Participants unanimously liked the idea of posting healthy-eating and physical-activity tips on a Facebook page.



Six (23%) males and 20 (77%) females ( $18 \pm 0.37$  years old) completed all components of all four assessments at phase II. Among participants, weight increased significantly between September and April of the 2011-2012 academic year (mean  $\pm$  SE =  $2.48 \pm 0.44$  kg,  $P < .0001$ ).

One hundred sixty-one subjects ( $18.13 \pm 0.04$  years old) predominately female (65%) and White (80%) completed the phase III study. There was a significant main effect of time such that the mean weight gain was 1.29 kg (SE=0.31) for the intervention group and 1.29 kg (SE=0.34) for the control group from baseline to final assessments (95% CL: 0.88-1.74,  $P < 0.05$ ). The results in Table 4 reveal that the waist-to-hip ratio decreased for the intervention group from baseline to midpoint and stayed the same for the control group (0.83 vs. 0.81,  $P < 0.05$ ). However, this group difference in the waist-to-hip ratio was not significantly different at the end of the study. There were not significant group by time interactions or main effects of group or time for any other anthropometric variables or blood pressure.

The reported dietary intake of the students in both groups reflects that they consumed fewer calories, carbohydrates, and sugar as reported in the final 24-hour-recall and CSU usual-intake assessments compared to the data reported for the same measures at the baseline assessment (time effect; respectively,  $P < 0.05$ ,  $P < 0.01$ , and  $P < .0001$ ). Only fat intake at baseline was significantly related to weight gain ( $r = 0.17$ ,  $P = 0.038$ ). The ANOVA indicates that the only difference in self-reported activity was that the intervention group had significantly less mild leisure-time activity compared to the control group at midpoint ( $P < 0.05$ ).

### *Conclusion*

This research is the only study investigating the impact of a Facebook page targeting weight gain prevention in first-year students that used an experimental pretest - posttest design. The results from this research suggests that a Facebook page offering daily educational

information coupled with additional educational modalities targeted at weight gain prevention for first-year students does not improve dietary and physical activity behaviors and fails to attenuate weight gain.

## ACKNOWLEDGEMENT

Over the last five years, I have received support and encouragement from many individuals. I would like to express my very great gratitude to Professor Jennifer Anderson, my advisor, for her patient guidance and devoted presence, enthusiastic encouragement, and useful critiques of this research work. I would also like to thank for her advice and assistance in keeping my progress on schedule. I would never have been able to be here without Dr. Jennifer Anderson's guidance who provided me with caring guidance and following up on my admission to CSU.

I would like to express my great appreciation to Professor Chris Melby for his invaluable, constructive, and eye-opening suggestions and critiques during the development and implementation of CSU Fit. His willingness to give his time so generously has been very much appreciated. I would never have been able to pursue an idea to a full project without Dr. Melby's support who admitted me to the program and generously devoted his time to guide my project.

Special thanks should be given to Professor Hill, my research project co-advisor for his professional guidance and valuable support. I would never have been able to defend today without Dr. Hill's encouragement who was one of the founders of America On the Move and who responded to my first email enthusiastically and promptly and expressed his interest in having me as one of his mentees.

I would like to thank Dr. Long for adding valuable insights and comments to this project. I would never have been able to finish writing my dissertation without her sincere engagement and interest in my project.

My grateful thanks are also extended to Mr. *Jim zumBrunnen* for his guidance in handling data and his help in doing the statistical data analysis. His commitment to fulfill my requests was exemplary. I am particularly grateful for the assistance given by John Wilson in developing online questionnaires, diet analysis, and multi-media set-up, Cliff Choury for assistance with processing funding, and Paula Coleman and Pam Cox to assist with administrative work. I would also like to thank Sharon Hamm for her great job editing and proofreading my dissertation. I would also like to thank Deb Morris for being a great supervisor, mentor, and friend and MaryAnn Lynn for being a great colleague and friend.

I would also like to extend my thanks to Nutrition and Health and Exercise volunteer students for their help and dedication to this research work and in offering me the assistance in conducting the assessments despite all challenges and early morning schedules. This project would not be possible without their assistance.

Last but not least, I wish to thank my mother Mahshid, my only sister Mina, and my boyfriend, Neal, for their support and encouragement throughout my study. I would never have been able to be here without a caring mom, a supportive sister, and an encouraging boyfriend.

July 30, 2013

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## CHAPTER 1

# INTRODUCTION AND OBJECTIVES

Obesity rates have accelerated among American adolescents and young adults since the 1960s.<sup>1,3</sup> Based on the National Health and Nutrition Examination Survey (NHANES), the prevalence of obesity in adolescents (aged 12 to 19 years) increased from 4.6% to 18.4% during the same period.<sup>1,2</sup> The prevalence of overweight among adolescents was 4.6% in the 1960s, and that rate has more than tripled, to 15.2%, according to the latest NHANES of 2009-2010.<sup>2,3</sup> The Behavioral Risk Factor Surveillance System report also confirmed high incidence rates of obesity in young adults. The incidence rates of both obesity and extreme obesity were higher among 18- to 29-year-olds (6.4% & 1.2%, respectively) than in any other age group, based on a 2009 report.<sup>14</sup>

Overweight and obesity also significantly affect college students. The authors of the National College Health Assessment (NCHA) reported that the overweight and obesity rates increased from 29.4% in the spring of 2000 to 32.4% in the spring of 2011 among students enrolled in American postsecondary institutions.<sup>4,5</sup> Given that almost half of Americans between 18 and 24 years of age were enrolled in higher education in 2009<sup>15</sup> the importance of addressing weight issues in this age group is readily apparent.<sup>16</sup>

Multiple surveys suggest that the unhealthy dietary habits and low physical-activity patterns of many college students predispose them to weight gain.<sup>6</sup> These behaviors are established during childhood and adolescence, and they extend into adulthood.<sup>5,17</sup> For many students, unhealthy diets and physical inactivity begin during the transition from high school to college and university, which can increase the likelihood of significant weight gain for them during that period.

Students' weight gain in the first year of college is commonly known as the "freshman 15," which refers to the perception that students gain an average of 15 pounds of weight during their first year. However, the results of several studies among college students suggest the average weight gain is less than 15 pounds—more on the order of 2.5 to 8 pounds.<sup>18</sup> The estimated average weight gain in adult Americans is approximately 2 pounds per year whereas young adults attending college appear to gain more than that during their first year at college.<sup>18-20</sup> In one report, almost 70% of students gained weight during their first 2 years of college, although a small minority lost weight during this time period.<sup>21</sup> Among students who have gained weight in college, there is little evidence that this weight gain is reversed in later years.<sup>22,23</sup> Such weight gain has significant implications, considering that a relatively small weight gain can raise students' body mass index (BMI) to the overweight range with possible adverse health consequences.<sup>9</sup>

Weight gain can affect young adults' health and academic performance. Data from the Coronary Artery Risk Development in Young Adults (CARDIA) study showed that weight gain in young adults was associated with increased risk of coronary heart disease. Alternatively, coronary heart disease risk factors did not change in young adults who did not gain weight over 15 years.<sup>24</sup> In a previous study of American college students, academic performance as measured by grade-point average was negatively correlated with BMI and fast-food intake.<sup>25</sup>

The college years can be an opportune time to prevent obesity by teaching young adults about eating healthy and being physically active.<sup>7</sup> Development of online approaches to weight management appears to be promising, given that college students are turning to the Internet for information about diet and physical activity.<sup>8,9</sup> The options available through online social networks such as Facebook may also provide an effective venue for reaching students with

educational information. Research is needed to explore the effectiveness of a Facebook-based weight-gain-prevention program for college students.

For these reasons, the following specific aims and associated hypotheses reflect the focus of the current study:

Specific Aim 1: To develop and implement a 7-month intervention, *CSU Fit*, a social networking program for first-year college students targeted at improvements in dietary and physical activity behaviors and attenuation of weight gain.

Specific Aim 2: To determine, using a randomized controlled intervention, the effect of *CSU Fit* on the weight gain of first year college students.

*Hypothesis:* Participants in *CSU Fit* will exhibit a mean lower weight gain over the 7-month intervention period compared to the control group during this same time period.

Specific Aim 3: To determine the effect of the *CSU Fit* on measures related to the quality of the participants habitual diets.

*Hypothesis:* Participants in the *CSU Fit* will exhibit higher dietary quality as evidenced by a mean lower dietary intakes of energy, total and saturated fat, and sodium, and greater mean intakes of fiber, vitamin A and vitamin C over the 7-month intervention period compared to the control group during this same time period.

Specific Aim 4: To determine the effect of the *CSU Fit* on the participants' physical activity levels.

*Hypothesis:* First-year college students participating in *CSU Fit* will exhibit greater mean levels of physical activity as determined by daily step counts and self-reported leisure-time activity over the 7-month intervention compared to the control group during this same time period.

Specific Aim 5: To determine the effect of *CSU Fit* on the participants' nutrition and physical activity-related knowledge and measures of self-efficacy.

*Hypothesis:* First-year college students participating in *CSU Fit* will exhibit greater improvements in specific measures of nutrition and physical activity-related knowledge and self-efficacy over the 7-month intervention compared to the control group during this same time period.

Specific Aim 6: To identify the predictors of weight change among first-year college students over a 7-month period.

*Hypothesis:* Attenuation of weight gain among first-year college students will be related to higher dietary quality, higher levels of physical activity, greater nutrition and physical-activity related knowledge, and a greater sense of self-efficacy for engaging in healthy eating and activity behavioral patterns.

The goal of this project was to design, implement, evaluate, and possibly disseminate an interactive, engaging, and effective weight-gain-prevention program for college students using the resources and educational materials of America On the Move (AOM). Also additional resources were developed that can possibly be used on a broader scale to help improve dietary

and physical activity behaviors of college students aimed at arresting weight gain. A three-part approach was used as follows:

- Conduct a formative evaluation of CSU first-year students' views to gain insights as to how to best design a weight-gain-prevention program that includes healthy eating and regular physical activity.
- Conduct a small pilot intervention using the current AOM program and to include tools and educational handouts uniquely tailored to first-year college students that are based on tenets of the social-ecological model.
- Conduct an experimental trial to evaluate the impact of the enhanced AOM for college students on the prevention of weight gain.

## CHAPTER 2

# LITERATURE REVIEW

### Obesity and Overweight in Young Adults

Healthy People 2020 identified overweight and obesity as one of 12 leading health indicators and called for a reduction in the proportion of overweight or obese adolescents. Little progress has been made on this goal to date.<sup>26</sup>

Based on results of NHANES, the prevalence of overweight and obesity significantly increased in adolescents (aged 12 to 19 years) between the 1960s and 2009-2010. During that period, the prevalence of obesity in this group increased from 4.6% to 18.4% (Figure 2.1)<sup>1,2</sup>, and the prevalence of overweight increased from 5% to 15.2%.<sup>2,3</sup>

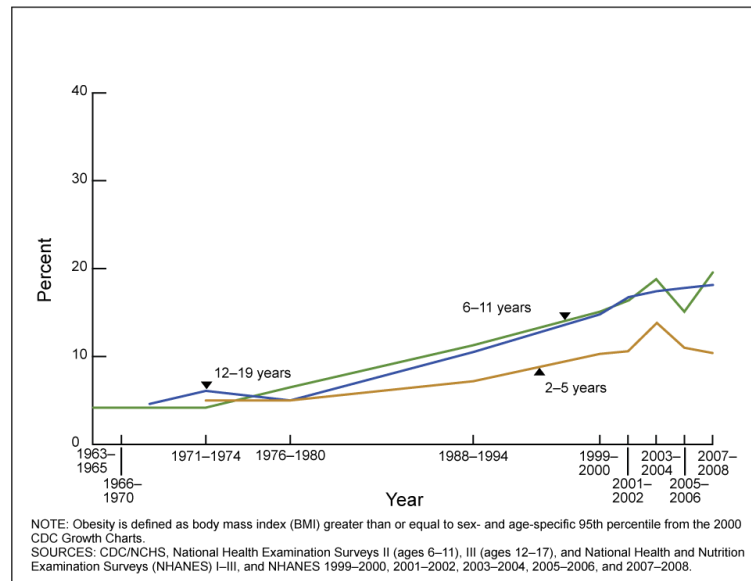


Figure 2.1. Trends in Obesity among Children and Adolescents: United States, 1963-2008<sup>1</sup>

The National Behavioral Risk Factor Surveillance System reported that 25.4% of 18- to 24-year-olds were overweight, and that 15.6% of them were obese in 2011.<sup>27</sup> Although the prevalence for these factors is lower in Colorado, it is not significantly different. The prevalence

of obesity in 18- to 24-year-old Coloradans was 10.2%, whereas 23.4% of the same age group were overweight in 2011.<sup>28</sup>

### *Obesity and Overweight in College Students*

Given the rising rates of overweight and obesity among young adults, it is critical to determine the extent of students' weight change during college. A relatively small weight gain in students can raise their BMI to the overweight range, which may in turn set the stage for increased risk for future obesity and its untoward sequela.<sup>9</sup> The NCHA reported that, from the spring of 2000 to the fall of 2011, the obesity rate for students enrolled in American post-secondary institutions increased (8% vs. 12.5%), and their overweight rate stayed the same (21.4% vs. 21.6%).<sup>5</sup> Based on the latest NCHA for CSU, in the spring of 2008 the prevalence of overweight students was 19.4% and of obese students was 3.4%.<sup>29</sup> During the same time, NCHA reported 21.9% overweight rates and 10% obesity rates for students nationwide.<sup>5</sup> The fact that almost half of Americans between 18 and 24 years of age were enrolled in higher education in 2009 further signifies the importance of addressing the weight issue in this age group.<sup>16,30</sup>

### *Weight Change in College Students*

As noted in Chapter 1, weight gain in the first year of college is commonly known as the "freshman 15." This term, first coined in 1989 in *Seventeen Magazine*, refers to the notion that students gain an average of 15 pounds of weight during their first year, although studies have suggested less weight gain.<sup>18,31</sup> Hovel and colleagues introduced the notion of substantial weight gain during students' first year of college based on a quasi-experimental study that compared female students at a private university to female students attending community or state colleges.<sup>32</sup> The researchers reported that, on average, female students at the private university

gained 8 pounds more than those students attending a community or state college during their first year.<sup>32</sup>

Many studies to date have investigated anthropometric changes in first-year college students. Recent studies have shown weight gain values ranging between 2.5 and 8 pounds.<sup>18,33</sup> Waist circumference and percent of body fat increased along with the weight gain.<sup>34,35</sup> A common finding is that more than half of students in the studies gained weight during their first year of college.<sup>36,37</sup>

Weight gain among first-year college students has been extensively studied; however, only a few studies have been conducted beyond students' first year. Comparisons of the weight change during the first two-years of the college experience revealed a significant weight increase for students during their first year, but no substantial change was seen from their freshman to sophomore year.<sup>33,35</sup>

#### *Academic Consequences of Obesity and Overweight in College Students*

A poor diet may not only increase the risk of students being overweight and obese; it also may lead to insulin resistance and thus decrease their supply of glucose, a major energy source, to the brain. In addition to increased risk of chronic disease, compromised academic performance could occur as a result of these factors. A previous study showed that students' grade point average was negatively correlated with BMI and fast food intake.<sup>25</sup> In addition, first-year university students who experienced "freshman 15" were more likely to have lower SAT scores.<sup>18</sup>

#### *Lifestyle and Risk Factors for Disease in Young Adults*

Unhealthy lifestyle habits of young adults also put them at an increased risk for chronic disease. The Coronary Artery Risk Development in Young Adults study demonstrated that



consumers of a healthier diet (higher intake of fruit, whole grains, milk, nuts, and seeds) and fewer sugar-sweetened beverages had a lower risk of metabolic syndrome and the lowest risk of high waist circumference and high triglycerides compared with Western consumers in general (with their higher intakes of fast food, meat and poultry, pizza, and snacks).<sup>38</sup> Increased sugar intake alone predicted lower HDL-cholesterol, higher LDL-cholesterol, and higher blood glucose among college students.<sup>39</sup> Also demonstrated was that, in college freshmen, BMI and lifestyle (diet and exercise) significantly affected the students' fasting insulin levels.<sup>40</sup>

### *Chronic Disease Risk Factors among Overweight and Obese College Students*

Young adults are at greater risk of heart disease and diabetes as a result of the high incidence of overweight/obesity, physical inactivity, and unhealthy eating habits. Research has shown that almost half of college students demonstrate at least one criterion of metabolic syndrome.<sup>41,42</sup> Increases in BMI, waist circumference, and percent of body fat among college students are associated with inflammatory markers and metabolic-syndrome components such as higher blood pressure, blood lipids, and glucose levels.<sup>41-45</sup> Furthermore, studies have shown that increases in BMI in college students decrease the subjects' cardiovascular fitness levels.<sup>44</sup>

### **Predictors of Weight Change in College Students**

First-year university students may be particularly susceptible to weight gain because of changes in their lifestyle. As a rule, students' diets do not meet nutritional guidelines, including the recommended fruit and vegetable intake; and their diets far exceed sugar, fat, and sodium recommendations.<sup>5,46</sup> Moreover, the physical activity rates of university students as a whole are exceptionally low. For example, the NCHA reported that almost 80% of university students do not meet recommended physical-activity guidelines.<sup>5</sup>

Environmental factors may also contribute to this lifestyle.<sup>47</sup> The college environment may be conducive to overconsumption as the result of factors such as readily available, energy-dense foods.<sup>22,48,49</sup> Self-efficacy was identified as another predictor of dietary and physical-activity behaviors among college students.<sup>50-53</sup> In brief, weight gain in first-year university students is multifactorial (Figure 2.2).<sup>16</sup>

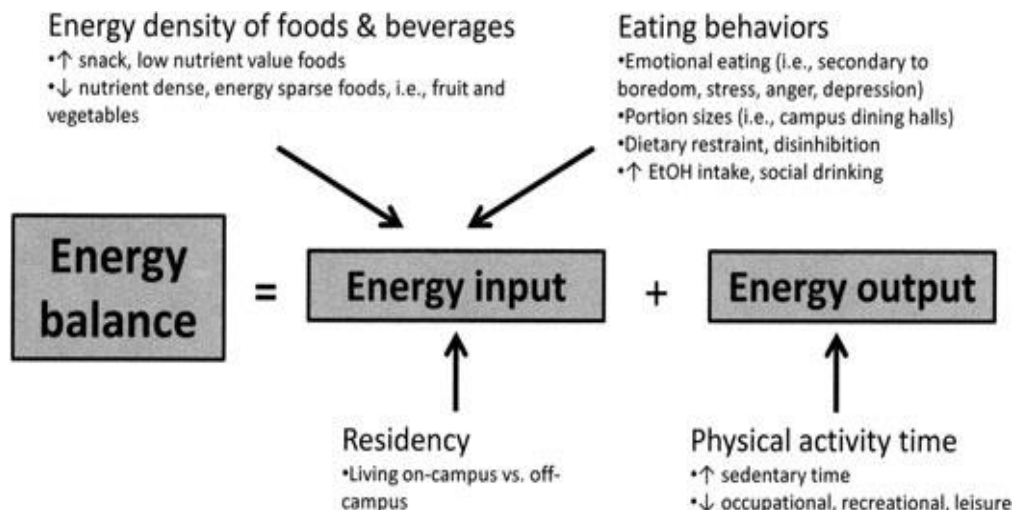


Figure 2.2 Factors that Predict Weight Changes As a Function of Energy Balance Equation in Freshman Students<sup>16</sup>

### Nutritional Factors that Contribute to Weight Change in Freshmen

According to one study, nearly 47% of students' weight gain in the first semester of college was attributed to their eating in all-you-can-eat dining halls, snacking, and eating junk food.<sup>48</sup> In general, students' diets do not meet nutritional guidelines, particularly in terms of recommended fruit and vegetable intake.<sup>5</sup> The latest NCHA reported that only 5.4% of the students studied had five or more servings of fruit and vegetables a day.<sup>5</sup> Typically, student diets also far exceed sugar, fat, and alcohol recommendations.<sup>54</sup>

### *Sugar-Sweetened Beverages*

A possible determinant of the increase in obesity among adolescents is their high intake of sugar-sweetened beverages, given the high level consumption of sweetened beverages.<sup>55</sup> The NHANES identified sugar-sweetened beverages (soda and fruit drinks) as the top sources of energy for 14- to 18-year-olds.<sup>54</sup> A majority of undergraduate college students drank sugar-sweetened beverages daily. Men consumed more soda than women, and older students (>21 years of age) took in fewer calories from sugar-sweetened beverages compared to younger students.<sup>55</sup>

### *Dietary Fat*

It is not well known what components of the diet (macronutrient and micronutrient composition) contribute to adiposity, but dietary fat is one of the potential candidates.<sup>56</sup> The intake of total dietary fat and saturated fat was the best predictor of visceral adipose tissue and subcutaneous adipose tissue areas in young women (aged 17 to 35 years). The combination of total dietary fat and calcium consumption determined the visceral adipose tissue area in young men (aged 17 to 35 years).<sup>56</sup>

### *Dietary Fiber*

Dietary fiber intake, an indicator of diet quality, also has been proposed as a contributor to the prevention of adiposity in college students.<sup>57</sup> In one research study, the intake of dietary fiber by university students was significantly related to their fat mass, percent of body fat, BMI, and fasting insulin. The students' intake of dietary fiber and waist circumference also were significantly associated.<sup>58</sup> In another study, normal-weight students had significantly higher intake of whole grain than overweight or obese students.<sup>59</sup> Yet other research has shown that students who lost or maintained weight ate more fruit, low-fat dairy, and whole grains. Lower

weight gain for these students was correlated with eating more nonfried vegetables, fruit (without juice), and breakfast fiber (g/day).<sup>57</sup>

### *Dairy Products*

Decline in dairy consumption is one of the significant dietary changes that happen for students during the first year of college that may contribute to weight change during this period.<sup>51</sup> College students with a higher intake of low-fat dairy products have been found to have better diet quality, less weight gain, and reductions in waist circumference, percentage of abdominal fat, and percentage of total body fat compared to those students with lower dairy intake.<sup>51</sup> Other studies have shown that underweight undergraduate students have a higher intake of green leafy vegetables, other vegetables, cheese, hot cereal, and dairy products, whereas obese students consumed more meats, including more pork and fish, and also more legumes.<sup>60</sup>

### *Alcohol*

Research indicates that poor dietary intake may be associated with increased alcohol consumption, which is a common dietary choice among college students.<sup>61</sup> According to this study, almost one-third of the students reported binge drinking in the previous 2 weeks. Students' binge drinking was associated with infrequent breakfast consumption and fruit/vegetable intake, and high fast-food consumption. Those students who reported binge drinking were also more likely to have unhealthy weight-control behaviors, body dissatisfaction, and sedentary behavior, and to be trying to lose weight.<sup>61</sup> Women who drank more alcohol and caffeine also increased their BMI and used more maladaptive coping behaviors. They also were more stressed, and they ate less high-fiber food or cruciferous vegetables and more high-cholesterol foods.<sup>62</sup>

### *Portion Size*

Some researchers have postulated that people with a higher BMI estimate portion sizes larger than reference portion sizes, especially for foods with high fat and calories.<sup>63</sup> In this study, college students chose substantially larger portion sizes in comparison to reference portion sizes in 10 of the 15 food/beverage items. BMI was associated with self-selected portion sizes for peanuts, M & M candies, jam, soda, and cereal. Students also chose significantly larger portion sizes for high-carbohydrate foods when compared to the portions they chose for high-fat foods.<sup>63</sup>

### *Food and Exercise Environment*

University students are exposed daily to a food environment packed with foods that are high in energy, fats, and added sugars, and low in nutrient density.<sup>64</sup> As reported earlier, significant weight gain during students' first semester of college could also be attributed to all-you-can-eat meals and an increase in their consumption of evening snacks, high-fat foods, and junk foods.<sup>48</sup> An exploration of available food and beverage options in college-student dormitory rooms showed that, on average, students had 47 food and beverage items containing a total of 22,800 calories in each dormitory room. Among these items, salty snacks, cereal or granola bars, main dishes, desserts or candy, and sugar-sweetened beverages were more common; low-calorie beverages, fruits and vegetables, dairy products, tea/coffee, and 100% fruit/vegetable juice were less common. Parents of students purchased more of the higher-calorie and higher-fat foods for dormitory rooms whereas students purchased low-calorie food items.<sup>64</sup>

Other researchers also have associated watching TV and snack-food advertisements with snack-food consumption and being overweight or obese in undergraduate university students. University students with medium or high rates of TV viewing snacked more frequently, consumed more energy-dense snacks, recognized more advertising, and were more likely to be

overweight and obese than low-rate viewers. TV viewing and place of residence also were related to snacking frequency.<sup>65</sup>

The living environments of students have been shown to influence their weight and lifestyle habits. It has previously been shown that students living on campus gained more weight than their off-campus peers.<sup>47</sup> Living in a dormitory with an on-site dining hall caused female students to weigh more and exercise less, and male students to eat more meals and snacks. At the same time, closer proximity of the dormitory to a campus gym led to more frequent exercise for students in the study, whereas those who lived farther from a campus gym reported exercising less.<sup>66</sup>

### *Nutrition Knowledge*

College students are exposed daily to a food environment that is characterized by calorie-dense food, and one in which no nutrition knowledge is provided. These factors may lead to poor dietary choices and weight gain.<sup>64</sup> Researchers have determined that nutrition knowledge is significantly correlated to fruit and vegetable consumption in college students.<sup>67</sup> For example, college students' increased knowledge of the 2005 *Dietary Guidelines for Americans* was shown in one study to be significantly related to those students meeting dietary guidelines for fruit, dairy, protein, and whole grains. That knowledge also appeared to be positively related to more healthful eating patterns, such as the students' use of 1% or skim milk instead of 2%, and low-calorie or no-calorie instead of regular salad dressing.<sup>68</sup>

Another study reveals that lack of nutrition knowledge is more prominent among first-year university students. Considering the off-campus residence of the majority of seniors and the on-campus residence of freshmen, a comparison of the nutrition knowledge of fourth-year with

first-year science students in this research demonstrated that their purchase and cooking of food may explain the senior students' greater knowledge of fat.<sup>69</sup>

### Physical Activity in College Students

As noted in *Healthy Campus 2010*<sup>4</sup>, one's participation in physical activity (PA) on a regular basis is a primary factor in improving health, fitness, and quality of life. Moreover, public-health guidelines recommend regular physical activity to prevent weight gain and promote healthy body weight. To promote and maintain health, the American College of Sports Medicine and the American Heart Association recommend at least 30 minutes of moderate-intensity cardio or aerobic exercise 5 days or more per week, or at least 20 minutes of vigorous-intensity cardio or aerobic exercise 3 or more days per week, or a combination of both. The US Department of Health and Human Services and Department of Agriculture recommend 60 minutes of moderate- to vigorous-intensity activity most days of the week to prevent unhealthy weight gain.<sup>70</sup>

The latest Behavioral Risk Factor Surveillance System data indicate that young adults in general do not meet recommended physical activity levels. Based on 2011 reports, 70.7% of 18- to 24-year-olds did not follow the recommended levels of aerobic or muscle strengthening physical activity.<sup>71</sup> In Colorado, 57.5% of the same age group did not meet the recommended level of physical activity.<sup>72</sup>

Studies also show that the majority of college students do not meet the recommended level of physical activity to maintain health. For example, according to the 2008 National College Health Assessment, more than half of college students reported that they did not participate in 20 minutes of vigorous exercise or 30 minutes of moderate exercise at least 3 to 5 days a week.<sup>73</sup> While the percentage of students failing to achieve these exercise goals is lower

for CSU students (30%) in the same year, it is still more than the target of *Healthy People 2010* (20%).<sup>73,74</sup> Based on the latest National College Health Assessment in the spring of 2011, 52.6% of college students did not meet the physical activity recommendations.<sup>5</sup> The results of the same assessment in the spring of 2008 at CSU found that at least 30.5% of students did not meet the recommendations for aerobic physical activity.<sup>29</sup>

### *Contributing Factors to Physical Inactivity in College Students*

Many factors may cause college students to be physically inactive. Sedentary behaviors compete with each other for students' time. Academic pressures may lead college students to spend more time studying and using the computer, while they discourage the students from being involved in physical activity and sports.<sup>22</sup> One study demonstrated that sedentary technology behaviors and lower physical activity levels were significantly related for males but not for females. Studying was the main sedentary behavior, although students also spent time watching TV, sitting and talking, and hanging out. Studying and computer game playing levels were significantly higher in males, whereas sitting and talking levels were higher in females.<sup>75</sup>

### *Physical Activity and Change in Body Composition in Young Adults and College Students*

In the past 20 years, physical activity has been declining among college students. Along with this decline, overweight and obesity have increased among this population. Regular physical activity is an important part of a healthy lifestyle, which might help prevent overweight and obesity. Decreased physical fitness also has been associated with increased body fat in college students. Levels of VO<sub>2</sub> max, an indicator of individuals' physical fitness, have been correlated with lower BMI and percent of body fat.<sup>76</sup> The data from the CARDIA study show that maintaining high physical activity was associated with 2.6 kg less weight and 3.1 cm smaller waist circumference gains in men compared to the results of those men in the lower-activity



group. Women who maintained high activity gained 6.1 kg less weight and 3.8 cm smaller waist circumference than those women in the lower-activity group.<sup>77</sup>

However, some studies have not found a significant association between weight and physical activity. Investigation of the effect on healthy females of their transition from high school to university demonstrated an increase in their weight, BMI, percent of body fat, and waist circumference. For these women, vigorous physical activity and computer use increased, whereas television use decreased and dietary energy intake remained the same for them during the transition; however, none of these changes were determinants of their final weight.<sup>78</sup> Another study of female, first-year university students found that students who gained weight had greater fat mass and were less active than those who lost weight during the year, although the difference was not significant.<sup>79</sup>

#### *Combination of Dietary Factors and Physical Activity in Young Adults*

Studies show that the transition to college is concurrent with weight gain and the initiation of some unhealthy behavior changes in many young adults. Prevention approaches may best be geared toward identifying and targeting these unhealthy behavior patterns.<sup>80</sup>

First- and second-year university students were surveyed about factors underlying college weight gain, nutrition, and physical-activity behaviors. Among these factors, the students identified the availability of unhealthful food on campus, snacking, late-night eating, alcohol-related eating, eating because of stress/boredom, and food in dorm rooms. Students also reported negative experiences using campus recreation facilities, poor weather, and lack of time/time-management issues, motivation, and social support for exercise as contributing factors.<sup>81</sup> Another study of contributing factors to weight gain among college students revealed that weight gainers were mostly men, and that they ate more calories from sweets or desserts, and fewer calories

from fats. Students and administrators noted access to nutritious food and physical amenities as supporters of healthy living, and easy access to high-calorie foods, limited recreation facilities, and policy challenges as barriers.<sup>13</sup>

Research derived from Harvard's *Growing Up Today Study* of adolescents and young adults aged 14 to 22 years showed that 25% of participants used not eating snacks, following low-calorie or low-fat diets, and limiting portion sizes for weight management. Less than half of the participants exercised occasionally to help with their weight management. Results indicated that limiting portion sizes combined with exercising frequently was the most successful strategy for weight-gain prevention among the females studied.<sup>82</sup>

#### *Combination of Dietary Factors and Physical Activity during the Transition from High School to University*

Their transition from high school to a post-secondary institution causes drastic changes in students' environment and resources. It is likely that these changes could lead to substantial alterations, including weight gain, in the students' health-related behaviors.<sup>83</sup> A review of literature regarding determinants of weight gain in young women (ages 18 to 36 years) revealed that more than half of the identified papers (20 of 29) addressed weight gain while young women were at a university or during their transition from high school to a university. Of these studies, seven suggested diet quality and six a decline in physical activity as determinants of weight gain.<sup>83</sup>

Their transition from high school to university caused a substantial increase in weight, BMI, body fat, waist circumference, hip circumference, and waist-hip ratio of male students, although their energy and nutrient intake levels did not change. In this study, significant predictors of final body mass were participants' intention for body mass to stay the same and

their frequency of TV viewing. Students' participation in fast aerobic physical activity, TV time, and nightly sleep significantly decreased, while their computer and study time increased. Their number of weekly alcoholic drinks and frequency of binge drinking significantly increased over this same period.<sup>84</sup>

#### *Combination of Dietary Factors and Physical Activity in College Students*

Given the increasing rates of obesity, inactivity, and unhealthy eating among college students, it is critical to recognize contributing factors. It is not clear whether college lifestyle promotes significant and involuntary weight gain in students. One study showed a significant weight increase for students from their freshman to senior years. Twenty-nine percent of freshmen students did not exercise regularly; 59% participated regularly in aerobic exercise, 45% in strengthening exercises, and 31% in stretching exercises. Only one-third (29%) of first-year students ate at least five servings of fruits and vegetables daily, whereas half of them ate fried foods and high-fat fast foods at least twice during the previous week.<sup>85</sup> In another study of college students, the BMI increased with age and physical inactivity. When compared with normal-weight students, overweight students reported increased engagement in dieting behavior, desire to be thinner, fear of bingeing, and preoccupation with food.<sup>86</sup> The UK version of the Youth Neighborhood Environment Walkability Survey demonstrated that less-healthy eating patterns and sedentary behaviors are significantly associated. Students who spent more time watching DVDs consumed higher-energy, higher-fat, percentage energy from fat, and lower-carbohydrate foods.<sup>87</sup>

Another study that assessed weight, exercise, and dietary patterns of college students during their first 2 years of college showed otherwise. Most of the students (70%) gained weight

by the end of their sophomore year; however, that gain was not associated with exercise or dietary patterns.<sup>88</sup>

### *Combination of Dietary Factors and Physical Activity in Freshmen Students*

Freshmen students are at an increased risk for weight gain, which could have an impact on the future of obesity rates nationwide. Fast-food consumption, snack consumption, and computer use lead to significant weight gain and increased BMI in first-year college students.<sup>89</sup> Increased stress and baseline BMI were associated with weight change. Under these conditions, underweight or normal-weight students lost the most weight, whereas overweight or obese students gained the most weight.<sup>90</sup> Sleeping more, eating breakfast more frequently, and being less physically active during college than high school were also associated with weight gain.<sup>84,91</sup>

Another study confirmed the role of physical activity level in weight gain during this stage. Students who had a low frequency of physical activity at baseline were twice as likely to be overweight than others with higher physical activity frequency.<sup>92</sup>

### **Self-efficacy and Weight-Related Behaviors**

Bandura defined self-efficacy as the confidence individuals have regarding their ability to do a specific activity that influences their lives.<sup>93</sup> Aside from other factors discussed earlier, self-efficacy is a strong predictor of weight-related behaviors (e.g., diet and physical activity) and is thus also likely to play an important role in influencing an individual's development of obesity.<sup>94</sup> In a study of university students and staff, self-efficacy was a significant predictor of alcohol consumption, physical activity, and nutrition-protective behavior.<sup>95,96</sup> The Australian Longitudinal Study on Women's Health identified determinants of BMI. Determinant of BMI included family and friends' support/sabotage of individuals, physical activity and healthy eating behaviors, tendency to never put on weight, self-efficacy for weight gain prevention and for

healthy eating, attention paid to weight, and perceived difficulty of taking the stairs rather than the elevator as part of the daily routine.<sup>94</sup>

### *Self-efficacy and Physical Activity*

Brannagan indicated that self-efficacy is required for one to adopt behaviors, including physical-activity behaviors.<sup>53</sup> Other researchers also have noted that peer and family support have been found to affect self-efficacy and active leisure. For example, greater self-efficacy related to physical activity led to greater involvement in active leisure. And peer support had significantly greater effect on self-efficacy in males than in females.<sup>97</sup>

Exercise self-efficacy has been found to be related to perceived exertion and level of activity in college freshmen. There also is a significant direct positive relationship between event-related stress and physical activity level, self-efficacy (sticking to it), and physical activity.<sup>53</sup>

### *Self-efficacy and Diet-Related Behaviors*

Self-efficacy is an essential determinant of behavior change, including changes in dietary behaviors.<sup>95</sup> Measures of healthy-eater identity significantly predicted individuals' consumption of fruits and vegetables, and of foods of low nutritional value. Self-efficacy improved the prediction of outcomes for both eating behaviors.<sup>95</sup>

## **Social Support and Weight-Related Behaviors**

Several studies investigated the impact of peers on the weight-related behaviors of college students.<sup>98,99</sup> Among female students living on campus during their first year, the amount of weight gain was strongly and negatively correlated to their roommate's initial weight. Family and friends support had a moderate direct impact on self-efficacy while self-efficacy had a large direct

influence on leisure physical activity. Female students adopted some of their roommates' weight-loss behaviors, which led them to gain less weight. This effect may be through the influences of eating, exercise, and use of weight-loss supplements.<sup>98</sup>

Results of an assessment inventory developed to measure social-influence patterns of the physical activity and food consumption habits of college students indicate that females reacted differently than males when they were supported for their dietary and physical-activity behaviors. Females received greater support for their diet and physical activity than did males. Specifically, females were more encouraged by friends and peers to exercise, practice healthy eating behaviors, and monitor their weight than their male counterparts were. Females also received significantly more support for exercise, healthy eating habits, and weight loss, and they received more criticism for their exercise habits when their peer groups were at least half or mostly all male. Male students, however, received the highest levels of support when their peers were mostly or all female.<sup>100</sup>

Another study identified beverages and protein as the only food groups with a statistically significant positive peer effect. Students' increased snack consumption and eating in dining halls led to an increase in their BMI, while their increased bread consumption led to a decrease in their BMI.<sup>101</sup>

### Stress and Weight-Related Behaviors

The college environment may contribute to higher stress levels among college students, which in turn may put them at risk of overweight by disturbing their energy balance. In one study, stress was associated with increased likelihood for weight change among first-year university students, with a stronger association indicated for females.<sup>102</sup> The assessment of stress and health-related behaviors' effect on freshman weight change showed that increased alcohol

consumption in men and increased workload in women were related to weight gain. Weight loss was associated with lower academic confidence at baseline and with peer pressure modified by alcohol increase in men, and with fruit/vegetable consumption at baseline in women.<sup>102</sup>

## Social-Ecological Model

Social-ecological research has received significant consideration recently from diverse communities of scholars. Most importantly, organizations such as the National Institute of Health Office of Behavioral and Social Science Research and the Centers for Disease Control and Prevention have recommended transdisciplinary health research that connects biomedical science (i.e., molecular and physiological causal mechanistic science) to social-ecological “systems methodologies” (e.g., social networking, complex-adaptive systems analysis, system-dynamics modeling) to understand multilevel effects on health outcomes.<sup>103</sup> To prevent the development of overweight and obesity throughout life, population-based strategies that improve individuals’ social and physical environmental contexts for healthful eating and physical activity are essential.<sup>104</sup>

### *Social-Ecological Model Applied to Nutrition and Physical-Activity Behaviors*

As discussed earlier, weight gain in first-year college students is probably due to changes in their individual, physical, and social environments that make it increasingly harder for them to get the activity and health-promoting foods they need. The college environment could be classified as “obesogenic” since “the surroundings, opportunities, or conditions of life lead to promoting obesity in this population.”<sup>105</sup> In an obesogenic environment, marketing, media, food and agricultural policies, education, and transportation collaborate to restrict individuals from eating healthy foods and getting regular physical activity.<sup>105</sup> Therefore, any attempt to reverse a weight-gain trend in such an environment requires a multilevel intervention. To reverse the

weight-gain trend, people must balance their energy intake (nutrition) and output (physical activity). But changing human behavior is hard in an obesogenic environment, and even the best weight-loss programs are difficult to sustain.<sup>106</sup> Thus, environmental health-promotion programs require emphasis on food-related behaviors and physical-activity choices for each individual, as well as the external factors that affect those choices.<sup>107</sup>

The social-ecological model, first introduced by McLeroy and colleagues, provides a framework to develop, implement, and evaluate just such a comprehensive intervention.<sup>108</sup> This model is more likely to succeed in changing individuals' health behavior and preventing obesity when multiple spheres of influence are used.<sup>107</sup> The social-ecological model addresses opportunities for promoting health while it recognizes that an individual's behavior both influences and is influenced by multiple levels of society.<sup>108</sup> In this model, behavior is determined by the following:

- Intrapersonal/individual factors include individual characteristics such as knowledge, attitudes, behavior, self-concept, skills, the developmental history of the individual, and so on.
- The interpersonal domain consists of formal and informal social-network and social-support systems, including the family, colleagues, classmates, and friends.
- Institutional factors address rules and the regulation of social institutions with organizational characteristics.
- Community factors comprise relationships among informal networks, institutions, and organizations.
- Public policy involves laws and policies at local, state, and national levels.<sup>109</sup>



To review some of the processes operating at each of these levels, their interaction with health-related behaviors, and potential health-promotion interventions, the following discussion includes further analysis of each level. Figure 2.3 demonstrates levels of influence in the social-ecological model.<sup>110</sup>

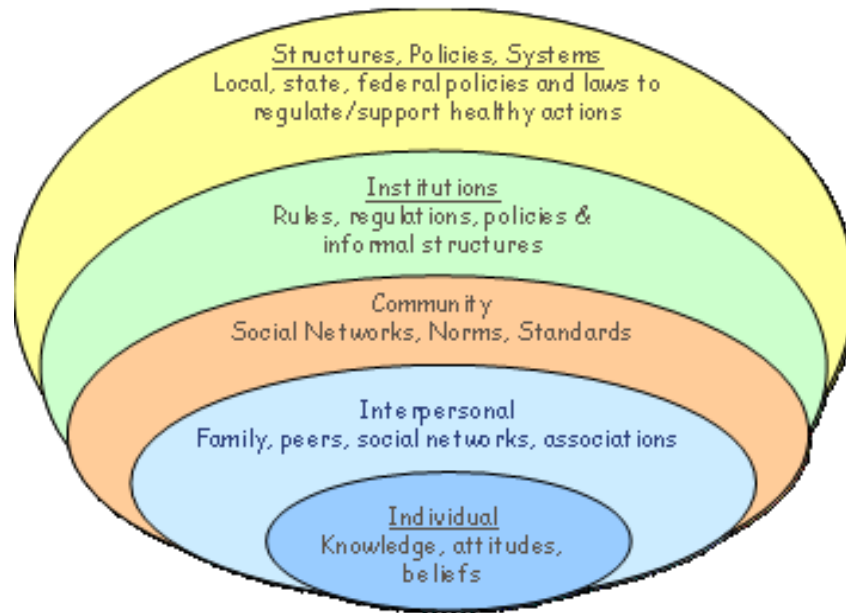


Figure 2.3. Levels of Influence in the Social-Ecological Model<sup>110</sup>

### *Intrapersonal Factors*

The social-ecological model may make use of behavioral-change models adapted from psychology, such as the health-belief model, social-learning theory, and the concept of locus of control. At the individual and interpersonal level, a variety of intervention strategies, such as educational programs, mass media, support groups, organizational incentives, or peer counseling likely will be used. The target of the intervention in this domain is to change individual characteristics such as one's knowledge, attitudes, skills, or intentions to comply with behavioral norms.<sup>109</sup>

### *Interpersonal Processes*

Their relationships with friends, family members, classmates, roommates, neighbors, colleagues, and acquaintances are important in influencing the health-related behaviors of individuals. Social relationships are an important resource in providing information, emotional support, and new social contacts and social roles. These social supports mediate life stress and help with individuals' overall well-being. Social networks influence the behavior of individuals within and outside of the network. At the interpersonal level, health-promotion strategies have typically emphasized changing individuals through social influences, rather than changing the norms or social groups to which the individuals belong.<sup>109</sup>

### *Organizational Factors*

An ecological behavioral perspective focuses not only on intra-individual factors and processes that affect behavior, but also on environmental determinants of behavior, such as organizational factors. Many people, including college students, spend at least one-third to one-half of their lives in organizational settings such as universities and dorms, which indicates the substantial influences such organizational structures and processes have on the health and health-related behaviors of those individuals. Organizational strategies such as management and supervisor support, incentives, changes in benefits (e.g., insurance coverage for nutrition services), changes in rules and regulations (e.g., alcohol restrictions), changes in the structure of work (e.g., time off to participate in health related activities), and environmental modifications may all be used to support behavioral changes.<sup>109</sup> A study of potential environmental determinants of persons' behaviors related to nutrition recognized as predictors social support and modeling, availability and accessibility of healthy foods, and socioeconomic status. The author suggested schools and worksites as appropriate settings for improving such behaviors.<sup>111</sup>

### *Community Factors*

In the social-ecological model, *community* has three distinct meanings. The different definitions have different implications for the development and implementation of health-promotion interventions. The first meaning of *community* refers to mediating structures, or the primary groups to which individuals belong, such as families, friendship networks, and neighborhoods. Because of the strong ties individuals have with these groups, changes are difficult for those individuals to achieve without the groups' support. Furthermore, these groups connect individuals and the larger social environment.<sup>109</sup>

In the second definition, *community* considers the relationships among organizations and groups within a defined area, such as local schools, local governmental health agencies, and so on. To develop and deliver an effective health-promotion service through existing community organizations, one should emphasize relationships between the host organization and other community agencies. Thus, health-promotion activities may include increasing coordination among community agencies and partnerships to impact resource expenditures, community awareness, and local health policies.<sup>109</sup>

The third definition of *community* is described in geographical and political terms, and is characterized by one or more power structures. An essential component of community health promotion is to increase exposure of the underprivileged to the larger community's political and power structures. Strategies at this level may include organizing community strategies and establishing contact among different involved community networks, including representation from the disadvantaged population on community boards.<sup>109</sup>

## *Public Policy*

Public health uses regulatory policies, procedures, and laws to protect the health of the community. The use of regulatory policies has had a considerable effect on the improvement of the health of the population. Examples of public-policy approaches include policies that indirectly affect behaviors, such as reduced subsidies for tobacco; policies that limit adverse behaviors, such as prohibition on alcohol; policies that distribute programmatic resources, such as establishment of health-promotion centers in selected universities; policies that provide behavioral incentives, both positive and negative, such as increased taxes on cigarettes and alcohol, the labeling of food offerings in cafeterias; and point-of-decision messages for food options to support diet and weight loss changes.<sup>109</sup>

A comprehensive intervention that considers all these levels of influence and supports long-term healthful lifestyle changes is warranted.<sup>112</sup> In its 2008 scientific statement, the AHA's Council on Epidemiology and Prevention indicated that prevention of obesity through population-based strategies in which the social and physical environmental contexts for healthful eating and physical activity are addressed is essential. The Council specifically pinpointed the social-ecological model as the basis for an action plan to address the epidemic of obesity in children and adults.<sup>104</sup>

There has never been a research study designed as a comprehensive obesity-prevention program for college students based on the social-ecological model. However, from an ecological perspective, individually focused interventions must be implemented in conjunction with environmental-level interventions to facilitate behavior change.<sup>49</sup>

## College Students' Insights into Weight and Weight-related Behaviors

Barnes and Goodrick suggested focus groups as a useful means for eliciting the views of a target audience regarding a specific behavior in populations that have not been widely studied.

