

TO HEALTH WITH PLANNING: A MANUAL FOR PROMOTING ACTIVE, HEALTHY
LIVING THROUGH COMMUNITY PLANNING

by

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A REPORT

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Abstract

This report examines what planners can do to increase healthy lifestyles within their communities by presenting development recommendations. In the beginning of the twentieth century the discipline of city planning was dedicated to stopping the spread of infectious diseases through improved sanitation and housing. Over the years planning separated from its origins in public health. Mobility and increased technology began to drive community development and planning, and our society created environments that devalue healthy lifestyles. A wide array of activities contribute to healthy lifestyles. Five characteristics have been shown to be the most promising in promoting health. They are regular physical activity, maintaining a healthy weight, moderate alcohol consumption, not smoking, and a prudent diet. To achieve its purpose this report will explore the prevalence of adhering to healthy lifestyle characteristics and recount a brief history of community development that has contributed to decreased healthy lifestyle adherence. Through the review of past destructive practices and current initiatives to create healthy communities, a guide to community development for healthy lifestyles is laid out. This guide will allow communities to determine their location in the process of becoming a health conscious community and give them recommendations about what they can do to promote health.

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Dedication

To my family, friends, husband, and educators. It is because of your never ending support that this study has been successful.

CHAPTER 1 - Introduction

In the beginning of the twentieth century the discipline of city planning was dedicated to stopping the spread of infectious diseases through improved sanitation and housing. Over the years planning has become more specialized, leading to a rift between it and its origins in public health. Through, and perhaps due to the separation of these fields, our society has created environments that promote increased food intake, unhealthy foods, physical inactivity, and other practices that lead to poor health. As disease rates and medical bills rise from these lifestyle choices, it has become apparent that city planning needs to return to its roots, and once again take a stand against unhealthy living.

Importance of a Healthy Lifestyle

Health is important because it allows individuals to fulfill their specific responsibilities. As part of society, everyone has duties to perform. These duties include obligations at work, family and household responsibilities, and societal duties. As a person grows older, his or her responsibilities grow and change, from facing the challenges of high school and college, to raising children and taking care of elderly family members. To be able to handle the responsibilities and pressures that build in everyday life, a person must be healthy. If a person is not healthy, they will lack the ability to meaningfully contribute to society in either a physical, mental, or social manner.

Humans are the most important asset to a community. The absence of health can have a devastating effect on communities. Physical ailments can leave people, even those with insurance, with lofty medical bills they are unable to pay leading to a larger reliance on government welfare. Today over 60% of US bankruptcies are caused by medical bills. Of those who filed for bankruptcy due to medical bills, 78% actually had health insurance (Tamkins, 2009). Beyond the steep financial cost of unhealthy living, there is also a high emotional price for inactivity. Physical and mental inactivity can lead to unhappiness and passivity. If people are unhappy they may avoid the social interactions vital to community development. However, evidence exists that exercising can reduce the effects of depression and anxiety (Fox, 1999). Finally the abuse of alcohol and smoking can lead to safety concerns for communities. Without

healthy people, a community can become a dreary and dangerous place that people would rather not be a part.

Overall, health is important to meet the basic needs of individuals and communities. Health promotes human interaction, it improves a person's capacity to carry out their duties, it can lead to happiness, and most importantly it allows people to live longer. For these reasons, it is important to decrease health problems in America. Communities can take action to promote health by planning developments in a way that promotes the five characteristics of a healthy lifestyle.

Characteristics of Healthy Living

According to the World Health Organization's Constitution, health is not merely the absence of disease or injury, it is a state of complete physical, mental and social well-being. Therefore a healthy lifestyle includes all the steps and strategies taken to achieve optimum health. A healthy lifestyle can include a wide array of activities; however, there are five key characteristics that have been shown to be the most promising in promoting health in all people. These characteristics are regular physical activity, maintaining a healthy weight, moderate alcohol consumption, not smoking, and a prudent diet (King, Mainous, Carnemolla, & Everett, 2009). In King et al.'s study, the five healthy lifestyle characteristics were defined in the following manner. Regular physical activity was defined as vigorous intensity activity three days a week for 20 minutes a day. To maintain a healthy weight, a body mass index (BMI) between 18.5 and 29.9 kg/m² had to be sustained. Moderate alcohol consumption allowed one drink per day for women and two drinks a day for men. Finally by eating at least five fruits and vegetables a day, a person could ensure that they had a prudent diet. (King et al., 2009) These standards were used in the study in order to be consistent with previous work. However, today's standards in physical activity and weight have changed.

According to the Centers for Disease Control and Prevention in 2009, adults need at least 150 minutes of moderate aerobic activity every week and muscle strengthening activities on 2 or more days a week. This standard could also be achieved by doing 75 minutes of vigorous-intensity aerobic activity every week and muscle strengthening activities on 2 or more days a week.

The Centers for Disease Control and Prevention currently uses BMIs to determine weight statuses. Individual weight statuses can be classified in four categories. The first category is underweight. If an individual has a BMI under 18.5 then they are considered underweight. The second category classifies individuals with a BMI between 18.5 and 24.9 as normal. The next category is for those with a BMI of 25-29.9. The individuals in this category are considered overweight. Finally those with a BMI greater than 30 are considered obese. (Centers for Disease Control and Prevention, 2009e)

This study focuses on physical activity, diet, weight, smoking, and alcohol consumption even though other factors can affect personal health. Factors such as stress, amount of sleep, and genetics play a part in health, but their actual effects can vary from person to person. This makes them difficult to study, and it means results will not be applicable to a wide audience. Even though the benefits of a healthy lifestyle are widely known, few people actually live healthy lifestyles.

Purpose and Format

The purpose of this report is to educate America about the path it has taken to arrive at its current health condition and outline what can be done within the planning field to promote healthy living. The study focuses on three main questions. The first question is how widespread is poor health in America? Second, how did we reach this point? The final and most important question to be answered within this report is what can be done through planning to promote healthy living?

To answer these questions three steps have been taken. First, data regarding the health of American citizens was collected from the Centers for Disease Control and Prevention and analyzed in order to determine how widespread poor health is in America. Next, it is important to know how our current health problems have developed in order to correct them. This portion of exploration examines how increased mobility, technology, and changes in lifestyles have affected health. Finally, planning initiatives were reviewed to determine what is currently being done to combat poor health. This research focuses on data collected from across the United States and internationally. From this review, a guide to healthy community planning was created to encourage healthy planning within communities.

Summary

Healthy living creates happy, safe, and active community members. By promoting healthy living, communities can improve citizens' quality of life as well as create community involvement. In turn, more citizens will be drawn to the area in hopes of being a part of the movement. By examining healthy lifestyles, the level of health in America, and how communities can implement planning strategies to promote healthy lifestyles, this report aims to inform citizens, planners, and community officials about the positive impact that they may have on their community and themselves by considering healthy choices when making decisions. Through the creation of conscious healthy citizens, communities can support their own growth and success.

CHAPTER 2 - America's Health Crisis

To determine how many people in the United States are currently leading a healthy lifestyle, it must first be established what constitutes a healthy lifestyle. To be considered healthy, a person must observe all five of the healthy lifestyle characteristics as defined in the following paragraphs.

Smoking affects every organ in the body. It can cause a range of diseases even in those who are exposed to secondhand smoke. Therefore, in order to be categorized as living a healthy lifestyle, a person must be a nonsmoker.

Moderate alcohol consumption should not cause serious health problems in adults. In fact, many people believe that in moderation alcohol can be good for you. However, alcohol can affect people in different ways and there is no specific amount that can be said to be safe for everyone. According to the *Dietary Guidelines for Americans*, drinking in moderation is defined as having no more than one drink per day for women and no more than 2 drinks per day for men (U.S. Department of Health and Human Services, U.S. Department of Agriculture, 2005). This definition of moderate alcohol consumption will be used to judge whether or not a person's level of consumption is healthy.

Being physically active is one of the most important things a person can do for their health. Physical activity strengthens your muscles, bones, and mind while reducing the risk of disease. The Centers for Disease Control and Prevention recommends that everyone partake in at least 150 minutes of moderate-intensity activities or 75 minutes of vigorous-intensity activities a week. To be considered as having a healthy lifestyle in this study, a person must meet or exceed the Centers for Disease Control and Prevention recommendation.

When it comes to weight, what is and is not healthy, varies from person to person. Because of this, BMIs are considered more accurate than weight when determining whether a person is overweight or underweight. A BMI is calculated based on a person's height and weight. For this study, a BMI less than 24.9 will be considered healthy. Anything above this range will be regarded as unhealthy.

A healthy diet is key to having a healthy weight. Two main components of a healthy diet that are difficult for most people to consume are fruits and vegetables. In this study, for a

lifestyle to be considered healthy, a person needs to consume at least five fruits and vegetables a day.

Healthy Lifestyle Characteristics and Quality of Life

Alcohol

Excessive alcohol use is the third leading lifestyle related cause of death in the nation (Centers for Disease Control and Prevention, 2008). Every year approximately 85,000 individuals die in the United States due to alcohol abuse (Centers for Disease Control and Prevention, 2009e). In 2005 alone, there were over 1.6 million hospitalizations and 4 million emergency room visits for alcohol related conditions (Centers for Disease Control and Prevention, 2008). Alcohol has numerous immediate and long term risks associated with it, making it dangerous after a single use.