Few studies have used focus groups or other qualitative methods to elucidate the view of college students or young adults on this topic.<sup>113</sup> Based on the results of one such focus group, weight-management interventions developed for young adults though their perception of the role of healthful eating and physical activity in managing their weight is not clearly understood.<sup>114</sup>

### *College Students As a Whole*

Learning about college students' insights could be a starting point in building effective interventions, to make progress in the development of effective nutrition education and to improve the health of those students.<sup>115</sup> An assessment of first- and second-year college students living on campus and of generally normal weight and fit showed that students did not consider healthful eating and physical activity as high priorities, even though they indicated they had plenty of free time, desire to exercise more, high exercise self-efficacy, and positive-outcome expectations for exercise. The students found regular exercise challenging because of factors that included lack of accountability, poor time management, dissatisfaction with body image, and laziness.<sup>22</sup> A study of undergraduate students' perceived barriers and facilitators in their ability to maintain a healthy body weight demonstrated common barriers such as high cost of and limited access to healthy foods, time constraints, peer influences, cultural environment, obesogenic campus infrastructure, and social norms. Students cited social support, variety of physical-activity options, access to a campus recreation center, sidewalks and staircases around campus, and health education classes as facilitators.<sup>116</sup> Furthermore, college men identified motivators for eating healthfully and being physically active as sports performance/fitness, self-esteem, attractiveness, and long-term health. Other enablers of healthy eating included the taste and availability of healthful foods, the use of food guidelines, the habit of healthful eating, and internal motivation. They identified barriers to healthy eating as the fat in dairy products, the

taste of fruit and vegetables, and quick spoilage, whereas they addressed having girlfriends, being lazy, having a lack of time/time management, and having obligations as barriers to physical activity.<sup>114</sup> In another study, Canadian university students cited having a healthy weight and good physical appearance, feeling better, preventing disease, and achieving personal satisfaction as benefits of healthy eating. These students listed lack of time and choice, taste preferences, and finances as barriers.<sup>117</sup>

Yet another study of male and female college students reported temptation and lack of discipline in social situations, time constraints, and ready access to unhealthful food as barriers to weight management. Enablers were regulating food intake, being physically active, having social support, and having a university environment that supports physical activity.<sup>49</sup>

### *Freshmen Students in Particular*

Studies that explore freshmen college students' views on weight-related behaviors, diet, and physical activity may offer clues into causes of weight change in that group in particular. In one study, almost half of female freshmen cited changes in eating habits as their explanation for the "freshman 15." The most commonly reported contributing factors to their weight gain were the influence of friends and family, social comparisons with peers, and their newly found food independence.<sup>118</sup>

Major influential themes associated with eating decisions that second-semester freshmen students listed in one study consisted of campus life (schedule issues and social eating), emotional issues, parental and family factors, accessibility of food, inconsistent consumption, and desire for weight control.<sup>119</sup> Other studies of freshmen's beliefs about weight shed some light on gender differences. Males gained more weight than females during these studies, and, when compared to women, they were less concerned about weight gain. Overweight male

students were more concerned about weight gain than normal-weight men. Overweight and obese females were less likely to gain weight than either obese or overweight males or participants with low to healthy body weights. Males employed fewer strategies to control weight gain than females, and they also were less interested in joining a weight-gain prevention program.<sup>120,121</sup>

### *College Students' Insights about Nutrition and Physical Activity*

For busy college students, many barriers exist on the way to achieving optimal nutrition and physical activity. Studies about students' perceptions of nutrition problems or suggestions for improving their dietary habits are very limited. One previous study found that a need exists for targeted resources for college students, and that it is important to use students' suggestions in the development of nutrition programs.<sup>122</sup> In another study, college students recognized six major themes as facilitators or barriers to healthful eating: environment, nutrition knowledge, convenience foods, time, media influence, and food cost.<sup>123</sup>

Understanding college students' motives and barriers to exercise is essential in developing interventions that increase their exercise participation.<sup>124</sup> In one study, university freshmen experienced significantly more barriers than high-school participants. First-year university students frequently listed workload (e.g., "I have been too busy with homework") and having a job (e.g., "I was working too much to do anything like that" [physical activity]) as barriers.<sup>125</sup> Barnes and McCormack conducted a series of focus groups and a survey in 2008 as part of formative research for a physical-activity social-marketing project at CSU. Focus-group data revealed that, in general, students like the social aspects of being physically active—being with friends and having fun. Students who reported meeting the recommendations for physical activity most likely are physically active because they feel good (18.37%), look better (16.02%),

and feel happier (11.9%), or the physical activity improves their health (12.72%) and relieves stress (12.13%). Students cited lack of time most frequently as competing with physical activity. In the survey, respondents had only the choices they were provided; thus, the answers for students who met the recommendations and those who did not meet them were similar, although the proportions for each answer were different between the two groups. Both groups reported similar barriers.<sup>126</sup>

Another similar study recognized students' common motives for exercising as supporting general health, maintaining fitness, reducing stress, enjoying the activity, and feeling good/better. Exercisers indicated having more time, less school work, more motivation, fewer time commitments, and a sport to train for as circumstances that led to their exercising more. Common barriers to nonexercisers were lack of time, laziness, other priorities, lack of motivation, and lack of energy/tiredness. Nonexercisers cited having more time, a workout partner or group, fewer demands, more motivation, and better facility location as motivators for them to begin exercise.<sup>124</sup>

### Weight-related Interventions in Young Adults

In the past, interventions aimed at reducing obesity have mainly targeted weight-loss treatment in obese adults, with limited long-term effects. Given the increasing number of obese and overweight people, there has been a shift from treatment to prevention of obesity. Obesity prevention has been defined as the maintenance of body weight or the attenuation of weight gain among nonobese adults ( $BMI < 30 \text{ kg/m}^2$ ).<sup>127</sup> As noted earlier, the major modifiable factors in obesity prevention are energy intake and physical activity.<sup>127</sup>

A literature review of studies that researched weight-gain prevention in young adults and college students revealed that most of the studies had promising results as pilot-study data, but



the studies insufficient data compared to completely powered, randomized trials.<sup>10</sup> In general, the behavioral/motivational interventions and combination interventions in vulnerable young adults (aged 18 to 25 years) showed a result of weight loss. The interventions increased self-efficacy, self-esteem, satisfaction with body areas and appearance, and the desire to control weight in study participants. Interventions also exhibited improvements in participants' HDL cholesterol, insulin, glucose, and VO2 max.<sup>128</sup>

### Weight-related Interventions in College Students

For higher-education institutes, health and physical-activity experts have not been able to effectively increase students' physical activity or improve their eating behaviors. Interventions to promote students' physical activity and healthy eating are still at an early stage, and development of effective young adult-focused weight gain prevention is warranted.<sup>10,129</sup>

A couple of studies have assessed the effectiveness of interventions on weight gain in freshmen. A 2-year interactive educational/behavioral seminar helped freshmen in the intervention group to maintain a healthy life style and lose weight, whereas students in the control group gained weight.<sup>130</sup> In another study, female freshmen's weight monitoring and online feedback led participants in the intervention group not to gain weight, while those in the control group gained significantly more weight.<sup>131</sup>

#### *Physical Activity Interventions*

Being physically active can promote a healthy body composition. Previous studies have demonstrated the role of physical activity on weight maintenance. It is therefore important to encourage both healthy weight and physical fitness in college students.

An investigation of adult preferences for features and content in an online physical-activity program indicated that adults prefer interactive features, together with information about

local community-activity opportunities, notice boards, personalized progress charts, and e-mail access to expert advice. The research also indicated that adults preferred information about specific local facilities and services for physical activities.<sup>132</sup>

One study revealed that previous physical-activity intervention with college students did not significantly change their BMI.<sup>133</sup> However, the use of record-keeping in combination with the buddy system significantly increased the students' physical activity levels.<sup>133</sup> In a separate study, an intervention that required students to take 10 000 steps per day led them to take significantly more steps; they also showed a significant reduction in blood pressure.<sup>134</sup>

### *Nutrition-Related Interventions*

Various nutrition-related interventions have been found to have an impact on eating habits, obesity, and nutritional behavior in college students. These interventions include nutrition education, support groups, and feedback.

College-based nutrition education has been used to encourage healthy eating habits in college students. In one study, a nutrition module taught by graduate nutrition students increased freshmen students' knowledge of healthier breakfasts, snack food choices, and food portions.<sup>115</sup> In another report, an interactive nutrition course for college students significantly increased their whole-grain intake and their number of whole-grain food sources after the intervention.<sup>135</sup> In yet another study, the effectiveness of an educational course entitled Food and Society was compared to a control course in health-related human biology about obesity, health psychology, and community health assessment. Members of the intervention group significantly improved their healthful eating, including increasing their consumption of vegetables and decreasing their high-fat dairy consumption, relative to the comparison group.<sup>136</sup>

Another intervention that included nutrition information related to prevention of chronic diseases, healthful dietary choices, increased fruit and vegetable consumption, dietary feedback, and interactive activities significantly increased college students' consumption of fruits and vegetables—especially fresh fruits and vegetables, and decreased their intake of french fries.<sup>67</sup> Similarly, a separate study among female college students compared students' use of the Healthy Weight group-based 4-hour prevention program with use of an educational brochure. The intervention group displayed significantly greater reductions than the control group in BMI, self-reported dieting, body dissatisfaction, and eating-disorder symptoms. The intervention group also had greater increases in physical activity than the control group.<sup>137</sup>

### *Support Groups*

Some studies have focused on social support and its effect on lifestyle habits. For example, scholars arranged for dinner groups of college students and then assessed the students' perceptions of the benefits and difficulties with the groups. A dinner group was a group of three or more roommates or students living nearby or cooking for one another (or together) and eating together at least four times a week. Students reported increasing social interaction and confidence in cooking, saving money and time, and eating more varied and healthful foods as benefits.

Difficulties were rare and included increased time spent on days the student cooked and stresses related to cooking on a schedule.<sup>138</sup>

### *Feedback*

Few obesity-prevention programs have specifically targeted college students. One successful approach in preventing weight gain was to e-mail feedback to participants about changes in weight and caloric intake based on the students' self-reports.<sup>131</sup> Providing individualized daily dietary feedback consisting of recommended daily nutrient values and

estimated calorie and fat data of daily food purchases to each participating college student reduced the students' purchase of calories and calories from fat.<sup>139</sup>

In another study, college students were randomized to a 4-month intervention group whose participants received four newsletters, one motivational interview, and an individually tailored e-mail follow-up, or a control group whose members received only assessments. At the end of the intervention, fruit and vegetable consumption had increased significantly in the intervention group relative to the control group.<sup>140</sup>

### AOM and Small Lifestyle Changes

As described earlier, AOM is a national weight-gain-prevention initiative<sup>141</sup> with science-based tools and programs to aid people in making small lifestyle changes. AOM's tools and programs are for individuals, schools, worksites and other organizations, health care professionals, families, and communities; however, AOM does not have any program for college students. AOM tools include online resources, interactive tools, and community events to support and encourage small lifestyle changes. All of the tools and programs are free and available via the Web and can be accessed at <http://aom3.americaonthemove.org>.<sup>142,143</sup>

AOM has estimated that most adults can prevent weight gain with an additional 2000 steps each day or a reduction in energy intake of about 100 kcal/day.<sup>144</sup> Assessment of small changes in AOM interventions has revealed different results. In a series of Small Changes interventions over 12 weeks, the intervention group significantly decreased weight and improved BMI, percent of body fat, waist circumference, general well-being, and total mood disturbance. Members of the intervention group also substantially decreased their intake of total energy, fat, and saturated fat intake.<sup>145</sup> Analysis of another 12-week Small Changes weight-loss intervention with Aspire, Virginia-based veterans that was phone-based displayed significant weight loss,

increased consumption of fruits and vegetables, but no change in distance walked.<sup>146</sup> Analysis of the findings in another study of overweight or obese sedentary adults randomized to target and compare small but cumulative participant-chosen changes in diet and physical activity to standard didactic and wait-list control groups showed that the experimental group participants lost significantly more weight than the standard and control groups.<sup>147</sup>

Other scientists have studied the impact on a group of healthy, overweight adults who followed AOM recommendations and increased their walking by 2000 steps/day and reduced their energy intake by about 100 kcal/day during an intervention week compared to a nonintervention week. Participants consumed fewer calories during the intervention week by reducing macronutrient contents, meal size, sugar intake, sweetened sodas, and sodium.<sup>141</sup>

The effect of small changes on weight and health-related behaviors also has been investigated in children. Children in an intervention group were instructed to make two small lifestyle changes promoted by AOM: (1) to walk an additional 2000 steps per day and (2) to reduce 100 kcal/day from their typical diet by replacing dietary sugar with a noncaloric sweetener. A greater percentage of children in the intervention group maintained or reduced the target BMI for age.<sup>148</sup> Scholars also have investigated the impact of an additional 2000 steps/day and cereal consumption (for breakfast and snacks) on weight-gain reduction in children and adults. This intervention significantly increased walking (steps) and cereal intake and positively influenced the values for % BMI-for-age and percent of body fat for target children, and the weight, BMI, and percent of body fat for parents.<sup>149</sup>

As noted at the beginning of this section, AOM has no weight-gain-prevention program specifically designed for or focused on college students. It is this researcher's belief that we can

enhance the existing AOM program through the inclusion of an AOM university program that uses the constructs of the social-ecological model.

### *Online Health Information and Weight-Gain-Prevention Programs*

Online information and communication technologies are potential venues for the delivery of health-related behavior-change programs to large numbers of adults at a low cost.

Technology-driven controlled trials to promote healthy lifestyles have produced mixed results. However, individualized development methods can assist by considering the preferences of participants in terms of content design, which may lead to the development of more effective programs.<sup>132</sup>

Research suggests that more than half of American adults (61%) look for health information online. Sixty percent of these individuals indicated that online health information has affected their health decisions.<sup>150</sup> Eight in 10 Internet users seek online health information, making it the third most popular online activity.<sup>151</sup>

Almost one-third (27%) of Internet users have tracked their weight, diet, exercise, or other health behaviors online.<sup>151</sup> The Internet is used more and more frequently to deliver health messages for weight loss to the public. This medium can convey simple health information cheaply, quickly, and continuously. The Internet also provides the social support one typically needs for weight-loss maintenance.<sup>152</sup>

Online support groups and communities have become a popular way for individuals to share information and seek emotional support for health issues surrounding weight loss.<sup>153</sup> Research has demonstrated an inverse association between the network social capital of individuals and their having an elevated waist circumference and BMI.<sup>154</sup> Authors who reviewed a collection of related articles and research studies found that self-monitoring, counselor

feedback and communication, social support, and structured and individually tailored programs were successful components in technology-based weight-loss interventions.<sup>155</sup>

A meta-analysis of online obesity-treatment programs revealed such programs produced a significant weight-loss effect. The Internet was effective when used as an adjunct to obesity care, but not as a substitute for face-to-face support. The Internet was effective for weight loss, but it was not effective when used for weight maintenance.<sup>156</sup>

#### *Online Nutrition, Physical-Activity, and Weight-Management Programs for College Students*

Younger adults are among groups that are more likely to browse the Internet for health information.<sup>151</sup> Students are especially interested in online health information. It has been shown that more than half (53%) of undergraduate students would like to get health information online, and almost one-third (28%) of them would like to participate in an online health program. The majority (74%) of students indicated they had at some time received health information online.<sup>8</sup>

The combination of the low-cost, wide-ranging nature of online intervention, college students' level of skill and familiarity with the Internet, and the success of previous Web-based weight-management programs in adults makes an online approach appropriate for college students.<sup>157</sup> Furthermore, as noted, young adults have not exhibited an optimal success rate with traditional dietary interventions.<sup>158</sup>

As examples of the outcome of online-based dietary intervention programs, Gow et al. found that a 6-week, Internet-based weight-gain-prevention program significantly lowered BMIs in the intervention-plus-feedback group compared to the control group.<sup>9</sup> However, some other online studies did not confirm these findings or identify similar outcomes. For example, Booth and colleagues assessed the effectiveness of an interactive online weight-reduction program. Daily steps increased in both the dietary advice-plus-exercise group and in the exercise-only

group, with no significant difference between the two groups. The dietary advice-plus-exercise group significantly decreased energy intake, but there was no significant change in weight within the group.<sup>159</sup> Similarly, Murnan compared the effectiveness of a 10-week online behavioral weight-loss program to a 10-week face-to-face program in terms of changes in weight, percent of body fat, and physical activity among college students. There were no significant changes among the main outcomes between groups.<sup>160</sup> In contrast, an online nutrition and physical-activity program for college students showed an increase in those students' fruit and vegetable intake compared to the control group.<sup>50</sup> However, authors of Fruit & Vegetable (F&V) Express Bites, another Web-based program, showed similar changes for fruit and vegetable consumption for both groups.<sup>158</sup> In other research, when Facebook was used to increase F&V intake and physical activity in freshmen, no significant changes in F&V consumption or physical activity levels were observed.<sup>161</sup>

Multiple studies have reported that online weight-management, nutrition, and physical-activity programs that target young adults improve self-efficacy.<sup>50,158,160,162</sup> The impact of computer games on nutrition knowledge and self-efficacy has also been explored. In one study, use of a Web-based Nutrition Jeopardy Game had no significant effect on college students' nutrition knowledge or nutrition self-efficacy.<sup>162</sup> However, in another study, the RightWay Café, an interactive computer game, was effective in improving undergraduate college students' nutrition knowledge.<sup>143</sup>

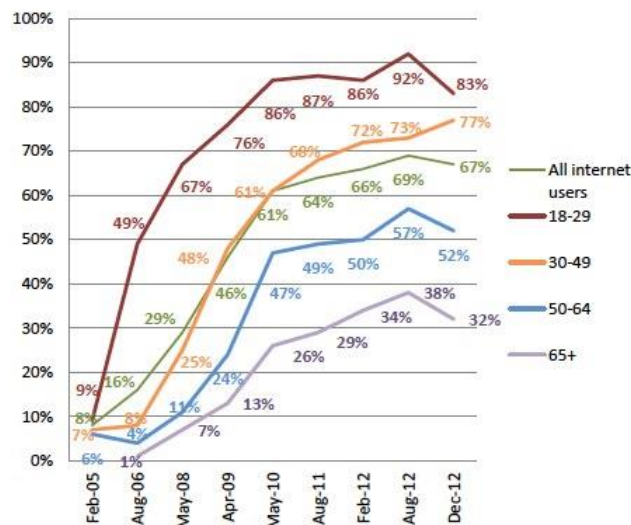
Physical-activity interventions that have specifically targeted college students in a university setting are scarce. However, the above findings strongly suggest that new interventions for college students could facilitate weight-gain prevention.<sup>163</sup> And as noted previously, the vulnerability of college students to weight gain as the result of distorted eating



habits and lack of regular physical activity signifies the importance of weight-gain prevention tailored to help this population with long-term weight management.<sup>22</sup>

### Social Networking Sites

Women and young adults aged 18 to 29 years are power users of social networking sites. As of May 2012 (Figure 2.4), more than 8 in 10 Internet users aged 18 to 29 years use social networking sites (83%).<sup>164</sup> Facebook, a social networking site, is the second most popular site in the world, according to the Alexa traffic rankings; and according to Pew Internet, Facebook is the first online social network with 67% of online users saying they use it.<sup>164,165</sup> As of March 2013, Facebook was reported to have an average of 655 million daily active users.<sup>166</sup> Other research indicates that Facebook users are more trusting, have closer relationships, and get more social support than non-Facebook users.<sup>167</sup>



Source: Pew Research Center's Internet & American Life Project surveys, 2005-2012

Figure 2.4. Social Networking Site Use by Age Group, 2005-2012<sup>164</sup>

Studies have shown that the greatest use of personal time among college students involves some form of communication (talking face to face, texting, talking on the phone, and using social-networking Web sites). Students spend the same amount of time studying for courses.<sup>168</sup> In one study, first-year students reported having fewer friends than upper-class students did, and also that they had a stronger emotional connection to and spent more time on Facebook than the upper-class students did.<sup>169</sup> According to other research, undergraduate students spent approximately 30 minutes on Facebook throughout the day as part of their daily routine. Students used Facebook most often for social interaction, primarily with friends with whom they had a pre-established relationship off-line.<sup>170</sup>

Despite the expanding popularity of social media, few studies have examined its potential role in the prevention of weight gain, support of healthy eating habits, and promotion of physical activity. Therefore the purpose of this study was to develop, an enhanced AOM program for first-year college students at Colorado State University (*CSU Fit*), using tenets of the social-ecological model and Facebook as the main venue of communication and information transfer. It was hypothesized that in comparison to a control group, college students enrolled in *CSU Fit* would maintain their initial weight, eat healthier, be more physically active. We further hypothesized that the healthier eating and physical activity patterns of students in enrolled in *CSU Fit* would be related to greater improvements in health-related knowledgeable and self-efficacy.

## CHAPTER 3

# METHODS

### Phase I: Formative Evaluation

The goal of this phase of the study was to determine the overall need for a prevention program based on the social-ecological model that targets first-year college students' weight-gain prevention. Numerous studies have been conducted to identify factors that affect healthy weight maintenance for university students. Studies have addressed students' easy access to unhealthy food, time constraints, and interest in using food rules to guide their intake as key factors.<sup>22,49,114</sup> These studies failed to specify how all the tenets of the social-ecological model relate to first-year college students, or something else.

#### *Focus Groups*

Focus-group research provides the formative data that professionals can use to assess motivators and barriers to maintaining healthy weight. The researcher conducted a minimum of eight focus groups, with eight to 12 participants in each group, in the fall of 2010. Separate focus groups were held for male first-year students ( $n = 2$ ), for female first-year students ( $n = 2$ ), for nonwhite female first-year students ( $n = 2$ ), and for nonwhite male first-year students ( $n = 2$ ). The researcher recruited 122 full-time, first-year students from 17 to 22 years of age through recruitment stations placed at dining hall entrances. She posted flyers in residence halls, El Centro, the Office of International Programs, and the SLICE office; mailed copies to diverse international student organizations; and announced the focus-group project in first-year students' classes. The author used the Kruger focus-group protocol in developing the questionnaire and implementing the focus groups.<sup>171</sup> Trained moderators with related focus-group facilitation experience led the groups.<sup>171</sup> All focus-group sessions were tape-recorded, transcribed, and

analyzed. A facilitator helped take notes during each focus-group session. Pizza and water bottles were provided to participants at the beginning of each session. Subjects received a consent form when they first entered the conference room and were questioned about their understanding before they signed the forms. The focus groups took place in a CSU Health Network conference room.

During each focus-group gathering, the moderator moved systematically through a list of questions that probed participants' views about food likes and dislikes, beliefs, the influence of others on their eating and physical activities, their preferred communication channels, and whether they had a favorable support system for healthy eating and physical activity. Upon their completion of the focus groups, participants received either a body-mind pass to the Recreation Center at CSU or a free chair-massage stub for use at the Wellness Zone in Lory Student Center on campus as an incentive. The time each focus-group session required ranged between 90 and 120 minutes.<sup>172,173</sup> During the focus-group sessions, the moderator probed for inconsistent and vague comments, offered a summary of key points, and sought confirmation responses. At the end of each session, the moderator and facilitator conducted a debriefing to identify the most important quotes, themes, or ideas that had been shared, and they compared each focus group major themes with the others.<sup>171</sup>

### *Background Questionnaire*

The current study used focus groups and a related background questionnaire to obtain the desired data from participants. Information about the development of the questionnaire and the questions used in the focus group sessions follows. Participants completed a demographic questionnaire at the beginning of each focus-group session. This brief questionnaire included information about the participants' age, ethnicity, gender, marital status, major, residence hall,

preferred dining hall, and whether their weight had changed since they arrived at CSU. The demographic survey is presented in Appendix A.

### *Focus Group Protocol/Questionnaire Development*

The author formulated focus-group questions using a thorough literature review and the help of a Kruger-trained moderator; questions were based on the constructs of the social-ecological model.<sup>171,174,175</sup> Two nutrition-education specialists who were experts in focus-group protocol at the Department of Food Science and Human Nutrition at CSU reviewed the focus-group questionnaire and the protocol. In addition, another experienced focus-group moderator who had worked extensively with AOM-related studies assisted in designing questions to ensure the understandability and acceptability of the question format (content validity). The focus-group questionnaire was designed to assess each of the social-ecological model domains. The questionnaire included 11 questions that addressed individual, social, and environmental variables that might affect CSU first-year students' eating and physical-activity choices. Questions about students' food and physical-activity preferences covered the individual domain of the social-ecological model. Questions about individual influences on eating and physical activities were related to the interpersonal domain. The study researched the community domain through a question about how CSU could better support students to eat healthier. A query in the institution/policies domain solicited students' responses about available nutrition information in the dining halls.

After participants responded to questions about their views concerning eating behavior and physical-activity patterns, they received a hard copy of a proposed AOM Facebook page for college students that would include small daily tips on eating healthfully or being more

physically active. The moderator investigated participants' insight about a Facebook group or any suggested venue. The focus group protocol and questionnaire are presented in Appendix B.

### *Data Analysis*

Twenty-five full-time, first-year CSU students aged 17 to 22 years ( $18.04 \pm .46$  years old) living in residence halls at the time of the study, participated in the focus groups. Only two of the focus groups met the minimum number of four required participants.<sup>171</sup> Within a week of completion, a professional transcriber who had worked with previous similar studies at the CSU Student Health Center transcribed the audiotapes of the focus groups into a Microsoft Word document. The researcher analyzed the transcripts using Krueger methodologies and later reviewed them for key ideas and descriptive quotations.<sup>171</sup> She also used the notes from the moderator and facilitator of the focus groups in reviewing the transcripts. The researcher categorized the transcripts from the tapes and notes, identifying the major points and capturing verbatim the best notable quotes. She shared the first draft of the report that contained the major points and notable quotes with the moderator for feedback and comments, and for revision if needed. The actual words, context, internal consistency, frequency and intensity of comments, specificity of responses, and any big ideas were considered.<sup>172,173,176,177</sup>

Finally, the researcher entered the background responses into a spread sheet and manually analyzed them. She used the findings from the focus groups to develop an AOM Facebook page group with healthy eating and physical-activity-oriented tools to help first-year students with weight-gain prevention behaviors.

## Phase II: Pilot Intervention Design

As a pilot study, the CSU Weight Gain Prevention Program was a quasi-experimental, one-group, pretest-posttest project designed to increase participants' walking by 2000 steps/day or to decrease their calorie intake by 100 Kcal/day with a 7-month follow-up assessment. The study evaluated the impact of the CSU Weight Gain Prevention Program on the weight gain, calorie intake, and number of steps among first-year CSU students. The CSU Weight Gain Prevention Program is an enhanced AOM program for university students, available on a Facebook page. The social-ecological model, findings from focus-group sessions with first-year CSU students, and an in-depth literature review guided the development of the CSU Weight Gain Prevention Program.<sup>11</sup>

The study was conducted at CSU, a land-grant university that represents students from all over the United States and 91 countries in Fort Collins, Colorado during the fall and spring semesters of 2011-2012.<sup>178</sup>

### *Recruitment*

Eighty-eight ( $18.10 \pm .46$  years old) full-time, healthy, first-year (17-22 years old) students were eligible participants. All of eligible students were admitted to CSU in the fall of 2011. Nutrition or health-and-exercise volunteer students recruited participants using convenience-sampling methods at six different dining-hall stations throughout campus during the first few weeks of the 2011 fall semester. The CSU institutional Review Board (IRB) reviewed and approved the study's methods and procedures. Recruitment occurred during meal times. Volunteers read a script aloud to interested first-year university students that included details about the study, participation eligibility, the assessments, and the incentives. Interested students

then completed slips with their contact information and returned them to volunteers. The researcher later contacted interested students through text messages, phone, or e-mail.

### *Intervention*

The CSU Weight Gain Prevention Program Facebook page started in October 2011 and continued for 7 months, until the final assessment in mid-April 2012. The Web address was e-mailed or texted to participants. Daily tips were developed using the AOM tools 100 Ways to Cut 100 calorie a Day and 100 Ways to Add 2000 Steps a Day, smallstep.gov, and other related and reliable online tools.<sup>179,180</sup> Daily tips and other postings were adjusted to accommodate college students' preferences and suggestions, the times of the year, special occasions, and the weather. Daily tips were posted on weekday afternoons. Participants chose the timing of the postings through Facebook. Along with the daily tips, news articles; educational Web sites, pages, images, and short texts that supported the daily tips; and announcements about winners of incentives, assessments, and CSU and Colorado events were shared on the page. Weekly incentives (\$10) were drafted for participants who had the highest interaction with the page; interactions included "liking" the postings, "commenting" on them, and "posting" or "sharing" on the page. Weekly incentives increased to two (\$10) gifts after January of 2012.

### *Assessments*

The researcher scheduled four assessments, two each semester, during the 2011-2012 academic year. Students signed an informed consent form prior to participating in the baseline assessment. That assessment started in early September, along with dining-hall recruitments, and continued until the beginning of October, when the CSU Weight Gain Prevention Program launched on Facebook. The second assessment occurred in early November, right before



Thanksgiving break; the third assessment during the third week of January, right after winter break; and the fourth in mid-April, 7 months after the program began.

### *Measurements*

In this study, the researcher measured participants' weight to the nearest 0.1 kg twice at each assessment using a calibrated Detecto beam scale (Cardinal Scale Manufacturing Company, Webb City, Missouri) and a calibrated Tanita TBF-215 digital scale (Tanita Corporation, Tokyo, Japan). For the weight measurement, participants wore light clothing and were told to take off their shoes, heavy belts, jewelry, and hair ornaments, and to empty their pockets. Their height with no shoes was measured to the nearest 0.1 cm twice at each assessment using the stadiometer attached to the Detecto beam scale. At each assessment, participants received AOM-branded LX2 pedometers (Health Measures, China) and were instructed to wear them at waistline for 7 days, record their steps and physical activity, and email the data back to the researcher.

In this study, the Web-based version of the Diet History Questionnaire (DHQ) was used to assess dietary intake. The DHQ collected food-frequency data during the previous month, along with portion size.<sup>181,58</sup> Participants were instructed to complete the online DHQ at home as soon as possible. They also received a link to an online questionnaire by e-mail. The questionnaire included demographic questions (age, gender, marital status, ethnicity, major, residence hall, preferred dining hall), knowledge (about nutrition and physical activity), self-efficacy (regarding nutrition and exercise habits), and the International Physical Activity Questionnaire (IPAQ).<sup>182</sup> The researcher used the adapted Sallis Exercise and Nutrition Self-Efficacy Questionnaire (SENSQ) for freshmen to check participants' self-efficacy.<sup>183</sup> She used the short version of the IPAQ to assess their physical-activity levels.<sup>182</sup>

Facebook provided information to track participant interaction and access to the Facebook page. Most participants were reminded a few times through the Facebook page, Facebook messages, e-mails, or text messages before they completed their questionnaires or sent their steps data. A drawing of ascending monetary incentive was held for participants who completed each assessment (\$50 at the end of the first phase, \$100 at the end of the second phase, \$200 at the end of the third phase, and \$300 at the end of the fourth phase). Participants completed a satisfaction survey at the time of the final assessment.

### *Physical-Activity Measurement*

To assess habitual physical activity, participants completed the short version of the IPAQ, a questionnaire developed between 1997 and 1998 by an International Consensus Group. Reliability was tested by test-retest within the same week, concurrent (inter-method) validity was assessed at the same administration, and criterion IPAQ validity was assessed against the CSA accelerometer. Overall, the data the IPAQ questionnaires produced was reliable (Spearman's rho clustered around 0.8) and had a comparable criterion validity to other similar studies (Spearman's rho 0.3).<sup>184</sup> Previous similar studies with current population used short-version of IPAQ to assess college students' physical activity.<sup>9,58,163</sup>

### *Steps*

At the time of the assessment, subjects were instructed to complete a 7-day period of pedometer use and e-mail their results to the researcher. During this time, participants wore a pedometer and recorded their daily number of steps and physical activity. Each participant's total steps over the 7 days were averaged to determine the participant's mean steps per day.

### *Dietary-Intake Assessment*

The DHQ is a freely available, food-frequency questionnaire (FFQ) developed by staff at the Risk Factor Monitoring and Methods Branch (RFMMB) of the National Cancer Institute (NCI). Other studies of college students in the past have used the DHQ. For this study, the researcher selected a Web-based version of the DHQ (DHQ Web), identical in content to the paper forms, and a validated FFQ for assessment of students' dietary intake. The food list of the DHQ II has been updated based on more recent dietary data; it consists of 134 food items and eight dietary-supplement questions. This study used the DHQ II version, which asks about intake in the past month and includes questions about portion size.<sup>185</sup> Previous studies have shown that the DHQ instrument provides reasonable nutrient estimates, and they also have confirmed its validity/calibration.<sup>186-188</sup> DHQ Web underwent two sets of usability testing, following which the look and flow were modified and refined based on respondents' experience and suggestions. Completing DHQ Web requires less than 1 hour. For this study, the researcher analyzed the DHQ II data from electronic forms using NCI's Diet Calc software to interpret the DHQ data and provide nutrient and food-group-intake estimates.<sup>185</sup>

### *Self-efficacy Measurement*

Participants completed the SENSQ, which been validated with young adults ( $M = 36.0$ ,  $SD = 7.0$ ) and college students and staff ( $M = 21.3$ ,  $SD = 6.5$ ).<sup>183</sup> This tool had previously been employed in studies to assess self-efficacy among college freshmen.<sup>183,53</sup> This study used the SENSQ that previously had been adapted for and used in a previous study of freshman women living in residence halls.<sup>183</sup> Cronbach's alpha in SPSS version 21 was performed to determine internal consistency (reliability) with a resulting value of 0.9.

### Phase III: *CSU Fit* Intervention Design

The goal of this phase was to implement an interactive and engaging weight-gain-prevention program for college students using AOM resources and educational materials. Overweight and obesity significantly affect college students.<sup>6,7,8</sup> Only limited studies have examined weight-gain prevention in college students; therefore, a need exists to develop weight-gain-prevention options that target college students.<sup>10</sup>

The researcher in this study used an experimental pretest-posttest design to maintain students' initial weight and at the same time increase their walking by 2000 steps/d or decrease their calorie intake by 100 Kcal/d. *CSU Fit* was a Facebook page for an enhancement of the AOM program designed to prevent weight gain in first-year students of CSU, which included a 7-month follow-up. The development of the *CSU Fit* page was guided by the social-ecological model, focus-group discussions with CSU first-year students, an in-depth literature review, and the CSU Weight Gain Prevention Program pilot study.<sup>11</sup> The *CSU Fit* study was conducted at CSU, a land-grant university in Fort Collins, Colorado, that enrolled students from all over the United States and 90 countries in Fort Collins, Colorado during the 2012-2013 fall and spring semesters.

#### *Study Participants*

This study aimed to include at least 240 study participants (120 participants in each of the experimental and control groups), which was expected to yield a power of  $\geq .80$ , based on  $\alpha \leq .05$  and assuming a medium effect size, and an attrition rate of 25% based on a similar previous study.<sup>14</sup> Participants completed baseline assessments, and then eligible individuals were randomly assigned, based on stratification by gender & residence halls to the *CSU Fit* group (n = 120) or the control group (n = 120). Based on previous weight-gain-prevention studies on first-

year university students,<sup>20,25,75,76</sup> a daily calorie deficit of  $150 \pm 152$  kcal (mean  $\pm$  SD) and an increase in steps of  $2000 \pm 2400$  (mean  $\pm$  SD) would have prevented weight gain in first-year university students. Based on these changes, to yield a power of  $\geq .80$  (80% probability that a treatment effect will be detected if present), with an  $\alpha \leq .05$  (5% probability that a significant difference will occur by chance), and using a one-tailed, two-sample t-test, the University of Iowa online sample-size calculator<sup>189,185</sup> suggested a minimum of 17 subjects for the intervention and the same number for the control groups.

The formula used for the sample-size determination follows:

$$n = \frac{2\delta^2\sigma^2}{\mu_1 - \mu_2}$$

Whereas  $\delta = 3$  is the degree of freedom if a power of  $\geq .80$  is to be considered,  $\sigma = 152$  kcal is the standard deviation for both groups, and  $\mu_1 - \mu_2 = 150$  kcal is the difference among groups.<sup>190</sup>

To account for potential participant dropouts, estimated at approximately 75% in the previous pilot study at CSU and another similar study with college students, a convenience sample of 120 subjects/group was recruited. Considering that both intervention and control groups were recruited from CSU, cross-contamination was possible. The suggested solution was to stratify the different residence halls, considering the number of residences and the gender breakdown, into either the intervention group or the control group. Allison, Braiden, Ingersol, Newsom, and Summit halls were assigned to the intervention group. Corbett, Durward, Edwards, Parmelee, and West Fall halls were assigned to the control group. Since one residence hall was specifically for honor and engineering students, participants in that hall were randomly assigned to either the intervention group or the control group. Three participants in the control group

joined the *CSU Fit* page on Facebook without invitation; thus, the researcher later assigned them to the intervention group.

Eligible participants included healthy, full-time, first-year students admitted to Colorado State University in 2012 who were from 17 to 22 years of age at the time of the recruitment.<sup>191</sup> Healthy participants were defined as those not being pregnant or lactating; not having chronic psychiatric or psychological conditions, or not having taken medications prescribed by a psychiatrist in the previous 6 months; not having a medical condition including, but not limited to, eating disorders (anorexia nervosa, bulimia nervosa, eating disorders not otherwise specified); currently not taking any medication known to affect body composition or physical activity (e.g., prednisone, lipid-lowering medications); not taking weight-control medications/supplements; not having been diagnosed with a major illness (e.g., asthma, cancer, heart disease, diabetes, liver disease, blood disease); and not having been diagnosed with any illness known to affect body composition or fat distribution (e.g., Cushing's syndrome).<sup>58,62</sup> Nutrition and Health and Exercise students at CSU volunteered to help with recruitment, assessments, diet analysis, and data entry. The researcher and one of the professors in the department of food science and human nutrition trained the volunteers before the beginning of the study. To ensure confidentiality of participants and compliance with IRB regulations, all the volunteers took and passed IRB training before the beginning of the study.

### *Recruitment*

Participants were recruited through convenience-sampling methods at various venues on campus during the first few weeks of the 2012 fall semester. Recruitment strategies included publishing announcements on Today@Colorado State University (a convenient, one-stop source for campus announcements at <http://www.today.colostate.edu>); sending e-mails through different

students Listserv; posting flyers throughout campus, including in freshmen residence halls and at the door of freshmen classes; presenting the information in freshmen classes; and spreading by word of mouth. The majority of participants were recruited from six recruitment stations run by volunteer nutrition or health and exercise students (mainly seniors) at six different dining halls during mealtimes. Volunteers read a script aloud to interested first-year university students. The script contained details about the study, participation eligibility, assessments, and incentives (Appendix C). Interested students received contact slips to fill out with their contact information and return to volunteers. The researcher later contacted interested students through e-mail, text messages, or phone to schedule appointments for the assessments.

### *Assessments*

Three assessments in September 2012, January 2013, and April 2013 were scheduled during the 2012-2013 academic year. The baseline assessment started in early September, along with the dining-hall recruitments, and continued until the beginning of October, before the *CSU Fit* page launched on Facebook. The second assessment took place in late January, right after winter break. The final assessment occurred in early April, 7 months after initiation of the program.

### *Measurements*

CSU's IRB reviewed and approved all methods and procedures prior to the beginning of the study. The researcher obtained a signed and informed consent form from all freshman volunteers before they participated in the study (Appendix D). Participants were sent a reminder e-mail the night before their scheduled appointments. The e-mail instructed participants not to eat for 10 hours before their assessments, to wear light indoor clothing (shorts and t-shirt), and to void their bladders before measurement. For consistent measurements, participants were

instructed to wear the same clothing at all visits, and they were scheduled between 6 AM and 10 AM in the morning. Upon their arrival at the Nutrition and Metabolic Fitness Laboratory at the Food Science and Human Nutrition Department at CSU,<sup>192</sup> participants received a glass of water, and volunteers went over a checklist with them to ensure that they had followed the instructions in the e-mail.

### *Physical Measurements*

Volunteers measured participants' weight to the nearest  $\pm 0.1$  kg using a calibrated Tanita TBF-215 digital scale (Tanita Corporation, Tokyo, Japan) and Detecto beam scale (Cardinal Scale Manufacturing Company, Webb City, Missouri). The Tanita TBF-215 includes a bioelectrical impedance analysis (BIA) to measure body composition, including percentage of body fat (%BF), fat mass (FM), and fat-free mass (FFM).<sup>193</sup> The BIA is an accessible, inexpensive, and accurate procedure to measure body composition. A foot sensor pad in the Tanita sends a small electric current through the body. The BIA measures the resistance to the signal as it travels through the water found in body. Lean tissue in a person's body relates to more water and less resistance to the current, whereas the more fat, the more resistant to the current the body is.<sup>194-196</sup>

Participants wore no shoes, socks, hats, outer garments, heavy belts, or jewelry that might obscure their weight or the BIA results, and volunteers instructed them to empty their pockets at the time of the measurements.<sup>193</sup> To ensure accuracy of the BIA, volunteers wiped the metal part of the Tanita with sanitizing wipes before each participant stepped on the scale, and participants were told to have their bare feet on the metal screen.

Participants' height was measured to the nearest  $\pm 0.1$  cm using a wall-mounted stadiometer and a Tanita digital scale-attached stadiometer. Participants wore no shoes, hats, and



hair ornaments that might obscure height. Volunteers asked them to have their head, shoulder blades, buttocks, and heels make contact with the wall at the time of measurements.<sup>197</sup>

Volunteers measured participants' waist, hip, and thigh circumferences in duplicate to the nearest 0.1 cm using an inelastic flexible measuring tape. Participants were asked to empty their pockets and hold or move clothing from around the area. Waist circumference was measured in a horizontal plane at the midpoint between the lowest rib and the iliac crest when the participant was relaxing and breathing normally.<sup>78,145,197</sup>

Volunteers measured hip circumference in a horizontal plane at the maximum extension of the buttocks when participants had their feet together and their weight was evenly distributed on both feet. The volunteers measured thigh circumference in a perpendicular position to the long axis of the thigh when participants had their right leg just in front of the left leg and their weight shifted back to the left leg. The measurement was taken around the midthigh, on the outer, side surface of the thigh midway between the top of the thigh bone, the femur, and the top of the tibia bone.<sup>197</sup>

Volunteers measured triceps skinfold thickness in duplicate to the nearest tenth of a millimeter (0.1 mm) using the Lange Caliper (Cambridge Scientific Industries, Cambridge, Maryland). For this measurement, participants were asked to flex their right arm 90 degrees at the elbow with the palm facing up. Assistants used eyeliner to mark the midway point between the tip of the elbow (ulna) and the acromion process of the shoulder. They then gently grasped the skinfold between their thumb and forefinger approximately 2.0 cm above midpoint. They placed the jaws of the calipers at the marked level, perpendicular to the length of the fold, while they continued to hold the skinfold with their fingers and record the reading.<sup>198</sup>

Systolic and diastolic blood pressures were measured using an automated Dinamap XL vital-signs monitor (Model 9300, Johnson & Johnson Medical, Tampa, Florida) after 5 minutes rest. Volunteers again made these measurements in duplicate with a 2-minute interval between readings, which were averaged later for analysis.

### *Dietary-Intake Assessment*

Participants' dietary intake was assessed using 24-hour dietary recall of both their usual intake at CSU and the usual intake at home. Volunteer nutrition and health and exercise students met one-on-one with each participant to record all food and drink the participant consumed typically at home, typically at CSU, and during the previous 24 hours (midnight to midnight). Volunteers reviewed the usual intakes and the 24-hour recall with the participant: consumed foods, composition, cooking method, brand, and the quantity of each food item consumed. They used the plates, cups, bowls, and spoons students use in dining halls to ensure accurate recording for portion sizes of food and drink consumed. Volunteers helped with entering dietary intakes into Nutritionist Pro (Axxya Systems, Stafford, TX) to analyze for calories, protein, fat (total, monounsaturated, polyunsaturated, saturated) carbohydrate, sugar, fiber, sodium, calcium, vitamin A, and vitamin C. Appendix E includes copies of these dietary records.

### *Online Surveys*

A self-administered, online study questionnaire collected participant data on demographics, health, knowledge, self-efficacy, and physical activity.<sup>84</sup> The self-administered online surveys provided quality control by offering students sufficient time to complete the questionnaires and by reducing data-management errors.<sup>68</sup>

The demographic survey included information about participants' age, sex, ethnicity, marital status, major, residence hall, dining halls, intention regarding their weight (to lose, gain,

or stay the same), and health status (only in the baseline survey). The General Nutrition Questionnaire was used to assess participants' nutrition knowledge. The short version of IPAQ was used to assess participants' physical activity.<sup>58,182</sup> An adapted SENSQ for freshmen was used to check participants' self-efficacy.<sup>183</sup> Scale of 1-100 changed to Likert scale to ease the data analysis per Dr. Anderson's suggestion. Copy of all online questionnaires are provided in Appendix F.

### *Physical Activity*

The Godin and Shephard leisure-time physical activity questionnaire was also added. The questionnaire includes a brief, self-explanatory, four-item query of usual leisure-time exercise habits that are classified as strenuous, moderate, and mild. Participants reported through an online survey the number of times they engaged in 15 minutes of mild, moderate, and vigorous physical activity per week. A previous study with freshmen suggested the protocol for scoring the survey into Metabolic Equivalent of Task (MET) hours by multiplying hours of engagement in vigorous physical activity by 7, moderate activity by 4, and mild activity by 2, and then adding these numbers together to provide an estimate of MET h/week.<sup>193</sup> Copy of all online questionnaires are provided in Appendix F.

Participants received an AOM-branded pedometer, with instructions to wear it at all times for 7 days after each assessment, except when they slept or went into water. They were also sent a physical-activity record sheet that asked for their daily steps, along with a column for them to record physical activity other than walking.

### *Satisfaction Survey*

Participants completed a 2-page satisfaction survey at the final assessment. The satisfaction survey included questions about how often they checked the Facebook page and how

satisfied they were with it, whether the program influenced their eating or physical-activity behaviors, their rating of the program, their likes and dislikes about the program, whether they recommended that CSU continue the program, and what factors kept them participating in the program. The assessment also queried participants about their suggestions and comments. A copy of the satisfaction survey is presented in Appendix G.

### *Intervention*

After they completed the online demographic surveys, participating CSU freshmen were assigned to receive access to either the *CSU Fit* (intervention group) or the Association for Student Activity Programming (ASAP) at CSU (control group) Facebook page. The CSU Campus Activities Office manages the ASAP at CSU Facebook page. ASAP, which is funded by CSU's student fees, organizes and implements various entertainment events around campus including films, concerts, lectures, comedy shows, and special events.<sup>12</sup>

The intervention, which targeted healthy eating and physical activity, was conducted through a Facebook page. This intervention was grounded in the social-ecological model.<sup>109</sup> The intervention utilized and emphasized environmental, personal, and behavioral factors for healthy weight maintenance. The current study focused on developing and implementing an intensive, 5-days-a-week, Facebook intervention. The basic concepts of the AOM tools were retained; however, the materials were modified to address the unique attitudes and behaviors often associated with first-year college students' weight gain. Factors in the college environment that have been shown to contribute to student weight gain were considered and added to the intervention (e.g., access to all-you-can-eat foods, snacking, and inactivity).

At the intrapersonal level, the goal was to strengthen individual skills (self-efficacy), and that aim encompassed providing health information to promote well-being among college

students. A related strategy at this level was to primarily provide daily facts on ways for students to cut 100 calories a day, or to add 2000 steps a day to their level of activity.<sup>180</sup> Each week for a total of 28 weeks, relevant tools, news articles, educational Web sites, pages, images, or short texts that supported daily tips were posted on the status portion of the Facebook page.

At the interpersonal level, the aim was to provide a social support to advocate healthy behaviors. At this level, a Facebook page acted as an online social network and encouraged students to interact with each other. Participatory activities included group discussions, questions to be answered and organized group activities. A healthy-plate activity and daily invitation to fitness classes were part of this effort. Feedback was provided to participants through an e-mail that contained information about their personal BMI, waist circumference, and number of steps. The e-mail also included details about healthy ranges and recommendation for those measurements. Upon successful completion of the study, all participants received \$50 cash, which was an ecological strategy to show them support.<sup>109</sup>

At the community level, the strategy was to provide postings on the Facebook group page or in residence halls on a weekly basis regarding fitness events in the community. Examples of such events were Recreation Center outdoor programs (hikes) or activity classes (Bootcamp, Zumba, Hiphop, Step, Cardio Kickboxing, etc.), CSU-coordinated physical activities such as a 5K run, Tour de campus, the introduction of Meetup.com's Fort Collins/Loveland Don't Hike Alone Group hikes and events, and outdoor programs organized by the Fort Collins International Center.

At the public-policy level, the project included the attempt to post on *CSU Fit* Facebook page nutrition information about food items in dining halls based on CSU dining halls' nutrition

information<sup>199</sup> and Calorieking.com.<sup>200</sup> Appendix H contains all the materials posted on the *CSU Fit* Facebook page for the research study.

### *Statistical Methods*

All descriptive statistical analyses were conducted using Predictive Analytics Software (PASW) 19 (formerly the Statistical Package for the Social Sciences, or SPSS) (SPSS Inc., Chicago, Illinois)(LSMEANS and PROC FREQ) and Statistical Analysis System version 9.3 (SAS, 2011, SAS Institute Inc, Cary, North Carolina);<sup>201</sup> SAS 9.3 was used for all inferential analyses. ANOVA (PROC GLM) was used to assess baseline differences between students who completed the study and those who dropped out, and ANOVA (PROC GLM) to examine pre- and post-study differences in physical variables, survey characteristics. For diet variables, the researcher repeated analysis-of-variance measures (MACRO AOV) to analyze diet components. Pearson's correlation coefficient (PROC CORR) was conducted to check correlation between weight change and diet components and multiple regressions (PROC REG) to check correlation of weight change with all other variables. Individuals with missing data were excluded from statistical analyses; therefore sample sizes varied slightly between different analysis.<sup>202</sup>

## CHAPTER 4

# RESULTS

### Phase I: Formative Evaluation

Twenty-five full-time, first-year CSU students aged 17 to 22 years ( $18.04 \pm 0.46$  years old) living in residence halls at the time of the study, participated in focus groups. Only two of the focus groups met the minimum required participants, one with five participants and one with six participants.<sup>171</sup> The majority of study participants were male (60%) and non-White (64%). During this phase, one-fourth (24%) of participants reported no weight change in their first two months of college, 16% reported weight loss, and 40% reported weight gain since their admission to CSU. The remaining 20% of participants did not know whether their weight had changed.

Participants defined “healthy eating” as eating fruit and vegetables and having a balance of different food/nutrients, limited intake of fatty/fried food, and moderation in their diet. Students defined “physical activity” as movement, increasing heart rate, and walking. Students cited “all-you-can-eat” dining halls, unstructured/busy schedules, availability of unhealthy choices, and absence of monitoring parents as reasons that lead to weight gain among first-year students. Students suggested the posting of nutrition information on menu items, greater food variety with healthier options, less variety for unhealthy food in dining halls, and coordination of university based activities as ways to improve healthy eating and physical activity. Participants unanimously liked the idea of posting healthy-eating and physical-activity tips on a Facebook page.

## Phase II: Pilot Study

Eighty-eight first-year students enrolled in the CSU Weight Gain Prevention Program pilot study. Twenty-six (23%) males and 20 (77%) females ( $18 \pm 0.37$  years old) completed all components of all four assessments of the CSU Weight Gain Prevention Program. Among participants, weight increased significantly between September and April of the 2011-2012 academic year (mean  $\pm$  SE =  $2.48 \pm 0.44$  kg,  $P < .0001$ ). Participants' calorie intake decreased and steps increased, but those changes were not significant and were not consistent with their changes in weight. Thirty-three students completed a satisfaction survey at the final assessment. The majority of the students indicated that the program had increased their awareness of food and healthy eating ( $n = 24$ ) or influenced their physical activity ( $n = 20$ ). Almost half of the participants (16) liked the Facebook page/tips best and 33% ( $n = 11$ ) of them liked the assessment the best. More than half ( $n = 17$ ) of students complained about the Diet History Questionnaire, especially its length ( $n = 12$ ). Preventing weight gain or improving health ( $n = 21$ ) and incentives ( $n = 10$ ) were cited as factors that kept students participating. Table 4.1 contains summary of the findings of phase II.

Table 4.1. Mean (SD) Weight, BMI, Steps and Calorie Intake of Participants of the CSU Weight Gain Prevention Program at Baseline, Midpoint, and Final Assessments

Characteristic	Baseline ( $n = 33$ )	Midpoint 1 ( $n = 33$ )	Midpoint 2 ( $n = 33$ )	Final ( $n = 33$ )
Weight (kg)	63.38 (1.85)	64.37 (1.85)	64.79 (1.85)	65.86 (1.85)
Body Mass Index (BMI) ( $\text{kg}/\text{m}^2$ )	22.95 (0.5)	23.28 (0.5)	23.4 (0.5)	23.8 (0.5)
Steps	14 027 (1444)	14 839 (1502)	14 708 (1445)	15 415 (1472)
Energy (Kcal)	1779 (128)	1307 (128)	1247 (128)	1360 (128)



### Phase III: CSU Fit Intervention

#### *Subject Characteristics*

Two hundred twenty-five first-year CSU university students who attended the baseline assessment in September 2012 completed the physical assessment and the dietary-intake assessment. Of this group, 216 participants completed a subsequent online survey and were randomly assigned (stratified by gender and residence hall) into either the intervention group or the control group. One hundred sixty-one subjects ( $18.13 \pm 0.04$  years old) completed the study (25% attrition rate) (Figure 4.1).

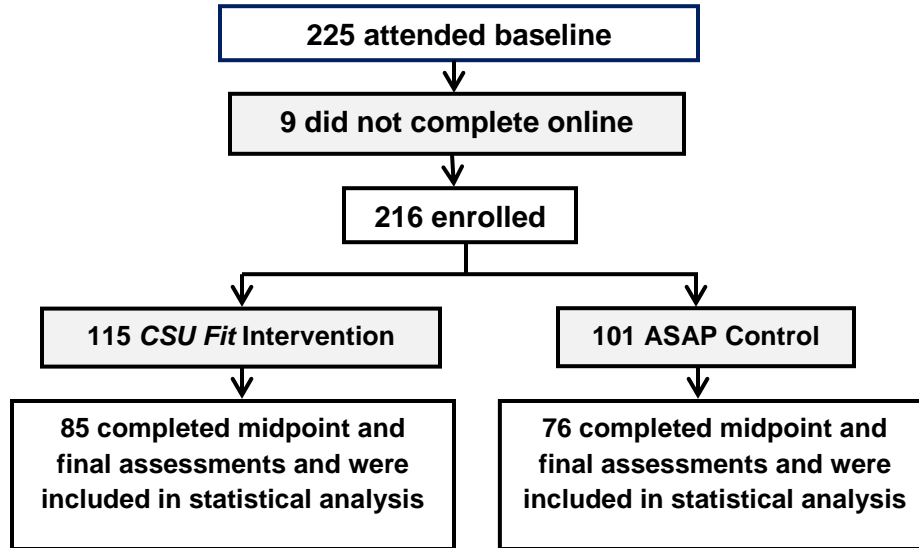


Figure 4.1. Flow Diagram of Participants Throughout Study

Table 4.2 displays the means and standard errors of completers and dropouts at baseline for *CSU Fit* study. The researcher compared baseline values for participants who completed all assessments and those who dropped out of the study using the analysis of variance test, except for the gender distribution between groups, which she compared via the chi-squared test. Results indicated that the dropouts were not significantly different from completers in their baseline

demographic and anthropometric characteristics, knowledge, self-efficacy, and measures of physical activity ( $P > .05$ ).

Table 4.2. Mean (SE) of Characteristics of Completers vs. Dropouts at Baseline for the *CSU Fit Intervention*

Characteristic	Completers ( <i>n</i> = 161) (Intervention = 85; Control = 76)	Drop-outs ( <i>n</i> = 55) (Intervention = 30; Control = 25)	<i>P</i> Value
Gender			
Female	105 (65%)	34 (62%)	0.65
Male	56 (35%)	21 (38%)	
Age (years)	18.13 (0.04)	18.14 (0.06)	0.87
Weight (kg)	67.14 (0.91)	68.51 (1.51)	0.43
Height (m)	173.67 (0.51)	174.52 (0.84)	0.38
Body Mass Index (BMI) (kg/m <sup>2</sup> )	22.04 (0.28)	22.26 (0.46)	0.68
Fat %	16.00 (0.46)	16.46 (0.77)	0.62
Fat mass (kg)	10.75 (0.47)	11.20 (0.78)	0.62
Fat free mass (FFM)(kg)	56.42 (0.52)	57.34 (0.07)	0.37
Total body water (TBW)(kg)	41.30 (0.38)	41.96 (0.63)	0.38
Waist circumference (WC) (cm)	80.85 (0.75)	79.89 (1.23)	0.51
Hip circumference (HC)(cm)	97.13 (0.70)	96.93 (1.15)	0.88
Waist-to-hip ratio (W/H)	0.83 (0.005)	0.82 (0.008)	0.08
Thigh Circumference (TC) (cm)	51.31 (0.47)	51.88 (0.78)	0.52
Triceps skinfold thickness (TSF) (mm)	17.13 (0.54)	17.40 (0.90)	0.79
Systolic blood pressure (SBP) (mmHg)	113.75 (.79)	114.39 (1.31)	0.67
Diastolic blood pressure (DBP) (mmHg)	67.54 (0.59)	66.95 (0.99)	0.61
Mean arterial pressure (MAP) (mmHg)	84.48 (0.58)	83.26 (0.96)	0.27
Pulse (/min)	67.40 (0.79)	64.49 (1.31)	0.05
Nutrition and physical activity knowledge (%)	58.99 (0.88)	56.63 (1.47)	0.17
Healthy eating self-efficacy	61.84 (1.05)	63.31 (1.76)	0.47
Physical activity self-efficacy	20.10 (0.53)	20.81 (0.88)	0.48
Total self-efficacy	82.19 (1.32)	83.22 (2.23)	0.69
Leisure physical activity (MET h/wk)	42.07 (3.08)	24.05 (5.12)	0.00
Steps	10 940 (362)	11 032 (774)	0.91

Table 4.3 summarizes the baseline demographic characteristics of participants. Participants were predominately female (65%) and White (80%), with the remaining racial composition including 3% African American, 6% Hispanic-Latino, 4% Asian, and 7% multiple ethnicity. The intervention and control groups were not significantly different in ethnicity at baseline, with the exception that there were more Hispanic-Latino and fewer White participants in the control group (Table 4.3). As the data in Table 4.3 show, the study participants represent a broad spectrum of first-year college students at CSU.

Table 4.3. Demographic Characteristics of the Intervention and Control Group Participants at Baseline for the *CSU Fit* Intervention

Characteristic	Intervention Group (n = 115)	Control Group (n = 101)
Gender		
Female	72 (63%)	67 (66%)
Male	42 (37%)	34 (34%)
Age	18.13 ±.47	18.0 ±.43
Ethnicity		
White (non-Hispanic)	93 (81%)	79 (78%)
African-American	3 (3%)	3 (3%)
Latino-Hispanic	5 (4%)	8 (8%)
Native American	0	0
Asian/Pacific	5 (4%)	4 (4%)
Combination	9 (8%)	7 (7%)
Weight Intention		
To lose weight	50	38
To gain weight	25	20
To maintain weight	39	39
College		
Undecided	24	33
Agricultural Sciences	4	3
Business	10	7
Engineering	17	15
Health & Human Sciences	12	13
Liberal Arts	11	8
Natural Sciences	27	16
Veterinary Medicine & Biomedical Sciences	6	3
Warner College of Natural Resources	4	3
Residence Hall		
Academic Village	24	20
Corbett Hall	1	24
Allison Hall	17	1
Summit Hall	22	0
Newsom Hall	15	0
Edwards Hall	1	14
Durward Hall	0	19
Parmelee Hall	1	7
Westfall Hall	0	13
Aspen Hall	1	2
Ingersol Hall	22	0
Braiden Hall	11	1

## Major Findings

### *Weight Gain*

*Hypothesis:* Participants in the *CSU Fit* intervention group will exhibit a mean lower weight gain over the 7-month intervention period compared to the control group during this same period.

Table 4.4 shows that participants in both the intervention group and the control group had similar baseline anthropometric measurements, with the exception of thigh circumference.

Participants in the control group had significantly smaller thigh circumference at baseline (mean  $\pm$  SE =  $52.27 \pm 0.57$  in the intervention group vs.  $50.45 \pm 0.62$  in the control group,  $P < 0.05$ ).

The mean weight and BMI increased from baseline to final assessment in both the intervention and control groups. A statistically significant difference was found between weight at baseline and weight at the final assessment across both groups (95% CL: 0.88-1.74). There was not a significant group by time interaction for body weight. Mean weight change was 1.29 kg (SE = 0.34) for the control group and 1.29 kg (SE = 0.31) for the intervention group from baseline to final assessment. More than half of the subjects (59%) maintained or lost their weight (54% of participants in the intervention group and 65% of participants in the control group), whereas 41% of them gained weight (46% of participants in the intervention group and 35% of participants in the control group).

The results in Table 4.4 reveal that the waist-to-hip ratio decreased for the intervention group from baseline to midpoint and stayed the same for the control group. Waist-to-hip ratio was significantly different between the intervention and control groups at the midpoint assessment ( $0.81 \pm 0.005$  vs.  $0.84 \pm .005$ , respectively,  $P = 0.0033$ ; see Table 4.4). However, this group difference in the waist-to-hip ratio was not significantly different at the end of the study.

There were not significant group by time interactions or main effects of group or time for any other anthropometric variables or blood pressure.

Table 4.4. Means (SE) of Anthropometric Characteristics of the Intervention and Control Group Participants Who Completed Baseline, Midpoint, and Final Assessments for the *CSU Fit* Intervention

Characteristic	Intervention Baseline (n = 85)	Control Baseline (n = 76)	Intervention Midpoint (n = 85)	Control Midpoint (n = 76)	Intervention Final (n = 85)	Control Final (n = 76)
Weight (kg)	67.83 (1.15)	66 (1.26)	68.46 (1.19)	66.92 (1.31)	69.13 (1.19)	67.29 (1.31)
Height (m)	174.04 (0.67)	173.13 (0.74)	174.09 (0.67)	173.10 (0.74)	174.09 (0.74)	174.05 (0.67)
Body Mass Index (BMI) (kg/m <sup>2</sup> )	22.13 (0.38)	21.78 (0.43)	22.46 (0.43)	21.73 (0.48)	22.79 (0.38)	22.04 (0.43)
Fat %	15.94 (0.62)	16.01 (0.74)	16.14 (0.61)	16.62 (0.67)	17.11 (0.65)	16.69 (0.72)
Fat mass (kg)	10.90 (0.62)	10.46 (0.68)	11.14 (0.63)	11.08 (0.7)	11.98 (0.69)	11.22 (0.76)
Fat-free mass (FFM) (kg)	56.94 (0.67)	55.60 (0.74)	57.46 (0.71)	55.96 (0.78)	57.15 (0.67)	56.09 (0.74)
Total body water (TBW) (kg)	41.69 (0.49)	40.70 (0.54)	41.81 (0.55)	40.97 (0.60)	41.84 (0.49)	41.06 (0.54)
Waist circumference (WC) (cm)	81.15 (0.93)	80.47 (1.02)	80.51 (0.91)	81.08 (1)	80.58 (0.92)	79.94 (1.01)
Hip circumference (HC) (cm)	98.06 (0.81)	96.30 (0.89)	98.86 (0.82)	97.07 (0.89)	99.16 (0.77)	97.59 (0.84)
Waist-to-hip ratio (W/H)	0.83 (0.01)	0.84 (0.01)	0.81 (0.01)*	0.84 (0.01)	0.81 (0.01)	0.82 (0.01)
Thigh Circumference (TC) (cm)	52.27 (0.57)*	50.45 (0.62)	52.50 (0.57)	51.52 (0.63)	53.06 (0.56)	51.69 (0.62)
Triceps skinfold thickness (TSF) (mm)	17.68 (0.74)	16.75 (0.84)	15.66 (0.56)	15.41 (0.62)	16.29 (0.52)	15.42 (0.58)

BMI calculated as kg/m<sup>2</sup>. High BMI  $\geq 25$  kg/m<sup>2</sup>

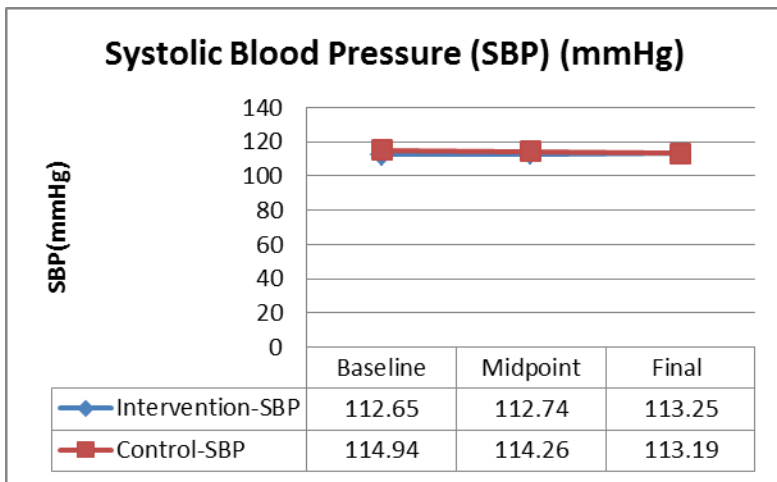
High-risk waist circumference  $\geq 88$  cm in women and  $\geq 102$  cm in men

High-risk W/H  $\geq .95$  in men and  $\geq .8$  in women

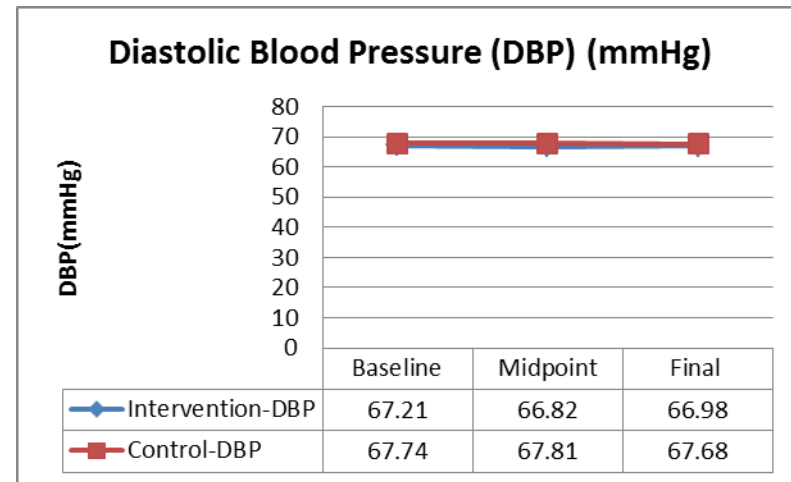
High-risk thigh circumference  $\geq 60$  cm

\*Difference from the control group,  $P < .05$

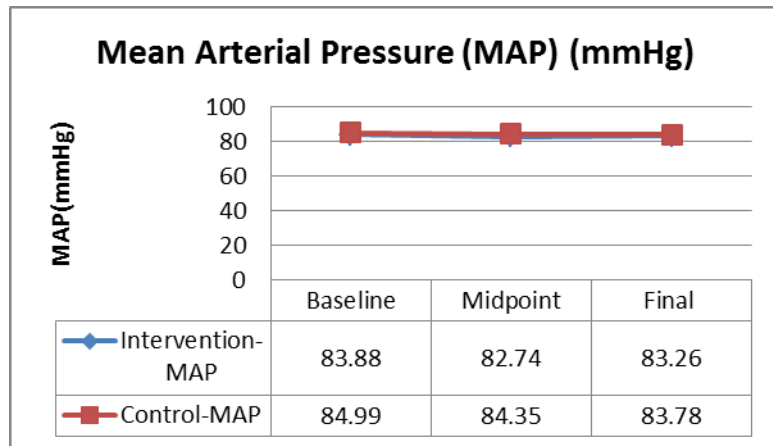




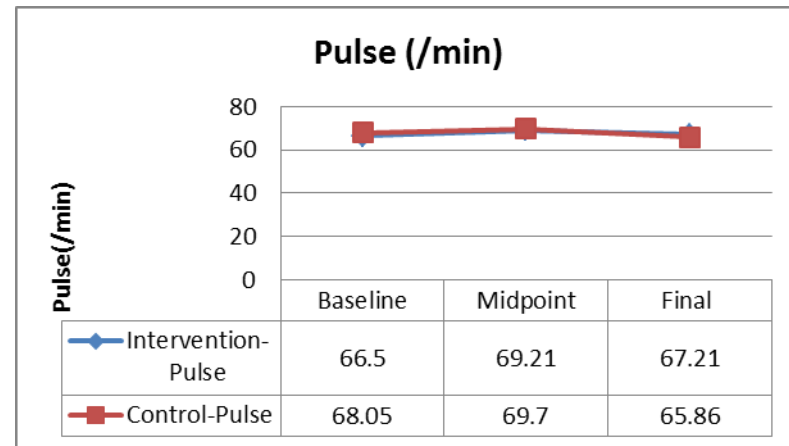
a.



b.



c.



d.

Figure 4.2. Changes in Blood Pressure Measurements Over the Course of the 7-month *CSU Fit* Intervention: a. Changes in Systolic Blood Pressure (mmHg), b. Changes in Diastolic Blood Pressure (mmHg), c. Changes in Mean Arterial Pressure (mmHg), d. Changes in Pulse (/min). No statistical significance observed between groups or over the course of the study. High SBP  $\geq 135$  mmHg and high DBP  $\geq 85$

### *Dietary Intake*

*Hypothesis:* Participants in the *CSU Fit* intervention will exhibit higher dietary quality as evidenced by a mean lower dietary intake of energy, total and saturated fat, and sodium, and greater mean intakes of fiber, vitamin A, and vitamin C over the 7-month intervention period compared to the control group during this same period.

As indicated in Chapter 3, the Methods section, the researcher measured dietary intake at each of the three designated points in the study (baseline, midpoint, and final) using two different approaches at all three benchmarks: 1) by asking participants to report their usual daily food intake at CSU in the previous month as a single example 24-hour period, and 2) by asking participants to record their food intake during a specific 24-hour period (24-hour recall). Table 4.5 displays the dietary data for the participants' usual intakes. There were no group differences in any of the measured dietary components at baseline. Also, there were no significant time-by-treatment interactions for any dietary variables. However, there were significant time effects for several variables. For example, the intake of total energy, total carbohydrates, and sugar decreased over time in both groups.

Table 4.6 displays the dietary data for participants' specific 24-hour recall. Comparisons of the baseline nutrient intakes showed no difference between groups with the exception of vitamin C ( $P < 0.002$ ) and calcium ( $P < 0.04$ ), with lower intakes of both of these nutrients in the intervention group compared to the control group. The ANOVA indicated no significant time-by-treatment interactions; but, similar to the analysis of participants' usual intake, energy, total carbohydrates, and sugar decreased in both groups over time. Additionally, the intake of sodium and calcium also decreased over time in both groups (significant time effect).

The reported dietary intake of the students in both groups reflects that they consumed fewer calories, carbohydrates, and sugar as reported in the final 24-hour-recall and CSU usual-intake assessments compared to the data reported for the same measures at the baseline assessment (time effect; respectively,  $P < 0.05$ ,  $P < 0.01$ , and  $P < .0001$ ). Results of the 24-hour dietary-recall assessment also show that participants significantly reduced their intake of sodium and vitamin C over the course of the study ( $P < 0.01$  and  $P < 0.002$ , respectively).

Table 4.5. Mean (SE) of Diet Components of Usual Intake at CSU for the Intervention and Control Group Participants Who Completed Baseline, Midpoint, and Final Assessments for the *CSU Fit* Intervention

Diet Components	Intervention (n = 77) baseline	Control (n = 69) baseline	Intervention (n = 77) midpoint	Control (n = 69) midpoint	Intervention (n = 77) final	Control (n = 69) final
Calorie (kcal) <sup>#</sup>	2859.14 (176.73)	2960.59 (187.24)	2808.62 (179.82)	2546.68 (191.89)	2435.99 (188.22)	2560.61 (198.06)
Total fat (g)	110.20 (8.22)	115.41 (8.7)	111.98 (8.38)	105.27 (8.93)	95.28 (8.81)	100.75 (9.25)
Saturated fat (g)	35.78 (2.430)	35.02 (2.61)	34.04 (2.47)	28.56 (2.68)	30.67 (2.63)	28.9 (2.82)
MUFA (g)	27.67(2.96)	29.59 (3.13)	29 (3.02)	29.37 (3.22)	28.64 (3.19)	28.89 (3.34)
PUFA (g)	13.79 (1.88)	16.29(1.98)	15.27(1.92)	16.67(2.04)	12.76(2.03)	16.50 (2.12)
Trans fat (g)	1.06 (0.22)	0.93 (0.24)	1.26 (0.23)	0.91 (0.24)	0.92 (0.25)	0.70 (0.25)
Protein (g)	118.00 (7.1)	126.37(7.53)	121.98 (7.20)	113.95 (7.70)	112.23 (7.49)	111.75 (7.91)
Carbohydrate (g) <sup>#</sup>	358.87(22.9)	364.00 (24.25)	337.27 (23.30)	295.85 (24.86)	289.90 (24.41)	310.63 (25.67)
Dietary Fiber (g)	26.89 (2.02)	26.57(2.14)	27.64 (2.06)	24.15 (2.2)	21.83 (2.16)	27.37 (2.27)
Sugar (g) <sup>#</sup>	151.06 (10.38)	161.91 (10.99)	129.16 (10.57)	103.01 (11.27)	112.29 (11.08)	110.94 (11.65)
Cholesterol (mg)	410.77 (42.30)	522.15 (44.81)	475.13 (43.05)	409.95(45.94)	409.19 (45.08)	439.63 (47.43)
Vitamin A (RE)	1617.29 (163.99)	1516.29 (173.67)	1933.78 (166.92)	1111.25 (178.08)	1319.60 (174.91)	1401.03 (183.95)
Vitamin C (mg)	130.80 (16.52)	171.57 (17.44)	144.23 (16.85)	146.32 (17.95)	114.79 (17.79)	126.19 (18.64)
Sodium (mg)	4907.80 (322.39)	5250.06 (341.77)	5070.90 (327.85)	4776.71 (349.97)	4458.55 (342.64)	4683.49 (360.82)
Calcium (mg)	1127.15 (87.77)	1350.17 (93.04)	1101.66 (89.25)	966.60 (95.27)	969.93 (93.27)	1061.14 (98.23)

<sup>#</sup> Difference from the baseline,  $P < .05$ .

Table 4.6. Mean (SE) of Diet Components of 24-Hour Recall for the Intervention and Control Group Participants Who Completed Baseline, Midpoint, and Final Assessments for the *CSU Fit* Intervention

Diet Components	Intervention baseline ( <i>n</i> = 77)	Control baseline ( <i>n</i> = 69)	Intervention midpoint ( <i>n</i> = 77)	Control midpoint ( <i>n</i> = 69)	Intervention final ( <i>n</i> = 77)	Control final ( <i>n</i> = 69)
Calorie (kcal) <sup>#</sup>	2876.10 (178.57)	3081.93 (190.43)	2794.57 (181.60)	2879.90 (190.71)	2548.95 (188.22)	2382.40 (198.06)
Total fat (g)	109.43 (8.32)	119.07 (8.86)	110.46 (8.48)	117.79 (8.87)	98.77 (8.81)	95.6 (9.25)
Saturated fat (g)	32.86 (2.46)	39.44 (2.68)	35.63 (2.5)	33.66 (2.66)	33.39 (2.63)	32.26 (2.84)
MUFA (g)	26.45 (3)	28.81 (3.19)	25.09 (3.06)	29.97 (3.19)	22.14 (3.19)	21.7 (3.34)
PUFA (g)	14.36 (1.90)	16.53 (2.03)	13.55 (1.94)	15.96 (2.03)	11.49 (2.03)	11.73 (2.12)
Trans fat (g)	1.47 (.0.23)	1.28 (0.24)	1.08 (0.23)	1.29 (0.24)	0.86 (0.24)	0.87 (0.26)
Protein (g)	113.29 (7.16)	118.49 (7.64)	117.15 (7.26)	114.19 (7.66)	103.80 (7.49)	101.49 (7.91)
Carbohydrate (g) <sup>#</sup>	368.02 (23.14)	394.45 (24.67)	340.62 (23.54)	346.97 (24.71)	319.00 (24.41)	288.39 (25.67)
Dietary Fiber (g)	24.76 (2.04)	27.3 (2.18)	24.26 (2.08)	25.98 (2.18)	23.32 (2.16)	22.05 (2.27)
Sugar (g) <sup>#</sup>	145.87 (10.49)	174.08 (11.18)	139.80 (10.67)	117.21 (11.2)	118.91 (11.08)	106.3 (11.65)
Cholesterol (mg)	388.23 (42.75)	415.49 (45.58)	457.90 (43.48)	449.96 (45.65)	362.63 (45.08)	387.33 (47.43)
Vitamin A (RE)	1353.41 (165.73)	1296.74 (176.70)	1399.23 (168.61)	1136.23 (176.95 )	1233.29 (174.91)	1202.45 (183.95)
Vitamin C (mg) <sup>#</sup>	128.69 (16.72)*	204.74 (17.8)	123.16 (17.06)	133.17 (17.81)	124.51 (17.79)	91.98 (18.64)
Sodium (mg) <sup>#</sup>	5150.84 (325.62)	5363.18 (347.36)	5109.22 (330.96)	5228.28 (347.89)	4515.42 (342.64)	4382.56 (360.82)
Calcium (mg)	1067.50 (88.64)*	1343.94 (94.56)	1153.36 (90.1)	1017.50 (94.71)	1053.80 (93.27)	1007.66 (98.23)

\*Difference from the control group, *P* < .05

<sup>#</sup>Main effect of time significant at *P* < .05

## Physical Activity

*Hypothesis:* First-year college students participating in the *CSU Fit* intervention will exhibit greater mean levels of physical activity as determined by number of daily steps taken and self-reported leisure-time activities over the 7-month intervention compared to the control group during this same period.

Considering physical-activity measures (leisure-time physical activities and number of steps taken), subjects in the intervention and control groups were not different at baseline. The ANOVA indicates that the only difference in self-reported activity was that the intervention group had significantly less mild leisure-time activity compared to the control group at midpoint (0.0035).

Table 4.7. Mean (SE) of Physical-Activity Measures for the Intervention and Control Group Participants Who Completed Baseline, Midpoint, and Final Assessments of the *CSU Fit* Intervention

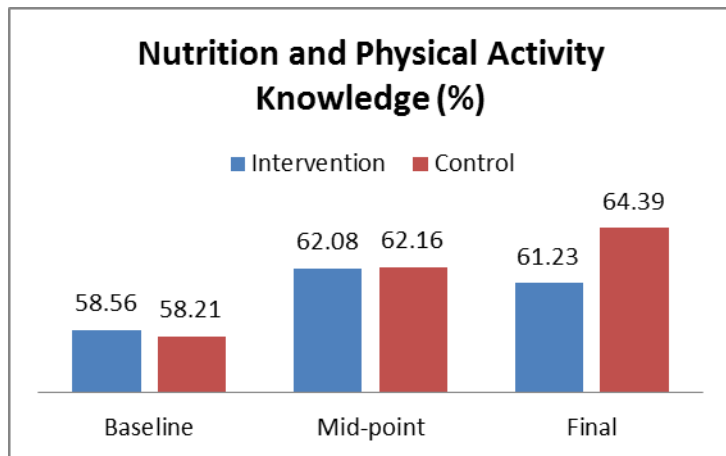
Physical Activity Measures	Intervention Baseline (n = 85)	Control Baseline (n = 76)	Intervention Midpoint (n = 85)	Control Midpoint (n = 76)	Intervention Final (n = 85)	Control Final (n = 76)
Total leisure time physical activity (MET h/wk)	59.09 (5.31)	57.19 (5.22)	47.97 (3.17)	56.97 (3.48)	52.50 (5.6)	50.54 (6.14)
Strenuous activity (MET h/wk)	28.03 (2.73)	31.45 (2.73)	25.61 (2.23)	28.54 (2.44)	29.12 (4.70)	27.46 (5.16)
Moderate activity (MET h/wk)	21.61 (4.26)	20.74 (4.26)	16.38 (1.14)	18.72 (1.26)	16.61 (1.75)	17.43 (1.93)
Mild activity (MET h/wk)	13.79 (1.33)	13.01 (1.38)	10.47(0.98)*	15.00 (1.15)	11.02 (0.91)	11.83 (1.06)
Steps	10954 (508)	11 043 (575)	9670 (412)	9382 (466)	10364 (412)	10480 (466)

\*Difference from the control group,  $P < .05$

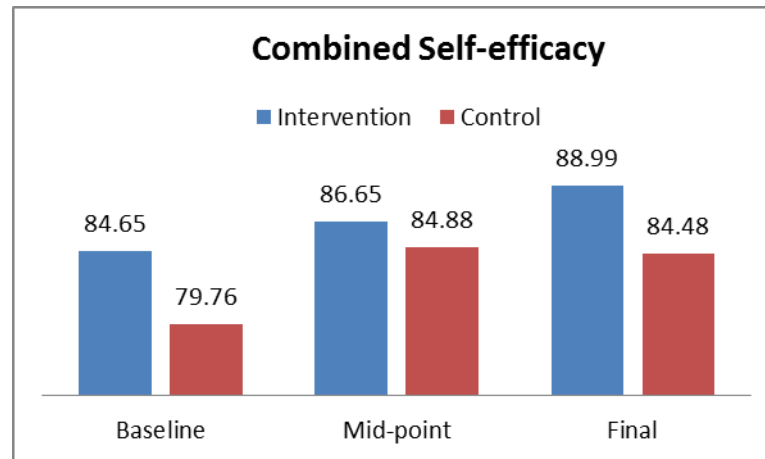
### *Nutrition & Physical Activity Knowledge & Self-efficacy*

*Hypothesis:* First-year college students participating in the *CSU Fit* intervention will exhibit greater improvements in specific measures of nutrition and physical-activity-related knowledge and self-efficacy over the 7-month intervention compared to the control group during this same period.

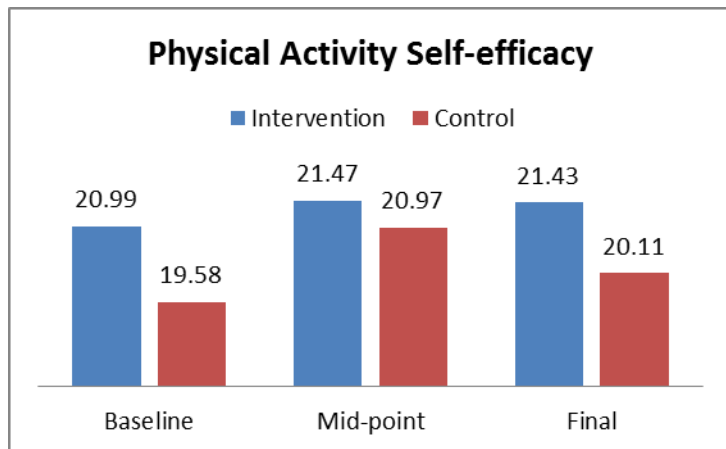
Figure 4.3 displays that there were no statistically significant differences at baseline between the two groups in their knowledge of, or self-efficacy relative to nutrition and physical activity, or in their self-efficacy relative to healthy eating and to physical activity. Participants' knowledge significantly increased exclusively in the control group over time, although the increase was modest and the group by time interaction did not reach statistical significance. Students' general self-efficacy increased, and their healthy-eating self-efficacy significantly increased from the baseline assessment to the final assessment (time effect; intervention  $P < 0.0180$ , control  $P < 0.0227$ ); but no significant differences were observed between groups over time, i.e. there was not a time by group interaction).



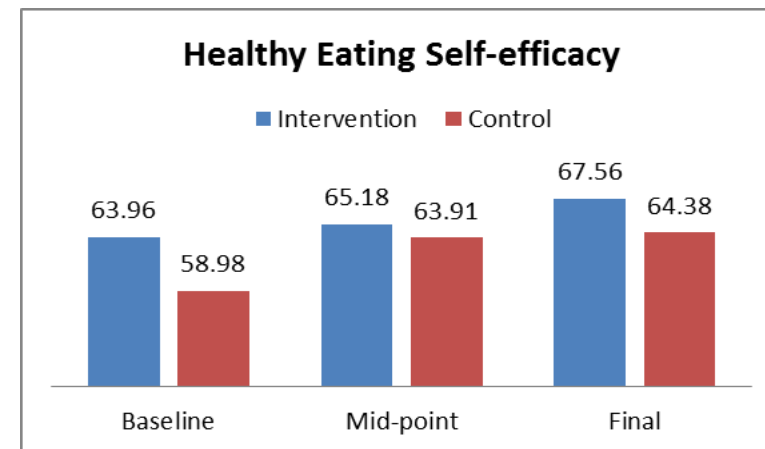
a.



b.



c.



d.

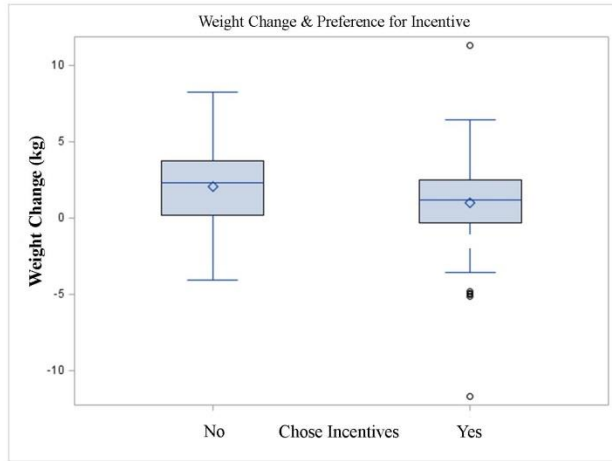
Figure 4.3. Changes in Nutrition and Physical Activity Knowledge and Self-efficacy, Main Effect for Time: a. Nutrition and Physical Activity Knowledge; b. Self-efficacy; c. Physical Activity Self-efficacy; d. Healthy Eating Self-efficacy



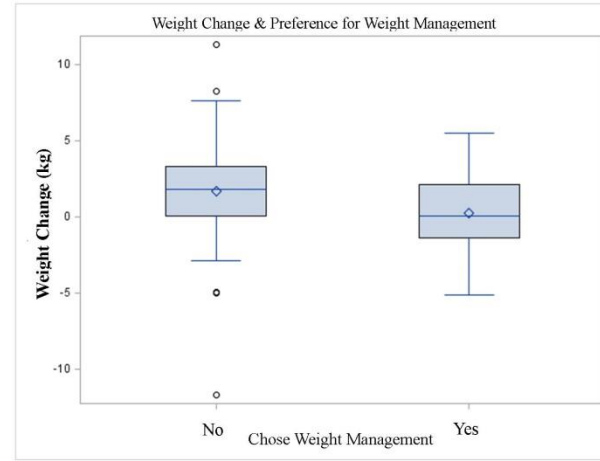
### *Correlation of weight change and variables*

*Hypothesis:* Attenuation of weight gain among first-year college students will be related to higher dietary quality, higher levels of physical activity, greater nutrition and physical-activity-related knowledge, and a greater sense of self-efficacy for engaging in healthy eating and activity behavioral patterns.

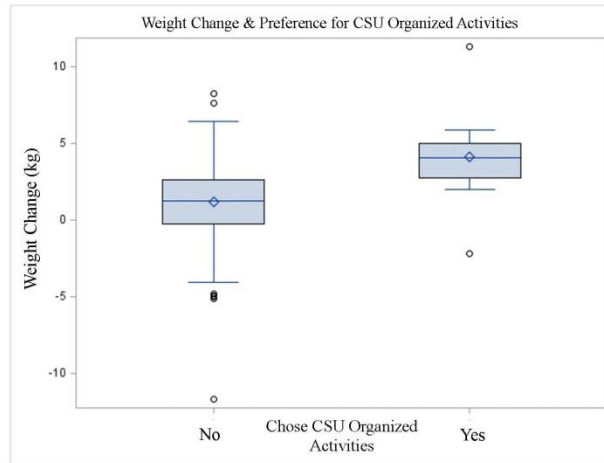
The researcher ran simple correlation analyses to identify among all study participants individual correlates of weight gain and fat gain over the 7 months. Only fat intake at baseline was significantly related to weight gain ( $r = 0.17$ ,  $P = 0.038$ ). No other dietary, physical-activity, knowledge, or self-efficacy variables were correlated with weight gain or fat gain. The researcher also ran multiple regression analyses, and none of the hypothesized predictor variables were correlated with weight or fat gain. Furthermore, as displayed in Figure 4.4, participants who chose incentive and weight management as their reasons to continue participating in the study weighed less than those who did not choose those as their motives to be in the study. However, participants who chose ideas for activities as their reason to continue with the study weighed more than other participants who did not choose this item.  $R^2$  for the model was .27.



a.



b.



c.

Figure 4.4. Weight Change and Preferences for Continuing Participation in *CSU Fit*: a. Correlation of Weight Change and Preference for Incentives; b. Correlation of Weight Change and Preference for Weight Management; c. Correlation of Weight Change and Preference for Campus Activities

### *Participant Satisfaction Data*

Most of the participants in the intervention group (79%) and the control group (89%) reported that they checked the *assigned Facebook* page less than once a week. Simple correlation analysis showed that no matter if participants access the page little (control group) or more (intervention), no association with weight has been noted.

Control-group subjects rated the ASAP at CSU Facebook page more favorably than the intervention group participants rated the *CSU Fit* page ( $P < 0.01$ ). More than half of participants in the intervention group (53%) and one-third of those in the control group (29%) claimed that the CSU Weight Gain Prevention Program increased their awareness about healthy eating. Forty-four percent of participants in the intervention group and 32% of the control-group subjects reported that the program made them eat healthier. Qualitative feedback included the following comments:

“Yes, I think it has. It [*CSU Fit*] makes me think more about the things I eat and it provides substitutions to eat instead. I enjoyed the Facebook page a lot.” (Intervention)

“Whenever I came in and said I ate something unhealthy, I felt guilty; so the program encourages me to eat healthy.” (Control)

Only 13% of participants in the intervention group and 10% of control-group subjects claimed that the program increased their awareness about physical activity. Less than half of participants in the intervention group (40%) and less than one quarter of control-group participants (23%) claimed that the program increased their physical activity. Qualitative feedback included the following:

“Before the program, I never went to the gym; now I try to go 5 times per week.”  
(Intervention)

“I sold my bike to walk more.” (Control)

Forty percent of participants reported learning about their physical measurements as the most favorable component, whereas 69% of participants indicated learning about their physical measurements as their motive for completing the study. Almost half of them (51%) indicated that waking up early was the least favorable component of the program.

Among intervention and control-group participants who completed the satisfaction survey (intervention:  $n = 85$ , control:  $n = 77$ ), 99% would recommend that CSU continue this program for first-year students. The majority of control-group (76%) and intervention-group (66%) participants indicated incentives as a reason for their continued participation. Learning about their physical measurements (69% of participants) and weight management (27% among the control group and 20% among the intervention group) were next on the list of reasons for participation. Intervention-group participants chose “Ideas for healthy eating/physical activity” significantly more often than control-group subjects did (29% vs. 16% respectively,  $P < 0.01$ ).

## CHAPTER 5

# DISCUSSION

### Objectives and Major Findings

The *CSU Fit* study was undertaken to determine whether or not a Facebook-based lifestyle intervention using the AOM small lifestyle changes approach and a social ecological behavior change model is feasible for implementation, is favorably received by first-year college students, and effectively leads to adoption of dietary and physical activity behaviors that attenuate weight gain. While the study was readily implemented and favorably viewed by almost all study participants, there were few differences in health-related behaviors between experimental and control groups during the course of the study, and there were no differences in the mean weight gain of experimental and control groups.

#### *Weight Gain*

The lack of an attenuation of weight gain in the *CSU Fit* group relative to the control group was a disappointing finding. However, this result concurs with previous online weight-management studies in a college setting. For example, Gow et al. assigned 170 first-year students to four different conditions for a 6-week weight gain prevention program: 1. No treatment; 2. Online intervention (6 weeks); 3. Weight and calorie feedback (once a week, 6 weeks); and 4. Combination of online and feedback intervention (6 weeks). Combined online and feedback intervention group was the only group that showed lower BMIs than the other groups and the baseline (pretest BMI: 23.64, post-test BMI: 23.39  $P < 0.05$ ) whereas online-only intervention group's BMI was not significantly different from that of the no treatment group.<sup>9</sup> Napolitano et al. assigned 52 college students to three arms for an 8-week weight loss program: 1. Facebook; 2. Combination of Facebook, text messaging, and weekly feedback; 3. Waiting List control. They

found that delivering weight-loss content alone to college students via the Facebook platform did not lead to a significant weight loss in the Facebook group compared to the Waiting List group. However, Facebook Plus text messaging and feedback resulted in a significantly greater weight loss than other two groups after 8 weeks ( $- 2.4 \text{ kg} \pm 2.5, P < 0.05$ ).<sup>203</sup> Note that these two studies in college students were of shorter length so they might not have experienced any significant weight gain over the course of the study. Furthermore, the Facebook study is a weight loss study, not a weight gain prevention study. It is not also conducted in first-year college students, with upper division students less likely to experience weight gain beyond their first year of college. Similarly, van Genugten et al. conducted a 2-months long online weight-management intervention focusing on making small dietary and physical activity changes in overweight adults. Dietary intake and physical activity behaviors and weight were self-reported and assessed at baseline, 3-month and 8-month after the beginning of the study. The authors did not find any statistically significant BMI differences between the study groups.<sup>204</sup> In addition, there was a significant difference in dropout rate between phase II (70%) and phase III (25%). Also participants in phase II gained more weight than participants in phase III. It is likely that those who completed phase II were more prone to weight gain and found study beneficial. Moreover, it is possible that if there was control group, they might have gained more than 2.48 kg that our intervention group gained.

A meta-analysis of online programs to promote behavior changes and another systematic review of dietary interventions with college students noted that an effective approach would not use a single modality but instead would use a combination of different approaches, such as the Internet along with text messages and mobile phone applications.<sup>205,206</sup> Based on this recommendation, the *CSU Fit* study used a variety of educational modalities. No significant

differences in weight or weight related behaviors were observed between groups despite following systematic reviews' recommendation by posting daily messages and information on Facebook, organizing several group sessions, sending feedback, and using several modalities (Facebook, email, and text messages) frequently for 7 months to reach participants. It is also possible that this college-age group did not find the health-promotion messages on Facebook motivating enough to change their current behaviors.<sup>207</sup> Furthermore, changing body weight with behavioral dietary and physical activity approach is complex and education only given the complex nature of human being would not make it possible to change weight.

Meanwhile, the amount of weight gain observed in the current study was similar to that seen in several published studies in body-weight-related college research;<sup>34,92,208,209</sup> however, it was less than what was reported in many others.<sup>33,48,102,131,210</sup> It is possible that simply knowing they were involved in a weight-related study sensitized participating students and made them more aware of relevant behaviors, regardless of their group assignment (control or intervention), and this awareness, in turn, limited the students' weight gain.<sup>9</sup>

Noteworthy is that 60% of *CSU Fit* subjects (intervention and control groups combined) maintained or lost weight, whereas 40% gained weight. The prevalence of weight gain is less than what was reported in previous studies, several researchers note that more than half of students gained weight during their first year of college.<sup>33,36,37,92</sup> One explanation for such a discrepancy in weight gainers between *CSU Fit* study participants and others could be the higher physical-activity levels among study participants that is typical of college students. Participants in the present study reported approximately 11,000 steps per day at the baseline and appeared to maintain this high level throughout the study. Furthermore, based on 2011 Behavioral Risk Factor Surveillance System reports, 29.3 % of 18- to-24-year-old Americans as a whole followed

the recommended levels of aerobic and muscle strengthening physical activity, whereas 42.5% of the same age group Coloradan met the recommended level of physical activity.<sup>71,72</sup>

### *Dietary Intake*

The analysis of self-reported 24-hour recall and usual intake at CSU did not show any significance differences between groups over time. Dietary analysis revealed that total energy, carbohydrates, and sugar decreased in both groups over time. Decreased calorie-intake outcomes agreed with a previous study by Ma and colleagues, who found 86 kcal/day lower calorie intake for participants in the spring compared to the fall.<sup>211</sup> Although students in the current study were aware of their individual anthropometric values when measured, they were not provided with information as to the meaning of these values in regard to health and disease risk. However, being informed of the measurement values themselves could have provided them with adequate feedback to alter dietary behaviors resulting in their decreased calorie intake. Evidence of this possibility is that 69% of participants indicated learning about their physical measurements as their motive for completing the study, and 40% of participants rated that data as the most favorable component of the study. Other studies confirm such inference. Levitsky and colleagues showed that providing college students with feedback of changes in their weight helped them to maintain their weight. They postulated that the feedback may lead to changes in students' calorie intake or expenditure in order to maintain their weight.<sup>131</sup> Likewise, Harper et al. found that awareness of body-fat percentage impacts students' self-image, which subsequently might be predictive of macronutrient intake.<sup>212</sup> Furthermore, dietary intake was self-reported and relied on retrospective recall of dietary intake via a single-day, 24-hour recall or usual intake, and were vulnerable to considerable misreporting.<sup>206,213</sup>



Diet-analysis reports of usual intake at CSU and individual 24-hour dietary recall (Table 4.5 and Table 4.6) also reflect that mean total fat intake was 35% per day for both groups and both dietary-intake methods. Participants' total fat intake was borderline high (25% to 35% of total calories) based on the Dietary Guidelines for Americans 2010.<sup>214</sup> Likewise other related studies reported that college students' and young adults' diet exceeded national recommendations for fat.<sup>54,215</sup> The current study showed that fat intake at baseline was significantly related to weight gain in CSU first year students. Bailey and colleagues also found that the intake of total dietary fat was the best predictor of visceral adipose tissue in young adults (aged 17 to 35 years).<sup>56</sup> Howarth and colleagues also reported that higher intake of dietary fat is related to excess weight in young adults.<sup>216,217</sup>

Average intake for reported saturated, monounsaturated, and polyunsaturated fat accounted for 11% ,8% , and 4.5% of calories at baseline and decreased to 10% and 4.5% for saturated and monounsaturated fat and remained constant for polyunsaturated at the final assessment for the *CSU Fit* and control groups, respectively. The Dietary Guidelines for Americans 2010 recommends reducing Saturated fat consumption to less than 10 percent of calories by replacing them with polyunsaturated (7%) and monounsaturated fats (12%).<sup>218</sup> None of fats in the current study met the recommendations. An argument is that dietary fat quality may be stronger predictor of weight gain than fat quality since within the United States, a percentage of energy from fat considerably decreased concurrent with a substantial increase in the prevalence of obesity during the last 20 years.<sup>219,220</sup> Nurses' Health Study found that an increase in polyunsaturated and monounsaturated fat were not associated with weight gain, whereas an increases in saturated fat was positively associated with weight gain.<sup>220</sup> Furthermore, participants in both groups exceeded the Dietary Guidelines for Americans 2010 recommended levels for

cholesterol (less than 300 mg per day).<sup>214</sup> Tam et al. also observed high dietary cholesterol intake in male students and those with positive energy balance.<sup>221</sup>

By and large, despite exposure to messages identifying practical ways to increase dietary fiber intake and encouraging the same, participants did not obtain the recommended level of fiber (14 g per 1,000 calories).<sup>214</sup> Other studies also confirmed suboptimal fiber intake among college students.<sup>46,222</sup> Multiple studies demonstrated that a low dietary fiber intake was strongly associated with higher BMI in college students and young adults.<sup>58,216,217</sup>

Findings from the diet analysis (Table 4.5 and 4.6) indicate that protein (15% to 18%) and carbohydrate (50%) percentages of total calorie intakes fell within the current dietary recommendations (10% to 30% and 45% to 65%, respectively), with wider variations for protein.<sup>214</sup> The effect of dietary composition on weight maintenance was explored extensively but no consensus on optimal dietary composition for weight gain attenuation could be reached due to differences in research design and outcomes.<sup>223-225</sup>

Although students reportedly reduced their sugar consumption from the baseline to final assessments, it is difficult to draw any conclusion about the amount of added sugar students consumed because the sugars listed on Nutritionist Pro Diet Analysis Software are based on naturally occurring sugars as well as those added to a food or drink.<sup>215,226</sup> Therefore, it is not possible to determine actual source of sugar. Gorgulho et al. and Anding and colleagues also observed high sugar intake in college students but they did not further explore the source of the sugar.<sup>215,227</sup> A possible determinant of the increase in obesity among adolescents is their excessive consumption of sugar-sweetened beverages.<sup>55</sup> The NHANES also identified sugar-sweetened beverages (soda and fruit drinks) as the top sources of energy for 14- to 18-year-olds.<sup>54</sup> A majority of undergraduate college students drank sugar-sweetened beverages daily.<sup>55</sup>

Mermudez and Gao showed that an increased consumption of sweetened beverages was positively related to obesity in young adults.<sup>228</sup> Similarly, West et al. found that college students had a substantial sugar-sweetened beverage consumption and it likely contributed to weight gain among undergraduate students.<sup>55</sup>

Overall, participants met the Dietary Recommended Intake for their age and gender for vitamin A (14-to-18-year-old female: 700 mcg RAE; male: 900 mcg RAE) and vitamin C (14-to-18-year-old female: 65 mg; male: 75 mg). Given that fruits and vegetables are a rich source of both vitamin A and C in the American diet, this finding contradicts the latest National College Health Assessment reports that only 5.4% of the college students had five or more servings of fruit and vegetables a day.<sup>5,229-231</sup> Georgiou et al. reported that college students ate more fruits and dark-green vegetables than non-students although they did not mention if they met the recommendations.<sup>232</sup> Because of the limitation of Nutritionist Pro software, it is hard to describe whether daily access to fruit and vegetables in dining halls helped students to meet their vitamin A and C requirements. One possibility is that they met these nutrients through taking supplements especially since they got less than recommended fiber.