The immediate health risks associated with alcohol are most often the result of binge drinking. These risks include injuries such as falling, drowning, burns, firearm accidents, violence, risky sexual behavior, and alcohol poisoning. In regards to violence, alcohol use is associated with over 65% of incidents of intimate partner violence. In addition studies have shown that alcohol is a leading contributor to child maltreatment and neglect. (Centers for Disease Control and Prevention, 2008)

Over time, alcohol use can cause diseases, impairments, and social problems. Diseases that can develop include dementia, stroke, neuropathy, cardiovascular diseases, cancer, alcoholic hepatitis, cirrhosis, pancreatitis, and gastritis. Alcohol not only effects the body, it effects the mind. After long term use it increases the risk of depression, anxiety, and suicide. Social problems that arise after long term alcohol use include unemployment, decreased productivity, and family problems.

Alcohol can create many similar problems in men and women, however, because alcohol affects the sexes in different manners it can lead to different issues as well. Men are more likely than women to drink in excess. They are also more likely than women to take risks when drinking, which increases their risk of injury. Men consistently are more likely to die or be hospitalized from alcohol related incidents. Men's reproductive health can also be affected by alcohol consumption. Excessive alcohol use can cause impotence, infertility, and reduce secondary sex characteristics such as facial and chest hair.

Although men are more likely to drink and drink larger quantities, gender differences cause women to absorb more alcohol and take longer to metabolize it. This makes women more vulnerable to alcohol's long term health effects. Excessive drinking in women may disrupt the menstrual cycle and increase the risk of infertility, miscarriage, and premature delivery. In addition women who drink excessively are more likely to take part in risky sexual activities. Women who binge and drink in excess increase their risk of becoming a sexual assault victim, especially young women. Each year, 1 in 20 college women are sexually assaulted. Women who drink during their pregnancies are more likely to have an infant with Fetal Alcohol Spectrum Disorders and Sudden Infant Death Syndrome. Fetal Alcohol Spectrum Disorders, including Fetal Alcohol Syndrome, can cause mental retardation and birth defects. These disorders are completely preventable if a woman abstains from alcohol consumption while pregnant. The risk of having a child suffer from Sudden Infant Death Syndrome increases if a woman drinks during her first trimester of pregnancy. In addition, the risk of miscarriage also increases if a woman drinks excessively during her first trimester. Unfortunately many women do drink excessively in their first trimester before finding out they are pregnant. Studies have shown that 1 of every 20 pregnant women drank excessively before finding out they were pregnant. (Centers for Disease Control and Prevention, 2008)

Smoking

From well known effects such as cancer and heart disease to not so well known effects like cataracts and low bone density, smoking can harm the human body in several ways. During 2000-2004 approximately 443,000 died prematurely every year from smoking and exposure to secondhand smoke. Of the 443,000, 270,000 were males and 174,000 were females. On average, 3 million years of potential life are lost for males and 2 million years of potential life are lost for females annually. This figure excludes deaths from residential fires, which are over 700 a year, and adult deaths from secondhand smoke. (Adhikari, Kahende, Malarcher, Pechacek, & Tong, 2008) Overall, an estimated 25 million Americans alive today will die prematurely from smoking-related illnesses (Centers for Disease Control and Prevention, 2009e).

According to the Surgeon General's 2004 Report, smoking is linked to ten different types of cancer including not only lung, esophageal, oral, and laryngeal, but also bladder, cervical, kidney, stomach, pancreatic, and leukemia cancers. Among adults who died prematurely from

smoking and secondhand smoke, over 160,000 are attributed to cancer. The leading specific cause of smoking-attributable death was lung cancer at 128,922 deaths per year. (Adhikari, et al., 2008) By quitting the practice of smoking, individuals actually have the ability to decrease their chances of developing certain kinds of cancer. Once an individual has quit smoking, their chances of contracting bladder cancer decrease by 50% after only a few years. In addition their chance of getting pancreatic cancer decreases measurably after ten years of abstinence. (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, & Office on Smoking and Health, 2004)

Numerous cardiovascular diseases are more common in smokers than in nonsmokers. Conditions such as abdominal aortic aneurysm, atherosclerosis, cerebrovascular disease (stroke), and coronary heart disease are all more common in smokers. In fact, cigarette smoking is the largest risk factor predisposing to atherosclerosis and is a major cause of stroke (U.S. Department of Health and Human Services, et al., 2004). Over 128,497 of those who die prematurely from the effects of smoking, die from cardiovascular diseases. Two of the three leading specific causes of smoking attributable death are cardiovascular diseases - ischemic heart disease at 126,005 and chronic obstructive pulmonary disease at 92,915. It is important to remember that, smoking affects more than just the person who smokes. An estimated 50,000 lung cancer and heart disease deaths are attributed annually to secondhand smoke exposure.(Adhikari, et al., 2008)

In regards to respiratory function, the relationship between smoking and phlegm is strong and consistent according to the Surgeon General's 1984 report. Many studies have led to the conclusion that smoking is the most important cause of cough, sputum, chronic bronchitis, and mucus hypersecretion (U.S. Department of Health and Human Services, et al., 2004). In adults, smoking accelerates decline in lung function. However, with sustained abstinence from smoking, the rate of decline in pulmonary function does return to that of those who have never smoked. Smoking can also have respiratory effects in utero and in childhood. Smoking near children promotes significant health problems including reduced lung function, cough, phlegm production, increased respiratory illnesses, decreased physical fitness, and an unfavorable lipid profile. Overall, the number of smokers who die prematurely due to respiratory diseases is 103,338 per year. (Adhikari, et al., 2008)

Women who smoke are less likely to conceive. In addition, if and when a woman smoker does become pregnant, their child can be exposed to some serious health effects if they do not stop smoking during their pregnancy. Smoking during pregnancy is associated with increased risks for premature birth and pregnancy complications. It also increases the risk for stillbirth, neonatal death, and sudden infant death syndrome. (U.S. Department of Health and Human Services, et al., 2004) Smoking during pregnancy results in almost 800 infant deaths annually (Adhikari, et al., 2008). In addition to the aforementioned health effects of smoking, cigarette smoking also increases the risk of cataracts, low bone density, peptic ulcer disease, and diminished general health.

Beyond health concerns, smoking can increase productivity losses and health care costs. On average annually, smoking attributed productivity losses are approximately \$97 billion, while smoking attributed health care expenditures were approximately \$96 billion. Using these numbers, the total economic burden of smoking is about \$193 billion a year. (Adhikari, et al., 2008)

Physical Activity

Regular physical activity has the ability to increase not only quality of life, but also length of life. Higher levels of regular physical activity are associated with lower mortality rates even in those who are moderately active over those who are the least active. Physical activity is correlated with many health issues including cardiovascular diseases, cancer, diabetes, arthritis, osteoporosis, falling, obesity, mental health, and quality of life. (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, & The President's Council on Physical Fitness and Sports, 1996)

Even though cardiovascular diseases have been on the decline over the last half century, they still are the leading causes of death and disability. In 2006 over 600,000 individuals died from heart disease (Centers for Disease Control and Prevention, 2009). Today, 13.5 million people have coronary heart disease and 1.5 million suffer from heart attacks every year (U.S. Department of Health and Human Services, et al., 1996). Cardiovascular disease risks are decreased by regular physical activity. The level of effect physical activity has on reducing the risk of coronary heart disease is similar to that of other lifestyle factors such as abstaining from

cigarette smoking. Physical activity also prevents and combats high blood pressure. High blood pressure affects over 50 million Americans including almost 3 million children and adolescents. It is a major cause of heart complications.

Cancer is the second leading cause of death in the US. In fact about 25% of all deaths in the US can be attributed to cancer (Centers for Disease Control and Prevention, 2009b). Physical inactivity has been examined as a possible factor for some cancers. Studies have shown that physical activity is associated with a decreased risk of colon cancer, a cancer that nearly 95,000 individuals are newly diagnosed with each year (U.S. Department of Health and Human Services, et al., 1996). Numerous other studies have been done to see if a correlation exists between activity and other types of cancer, but results have been inconsistent.(U.S. Department of Health and Human Services, et al., 1996)

To maintain muscle strength, skeletal development, and joint function, physical activity is necessary. It is also beneficial in easing the pain associated with arthritis. Several studies have shown that specific exercise programs relieve symptoms such as joint swelling and improve function associated with arthritis. Regular physical activity can also increase pain threshold and energy.

Being physically active has been shown to reduce the risk of falling in older adults. Improved balance and gait decreases falling in the elderly. Exercising has the potential to improve balance and gait. In examining the relationship between physical activity and falling it was also found that women who are more active have a lower risk of hip fracture. Over 250,000 people suffer from hip fractures each year (U.S. Department of Health and Human Services, et al., 1996) Strength training and exercise may also help them maintain their independent living status.

Over 60 million Americans today are overweight (U.S. Department of Health and Human Services, et al., 1996). One of the main reasons many people work out is to lose weight. Most people believe they are less likely to gain weight and become obese if they are active. Physical activity is very important for weight control. Higher levels of activity result in burning more calories. Consuming more calories than are burned is a contributing factor to obesity. By partaking in activities that burn more calories, a person can reduce their chances of becoming obese.