Sodium and calcium intake decreased over time in both groups, which was probably due to reduced calorie intake. Calcium intake was insufficient (14 to 18 years old: 1300 mg) and both groups exceeded the Dietary Guidelines for Americans 2010 recommended levels for sodium (less than 2,300 milligrams per day).<sup>214</sup> Other scholars also showed high intake of sodium<sup>215,222,227,233</sup> and low intake of calcium among young adults and college students.<sup>233-237</sup> Poddar et al. and Bradlee et al. demonstrated that dairy calcium may help prevent excess weight gain and obesity when consumed in adequate amounts combined with energy balance in college students and adolescents.<sup>235,238</sup>

Other scientists also found deviations from healthy dietary practices in college students.<sup>61,239-242</sup> All-you-can-eat dining halls could be a possible culprit in the current study, given that CSU first-year students are obliged to purchase a meal plan from dining halls. Eating in the 'all-you-can-eat' dining halls accounted for 20% of the variance in weight gain.<sup>48</sup> Based on an evaluation of fifteen higher education institutions, the campus dining halls minimally supports healthy eating and weight gain prevention.<sup>243</sup> Previous studies showed that food intake for college students was largely determined by the number of available food items, the type of food, and the amount of food they were offered.<sup>244-246</sup>

### *Physical Activity*

The present study also suggests that physical-activity measures (steps and leisure-time physical activity) were unchanged for both groups of participants over the 7-month study. This outcome is opposed to what were expected based on participants' responses to the satisfaction survey question about changes in physical activity. The current study's null findings regarding physical activity seem to be consistent with previous studies, thus emphasizing the complexity of human behavior and the failure of an online approach to stimulate behavior change.<sup>50</sup> Kasperek et al. found that physical activity did not differ over 6 months, between baseline and follow-up, in a study of first-year students.<sup>92</sup> Franko and colleagues also noted that their one-semester-long, online, randomized, controlled trial did not change physical-activity behaviors.<sup>50</sup> However, other college studies reported otherwise. Mago et al. reported that as a result of a Web-based intervention for college students, the experimental group had increased moderate and vigorous physical activity relative to the comparison group.<sup>247</sup> Hager and colleagues also showed that a single-semester health and wellness course may positively impact physical-activity behaviors in university students.<sup>248</sup> The observed minimal impact in the existing study may be due a ceiling

effect, since the study participants had high levels of physical activity (approximately 10 000 steps) when the study began.<sup>50,249-251</sup> A statistically significant difference was observed for both groups at midpoint (time effect), when participants reported on average 1300 fewer steps per day for the control group and 1700 fewer steps per day for the intervention group compared to their baseline. This observation raises the question of clinical significance of such a drop since previous studies suggested the effectiveness of an additional 2000 steps per day in preventing excessive weight gain.<sup>141,148,149,252</sup> Based on a review of previous studies, it appears that students' physical activity was lower during winter and cold weather. The fact that the midpoint assessment for the current study was in the cold months in Colorado could account for the decrease in steps.<sup>253-255</sup>

#### *Nutrition & Physical Activity Knowledge & Self-efficacy*

The outcome of participants' nutrition and physical-activity knowledge and self-efficacy surveys suggests that there were significant changes in self-efficacy for both the *CSU Fit* intervention and control groups. This finding differs from previous interventions that targeted dietary behaviors or physical-activity improvements in college students, in which students increased self-efficacy only in the intervention group and not in the control group.<sup>50,51,256,257</sup> Moreover, the knowledge of nutrition and physical activity for students in the current study improved significantly only in the control group. This finding, although disappointing, is the opposite of what students claimed in the satisfaction survey, and also counter to what Matvienko and colleagues found as a result of a college nutrition-science course and to what Franko et al.'s work showed for an Internet-based education program plus booster.<sup>50,258</sup> These findings are difficult to interpret, given that the *CSU Fit* intervention group was the only group exclusively provided with daily-nutrition and physical-activity information. Perhaps the use of a self-selected

convenience sample whose members had a previous tendency toward acquiring nutrition and physical-activity information affected the participants' knowledge and self-efficacy ratings.<sup>51,67,259</sup> In addition, although separate groups of students were used for the *CSU Fit* intervention group and the ASAP (Association for Student Activity Programming) at CSU control group, the possibility of cross-contamination, as predicted in previous studies, cannot be ruled out.<sup>159,260</sup> It is likely that participants in the control group also had access to the *CSU Fit* Facebook page content directly or through a friend or classmate. The researcher did not investigate what courses participants took concurrent with the study, and it is likely that the control group had more exposure to health-related information than the intervention group. Another possibility is suboptimal access to *CSU Fit* information. The majority of participants in the intervention group (79%) reported that they checked the *CSU Fit* page less than once a week. The control group subjects rated the ASAP at CSU Facebook page more favorably than the intervention group participants rated the *CSU Fit* page which may also explain a suboptimal use of the *CSU Fit* Facebook page by the intervention group, which in turn could lead to absence of effect.<sup>204,261</sup>

### *Satisfaction Data*

The majority of participants in this study selected incentives as a reason for their continued participation. It could be postulated that most people were only in the study because of \$50 incentive. Weight management was overall their third-highest reason for participation. Participants who chose incentive and weight management as their reasons to continue participating in the study maintained their weight more than those who did not choose those options as their motives. Financial incentives have been shown to cause weight loss in previous studies.<sup>262,263</sup> For example, Haring et al. found that female college students who were concerned

about their weight would act upon such incentives and would try to manage their weight.<sup>264</sup> In the present study, significantly more intervention-group participants than control-group subjects chose ideas for healthy eating/physical activity as incentives. Results show that participants who chose ideas for activities as their reason to continue with the study maintained their weight less than other participants who did not chose this item.

### Study Strengths and Limitations

This study had both strengths and limitations. Strengths include the use of focus groups (Phase I) to gather information on the appropriateness of using a social networking platform as the basis for the intervention; use of a pilot study (Phase II) to determine the feasibility of a 7-month experimental protocol in first-year college students and to determine the best instruments to use in measuring the key variables; and the use of a randomized trial with both experimental and control groups. The sample size was large and there was a relatively low drop-out rate of participants (only 25%). Multiple variables were measured including knowledge, self-efficacy, dietary and physical activity, and multiple anthropometric characteristics and blood pressure..<sup>50</sup> Furthermore, all the measurement tools were regularly calibrated to enhance the validity and reliability of the measurements. Unlike some other studies that only measured body weight, we also assessed body composition (percent of body fat, fat mass, fat free mass, total body water), body circumferences (waist circumference, hip circumference, waist to hip ratio, thigh circumference) and triceps skinfold thickness. Almost all participants recommended that CSU continue the program for first-year students, and they rated the program good to excellent. Participants in the control group were neutral toward the program, whereas those in the intervention group were satisfied with it ( $P < 0.0072$ ). The benefit of having a control group is

that it takes into consideration the effect of participation and controls for confounding due to historical effects. Baseline characteristics for the completers and dropout participants were analyzed for potential attrition bias and none was found.<sup>265</sup> Trained students helped with physical assessment and diet inquiry in the program to maximize reliability and accuracy of measurements and providing a low-cost intervention.<sup>266</sup>

Although the present study has various strengths, as with any study there are limitations. The study enrolled a convenience sample and there is the possibility that lack of random selection of participants from among first-year college students resulted in a sample not representative of the true population of first-year students. Because subjects volunteered for the study, this could indicate they were more favorable toward physical activity and healthful eating, which in turn might leave little room for changing the key outcome variables. Another obvious shortcoming of the study was the fact that values for many variables were self-reported including the key dependent variables of dietary intake and physical activity. Owing to issues of social desirability it is readily conceivable that participants reported dietary and physical activity measures to be more favorable than they actually were. This notion is supported by the fact that energy intake decreased while weight gain increased over the 7 months. This suggests that participants underreported their food intake. The use of a comparison group does not adequately control for this confounding. It is possible that volunteers also over reported their physical activity levels. However, the step counts recorded by participants strongly suggest that participants were very active in keeping with the results of the physical activity questionnaire.<sup>67,115</sup> Given the reliance of self-reporting in this study, we recognize that issues of social desirability could have influenced the validity of these data. Still, the values for many of these variables are in keeping with previous studies..<sup>213</sup>



## CHAPTER 6

# CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

### Conclusion

The purpose of this study was to develop, an enhanced AOM program for first-year college students at Colorado State University (*CSU Fit*), using tenets of the social-ecological model and Facebook as the main venue of communication and information transfer. It was hypothesized that in comparison to a control group, college students enrolled in *CSU Fit* would maintain their initial weight, eat healthier, be more physically active. We further hypothesized that the healthier eating and physical activity patterns of students enrolled in *CSU Fit* would be related to greater improvements in health-related knowledgeable and self-efficacy.

This research is the only study investigating the impact of a Facebook page targeting weight gain prevention in first-year students that used a randomized, controlled experimental pretest - posttest design. Almost all participants recommended that CSU continue the program for first-year students, and they rated the program good to excellent. Participants in the control group were neutral toward the program, whereas those in the intervention group reported satisfaction with *CSU Fit*.

The results from this research suggests that a Facebook page offering daily educational information coupled with additional educational modalities targeted at weight gain prevention for first-year students does not improve dietary and physical activity behaviors and fails to attenuate weight gain. Findings demonstrate that despite the efforts made to improve *CSU Fit* program based on students' feedback from phase II by enhancing messages and including feedback and group sessions, an intervention that targets weight-gain prevention via Facebook is

not successful in promoting lifestyle improvements among first-year college students. While the participants in the experimental group did report greater satisfaction with the program compared to those in the control group, this is not particularly noteworthy given the lack of group differences over time in the key outcome variables and the fact that almost 80% of the participants in the experimental group reported checking the Facebook page less than one time per week. This lack of an effect on weight-gain prevention is consistent with several previous reports and is at odds with other studies that have shown attenuation of weight gain. The inconsistent findings among the studies to date are perhaps related to numerous factors that vary from one study to another, including the amount of online intervention available and participants' use of these interventions, the degree to which materials are tailored to participants' needs and preferences, the extent of in-person contact, classroom activities, the content of the program, characteristics of participants, and length of the study.<sup>50,204</sup>

### Implication for future research

College campuses offer the opportunity for using multiple modalities for weight gain prevention. The use of several modalities, as used in a few studies demonstrating beneficial effects on body weight in college students, may be more influential in behavioral change of college students than those approaches using only a single modality. Considering the complexity of body weight regulation and the vast array of individual, social, and environmental factors that affect students' weight status and health-related behaviors during their first year of college, perhaps the results of this study are not surprising. The literature suggests that the most effective interventions will likely include a combination of in-person, online, and environmental

components, although the need for additional research to examine the effectiveness of such an approach is warranted.<sup>206</sup>

Both groups gained 1.3 kg, which is a very modest weight gain. Given participants' reported interest in their physical assessment including body composition, access to immediate feedback on their individual values, independent of messages delivered could influence weight gain. Possible future studies could take this into consideration a second control group in which participants were blinded to their measurements, i.e. they would receive no immediate feedback. Another possible approach would be to blind all participants to their measured values when taken.

In regard to issues of dietary measurement, a better approach to dietary intake should be used using as 3-day diet record supplemented with a 24 hours recall, although this also relies on self-report. Owing to the location of the study in residence halls, it is feasible that cameras could be used to measure actual intake in the dining halls, or even use scales to accurately measure food intake.

Based on an evaluation in fifteen institutions, the dining halls could be a target to add to such intervention, given that first-year students are on meal plans while dining services offer limited support for healthy eating and weight gain attenuation.<sup>243</sup> This study demonstrated that students had suboptimal intake of a number of nutrients from dining halls. Future research should target offering more healthful options and providing nutrition information that would facilitate healthier choices and prevent weight gain- which also requires staff education and menu modification.<sup>243,267</sup> Another approach could be teaching skills to food service staff for preparing healthful meals. Young adults who reported frequent food preparation were more likely to meet dietary recommendations but opportunities to prepare meals are limited when

living in a residence hall.<sup>268</sup> Future research should explore the impact these combined programs have on weight, physical activity, and dietary behavior of first-year college students.

On a final note, it is possible that a short-term intervention as occurred in this 7-month study could affect body weight and composition in later years. Thus implementing a longer study over the course of the entire 4-5 years of college should be considered.

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## APPENDIX A

# DEMOGRAPHIC SURVEY

This is a survey, not a test. This survey is designed to assess general demographic data. Your answers will remain confidential.

1. Please write your first name:

---

2. What is your age?

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3. What is your ethnicity?

- White (non-Hispanic)  African-American  Latino-Hispanic  
 Native American  Asian/Pacific  Other (please specify) \_\_\_\_\_

4. What is your gender?

- Male  Female

5. Are you?

- Single  Married  
 Single with children  Married with children

6. What college are you at CSU?

- Liberal Arts  Agricultural Sciences  Applied Human Sciences  
 Business  Engineering  Natural Sciences  
 Veterinary Medicine and Biomedical Sciences  Warner College of Natural Resources

7. What is your major? (please specify) \_\_\_\_\_ or  Undecided

8. Where do you live?

- Allison Hall  Academic Village  Aspen Hall  Braiden Hall  
 Corbett Hall  Durward Hall  Edwards Hall  Ingersol Hall  
 Newsom Hall  Parmelee Hall  Westfall Hall  Summit Hall

9. Where do you usually eat?

- Allison  Braiden  Corbett  Durrell  Durrell Express  
 Parmelee  Ram's Horn  Ram's Horn Sports Grill  
 Ram's Horn Express  
 Others (please specify) \_\_\_\_\_

10. Since you came to CSU, your weight?

- Hasn't changed  Lost weight  Gained 1-2 lbs  Gained 3-4 lbs  Gained 5-6 lbs  
 Gained 7-8 lbs  Gained 9-10 lbs  
 Gained more than 10 lbs  Don't know

## APPENDIX B

# COLORADO STATE UNIVERSITY AOM FIRST YEAR STUDENTS

### Focus Group Guide

Date: \_\_\_\_\_

Facilitator: \_\_\_\_\_

Location: \_\_\_\_\_

Duration: \_\_\_\_\_

Room Setup for focus groups:

- central table and 8-10 chairs around
- separate (but not too far away) table/chair for assistant/recorder
- separate table or area for refreshments
- CSU Health Network are arranging for all refreshments- Dinner will be served

Facebook Page Team brings/sets up

- Table tents
- Markers for Table tents
- Watch
- Incentives (Mind Body pass or Chair message Coupon)
- Water
- Pizza
- Tape recorder and microphones
- Extension cords
- Masking tape
- Script
- Paper for notetaking (field notes as back up to tape recording/transcript)
- Debrief Summary sheets
- Business Cards

Ph D Student will bring

- List of participants (list of names of consented, recruited for the focus group plus alternates if needed)

Pre Focus Group

Focus group participants arrive and do the following:

- Check-in for focus group (A list will be available with participants' names)
- Get a table tent and put their first name only on it.
- Get refreshments.
- Gather around the focus group table.

- Participants fill out questionnaire.

### Introduction (10 minutes for entire section)

- Thank you for coming.
- My name is \_\_\_\_\_
- You were invited to participate because you are CSU first year students.
- Your participation is voluntary. Feel free to not answer a question if you feel uncomfortable. You have the right to stop participating at any time.
- A focus group is like a conversation but focuses on a few specific topics.

### Purpose of Project

- America On the Move is a national program encourages people to make small changes to live healthier lifestyles. We are working to disseminate it to university students.
- We're going to be talking about your eating and physical activity experiences.
- We see all of you as experts. We are interested in all your ideas, opinions, comments, and suggestions regarding eating and physical activity at CSU.
- There are no right or wrong answers in any focus group. We are interested in both positive and negative comments from each of you.
- Please feel free to disagree with each other, respectfully of course.

### Consent forms and participant questionnaire

- As soon as participants show up, hand them the consent form. Read the consent form given to them when they came in and make sure they clearly understand it. Ask them to sign a copy of the consent form indicating their agreement to participate in the study. If they would like a copy for their records make them a copy.
- We would also like to collect the questionnaires we asked you to complete when you arrived. As we explained before, the questionnaire will give us some information about your background. We will use this information for descriptive purposes only. In other words, we will never use any identifying information such as your name in any of our reports.
- Please pass the completed questionnaire to \_\_\_\_\_.

### Procedures

- Our session today should last about 90-120 minutes.
- It is a group discussion, so don't wait to be called on.
- We are recording so we don't leave out anything you have to say.
- Please speak one at a time so I can get your opinions on the tape.
- Confidential –we will not use your name, address, or any other identifying information in reports or other materials related to this study. Your responses will be used together to guide the program development. Does that make sense and do you accept that plan?(look for assent from everyone)
- We are going by first names only. We need your first names for this group and for the overall data, but the final report will not include your names.
- We have a lot to cover so I might change the subject or move ahead, but let me know if you want to add something. Don't let me cut you off.
- The bathrooms are \_\_\_\_\_. Feel free to get up at any time during our discussion.

- At the end of your full participation in this focus group, you will receive either a mind-body pass or chair massage coupon to thank you for your time and participation.

Focus Group Questions:

1. Let's go around the room and please tell me three things: (1) your first name; (2) your favorite place to eat on campus; and (3) the physical activity you like to do as a college student. (opening question)
  2. Tell me about your experiences at dining halls?  
On a scale of 1-10 with 1 being "I don't enjoy eating in the dining halls at all" and 10 being "I very much enjoy eating in the dining halls." Tell us your number and reasons why you chose that number. (introductory question)  
Probe: food, likes & dislikes, different meals
  3. When you hear the phrase "healthy eating" what does that mean to you? (Introductory question)  
Probe: Tell me what differences you see between healthy eating and being on a diet? (Transition question)
  4. What do you think it is about the first year of college that causes many people to gain wt? (key)  
Probe: Who/what influences you regarding you eating and physical activity habits?
  5. Where do you get information regarding healthy eating? \_\_\_\_\_ What is your favorite source to get health information and what do you like about that favorite source. How do you know it is reliable? (If online, what sites) (key question)  
Probe: if any, what nutrition information have you checked in the dining halls? How much attention do you pay to that?
  6. How could CSU better support your efforts to eat healthier? (Encourage them to think in a large scale)(Key question) What could CSU do to better provide you with keeping active and eating healthy? Where do you want to get this support? How do you want to get them? Probe: foods, hours, venues, ...
- Now we want to talk about physical activity (transition).
7. When you hear the phrase "physical activity" what does that mean to you?  
Probe: What do you do for physical activity? (Key question)
  8. What physical activity do you think is the most effective to maintain weight? Please explain your answer. (Key question).  
Probe: frequency and duration
  9. There is one recommendation to add 2000 extra steps a day (roughly one additional mile) to your current activity level, to maintain your weight. On a scale of 1-10 (1 being not achievable; 10 being highly achievable), how realistic is this for you to do in a campus setting? What would get in the way of attaining this goal of 2,000 extra steps a day? What would achieving this "look like" on a daily basis for you (how would you make it happen?)



(Key question)

10. Is there anything we missed? Is there anything that you came wanting to say that you didn't get a chance to say? How could we design a program not to gain weight this year? What suggestions do you have?

11. How could CSU design a program not to gain weight this year? What suggestions do you have?

Thanks so much for your comments- now at the very end here we are going to switch to an idea that CSU has- regarding America On the Move and Facebook. First I'll describe America On the Move- briefly. America On the Move is a national non-profit organization that encourages people to make small changes to live healthier lifestyles. AOM works with many different groups, including worksites, schools, communities, and families.

We want to learn how it works in a "real-life" setting and to disseminate it to university students at CSU. For example, proposing we use Facebook to connect to you all and we seek honest opinion on this or other ideas. We hope that eventually the entire university students will be enrolled on AOM and it will be accessible to all university students across the country.

How do we get this information to first year students?

Probe: How about a Facebook group?

We are beginning to design a program, which is CSU oriented using Facebook (are you a Facebook member? is everyone familiar with Facebook?) in such a manner that:

- If we use Facebook, it will be focused on cutting back 100 calories a day or adding 2000 steps a day
- Some of the things we are thinking of are: inviting friends, posting photos and videos, sharing links of nutrition and physical activity articles, finding out about what is happening at CSU and or in Fort Collins and how you may like to participate

12. Is this a good method or do you have other suggestions?

Probe: Would you participate if such a program was offered in your residence hall? What could motivate you to participate in such a program? Is there another route to make such a program available? (Student center, Rec center, Collegian, Dining Halls, Library or?)

We are now going to pass out 2 examples of how a new Facebook page could look.

\*Distribute handouts of comps of the new Facebook page.

13. What other comments can you share with us? Any further ideas in close-up?

## APPENDIX C

### CSU FIT VERBAL SCRIPT

#### Volunteers Needed For a research study

#### CSU Fit (Freshmen Healthy Eating and Physical Activity Program)

The study is open to full-time first year CSU students 17-22 years



The purpose of the study is to evaluate & compare students' weight, body composition, body circumferences, skinfold thickness, blood pressure, resting metabolic rate, eating habits, physical activity, knowledge and self-efficacy.

Participation involves answering questions about your eating and physical activity habits, body measurements, wearing pedometers, and it may include a Facebook page that encourages people to make small healthy lifestyle changes.

Time Commitment and incentive: Each assessment should take approximately 1.5-2 hours of your time. If you complete all requirements for 4 phases of assessment you will receive \$50 cash upon completion of final phase.

If you are interested in participating, please contact. Alternatively, you can come to Food Science and Human Nutrition Department and see.

Thank you.

Primary Investigator:

Food Science and Human Nutrition Dept.

This research study was approved by IRB, protocol # 10-2042H.

## APPENDIX D

# RESEARCH SUBJECT INFORMATION AND CONSENT FORM

TITLE: America on the Move University Program

PROTOCOL ID: 10-2042H

INVESTIGATOR:  
Jennifer Anderson, PhD, RD,  
Department of Food Science and Human  
Nutrition  
Colorado State University  
970.491.7622

CO-INVESTIGATOR:  
Maryam Dadkhah, MS, RD  
Department of Food Science and Human  
Nutrition  
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970.492.9518

Chris Melby, Dr. P.H.  
Department of Food Science and Human  
Nutrition  
Colorado State University  
970.491.6736

You are being asked to be in a research study. This form provides you with information about the study. A member of the research team will describe this study to you and answer all of your questions. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part. You may take home an unsigned copy of this consent form and take as much time as you need to think about this consent form or discuss it with family or friends before making your decision.

Why am I being asked to take part in this research?

You are being invited to help with the evaluation of the America on the Move University Program. You are being asked to be in this research study because you are:

1. Under 22 years of age
2. Enrolled as a full-time first year student at the Colorado State University

Who is doing the study?

This research study is being conducted by Maryam Dadkhah (Co-PI), Food Science and Human Nutrition Dept. under the guidance of Dr. Jennifer Anderson and Dr. Chris Melby for PhD dissertation. Although this is a research study, America on the Move, a nonprofit organization may benefit financially from the eventual development of the web-based program being tested in this research.

What is the purpose of the study?

The purpose of the America on the Move University program study is to evaluate a new weight gain prevention program to educate college students about physical activity and good nutrition.

At least 240 students from Colorado State University will participate to help us evaluate a weight gain prevention program for university students in a Facebook Page.

Where is the study going to take place and how long will it last?

For your first assessment, you will be weighed at the Food Science and Human Nutrition Department, your body composition, skinfold thickness, waist, hip, thigh circumferences, skinfold thickness, resting metabolic rate, and blood pressure will be measured. You will be asked to complete nutrition and physical activity questionnaires 4 times during the study. You will be interviewed for your usual dietary intake and 24 hour food recall. You will be asked to wear pedometers at each assessment for a week and report you're your average steps. Each assessment will take approximately 90 to 120 minutes. All the questionnaires will be online to reduce the need for paper.

Once everyone has gone through the first assessment, you will then be randomized to an intervention or control group.

If you are in the Control group, you will get a pedometer and will only go through the above detailed 4 times assessments.

If you are in the Intervention group, you will receive feedback on assessments, a Facebook Page, and will be encouraged to wear pedometers at all times and participate in related events.

What will I be asked to do?

If you take part in this study, both intervention or control groups, you will be asked to answer questions about your attitudes and behaviors related to nutrition, usual dietary intake, and physical activity.

You may or may not be asked to be on a Facebook page or attend related events. You will also be asked to wear a pedometer before each assessment or may be asked to wear it at all times and record your steps for 7 days and report back your average steps.

Are there reasons why I should not take part in the study?

You should not take part in the study if you are:

1. Over 22 years of age
2. Not enrolled as a full-time first year student at the Colorado State University

What are the possible risks and discomforts?

There are no known risks. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

Are there any benefits from taking part in this study?

There are no known benefits in participating in the study, but your assistance will help us learn how to develop more effective weight gain prevention programs.

Do I have to take part in the study?

You should not find any of the questions embarrassing or uncomfortable, and there is no right or wrong answer. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

Who will see the information that I give?

We will keep private all research records that identify you, to the extent allowed by law.

No one will know what you answered except the research staff, and the other participants. Your data will be shared with researchers at other institutions - without identifiers. Your professors and school officials from outside Food Science and Human Nutrition Department will never be told your answers to questions, nor will your

contact information be shared with anyone except the Food Science and Human Nutrition Department and Co-PI. Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be identified in these written materials.

Your decision to participate or not to participate in this study will have absolutely no effect on your academic standing at your university. Your answers will be kept in a locked file in primary investigator's office, at Food Science and Human Nutrition Department (Gifford Building). Only primary investigator and Co-PI working on this study will have access to your files and to the audio tapes made during the focus group meeting.

Research records which identify you and the consent form signed by you may be looked at and/or copied for research or regulatory purposes by:

- Department of Health and Human Services (DHHS) agencies; and
- IRB

Absolute confidentiality cannot be guaranteed because of the need to give information to these parties. The results of this research study may be presented at meetings or in publications. Your identity will not be disclosed in those presentations.

Can my taking part in this study end early?

Your participation may end early if the investigator needs to stop the study.

If you choose to participate, please retain a copy of this consent form for your records, and read and sign the attached consent statement. Return

the signed consent statement to the study coordinator before the start of the study.

Will I receive any compensation for taking part in this study?

All participants will receive a pedometer at the beginning of the study and \$50 upon completion of all the requirements at the final assessment. Your identity/record of receiving compensation (NOT your data) may be made available to CSU officials for financial audits.

What if I have questions?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the Co-PI, Maryam Dadkhah at 970.492-9518. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator at 970-491-1655. We will give you a copy of this consent form to take with you. This consent form was approved by the CSU Institutional Review Board for the protection of human subjects in research on September 6, 2012.

What else do I need to know?

Please check off each activity and initial each activity you are agreeing with.

1.  I will be asked to complete questionnaires about my information, nutrition and exercise-related knowledge, self-efficacy, and behaviors at baseline and 3 follow-up assessments. Questionnaires will ask information about my age, ethnicity, gender, marital status, the college, the residence hall I live at, the dining hall I eat at, disease and medication history, weight intention, and my nutrition and exercise self-efficacy, knowledge, and behaviors.

Participant's initials \_\_\_\_\_ Date \_\_\_\_\_

2.  My weight, height, body composition, waist, hip, thigh circumferences, skinfold thicknesses, blood pressure, resting metabolic rate and steps will be measured at baseline and 3 follow-up assessments.

Participant's initials \_\_\_\_\_ Date \_\_\_\_\_

3.  The data I provided in this study might be used for the future nutrition and physical activity studies.

Participant's initials \_\_\_\_\_ Date \_\_\_\_\_

Consent Statement

Your signature acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document containing 4 pages.

I have read the information in this consent form. My questions about its content have been answered. If I have any questions or problems which I feel are related to the study, I can

contact Co-PI at 970.492.9518 or IRB at (970) 491-1553. By signing below, I agree to participate in this research study.

\_\_\_\_\_

Signature of person agreeing to take part in the study \_\_\_\_\_  
Date \_\_\_\_\_

\_\_\_\_\_

Printed name of person agreeing to take part in the study \_\_\_\_\_

\_\_\_\_\_

Name of person providing information to participant \_\_\_\_\_  
Date \_\_\_\_\_

\_\_\_\_\_

Signature of Research Staff



# CSU FIT USUAL INTAKE QUESTIONNAIRE @ CSU

Please take a few moments to answer these questions about your usual intake of last month. The completeness and honesty of your answers will help us best know how to assess your needs.

Please list all foods and beverages which you typically consume within 24 hours. This includes meals, snacks, beverages, and condiments.

Study ID # \_\_\_\_\_ Date \_\_\_\_\_

Phase: \_\_\_\_\_

Name of Food Preparation

(baked, fried, boiled, etc.)

Amount

(cups, tbsp, tsp, ounces)

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Is this a typical day for you? Please explain if why not.

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## 2. Overall eating patterns:

1. How many meals and snacks do you eat each day?

Meals \_\_\_\_\_ Snacks \_\_\_\_\_

2. How many meals do you skip on regular basis if any? \_\_\_\_\_ What meal? \_\_\_\_\_

3. How many times a week do you eat the following meals away from home/dining halls?

Breakfast \_\_\_\_\_ Lunch \_\_\_\_\_ Dinner \_\_\_\_\_

What types of eating places do you frequently visit? (Check all that apply)

Fast-food \_\_\_\_\_ Diner/cafeteria \_\_\_\_\_

Sit-down Restaurant \_\_\_\_\_ Other \_\_\_\_\_

3. On average, how many pieces of fruit or glasses of juice do you eat or drink each day?

Fresh fruit \_\_\_\_\_ Juice (8 oz cup) \_\_\_\_\_

4. On average, how many servings of vegetables do you eat each day? \_\_\_\_\_ Potato?

5. On average, how many times a week do you eat a high-fiber breakfast cereal? \_\_\_\_\_

6. How many times a week do you eat red meat (beef, lamb, veal, pork)? \_\_\_\_\_

7. How many times a week do you eat chicken or turkey? \_\_\_\_\_

8. How many times a week do you eat fish or shellfish? \_\_\_\_\_



9. How many hours do you spend on computers/watching TV every day? \_\_\_\_\_
10. Do you usually snack while watching television/being on computer? Yes \_\_\_\_\_ No \_\_\_\_\_
11. How many times a week do you eat desserts and sweets? \_\_\_\_\_
12. What type of beverages do you usually drink? How many servings of each do you drink a day?

Water \_\_\_\_\_

Juice \_\_\_\_\_

Soda \_\_\_\_\_

Diet soda \_\_\_\_\_

Sports drinks \_\_\_\_\_

Iced tea \_\_\_\_\_

Iced tea with sugar \_\_\_\_\_

Milk:

Whole milk \_\_\_\_\_

2% milk \_\_\_\_\_

1% milk \_\_\_\_\_

Skim milk \_\_\_\_\_

Alcohol:

Beer \_\_\_\_\_

Wine \_\_\_\_\_

Hard liquor \_\_\_\_\_

From The AAFP, *Taking a Nutrition History: A Practical Approach for Family Physicians*. March 15, 1999

13. What would you have for snacks if any? \_\_\_\_\_

3. Are you currently on a special diet? Please describe:

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4. How would you describe your relationship with food? (Do you have rigid rules about food? Do you feel guilty about eating? Are you preoccupied with food? Do you binge?)

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5. What makes you choose food that is unhealthy for you?

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6. What makes you keep eating when you know you should stop?

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7. What makes you avoid eating when you know you should eat?

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8. Do you eat for other reasons than hunger?

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# CSU FIT USUAL INTAKE QUESTIONNAIRE @ HOME

Please take a few moments to answer these questions about your usual intake of last month. The completeness and honesty of your answers will help us best know how to assess your needs.

Please list all foods and beverages which you typically consume within 24 hours. This includes meals, snacks, beverages, and condiments.

Study ID # \_\_\_\_\_ Date \_\_\_\_\_

Phase:

Name of Food Preparation

(baked, fried, boiled, etc.)

Amount

(cups, tbsps, ounces)

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Is this a typical day for you? Please explain if why not.

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2. Overall eating patterns:

1. How many meals and snacks do you eat each day?

Meals \_\_\_\_\_ Snacks \_\_\_\_\_

2. How many meals do you skip on regular basis if any? \_\_\_\_\_ What meal? \_\_\_\_\_

3. How many times a week do you eat the following meals away from home/dining halls?

Breakfast \_\_\_\_\_ Lunch \_\_\_\_\_ Dinner \_\_\_\_\_

What types of eating places do you frequently visit? (Check all that apply)

Fast-food \_\_\_\_\_ Diner/cafeteria \_\_\_\_\_

Sit-down Restaurant \_\_\_\_\_ Other \_\_\_\_\_

3. On average, how many pieces of fruit or glasses of juice do you eat or drink each day?

Fresh fruit \_\_\_\_\_ Juice (8 oz cup) \_\_\_\_\_

4. On average, how many servings of vegetables do you eat each day? \_\_\_\_\_ Potato?

5. On average, how many times a week do you eat a high-fiber breakfast cereal? \_\_\_\_\_

6. How many times a week do you eat red meat (beef, lamb, veal, pork)? \_\_\_\_\_

7. How many times a week do you eat chicken or turkey? \_\_\_\_\_

8. How many times a week do you eat fish or shellfish? \_\_\_\_\_

9. How many hours do you spend on computers/watching TV every day? \_\_\_\_\_
10. Do you usually snack while watching television/being on computer? Yes \_\_\_\_\_ No \_\_\_\_\_
11. How many times a week do you eat desserts and sweets? \_\_\_\_\_
12. What type of beverages do you usually drink? How many servings of each do you drink a day?
- Water \_\_\_\_\_
- Juice \_\_\_\_\_
- Soda \_\_\_\_\_
- Diet soda \_\_\_\_\_
- Sports drinks \_\_\_\_\_
- Iced tea \_\_\_\_\_
- Iced tea with sugar \_\_\_\_\_
- Milk:
- Whole milk \_\_\_\_\_
- 2% milk \_\_\_\_\_
- 1% milk \_\_\_\_\_
- Skim milk \_\_\_\_\_
- Alcohol:
- Beer \_\_\_\_\_
- Wine \_\_\_\_\_
- Hard liquor \_\_\_\_\_

From The AAFP, *Taking a Nutrition History: A Practical Approach for Family Physicians*. March 15, 1999

13. What would you have for snacks if any? \_\_\_\_\_

3. Are you currently on a special diet? Please describe:

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4. How would you describe your relationship with food? (Do you have rigid rules about food? Do you feel guilty about eating? Are you preoccupied with food? Do you binge?)

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5. What makes you choose food that is unhealthy for you?

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6. What makes you keep eating when you know you should stop?

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7. What makes you avoid eating when you know you should eat?

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8. Do you eat for other reasons than hunger?

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## APPENDIX F

# DEMOGRAPHIC SURVEY

This is a survey, not a test. This survey is designed to assess general demographic data. Your answers will remain confidential. This survey will take about 10 to 15 mins.

1. In order for us to enter your data into system, we need to have a constant code that you would remember during the study. Please enter your birth date below:\*

MMDDYYYY

2. Please write your first name:\*

3. What is your ethnicity?\*

- White (non-Hispanic)  African-American  Latino-Hispanic  
 Native American  Asian/Pacific  Other (please specify) \_\_\_\_\_

4. What is your gender?\*

- Male  Female

5. Are you?\*

- Single  Married  
 Single with children  Married with children

6. What is your major? ( please specify) \_\_\_\_\_ or  Undecided \_\_\_\_\_

7. Where do you live?\*

- Allison Hall  Academic Village  Aspen Hall  Braiden Hall  
 Corbett Hall  Durward Hall  Edwards Hall  Ingersol Hall  
 Newsom Hall  Parmelee Hall  Westfall Hall  Summit Hall

8. Where do you usually eat?

- Allison  Braiden  Corbett  Durrell  Durrell Express  
 Parmelee  Ram's Horn  Ram's Horn Sports Grill  
 Ram's Horn Express  Others (please specify) \_\_\_\_\_

9. Do you have any of these conditions?

- Pregnancy/lactation  
 Major Illness (ashtma, cancer, heart disease, diabetes, liver disease, blood disease)  
 Having seen a psychiatrist or psychologist in the previous 6 months  
 Being diagnosed with any illness known to affect body composition or fat distribution

10. Are you currently taking any of following medication?

- Medications prescribed by a psychiatrist  
 Medications known to affect body composition or physical activity  
 Lipid-lowering medications

11. Would you like your weight to?\*

- Stay the same  Decrease  Increase

# NUTRITION & PHYSICAL ACTIVITY KNOWLEDGE SURVEY

This is a questionnaire, not a test. This questionnaire is designed to assess general nutrition knowledge. Your answers will remain completely anonymous.

9. Based on percent of total daily value (DV) recommendations, which amounts would be considered low in sodium?\*

- 10% DV
- 15% DV
- 5% DV
- 20% DV
- All

10. Which of the following would be considered the most reliable source of nutrition information?\*

- Personal trainer
- eHow.com
- Nutrition.gov
- Atkins diet book

11. What is step equivalent of cycling per minute?\*

- 50-80
- 90-120
- 150-180
- 210-240

12. Which of the following items is a whole grain product?\*

- White Tortilla
- Whole Wheat flour
- Sourdough bread
- White rice

13. Which of the following sources provide the most calories?\*

- To eat combo at Soups & Salad
- To share your food with your friend
- To have half of your food at restaurant and take half home
- To get the dressing on the side

14. Which beverage has the highest calorie? (Assume 12 oz)\*

- Frappuccino
- Cola
- Beer
- Coffee with 2% milk

15. On average, how many extra steps does a person need to take daily to prevent weight gain?\*

- 1000
- 2000
- 3000
- 4000

16. If you want to prevent unhealthy weight gain, what is the recommendation for minutes of moderate – intensity physical activity on most days of the week?\*

- 30 minutes
- 45 minutes
- 60 minutes

90 minutes

17. Obesity increases the risk of?\*

- Osteoporosis
- Heart Disease
- Liver failure
- Kidney failure
- Alzheimer

18. One benefit of eating breakfast is to:\*

- Increases cholesterol
- Control weight
- Lower concentration and productivity
- Increase craving during the day

19. What nutrient(s) is likely to be low in a vegetarian diet?\*

- Iron
- B-12
- Protein
- Calcium
- All
- None

20. Which of the following contains trans fats?\*

- Dressing
- Hydrogenated oil
- Fried foods
- Cookies
- All
- None

21. What is considered a healthy weight?\*

- Body mass index of 18.5-24.9
- The weight that I feel healthy in
- Body mass index of less than 18.5
- Nicole Richie's weight

22. Which of the following options will quench hunger with the least number of calories?\*

- Drink soda before a meal
- Eat creamy broccoli soup before meal
- Eat Caesar salad with creamy ranch dressing
- Drink water before meal

23. Which one of these items has the lowest calorie content? (Assume an 8 oz)\*

- Chocolate soy milk
- Activia fruit yogurt
- Peach frozen yogurt
- Fat-free plain yogurt

24. Which food item would be considered a healthy snack?\*

- Fruit and veggies
- Pretzels
- Dried fruit and nuts
- Pop corn
- All
- None

## NUTRITION & PHYSICAL ACTIVITY SELF-EFFICACY

25. The following questions are about your nutrition and exercise habits.*	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
I stick to my physical activity program when I have a lot of homework to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to my physical activity program when I have excessive demands at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to my physical activity program when social obligations are very time consuming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I read or study less in order to exercise more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get up early on weekends to exercise more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to my physical activity program after a long, tiring day at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to my physical activity program when my teachers are demanding more time from me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to low fat, low salt foods, when teacher are demanding more time from me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to low fat, low salt foods when there are high fat, high salt foods readily available at the residence halls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to low fat, low salt foods when there are high fat, high salt foods readily available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to low fat, low foods when there are high fat, high salt foods available at a party	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stick to low fat, low salt foods when there is no one to watch you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat smaller portions at dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat lunch as my main meal of the day rather than dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I plan snack times in advance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat smaller portions at a party	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I share a party food with a partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat unsalted peanuts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat unsalted chips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat unsalted crackers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat unsalted pretzels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I buy fewer high salt snack items (e.g., chips, pretzels)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat unsalted, unbuttered popcorn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat low salt cereal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat vegetarian entrees for dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I substitute low or non-fat milk for whole milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I cut down on gravies and cream sauces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I eat poultry instead of red meat for dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I substitute foods like beans, peas, lentils, potatoes, corn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that you do as part of your everyday lives. The questions will ask you about the time you spent being physically active in the last 7 days. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the vigorous activities that you did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

26. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?\*

- 1 days
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days
- No vigorous physical activities - go to question 28

27. How much time did you usually spend doing vigorous physical activities on one of those days?\*

Number      hours per day

28. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.\*

Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

- 1 days
- 2 days
- 3 days
- 4 days



- 5 days
- 6 days
- 7 days
- No moderate physical activities - go to question 30

29. How much time did you usually spend doing moderate physical activities on one of those days?\*

Number      hours per day

30. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?\*

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you might do solely for recreation, sport, exercise, or leisure.

- 1 days
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days
- No walking - go to question 32

31. How much time did you usually spend walking on one of those days?\*

If no time walk go to question 32.

Number      hours per day

32. During the last 7 days, how much time did you spend sitting on a week day?\*

The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

Number      hours per day

# GODIN-SHEPHARD PHYSICAL ACTIVITY

This is a survey, not a test. This survey is designed to assess your physical activity. Your answers will remain confidential. Try to answer questions as honestly as possible. This survey will take about 3 mins.

1. In order for us to enter your data into system, we need to have a constant code that you would remember during the study.

Please enter your birth date below:\*

MMDDYYYY

2. Please write your first name:\*

3. During a typical 7-day period (a week), how many times on average do you do the following kinds of exercises for more than 15 minutes during your free time? Please write on each line the appropriate number).\* Times per week

**STRENOUS EXERCISE (HEART BEATS RAPIDLY)** (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, martial arts, downhill skiing, roller skating, vigorous swimming, vigorous long distance bicycling, spinning, elliptical, rowing machine, step master, vigorous hiking, Rec Center Group Fitness classes (steps, Absolution, Cardio, Chieseled, Zumba, Boot camp, Kick boxing, etc.)

**MODERATE EXERCISE (NOT EXHAUSTING)** (e.g., fast walking, baseball, tennis, moderate bicycling, volleyball, badminton, moderate swimming, alpine skiing, easy hiking, rock climbing, popular and folk dancing)

**MILD EXERCISE (MINIMAL EFFORT)** (e.g., yoga, archery, fishing, bowling, horseshoeing, golf without using a cart, snow-mobiling, easy walking, Tai chi, Pilates, easy bicycling)

4. During a typical 7-Day period (a week), in your leisure time, how often do you engage in any regular activity long enough to work up a sweat (heart beats rapidly)?\*

- Always
- Often
- Sometimes
- Occasionally
- Never/rarely

APPENDIX G

CSU FIT SATISFACTION SURVEY

CSU FIT ID:

			0	9			2	0	1	2
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Please help us by answering the following questions:

1. How often do you check the Facebook page?
  - a. Few times a day
  - b. Once a day
  - c. Few times a week
  - d. Once a week
  - e. Few times a month
  - f. Once a month or less
  
2. How satisfied were you with the Facebook page you were assigned to?
  - a. Very satisfied
  - b. Satisfied
  - c. Neutral
  - e. Very dissatisfied
  - d. Dissatisfied
  
3. Has this program influenced your eating behaviors? If so, please tell us what change(s) you have made as a result of this program.
  
  
  
  
  
  
  
  
  
  
4. Has this program influenced your physical activity behaviors? If so, please tell us what change(s) you have made as a result of this program.
  
  
  
  
  
  
  
  
  
  
5. How would you rate the CSU FIT Program?
  - a. Excellent
  - b. Good
  - c. Fair
  - d. Poor
  
6. What did you like best about the program? \_\_\_\_\_

7. What did you like least about the program? \_\_\_\_\_

8. Would you recommend that CSU continue this program for first year students?

- e. Yes
- f. No, (please explain why)

9. What kept you participating in the study?

- |   |  |
|---|--|
| a. Incentives                                 | b. learning about my physical measurements |
| c. Meeting others                             | d. Facebook pages                          |
| e. Weight management                          | f. Ideas for campus activities             |
| g. Ideas for healthy eating/physical activity | h. others_____                             |

10. What comments and/or suggestions would you like to make to help improve the CSU FIT Program?

Thank you very much for participating in the study!

## APPENDIX H

# FACEBOOK MATERIALS

10/08 Satisfy your sweet tooth with a sliver, bite, or taste of dessert instead of full portion



Image retrieved from:

<http://us.123rf.com/400wm/400/400/vandriotis/vandriotis0707/vandriotis070700029/1335929-brownie-with-a-bite-taken-out-of-it--brownie-is-on-a-white-dessert-plate-plate-is-on-a-red-placemat.jpg>

To burn 200 kcal you could do any of the following: 1 hr of walking (2mph), 20 mins running (5mph), 30 min swimming, 40 bicycling (leisure)

(%DV) Percent Daily Values are based on a 2000 calorie diet for healthy adults. If a food has 5 percent or less of a nutrient, it's considered to be low in that nutrient. If it has 20 percent or more, it's considered to be high in that nutrient. To get the most benefit from Percent Daily Values,

limit foods high in fat, cholesterol, sodium, and processed carbohydrate (without fiber).

1 Chocolate Chip Cookie has 390 kcal, 19 gr Fat (29% DV\*), 53 gr Carbohydrate (18% DV), 263mg Sodium (11% DV), 38 mg Cholesterol (13 % DV)

1 Red Velvet Cupcake has 318 calories, 14 gr Fat (22% DV), 48 gr Carbohydrate (16% DV), 246mg Sodium (10% DV), 6 mg Cholesterol (2 % DV)

1 cup vanilla ice cream has 273 calories, 14 gr Fat (22% DV), 31 gr Carbohydrate (10% DV), 106 mg Sodium (4% DV), 58 mg Cholesterol (19% DV)

1/2 cup bread pudding has 481 calories, 16 gr Fat (25% DV), 43 gr Carbohydrate (14% DV), 385mg Sodium (16% DV), 83 mg Cholesterol (28 % DV)

1 Snicker bar has 280 calories, 14 gr Fat (22% DV), 35 gr Carbohydrate (12% DV), 140 mg Sodium (6% DV), 5 mg Cholesterol (2% DV)

1 piece of brownie has 214 calories, 7 gr Fat(11% DV), 36 gr Carbohydrate (12 %DV), 126 mg Sodium (5% DV)

1 slice of apple pie has 332 calories, 15 gr Fat (23% DV), 48 gr Carbohydrate (16 %DV), 280 mg Sodium (12% DV)



Image retrieved from: <http://www.kevinandamanda.com/whatsnew/wp-content/uploads/2012/06/Must-Stop-Guide-to-NYC-Sweets.jpg>

Text retrieved from:

<http://wsnet.colostate.edu/cwis10/dining/nutritioncalculator/>  
<http://www.mayoclinic.com/health/food-and-nutrition/AN00284>  
<http://www.mayoclinic.com/health/exercise/SM00109>

3. Significantly reduce breast cancer risk with exercise  
<http://www.tri-cityherald.com/2012/10/08/2128719/significantly-reduce-breast-cancer.html>

4. Systematic Review: Short bouts of sedentary behaviour consistently increase health risk  
<http://networkedblogs.com/DaWY8>

10/09 1. Take up photography—walk through a scenic location on a hunt for photo opportunities.