Health is more than the absence of disease; it is a positive state of wellbeing. Physical activity has been found to increase wellbeing. Physical activity appears to relieve depression and anxiety, and increase self-esteem and mood. In addition physical activity may reduce the risk of developing depression.

Fruit and Vegetable Consumption

Fruits and vegetables are critical in maintaining good health and a healthy diet. Unfortunately not enough Americans are getting the recommended amounts. In fact only 32.6% of Americans consume two or more fruits a day and only 27.2% consume three or more vegetables a day (Blanck, et al., 2007). A healthy diet including fruits and vegetables can decrease risk of chronic diseases such as diabetes, hypertension, certain cancers, overweight and obesity, and micronutrient deficiencies. (Centers for Disease Control and Prevention, 2009d) People who consume a diet with only small amounts of fruits and vegetables are more likely to have chronic diseases such as stroke, cardiovascular diseases, and certain cancers. Fruits and vegetables contain essential vitamins, minerals, and fiber that protect and improve body functions (Centers for Disease Control, 2009a). In addition, they have a low energy density which makes them a beneficial tool in weight management (Blanck, et al., 2007).

The nutrients found in fruits and vegetables are key in maintaining good health. Fiber, folate, potassium, vitamin A, and vitamin C are just a few of the nutrients prevalent in fruits and vegetables, yet they can have a great impact on health. Diets rich in fiber have been shown to decrease the risk of coronary artery disease. Excellent vegetable sources of fiber include beans, peas, lentils, and artichokes. Folate may reduce a woman's risk of bearing children with a brain or spinal cord defect. Some excellent sources of folate include black eyed peas, cooked spinach, and asparagus. Potassium helps maintain healthy blood pressure levels. Sources rich in potassium include sweet potatoes, tomatoes, beet greens, white beans, cooked greens, carrot juice, and prune juice. Diets with adequate amounts of vitamin A help keep eyes and skin healthy and protect against infections. Vitamin A can be found in sweet potatoes, pumpkin, carrots, spinach, turnip greens, mustard greens, kale, cantaloupe, red peppers, and winter squash. Finally Vitamin C helps heal cuts and wounds and keep teeth healthy. Excellent sources of vitamin C include green peppers, kiwi, strawberries, kale, cantaloupe, broccoli, pineapple,

oranges, mangoes, tomato juice, and cauliflower. (Centers for Disease Control and Prevention, 2009a)

There are numerous ways to lose weight; however incorporating fruits and vegetables in a balanced diet is one of the few safe ways to lose weight. To lose weight, an individual must consume fewer calories than their body uses. One way to do this is to create low calorie dishes using fruits and vegetables instead of higher calorie ingredients. The water and fiber in fruits and vegetables add volume with fewer calories. (Centers for Disease Control and Prevention, 2009c)

Weight

Overweight and obesity are becoming more prevalent in the United States every year. Currently over 63% of adult Americans are considered obese. By 2030 this percentage is expected to rise to 86% (Pepper, 2009). Overweight and obesity can have a severe impact on health. Weight is associated with numerous health problems including hypertension, diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, cancer, respiratory problems, and reproductive issues. For the obese, mortality rates from all causes are generally increased by 50 to 100% compared to those with BMIs in the 20 to 25 range. Being overweight or obese can also take a serious toll on individuals psychologically.

High blood pressure tends to increase as an individual's BMI increases. Of those who are obese, 38.4% of males and 32.2% of females have high blood pressure. On the other hand, of those who have a BMI less than 25 only 18.2% of men and 16.5% of women have high blood pressure. This increase in blood pressure also puts those who are overweight or obese at a greater risk for cardiovascular diseases and stroke. (National Heart, Lung, and Blood Institute, 1998)

Studies have shown that overweight, obesity, and abdominal fat are all associated with increased morbidity and mortality from coronary heart disease. The risk of death from the disease increases as BMI increases. Risks are lowest in individuals with a BMI under 22. In people with BMIs of 25-29 the risk of dying is twice that of those under 22, and in people with a BMI of 29 or greater the risk is three times as high. In addition, weight has been identified as a factor in congestive heart failure. Weight and stroke have an inverse relationship, as weight

increases so do the chances of having a stroke. However, weight seems to only be a factor in ischemic stroke and not hemorrhagic stroke.

The Nurses' Health Study has found that the risk of developing type 2 diabetes increases as BMI increases. The risk increases from changes that come from BMIs as low as 22. Each unit of BMI over 22 increases the risk of diabetes by approximately 25%. It has also been determined that about 27% of all new diabetes cases are attributable to weight gain of 11 pounds or more. (National Heart, Lung, and Blood Institute, 1998)

In regards to cancer, increased weight has been linked to an increase in colon, breast, and endometrial cancers. Twice as many women with a BMI greater than 29 have distal colon cancer than women with a BMI less than 21. In breast cancer, overweight and obese women are more likely to die than women of a normal weight. In addition, a gain of more than 20 pounds from age 18 to midlife doubles a woman's risk of breast cancer. Obesity also increases the risk of endometrial cancer by three times in women compared to those of a normal weight.

Obesity is associated with menstrual irregularities and amenorrhea. Studies have shown that higher BMIs are also related to ovulatory infertility. When it comes to pregnancy, women with higher pre-pregnancy weight have an increased risk of late fetal deaths, morbidity for both the mother and child, and labor difficulties. Other health concerns that are affected by weight include gallstones, osteoarthritis, and sleep apnea. The risk of all these problems increases as weight increases. (National Heart, Lung, and Blood Institute, 1998)

The toll that weight can take on an individual can also be measured psychologically. In America, society sends a powerful message that being overweight is a sign of poor self control. Negative attitudes towards the overweight can translate into discrimination in employment, acceptance, and marriage. Because of this stigma, overweight individuals can have a negative perception of themselves. Therefore, it should come as no surprise that many obese people are dissatisfied with their physical appearance and avoid social situations due to it.

Another way that weight impacts individuals is in economic terms. Increased health risks translate into increased medical costs due to weight. In 1998 obesity was responsible for between \$51 billion and \$79 billion medical expenditures in the United States (Centers for Disease Control and Prevention, 2009a). This means that about 9% of all US medical expenditures were caused by overweight and obesity. As of 1995, the indirect costs attributable

to obesity were \$47.6 billion. Indirect costs represent the productivity lost due to morbidity and mortality. (Centers for Disease Control and Prevention, 2009a)

Healthy Lifestyle Statistics

To establish the extent of America's health problem, quantitative data was collected from the Behavioral Risk Factor Surveillance System (BRFSS) via the Centers for Disease Control and Prevention. The BRFSS is an ongoing telephone health survey system that tracks health conditions and risk behaviors in the United States (Centers for Disease Control and Prevention, 2009f). The statistics used are median percentages for the states from 2007 and 2008, the most current available from the BRFSS. Each of the healthy lifestyle characteristics was examined based on age, race, income, and education level. Computations were done to establish which of the five characteristics is adhered to the least and the most. This information establishes which characteristics communities most need to focus on when promoting healthy living.

Alcohol

Moderate alcohol consumption was the most observed healthy lifestyle practice of the five examined. Overall, only 5% of Americans were considered heavy drinkers. Meaning, 95% only consumed alcohol in moderation, if at all. Males were more likely to be heavy drinkers than females. The median percentage of males that consumed two or more alcoholic beverages a day was 5.6% while the median percentage of females that consumed one or more alcoholic beverages a day was 4.4%.

The percentages of heavy drinkers and moderate drinkers by age cohort are provided in Table 2.1. Alcohol consumption did not see much change between age cohorts with two exceptions. First, 18-24 year olds were the heaviest drinkers with 7.3% consuming more than the recommended amount of alcohol per day. This is about 2% above the percentages in the cohorts ranging from 25-64. The second exception is the 65+ cohort. Only 3.0% of those over 65 were considered heavy drinkers – about 2% lower than the majority of the cohorts. The increased percentage of heavy drinkers in the 18-24 cohort could be due to increased accessibility and peer pressure from other college age students. For many young adults, college is their first opportunity to experiment with alcohol, thereby making it that much more appealing.

The overall range in percentages was 4.3% from the cohort with the highest percentage of heavy drinkers to the lowest.

Table 2.1 2008 Alcohol Consumption by Age

Alcohol Consumption by Age		
Age	Heavy Drinkers	Moderate Drinkers
18-24	7.3%	92.7%
25-34	5.5%	94.5%
35-44	5.2%	94.8%
45-54	5.7%	94.3%
55-64	4.6%	95.4%
65+	3.0%	97.0%

Table 2.2 illustrates the percentages of heavy and moderate drinkers by race. This data shows that the white people have the highest percentage of heavy drinkers with 5.6%. The group with the highest percentage of moderate drinkers is Black with 96.6%. They are followed closely by Hispanics with 96.4%. The Multiracial and Other categories were fairly even with 95.5% and 96.1% being moderate drinkers respectively. Overall, the Black, Hispanic, Other, and Multiracial groups were all within 1% of each other on the percentage of heavy and moderate drinkers. The White racial group was the only group that was outside of this range. It was 1.1% higher on the percentage of heavy drinkers and 1.1% lower on the percentage of moderate drinkers than the next closest group, which was the Multiracial category. However, there was only a 2.1% range between all the racial groups.

Table 2.2 2008 Alcohol Consumption by Race

Alcohol Consumption by Race		
Race	Heavy Drinkers	Moderate Drinkers
White	5.6%	94.4%
Black	3.5%	96.6%
Hispanic	3.7%	96.4%
Other	4.1%	96.1%
Multiracial	4.5%	95.5%

In Table 2.3 the percentages of heavy and moderate drinkers are broken down by income level. The group with the highest amount of moderate drinkers was those making less than \$15,000. The lowest percentage of moderate drinkers and therefore highest number of heavy drinkers came from the \$50,000+ income category. The overall trend shows that as income increases so does the percentage of heavy drinkers. The number of heavy drinkers may increase with income because the wealthy would have more money to spend on alcohol. However, overall there was only a 1.6% difference in the percentage of heavy drinkers from those making less than \$15,000 to those making over \$50,000.

Table 2.3 2008 Alcohol Consumption by Income Level

Alcohol Consumption by Income Level		
Income	Heavy Drinkers	Moderate Drinkers
Less than \$15,000	4.1%	95.9%
\$15,000 -24,999	4.4%	95.6%
\$25,000-34,999	5.2%	94.8%
\$35,000-49,999	5.2%	94.8%
\$50,000+	5.7%	94.3%

The effects of education level on alcohol consumption appear to be minimal, as can be seen in Table 2.4. The education level with the lowest percentage of heavy drinkers was that of people with less than a high school education. The percentage of heavy drinkers then spikes up

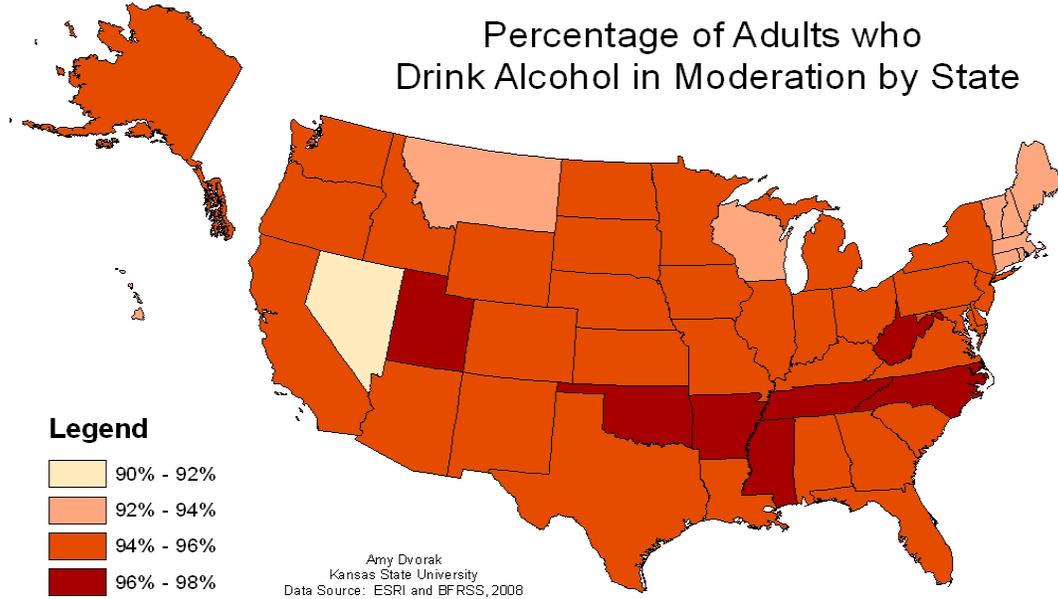
to 5.5% in the high school or GED category, an increase of 1.6%. However after this the heavy drinker percentage decreases as education level gets higher. The overall difference in percentage of heavy and moderate drinkers is again low with there being only a 1.6% difference between the highest and lowest categories.

Table 2.4 2008 Alcohol Consumption by Education Level

Alcohol Consumption by Education Level		
Education Level	Heavy Drinkers	Moderate
Less than High School	3.9%	96.1%
High School or GED	5.5%	94.5%
Some Post High School	5.4%	94.6%
College Graduate	4.8%	95.2%

By looking at the states with the most prominent percentage of moderate alcohol consumers, it can be determined whether alcohol consumption is something that should be addressed on the state level. Figure 2.1 shows the percentage of moderate alcohol consumption by state. According to the map, Nevada has the lowest percentage of moderate alcohol consumption. This is most likely correlated to legalized gambling and the Las Vegas lifestyle that promotes higher drinking levels. States that have a high percentage of moderate alcohol consumption include Utah, Oklahoma, Arkansas, Mississippi, Tennessee, North Carolina, and West Virginia. The increased percentage of moderate alcohol consumption in these states could have something to do with religious affiliation. Utah is known for its Mormon population, while the southeastern states are sometimes known as the Bible Belt.

Figure 2.1 2008 Percentage of Adults who Drink Alcohol in Moderation by State



Overall the percentage of heavy drinkers compared to those who drink moderately if at all is low. Heavy drinkers only account for about 5% of the total population in the United States with Nevada having the highest percentage of heavy drinkers. The social and economic characteristics of drinkers did not reveal much about which populations were more likely to have heavy drinkers. The greatest range in data existed based on age, with the heaviest drinkers being between the age of 18 and 24. In general, all of the other characteristics observed had percentages within a fairly small range no larger than 2.1%.

Smoking

The second most adhered to healthy lifestyle characteristic in America is being a nonsmoker. 81.6% of Americans abstain from smoking, while 18.4% do not. Men were more likely to be smokers than women, with 20.3% of men smoking and 16.7% of women.

Table 2.5 illustrates the percentage of smokers and nonsmokers by age group. The age cohort with the highest percentage of smokers is the 25-34 cohort with 23.7%. This is only 1.4% higher than the 18-24 cohort which is made up of 22.3% smokers. The percentages stay fairly constant throughout the cohorts until that of the 55-64 year olds. This cohort is the first to see a significant decline in the number of smokers. The percentage dropped 4.2% from the 45-54 cohort to the 55-64 cohort. However the greatest decline came from those over 65. They were

the least likely to smoke with only 8.2% smoking. This could be attributed to the fact that the number of smokers who survive decreases passed age 55 and especially passed 65, especially when it is considered that all other age categories have roughly the same percentage of smokers.

Table 2.5 2008 Smoking Status by Age

Smoking Status by Age		
Age	Smokers	Nonsmokers
18-24	22.3%	77.7%
25-34	23.7%	76.3%
35-44	20.0%	80.0%
45-54	21.0%	79.0%
55-64	16.8%	83.2%
65+	8.2%	91.8%

Another characteristic that can be examined when reviewing smoking patterns is race. Table 2.6 depicts the racial make up of smokers and nonsmokers. Those of multiracial and black descent were the most likely to smoke with 22.8% and 21.2% respectively. White people were the next most likely to smoke with 17.9%. Hispanics and those of other racial backgrounds were the most likely to be nonsmokers. 84.3% of Hispanics and 84% of the Other category were nonsmokers.

Table 2.6 2008 Smoking Status by Race

Smoking Status by Race		
Race	Smokers	Nonsmokers
White	17.9%	82.1%
Black	21.2%	78.8%
Hispanic	15.7%	84.3%
Other	16.0%	84.0%
Multiracial	22.8%	77.2%

Table 2.7 shows the financial background information of those who make the choice to smoke and not to smoke. Those making over \$50,000 annually are the most likely to be nonsmokers at 87.0% of them abstaining from the practice. They are followed by those making \$35,000-49,999 in the highest number of nonsmokers at 79.2%. The trend of increased percentage of smokers continues as salary decreases down to less than \$15,000. The largest gap in percentage of nonsmokers can be found between the \$35,000-49,999 and \$50,000+ categories. There is a 7.8% difference in the number of smokers between these two groups.

According to this information, people who make over \$50,000 are the most likely to be nonsmokers, and those making less than \$15,000 are the most likely to be smokers. This is the opposite of what would be expected, in terms of financial security. One would assume that those with more money would be able to better afford the habit than those making less money. However, with greater salary comes greater education. Those who make more money may be better informed of the health consequences of smoking and therefore abstain from the practice. They may also be happier about their lifestyle and profession, and consequently avoid smoking.