Image retrieved from: <http://2.bp.blogspot.com/-EneF210IjXs/ThaE3nc9wbI/AAAAAAAAABOQ/5CCPFYXaVNA/s1600/young+person+with+camera.JPG>

### 2. 5. Outdoor Photo Contest

When: Monday, October 15th - Friday, October 19th

Where: Anywhere outside- photos must be your own.

Cost: FREE

Join us in the 2nd Annual Outdoor Week Photo Contest- last year we received submissions from outdoor trips to Patagonia, Canada, France and Colorado (just to name a few). Submit your photos via [campusrec\\_op@mail.colostate.edu](mailto:campusrec_op@mail.colostate.edu)?subject=outdoor photo contest email starting Monday, October 15th at 9am. Entries received before that date will not be accepted.

For more information go to:

<http://campusrec.colostate.edu/OutdoorProgram/OutdoorPhotoContest.cfm>



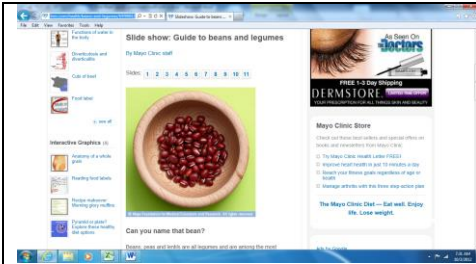
Image retrieved from <http://www.colostate.edu/>

### 3. Obesity: The New Normal

[http://www.hivehealthmedia.com/obesity-the-new-normal/?utm\\_source=twitterfeed&utm\\_medium=twitter](http://www.hivehealthmedia.com/obesity-the-new-normal/?utm_source=twitterfeed&utm_medium=twitter)

10/10 1. Enjoy pinto or kidney beans on a salad or a hearty split pea or lentil soup.

<http://www.mayoclinic.com/health/beans-and-legumes/MY00612>



2. Beans are one of nature’s healthiest foods – they are naturally low in total fat, contain no saturated fat or cholesterol, and provide important nutrients such as fiber, protein, calcium, iron, folic acid and potassium. National and international expert bodies, including the National Research Council, the World Health Organization, the World Cancer Relief Fund, the National Heart, Lung, and Blood Institute, and the U.S. Surgeon General, have reviewed scientific evidence and concluded that eating beans can be an important ally in maintaining health and may reduce the risk of heart disease and certain cancers. Other studies suggest beans are useful in managing diabetes, may cut risk for high blood pressure and may help in losing weight. The US department of Agriculture recommends that adults eat more than three cups of beans each week for maximum health benefits – three times more than the current average American consumption.

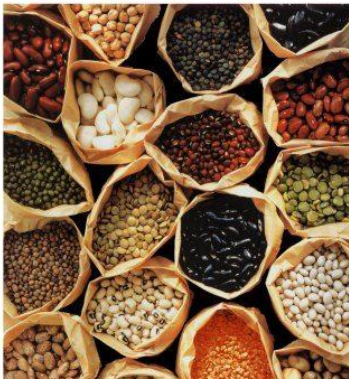


Image retrieved from: <http://4.bp.blogspot.com/-RktBK31FLXs/T00nwWu9Tsl/AAAAAAAAAXM/Htwj3eeG45E/s1600/agriculture-beans.jpg>  
 Text retrieved from: <http://americanbean.org/bean-facts/>

3. Chili Challenge at Corbett October 8-12  
<http://www.housing.colostate.edu/dining/Fall2012EventsCalendar.pdf>



Image retrieved from: <http://oneidacountypublichealth.org/wp-content/uploads/2011/12/Chili-2.jpg>

10/11 1. Walk around the campus when you go to classes or coming back to your halls.



Image retrieved from: <http://admissions.colostate.edu/photogalleries>

2. Take a walk on the green side (more information at: <http://www.green.colostate.edu/multimedia/green-walking-tour.pdf>)



Image retrieved from: <http://www.green.colostate.edu/green-walking-tour.aspx>

10/12 1. Get a whole grain head start with oatmeal or whole grain cereal in the morning.



Image retrieved from: [http://a.abcnews.go.com/images/Health/gty\\_whole\\_grain\\_cereal\\_nt\\_111207\\_ssh.jpg](http://a.abcnews.go.com/images/Health/gty_whole_grain_cereal_nt_111207_ssh.jpg)

2. Whole Grains Council defines whole grains foods as food items that contain all the essential parts and naturally-occurring nutrients of the entire grain seed. In another word, a food must have *100% of the original kernel – all of the bran, germ, and endosperm to qualify as a whole grain. Oatmeal, granula, brown & wild rice, whole wheat pasta, whole wheat and whole grain bread and bagel, popcorn, quinoa, barley, kamut, bulgur and teff are whole grain food items. Whole grain breakfast cereals that you can find at dining halls include: All Bran Cereal, Heart Start Bran Flakes, Raisin Bran, Toast O's, Wheat Chex, Grapenuts Cereal, Cracklin Oat Bran Cereal, Assorted Cereal Take Out.*



## The Whole Grain Kernel

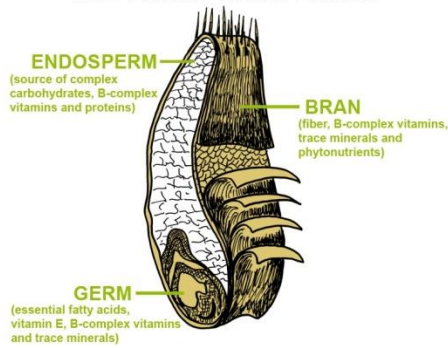


Image retrieved from: <http://thumbs.ifofood.tv/files/images/editor/images/whole-grain.jpg>

Text retrieved from <http://www.wholegrainscouncil.org/whole-grains-101/identifying-whole-grain-products>

<http://wsnet.colostate.edu/cwis10/dining/nutritioncalculator/>

3. Whole grains can benefits you by:

Lower the risk of hypertension

Lower the risk of diabetes

Lower the risk of some forms of cancer,

Decrease bad LDL cholesterol.

Fiber in whole grain food creates a feeling of fullness with fewer calories, help to curb your appetite and manage your weight



Image retrieved from: [http://www.blogcdn.com/www.thatsfit.com/media/2007/03/cereal\\_heart.jpg](http://www.blogcdn.com/www.thatsfit.com/media/2007/03/cereal_heart.jpg)

Text retrieved from: <http://www.ext.colostate.edu/pubs/columnnn/n120117.html>

4. When do you usually check your Facebook page?

Morning before 12 PM

Afternoon 12-4 PM

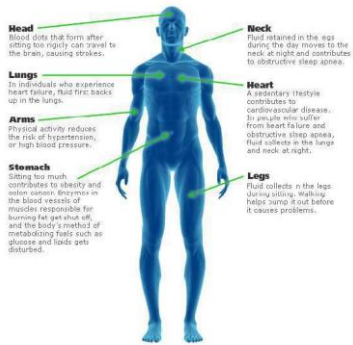
Evening 4-8 PM

Night after 8 PM

10/15 1. How sitting too long affects the body. I must admit I also sit too long some days. What are your best tips for activities to do between long periods of desk or computer work?

<https://www.facebook.com/#!/photo.php?fbid=483657921664487&set=a.431953050168308.100118.428734623823484&type=1&theater>

### How Sitting Too Long Affects the Body



2. Aim for 30 to 60 minutes of physical activity each day



Image retrieved from: [http://www.hmsa.com/go/letsgo/images/just\\_30\\_minutes.jpg](http://www.hmsa.com/go/letsgo/images/just_30_minutes.jpg)

3. Why Exercise?



Image retrieved from: <http://www.rapidonline.com/catalogueimages/module/M079149P01WL.jpg>

10/16 1. The Fall Ball  
Oct 19, 2012 7 pm @ Lory Student Center Theatre  
Dress to Impress  
Live DJ, free food and drink  
<http://www.fallingwhistles.com/>

2. Nothing like walking through campus on a fall afternoon!



Image retrieved from:

[https://www.facebook.com/?ref=tn\\_tnmn#!/photo.php?fbid=10152187444845615&set=a.10151875423270615.871514.136298855614&type=1&theater](https://www.facebook.com/?ref=tn_tnmn#!/photo.php?fbid=10152187444845615&set=a.10151875423270615.871514.136298855614&type=1&theater)

3. Good morning, Rams!

[https://www.facebook.com/?ref=tn\\_tnmn#!/photo.php?fbid=10152186375230615&set=a.143943555614.232959.136298855614&type=1&theater](https://www.facebook.com/?ref=tn_tnmn#!/photo.php?fbid=10152186375230615&set=a.143943555614.232959.136298855614&type=1&theater)



4. Rethink your drink. Replace soft drink, fruit juice, or fruit punch with water or water with fresh cut lemon in it.

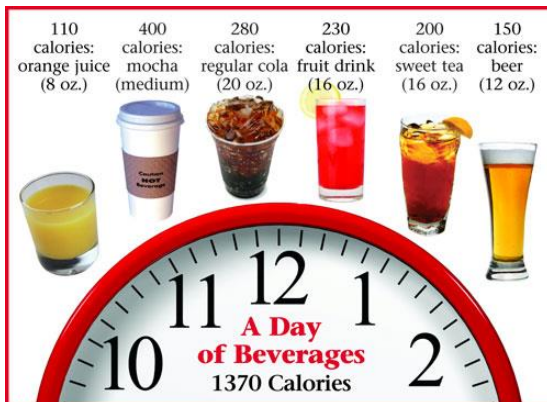


Image retrieved from: <http://familiesfoodfitness.files.wordpress.com/2012/08/day-beverages.jpg>

5. Would you like to take rethink your drink challenge? Here is how to do so:

## >> Rethink Your DRINK Challenge

### How does it work?

1. To begin, track how many RED, YELLOW and GREEN drinks you consume for a week. This will give you an idea of the average number of sugary drinks you are currently consuming and help you to write a goal for the next 3 weeks. See the key at the bottom of the page for drink categories and recommendations.
2. Set a goal for the program, aiming to cut your total RED drink consumption by half over the next 3 weeks. GOALS are unnecessary for YELLOW and GREEN drinks as these will probably increase as you consume less RED drinks.
3. Continue tracking your intake over the next 3 weeks, focusing on replacing RED drinks with healthier alternatives (mostly GREEN, some YELLOW)

Watch out for serving sizes when you are checking grams of sugar. Most bottles are at least 2 servings!  
 \*\*\* Artificial Sweeteners include: **Acesulfame potassium** (Sunett, Sweet One), **Aspartame** (Equal, NutraSweet), **Neotame**.

<p><b>Unhealthy Choices</b>          Drink rarely, if at all  <b>Over 12 g of sugar per 12 oz</b></p> <ul style="list-style-type: none"> <li>• Regular soda</li> <li>• Energy Drinks</li> <li>• Sports Drinks</li> <li>• Sweetened Coffee/Tea</li> <li>• Other beverages sweetened with any sugar (natural or not) or high-fructose</li> <li>• Juice Drinks</li> <li>• Whole or 2% milk</li> </ul>	<p><b>Better Choices</b>          Drink occasionally  <b>6 to 12 g of sugar per 12 oz</b>          or contains <b>artificial sweeteners</b>***</p> <ul style="list-style-type: none"> <li>• Diet Soda or Iced Tea</li> <li>• Artificially sweetened beverages with less than 25 calories per 8 ounce serving</li> <li>• 100% Fruit Juice*—8 ounce serving</li> <li>• Sweetened soy milk</li> </ul>	<p><b>Best Choices</b>          Drink Plenty  <b>0 to 5 g of sugar per 12 oz</b></p> <ul style="list-style-type: none"> <li>• WATER</li> <li>• Skim or 1% milk</li> <li>• Unsweetened tea and coffee</li> <li>• Unsweetened carbonated water</li> <li>• Unsweetened soy milk</li> </ul>
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Image retrieved from:

<http://www.yvmc.org/upload/images/Rethink%20Your%20Drink%20Challenge%20Instructions.jpg>

10/17 1. A film that follows a group of dumpster divers or "urban foragers" as they reevaluate the role of food in a society that wastes 1/2 of all it produces. Inspired by a curiosity about our country's careless habit of sending food straight to landfills, the multi award-winning documentary DIVE! follows filmmaker Jeremy Seifert and friends as they dumpster dive in the back alleys and gated garbage receptacles of Los Angeles' supermarkets.

Thursday, October 18, 7 p.m.

Behavioral Sciences Building, Room 131

<http://www.today.colostate.edu/story.aspx?id=7785>



<http://www.divethefilm.com/trailer.aspx>

2. Find an activity or sport that you enjoy (try walking, dancing, biking, swimming...anything that gets your body in motion).

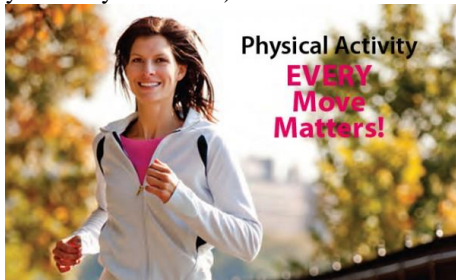


Image retrieved from: <http://www.sofitmagazine.com/physical-activity-every-move-matters/>

3. CSU Triathlon Halloween 5k

Join us for a morning of spook and fun for the Colorado State University Triathlon Team's 3rd Annual Halloween 5k! This is our primary fundraiser that helps get us to competitions, including USAT Collegiate Nationals in the spring. Make sure to come dress up, there will be a costume contest, great give-aways, free post-race snacks, awards for age divisions, a \$50 cash prize for top female and male finishers, and more. Dogs are allowed on course if on a leash (please pick-up after them). In the case of a rainy/snowy day like last year, the race will be held the next day (Sunday October 28th).

Registration opens: Jun 26 2012, 7:30 pm (EST)

Registration closes: Oct 27 2012, 9:00 am (EST)

Phone: 512-638-0180

For more information: <http://www.prerace.com/races/event/41297/CSU-Triathlon-Halloween-5k>



10/18 1. Good Morning Rams!

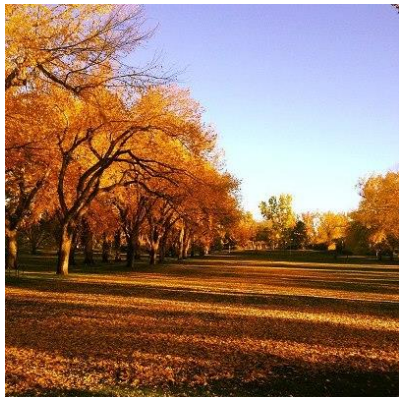


Image retrieved from:

[https://www.facebook.com/?ref=tn\\_tnmn#!/photo.php?fbid=10152191566430615&set=a.10151875423270615.871514.136298855614&type=1&theater](https://www.facebook.com/?ref=tn_tnmn#!/photo.php?fbid=10152191566430615&set=a.10151875423270615.871514.136298855614&type=1&theater)

2. Before going back for seconds, wait 10 minutes. You might not want seconds after all.



Image retrieved from: [http://www.kiplinger.com/tools/slideshows/save\\_on\\_food/images/10.jpg](http://www.kiplinger.com/tools/slideshows/save_on_food/images/10.jpg)

3. When you eat very fast, your brain doesn't have time to fill full appetite satisfaction. Slow down and enjoy your food. You want to be comfortable, but not stuffed when you finish your meal.





Image retrieved from: [http://i.telegraph.co.uk/multimedia/archive/01516/food\\_1516325c.jpg](http://i.telegraph.co.uk/multimedia/archive/01516/food_1516325c.jpg)

10/19 1. Ride on, Rams! Check out CSU's new bike lane indicators.

(Notice CAM is wearing a helmet. You should, too!)

<https://www.facebook.com/#!/photo.php?fbid=10152194164100615&set=a.143943555614.232959.136298855614&type=1&theater>



2. Walk the track at the campus Rec Center—four laps is roughly 2,000 steps(10/18)

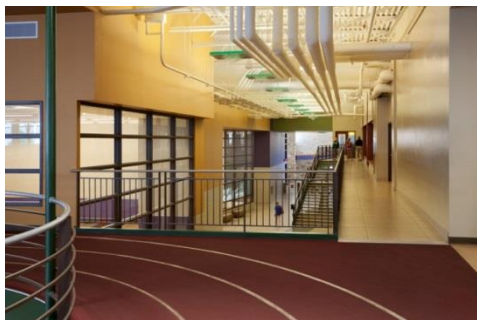


Image retrieved from: <http://www.athleticbusiness.com/galleries/images/large/64-14-Colorado-State-NW-Corner-of-Track-AFTER.jpg>

3. Walking an extra mile (equivalent to 2,000 steps) and cutting 100 calories from your food intake in one day can help you achieve the energy balance and stop weight gain. Small changes in your daily activity or eating habits (similar to ones I post on the page) will quickly add up to 2,000 extra steps or 100 calorie reduction!



Image retrieved from:

[http://ethicsandvibes.files.wordpress.com/2010/09/getty\\_rm\\_photo\\_of\\_trail\\_distance\\_sign.jpg](http://ethicsandvibes.files.wordpress.com/2010/09/getty_rm_photo_of_trail_distance_sign.jpg)

4.Creativity

<https://www.facebook.com/#!/photo.php?fbid=374361902646232&set=a.349674445114978.81574.349673158448440&type=1&theater>



10/22 1. On sandwiches, choose mustard, reduced-fat or fat-free dressings more often than mayonnaise or "special sauces".



Image retrieved from:

<http://www.farmersalmanac.com/wp-content/uploads/2011/06/make-your-own-ketchup-mustard-mayo-12211.jpg>

2. Here are some of calorie and nutrient breakdown of common sandwich dressing:

Type of Dressing	Calorie s	Fa t	Suga r	Cholesterol (mg)	Sodiu m
------------------	-----------	------	--------	------------------	---------

(1tbsp)		(g)	(g)		(mg)
Ketchup	15	<.1	3.4	0	167
Mayo	90	10	0	5	70
Light Mayo	45	4	1	5	95
Honey Mustard	60	4	5	5	115
Yellow Mustard	3	.2	<.1	0	57
Chipotle Southwest	65	6.7	.2	5	144
Ranch	73	7.7	.4	5	122



Image retrieved from: [http://3.bp.blogspot.com/\\_\\_\\_-pMfc8C19U/SH9LfhgzAZI/AAAAAAAAA2U/O4DbnoG2J54/s400/mayo.jpg](http://3.bp.blogspot.com/___-pMfc8C19U/SH9LfhgzAZI/AAAAAAAAA2U/O4DbnoG2J54/s400/mayo.jpg)

10/23 1. "Build Your Plate, Maintain Your Weight"

When: October 30th, from 5-6 or 6-7 (your choice!)  
Where: Horsetooth Room in RamsHorn

Join CSU Fit on October 30th for a fun, interactive program to help you learn about portion control in your diet! Topics that will be covered include: Portion Distortion, Portion Control for Health, and MyPlate (how to build a well-balanced meal). You will swipe your meal card to get into the RamsHorn dining center and then meet in the Horsetooth Room for the program. After we go over MyPlate, everyone will have a chance to go grab dinner and we will all eat together. This way, you will get to practice portion control and MyPlate guidelines and receive feedback from program instructors. You can also talk ask whatever burning nutrition questions you have to instructors.

The program will be offered, from 5-6 and then from 6-7. Please RSVP for your preferred time slot!

Oh, and because the event is being held the night before Halloween, we invite you all to wear a costume if you'd like (even just a funny hat if you want). We definitely will be wearing our costumes!





Image retrieved from: <http://www.healthykidsplate.com/wp-content/uploads/2011/11/healthy-myplate-breakfast.jpg>

## 2. CSU Triathlon 5K

October 27 at 9:30am

Colorado State University in Fort Collins, Colorado



<https://www.facebook.com/events/251046495012861/>

## 10/24 1. Party Rock Anthem Flash Mob at CSU

<http://www.youtube.com/watch?v=7wYSacRJtrI&feature=related>

## 2. Thriller Event

Its time to channel your inner Michael Jackson!!!!!!

Come to Mac Gym in the Campus REC Center and join 600 of your closest buddies to learn the Michael Jackson Thriller dance! Get zombie up ..... get your glove .... Fine the red jacket ..... and bust it out!

Prizes will be awarded; this is not the time to be shy!

When: October 26<sup>th</sup>

Where: REC Center – Mac gym

Time: 8-0:30 PM

Cuz this is Thriller..... Thriller

<http://www.youtube.com/watch?v=Sn34VpAHR0w>

3. Put lettuce, tomato, onions, spinach, bell pepper, cucumber, and jalapeno on your burger or sandwich instead of cheese or bacon.



Image retrieved from:

[http://www.healthykids.nsw.gov.au/downloads/header/header\\_Health\\_HealthySandwich\\_4d14\\_header.jpg](http://www.healthykids.nsw.gov.au/downloads/header/header_Health_HealthySandwich_4d14_header.jpg)

4. Vegetables contain lots of vitamin A

(Helps you see in dim light, fights infection, and keeps hair and skin healthy)

, vitamin C (heals cuts and bruises, and keeps the inside of your nose and mouth healthy.)

, and fiber(Fiber can help prevent constipation and control appetite)

. They are low in calories and has no cholesterol, too.



Image retrieved from: <http://whatsforlunchsolutions.com/images/salad-bar-600.jpg>

10/25 1. A snowy start to Thursday in Ram Country.



Image retrieved from:

[https://www.facebook.com/?ref=tn\\_tnmn#!/photo.php?fbid=10152209494120615&set=a.10151875423270615.871514.136298855614&type=1&theater](https://www.facebook.com/?ref=tn_tnmn#!/photo.php?fbid=10152209494120615&set=a.10151875423270615.871514.136298855614&type=1&theater)

2. Beautiful first snow of the year on the Oval! Bundle up Rams.



Image retrieved from:

[https://www.facebook.com/?ref=tn\\_tnmn#!/photo.php?fbid=10151287256355330&set=a.10150146166845330.335595.266694100329&type=1&theater](https://www.facebook.com/?ref=tn_tnmn#!/photo.php?fbid=10151287256355330&set=a.10150146166845330.335595.266694100329&type=1&theater)

3. Take MyPlate Makeover Challenge and win \$100 Grocery Gift Card

It's Easy to Enter!

Just upload a picture of your plate showing you're serious about filling half your plate with fruits & veggies. Once your post is entered, you'll get a valuable grocery coupon AND voila! ... you're in the running to win a \$100 grocery gift card! *Winner chosen weekly.*

For more information go to:

[https://www.facebook.com/pages/Fruits-VeggiesMore-Matters/103391981984?sk=app\\_225131720862670](https://www.facebook.com/pages/Fruits-VeggiesMore-Matters/103391981984?sk=app_225131720862670)



4. Join a fun free fitness class at Rec Center such as Zumba, Hip Hop, Dance Fever, Hoop La Fit, Step To The Beat. For Schedule please check: <http://campusrec.colostate.edu/docs/GetFit/currentSchedule.pdf>



Image retrieved from:

<http://www.news.colostate.edu/content/photos/Student%20Recreation%20Center%201.jpg>

10/26 1. Happy Friday Rams!



Image retrieved from:

[https://www.facebook.com/?ref=tn\\_tnmn#!/photo.php?fbid=10152212092455615&set=a.143943555614.232959.136298855614&type=1&theater](https://www.facebook.com/?ref=tn_tnmn#!/photo.php?fbid=10152212092455615&set=a.143943555614.232959.136298855614&type=1&theater)

## 2. Fruits and Vegetables: Seven-A-Day for Happiness and Mental Health

<http://www.sciencedaily.com/releases/2012/10/121009102003.htm>

3. Select fat-free, 1% milk, or unflavored soymilk instead of 2% milk (low-fat), whole milk, or chocolate milk



Image retrieved from: <http://www.nutrition.org/media/asn-blog/2009/08/the-milk-debate/JovanaMilk.jpg>

4. To burn 200 kcal you could do any of the following: 1 hr of walking (2mph),

20 mins running (5mph), 30 min swimming, 40 bicycling (leisure)

(%DV) Percent Daily Values are based on a 2000 calorie diet for healthy adults.

If a food has 5 percent or less of a nutrient, it's considered to be low in that nutrient.

If it has 20 percent or more, it's considered to be high in that nutrient.

To get the most benefit from Percent Daily Values, limit foods high in fat, cholesterol, sodium, and processed carbohydrate (without fiber).

Type of Milk (8 oz)	Calories	Fat(%D V)	Saturated Fat (%DV)	Cholesterol (%DV)
Fat-free(skim)	90			2
Low-fat milk(%1)	105	4	7	3
Whole milk	146	12	23	8
Low-fat Chocolate milk(%1)	158	4	8	3
Soy milk (plain)	132	3	0	0
Chocolate soy milk	140	5	3	0

## 5. 11 Tricks to Avoid Halloween Treats

<http://www.active.com/nutrition/Articles/11-Tricks-to-Avoid-Halloween-Treats.htm?cmp=23-42>

## 6. It's not a theory...

<https://www.facebook.com#!/photo.php?fbid=10151214467487192&set=a.10150344725487192.366471.59453552191&type=1&theater>



10/29 1. Create (participate in) a step competition with classmates, roommates, friends-see who can get the most steps in.



Image retrieved from: [http://www.today.colostate.edu/userfiles/images/students\\_plaza\\_300.jpg](http://www.today.colostate.edu/userfiles/images/students_plaza_300.jpg)

2. Here are the details for step contest.

The contest is among six different residence halls participating in this page.

Start wearing your pedometer and recording your steps for a week until November 6<sup>th</sup>.

I will post a question considering all 6 residence halls. If your average steps are 2000 more than your baseline (the one you sent me for the assessment) then hit your residence halls.

I will then divide the number of people to number of participants in that residence hall to see which residence hall has the highest ratio of participants surpassing their baseline by 2000 steps.

The 2000 extra step is selected given the fact that it helps with weight maintenance.



Image retrieved from: [https://aom3.americaonthemove.org/~media/Store-Images/BuddyPack\\_small.ashx](https://aom3.americaonthemove.org/~media/Store-Images/BuddyPack_small.ashx)

3. Winter is coming...

<https://www.facebook.com/#!/photo.php?fbid=10152233461115534&set=a.306427930533.335114.279999590533&type=1&theater>





10/30 1. Enjoy healthy food treats such as dried fruit, baked pretzels, nut and seeds, single-serve packets of low-fat microwave popcorn, or sugar-free hot chocolate or apple cider packets.



2. Healthy snacks help manage hunger and reduce bingeing.

Eating a healthy snack, a piece of fruit, some raw veggies, fat free popcorn, or trail mix can tame your hunger without ruining your appetite for your next meal.

Pick a healthy snack from the virtual snack machine!

[http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/Virtual-Snack-Machine\\_UCM\\_311410\\_Article.jsp#.TytsmCJv5HA.facebook](http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/Virtual-Snack-Machine_UCM_311410_Article.jsp#.TytsmCJv5HA.facebook)

Image retrieved from:

[http://www.eatright.org/uploadedImages/Programs/Kids\\_Eat\\_Right/Public/Images/teen\\_snacking\\_appetite.jpg](http://www.eatright.org/uploadedImages/Programs/Kids_Eat_Right/Public/Images/teen_snacking_appetite.jpg)

10/31 1. Hit the tennis courts in City Park.



Image retrieved from: <http://grfx.cstv.com/schools/csu/graphics/auto/OutdoorCourts.jpg>

2. Try the Calorie Burn Calculator to check how much calorie you burned doing different physical activity.

Here is the link:

<http://www.healthstatus.com/calculate/cbc>

3. Happy Halloween

[https://www.facebook.com/?ref=tn\\_tnmn#!/photo.php?fbid=10151115607371130&set=a.443444786129.234228.18468761129&type=1&theater](https://www.facebook.com/?ref=tn_tnmn#!/photo.php?fbid=10151115607371130&set=a.443444786129.234228.18468761129&type=1&theater)



11/1 1. Health care costs attributed to a lack of physical activity are \$76 billion annually (Centers for Disease Control and Prevention).

[https://www.facebook.com/?ref=tn\\_tnmn#!/ColostateFIT/posts/372423692845313](https://www.facebook.com/?ref=tn_tnmn#!/ColostateFIT/posts/372423692845313)

2. Omit or use half the amount of butter, margarine, cream on your toast, dinner roll, pancake or waffle.

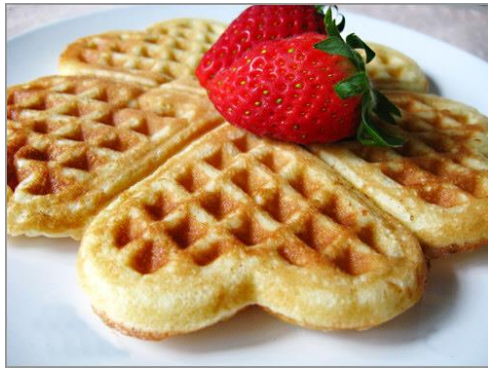


Image retrieved from: <http://xa6.xanga.com/b5df412423233262160246/w208933957.jpg>

3. Regular butter or margarine contains 100 calories per tablespoon.

Cutting them back to half save you up to 50 calories per tablespoon.

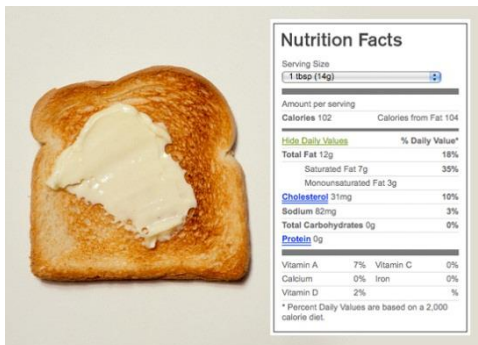



Image retrieved from: <http://www.ameliablack.net/wp-content/uploads/2011/02/nutritional-facts.jpg>

11/2 Go for a half-hour walk instead of watching TV, playing video games, or being on the computer.

**W  
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G**

**20 Benefits Of Walking**

1. Helps with weight management
2. It's accessible to everyone
3. Doesn't require special equipment
4. One of the easiest ways to get more active
5. Reduces symptoms of depression and anxiety
6. It's a low impact exercise
7. Lowers low-density lipoprotein (LDL) cholesterol (the "bad" cholesterol)
8. Raises high-density lipoprotein (HDL) cholesterol (the "good" cholesterol)
9. Lowers blood pressure
10. Reduces the risk of some cancers
11. Helps reduce risk and aids with the management of type 2 diabetes
12. Improves mood
13. Helps maintain strong bones
14. Reduces the risk of heart attack
15. Less likely to lead to injuries
16. Reduces stress
17. Reduces risk of heart disease
18. You don't have to pay for it
19. Builds aerobic fitness
20. Helps maintain lean muscle tissue



MotiveWeight.Blogspot.com

Image retrieved from: <http://1.bp.blogspot.com/-PqGd089Xus/UDhHSbPow3I/AAAAAAAAAGKc/zphFbeFyDhQ/s1600/20+benefits+of+walking.jpg>

2. Twenty-two years and twenty-two pairs of shoes later, this walker has covered the distance around the world's equator!

<http://www.uppermichiganssource.com/news/story.aspx?id=819602#.UJKUQmnuWfE>

3. Benefits of Walking vs. Sitting

<https://www.facebook.com/video/video.php?v=415962227010>

11/5 1. Wearing a pedometer is an easy way to track your steps each day. Start by wearing the pedometer every day for one week. Put it on when you get up in the morning and wear it until bed time. Record your daily steps in a log or notebook. By the end of the week you will know your average daily steps. You might be surprised how many (or how few) steps you get in each day.

2. Enjoy your salad without the croutons, sunflower seeds, bacon bits, or cheese.



Image retrieved from: <http://nutritionistics.files.wordpress.com/2011/07/salad-3614277.jpg>

2. Check nutrition information of different salads by adding different ingredients. Check to see how croutons and cheese make a difference in calorie and fat content.

[http://people.bu.edu/salge/salad/salad\\_bar/salad\\_bar.html](http://people.bu.edu/salge/salad/salad_bar/salad_bar.html)



3. Make different salads and check the nutrition information!  
<http://sweetgreen.com/menu/customize>

11/6 1. You can break up your physical activity into 10-15 minute sessions throughout the day-it's the daily total that matters.



Image retrieved from: <http://wkqsfm.com/wp-content/uploads/2012/02/Exercise-for-30minutes.gif>

2. The 10-Minute Workout, Times Three  
Exercise was helpful in controlling blood pressure, but breaking up the workout into three short sessions was significantly more effective than the single half-hour session. "The fractionized exercise led to lower average 24-hour blood pressure readings,"  
<http://well.blogs.nytimes.com/2012/07/25/the-10-minute-workout-times-three/>

3. Researchers quantify how many years of life are gained by being physically active  
<http://medicalxpress.com/news/2012-11-quantify-years-life-gained-physically.html#jCp>

11/7 1. Today is National Eating Healthy Day! Celebrate today by following healthy eating tips I provide on the page for you!

2. Walk More to Live 7.2 Years Longer  
<http://www.everydayhealth.com/fitness/1106/walk-more-to-live-longer.aspx>

3. You don't have to see the whole staircase, just take the first step!  
<http://pinterest.com/pin/359584351467536414/>



4. Give your plate a healthy makeover. Fill your plate half with vegetables, one quarter with a lean meat and the rest with a starch of your choice.

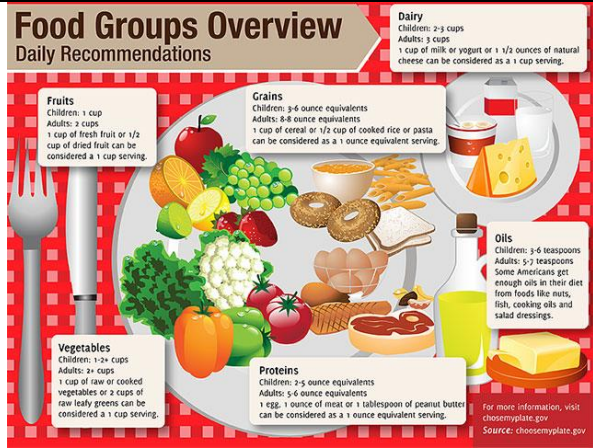


Image retrieved from: [http://4.bp.blogspot.com/-GBmL\\_Z\\_DFts/T-qITZFst8I/AAAAAAAAACrk/5fccU9T\\_mgQ/s1600/11nutritioninfo.jpg](http://4.bp.blogspot.com/-GBmL_Z_DFts/T-qITZFst8I/AAAAAAAAACrk/5fccU9T_mgQ/s1600/11nutritioninfo.jpg)

5. Daily Food Plan

Do you want to know the amount of each food group you need every day? Enter your information below to find out and receive a customized Daily Food Plan.

<http://www.choosemyplate.gov/myplate/index.aspx>

6. A View of the U.S. Obesity Epidemic

<http://directorsblog.nih.gov/a-view-of-the-u-s-obesity-epidemic/>

11/8 1. Are you following...

- All of the tips
- Some of the tips
- Most of the tips
- None of them

2. Walk at the mall and do some window shopping.



Image retrieved from: [http://2.bp.blogspot.com/-LzyJ42hidjE/T-VeRg-cYuI/AAAAAAAAAxw/Ym9K9s1\\_168/s1600/mall+walkers.jpg](http://2.bp.blogspot.com/-LzyJ42hidjE/T-VeRg-cYuI/AAAAAAAAAxw/Ym9K9s1_168/s1600/mall+walkers.jpg)

3. The amount of calories you burn while shopping depends on your body weight and the amount of time spent standing, walking and sitting. In addition, carrying heavy packages can increase calorie expenditure. It all adds up to burning a lot more calories than you would by sitting on a screen. Here are the numbers:

**WEIGHT APPROX CALORIES  
IN POUNDS BURNED PER HOUR**

Lounging on the couch  
100 . . . . . 60

200 .....	120
300 .....	180
Standing in line	
100 .....	120
200 .....	230
300 .....	340
Walking slowly (2 mph)	
100 .....	135
200 .....	275
300 .....	410



Image retrieved from: [http://i.telegraph.co.uk/multimedia/archive/01439/pmallwalk1\\_1439276c.jpg](http://i.telegraph.co.uk/multimedia/archive/01439/pmallwalk1_1439276c.jpg)  
Text retrieved from: <http://www.myfitnesspal.com/topics/show/339974-shopping-calories>

11/9 1. Happy Friday Rams! Keep it classy.



Image retrieved from:  
<https://www.facebook.com/ColostateFIT#!/photo.php?fbid=10151312072930330&set=a.10150146166845330.335595.266694100329&type=1&theater>

2. Happy Friday Rams!

The only way I know how you like the page content is to follow your "like", "comment", "response to questions", "share", "post", "attend events", and interact with this page. Please make sure that you interact with postings as much as you can so I can tailor them based on what you like.

3. Trim all the visible fat from beef or pork and remove the skin from chicken.



Image retrieved from: [http://www.keepitmovingfitness.com/wp-content/uploads/2012/10/getty\\_rm\\_photo\\_of\\_high\\_protein\\_foods.jpg](http://www.keepitmovingfitness.com/wp-content/uploads/2012/10/getty_rm_photo_of_high_protein_foods.jpg)

4. The body uses protein to build and repair tissue as well as to perform other special roles. Protein is mainly found in meats (chicken, fish, pork, turkey, and beef) and meat alternatives such as cheese, eggs, peanut butter, and tofu. Protein foods can contain unhealthy amounts of fat and cholesterol. Fat and cholesterol are linked to heart disease, cancer, and obesity.

Healthy PROTEIN Foods	
Beans & Peas	kidney beans, red beans, black beans, pinto beans, white beans, chickpeas, green peas, soybeans, tofu, and more
Nuts & Seeds	peanuts, almonds, walnuts, sunflower seeds, pecans, pumpkin seeds, cashews, and more
Fish	tuna, salmon, and many other types of fish
Lean Poultry	skinless chicken and turkey
Lean Meat	lean cuts of beef, pork, and lamb
Eggs	whole eggs, egg whites, and egg substitute
Milk	low-fat or non-fat

Text retrieved from: <http://www.clevelandclinic.org/health/health-info/docs/4100/4198.asp>

Image retrieved from: [http://pubs.ext.vt.edu/348/348-672/L\\_IMG\\_HealthyProteinFoods.jpg](http://pubs.ext.vt.edu/348/348-672/L_IMG_HealthyProteinFoods.jpg)

5. Did you know consuming too much sodium can make you look older and bigger? We've identified 6 foods that could lead to these not so flattering looks!

<https://www.facebook.com/ColostateFIT#!/photo.php?fbid=10151128597806139&set=a.254785836138.137632.55701226138&type=1&theater>



11/11 1. To the nearly 800 student veterans here at CSU, along with faculty, staff & alumni, and all of the nation's veterans, current service members, and their families, thank you for your service. Happy Veterans Day.

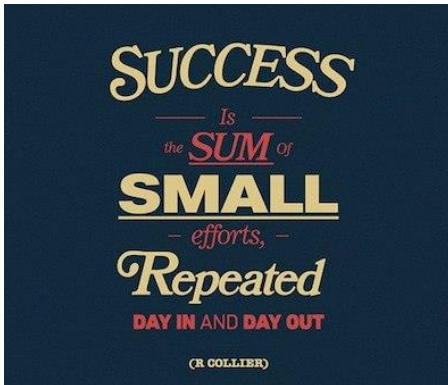
<https://www.facebook.com/ColostateFIT#!/photo.php?fbid=10152255527630615&set=a.143943555614.2>

32959.136298855614&type=1&theater



2. Northern Colorado's Largest Run/Walk Event Benefiting the Food Bank for Larimer County  
<http://timberlinetiming.com/FCThanksgivingDayRun.html>

3. <http://pinterest.com/pin/359584351467542064/>



4. Who is up for ABSolution tomorrow Monday from 4:15-4:45 pm? Courtney and I are going and we can meet whoever wants to join us at 4:10 pm at front desk.

ABSolution is a solution for your ABS which helps to build strength in your back and in your ABS, and help the muscles around your trunk and pelvis to be in better shape!

11/12 1. Drink enough water during exercise!

<http://www.nature.com/ejcn/journal/v66/n11/full/ejcn2012139a.html>

2. Good Monday morning, Rams. Just one week of classes left before fall break





Image retrieved from:

<https://www.facebook.com/ColostateFIT#!/photo.php?fbid=10152258079920615&set=a.143943555614.232959.136298855614&type=1&theater>

3. Wear your pedometer and set weekly goals to increase the number of steps you take.



Image retrieved from: <http://losangelesbootcamp.net/wp-content/uploads/2012/02/best-pedometer-watch.jpg>

4. Ready for some Hip Hop dance tomorrow, Tuesday from 8:15-9:15 PM. If you are interested, meet us at 8:10 PM at front desk (Service Center).

5. A pedometer provides customized feedback about your activity level. It is a strong motivator to keep moving while it helps you track your progress over time.

Set a goal and increase your steps to:

10,000 steps/d for health, 12,000 to 15,000 steps/d for weight loss and increase your speed for aerobic fitness.

You can add 100 steps by adding:

- jumping jacks, sit-ups, push-ups, lunges, jump rope, or just walk around the building or up and down the stairs of the residence halls for the length of a TV commercial break.
- Take out the trash and the recyclables, fix your bed, or vacuum your room.
- Walk down all the aisles in the grocery store.



Image retrieved from: <http://eatingplansforweightloss.info/wp-content/uploads/2012/05/bigstock-Walking-For-A-Healthy-Heart-5975135-300x200.jpg>

Text retrieved from: <http://www.nwgapublichealth.org/wanwga/links/WalkingPacket.pdf>

6. Join other CSU FIT members for fun fitness classes.

Here is the schedule for this week:

Tuesday Hip Hop 8:15-9:15 PM

Wednesday Cardio Interval 4:00- 4:45 PM

Thursday Zumba 4:15-5:15 PM

7. Do you want to get the page update in your wall news feed? Make sure to check Show in News Feed



11/13 1. Keep portion size of cooked rice and pasta to a 1 cup serving, pizza to 1 slice, and bread to 2 slices. Sometimes 1/2 cup, 1/2 slice or 1 slice may be sufficient.



Image retrieved from: <http://nourishinteractive.com/system/assets/free-printables/584/preview-en-large.jpg?1331518025>

## 2. Sea salt vs. Table Salt

[http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/Sea-Salt-Vs-Table-Salt\\_UCM\\_430992\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/Sea-Salt-Vs-Table-Salt_UCM_430992_Article.jsp)

## 3. Eat more healthy carbs and whole grains!

Healthy carbs (good carbs) include whole grains, beans, fruits, and vegetables. Healthy carbs are digested slowly, helping you feel full longer and keeping blood sugar and insulin levels stable. Unhealthy carbs (bad carbs) are foods such as white flour, refined sugar, and white rice that have been stripped of all bran, fiber, and nutrients. Unhealthy carbs digest quickly and cause spikes in blood sugar levels and energy.

Breakfast	Lunch	Snack	Dinner
Cereal made with whole grain	Sandwich made with whole wheat bread	Popcorn	Brown rice with stir-fried vegetables
Whole wheat toast with jam	Whole grain pita stuffed with your favorite fixings	Oatmeal cookie	Whole grain pasta topped with sauce
Oatmeal	Hamburger on a whole grain bun	Whole grain granola bar	Wild rice
Whole grain pancakes or waffles	Soup with barley or brown rice	Stir cereal made with whole grain into yogurt	Whole grain dinner roll

[http://www.lapbandsurgery.com/wp-content/uploads/2012/04/lifestyle\\_meal\\_plan.jpg](http://www.lapbandsurgery.com/wp-content/uploads/2012/04/lifestyle_meal_plan.jpg)

Text retrieved from: [http://www.helpguide.org/life/healthy\\_eating\\_diet.htm](http://www.helpguide.org/life/healthy_eating_diet.htm)

## 4. How often do you see/check CSU FIT Facebook page?

Everyday

4-5 days/ week

2-3 days/week

once a week or less

11/14 1. When making a phone call, stand up and pace around as you talk.



Image retrieved from: <http://www.vablood.org/wp-content/uploads/2012/07/walkwalk1.gif>

2. Walking when you are talking on the phone can help you burn an extra 50 calories depending on how much you talk.





Image retrieved from: [http://www.popwuping.com/assets\\_c/2011/01/phone-walking-head-thumb-575x384.jpg](http://www.popwuping.com/assets_c/2011/01/phone-walking-head-thumb-575x384.jpg)

11/15 1. Select a meatless meal such as portabella mushrooms, beans or humus.



Image retrieved from: [http://bed56888308e93972c04-0dfc23b7b97881dee012a129d9518bae.r34.cf1.rackcdn.com/sites/default/files/vegetarian\\_foods\\_310\\_2.jpg](http://bed56888308e93972c04-0dfc23b7b97881dee012a129d9518bae.r34.cf1.rackcdn.com/sites/default/files/vegetarian_foods_310_2.jpg)

2. A plant-based diet, rich in fruits and vegetables, grains, beans and legumes, and nuts, is high in fiber, vitamins and other nutrients while is low in calories and fat. Vegetarian weigh less, and have a lower risk of heart disease than others.

National Cancer Institute study of 500,000 people found that those who ate 4 ounces (113 grams) of red meat or more daily were 30 percent more likely to have died of any cause during a 10-year period than were those who consumed less. Sausage, luncheon meats and other processed meats also increased the risk. Those who ate mostly poultry or fish had a lower risk of death. Consider going meatless one day a week. Choose lean cuts and avoid oversized portions.



Image retrieved from: [http://sphotos-b.xx.fbcdn.net/hphotos-ash3/s480x480/561481\\_10151074222104003\\_1513812147\\_n.jpg](http://sphotos-b.xx.fbcdn.net/hphotos-ash3/s480x480/561481_10151074222104003_1513812147_n.jpg)

Text retrieved from: <http://www.mayoclinic.com/health/meatless-meals/my00752>

11/16 1. Walk, skate, or cycle more, and drive less.



Image retrieved from: [http://1.bp.blogspot.com/\\_piG2fv-C4Qg/TJIUMIEw3QI/AAAAAAAAAC80/6OFBWav85zQ/s1600/Fat+Lane+Fast+Lane+advert.jpg](http://1.bp.blogspot.com/_piG2fv-C4Qg/TJIUMIEw3QI/AAAAAAAAAC80/6OFBWav85zQ/s1600/Fat+Lane+Fast+Lane+advert.jpg)

## 2. Healthy Family Fun for Thanksgiving

[http://www.dailyspark.com/blog.asp?post=healthy\\_family\\_fun\\_for\\_thanksgiving](http://www.dailyspark.com/blog.asp?post=healthy_family_fun_for_thanksgiving)

### 11/19 1. Your Perfect Thanksgiving Week Workout Plan

[http://www.everydayhealth.com/fitness-pictures/your-perfect-thanksgiving-week-workout-plan.aspx?xid=tw\\_weightloss\\_sf#/slide-1](http://www.everydayhealth.com/fitness-pictures/your-perfect-thanksgiving-week-workout-plan.aspx?xid=tw_weightloss_sf#/slide-1)

### 2. 5 Ways to Beat the Holiday Weight Gain

<http://nutritionexpert.com/blog/2012/11/5-ways-to-beat-the-holiday-weight-gain/>

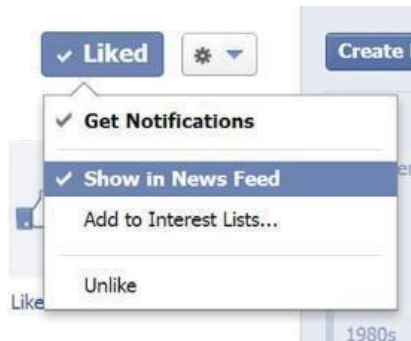
### 3. Turkey Talk from Nutrition Specialists on Healthy Thanksgiving Day Bird

<http://www.emaxhealth.com/1506/turkey-talk-nutrition-specialists-healthy-thanksgiving-day-bird#.UKJq4Ruz7Yk.twitter>

### 4. Keep holiday meals heart-healthy with these Simple Cooking tips:

[http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/HealthyCooking/Simple-Cooking-with-Heart-Home-Page\\_UCM\\_430043\\_SubHomePage.jsp](http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/HealthyCooking/Simple-Cooking-with-Heart-Home-Page_UCM_430043_SubHomePage.jsp)

5. Do you want to continue getting CSU FIT updates? Make sure you've selected to show our updates in your newsfeed, and if you're interested, receive notifications -- thanks!