Table 2.7 2008 Smoking Status by Income Level

Smoking Status by Income Level		
Income	Smokers	Nonsmokers
Less than \$15,000	31.0%	69.0%
\$15,000 -24,999	27.7%	72.3%
\$25,000-34,999	22.7%	77.3%
\$35,000-49,999	20.8%	79.2%
\$50,000+	13.0%	87.0%

Data on education level and smoking status indicates that the two are correlated. Table 2.8 presents this information. The higher the education level a person reaches the less likely they are to be a smoker. Only 8.8% of college graduates smoke, while 30.1% of those with less than a high school education smoke. The smoking rate in between these two education levels is consistent. The smoking rate decreases as education level increases. This fact supports the theory that those who are better educated on the health consequence of smoking are less likely to practice the habit. The difference between the percentages of each category was about a 5%

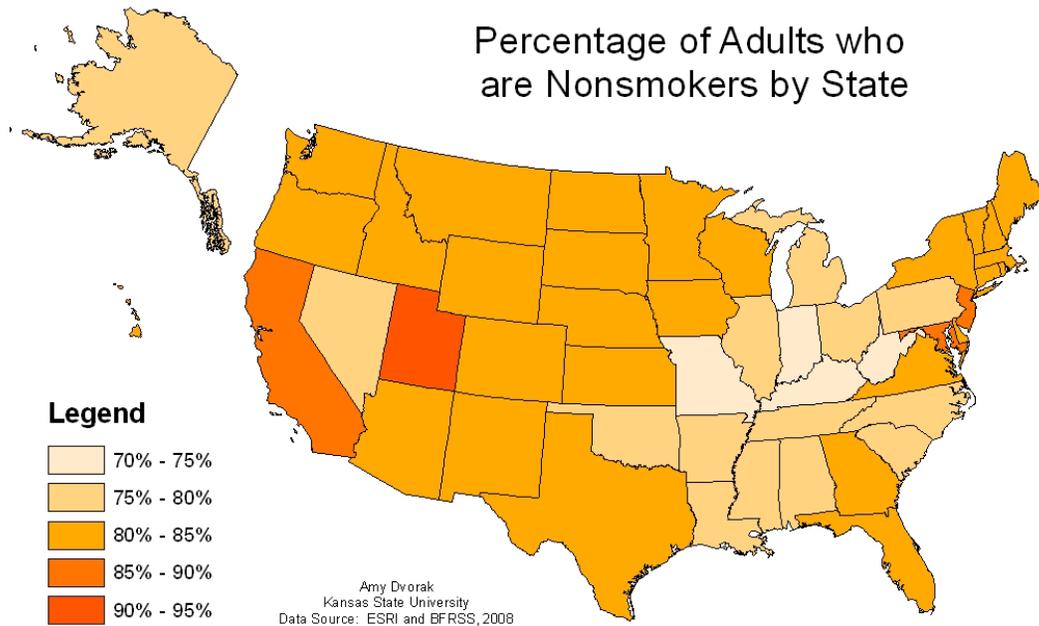
decrease at each step up in education level. This is true except for the category change between some post high school education and college graduate. There was an 11.2% decrease in smoking between these two education levels.

Table 2.8 2008 Smoking Status by Education Level

Smoking Status by Education Level		
Education Level	Smokers	Nonsmokers
Less than High School	30.1%	69.9%
High School or GED	24.9%	75.1%
Some Post High School	20.0%	80.0%
College Graduate	8.8%	91.2%

In Figure 2.2 the percentage of adults who are nonsmokers is broken down by state. This map shows that a large area in the east to Midwest, along with Nevada have the lowest percentages of nonsmokers. A vast majority of the western states, especially Utah have low percentages of smokers. As with alcohol, smoking is most likely higher in Nevada due to legalized gambling and the residents the state attracts due to it.

Figure 2.2 2008 Percentage of Adults who are Nonsmokers by State



Overall, smoking afflicts all age cohorts, races, income levels, education levels, and states. However, those who are less educated and have lower salaries are more likely to indulge in the practice. Youth are also slightly more likely to smoke than older adults. To address this, special attention should be paid to educating these groups of the harmful effects smoking can have on them and those around them.

Physical Activity

Being physically active was the third most adhered to healthy lifestyle characteristic studied. Overall 49.5% of the population reported getting the recommended amount of physical activity. Of the male population 51.5% reportedly obtained the recommended amount of physical activity, while 47.5% of the female population did.

Table 2.9 depicts the percentage of people who participate and do not participate in the recommended amount of physical activity. According to the collected data, the percentage of people participating in the recommended amount of physical activity decreases as age increases. The highest percentage of activity occurred in the 18-24 age cohort with 60.9% of them being active. The lowest percentage of activity was 39.3% for those over 65. Most likely this trend exists because as people get older their physical ability to complete activities decreases. In

addition, older adults may have less energy and more responsibilities that prevent them from partaking in physical activities.

Table 2.9 2007 Physical Activity Level by Age

Physical Activity Level by Age		
Age	Inactive	Active
18-24	39.1%	60.9%
25-34	45.0%	55.0%
35-44	48.1%	51.9%
45-54	51.1%	48.9%
55-64	52.5%	47.5%
65+	60.7%	39.3%

Physical activity level relative to race is shown in Table 2.10. The Multiracial category has the highest percentage of active members with 55.6%. The next highest percentage belongs to those of a White background; 51.6% of them are active. The race with the lowest percentage of active people is Black. Of the people with a Black racial background only 41.4% are active. Hispanics were the next least active with 44.7% active, followed by the Other category with 49.0%.

Table 2.10 2007 Physical Activity Level by Race

Physical Activity Level by Race		
Race	Inactive	Active
White	48.4%	51.6%
Black	58.6%	41.4%
Hispanic	55.3%	44.7%
Other	51.0%	49.0%
Multiracial	44.5%	55.6%

Table 2.11 depicts physical activity by income level. A trend exists in this data that the higher the income, the higher the percentage of active people. The highest percentage, 54.9%, of

active people exists in the \$50,000+ category. The next income level, \$35,000-49,999, has a decrease of 5.2% in number of active people. This percentage drops again in the \$25,000-34,999 category by 3.8%. In the \$15,000-24,000 income bracket the percentage of active people is 42.7%, 3.2% less than the \$25,000-34,999 category. The lowest percentage of active people is in the less than \$15,000 bracket with 37.2%. This is 5.5% lower than the \$15,000-24,999 category. The overall percentage range of active people has a spread of 17.7% from the lowest to the highest. The large difference in the percentage of active people could be caused by increased education of health benefits and availability of recreational services for those with higher incomes.

Table 2.11 2007 Physical Activity Level by Income Level

Physical Activity Level by Income Level		
Income	Inactive	Active
Less than \$15,000	62.8%	37.2%
\$15,000 -24,999	57.4%	42.7%
\$25,000-34,999	54.1%	45.9%
\$35,000-49,999	50.3%	49.7%
\$50,000+	45.1%	54.9%

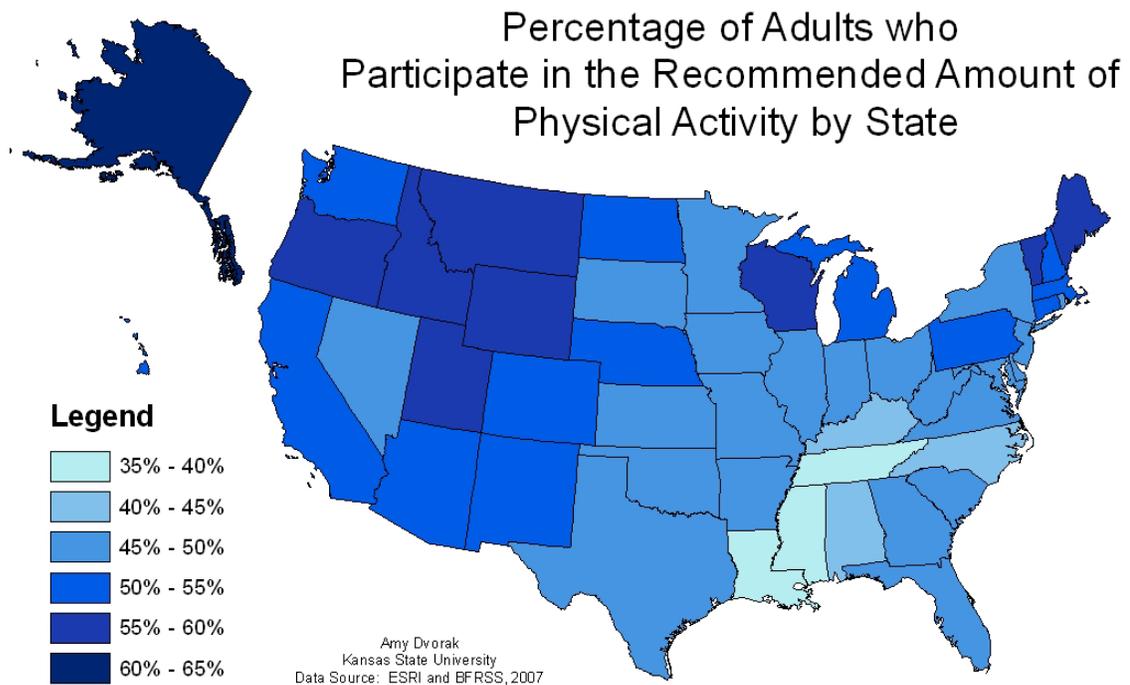
In Table 2.12 physical activity is broken down by education level. According to this data, of those who have less than a high school education only 40.2% are physically active. This is the lowest percentage of all education levels. The next lowest percentage is in the high school or GED education level with 46.1%. College graduates have the highest percentage of active people with 53.8%. There is a trend among the data that the higher the education level, the higher the percentage of active people. This supports the idea that increased knowledge of the health benefits of physical activity causes more people to work out.

Table 2.12 2007 Physical Activity Level by Education Level

Physical Activity Level by Education Level		
Education Level	Inactive	Active
Less than High School	59.8%	40.2%
High School or GED	53.9%	46.1%
Some Post High School	49.4%	50.6%
College Graduate	46.2%	53.8%

In regards to geography, Figure 2.3 shows the spatial distribution of adults who participate in the recommended amount of physical activity. Alaska had the highest percentage of participants at 61%, while three states in the southeast, Louisiana, Mississippi, and Tennessee, had the lowest percentages. In general the western states seemed to have more physical activity participants than the eastern states. This could be related to the number of outdoor recreational activities available.

Figure 2.3 2007 Percentage of Adults who Participate in the Recommended Amount of Physical Activity by State



In general, age, income, and education level all seem to effect physical activity. Older adults are less likely to work out, as are the poor and less educated. Specific programs promoting activity in these three groups could be helpful in increasing America's activity level. However, the highest percentage of active people was 60.9% for the 18-24 age cohort. This means that all cohorts observed could benefit from increased physical activity.

Fruit and Vegetable Consumption

Of the five healthy lifestyle characteristics observed, maintaining a prudent diet by consuming fruits and vegetables five or more times a day was the least adhered to category. Only 24.4% of the population reported consuming the recommended number of fruits and vegetables. The median percentage of males that consumed 5 or more fruits and vegetables a day was 19.4%. The median percentage of females that consumed that much was 28.8%.

In Table 2.13 the percentage of people who did and did not consumed the recommended number of fruits and vegetables are sorted by age cohort. The 65+ age cohort had the highest percentage of people who did consume the recommended number of fruits and vegetables with 28.7%. This percentage was higher than any other cohort by 3.8%. The lowest percentage, 22.0%, of consumers came from the 35-44 age cohort. The other cohorts are all around 23% except for the 55-64 age cohort. The 55-64 cohort has 24.9% consumers. The height in percentage of consumers in the two oldest age cohorts could be linked to heightened health concerns, habits instilled in them from childhood, or the percentage of those who survive in these cohorts are more likely to be fruit and vegetable consumers.

Table 2.13 2007 Fruit and Vegetable Consumption by Age

Fruit and Vegetable Consumption by Age		
Age	Consume Recommended Fruits and Vegetables	Do Not Consume Recommended Fruits and Vegetables
18-24	23.0%	77.1%
25-34	23.5%	76.5%
35-44	22.0%	78.0%
45-54	23.1%	76.9%
55-64	24.9%	75.1%
65+	28.7%	71.3%

Table 2.14 depicts the percentage of consumers by race. The highest percentage of consumers occurs in the Other racial category with 26.6%, followed by the White category at 24.5%. The Black and Hispanic racial groups had fairly close percentages with 23.1% and 22.6% respectively. The lowest percentage of consumers occurred in the Multiracial category with 20.0%. It is possible that the culture and diet of those in the Other category could promote more fruit and vegetable consumption than those in other racial categories.

Table 2.14 2007 Fruit and Vegetable Consumption by Race

Fruit and Vegetable Consumption by Race		
Race	Consume Recommended Fruits and Vegetables	Do Not Consume Recommended Fruits and Vegetables
White	24.5%	75.5%
Black	23.1%	76.9%
Hispanic	22.6%	77.4%
Other	26.6%	73.4%
Multiracial	20.0%	80.1%

The percentage of fruit and vegetable consumers is correlated to income level as shown in Table 2.15. The percentage of consumers increases as income level increases. Only 20.7% of

those making less than \$15,000 consumed the recommended number of fruits and vegetables, whereas 26.1% of those making over \$50,000 did. This phenomenon could be directly related to the price of fruits and vegetables. Those on a limited budget would most likely cut out more expensive foods in order to live within their means. If this is true, the price of fruits and vegetables could be connected to how many are consumed.

Table 2.15 2007 Fruit and Vegetable Consumption by Income Level

Fruit and Vegetable Consumption by Income Level		
Income	Consume Recommended Fruits and Vegetables	Do Not Consume Recommended Fruits and Vegetables
Less than \$15,000	20.7%	79.3%
\$15,000 -24,999	21.7%	78.3%
\$25,000-34,999	22.5%	77.5%
\$35,000-49,999	23.2%	76.8%
\$50,000+	26.1%	73.9%

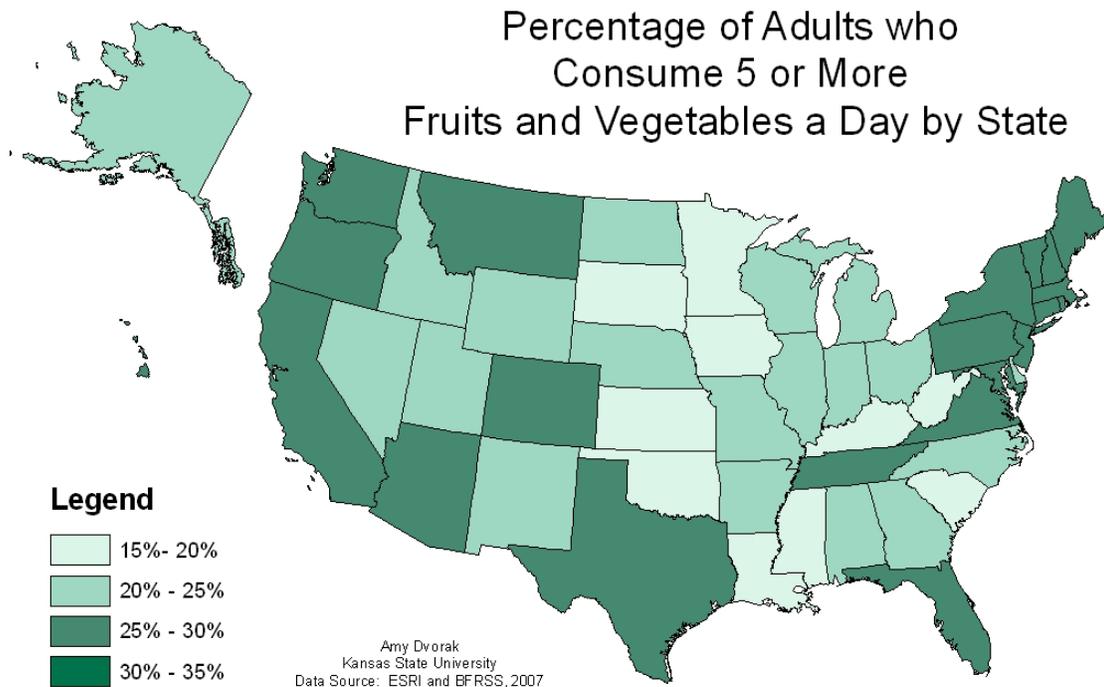
Table 2.16 shows the percentage of consumers by education level. According to the observed percentages, education level is related to fruit and vegetable consumption. The greater the education level, the greater the percentage of consumers. Only 18.4% of those with less than a high school education consumed the recommended fruits and vegetables. This is a full 11.4% less than the 29.8% of consumers in the college graduate category. There were increases of almost 5% in consumers from high school graduates to those with some post high school education and from those with some post high school education to college graduates. It could be hypothesized that many people gain important knowledge in post high school institutions about fruit and vegetable consumption. However, it could also be hypothesized that this is directly connected with income. Those who have higher education levels are more likely to make more money and therefore can afford expensive fruits and vegetables.

Table 2.16 2007 Fruit and Vegetable Consumption by Education Level

Fruit and Vegetable Consumption by Education Level		
Education Level	Consume Recommended Fruits and Vegetables	Do Not Consume Recommended Fruits and Vegetables
Less than High School	18.4%	81.6%
High School or GED	19.9%	80.1%
Some Post High School	24.5%	75.5%
College Graduate	29.8%	70.2%

Figure 2.4 illustrates fruit and vegetable consumption by state. The states further towards the coasts appear to have the highest fruit and vegetable consumption percentages, while the central states have a lower adherence rate. Overall Oklahoma had the lowest consumption rate at 16.3% and the District of Columbia had the highest rate at 32.5%.

Figure 2.4 2007 Percentage of Adults who Consume 5 or More Fruits and Vegetables a Day by State



Fruit and vegetable consumption is highest among those over 65, in the Other racial category, those who make over \$50,000, and college graduates. Even though these groups have heightened percentages, no group in any category has a consumption rate over 30%. Consumption rates need to be increased in all groups. Therefore programs to promote fruit and vegetable consumption will need to target the mass public.

Weight

Maintaining a healthy weight was the second healthy lifestyle characteristic that people were the least likely to observe. In the United States only 36.6% of people were not overweight or obese. A total of 36.5% were overweight while 26.7% were obese. Therefore, the total percentage of people overweight in America is 63.2%. A larger percentage of males than females were overweight or obese. 44.4% of females surveyed were neither overweight nor obese, while 29.7% were overweight and 25.6% were obese. Of the males surveyed, 29.3% were neither overweight nor obese, 43.1% were overweight, and 27.4% were obese.