6. Choose angel food cake over other dessert options. Angel food cake is a tasty lower fat cake choice.



Image retrieved from: <http://www.williams-sonoma.com/wsimgs/rk/images/rcp-images/Recipe/AngelCake.jpg>

### 7. Check and see how many sugar is in your sweets:

<http://www.sugarstacks.com/desserts.htm>

### 8. 9 Thanksgiving Nutrition Myths, Busted

[http://www.huffingtonpost.com/2012/11/19/thanksgiving-nutrition\\_n\\_2147767.html?utm\\_hp\\_ref=healthy-living&ncid=edlinkusaolp00000009](http://www.huffingtonpost.com/2012/11/19/thanksgiving-nutrition_n_2147767.html?utm_hp_ref=healthy-living&ncid=edlinkusaolp00000009)

11/20 1. Marching Minutes - every 30 minutes get up from your desk or easy chair as you study or watch television and do 1-5 minutes of walking in place and stretching your arms, shoulders and neck.

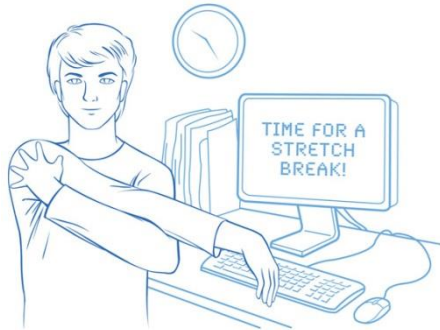


Image retrieved from: [http://wendyding.com/secretary/files/projects/info-graphics--maps/webdesigner\\_stretch2.jpg](http://wendyding.com/secretary/files/projects/info-graphics--maps/webdesigner_stretch2.jpg)

2. 6 reasons sitting is bad for health:

[http://www.huffingtonpost.com/2012/01/13/sitting\\_n\\_1202800.html#slide=608680](http://www.huffingtonpost.com/2012/01/13/sitting_n_1202800.html#slide=608680)

3. Deskerise! 33 Ways to Exercise at your desk

<http://greatist.com/fitness/deskercise-exercise-work/>

4. Better Thanksgiving Portion Control: How Much Should You Really Eat On Turkey Day?



11/21 1. If you're full, save dessert for later.



Image retrieved from: [http://media-cache-lt0.pinterest.com/upload/248049891946578936\\_nrufYSM4\\_b.jpg](http://media-cache-lt0.pinterest.com/upload/248049891946578936_nrufYSM4_b.jpg)

2. Save sweets and desserts for special occasions so you don't miss out on the more nutritious foods your body needs. To satisfy a sweet craving, try eating a piece of fresh fruit or fruit salad. When you *do* decide to include a treat in your meal plan, make sure you keep portions small.



Image retrieved from: <http://cravingideas.blogs.com/photos/uncategorized/2008/05/18/fruitkabob1.jpg>  
Text retrieved from: <http://www.diabetes.org/food-and-fitness/food/what-can-i-eat/sweeteners-and-desserts.html>

3. Healthy Wild Rice Stuffing! Yummmmmmmmmmm

<http://www.mayoclinic.com/health/wild-rice-stuffing/RE00166>

4. Searching for something to be thankful? Just look down at your two feet! Walking is a gift.

<https://www.facebook.com/everybodywalk/posts/437724122955057>

11/22 1. Stuff a pita pocket with more fresh vegetables, less meat, and less cheese



[http://farm2.static.flickr.com/1027/1149754184\\_71adaf9946.jpg](http://farm2.static.flickr.com/1027/1149754184_71adaf9946.jpg)

2. Going meatless not only may reduce your risk of chronic preventable conditions like cancer, cardiovascular disease, diabetes and obesity but it can also help reduce your carbon footprint and save precious resources like fresh water and fossil fuel. Your food choice can affect the global warming.

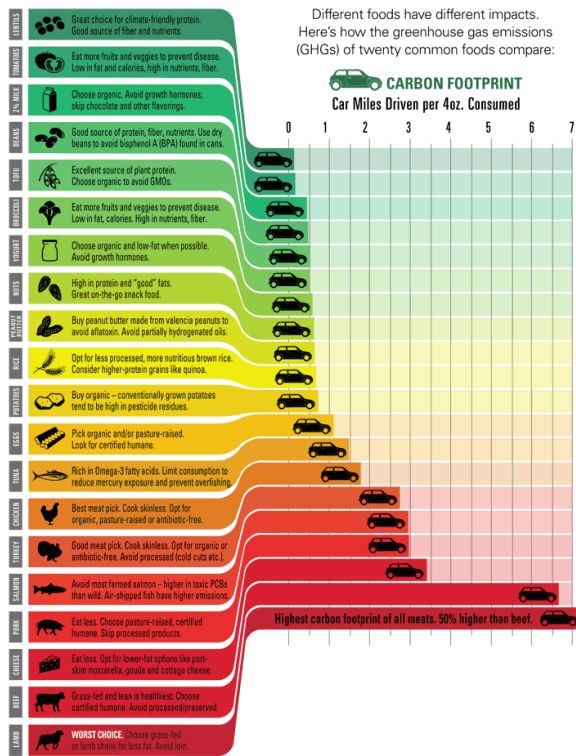


Image retrieved from: [http://api.ning.com/files/xUCP\\*w4Me-xssqOX8CS6gZ0sIS46xGcm76xzDx7fxru e6UrX20IGtJSR7QV75YM3Z6X6Xs4eQwKxMDsTEy\\*9ig\\_/eatsmart\\_twenty.gif](http://api.ning.com/files/xUCP*w4Me-xssqOX8CS6gZ0sIS46xGcm76xzDx7fxru e6UrX20IGtJSR7QV75YM3Z6X6Xs4eQwKxMDsTEy*9ig_/eatsmart_twenty.gif)

### 3. The Turkey-Tryptophan Myth

<http://www.psychologytoday.com/blog/prefrontal-nudity/201111/the-turkey-tryptophan-myth>

11/23 1. Hide the TV remote and walk to the TV to change channels.



© Philips



2. Southwestern Corn Hash

<http://www.hsph.harvard.edu/nutritionsource/recipes/southwestern-corn-hash/index.html>

3. 10 ways to exercise while watching TV

<http://www.fitwatch.com/weight-loss/10-ways-to-exercise-while-watching-tv-579.html>

11/26 1. Welcome back Rams! Have a great Monday!

2. Please join CSU FIT for this week group fitness class!

Here is the schedule for 11/26-11/30 week:

Monday 11/26 Basic Step 6:15-7:00 PM

Tuesday 11/27 Zumba 6:30- 7:15 PM

Wednesday 11/28 Hoop- La-Fit 7:30-8:15 PM

Thursday 11/29 Zumba 4:15-5:15 PM

Friday 11/30 ABSolution 3:30-4:00 PM

3. Build a snowman or have a snowball fight.



4. Say hello to snow!

Activity	Calories Burned
Building a Snowman	285 calories burned per hour
Having a Snowball Fight	319 calories burned per hour
Making Snow Angels	214 calories burned per hour



Image retrieved from: <http://www.ata-wa.org.au/wp-content/uploads/2008/03/snow-fight-in-hobart.jpg>  
<http://www.fitsugar.com/Calories-Burned-Building-Snowman-Making-Snow-Angel-Having-Snow-Ball->

Fight-878946

5. There are plenty of ways to stay active this holiday season. Find what works for you!

<https://www.facebook.com/ColostateFIT#!/photo.php?fbid=10151510506227802&set=a.10150531405377802.461873.40442177801&type=1&theater>



11/27 1. Enjoy seasonal fresh fruit for dessert instead of cake, pudding, or pie



Image is retrieved from: <http://mandyblossraw.com/wp-content/uploads/2012/10/Fresh-Fruit11-Copy.jpg>

2.

*Tips From The Cancer Project: The more naturally colorful your meal is, the more likely it is to have an abundance of cancer-fighting nutrients. Pigments that give fruits and vegetables their bright colors represent a variety of protective compounds. The chart below shows the cancer-fighting and immune-boosting power of different-hued foods.*

Colors	Foods	Colorful Protective Substances and Possible Actions
Red	Tomatoes and tomato products, watermelon, guava	Lycopene: antioxidant; cuts prostate cancer risk
Orange	Carrots, yams, sweet potatoes, mango, pumpkins	Beta-carotene: supports immune system; powerful antioxidant
Yellow-orange	Oranges, lemons, grapefruits, papayas, peaches	Vitamin C; flavonoids: inhibit tumor cell growth; detoxify harmful substances
Green	Spinach, kale, collards, and other greens	Folate: builds healthy cells and genetic material
Green-white	Broccoli, Brussels sprouts, cabbage, cauliflower	Indoles, lutein: eliminate excess estrogen and carcinogens
White-green	Garlic, onions, chives, asparagus	Alliyl sulfides: destroy cancer cells; promote cell division; support immune systems
Blue	Blueberries, purple grapes, plums	Anthocyanins: destroy free radicals
Red-purple	Grapes, berries, plums	Resveratrol: may decrease estrogen production
Brown	Whole grains, legumes	Fiber: carcinogen removal

Image retrieved from: <http://www.cancerproject.org/resources/pdfs/2009RainbowPoster.pdf>

11/28 1. Form a residence hall walking group and meet to walk together in the morning, noon, or after

class.



Image retrieved from: <http://admissions.colostate.edu/Data/Sites/1/img/xquickfacts.jpg>

2. Benefits of having a partner for workout:

1. It can motivate you to work out simply because you know someone is counting on you.
2. Exercising with a fitness partner is also a great way to socialize and time goes by faster
3. A fitness partner makes it less intimidating to join a gym, try a new class, or learn a new sport.
4. It's safer to workout with someone, your partner can help if you need it.



Image retrieved from: <http://www.physicaltherapyandfitness.com/wp-content/uploads/2012/05/spinning.jpg>

Text retrieved from: <http://www.beliefnet.com/healthandhealing/getcontent.aspx?cid=44050>

11/29 1. Season steamed veggies with fresh lemon and herbs instead of salt.



Image retrieved from: <http://www.delish.com/cm/delish/images/grilled%20veg%20400-98628226.jpg>

2. Wanna join me for Zumba and ABSolution today and tomorrow?

Here are the schedule:

Thursday 11/29 Zumba 4:15-5:15 PM

Friday 11/30 ABSolution 3:30-4:00 PM

Meet me at Service Center/Check-in desk 5 minutes before the class starts!

3. The American Heart Association **recommends** foods with little or no salt to reduce the risk of cardiovascular diseases. Aim to eat less than 1,500 mg of sodium per day. Sodium is an acquired taste and



as you take steps to reduce sodium, you'll actually start to appreciate foods for their true flavor. In time, you'll look forward to how food really tastes – not just the salty flavor.



Image retrieved from: <http://www.daveywaveyfitness.com/wp-content/uploads/2012/10/EatLessSalt.jpg>

Text retrieved from: <http://www.diabetes.org/food-and-fitness/food/what-can-i-eat/be-sodium-savvy.html?loc=CuttingBackOnSodium>

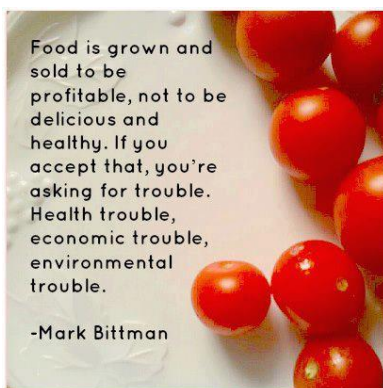
11/30 1. When walking, pick up the pace from leisurely to brisk and choose a hilly route.



Image retrieved from: <http://walkoverstates.files.wordpress.com/2010/07/100612-mound-city-to-fairfax-009.jpg>

2. Some Hollywood stars have a question for the food industry...

<http://bit.ly/Tw5zB8>



3. The faster you walk, the more calories you burn. The slow pace of the tortoise is better in the beginning than the riot race of the hare. As you get used to and comfortable with the 2.5 mph pace, you can increase the speed gradually to improve the caloric burn. Whether on a treadmill or walking outside, add variations to your path such as inclines or hills. Walking uphill increases the resistance and makes your muscles work harder. The harder your muscles work, the more calories burned.



Image retrieved from: [http://photos2.demandstudios.com/DM-Resize/photos.demandstudios.com/getty/article/41/181/89687603\\_XS.jpg?h=10000&w=258&keep\\_ratio=1](http://photos2.demandstudios.com/DM-Resize/photos.demandstudios.com/getty/article/41/181/89687603_XS.jpg?h=10000&w=258&keep_ratio=1)

Text retrieved from: <http://fitness.families.com/blog/turn-up-the-heat-10-tips-to-maximize-the-calorie-burn-while-walking>

#### 4. Hello CSU FIT Members!

Please let me know if you have any preference on Fitness classes timing or type for next week, so I can consider them in the schedule. It is fun and I invite all of you to come!

12/3 1. Please join other CSU FIT members at Rec center for:

Monday 12/3 Basic Step 6:15-7:00 PM

Tuesday 12/4 TNT Kickboxing 5:15-6:15 PM

Wednesday 12/5 Hoop-La-Fit 7:30-8:15 PM

Thursday 12/6 Zumba 4:15-5:15 PM

Friday 12/7 ABSolution 3:30-4:00 PM

Meet us 5 minutes ahead of time at the Front Desk (Service Center).

2. Here is a testimonial from one of the active members of CSU FIT:

"I have been going to the planned classes at the gym for two weeks now and I definitely see a difference in my body. I had always been a person who just does cardio, so actually mixing it up led to the first real noticeable change in my body. Exercises are so much more productive when you are following a professional. Coming to these classes also works better than exercising by yourself because the other people that you come with can help motivate you to push yourself. It keeps you active and really helps to distress during the weekday. I highly suggest adding these classes to your everyday schedule to stay energized and fit."

3. Exercise tip: Try the buddy system! Get family and friends to join you when you work out. You're more likely to stick with it if you have company!

<https://www.facebook.com/ColostateFIT#!/photo.php?fbid=10151155277046139&set=a.254785836138.137632.55701226138&type=1&theater>



4. Are You Exercising for the Right Reasons? <http://health.usnews.com/health-news/blogs/eat-run/2012/11/30/are-you-exercising-for-the-right-reasons>

5. Leave three or four bites on your plate.



Image retrieved from: [http://4.bp.blogspot.com/-lnHeuxy5qBs/Tzv9v9o1E1I/AAAAAAAAD7s/a2m7RbvLhns/s1600/DSC\\_4312.JPG](http://4.bp.blogspot.com/-lnHeuxy5qBs/Tzv9v9o1E1I/AAAAAAAAD7s/a2m7RbvLhns/s1600/DSC_4312.JPG)

6. Leaving a few bites on your plate can take away 100 calories from your meal.



Image retrieved from: <http://l.yimg.com/bt/api/res/1.2/G91CeoCxSvGvewS5NRn1RA--/YXBwaWQ9eW51d3M7Y2g9NzY4O2NyPTE7Y3c9MTAyNDtkeD0wO2R5PTA7Zmk9dWxjcm9wO2g9NDcyO3E9ODU7dz02MzA-/http://media.zenfs.com/en-US/blogs/partner/2352140.0>

7. the more they burn the better they learn

An infographic with a yellow header and a blue body. The header contains the text "THE MORE THEY BURN THE BETTER THEY LEARN" in bold, black, sans-serif font. Below the header, there is a visual equation: a stick figure icon + a stopwatch icon with "60 MIN" inside + a bicycle icon + a person running icon = a report card icon. Below this equation, there are four columns: "YOUR CHILD", "AMOUNT OF ACTIVITY", "VARIOUS ACTIVITIES", and "ACADEMIC ACHIEVEMENT". At the bottom, there is a section titled "Did you know that kids who are physically active get better grades?" followed by two paragraphs of text explaining the benefits of physical activity for academic performance.

Image retrieved from: <http://makinghealthasier.org/burntolearn>

12/4 1. Such a cute idea



Image retrieved from:

<https://www.facebook.com/ColostateFIT#!/photo.php?fbid=467192969992892&set=a.416533708392152.92902.414357165276473&type=1&theater>

2. Finals Week: I'm Stressing Out!

<http://blog.heart.org/finals-week-im-stressing-out/>

3. Clean your room regularly.



Image retrieved from: <http://gabrielaszewcow.files.wordpress.com/2010/08/vacccum.jpg?w=199&h=300>

4. 15 minutes

Carpet sweeping, sweeping floors 39 kcal

Washing Car 34 kcal

dusting, straightening up, changing linen, carrying out trash 26 kcal

Vacuuming 43 kcal

Washing dishes and cleaning them from table 26 kcal

Cooking or preparation of food with some walking 26 kcal

carrying groceries upstairs 111 kcal

Food shopping 22 kcal

Making the bed 17 kcal



Image retrieved from: [http://inmenlo.com/wp-content/uploads/2012/07/Jack-and-Christian\\_JustPark.jpg](http://inmenlo.com/wp-content/uploads/2012/07/Jack-and-Christian_JustPark.jpg)

Text retrieved from: <http://calorielab.com/burned/?mo=se&gr=05&ti=Home+activities&wt=150&un=lb&kg=68>

5. Please join other CSU FIT members at Rec center for:  
Wednesday 12/5 Hoop-La-Fit 7:30-8:15 PM  
Thursday 12/6 Zumba 4:15-5:15 PM  
Friday 12/7 ABSolution 3:30-4:00 PM  
Meet us 5 minutes ahead of time at the Front Desk (Service Center).  
There were 4 of us today. We are looking to have more of you join tomorrow!

12/5 1. Walk to your place of worship instead of driving.



Image retrieved from: <http://2.bp.blogspot.com/-Di6Zz3gnRII/TtE7ddIFDLI/AAAAAAAAAfs/EfUfp84ZAc8/s1600/martin%2Bsheen.jpg>

2. Does walking for transportation pay off? And how! A study of 12,000 adults found that people who live in cities have a lower risk of being overweight and obese than people who live in the suburbs. In Atlanta, for example, 45% of suburban men were overweight and 23% were obese; among urbanites, however, only 37% were overweight and 13% obese. The explanation: driving vs. walking.





Image retrieved from: [http://4.bp.blogspot.com/-1CNMNpdNPLU/UGYf1myA5PI/AAAAAAAAA4w/9Fzt4PZawFQ/s1600/374338708\\_4a16477756\\_z+\(1\).jpg](http://4.bp.blogspot.com/-1CNMNpdNPLU/UGYf1myA5PI/AAAAAAAAA4w/9Fzt4PZawFQ/s1600/374338708_4a16477756_z+(1).jpg)

Text retrieved from:

[http://www.health.harvard.edu/newsletters/Harvard\\_Mens\\_Health\\_Watch/2009/August/Walking-Your-steps-to-health](http://www.health.harvard.edu/newsletters/Harvard_Mens_Health_Watch/2009/August/Walking-Your-steps-to-health)

### 3.How Music Can Enhance Your Workout

<http://www.active.com/fitness/Articles/How-Music-Can-Enhance-Your-Workout.htm?cmp=17-7-3675>

### 12/6 1. Season's greeting Rams!

<http://www.youtube.com/watch?v=RmJjYcv9cOk&feature=youtu.be>

2. Your body is the baggage you must carry through life. The more excess the baggage, the shorter the trip. -Arnold H. Glasgow

<https://www.facebook.com/ColostateFIT#!/ColostateFIT/posts/209704649164866>

3.Quote of the Day: “Everywhere is walking distance if you have the time.” – Steven Wright

<https://www.facebook.com/ColostateFIT#!/ColostateFIT/posts/396477657103094>

4.Eat slowly to make your meal last longer to reduce your urge for second helpings.

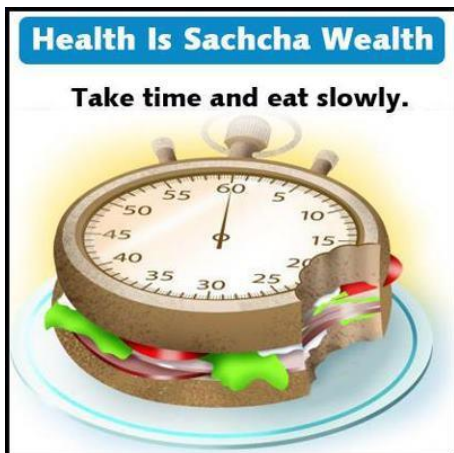


Image retrieved from: [http://sphotos-a.xx.fbcdn.net/hphotos-ash4/c0.0.403.403/p403x403/319001\\_546703015357638\\_1803411086\\_n.jpg](http://sphotos-a.xx.fbcdn.net/hphotos-ash4/c0.0.403.403/p403x403/319001_546703015357638_1803411086_n.jpg)

5. By eating too quickly, people may not give the intricate hormonal cross-talk system enough time to signal fullness.

<http://www.health.harvard.edu/blog/why-eating-slowly-may-help-you-feel-full-faster-20101019605>



<http://www.livinghealthymom.com/wp-content/uploads/2011/06/eat-slowly.jpg>

12/7 1. Surgeon General Announces Call to Action on Walking

<http://www.everybodywalk.org/read/1015-surgeon-general-announces-call-to-action-on-walking.html>

2. Stretch before bed to give you more energy when you wake.



Image retrieved from:

[http://img.webmd.com/dtmcms/live/webmd/consumer\\_assets/site\\_images/articles/health\\_tools/rls\\_remedies\\_slideshow/getty\\_rf\\_photo\\_of\\_man\\_stretching\\_calf.jpg](http://img.webmd.com/dtmcms/live/webmd/consumer_assets/site_images/articles/health_tools/rls_remedies_slideshow/getty_rf_photo_of_man_stretching_calf.jpg)

3. Bedroom Workouts

<http://nanoworkout.com/category/bedroom-workouts/>

4. Chime in: What do you listen to while you walk?

<https://www.facebook.com/ColostateFIT/posts/134510963369522>

12/10 1. Tomorrow is Move It Monday! How are you going to jump start your week?

<https://www.facebook.com/ColostateFIT#!/photo.php?fbid=390414384375225&set=a.343708129045851.82089.334999079916756&type=1&theater>



2. Come de-stress for some fun fitness at rec center!

Monday 12/10 Ride 45 12-12:45 PM

Tuesday 12/11 ABSolution 2-2:30 PM

Wednesday 12/12 Zumba 12-12:45 PM

Thursday 12/13 Chiseled Express 7:15-7:45 PM

Friday 12/14 Ride 45 12-12:45 PM

Meet CSU FIT members at Service Center 5 minutes before the program starts!

3. Dress salads with reduced-fat or fat-free dressings, lemon juice, or vinegar.



Image retrieved from: <http://livingwellatuhn.files.wordpress.com/2012/10/lemons-limes.jpg>

#### 4. Calorie and Fat Content in Dressings

Calorie and Fat Content in Dressings			
Calorie charts and fat tables with calorific values of salad dressing			
Please note: all calorie values are approximate.			
Dressings	Amount	Fat	Calories
Blue Cheese Dressing	2 tbsp	16g	149
Cocktail Sauce	2 tbsp	0	35
Dijon Dressing	2 tbsp	17g	150
Fat-free Dressing	2 tbsp	0	5
French Dressing	2 tbsp	20g	185
Garlic Dressing	2 tbsp	18g	155
Guacamole Dressing	2 tbsp	11g	105
Italian Dressing	2 tbsp	14g	145
Mayonnaise	2 tbsp	24g	220
Oil & Vinegar Dressing	2 tbsp	14g	140
Peanut Butter Dressing	2 tbsp	21g	200
Pesto Dressing	2 tbsp	14g	140
Ranch Style Dressing	2 tbsp	16g	160



Roqufort Dressing	2 tbsp	12g	120
Sesame Dressing	2 tbsp	16g	180
Sun-dried Tomato Vinaigrette	2 tbsp	3g	75
Tartar Sauce	2 tbsp	18g	185
Thousand Island Dressing	2 tbsp	18g	180
Vinaigrette	2 tbsp	18g	180
Yogurt Dressing	2 tbsp	2g	35
<p>Calorie and Fat Content in Dressings          Calorie charts and fat tables with calorific values of salad dressing          Please note: all calorie values are approximate.</p>			

Image retrieved from: [http://recipes.albertarose.org/calorie\\_charts/dressings\\_chart.htm](http://recipes.albertarose.org/calorie_charts/dressings_chart.htm)

5. Good Luck with your finals!

12/11 1. Holiday Healthy Eating Guide

<http://www.startwalkingnow.org/documents/HolidayHealthyEatingGuide9-19-2011.pdf>

2. Don't take the people-mover walkways at the airport – if time permits!



Image retrieved from:

[http://www.fastcodesign.com/multisite\\_files/codesign/imagecache/960/article\\_feature/Suitcase-Musical-Floor-lead.jpg](http://www.fastcodesign.com/multisite_files/codesign/imagecache/960/article_feature/Suitcase-Musical-Floor-lead.jpg)

3. Stay Active “On the Road”

Airport layovers can be a perfect time for physical activity. Here are some simple ways to move at the airport:

Take a 10-minute walk around the airport.

Walk and window shop.

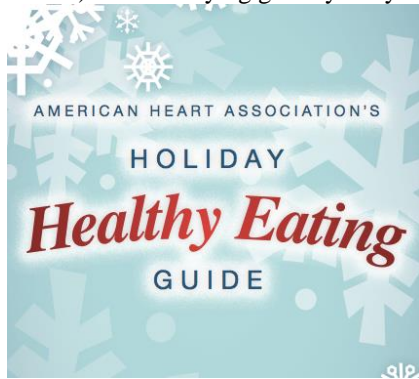
Take the stairs instead of the escalator.

Walk while looking for healthy food choices.

For longer layovers, some airports now have physical activity facilities that offer a day pass. For information on “airport gyms,” visit: [www.airportgyms.com/gyms/usa.html](http://www.airportgyms.com/gyms/usa.html)

4. Don't let the holidays derail your heart-healthy diet. Check out our guide on how to survive (and

thrive!) without saying goodbye to your festive favorites. <http://bit.ly/RyXhpA>



12/12 1. If portion sizes are large, share it with a friend.



Image retrieved from: <http://www.flickr.com/photos/choosehealthla/8052208522/>

2. Choose less Weigh Less photostream

<http://www.flickr.com/photos/choosehealthla/8052208264/in/photostream/>

12/13 1. If you are driving back home, take a short walk around the rest area.



Image retrieved from:

[http://2.bp.blogspot.com/\\_Dan11NiI7Vs/SAGrUSgIRLI/AAAAAAAAAto/7\\_V043pbuZM/s320/lakehead%2B\(1\).jpg](http://2.bp.blogspot.com/_Dan11NiI7Vs/SAGrUSgIRLI/AAAAAAAAAto/7_V043pbuZM/s320/lakehead%2B(1).jpg)

2. Staying physically active while away can:

- Give you more energy
- Help control your weight
- Help you handle stress
- Help you sleep better
- Help you maintain a positive mood



Image retrieved from: <http://4.bp.blogspot.com/-YI07PYgQ-fl/Tn50DsiHY6I/AAAAAAAAAFg/kKUpKFPieL8/s1600/Healthy+Life+road+sign.jpg>  
Text retrieved from: <http://www.dhhs.nh.gov/dphs/nhp/adults/documents/activeroad.pdf>

12/14 1. Make substitutions – have green salad instead of fries



Image retrieved from: [http://www.neurosciencemarketing.com/blog/wp-content/photos/Fries\\_or\\_Salad.jpg](http://www.neurosciencemarketing.com/blog/wp-content/photos/Fries_or_Salad.jpg)

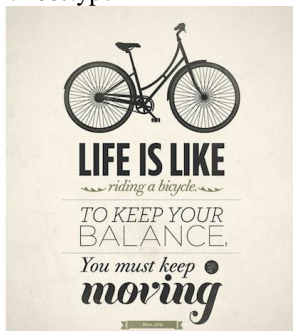
2. Tips for Making Healthier Fast Food Choices  
[http://www.helpguide.org/life/fast\\_food\\_nutrition.htm](http://www.helpguide.org/life/fast_food_nutrition.htm)

3. The Retro Run 5K

<http://www.youtube.com/watch?v=IlpbgP6CfSY&feature=youtu.be>

4.

<https://www.facebook.com/photo.php?fbid=10151593155219741&set=a.110425509740.117446.52436029740&type=1>



5. Stuffing mixes are holiday classics. Make your own colorful and heart-healthy version by mixing in dried cranberries, raisins and apricots instead of meat! What heart-healthy holiday meal will you make?

<https://www.facebook.com/ColostateFIT/posts/374243342662974>

6. Tomorrow is Move It Monday! What are your fitness goals for this week?

<https://www.facebook.com/photo.php?fbid=393159530767377&set=a.343708129045851.82089.334999079916756&type=1>

## Take your body for a ride.



**MOVE IT  
MONDAY!**  
Jump start your week!

7. Obesity: The little things

<http://www.youtube.com/watch?v=D--AtATgfyM&feature=youtu.be>

8. Healthy Fast Food

[http://www.helpguide.org/life/fast\\_food\\_nutrition.htm](http://www.helpguide.org/life/fast_food_nutrition.htm)

9. Lose Weight Over the Holidays!

[http://www.sparkpeople.com/resource/nutrition\\_articles.asp?id=1241](http://www.sparkpeople.com/resource/nutrition_articles.asp?id=1241)

12/17 1. Take the long route when browsing at a mall—don't visit the stores sequentially



Image retrieved from: <http://2c2f06a14a9ade4267e6-fb8aac3b3bf42afe824f73b606f0aa4c.r92.cf1.rackcdn.com/propertyimages/1229/the-mall-at-tuttle-crossing-01.jpg>

2. Mall Walkers

<http://www.youtube.com/watch?v=4ZHRYLg11Js>

3. 7 BEST CHRISTMAS LIGHT SHOWS EVER!! WOW!!!

<http://www.youtube.com/watch?v=2ZH0eZ9KT1U>

4. Not only are legumes a tasty, affordable entrée, they also pack a healthy punch of protein, fiber and other key nutrients.

This Monday try some new flavors with the help of beans, like Marcus Samuelsson's traditional Moroccan recipe for Cauliflower and Chickpea Stew: <http://bit.ly/TWayLi>



5. Swimming In A Watery Wonderland

<https://www.facebook.com/media/set/?set=a.489952117722777.149770.177986985585960&type=1>

6. This week's Move It Monday tip is Dare to Walk Alone:

While the buddy systems works for some, others are more comfortable going at activity alone. Solo time at the gym, during yoga or while walking may be a great way to clear your mind, release stress and get the most from your workout.

Think about your workout sociability this week. Are you cut out to go solo or do you prefer a fitness friend? Perhaps you would enjoy a bit of both!

<https://www.facebook.com/ColostateFIT/posts/434190189969303>

12/18 1. Avoid food portions larger than your fist.

**Protein  
Portion**



**Carbohydrate  
Portion**



**Vegetable  
Portion**



Image retrieved from: <http://lifestyletransformationsystem.com/wp-content/uploads/2012/10/Portion-sizes-hands.jpg>

**The secret to serving size is in your hand.**



**A fist or cupped hand = 1 cup**

1 cup = 1½-2 servings of fruit juice  
1 oz. of cold cereal  
2 oz. of cooked cereal, rice or pasta  
8 oz. of milk or yogurt



**Palm = 3 oz. of meat**

Choose lean poultry, fish, shellfish and beef. One palm size portion equals 3 oz. for an adult and 1½-2 oz. for a child under 5.

**A thumb = 1 oz. of cheese**

Consuming low-fat cheese helps you meet the required servings from the milk, yogurt and cheese group. 1½ oz. of low-fat cheese counts as 8 oz. of milk or yogurt.



**Thumb tip = 1 teaspoon**

Keep high-fat foods, such as peanut butter and mayonnaise, at a minimum. One teaspoon is equal to the end of your thumb, from the knuckle up. Three teaspoons equals 1 tablespoon.



**Handful = 1-2 oz. of snack food**

Snacking can add up. Remember, 1 handful equals 1 oz. of nuts and small cookies. For chips and pretzels, 2 handfuls equal 1 oz.



**1 tennis ball = ½ cup of fruit and vegetables**

Healthy diets include a variety of colorful fruits and vegetables every day.

Because hand sizes vary, compare your fist size to an actual measuring cup.

from WIC Program - Iowa Department of Public Health - 2007  
Adapted from North Carolina Nutrition Network

Image retrieved from: <http://img.docstoccdn.com/thumb/orig/14604751.pngv>

12/19 1. Drink lots of water.

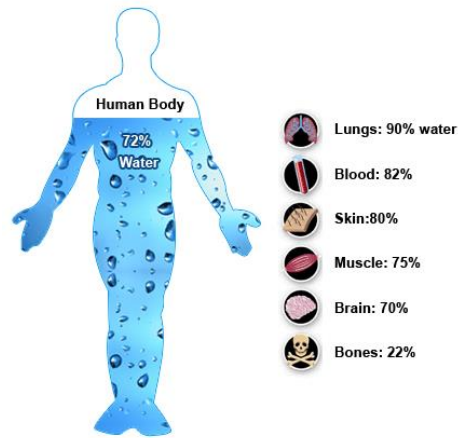


Image retrieved from: <http://www.livpurewater.com/images/human-body-water-composition.jpg>

**Your Liquid Assets**

Water keeps your energy up, weight down, muscles strong, joints supple, digestive system smooth—your whole system in physical balance.

- REGULATES BODY TEMPERATURE
- MAKES UP 83% OF BLOOD
- REMOVES WASTE
- COMPOSES 75% OF BRAIN
- HELPS CARRY NUTRIENTS AND OXYGEN TO CELLS
- MOISTENS OXYGEN FOR BREATHING
- HELPS CONVERT FOOD INTO ENERGY
- PROTECTS AND CUSHIONS VITAL ORGANS
- HELPS BODY ABSORB NUTRIENTS
- ACCOUNTS FOR 22% OF BONES
- CUSHIONS JOINTS
- MAKES UP 75% OF MUSCLES

**Water and Cancer**  
Drinking 1 1/2 glasses of fluid a day... The study... found that...  
**Water and Workouts**  
Muscle is made of water...  
—Shari Sims

Image retrieved from: [http://www.thewaterq.com/wnews1/images/stories/maxqcontent/health/how\\_much\\_water\\_11.jpg](http://www.thewaterq.com/wnews1/images/stories/maxqcontent/health/how_much_water_11.jpg)

3. Mid-Week Challenge: Take an evening walk with a friend!  
<https://www.facebook.com/photo.php?fbid=449493538444782&set=a.200505693343569.49929.136503939743745&type=1>



4. Snow!  
<https://www.facebook.com/photo.php?fbid=10152350043840615&set=a.143943555614.232959.136298855614&type=1>





12/20 1. Don't skip a meal if you know you are going out to eat later. You will be hungrier and less likely to make wise decisions.



Image retrieved from: <http://tips.diabeticlivingonline.com/files/2012/08/dont-skip-meals.jpg>

2.



Image retrieved from: <http://maxfitnessadvice.com/wp-content/uploads/2010/06/Skipping-Meals2.jpg>

12/21 1. Avoid elevators and escalators—take the stairs instead.

## Your health. Your choice.



Image retrieved from: <http://3.bp.blogspot.com/-dJ7iDDHreWE/UCKivr-mcSI/AAAAAAAAAJ8/46lMBzaRIak/s1600/sitting-disease-stairs.gif>

2. Walking up stairs provides numerous health benefits, including cardiovascular exercise which helps condition your heart muscle. Walking up stairs also burns a significant amount of calories, which will help you to lose weight. Stair climbing also provides an alternative to other forms of cardiovascular exercises; this allows you to effectively cross train and avoid potential overuse injuries.



Text retrieved from: Image retrieved from: <http://www.livestrong.com/article/433171-what-are-the-health-benefits-of-walking-up-stairs/#ixzz2DeND63mn>

Image retrieved from: <http://www.coachwithjeremy.com/blog/wp-content/uploads/2009/10/take-the-stairs.jpg>

3. Stairway to health: Calorie Counter  
<http://stairway.phac-aspc.gc.ca/calcalc.aro>

4. Merry Xmas  
<https://www.facebook.com/photo.php?fbid=578145928878075&set=a.459039804122022.123727.459010947458241&type=1>





5. Happy Holiday Rams!

Wool comes in handy during the winter for CAM the Ram!

<https://www.facebook.com/photo.php?fbid=10151177499771769&set=a.208662221768.127125.41596326768&type=1>



6. Go for a different kind of a Christmas tree this year

...<https://www.facebook.com/photo.php?fbid=577521192273882&set=a.459039804122022.123727.459010947458241&type=1>



12/24 1. Make just one trip to the party buffet.



Image retrieved from:

[http://www.tmcasino.com/uploadedImages/Public/General\\_Information/Dining/hungryman.jpg](http://www.tmcasino.com/uploadedImages/Public/General_Information/Dining/hungryman.jpg)

2. To help you eat less when eating out, order from the menu instead of heading for the all-you-can-eat buffet. Many people overeat at buffets. Getting a plate of food, instead of unlimited access to food, may help you eat less. Don't forget that you don't have to clean your plate!



Image retrieved from:

<http://thumbs.ifoed.tv/files/images/editor/images/Christmas%20dinner%20recipes.jpg>

Text Retrieved from: <http://www.choosemyplate.gov/weight-management-calories/weight-management/better-choices/eating-out.html>

3. Finding it hard to get started in the morning? Here are some tasty & nutritious breakfast ideas that will get you moving & keep you going! <http://www.fruitsandveggiesmorematters.org/healthy-breakfast-ideas-to-get-you-moving>



4. This Monday start your new year early: Take stock of last year and resolve five ways to do better, love more, and live healthier.

<https://www.facebook.com/ColostateFIT/posts/399964870081489>

12/25 1. Make a habit of taking a 10-20 minute walk after dinner together, or first thing in the morning.



Image retrieved from: <http://www.today.colostate.edu/userfiles/images/Summer-walk-the-oval-275.jpg>

2. Walking improves cardiac risk factors such as cholesterol, blood pressure, diabetes, obesity, vascular stiffness and inflammation, and mental stress. Walking for just 35 minutes a day saved a 160-pound person about 18 pounds of flab over 15 years of aging. To estimate the distance, count 2,000 steps as about a mile of walking. To estimate your intensity: 80 steps a minute indicates a leisurely pace; 100 steps a minute, a moderate to brisk pace; and 120 steps a minute, a fast pace.



Image retrieved from: <http://i.ytimg.com/vi/m1rRo7COIRI/0.jpg>

12/26 1. While at a party, take time to greet people you know – conversation is calorie free!



Image retrieved from: [http://www.today.colostate.edu/userfiles/images/party\\_story.jpg](http://www.today.colostate.edu/userfiles/images/party_story.jpg)

## 2. How to avoid holiday weight gain

Get moving

Aim for seven-a-day fruit and vegetable

Control the risk for temptation (don't have sweets handy)

Limit to one-a-day sweets

Always plan ahead – Never go to a party hungry

Be in charge of your party choices: (small plate, avoid sauce, watch drinks)

Say No Politely

Focus on socializing



Image retrieved from: <http://www.spectrumfit.net/wp-content/uploads/2011/11/holiday-weight-gain-torrance.jpg>

Text retrieved from: [http://my.clevelandclinic.org/heart/prevention/nutrition/holidayeating12\\_01.aspx](http://my.clevelandclinic.org/heart/prevention/nutrition/holidayeating12_01.aspx)

## 3. Willpower: How to Say 'No' to Temptation

<http://health.clevelandclinic.org/2012/12/willpower-how-to-say-no-to-temptation/>

12/27 Walk instead of sitting around.



Image retrieved from: <http://assets.inhabitat.com/wp-content/blogs.dir/1/files/2010/07/sit-to-walk-station-desk-treadmill-6.jpg>

2.



Image retrieved from: <http://www.livescience.com/images/i/23915/i02/go-figure-steps-per-day-120125.jpg?1327528355>

3. Dance Walking Fitness Ben Aaron. Time to Dance Walk Baby  
[http://www.youtube.com/watch?v=Ib3Duz\\_6a9M&noredirect=1](http://www.youtube.com/watch?v=Ib3Duz_6a9M&noredirect=1)

4.  
<https://www.facebook.com/photo.php?fbid=452874448106691&set=a.200505693343569.49929.136503939743745&type=1>



5. How to Stay Healthy in 2013: Get 52 Healthy Monday Tips to Help You Stick to Your New Year's Resolutions  
<http://www.newswise.com/articles/how-to-stay-healthy-in-2013-get-52-healthy-monday-tips-to-help-you-stick-to-your-new-year-s-resolutions>

12/28 1. Sweet tooth? Try fresh fruit, or a cup of coffee with a little cream or tea with skim milk for dessert.





Image retrieved from: <http://www.gerogrundmann.com/images/work/project-gallery/travelling-apothecary/1286755657/standard/sweet-tooth-2.jpg>

2. Foods high in processed carbohydrate (e.g. bleached flour & sugar) such as desserts have a high glycemic index and glycemic load. Such foods cause fast and furious increases in blood sugar and insulin that, in the short term, can cause hunger to spike and can lead to overeating—and over the long term, increase the risk of weight gain, diabetes, and heart disease.

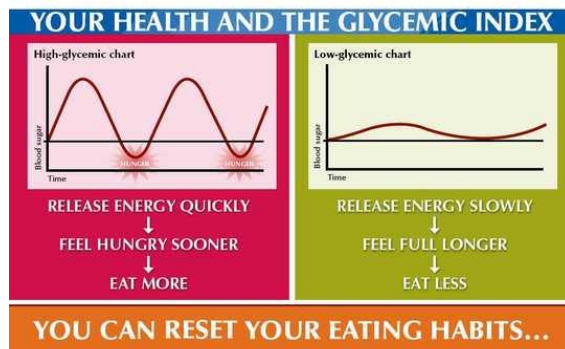


Image retrieved from: <http://healthmad.com/conditions-and-diseases/what-is-glycemic-indexhow-it-is-used-to-choose-the-foods-to-lose-weight/>

Text retrieved from: <http://www.hsph.harvard.edu/obesity-prevention-source/obesity-causes/diet-and-weight/index.html#carbohydrate-and-weight-control>

3.

[https://www.facebook.com/photo.php?fbid=367475886681873&set=a.362586437170818.59843342.357323844363744&type=1&relevant\\_count=1](https://www.facebook.com/photo.php?fbid=367475886681873&set=a.362586437170818.59843342.357323844363744&type=1&relevant_count=1)

THERE IS NO DIET  
THAT WILL DO  
WHAT EATING  
HEALTHY DOES.

SKIP THE DIET. JUST EAT HEALTHY.

4.

[https://www.facebook.com/photo.php?fbid=442084159192035&set=a.408581099209008.96566.407012282699223&type=1&relevant\\_count=1](https://www.facebook.com/photo.php?fbid=442084159192035&set=a.408581099209008.96566.407012282699223&type=1&relevant_count=1)



12/31 1. Enjoy a cold weather hike or (if you prefer being indoors) consider some fast paces around the mall, supermarket, or gym.



Image retrieved from:

[http://3.bp.blogspot.com/\\_MNwuQui0kec/TUhKRRTCKhI/AAAAAAAAAJk/803Ydcg8v6U/s1600/Winter+hike+at+Mill+Hollow+on+Walkway-H2.jpg](http://3.bp.blogspot.com/_MNwuQui0kec/TUhKRRTCKhI/AAAAAAAAAJk/803Ydcg8v6U/s1600/Winter+hike+at+Mill+Hollow+on+Walkway-H2.jpg)

2. Hiking Social Groups in Fort Collins Area

<http://www.meetup.com/ft-collins-loveland-don-t-hike-alone-group/>

<http://www.meetup.com/Front-Range-Hikers/>

3. Enjoy black eyed peas this Meatless Monday for a lucky 2013!  
<http://www.meatlessmonday.com/black-eyed-pea-stuffed-squash/>



4. Hoppin' John is a southern dish of black-eyed peas and rice. It's traditionally enjoyed on New Year's Day to ensure prosperity in the coming year. From all of us to all of you, we're wishing you a Happy & Healthy New Year!

<http://madejustright.com/blog/post/hoppin-john-black-eyed-peas-new-year>



5. Get Moving: Easy Tips to Get Active!

[http://www.heart.org/HEARTORG/GettingHealthy/PhysicalActivity/StartWalking/Get-Moving-Easy-Tips-to-Get-Active\\_UCM\\_307978\\_Article.jsp](http://www.heart.org/HEARTORG/GettingHealthy/PhysicalActivity/StartWalking/Get-Moving-Easy-Tips-to-Get-Active_UCM_307978_Article.jsp)

6. It's Meatless Monday & New Year's Eve – A Perfect Time to Join the Movement (or help others go MM if you're already on board!)

<http://bit.ly/Vu6Itb>





7. 6 Ways to Sit Less Every Day

<http://www.health.com/health/gallery/0,,20534367,00.html>

8. Add black, garbanzo, or kidney beans to pasta dishes for more flavor, fiber, and protein.

<https://www.facebook.com/ColostateFIT/posts/388234637930703>

9. The countdown is on! Have you made a heart healthy New Years resolution? Tell us about it!

<https://www.facebook.com/ColostateFIT/posts/478372542204659>

1/1/ 1. Choose lower-calorie party foods such as raw vegetables with a small amount of dip, boiled shrimp or scallops with cocktail sauce or lemon.



Image retrieved from:

[http://2.bp.blogspot.com/\\_pWf5T\\_zmsYk/SGwY7xKQEII/AAAAAAAAAZI/GLtt0z6tQ6M/s320/food%2B337.jpg](http://2.bp.blogspot.com/_pWf5T_zmsYk/SGwY7xKQEII/AAAAAAAAAZI/GLtt0z6tQ6M/s320/food%2B337.jpg)

2. Omega-3 fatty acids, found in seafood, have been shown to help prevent heart disease and stroke, may help control lupus, eczema, and rheumatoid arthritis, and may play protective roles in cancer and other conditions. Given the wide-ranging importance and benefits of marine omega-3 fatty acids, it is important to eat fish or other seafood one to two times per week.



Image retrieved from: <http://best-omega-3-fish-oil.com/wp-content/uploads/2012/01/Foods-High-in-Omega-3.jpg>

3. What Should I Eat? <http://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/>

4. Happy New Year from Colorado State University

<http://www.youtube.com/watch?v=XZ4DZMPxX0A&feature=youtu.be>

1/2 1. Blow the dust off that old ping pong table and play a few rounds.



Image retrieved from: <http://csupueblotoday.com/wp-content/uploads/2011/01/2.Student-playing-pingpong-in-Culebra-Hall-1024x682.jpg>

2. A 150 lb. person for 30 minutes ... burn:

Table tennis/ping pong 136 kcal

Single tennis 272 kcal

Badminton 408 kcal

Racquetball(casual) 238 kcal

Squash 408 kcal

Text retrieved from: <http://www.acefitness.org/calculators/physical-activity-calorie-calculator.aspx>

3. Put Down the iPad, Lace Up the Hiking Boots

<http://www.psmag.com/environment/put-down-the-ipad-lace-up-the-hiking-boots-51031/>

4. Exercise tip: Company is key. When family or friends join you to work out, you're more likely to stick with it! Give your exercise buddy a shout out!

<https://www.facebook.com/photo.php?fbid=10151198953561139&set=a.254785836138.137632.55701226138&type=1>



5. How to Reduce Salt and Retain Flavor

<http://www.goredforwomen.org/live-healthy/heart-healthy-cooking-tips/reduce-salt-and-retain-flavor/>



1/ 3 1. Move your socializing away from the buffet table; this will eliminate unconscious nibbling.



Image retrieved from: <http://jeffhurlblog.com/wp-content/uploads/2010/03/danceparty.jpg>

2. Seven things you can do instead of eating at a party:

Chat with friends

Put on music and dance to it

Sing or play music

Help clean the dishes

Drink unsweetened tea or water

Play games

Take a tour of the party house



Image retrieved from: <http://bouncearoundrental.com/twister4.jpg>

3. 50 Winter Activities

<http://www.growingajeweledrose.com/2012/11/winter-activities-to-keep-kids-active.html>

4. Sodium Swap Challenge

<https://apps.facebook.com/forumforpages/55701226138/fc022bbc-23a0-46bf-bf3e-bf79b80d0038/0>

5. Fructose May Lead To Overeating

[http://www.businessinsider.com/this-is-your-brain-on-fructose-2013-1?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+businessinsider+%28Business+Insider%29](http://www.businessinsider.com/this-is-your-brain-on-fructose-2013-1?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+businessinsider+%28Business+Insider%29)

1/4/2013 1. Snowshoe over hills and drifts in the colder months



Image retrieved from: <http://www.beechmtn.com/blog/img/2012/09/snowshoe.jpg>

2. Walking in Washington, DC

<http://everybodywalk.org/read/1043-walking-in-washington-dc.html>

3. Quote of the day: “Walking . . . is how the body measures itself against the earth.”

— Rebecca Solnit, *Wanderlust: A History of Walking*

<https://www.facebook.com/ColostateFIT/posts/465565320168005>

4. Happy Friday, Rams. Thought we’d share an image from CSU student Hrushikesh K. of fall colors to snow on the Oval.

<https://www.facebook.com/photo.php?fbid=10152395575780615&set=a.143943555614.232959.136298855614&type=1>



5. History's weirdest fad diets

<http://www.bbc.co.uk/news/magazine-20695743>

1/7 1. Be aware of what foods you are eating and be selective! Choose only the foods you really want to.