Table 2.17 illustrates weight status by age. The percentage of adults with a healthy weight is the highest in the 18-24 age cohort. This cohort also has the lowest percentages in the overweight and obese categories with 25.6% and 16.8%. The percentage with a healthy weight in the 18-24 cohort is probably so high due to their physical activity level - 60.9% are active. The cohort with the lowest percentage of healthy weights is 55-64 with 27.9%. The highest percentage of overweight individuals, 40.2%, comes from the 65+ cohort. The highest percentage of obese comes from the 55-64 age cohort with 32.1%. Overall as age increases the percentage of people with a healthy weight decreases, except for the 65+ cohort which has a 8.5% increase in individuals with healthy weights over the 55-64 age cohort. Because the 65+ has the second lowest percentage of obese people at 22.9%, it could be inferred that the larger percentage of people with a healthy weight is due to survivorship. Those with higher obesity rates are probably not as likely to survive to the 65+ age cohort.

Table 2.17 2008 Weight by Age

Weight by Age			
Age	Healthy	Overweight	Obese
18-24	56.8%	25.6%	16.8%
25-34	39.3%	34.4%	26.1%
35-44	33.9%	36.7%	28.2%
45-54	31.3%	38.0%	31.0%
55-64	27.9%	39.7%	32.1%
65+	36.4%	40.2%	22.9%

In Table 2.18 weight status is broken down by race. The racial group with the highest percentage of healthy weight is the Other category. This group also has the lowest percentage of obese individuals with 16.7% and the second lowest overweight percentage with 32.6%. This fact can most likely be attributed to the increased fruit and vegetable consumption of the Other racial group. The Black racial group has the lowest percentage of healthy weight at 26.5%. In addition they have the highest percentage of obese individuals with 37.4%. This is probably due to their low fruit and vegetable consumption as well as the group's activity level which was also low. The Hispanic category had the highest percentage of overweight individuals at 39.6% and the second lowest percentage of healthy weight individuals at 32.2%.

Table 2.18 2008 Weight by Race

Weight by Race			
Race	Healthy	Overweight	Obese
White	37.7%	36.3%	25.4%
Black	26.5%	35.2%	37.4%
Hispanic	32.2%	39.6%	28.1%
Other	47.7%	32.6%	16.7%
Multiracial	33.0%	31.9%	34.8%

The effects of income on weight are shown in Table 2.19. The \$50,000+ income bracket has the highest percentage of individuals in the healthy weight category. Those in this category had higher levels of physical activity and fruit and vegetable consumption. This has most likely led to the increased percentage in healthy weight for this income bracket. There does not seem to be a trend in healthy weight and income. However there is a trend in the overweight and obesity categories. The percentage of overweight individuals increases as income level increases. The highest level of overweight individuals is in the \$50,000+ income category with 38.4%. Obesity, on the other hand, decreases as income level increases. The highest level of obese individuals is in the less than \$15,000 category with 33.7%.

Table 2.19 2008 Weight by Income Level

Weight by Income Level			
Income	Healthy	Overweight	Obese
Less than \$15,000	35.3%	31.4%	33.7%
\$15,000 -24,999	35.1%	33.7%	30.3%
\$25,000-34,999	34.6%	36.4%	29.3%
\$35,000-49,999	34.5%	36.7%	28.4%
\$50,000+	36.6%	38.4%	25.2%

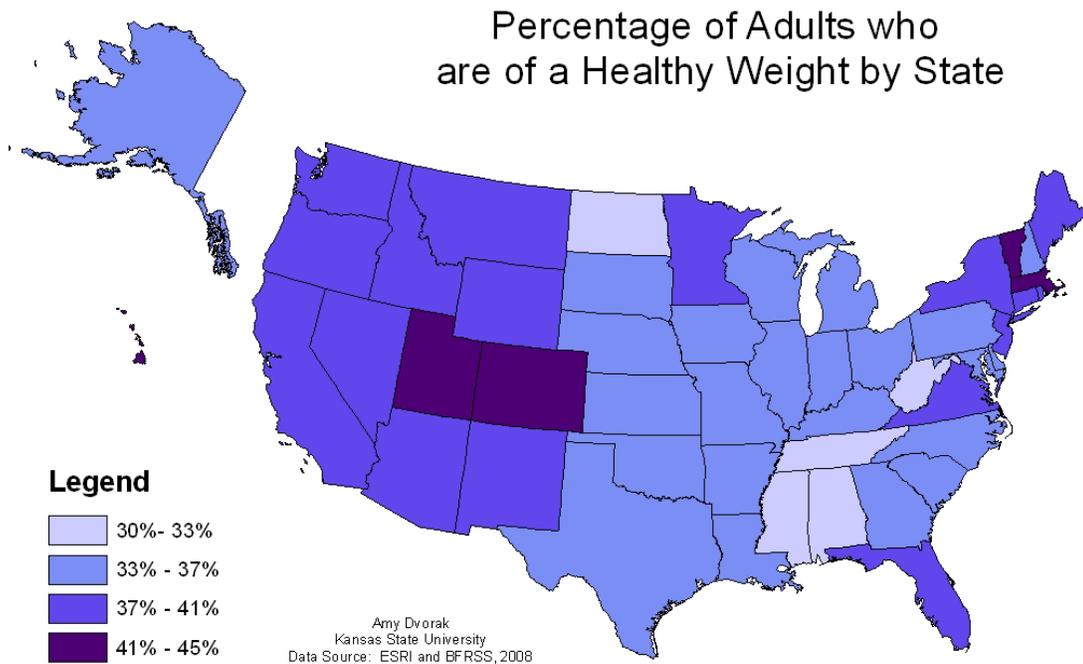
Table 2.20 depicts weight statuses by education level. College graduates have the highest percentage of individuals maintaining a healthy weight. College graduates also have the lowest percentage of obese people with 21.7%. However they have the highest percentage of overweight individuals at 37.8%. This most likely is correlated with their increased physical activity and fruit and vegetable consumption. Obesity is consistent between those whose education level is less than a college graduate with all categories having around 29% obesity. This is almost 7% higher than that of college graduates. In the overweight category, those with less than a high school diploma had the least individuals with 34.0%. The education level with the lowest percentage of people with a healthy weight is high school or GED with 34.0%.

Table 2.20 2008 Weight by Education Level

Weight by Education Level			
Education Level	Healthy Weight	Overweight	Obese
Less than High School	35.4%	34.0%	29.7%
High School or GED	34.0%	36.0%	29.6%
Some Post High School	34.9%	35.9%	29.0%
College Graduate	39.8%	37.8%	21.7%

In Figure 2.5 the percentage of adults who are of a healthy weight are distributed by state. By looking at this map it becomes obvious that the states with the lowest percentage of healthy weight adults are in the south and Midwest. The western states and the far northeast appear to have the highest percentage of healthy weight adults. This is most likely caused by increased physical activity opportunities and higher fruit and vegetable consumption. Both activities were more prevalent in the west and northeastern states. Overall the highest percentages of healthy weight adults were in the District of Columbia followed by Colorado, with 44.9% and 44.7% respectively. The lowest percentage of healthy weight adults was found in West Virginia where only 31.2% of adults had a healthy weight.

Figure 2.5 2008 Percentage of Adults who are of a Healthy Weight by State



Overall it appears that those groups who had high percentages in physical activity and fruit and vegetable nutrition had higher percentages in healthy weights. Most groups had a rather even 30%, 30%, 30% split between those with a healthy weight, overweight, and obesity. The biggest exception to this statement is in the 18-24 age cohort which had 56.8% of the individuals at a healthy weight and only 16.8% obese. The cohort's increased physical activity is the best explanation for this phenomenon.

Summary

Age seems to be correlated to adherence to the healthy lifestyle characteristics. In general, the younger age cohorts are more likely to be physically active and maintain a healthy weight. However they are also more likely to be smokers and drink heavily. Older members of society, on the other hand, are less active, but they are more likely to consume fruits and vegetables, to not smoke, and drink only in moderation.

Race does not seem to play a large part in overall health. However, certain characteristics were more common in some races than in others. For example, those in the Other racial category were more likely to consume fruits and vegetables and maintain a healthy weight.

Income significantly impacted healthy lifestyle characteristic observation. Those with higher incomes were more likely to be nonsmokers, drink heavily, be active, consume fruits and vegetables, and maintain a healthy weight. On the other end of the spectrum, lower incomes were correlated with higher rates of smoking, inactivity, unhealthy weights, and a lack of fruit and vegetable consumption. The only positive for those making less money was they were less likely to be heavy drinkers.

Education level also seemed to affect lifestyle. In general, those with higher education levels were more likely to be of a healthy weight, be active, consume fruits and vegetables, and be nonsmokers. Lower education levels were correlated with smoking, inactivity, and lower fruit and vegetable consumption.

On the whole, moderate alcohol consumption was the most observed healthy lifestyle characteristic studied, followed by not smoking and physical activity. Consuming the recommended number of fruits and vegetables was the least adhered to characteristic followed by maintaining a healthy weight. It is not possible to determine how many Americans observe all five healthy lifestyle characteristics from the data. However, according to a study done by Reeves and Rafferty in 2000 only 3% of the American population adhered to four of these traits – regular physical activity, healthy weight, prudent diet and not smoking (Reeves & Rafferty, 2005). This percentage would likely be even lower if alcohol consumption was taken into account. Based on these statistics it can be affirmed that healthy lifestyle habits are not as prevalent as unhealthy ones. Having healthy lifestyle habits does not always equate to good health; genetics and other factors can affect a person's health. However, 80% of chronic diseases can be avoided through changes in lifestyles (Church, 2009).