Image retrieved from: <http://www.buzzle.com/img/articleImages/530925-56416-11.jpg>

## 2. EASY TIPS FOR PLANNING A HEALTHY DIET AND STICKING TO IT

Plan a healthy diet with small and manageable steps. Every change you make to improve your diet matters.

Moderation is the key. It means eating far less of the unhealthy stuff (unrefined sugar, saturated fat, for example) and more of the healthy (such as fresh fruit and vegetables).

It's not just what you eat, it's how you eat (try to eat meals with others, get smaller meals, enjoy meals, listen to your body, and avoid eating at night).

Fill up on colorful fruits and vegetables.

Eat more healthy carbs and whole grains.

Enjoy healthy fats & avoid unhealthy fats.

Focus on quality source of protein (fish, chicken or turkey, tofu, eggs, beans, or nuts) and downsize their portion.

Drink water, tea or coffee and add calcium for strong bones.

Limit sugar and salt.

Stay active.

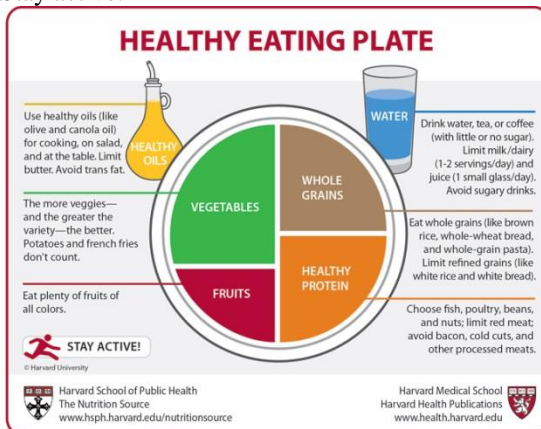


Image retrieved from: <http://www.hsph.harvard.edu/nutritionsource/images/healthy-eating-plate-700.jpg>

Text: [http://www.helpguide.org/life/healthy\\_eating\\_diet.htm](http://www.helpguide.org/life/healthy_eating_diet.htm)

1/8 1.Swoosh down the slopes—try downhill skiing or pull out the toboggan.





Image retrieved from: [http://www.wallcoo.net/sport/Skiing/images/%5Bwallcoo.com%5D\\_MIL34077.jpg](http://www.wallcoo.net/sport/Skiing/images/%5Bwallcoo.com%5D_MIL34077.jpg)

2. Downhill skiing takes shorter bursts of energy; most ski runs last about two to three minutes, The muscle groups used in downhill skiing are the "prime movers," including the hamstrings, quadriceps, calves, hip, and feet muscles. To a lesser degree, you'll also use your abdominal muscles for control and strengthen your arms by using poles. Downhill skiing is a power sport that improves balance, flexibility, agility, and leg and core strength. Someone weighing 150 pounds burns about 360 to 570 calories per hour while downhill skiing.



Text retrieved from: <http://www.webmd.com/fitness-exercise/features/5-best-winter-sports-to-try>

Image retrieved from: [http://www.riversideonline.com/source/images/slideshow/fsm22\\_skiintro.jpg](http://www.riversideonline.com/source/images/slideshow/fsm22_skiintro.jpg)

1/9 1. There are no good foods or bad foods but there are good or bad choices. All foods can be part of healthy eating, when eaten in moderation.



Image retrieved from: <http://www.drgangemi.com/wp-content/uploads/2012/11/food-moderation.jpg>

2. Try not to think of certain foods as "off-limits." When you ban certain foods or food groups, it is natural to want those foods more, and then feel like a failure if you give in to temptation. If you are drawn towards sweet, salty, or unhealthy foods, start by reducing portion sizes and not eating them as often. Later you may find yourself craving them less or thinking of them as only occasional indulgences.



Image retrieved from:

[http://1.bp.blogspot.com/\\_5wdBdLOkwnY/TQZr8QNbIDI/AAAAAAAAACRY/Wq4Rmxla10Q/s1600/HEALTH3\\_no\\_fast\\_food\\_35840802\\_std.jpg](http://1.bp.blogspot.com/_5wdBdLOkwnY/TQZr8QNbIDI/AAAAAAAAACRY/Wq4Rmxla10Q/s1600/HEALTH3_no_fast_food_35840802_std.jpg)

Text retrieved from: [http://www.helpguide.org/life/healthy\\_eating\\_diet.htm](http://www.helpguide.org/life/healthy_eating_diet.htm)

1/10 1. Enjoy the calm of nature while cross-country skiing on a trail.



Image retrieved from: <http://www.gunflint-trail.com/wp-content/gallery/winter-xcski/ski2.jpg>

2. Cross-country skiing is an aerobic sport. That means you move nonstop for an extended period of time while your **heart** pumps oxygen to your muscles, providing them with energy. For building endurance, [cross-country skiing] is one of the best sports you can do. A 150-pound person burns about 500 to 640 calories per hour while cross-country skiing, depending on the effort level.

Text retrieved from: <http://www.webmd.com/fitness-exercise/features/5-best-winter-sports-to-try>

1/11 1. Eat off smaller plates.

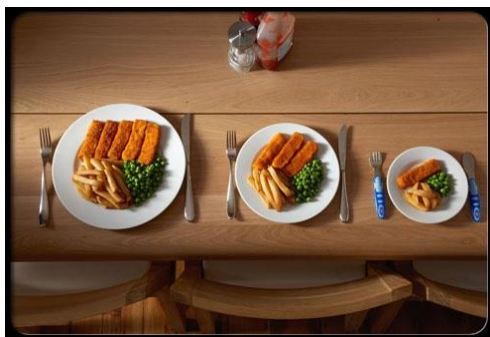


Image retrieved from: <http://www.pronutritionconsulting.com/uploads/photos/1/secrets-of-healthy-eating->

and-portion-control-s9-three-different-portions\_1333485361.jpg

2. A simple trick to help you eat less is to use a smaller plate, bowl, or glass. One cup of food on a small plate looks like more than the same cup of food on a large plate.

<http://smallplatemovement.org/>

1/14 1. Reward yourself for step accomplishments— every time you reach your step goal for the day put a dollar in a jar and save for a special reward.



Image retrieved from: [http://media-cache0.pinterest.com/upload/167196204885765255\\_o4FKius1\\_f.jpg](http://media-cache0.pinterest.com/upload/167196204885765255_o4FKius1_f.jpg)

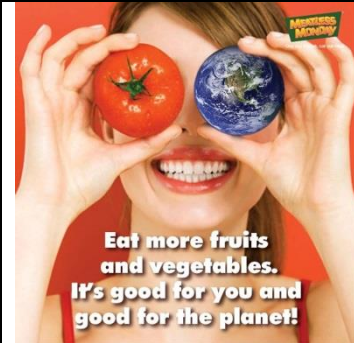
2.



Image retrieved from: <http://today.duke.edu/showcase/mmedia/misc/images/holidayfoods.jpg>

3. Extra fruits and veggies tomorrow! [www.MeatlessMonday.com](http://www.MeatlessMonday.com)





1/15. 1. If main dishes are too big, choose an appetizer or a side dish instead.



Image retrieved from: <http://mjskitchen.com/wp-content/uploads/2011/07/BellPepperDipWeb.jpg>

2. Here is a link to look up a food to get quick access to nutrition info.

<https://www.supertracker.usda.gov/foodapedia.aspx>

1/16 1. Do sit-ups in front of the TV or computer screen.



Image retrieved from:

[http://media2.onsugar.com/files/2012/11/44/4/192/1922729/9141a86b001d5779\\_woman-doing-crunches-in-front-of-tv.xxxlarge\\_1.jpg](http://media2.onsugar.com/files/2012/11/44/4/192/1922729/9141a86b001d5779_woman-doing-crunches-in-front-of-tv.xxxlarge_1.jpg)

2.

## The TV Commercial Workout

I'm sure we've all heard that sleeping burns more calories than sitting on the couch watching TV does - but does that mean that we can't watch TV, ever? Nope! Time for the TV Commercial Workout!

For every:	Do:
Car commercial	Jog in place until commercial ends
Fashion/shopping commercial	30 crunches
Food/restaurant commercial	30 jumping jacks
Jewelry commercial	20 squats/lunges
Travel commercial	Plank for entirety
Health/beauty commercial	20 hip raises
Movie Trailer	30 Russian twists
Commercial for TV show	40 high knees
PSA	10 leg lifts on each side
Fitness commercial	Exercise of choice!
Miscellaneous	Water break :)

Image retrieved from: <http://pushfitnesskawartha.com/wp-content/uploads/2012/10/need-motivation-4.jpg>

3.

1/17 1. Plan what you will eat in advance. Many restaurants now have menus on the web.

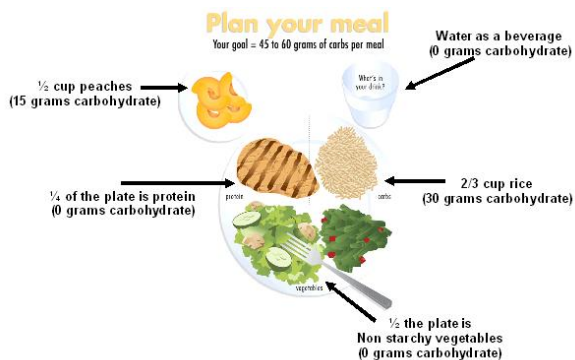


Image retrieved from: [http://www.ucdmc.ucdavis.edu/chronicdisease/images/plan\\_your\\_meal\\_grams.bmp](http://www.ucdmc.ucdavis.edu/chronicdisease/images/plan_your_meal_grams.bmp)

2. Restaurants and Fast food Calorie Counter

[http://www.calorieking.com/foods/calories-in-fast-food-chains-restaurants\\_c-Y2lkPTIx.html](http://www.calorieking.com/foods/calories-in-fast-food-chains-restaurants_c-Y2lkPTIx.html)

3. Getting to the “After” isn’t so easy!

<http://livewellcolorado.org/healthy-living/motivate/livewell-moms-blog/getting-to-the-after-isnt-so-easy>

4. Berries may lower women’s heart attack risk

<http://www.hsph.harvard.edu/news/hsph-in-the-news/berries-may-lower-womens-heart-attack-risk/>

5. 360° Gut Check

<http://livewellcolorado.org/healthy-living/360-gut-check>

6. Meatless Mondays: The Myth of Plant-Based Protein Deficiency

<http://mobile-cuisine.com/trends/meatless-mondays-the-myth-of-plant-based-protein-deficiency/>

7. Not ready to give up your favorite foods? That's ok! Simply learn to make healthy substitutions like these: <http://bit.ly/TCS74o>



8. The most Xtreme meals in America: 9 diet-busting, artery-clogging meals from the country's most popular dining spots are the 2013 Xtreme Eating dishonorees: <http://cspinet.org/new/201301161.html>



9. Why waste your workout? <https://www.facebook.com/photo.php?fbid=10151395835425406&set=a.10150119529535406.322571.240937060405&type=1>

**How long does it take to walk off  
the calories in a Gatorade?**



**One hour.**

Why waste your workout? Go for a no-cal option or water.

1/18 1. Enjoy time with friends and plan an activity you can all enjoy together.



Image retrieved from: <http://www.940wg.afrc.af.mil/shared/media/photodb/web/2012/08/120603-F-UD849-020.jpg>

2. Physical activity and exercise are important for health, but going to the gym and lifting weights may not be your idea of fun. You can get the same benefits by regularly doing recreation activities that you enjoy with your friends! ANY increase in physical activity can help prevent health problems and make you feel better. According to the Surgeon General's report, just 30 minutes of moderate activity added up over an entire day can help prevent disease.

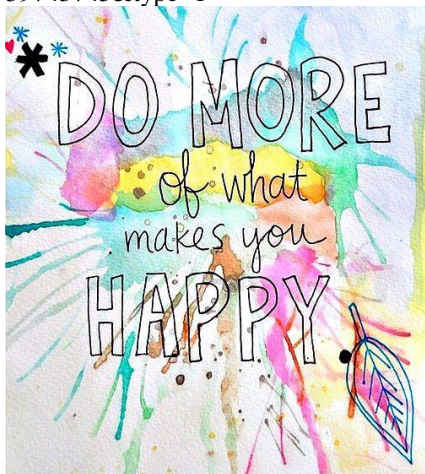


Image retrieved from: [http://lamar.colostate.edu/~nscs/images/gallery0708/frisbee/DSC\\_0048.jpg](http://lamar.colostate.edu/~nscs/images/gallery0708/frisbee/DSC_0048.jpg)

Text retrieved from: <http://projects.fpg.unc.edu/~ncodh/htmls/recbeactive.htm>

3.

<https://www.facebook.com/photo.php?fbid=462824130445056&set=a.200505693343569.49929.136503939743745&type=1>



4. BANFF Mountain Film Festival  
February 22nd and 23rd at 7pm at the LSC Theater



We anticipate that tickets will go on sale on February 1st through the LSC Box Office.

Questions? Contact: CampusRec\_OP@mail.colostate.edu or 970--491-1669

<http://www.youtube.com/watch?v=wEC4TKfBGhc>

5. TIP: Practice mindful eating. Take small bites & notice the color, texture & taste of your food. Which food surprises you the most?

<https://www.facebook.com/ColostateFIT/posts/567617576599199>

6. Tomorrow is Healthy Monday! How will you start the week off on a healthy note?

<https://www.facebook.com/ColostateFIT/posts/459388177460446>

7. Tomorrow is Move It Monday! What are your fitness goals for the week to come?

<https://www.facebook.com/ColostateFIT/posts/527976737236415>

8. Here is the first week fitness schedule I put together. Please let me know if you have any preference.

We will meet 5 minutes before the program starts at Service Desk. For Water Aerobics, let's meet 15 minutes ahead of time. Remember we will start slowly! I hope to see you all on Tuesday!

Tuesday 1/22 Tabata Attack 7:30- 8PM

Wednesday 1/23 ABSolution 8:30-9PM

Thursday 1/24 Zumba 7:30-8:30PM

Friday 1/25 Water Aerobics 1-2PM

1/21 1. Try hummus with pita wedges. Instead of large packages of chips, cookies, and similar snacks, try single serving when a craving strikes.



Image retrieved from: [http://mydanishkitchen.files.wordpress.com/2010/05/img\\_2311e.jpg](http://mydanishkitchen.files.wordpress.com/2010/05/img_2311e.jpg)

2. Size up your serving and calories!

<http://www.accessdata.fda.gov/videos/cfsan/hwm/hwmsk01.swf>

3. Get Up! Sitting Less Can Add Years to Your Life

<http://healthland.time.com/2012/07/10/get-up-sitting-less-can-add-years-to-your-life/>

1/22 1. Enroll in a fitness class! It could be martial arts, indoor cycling, yoga or dance lessons.



Image retrieved from: [http://blog.csurec.com/wp-content/uploads/2012/11/199088\\_10151148013234725\\_2039999405\\_n-300x300.jpg](http://blog.csurec.com/wp-content/uploads/2012/11/199088_10151148013234725_2039999405_n-300x300.jpg)

2. Spring Rec Center Fitness class schedule!

<http://campusrec.colostate.edu/docs/GetFit/currentSchedule.pdf>

3. Just How Dangerous Is Sitting All Day? [INFOGRAPHIC]

<http://mashable.com/2011/05/09/sitting-down-infographic/>

4. Welcome back, Rams! Here's to a great spring semester at Colorado State.

<https://www.facebook.com/photo.php?fbid=10152447506865615&set=a.143943555614.232959.136298855614&type=1>



5. Wanting to eat healthier this year, but not sure where to start? Our one-hour nutrition counseling session includes body measurements; diet assessment; meal planning, shopping and cooking tips; and plenty of specific recommendations to help you achieve your 2013 health goals! Learn more at <http://www.nutritioncenter.colostate.edu/nutritionservices.aspx>



6. Blend a smoothie made from nonfat yogurt, skim milk, and fresh fruit instead of ice cream.

<https://www.facebook.com/ColostateFIT/posts/458052440910223>

1/23 1. Try 1/2 cup fresh fruit in place of 1/2 cup dried fruit or fruit juice.



Image retrieved from: [http://i.yimg.com/ea/img/-/121109/healthy\\_habits\\_fat\\_fruit\\_juice\\_189p3rn-189p3ui.jpg?x=450&q=80&n=1&sig=zZuHi2iP\\_GwD\\_X92JNLWUw--](http://i.yimg.com/ea/img/-/121109/healthy_habits_fat_fruit_juice_189p3rn-189p3ui.jpg?x=450&q=80&n=1&sig=zZuHi2iP_GwD_X92JNLWUw--)

2. Sugar-sweetened beverages — non-diet sodas, sugary fruit drinks, iced teas with added sugar, and sports drinks — provide calories and little else. There's good evidence that these drinks can raise the threshold for satiety (feeling full), thereby increasing the amount you eat and promoting weight gain. A 2011 Harvard study found that sugar-sweetened beverages were one of the dietary components most strongly linked to long-term weight gain among healthy women and men. What about 100% fruit juice with no added sugar? Even all-natural fruit juice has a lot of calories. The Healthy Eating Plate guidelines suggest

you drink no more than one small glass a day (say, 4 to 6 ounces). *Hint:* Add carbonated water to your "one small glass" for full-glass satisfaction.

**ARE YOU POURING ON THE POUNDS?**

Drink	Number of Calories	Teaspoons of Sugar
Iced White Chocolate Mocha (16 oz)	340	14
Gola (20 oz)	250	10
Lemon Lime Soda (20 oz)	240	10
Orange Delight Drink (16 oz)	225	9
100% Apple Juice (16 oz)	220	9
Lemon Flavored Iced Tea (20 oz)	210	9
Café Latte (16 oz)	190	8
Sports Drink (20 oz)	120	6
Water, Still (20 oz)	0	0

Image retrieved from: <http://www.nyc.gov/html/doh/html/pr2009/pr057-09.shtml>  
[http://www.health.harvard.edu/newsletters/Harvard\\_Womens\\_Health\\_Watch/2012/January/12-for-2012-twelve-tips-for-healthier-eating](http://www.health.harvard.edu/newsletters/Harvard_Womens_Health_Watch/2012/January/12-for-2012-twelve-tips-for-healthier-eating)

3.



Image retrieved from: <http://gourmandelle.com/wp-content/uploads/2011/12/Whats-in-your-juice-infographic-470x1024.jpg>

4. Look out for hidden sodium in processed foods  
<http://blog.heart.org/look-out-for-hidden-sodium-in-processed-foods/>

1/24 1. Pick an activity you like and one that fits into your life.

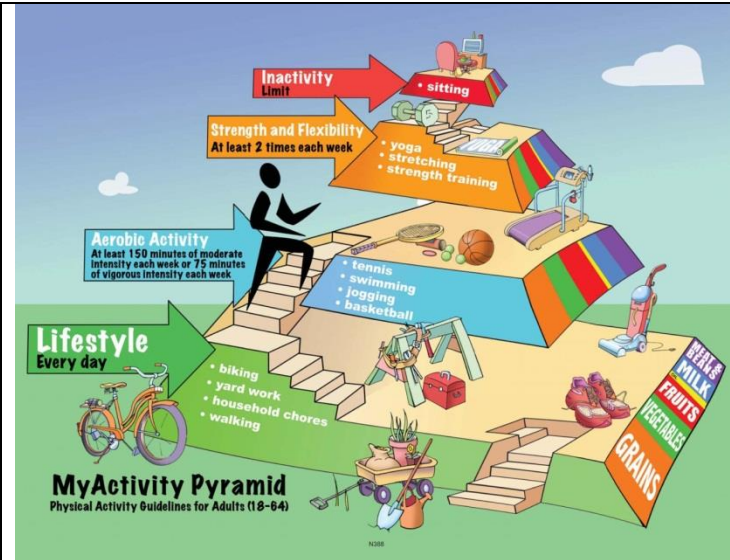


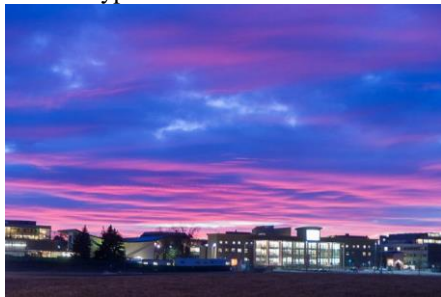
Image retrieved from: <http://extension.missouri.edu/NewsAdmin/Photos/2009/MyActivityNew-1.jpg>

## 2. MyFitness Planner

<http://www.mealsmatter.org/EatingForHealth/Tools/MFP/MFP.aspx>

## 3. Good morning from Ram Country!

<https://www.facebook.com/photo.php?fbid=10152453119595615&set=a.143943555614.232959.136298855614&type=1>



4. Bring a fun water bottle to school or the office and make an effort to drink several glasses of water. Staying hydrated perks energy and curbs hunger.

<https://www.facebook.com/ColostateFIT/posts/153729101446466>

1/25 1. Choose low fat preparation options. Watch out for words like fried, creamed, pan-fried, buttery, sauteed, with gravy or hollandaise sauce, Au-gratin, alfredo)





Image retrieved from:

<http://dp.hightechhigh.org/~pguerrero/09/humanities/om%20nom%20nom/project%20work.html>

2. Saturated fats and trans fats are bad for you because they raise your cholesterol and increase your risk for heart disease. But monounsaturated fats and polyunsaturated fats are good for you, lowering cholesterol and reducing your risk of heart disease. Appearance-wise, saturated fats and trans fats tend to be solid at room temperature (think of butter or traditional stick margarine, commercially-baked pastries, cookies, doughnuts, muffins, cakes, pizza dough, whole-fat dairy products, high fat meats), while monounsaturated and polyunsaturated fats tend to be liquid (think of olive or corn oil or vegetable oils and nuts).

Sources of Saturated Fats

Healthier Options

Butter

Olive oil

Cheese

Low-fat or reduced-fat cheese

Red meat

White meat chicken or turkey

Cream

Low-fat milk or fat-free creamer

Eggs

Egg whites, an egg substitute (e.g. Eggbeaters), or tofu

Ice cream

Frozen yogurt or reduced fat ice cream

Whole milk

Skim or 1% milk

Sour cream

Plain, non-fat yogurt



**GOOD FATS**

vs.

**BAD FATS**



Image retrieved from: <http://raspberrynetonedangers.com/wp-content/uploads/2012/09/Good-Fats-and-Bad-Fats.jpg>

Text retrieved from: [http://www.helpguide.org/life/healthy\\_diet\\_fats.htm](http://www.helpguide.org/life/healthy_diet_fats.htm)

1/28 1. Ice skate at Edora Pool Ice Center (EPIC).



Image retrieved from: [http://www.rogersrealty.net/wp-content/uploads/2010/01/ice\\_rink1.jpg](http://www.rogersrealty.net/wp-content/uploads/2010/01/ice_rink1.jpg)

2. Ice skating is a low-impact exercise -- unless you're doing a lot of jumps -- that's good for building lower-body muscles including the hips, hamstrings, quadriceps, and calves. Performing jumps can build bone mass. Skating also boosts balance, flexibility, quickness, and agility.

<http://www.webmd.com/fitness-exercise/features/5-best-winter-sports-to-try?page=2>

3. It's Move it Monday! This week's tip is to Eat Before Exercise:

If you don't eat before you work out, your blood sugar may get too low, causing you to feel weak or lightheaded. Aim to eat big meals 3-4 hours before exercise, small snacks 2-3 hours before. Eat too close to activity and you may get cramps or feel sluggish.

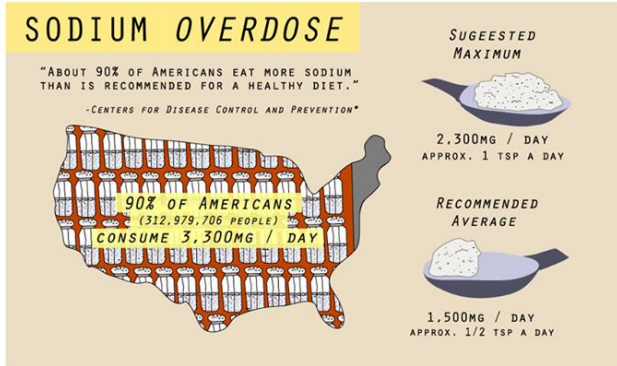
Time your workout fuel-ups this week. If you exercise in the morning, take time for breakfast. Similarly, if you haven't eaten in hours be sure to have a small snack before.

<https://www.facebook.com/ColostateFIT/posts/589492621077127>

4. Say no to sodium. Sodium can lead to a lot of health problems.

It's extremely important to control the intake of sodium in our diet.

<https://www.facebook.com/photo.php?fbid=10151247528448564&set=a.10150308924013564.344890.51610058563&type=1>



5. Smoky Tempeh Scramble Burritos

<http://vegetariannutrition.net/recipes/smoky-tempeh-scramble-burritos/>

6. Don't forget to make tomorrow a Healthy Monday! Comment below to let us know what healthy goal you'll be working on.

<https://www.facebook.com/ColostateFIT/posts/544774675541324>

7. The Gift of Walking

<http://www.youtube.com/watch?v=ce0yxolt0Cw&list=UU6HKoewppuwDGj-S3vuf03Q&index=2>

8. What's your favorite warm winter recipe? Here's one for healthy kale and lentil soup from GirlMakesFood! <http://bit.ly/VgqCrO>



9. Here is the next week's fitness schedule. Please let me know if you have any preference. We will meet 5 minutes before the program starts at Service Center.

Monday 1/28 Lower Body Shred 8:15-8:45PM

Tuesday 1/29 Tabata Attack 7:30- 8PM

Wednesday 1/30 ABSolution 8:30-9PM

Thursday 1/31 Chieseled Express 3:30-4PM

Friday 2/1 Zumba 5:30-6:30PM

1/29 1. Get your body's metabolism going by eating a good breakfast each day!



Image retrieved from: <http://www.thedailygreen.com/cm/thedailygreen/images/6z/breakfast-cereal-desk-lg.jpg>

2. Here are some of the ways that regularly eating a healthy breakfast may help you manage your weight:  
 Reduced hunger  
 Help making healthier choices  
 Give more energy so more physical activity



Image retrieved from: <http://img.gawkerassets.com/img/17k2sfx060ldsjpg/original.jpg>  
<http://www.mayoclinic.com/health/food-and-nutrition/AN01119>

1/30 1. Buy an exercise video so you can get in your physical activity on rainy days.



Image retrieved from: <http://hostedmedia.reimanpub.com/TOH/Images/healthy/exercise/tvworkout.jpg>

2. Core-strength exercises strengthen your core muscles, including your abdominal muscles, back muscles and the muscles around the pelvis. Strong core muscles make it easier to do many physical activities. You can do core-strength exercises on a carpeted floor or mat.

<http://www.mayoclinic.com/health/core-strength/SM00047>

<http://www.youtube.com/watch?v=vkKCVCZe474>

1/31 1. Slow down when you eat. Try to relax and pace yourself so that your meals last at least 20 minutes, since it takes 20 minutes for you to feel full.

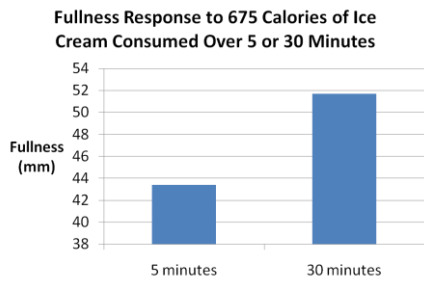


Image retrieved from: <http://weightology.net/weightologyweekly/wp-content/uploads/2010/08/fullness.png>

2. Easy Ways to Burn 100 More Calories A Day

<http://www.ivillage.com/easy-ways-burn-100-more-calories-day/4-b-282895>

3. Make 2013 healthier by adding five foods to your daily fare

<https://www.uab.edu/news/news-you-can-use/better-living/make-2013-healthier-by-adding-five-foods-to-your-daily-fare>

2/1 1.Walk on a treadmill or laps in the gym or campus Rec Center on rainy, snowy, or cold days or when it is dark.



Image retrieved from: <http://coyotechronicle.net/wp-content/uploads/2012/01/recen3-610x300.jpg>

2.

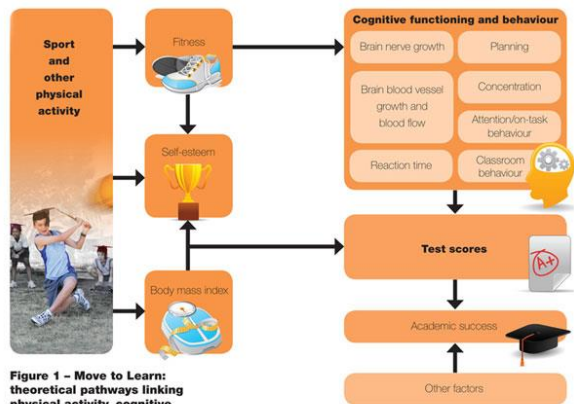


Figure 1 - Move to Learn: theoretical pathways linking physical activity, cognitive functioning and academic success

Image retrieved from: [http://fithealthinsurance.com.au/Portals/0/Brain\\_boost\\_diagram.jpg](http://fithealthinsurance.com.au/Portals/0/Brain_boost_diagram.jpg)

3. Taking the Stairs, Raking Leaves May Have Same Health Benefits as a Trip to the Gym

<http://www.everybodywalk.org/read/1079-taking-the-stairs-raking-leaves-may-have-same-health-benefits->



as-a-trip-to-the-gym.html

4. Don't forget, Super Bowl Sunday is followed by Healthy Monday! How will you start the week off on a healthy note?

<https://www.facebook.com/ColostateFIT/posts/442912469113376>

5. Here is next week's Rec Center schedule:

Monday 2/4 ABSolution 3:30-4PM

Tuesday 2/5 Boot Camp 4-4:45PM

Wednesday 2/6 Zumba 6:30-7:15PM

Thursday 2/7 Lower Body Shred 6:45-7:15 PM

Friday 2/8 Zumba 5:30-6:30PM

CSU FIT members will meet 5 minutes ahead of the program at Service Center or in the studio! Hope you have a great week!

6. Gobbling Up Snacks: Cause or Potential Cure for Childhood Obesity?

<http://www.ers.usda.gov/amber-waves/2012-december/gobbling-up-snacks-cause-or-potential-cure-for-childhood-obesity.aspx#.UcT1mzjnZjo>

7. A calorie is a calorie? We don't think so! Watch CSPI's "Coming Together - Translated," for the plain English version of Coca-Cola's confusing new ad. <http://youtu.be/RyeImvWtnr4>



2/4 1. Load up on veggies...vegetable mixtures, steamed broccoli, peas and carrots...whatever your preference!



Image retrieved from: <http://forgoodness-sake.com/wp-content/uploads/2011/04/vegetables.jpg>

2. Eating a diet rich in vegetables and fruits as part of an overall healthy diet may reduce risk for heart disease, certain types of cancers, obesity, type 2 diabetes, blood pressure, and may also reduce the risk of developing kidney stones and help to decrease bone loss. Eating foods such as vegetables that are lower in calories per cup instead of some other higher-calorie food may be useful in helping to lower calorie intake.



Image retrieved from: <http://www.choosemyplate.gov/food-groups/vegetables-why.html>

### 3. Leaving the Car Behind: Making Cities Walkable

<https://www.youtube.com/watch?v=itOn8mPOIDc>

### 4. It's Move It Monday! This week's tip is Recovery Time Required:

Recovery after exercise is just as important as exercise itself. Refuel your muscles by grabbing a snack or drink with 4 grams of carbohydrates to every 1 gram of protein. Even if you're trying to lose weight, not replenishing your muscles' glycogen store...See More

<https://www.facebook.com/ColostateFIT/posts/201091023370140>

### 5. Did Super Bowl Sunday mean a lot of unhealthy eating? (fries, chips, pizza, soda, beer, etc)

Well then, you need to buckle up this Monday and start a good fitness regime!

Exercise for at least 30 minutes daily and eat right! Check out the infographic to see how unhealthy people tend to eat during Super Bowl!

<https://www.facebook.com/photo.php?fbid=10151258633918564&set=a.10150308924013564.344890.51610058563&type=1>



### 2/5 1. Visit the restroom on the far side of the building



Image retrieved from: [http://i.ebayimg.com/t/RESTROOM-DIRECTION-SIGN-RESTROOMS-SIGN-/00/s/Njk5WDc0OQ==/\\$/KGrHqUOKjUE6MLumy+FBOp\)DOvofg~~60\\_35.JPG](http://i.ebayimg.com/t/RESTROOM-DIRECTION-SIGN-RESTROOMS-SIGN-/00/s/Njk5WDc0OQ==/$/KGrHqUOKjUE6MLumy+FBOp)DOvofg~~60_35.JPG)

### 2. Office workouts are great exercises you can do when at your desk. Here are some examples:

<http://nanoworkout.com/category/office-workouts/>

### 3. 5 Meatless Monday Recipes <http://grt.st/XBQ6Bw>



4. In anticipation of Valentine's Day, we want to know what's your favorite sweet treat? (Your answer may be featured on eatright.org!)  
<https://www.facebook.com/ColostateFIT/posts/208728062598960>

2/6 1. Avoid croissants, biscuits, potpies, quiches, and pastries. Pick hard rolls, bread sticks (if not brushed with butter), french bread, or whole-wheat buns.



Image retrieved from: <http://lapetitefrancecafe.com/wp-content/uploads/2012/01/croissants.jpg>

## 2. Tips for Healthy Eating Out

Do

- Share dessert with the table
- Order an appetizer as a main dish
- Share an entree with a friend
- Plan your meal choices in advance by looking for nutritional facts on the restaurant website.
- Have water with your meal.
- Have a vegetable - either salad or side dish of veggies
- Choose terms like:
  - Grilled, Steamed, Baked, Roasted, Broiled
- Order salad dressing on the side

Don't

- Avoid terms like:
  - Fried, Creamy, Crispy, Breaded, Au Gratin, Scalloped, Smothered, Scampi, Carbonara
- Leave the bread basket on the table
- Order three courses and bread

Image retrieved from: <http://3.bp.blogspot.com/-RJjVzNzrSyg/Tut1vkgVu-I/AAAAAAAAAF0/aZivSDeivsc/s1600/eatingout2.jpg>

3. Tips and tricks to save money and time while grocery shopping: <http://sm.eatright.org/saveatstore>

4. Top Food Sources of Saturated Fat in the U.S.

<http://www.hsph.harvard.edu/nutritionsource/top-food-sources-of-saturated-fat-in-the-us/>



2/7 1. Go for a wilderness hike and have fun.



Image retrieved from: <http://o5.com/wp-content/uploads/2011/06/hiking-colorado.jpg>

2. Fort Collins Area Hiking

<http://www.trails.com/activity.aspx?area=12338>

3. Kale is awesome. It's a food with so many benefits and tasty too! So let's jump on kale's bandwagon ASAP!

<https://www.facebook.com/photo.php?fbid=10151283867313564&set=a.10150308924013564.344890.51610058563&type=1&theater>



4. Play with a brightly colored ball. Try "snow pitch" (baseball in the snow) or "snoccer" (soccer in the snow).



Image retrieved from: <http://news.discovery.com/earth/2009/12/18/snow-ball-fight2.jpg>

2/8 1. Don't skip meals.

## Fit Tips:

### Do **NOT** skip meals!

When you skip meals your metabolism slows down, and you are not burning calories like you should. Your body thinks that you are starving so when you eat again, your body stores away more than usual **resulting in more fat.**

Image retrieved from: <http://www.encognitive.com/files/images/meals--do%20not%20skip%20meals.jpg>

2/11 1. Try retro walking—walking backwards more evenly distributes your weight.

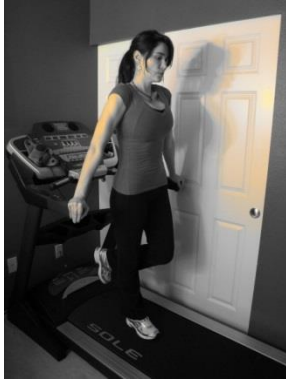


Image retrieved from: [http://jimmypeters.files.wordpress.com/2011/03/wpid-kim\\_kare\\_black\\_and\\_white1.jpeg](http://jimmypeters.files.wordpress.com/2011/03/wpid-kim_kare_black_and_white1.jpeg)

2.







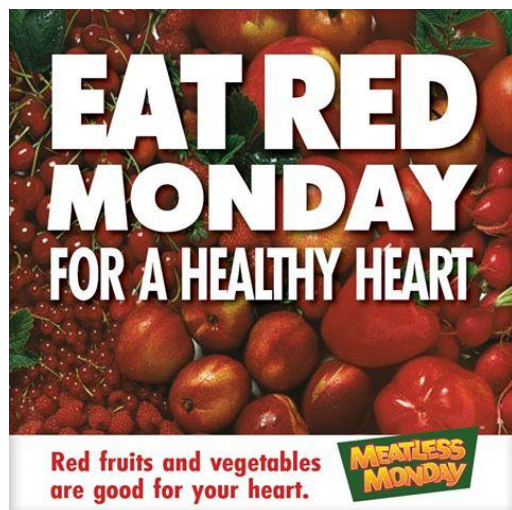
HEALTH	ENVIRONMENT	SAVING
 <p>People in walkable places weigh 6-10 lbs less.</p>	 <p>82% of CO2 emissions are from burning fossil fuels.</p>	 <p>Cars are the 2nd largest household expense.</p>
 <p>Walkable neighborhoods make you happier.</p>	 <p>Your feet are zero pollution transportation machines.</p>	 <p>1 point of Walk Score is worth \$3K in home value.</p>

Image retrieved from: <http://cdn2.walk.sc/images/pages/1m-infographic.png>

3. Celebrate American Heart Month by eating red this Meatless Monday! U.S. News Health shares 5 red fruits and veggies that are good for your heart: <http://bit.ly/VQ5fxT>



2/12 1. For the healthiest dessert of all, think fruit! Have a generous portion of fresh whole fruit or scoop up a dish of sliced fruit mixtures.



Image retrieved from: <http://quick-dish.tablespoon.com/files/2011/03/2011-03-15-double-rainbow-pancakes-fruit-platter-500.jpg>

2. Why is added sugar a problem?

Poor nutrition. filling up on foods with added sugar, skimps on nutritious foods, which means you could miss out on important nutrients, vitamins and minerals.

Weight gain. added sugar may contribute to the weight gain.

Increased Triglycerides. Eating an excessive amount of added sugar can increase triglyceride levels, which may increase your risk of heart disease.

Tooth Decay. All forms of sugar promote tooth decay by allowing bacteria to proliferate and grow.



Image retrieved from: [http://nomoreaddedsugar.com/wp-content/uploads/2012/01/ADDED\\_SUGAR\\_INFO.jpg](http://nomoreaddedsugar.com/wp-content/uploads/2012/01/ADDED_SUGAR_INFO.jpg)

Text retrieved from:

<http://www.mayoclinic.com/health/added-sugar/my00845>

3. Sugar Addiction



Image retrieved from: [http://flipcookbook.zippykidcdn.com/wp-content/uploads/2012/10/sugar\\_addiction\\_infographic.jpg](http://flipcookbook.zippykidcdn.com/wp-content/uploads/2012/10/sugar_addiction_infographic.jpg)

**4. MEATLESS MONDAY!**

Quinoa provides a healthy dose of fiber and essential fats, and is a complete protein, with nearly twice as much of the muscle-building nutrient as brown rice. Try it in this Quinoa-Stuffed Peppers Recipe: <http://ow.ly/hCMI1>



5. Are you feeling inspired to start piling up those veggies high on your plate yet? If you are, then here are 14 awesome veggies that deserve all the attention they are getting. Let's eat healthy!

<https://www.facebook.com/photo.php?fbid=10151292210678564&set=a.10150308924013564.344890.51610058563&type=1&theater>

**14 of the best vegetables**

<p><b>arugula</b> 1 cal/leaf</p> <p>High in protein, fiber, potassium, calcium, and vitamins A, C, K, and E.</p> <p>eat it in salads or in sandwiches and soups</p>	<p><b>spinach</b> 2 cal/leaf</p> <p>High in fiber, potassium, calcium, magnesium, potassium, and vitamins A, C, K, and E.</p> <p>high in sodium</p> <p>eat it raw in salads, steamed, or sautéed</p>	<p><b>mushrooms</b> 2 cal/mushroom</p> <p>High in fiber, protein, iron, potassium, and vitamins B1, B2, and B3.</p> <p>eat them stir-fried, sautéed, or roasted</p>	<p><b>broccoli</b> 3 cal/floret</p> <p>High in protein, calcium, iron, magnesium, potassium, and vitamins A, C, K, and E.</p> <p>eat it steamed, roasted, and in salads</p>	<p><b>cauliflower</b> 3 cal/floret</p> <p>High in protein, calcium, iron, magnesium, potassium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat it steamed, roasted, or in soups</p>	<p><b>tomatoes</b> 22 cal/tomato</p> <p>High in magnesium, fiber, potassium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat them raw, in salads, or in sandwiches</p>	<p><b>cucumbers</b> 8 cal/cucumber</p> <p>High in potassium, calcium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat it raw or in salads</p>
<p><b>red bell pepper</b> 30 cal/pepper</p> <p>High in fiber, potassium, iron, magnesium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat it raw, in salads, roasted, or stir-fried</p>	<p><b>zucchini</b> 31 cal/zucchini</p> <p>High in fiber, potassium, iron, magnesium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat it roasted, sautéed, stir-fried, or in salads</p>	<p><b>yellow pepper</b> 40 cal/pepper</p> <p>High in fiber, potassium, iron, magnesium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat them raw, sautéed, stir-fried, or roasted</p>	<p><b>red onions</b> 44 cal/onion</p> <p>High in fiber, potassium, iron, magnesium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat it roasted, sautéed, stir-fried, or in salads</p>	<p><b>bean sprouts</b> 54 cal/1/2 oz</p> <p>High in fiber, potassium, iron, magnesium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat them in sandwiches, in salads, or stir-fried</p>	<p><b>eggplant</b> 10 cal/eggplant</p> <p>High in magnesium, fiber, potassium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat them roasted, in salads, or stir-fried</p>	<p><b>bok choy</b> 2 cal/leaf</p> <p>High in fiber, potassium, iron, magnesium, and vitamins A, C, K, and E.</p> <p>High in sugars</p> <p>eat it in soups, in stir-fry, or sautéed</p>

**6. Diet Soda Associated With Higher Type 2 Diabetes Risk, Study Finds**

<http://www.huffingtonpost.com/2013/02/11/diet-soda-diabetes-risk-type-2-artificially-sweetened->

sugar\_n\_2663247.html?ncid=edlinkusaolp00000009

2/13 1. *Quality time is a perfect gift for Valentine's day. Bundle up and plan an active outing this weekened such as sledding, ice skating, gathering wood for a fire, or visit an indoor rock wall.*



Image retrieved from:

<http://www.forestholidays.co.uk/~media/images/content%20block%20images/slideshow%20images/valentines%20images/valentines%20day%20in%20the%20forest.ashx>

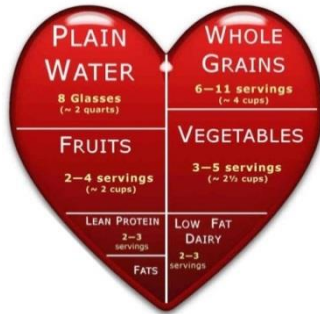
2. Here's to a Healthy Valentine's Day



Treat yourself and loved ones to a heart-healthy meal that includes plenty of [fruits and vegetables](#) and foods low in saturated fat and salt.

Plan an event that encourages [physical activity](#), and healthy eating.

Give yourself or your loved ones a favorite healthy alternative to candy.



Text retrieved from: <http://www.cdc.gov/features/valentine/Image> retrieved from: [http://lh6.ggpht.com/oVW5IcumM34/UJ\\_06SCxIJI/AAAAAAAAATxA/iny5cusixow/healthy-heart-eating%25255B3%2525D.jpg](http://lh6.ggpht.com/oVW5IcumM34/UJ_06SCxIJI/AAAAAAAAATxA/iny5cusixow/healthy-heart-eating%25255B3%2525D.jpg)

3. 385: The number of calories from added sugars consumed daily by the average American.

<https://www.facebook.com/photo.php?fbid=10151478061520406&set=a.10150119529535406.322571.240937060405&type=1&theater>



4. Sugar: Too Much of A Sweet Thing

<https://www.facebook.com/photo.php?fbid=10151476542800406&set=a.10150119529535406.322571.240937060405&type=1&theater>



2/14 1. Try fat-free or 1% plain yogurt instead of flavored or high fat alternatives



Image retrieved from:

[http://media.onsugar.com/files/ed2/192/1922729/43\\_2009/276a98274c7543bd\\_yogurt.preview.jpg](http://media.onsugar.com/files/ed2/192/1922729/43_2009/276a98274c7543bd_yogurt.preview.jpg)

2. Happy Valentine's Day Meatless Monday lovers. Our hearts "beet" for you! <http://bit.ly/X7EHM0>  
(recipe by Apron Strings Blog)

<https://www.facebook.com/photo.php?fbid=10151507632226563&set=a.418708351562.211033.81688566562&type=1&theater>



2/15 1. Bicycle to the store instead of driving.



Image retrieved from: <http://2013-bike-images.s3.amazonaws.com/images/page-content/header-01.jpg>

2.



**Does Driving Make Us Unhealthy? Obesity falls sharply with increased walking, cycling, and transit use!**

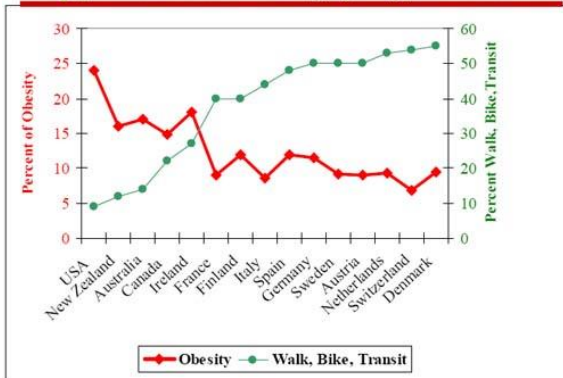
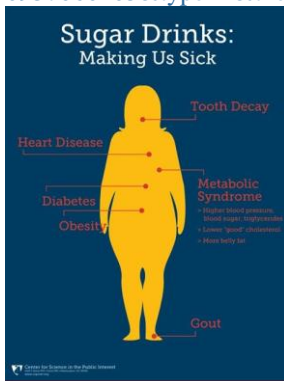


Image retrieved from: <http://www.portlandoregon.gov/shared/cfm/image.cfm?id=266299>

3. Sugar drinks are making us sick. Studies connect consumption of sugary beverages with the following health conditions:

<https://www.facebook.com/photo.php?fbid=10151481994470406&set=a.10150119529535406.322571.240937060405&type=1&theater>



4. Diet soda is doing these 7 awful things to your body

<http://www.today.com/health/diet-soda-doing-these-7-awful-things-your-body-1C6558748?franchiseSlug=todayhealthmain>

2/18 1. Listen to your body. Eating when you are hungry and stopping when you are full will help your body balance its energy needs and stay comfortable.



Image retrieved from: <http://www.110pounds.com/wp-content/uploads/2011/04/soup.jpg>

2.

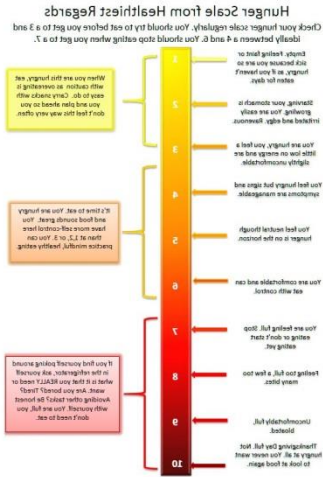


Image retrieved from: <http://healthiestregards.files.wordpress.com/2010/12/hunger-scale.jpg>

3. Diet soda is doing these 7 awful things to your body

<http://www.today.com/health/diet-soda-doing-these-7-awful-things-your-body-1C6558748?franchiseSlug=todayhealthmain>

2/19 1. Be realistic. Make small changes over time in the level of physical activity you do. Small steps often work better than giant leaps.

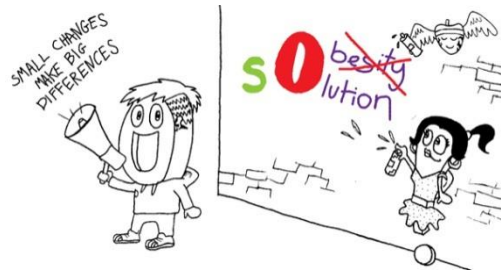


Image retrieved from: [http://saludableomaha.com/wp-content/uploads/2012/05/small\\_changes\\_obesity\\_solution.jpg](http://saludableomaha.com/wp-content/uploads/2012/05/small_changes_obesity_solution.jpg)

2. My Top 5 Goals

<https://www.supertracker.usda.gov/mytop5goals.aspx>

2/20 1. Pasta with red sauce (marinara, red clam, or marsala) is a great choice unless the sauce has high fat meat such as sausage.



Image retrieved from: [http://4.bp.blogspot.com/-vc3gwrRpwIU/Tx7XDncWegI/AAAAAAAAAMg/s86o\\_IB2INQ/s1600/pasta.jpg](http://4.bp.blogspot.com/-vc3gwrRpwIU/Tx7XDncWegI/AAAAAAAAAMg/s86o_IB2INQ/s1600/pasta.jpg)

2. Tomato & Pasta Sauce Calorie Counter  
<http://calorielab.com/foods/tomato-and-pasta-sauce/135>

3. Deliciously Healthy Eating  
 Use this interactive tool to find ways to make the meals you already cook healthier for you.  
<http://hp2010.nhlbihin.net/healthyeating/Default.aspx?AspxAutoDetectCookieSupport=1>

2/21 1. Make physical activity a priority and a planned activity in the day.

Week 1	Day	Physical Activities	# of Minutes or Pedometer Steps
	Mon		
	Tues		
	Wed		
	Thurs		
	Fri		
	Sat		
	Sun		
<b>Healthy Eating</b> —Select a goal for this week			
Participant Signature		Date	

Image retrieved from: [https://www.presidentschallenge.org/tools-resources/docs/PALA\\_log.pdf](https://www.presidentschallenge.org/tools-resources/docs/PALA_log.pdf)

2. The Active Lifestyle Activity Log  
[https://www.presidentschallenge.org/tools-resources/docs/PALA\\_log.pdf](https://www.presidentschallenge.org/tools-resources/docs/PALA_log.pdf)

3. Who's excited for a weekend hike?  
<https://www.facebook.com/photo.php?fbid=481346348592834&set=a.200505693343569.49929.136503939743745&type=1&theater>



2/22 1. Avoid cream sauces such as Alfredo or butter sauce as well as parmigiana, beef lasagna, cheese sauce or filling, pesto, carbonara, sausage dishes and garlic bread.



Image retrieved from: <http://www.carriessweetlife.com/wp-content/uploads/2009/01/gorgonzola-pasta.jpg>

2. It's your simple guide to healthy eating, weight management and how to balance the food you eat with physical activity.

[http://www.shapeup.org/kitchen/kitchen\\_0.html](http://www.shapeup.org/kitchen/kitchen_0.html)

2/25 1. Get an exercise buddy. Go for a walk with a classmate during one of your breaks, go to the gym, run or take a walk with a friend, walk in the mall with a shopping companion.



Image retrieved from:

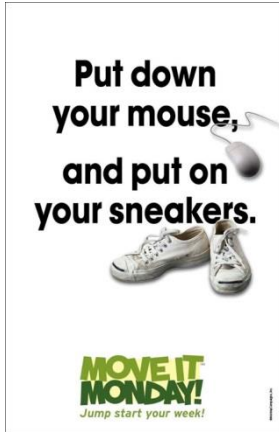
[http://media.onsugar.com/files/2010/07/26/5/192/1922729/76fba90ce3cab48\\_Exercise.jpg](http://media.onsugar.com/files/2010/07/26/5/192/1922729/76fba90ce3cab48_Exercise.jpg)

2. Buddy Finder

[http://www.sparkpeople.com/mypage\\_home.asp](http://www.sparkpeople.com/mypage_home.asp)

3. Put down your mouse, and put on your sneakers. It's Move It Monday!

<https://www.facebook.com/photo.php?fbid=427927050623958&set=a.343708129045851.82089.334999079916756&type=1&theater>



4. Revive Your Workout

<http://www.youtube.com/watch?v=nmLAHhCUFLM&feature=share&list=UUEYCiBjudLwppkhIJ8LDO9A>

2/26 1. Replace sour cream, guacamole, and chesse in chicken fajitas, tortillas and with lettuce, veggie salsa, tomato, onion, and beans.



Image retrieved from:

[http://cdn.aarp.net/content/dam/aarp/food/recipes/2010\\_07/420\\_turkeyTortilla.imgcache.rev1278539468451.jpg](http://cdn.aarp.net/content/dam/aarp/food/recipes/2010_07/420_turkeyTortilla.imgcache.rev1278539468451.jpg)

2. Chipotle Nutrition Calculator

[http://www.chipotle.com/en-us/menu/nutrition\\_calculator/nutrition\\_calculator.aspx](http://www.chipotle.com/en-us/menu/nutrition_calculator/nutrition_calculator.aspx)

2/27 1. Track your diet and physical activity and. It helps you stay on course. You can use your pedometer or food and activity logs.

DAILY FOOD AND ACTIVITY LOG			
Breakfast	Lunch	Dinner	Snacks
-Cereal with skim milk	-Turkey and swiss cheese sandwich on whole wheat bread with mustard	-Grilled chicken breast	-5 graham crackers
-1 slice whole wheat toast with jam	-Grapes	-Broccoli	-Peanut butter and jelly sandwich
-1 banana	-Celery and carrot sticks	-Rice	-Frozen yogurt
-6 oz orange juice	-1 cup skim milk	-Apple sauce	
		-1 cup skim milk	
		-Mixed green salad w/ reduced fat dressing	
Activity: Ride bike 0.30 minutes, Walk dog 0.35 minutes			

Image retrieved from: [http://msdh.ms.gov/msdhsite/images/graphics/Nutrition\\_FoodLog.gif](http://msdh.ms.gov/msdhsite/images/graphics/Nutrition_FoodLog.gif)

2. Super Tracker : Get your personalized nutrition and physical activity plan.  
<https://www.supertracker.usda.gov/default.aspx>

2/28 1. Try brown rice, whole-wheat pasta, quinoa, whole grain cereal, or whole grain bread.



Image retrieved from: <http://anthonycolpo.com/wp-content/uploads/2010/12/grains.jpg>

2. Evidence shows that intake of whole grains and grain fiber is associated with lower body weight. Whole grains—whole wheat, brown rice, barley, and the like, especially in their less-processed forms—are digested more slowly than refined grains. So they have a gentler effect on blood sugar and insulin, which may help keep hunger at bay. Fiber may be responsible for these foods’ weight control benefits, since fiber slows digestion, helping to curb hunger.



Image retrieved from: [http://blog.mlive.com/food\\_impact/2009/05/large\\_grains20.jpg](http://blog.mlive.com/food_impact/2009/05/large_grains20.jpg)  
<http://www.hsph.harvard.edu/obesity-prevention-source/obesity-causes/diet-and-weight/#whole-grains-fruit-and-weight-control>  
[http://www.nel.gov/evidence.cfm?evidence\\_summary\\_id=250304](http://www.nel.gov/evidence.cfm?evidence_summary_id=250304)

3. Hmm...sure you need that pop or fruit juice today?  
<https://www.facebook.com/photo.php?fbid=10151254853560194&set=a.10151006255500194.409458.111960505193&type=1&theater>





4. Sugar Seen as Driver in Rise of Diabetes, Study Suggests  
<http://www.businessweek.com/news/2013-02-27/sugar-seen-as-driver-in-rise-of-diabetes-study-suggests>

3/1 1. Vary your walking pace—start slowly, increase your speed, include short bursts of speed walking and cool down with a slower pace at the end.



Image retrieved from:  
<http://www.juststartwalking.com.au/asset/cms/WalkingFamily.jpg>  
 2. Although sometimes it helps to start things slow and build them up over time. For further progress: Gradually increase your distance, speed and/or time. Vary your pace with fast and slow intervals.

Park at the far end of the parking lot.  
 Use the stairs whenever possible.



Image retrieved from:  
[http://cdn.intohigher.com/media/1420168/students\\_walking\\_downtown\\_fort\\_collins\\_3415\\_\\_1\\_.jpg](http://cdn.intohigher.com/media/1420168/students_walking_downtown_fort_collins_3415__1_.jpg)  
 Text retrieved from: <http://www.juststartwalking.com.au/home/setting-walking-goals>

3. Sitting less may reduce diabetes risk <http://ow.ly/1SYBdu>

3/4 1. Be careful about potato and pasta salads, bacon bits, marinated vegetables, olives, fruits in heavy syrup, and seeds or nuts.



Image retrieved from: [http://www.sodahead.com/fun/potato-salad-pasta-salad-or-coleslaw/question-1945479/?link=ibaf&q=potato+and+pasta+salads&imgurl=http://images.sodahead.com/polls/001945479/35430662\\_Stoltzfus\\_Deli5\\_xlarge.jpeg](http://www.sodahead.com/fun/potato-salad-pasta-salad-or-coleslaw/question-1945479/?link=ibaf&q=potato+and+pasta+salads&imgurl=http://images.sodahead.com/polls/001945479/35430662_Stoltzfus_Deli5_xlarge.jpeg)

2. A simple switch of ingredients can turn fatty family favorites into healthy dishes. Substitute turkey bacon or lean prosciutto for bacon. Replace sour cream with fat-free plain yogurt. Try lean ground turkey or chicken instead of ground beef. And use applesauce or prune puree for half of the called-for butter, shortening or oil in baked goods.

**healthy eats**  
Healthy Swaps: Salads

Instead Of	Choose	What You'll Save
Cheddar Cheese	Crumbed Feta	20 percent of the fat
Iceberg Lettuce	Mixed greens or spinach	More vitamins, antioxidants and fiber without adding calories
Steak or Beef	Tuna	30 percent of the calories and add heart-healthy omega-3 fats
Creamy Dressings	Vinaigrettes	4 grams of fat per tablespoon
Croutons	A slice of whole wheat bread	300 milligrams of sodium, plus a fiber boost
Meat	Beans	100 percent of the cholesterol
Bacon	Grilled Chicken Breast	Over 300 calories and 30 grams of fat
Cheese	Avocado	5 grams of saturated fat per ounce, 50 percent fewer calories.

<http://www.mayoclinic.com/health/health-tip/HT00158/rss=6>

Image retrieved from: <http://blog.foodnetwork.com/healthyeats/files/2010/06/Healthy-Swaps-Salads.jpg>

3/5 1. Sign up for a community 5K or 10K walking/running event.



Image retrieved from: [http://www.today.colostate.edu/userfiles/images/Cinco-Cinco\\_275.jpg](http://www.today.colostate.edu/userfiles/images/Cinco-Cinco_275.jpg)

2. Find Local Events, Races & Things to Do on Active.com

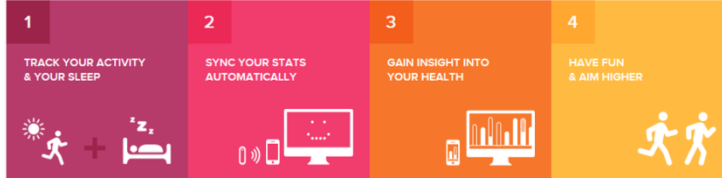
<http://search.active.com/search?f=activities&v=list&k=&l=Fort+Collins%2C+CO%2C+US&r=50&m=m>



meta%3AendDate%3Adaterange%3Atoday

3. We walk the talk at TEDMED – literally – and are proud to partner with Fitbit, to make physical activity and health awareness a goal of our community. Each TEDMED 2013 Delegate will receive a Fitbit tracker to measure daily steps, distance and calories burned during our event and beyond. And staying active at TEDMED is easy – delegates can join a TEDMED Health morning run, walk or yoga class or take advantage of treadmills on site while watching a live simulcast from the stage.

<https://www.facebook.com/photo.php?fbid=546574848706216&set=a.334429189920784.82105.219609131402791&type=1&theater>



4. Find Local Events, Races & Things to Do on Active.com

<http://search.active.com/search?f=activities&l=Fort+Collins%2C+CO%2C+US&m=meta%3AendDate%3Adaterange%3Atoday..&k=&v=list>

3/6 1. Control your portions by pouring one serving of pretzels or chips in a bowl instead of eating from the bag



Image retrieved from: <http://blog.thenibble.com/wp-content/hummus-chips-bag-bowl-1-230.jpg>

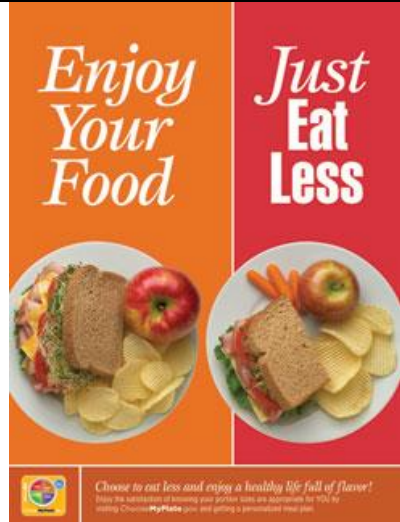


Image retrieved from: <http://www.learningzonexpress.com/images/Product/medium/enjoy-your-food-just-eat-less-poster.jpg>

3/7 1. Increase the fiber in your diet.



Image retrieved from: <http://thehealthyapron.com/wp-content/uploads/2010/08/high-fiber-diet.jpg>

2. The beneficial effect of fibre in weight regulation, is due to the fact that

- High fibre foods generally require more chewing time – this gives the body time to register when appetite is satisfied and to stop eating, thus reducing the risk of over-consumption.
- High fibre foods linger in the stomach longer - so the sensation of fullness is sustained for longer.
- High fibre foods tend to be less "energy dense" - offering fewer calories for the same volume of food.
- Fibre reduces insulin secretion and hence fat deposition may play a role in the prevention of weight gain.

Soluble fiber can be found in foods such as oatbran, barley, nuts, seeds, beans, lentils, fruits (citrus, apples), strawberries and many vegetables



Insoluble fiber is found in foods such as whole wheat and whole grain products, vegetables, and wheat bran

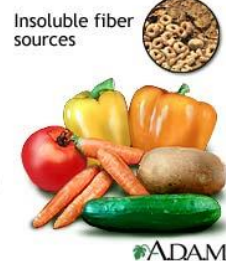


Image retrieved from: <http://www.umm.edu/graphics/images/en/19531.jpg>  
Text retrieved from: [http://www.afic.org/WMWS/dietary\\_fiber.shtml](http://www.afic.org/WMWS/dietary_fiber.shtml)

### 3.High Fiber Food

<http://www.webmd.com/diet/fiber-health-benefits-11/slideshow-high-fiber-foods>

3/8 1.Use spices instead of salt. Start by cutting salt in half.



Image retrieved from:  
[http://2.bp.blogspot.com/\\_zfnGIPJkL8o/THqLKzmuyLI/AAAAAAAAAyw/yr15exMF2w0/s1600/herbssa1t01a.jpg](http://2.bp.blogspot.com/_zfnGIPJkL8o/THqLKzmuyLI/AAAAAAAAAyw/yr15exMF2w0/s1600/herbssa1t01a.jpg)

### 2.Salt Test

<http://salttest.unilever.com/>

3.

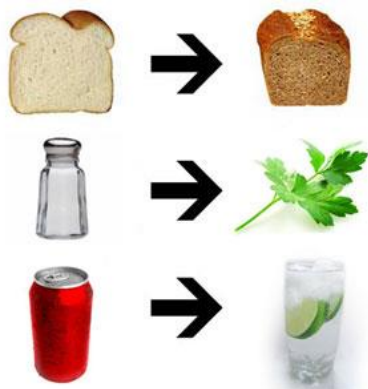


Image retrieved from: <http://memyselfandthem.files.wordpress.com/2012/04/the-end-of-war.jpg>

3/11 1. Carry your groceries instead of pushing a cart.



Image retrieved from: <http://blog.trysensa.com/wp-content/uploads/2009/09/kate2.jpg>

2. Workouts you can do when grocery shopping:

Park your car the farthest parking spot to grocery store.

Carry your bags to your car.

Curl or bow with grocery bags.

Raise your heels whenever standing.

Take the stairs.

Contract your gluteals (rear end muscles) any time you're stuck waiting.

As you walk, every time you step with your left foot, bend your arm at the elbow to lift your bag up to chest level.

Shop Till You Drop.



Image retrieved from: <http://i-cdn.apartmenttherapy.com/uimages/at/schlepp%20workout%20080612.jpg>

3/12 1. Vary your veggies - it's easy to go dark green. Add spinach, collard greens, or turnip greens into your soup.



Image retrieved from: [http://media.tumblr.com/tumblr\\_InrzpoSBQL1qidai1.jpg](http://media.tumblr.com/tumblr_InrzpoSBQL1qidai1.jpg)

2. How Many Fruits and Vegetables Do You Need?

<http://www.cdc.gov/nutrition/everyone/fruitsvegetables/howmany.html>

3. Dark green vegetables are major sources of potassium and magnesium, minerals linked with healthy blood pressure and blood sugar. Romaine lettuce, and even darker green leafy vegetables – spinach, Swiss chard, kale, collard greens, mustard greens, turnip greens – offer not only beta-carotene, but other carotenoid cousins called lutein and zeaxanthin. Lutein may help slow the development of age-related macular degeneration (AMD), an age-related cause of blindness. Beta-carotene, lutein and zeaxanthin all are powerful antioxidants that seem to play a role in blocking early stages in the development of cancer. Dark greens also can supply a significant amount of the folate we need. Folate is a B vitamin that promotes heart health and helps prevent certain birth defects. Folate is also necessary for DNA production and repair; without that repair, damaged cells can develop into cancer. Watercress, arugula, bok choy, broccoli and kale are dark green vegetables in the cruciferous family that provide additional cancer-fighting compounds.



Image retrieved from: [http://dalchwellness.com/wp-content/uploads/2012/03/spring\\_greens.jpg](http://dalchwellness.com/wp-content/uploads/2012/03/spring_greens.jpg)

Texts received from: <http://www.aicr.org/press/health-features/nutrition-notes/nn-more-vegetables-more-colors.html>

3/13 1. Escape the stress of a difficult day by excusing yourself for a walk

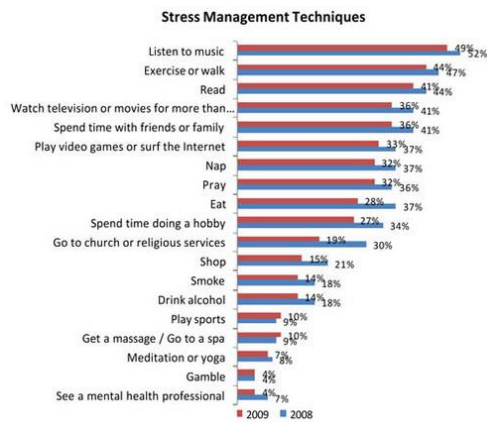


Image retrieved from: [http://www.adaa.org/sites/default/files/Exercise\\_woman-running.jpg](http://www.adaa.org/sites/default/files/Exercise_woman-running.jpg)

2. Exercise increases your overall health and your sense of well-being and has some direct stress-busting benefits.



It pumps up your brain's feel-good neurotransmitters, called endorphins.  
 It's meditation in motion.  
 It improves your mood.



Text retrieved from: <http://www.mayoclinic.com/health/exercise-and-stress/SR00036>

Image retrieved from: <http://lifeisntover.wordpress.com/2009/11/10/relieve-some-stress-exercise/>

3/14 1. Be adventurous. Expand your tastes to enjoy a variety of foods.



Image retrieved from: [http://blu.stb.s-msn.com/i/E0/F5A96670778D4CDAC6A5DB29D8099\\_h296\\_w526\\_m2\\_bblack\\_q100\\_p100\\_cTdOymbEc.jpg](http://blu.stb.s-msn.com/i/E0/F5A96670778D4CDAC6A5DB29D8099_h296_w526_m2_bblack_q100_p100_cTdOymbEc.jpg)

2. Fruit/Vegetable/Fiber Screener

<http://www.nutritionquest.com/wellness/free-assessment-tools-for-individuals/fruit-vegetable-fiber-screener/>

3/15 1. Take the long way to the water cooler.

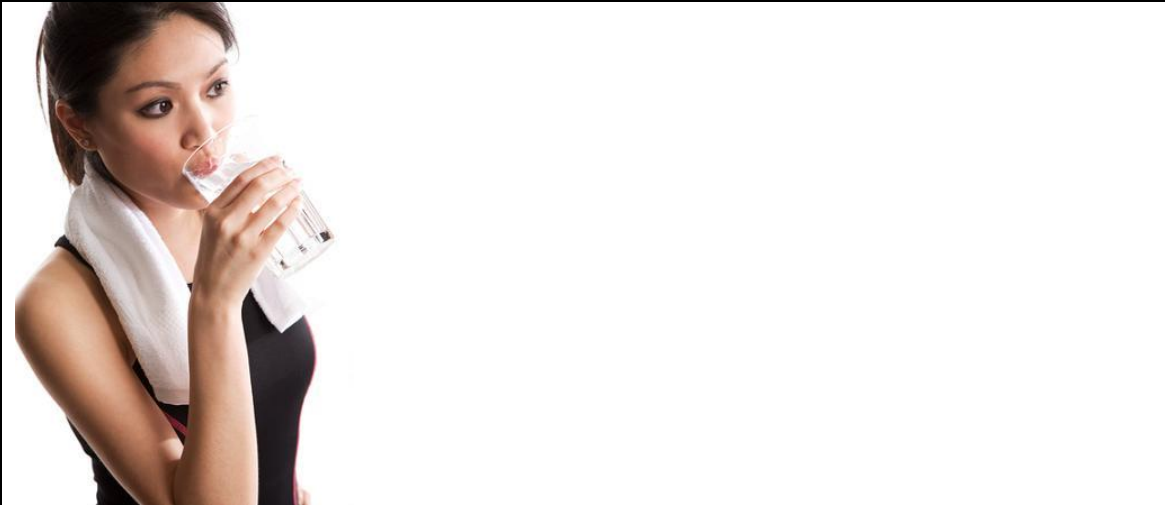


Image retrieved from: [http://www.babybellies.ca/images/woman\\_drinking\\_water.jpg](http://www.babybellies.ca/images/woman_drinking_water.jpg)

2. Quiz: How physically active are you?

<http://www.measureup.gov.au/internet/abhi/publishing.nsf/Content/Tips+for+getting+active-lp>

3/19 1. Every time you eat a meal, sit down, chew slowly, and pay attention to flavors and textures.



Image retrieved from: [http://s2.hubimg.com/u/6804101\\_f248.jpg](http://s2.hubimg.com/u/6804101_f248.jpg)

2. How to enjoy eating?

Put your utensils down for 10-15 seconds after a few bites.

Take sips of water (or non-calorie beverage) after every few bites.

Take small bites and chew slowly. Finish chewing and swallowing each bite before you put more food on your fork.

Look at the food on your plate. Notice the texture and flavor of each bite. Take time to savor the taste and aroma of the food.

Create a calm eating environment. With less stress or chaos, you will be able to pay attention to what you are eating. Turn off the TV and computer, put away reading material, and refrain from eating on the run.



Image retrieved from:

[http://www.canyonranch.com/sites/default/files/NUT16\\_80612441\\_savor\\_food\\_466x196.jpg](http://www.canyonranch.com/sites/default/files/NUT16_80612441_savor_food_466x196.jpg)

<http://www.diabetesprevention.pitt.edu/docs/Session%2017%20Mindful%20Eating%20Handouts.pdf>

### 3. The unhappy truth about soda

<http://www.youtube.com/watch?v=myxwCEGcBYc>

3/20 1. Do leg lifts while sitting at your desk.



Image retrieved from: <http://mondomagazine.net/wp-content/uploads/2009/03/leg-lift.jpg>

### 2. Desk Workout video

<http://www.sparkpeople.com/resource/videos-detail.asp?video=103>

3/21 1. Top your favorite cereal with apples, bananas, raisons, or berries.



Image retrieved from: [http://www.sodahead.com/fun/do-you-put-fruit-in-your-cereal/question-3309741/?link=ibaf&q=top+your+cereal+with+fruit&imgurl=http://images.sodahead.com/polls/003309741/4316570450\\_cereal\\_and\\_fruit\\_original\\_xlarge.jpeg](http://www.sodahead.com/fun/do-you-put-fruit-in-your-cereal/question-3309741/?link=ibaf&q=top+your+cereal+with+fruit&imgurl=http://images.sodahead.com/polls/003309741/4316570450_cereal_and_fruit_original_xlarge.jpeg)

2. High-fiber foods, such as fruit and vegetable generally require more chewing time, which gives your body time to register when you're no longer hungry, so you're less likely to overeat. Also, a high-fiber diet tends to make a meal feel larger and linger longer, so you stay full for a greater amount of time. And high-



fiber diets also tend to be less "energy dense," which means they have fewer calories for the same volume of food.



Text retrieved from: <http://www.mayoclinic.com/health/fiber/NU00033>

Image retrieved from:

[http://img.webmd.com/dtmcms/live/webmd/consumer\\_assets/site\\_images/article\\_thumbnails/reference\\_guide/lose\\_weight\\_fast\\_how\\_to\\_do\\_it\\_quickly\\_ref\\_guide/375x321\\_lose\\_weight\\_fast\\_how\\_to\\_do\\_it\\_quickly\\_ref\\_guide.jpg](http://img.webmd.com/dtmcms/live/webmd/consumer_assets/site_images/article_thumbnails/reference_guide/lose_weight_fast_how_to_do_it_quickly_ref_guide/375x321_lose_weight_fast_how_to_do_it_quickly_ref_guide.jpg)

### 3. The Benefits of Fiber: For Your Heart, Weight, and Energy

<http://www.webmd.com/diet/fiber-health-benefits-11/slideshow-high-fiber-foods>

3/22 1. Do something outside on the weekends like going for a hike or a bike ride.



Image retrieved from: <http://www.grandnefeli.com/club/wp-content/uploads/2010/12/mj-gt-mountain-biking-1.jpg>

### 2. Top Five Benefits of Outdoor Recreation

1. Good for the mind. prevention or reduction of stress, improved self-esteem, confidence, creativity, and spiritual growth;
2. Good for the body. aerobic, cardiovascular and muscular fitness, and improved immune system.
3. Even better for your social life. bonding with like-minded and feeling an increased pride
4. Good for academic performance. People who regularly participate in outdoor recreation tend to be more productive at work/school.
5. Great for the great outdoors. environmental benefits, including increased environmental awareness and involvement.



Image retrieved from: [http://www.brennanzelener.com/profile/wp-content/uploads/2012/08/Jackson-Hole-821839\\_960x360.png](http://www.brennanzelener.com/profile/wp-content/uploads/2012/08/Jackson-Hole-821839_960x360.png)

Text retrieved from: <http://einside.kent.edu/?type=art&id=82928>

3/25 1. If you are eating out, only eat half of your meal. Share it with a friend or take the other half with you.



[http://media.mlive.com/chronicle/entertainment\\_impact/photo/10971281-large.jpg](http://media.mlive.com/chronicle/entertainment_impact/photo/10971281-large.jpg)

2. Tips for Eating Out

Instead of a large entrée, order an appetizer and a leafy green salad.

Start with a small serving like a cup of soup, a junior burger or a small order of fries

Order a kid's meal at a fast-food restaurant.

Eat half at the restaurant, then take the other half home.

Ask for a to-go box as soon as your meal is served and put half your food into the container.

Share from start to finish.



Image retrieved from: <http://img4.myrecipes.com/i/may1/tout-dining-out-sl-1.jpg>

Text received from: <http://www.eatright.org/public/content.aspx?id=6850>

3/26 1. Watch birds and squirrels and enjoy spring blossoms while walking or riding your bike.



Image retrieved from: [http://2.bp.blogspot.com/-YcxQ8hrZb2Q/TrCHU6jenPI/AAAAAAAAAH\\_E/rUXaciXy1VA/s1600/SpringBayDouglasSquirrel.jpg](http://2.bp.blogspot.com/-YcxQ8hrZb2Q/TrCHU6jenPI/AAAAAAAAAH_E/rUXaciXy1VA/s1600/SpringBayDouglasSquirrel.jpg)

## 2. *Benefits Of Outdoor Exercise*

[http://www.huffingtonpost.com/2012/06/23/outdoor-exercise-health-benefits\\_n\\_1616467.html#slide=1126585](http://www.huffingtonpost.com/2012/06/23/outdoor-exercise-health-benefits_n_1616467.html#slide=1126585)

3. How do you veggie-fy your pizza pie for Meatless Monday? This Barbecue Pizza from [TakePart.com](http://www.TakePart.com) is loaded with spinach, tomatoes, onions, and avocado slices: <http://bit.ly/11IQ7q6>



3/27 1. Eat small, healthy snacks during the day. This will keep you from overeating at mealtimes.



Image retrieved from: [http://miamihousewife.org/wp-content/uploads/2012/04/IMG\\_4961.jpg](http://miamihousewife.org/wp-content/uploads/2012/04/IMG_4961.jpg)

2. When it comes to snacking, people often think of foods that are high in **sugar** or added **fats** but you have lots of other options. Snacks can help curb hunger while adding a nutritious energy boost to your day. But that means choosing foods wisely. It's a great opportunity to fit in another serving of **whole grains**, **fruits**, or **vegetables**! These foods are lower in fat and calories compared to most salty snacks and sweets. They will also fill you up and give you the energy you need. Regardless of how many snacks your meal plan includes, **portion sizes** are the key to avoiding weight gain. So, resist those trips to the vending machine – plan ahead and pack a healthy snack





<http://www.diabetes.org/food-and-fitness/food/planning-meals/snacks/>

Image retrieved from: [http://www.fitday.com/fitness-articles/iStock\\_000003888693XSmall.jpg](http://www.fitday.com/fitness-articles/iStock_000003888693XSmall.jpg)

### 3. The Smart Snack Finder

<http://recipes.familyeducation.com/healthy-snack-finder.html>

3/28 1. Tour a museum, zoo, or nature preserve.



Image retrieved from: <http://mtobikes.com/wp-content/bobcat-ridge-natural-area-mountain-bike-trail-fort-collins-colorado-group-pic.jpg>

### 2. Exploring Natural Heritage in Fort Collins

<http://www.fcmdsc.org/trails/tour1/tour1-gateway.html>

### 3. Happy Easter!

Thought this was a cute idea for Easter

<https://www.facebook.com/photo.php?fbid=518705611508294&set=a.416533708392152.92902.414357165276473&type=1>



3/29 1. Don't eat in front of the TV or screen. It's harder to keep track of how much you are eating.



Image retrieved from: <http://www.learn2sweat.com/wp-content/uploads/2011/04/9-610x405.jpg>

2. Limit eating while watching television. Many people overeat when watching television because they aren't thinking about what they are eating - they stop eating when the bowl or bag is empty, instead of when they have had enough! If you choose to eat while watching television, portion out a small amount.



Image retrieved from: <http://timewellness.files.wordpress.com/2012/05/455492-001tveatingcrop.jpg?w=600&h=398&crop=1>

Text retrieved from: <http://www.choosemyplate.gov/weight-management-calories/weight-management/better-choices/decrease-screen-time.html>

3. Keep forgetting where you put your keys? There's a simple solution. Exercise more! When you're physically active your brain gets more oxygen which gives memory a boost!

<https://www.facebook.com/photo.php?fbid=10151338690356139&set=a.254785836138.137632.55701226138&type=1&theater>



4. Happy Easter folks.

<https://www.facebook.com/photo.php?fbid=550503871656266&set=a.234673756572614.56971.190365661003424&type=1&theater>



4/1 1. Park your car or lock your bike in the far corner of the parking lot or bike rack so you walk further to your destination.



Image retrieved from: [http://blu.stb.s-msn.com/i/AF/45F48839BD99A87E71D55037681D\\_h400\\_w400\\_m2\\_bblack\\_q100\\_p100\\_ccVhSrQLZ.jpg](http://blu.stb.s-msn.com/i/AF/45F48839BD99A87E71D55037681D_h400_w400_m2_bblack_q100_p100_ccVhSrQLZ.jpg)

## 2. Benefits of Walking

<http://www.youtube.com/watch?v=m1rRo7COIRI>

4/2 1. Eat before you get too hungry.

-3   -2   -1   0   +1   +2   +3  
Starving ← → Stuffed

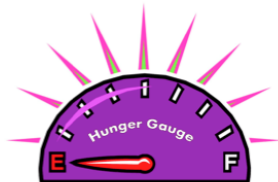


Image retrieved from: <http://nicolegeurin.files.wordpress.com/2012/06/screen-shot-2012-05-09-at-11-00-06-am.png>

## 2. What triggers overeating?

Getting too hungry, a super-size meal, watching TV or talking on the phone, emotions such as stress or contentment, and even the types of foods you eat all can affect overeating. You can feel fuller longer by eating solids over liquids, not skipping meals, choosing high-volume and low-calorie foods (vegetables and fruit), and substituting whole grains for refined grain products.



Image retrieved from: [http://cdn.blisstree.com/files/2012/08/shutterstock\\_100687321.jpg](http://cdn.blisstree.com/files/2012/08/shutterstock_100687321.jpg)  
Text received: <http://www.mayoclinic.com/health/overeating/MY00672>

4/3 1.If you find it difficult to be active after school, try it before classes.



Image retrieved from: <http://pathwayintelligence.org/wp-content/uploads/2012/09/How-to-maximize-your-intelligence-2.jpg>

2. 7 Reasons Why Not to Exercise-and Why You Should Ignore Them

<http://www.dietsinreview.com/slideshows/7-reasons-why-not-to-exercise-and-why-you-should-ignore-them/exercise-related-excuses/>

4/4 1.Munch on a small bag of microwave popcorn with no added butter.



Image retrieved from: [http://ecx.images-amazon.com/images/I/51HBWWGZDAL.\\_SL500\\_AA300\\_PIbundle-12,TopRight,0,0\\_AA300\\_SH20\\_.jpg](http://ecx.images-amazon.com/images/I/51HBWWGZDAL._SL500_AA300_PIbundle-12,TopRight,0,0_AA300_SH20_.jpg)

2. Popcorn is relatively high in fiber - a cup of air-popped popcorn contains just over a gram of fiber. It also contains 1 gram of protein and 6 grams of carbohydrate. It contains no cholesterol, it is virtually fat-free (only 0.1 g per cup) as long as no butter is added. It contains only 100 to 150 calories in a serving of 5

popped cups. As popcorn is 100 percent unprocessed grain, it is a whole-grain food. One serving can provide about 70 percent of the recommended daily intake of whole grain. Popcorn also contains a number of vitamins: folate, niacin, riboflavin, thiamin, pantothenic acid, and vitamins B6, A, E and K. A serving of popcorn contains about 8 percent of the daily value of iron, with lesser amounts of calcium, copper, magnesium, manganese, phosphorus, potassium and zinc.



Image retrieved from: <http://www.curvygirlguide.com/wp-content/uploads/2011/02/popcorn.jpg>

Text retrieved from: <http://www.ars.usda.gov/News/docs.htm?docid=22719>

3. Show us your moves! We want to know how you're getting your 30 minutes of exercise today. Post a picture on Instagram with #mymoves!

<https://www.facebook.com/photo.php?fbid=10151533323237458&set=a.10150384390712458.378762.10873187457&type=1&theater>



4/5 1. Reverse your walking routine—start where you usually end.



<http://mindbodyandsoul.ca/wp-content/uploads/2013/02/walking-logo.jpg>

2. Walking Path

[http://www.startwalkingnow.org/start\\_walking\\_path\\_search\\_result.jsp](http://www.startwalkingnow.org/start_walking_path_search_result.jsp)

3. Exercise

<http://www.yourweightmatters.org/health-and-wellness/exercise/>



4. TOS Member Dr. Arya Sharma comments on study linking healthy eating and exercise to improved work productivity <http://ow.ly/jU2o0>

5. Fifty something Diet: The 3 Best Ways To Eat For A Healthy Heart  
[http://www.huffingtonpost.com/2013/04/05/heart-diet\\_n\\_3021107.html](http://www.huffingtonpost.com/2013/04/05/heart-diet_n_3021107.html)

6. Couch to 5K running plan  
<http://www.nhs.uk/Tools/Pages/couch-5K-running-plan.aspx>

7. Fat Intake Screener  
<http://www.nutritionquest.com/wellness/free-assessment-tools-for-individuals/fat-intake-screener/>

#### Additional suggested postings

1. Stop eating when you are full.



Image retrieved from: [http://i.yimg.com/ea/img/-/120820/fat\\_burning\\_food\\_bonus\\_fast\\_eating\\_183369j-18336kt.jpg?x=450&q=80&n=1&sig=cK8WuZSU9DJF6YMF7aZj6A--](http://i.yimg.com/ea/img/-/120820/fat_burning_food_bonus_fast_eating_183369j-18336kt.jpg?x=450&q=80&n=1&sig=cK8WuZSU9DJF6YMF7aZj6A--)

2. The difference between emotional hunger and physical hunger

Before you can break free from the cycle of emotional eating, you first need to learn how to distinguish between emotional and physical hunger. This can be trickier than it sounds, especially if you regularly use food to deal with your feelings.

Emotional hunger comes on suddenly.

Physical hunger comes on gradually.

Emotional hunger feels like it needs to be satisfied instantly.

Physical hunger can wait.

Emotional hunger craves specific comfort foods.

Physical hunger is open to options—lots of things sound good.

Emotional hunger isn't satisfied with a full stomach. Physical hunger stops when you're full.

Emotional eating triggers feelings of guilt, powerlessness, and shame.

Eating to satisfy physical hunger doesn't make you feel bad about yourself.



Image retrieved from: <http://www.azminanutrition.com/wp-content/uploads/2012/02/emotional-eating-e1330986047357.jpg>  
[http://www.helpguide.org/life/emotional\\_eating\\_stress\\_cravings.htm#hunger](http://www.helpguide.org/life/emotional_eating_stress_cravings.htm#hunger)

1. Take a walk a few hours before bed to sleep more soundly.



Image retrieved from: [http://1.bp.blogspot.com/-E76GspO30cA/S298NBcxDUI/AAAAAAAAA2I/9IvoGv\\_JmVI/s1600/walking.jpg](http://1.bp.blogspot.com/-E76GspO30cA/S298NBcxDUI/AAAAAAAAA2I/9IvoGv_JmVI/s1600/walking.jpg)

2. Regular physical activity can promote better sleep, helping you to fall asleep faster and to enjoy deeper sleep. Timing is important, though. If you exercise too close to bedtime, you might be too energized to fall asleep.



<http://www.mayoclinic.com/health/sleep/HQ01387/NSECTIONGROUP=2>

Image retrieved from: <http://drnohle.org/files/2011/11/sleep.jpg>

1. Try eating at least 2 vegetables with lunch or dinner.

## THE PLATE METHOD

Use this as a guide in choosing appropriate portion sizes and balancing nutrients at lunch and dinner.



find out more at:  
[wellness.rice.edu](http://wellness.rice.edu)

Image retrieved from: <http://treatsandfeasts.files.wordpress.com/2011/02/platemethod20final2010.png>

2.

### Science Matters

## Bright colors, rich diet

Some of the most health-enhancing nutrients in fruits and vegetables are bright red, orange, yellow and green.

**A simple guide: Go for color**  
Dark and intensely-colored plant foods usually contain more chemically active antioxidant pigments than pale ones.

**Some of the best:**

- Grapes, blueberries
- Fresh corn
- Kale, spinach, dark greens
- Sweet potatoes, yams
- Sweet peppers, all colors
- Pumpkin, winter squash
- Plums, prunes
- Mango and papaya
- Oranges, other citrus
- Watermelon, other melons
- Tomatoes
- Strawberries
- Carrots

**Magic chemicals**  
The most important chemically active nutrients

- Anthocyanidins
- Aliphen
- Hesperetin
- Lutoclin
- Proanthocyanidin
- Myricetin
- Quercetin
- Lycopene
- Beta carotene

**What do antioxidants do?**  
Free radicals are small, cell-damaging molecules produced by the body as waste products; antioxidants neutralize them!

● Oxygen

● Body uses oxygen in metabolism

● Free radical Attacks and damages cells

● Antioxidant Neutralized free radical

© 2007 MCT  
Source: Produce for Better Health Foundation, Dairy Food Connection, Florida Department of Agriculture and Consumer Services, Oregon State University, "Understanding Free Radicals and Antioxidants"  
Graphic: Cindy Jones-Huffman, Sun Sentinel

Image retrieved from: <http://thermographydoc.com/wp->

content/uploads/2011/11/20071107\_SM\_Foods1.jpg

<http://www.fruitsandveggiesmorematters.org/fruit-veggie-community-social>  
Join America's More Matters Pledge to Fight Obesity

1. Keep a walking journal, note steps and how you feel afterwards

Keep Moving Walk Club \_\_\_\_\_ Weekly Journal  
(your walking club name)

Day	Time of Day	Steps Walked	Miles Walked	Minutes Walked	Notes
MONDAY					
Date _____					
TUESDAY					
Date _____					
WEDNESDAY					
Date _____					
THURSDAY					
Date _____					
FRIDAY					
Date _____					
SATURDAY					
Date _____					
SUNDAY					
Date _____					
My total is:					

Image retrieved from: <http://www.mass.gov/eohhs/docs/dph/com-health/keep-moving/walking-journal.pdf>

2. Activity Tracker

[http://www.startwalkingnow.org/mystart\\_tracker.jsp](http://www.startwalkingnow.org/mystart_tracker.jsp)

1. Have low-calorie beverages such as water and unsweetened tea and snacks such as fruit and veggie handy in your room.



[http://www.hellawella.com/wp-content/uploads/2012/02/Eats\\_FruitVeggiesWater.jpg](http://www.hellawella.com/wp-content/uploads/2012/02/Eats_FruitVeggiesWater.jpg)

2. Snacks are a terrific way to satisfy that hunger and get all the vitamins and nutrients your body needs. To keep energy levels going — and avoid weight gain — steer clear of foods with lots of added sugars like candy bars or soda. Look for foods that contain fiber like whole-grain breads, cereals, fruit, and vegetables and combine them with protein-rich snacks such as peanut butter or low-fat yogurt or cheese.



Image retrieved from: <http://planetlifestyle.files.wordpress.com/2011/09/0409-healthy-snacks-preview.jpg>  
 Text retrieved from: [http://kidshealth.org/teen/food\\_fitness/nutrition/healthy\\_snacks.html](http://kidshealth.org/teen/food_fitness/nutrition/healthy_snacks.html)

1. Do household activities such as laundry, rubbing floor, and vacuuming.



<http://web-images.chacha.com/images/Gallery/5039/how-can-you-avoid-the-flu-in-college-1698020146-nov-5-2012-1-600x400.jpg>

2.

Home & Daily Life Activities	125 pound person	155 pound person	185 pound person
Sleeping	19	23	28
Watching TV	23	28	33
Reading: sitting	34	42	50
Standing in line	38	47	56
Cooking	75	93	111
Child-care: bathing, feeding, etc.	105	130	155

Food Shopping: with cart	105	130	155
Moving: unpacking	105	130	155
Playing w/kids: moderate effort	120	149	178
Heavy Cleaning: wash car, windows	135	167	200
Child games: hopscotch, jacks, etc.	150	186	222
Playing w/kids: vigorous effort	150	186	222
Moving: household furniture	180	223	266
Moving: carrying boxes	210	260	311

<http://www.health.harvard.edu/newsweek/Calories-burned-in-30-minutes-of-leisure-and-routine-activities.htm>

1. Snack only in response to true hunger. Avoid nibbling in response to stress, studying, boredom, etc.



Image retrieved from:

[http://i.i.com.com/cnwk.1d/i/tim/2011/06/15/yumchocolate\\_11185339\\_620x350.jpg](http://i.i.com.com/cnwk.1d/i/tim/2011/06/15/yumchocolate_11185339_620x350.jpg)

2. If you've ever make room for dessert even though you're already full or dove into a pint of ice cream when you're feeling down, you've experienced emotional eating. Emotional eating is using food to make yourself feel better—eating to fill emotional needs, rather than to fill your stomach.

Alternatives to emotional eating



If you're depressed or lonely, call someone who always makes you feel better, play with your dog or cat, or look at a favorite photo or cherished memento.  
 If you're anxious, expend your nervous energy by dancing to your favorite song, squeezing a stress ball, or taking a brisk walk.  
 If you're exhausted, treat yourself with a hot cup of tea, take a bath, light some scented candles, or wrap yourself in a warm blanket.  
 If you're bored, read a good book, watch a comedy show, explore the outdoors, or turn to an activity you enjoy (woodworking, playing the guitar, shooting hoops, scrapbooking, etc.).



Image retrieved from: <http://www.norwalkettlebellcamp.com/blog/wp-content/uploads/2011/10/emotional-eating2.jpg>

Text retrieved from: [http://www.helpguide.org/life/emotional\\_eating\\_stress\\_cravings.htm](http://www.helpguide.org/life/emotional_eating_stress_cravings.htm)

Play sand volleyball/ping pong with other people in the residence halls.

<http://www.flickr.com/photos/coloradostateuniversity/6192772243/>

How can you burn off some of those extra calories before they turn into extra pounds? After thinking about a particular dish you savored (was it that brownie sundae?), try our "Get Moving! Calculator" to see how many calories you expend doing your favorite exercise or activity.

<http://www.caloriecontrol.org/healthy-weight-tool-kit/lighten-up-and-get-moving>

If eating fast food, choose a small hamburger, grilled chicken, fries, chili or salad entrée.



Image retrieved from: <http://www.cafebonappetit.com/assets/media/calories.jpg>

# Is that one meal or two?

So how much of that meal should you eat? As portion sizes at restaurants have increased over the last 50 years, so have our waistlines, said Cindy Ketterman, the chief dietitian at York Hospital.

"I don't think people necessarily want more," Anderson said. "I think they just want something commensurate with what they're paying." We brought five meals from local restaurants — their portion sizes were typical for what you'd often find eating out — and asked Ketterman to weigh in. She pared the plates down to healthier sizes. Then we asked the restaurant owners for their reactions.

Restaurants aren't trying to fatten you up, said Jeremiah Anderson, the general manager at the White Horse Bar & Grill.

## Restaurant portion

## Healthier portion

**Italian sub with barbecue chips**

Estimated calories as served: **1,345**

Restaurant: Marcollo's Pizzeria in West Manchester Township  
Marcollo's management declined to comment.



**Italian sub with barbecue chips**

Estimated calories as shown: **635**

is half the sub and one serving of potato chips.

Ketterman says: The sub is below the recommended serving — so only eat half of it — and remember that bag of chips holds two- and a-half servings.

**Angus mushroom and Swiss burger with fries**

Estimated calories as served: **1,150**

Restaurant: McDonald's (770 burgers, 360 items)

Pamela Simonelli, the regional marketing manager for McDonald's, says: "McDonald's offers a variety of choices and variety. We offer a variety of great-tasting, quality food choices in a number of serving sizes to fit many nutritional needs — from chicken sandwiches and Steak 'n' Fries to Premium Salsas and our new Angus Burgers."



**Angus mushroom and Swiss burger with fries**

Estimated calories as shown: **560**

is a three-ounce burger and 2.4 ounces of fries.

Ketterman says: This burger contains five ounces of beef, 60 percent more than needed. And way too many fries.

**Chicken parmesan**

Estimated calories as served: **900**

Restaurant: White Horse Bar & Grill in York

White Horse general manager Jeremiah Anderson says: "Hardly anyone finishes the pasta dishes." All White Horse meat portions larger than six ounces are clearly marked on the menu, he said. Many people take home leftovers.



**Chicken parmesan**

Estimated calories as shown: **600**

after Ketterman removed one piece of bread and 2 cups of pasta.

Ketterman says: The chicken wasn't breaded, a good sign, and it is close to a healthy portion. But there was way too much pasta — one cup equals one serving.

**Two slices of pizza**

Estimated calories as served: **850**

Restaurant: Marcollo's Pizzeria in West Manchester Township  
Marcollo's management declined to comment.



**Two slices of pizza**

Estimated calories as shown: **500**

Ketterman says: Trim a third off each slice for a healthier meal.

**Two pancakes and four sausage links with syrup**

Estimated calories as served: **800**

Restaurant: Round the Clock Diner in Manchester Township

Round the Clock co-owner Thom Sauerbrey says: "I think the market demands what size we serve. White boxes for quickly prepared food, fresh food and larger portions." Many customers, especially seniors, take at least some of their meal home in a box.



**Two pancakes and two sausage links, no syrup**

Estimated calories as shown: **450**

Ketterman says: The pancakes were about two-thirds a half times the recommended serving. Two smaller pancakes — at about 150 calories each — is more reasonable. High fat sausage is never a good idea, but if you must, limit yourself to two links.

Watch Ketterman cut these portions at [ydr.com](http://ydr.com)

NOTE: McDonald's calorie information is from mcdonalds.com, all other calories estimated by Cindy Ketterman. DAILY RECORD: STANLEY HEINS — PHOTOS: BILL BOWEN; DESIGN: GABRIEL HANLON

Image retrieved from:

[http://extras.mnginteractive.com/live/media/site515/2010/0827/20100827\\_084247\\_portion-web.jpg](http://extras.mnginteractive.com/live/media/site515/2010/0827/20100827_084247_portion-web.jpg)