CHAPTER 3 - Changes in Lifestyle

Numerous factors have contributed to Americans' current lifestyles over the last hundred years. City design, automobile usage, leisure devices, occupational activities, and labor saving devices are some of the most notable changes that have impacted our lifestyles and health. Our society and our technology have made life much easier. However, in easing the demands of our daily lives, we may have made it more difficult to live a healthy life.

The Built Environment

Research has shown that the built environment plays an integral role in lifestyle choices. Increased motor vehicle transportation necessary for low-density land use and convenience has had drastic implications on health. Many planning and building practices came with good intentions. For example, current zoning laws that prevent high-density and mixed use developments were put in place to prevent the spread of tuberculosis and other diseases in the 19th century. Zoning regulations also helped separate residential areas from industries and their toxic byproducts. However as distances increased between homes and work, the ability to walk the distance decreased.

During the industrial revolution of the 19th century, thousands of workers crowded into cities with poor sanitary conditions in hopes of creating a better life for themselves and their families. However, instead of finding the American Dream, many of these workers found nothing but death, disease, and heartache. As sanitation conditions grew worse, public officials began to realize a change was necessary. To improve public health, the built environment was altered. Comprehensive sewer systems were installed, setbacks to ensure light and fresh air were enforced, and the movement of individuals away from noxious industrial facilities all significantly improved the health of the public (Perdue, Stone, & Gostin, 2003).

The health problems caused by industrialization, established the mainstream view that population concentration and residential areas close to businesses were unhealthy. This became a major rallying point behind the housing reform movement and the zoning ordinances that followed it in the early 20th century. Zoning ordinances focused on separate residential, commercial, and industrial neighborhoods; building heights; setback requirements; and density.

These changes were justified because, according to officials, they improved health. (Perdue, et al., 2003).

Traditional neighborhoods were common in America through World War II. Neighborhoods were primarily based on the neighborhood unit concept, centered around an elementary school and playground, and within easy walking distance of parks. Streets and sidewalks were mandatory, providing easy access to places of play. Walking and bicycling were the common modes of transportation for even high school students, and through mixed use developments, walking to the grocery store was a common practice.

However with the end of the war came the urban sprawl that is now common throughout North America. The connection between public health and the built environment by this time had diminished. City form and layout became a matter of aesthetics, ease, and economics (Perdue, et al., 2003). The Federal Housing Administration and Veterans Administration loan programs that provided mortgages for over 11 million new homes following World War II, played a large part in the beginning of sprawl (Duany, Plater-Zyberk, & Speck, 2000). These programs discouraged the renovation of existing houses while the interstate highway program helped make automobile travel feasible for the middle class American. Even with low population densities sprawl produces traffic congestion, isolation, and land consumption. This destruction is often overlooked due to the simplistic nature of sprawl. Housing, shopping, offices, and civic centers are all independent of each other and can be placed in any location as long as roads are built to connect them. (Duany, et al., 2000)

In the 20th century, automobiles and highway construction made transportation over long distances even easier. Today they are considered a pollution problem, however during their inception they were seen as the answer to the pollution problem caused by horses. It has been estimated that during the latter part of the 19th century horses dropped up to 1.3 million pounds of manure a day in New York City alone (Melosi, 2004).

Since their creation, cars have been reshaping America's landscape. In 1947 the government authorized the construction of a 37,000 mile highway network (Melosi, 2004). These highways increased connectivity and travel throughout the country. They also increased traffic congestion in downtown areas that were never meant to handle large amounts of automobile traffic. For this reason, beltways surrounding cities began drawing development towards them. While suburbanization had already begun before the advent of the highways and

the popularity of automobiles through street cars and trolleys, automobiles increased the speed and distance of sprawl. They enabled the growth of suburbs and led to a decline in public transportation. By replacing rail service and pedestrianism, automobiles pushed the boundaries of suburbanism outward.

By the 1970s many major cities were in decline. The majority of the population that could afford to move to the suburbs had done so, leaving nothing behind but failing schools, rising crime rates, and empty buildings (Jackson, 2003). As time passed the division between the city core and suburbia has become obsolete. The old central city is now only one area of activity, while there are several suburban communities that have morphed into activity areas with more amenities than those found in the central city (Melosi, 2004). Even though the once vibrant urban cores have extensive preexisting infrastructure, past contamination and the liability risks that go with them have left brownfields unsalvaged. Over 10,000 vacant land parcels exist in New York City, however many individuals have chosen four and five hour commutes per day from suburbs than redevelop a vacant lot (Jackson, 2003). Because of the shift to a suburban population, cars have become a necessity for travel. During the seven year period between 1983 and 1990, daily vehicle miles traveled per household increased by 29%. In addition the proportion of Americans driving to work increased by 11% from 1970 to 1990. This data suggests that automobile use for commuting has increased. (French, Story, & Jeffery, 2001)

Increased commuting over long distances has also led to large quantities of pavement. In fact, as of 2003, a land area equivalent to the size of Georgia had been paved in the United States alone (Jackson, 2003). Additionally, it has been estimated that almost one half of a modern American city's land area is dedicated to streets, roads, parking, service stations, driveways, traffic signals, car dealerships, and other automobile orientated businesses. On average, cars are parked for about 90% of their lifetime just taking up space. A parking study from the 1960s found that 59% of Los Angeles' central business district ground area was dedicated to streets and parking (Melosi, 2004). It can be assumed that this percentage has only increased as the number of automobiles has increased.

Planning, zoning, and the automobile, followed by the "big box" one-stop shopping of the 1990s changed the community by moving away from the neighborhood unit. Over the decades being mobile meant that one could shop for more than what was needed for the week and link the trip to several other activities. The sprawl that emanated from the use of the

automobile and the desire for the American Dream, a single family house in suburbia, brought about the meandering street patterns and the developers, complaining about the costs of having to include sidewalks, managed to convince city officials of the lack of need on both sides of the street, then why have them at all. Group play was gradually replaced with electronic games, most of which were oriented to individual play requiring no physical activity and an obesity epidemic ensued. Sprawling suburbs did not support walking or biking through their physical design. Walking and biking became less common as driving became more convenient. Mom and Pop stores, located in each neighborhood, disappeared as though an eradication plan was in place. They had no way to compete with the one-stop shopping opportunities available at stores like Wal-Mart, K-Mart, Cosco, and Sam's Club.

Another issue that has evolved with sprawl is its economic cost. Compared to managed growth, sprawl causes about 10% more annual public service deficits of \$4.2 billion and 8% higher housing occupancy costs or \$13,000 per unit. Furthermore sprawl produces a 21% increase in undeveloped land converted and a 10% increase in local road lane miles. From the period of 2000 to 2025 the US is projected to spend over \$927 billion on road infrastructure. If managed growth was implemented instead, our country could save over \$100 billion in road costs. (Burchell & Mukherji, 2003) This proves that even though sprawl promotes health through providing enough air and light, other options are available. Managed growth regulations would be able to promote health by reducing the amount of land consumed and increasing walkability while saving public funds.

Health Consequences

The deconcentration of population and the separation of building uses that occurred a hundred years ago improved health. However, communities may have taken a good thing too far. As communities continue to decrease density and separate residential, commercial, and industrial neighborhoods; they may in fact be contributing to chronic health problems. The sprawl of suburbs has increased our country's reliance on automobiles. (Perdue, et al., 2003) In turn, individuals are less active because they walk less, vehicle exhaust decreases air quality, vehicle injuries have increased, and mental health has been adversely affected (Jackson, 2003). In addition, for America's rapidly growing 65+ age group cities plagued by sprawl can be almost unnavigable. As chronic diseases increase in prevalence, the need for functional communities

that the elderly, disabled, and those with few resources can contribute to without an automobile also need to increase (Jackson, 2003).

The leading health problems that come with sprawl are sedentary lifestyles, poor nutrition, and toxic conditions. Air quality is a contributor to two leading causes of death as well, chronic respiratory diseases and cancer. Little physical activity and poor nutrition contribute to obesity. Obesity is a risk factor for some of the leading causes of death in the United States, including cardiovascular disease, diabetes, stroke, and cancer. Even though many individuals know and understand the risks associated with being obese, the percentage of overweight and obese individuals continues to grow. (Perdue, et al., 2003)

The importance of physical activity, nutrition, air quality, and safety are well known throughout the country. However much of America's built environment does not promote them. (Perdue, et al., 2003) In fact, many environments do just the opposite. They promote alcohol and tobacco consumption through advertising, inactivity through a lack of open space, unhealthy foods through accessibility and affordability, obesity, and toxic conditions through the use of motorized vehicles.

A study called *Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity* found that individuals living in counties with sprawling developments weigh more, walk less, and have a higher rate of high blood pressure than those who live in less sprawling counties. According to the study, people that live in sprawling areas are likely to weigh six pounds more than those in the most compact counties. In addition, people were 10% more likely to be obese with every 50 point increase in the degree of sprawl within the county. (Ewing, Schmid, Killingsworth, Zlot, & Raudenbush, 2003)

To encourage physical activity, open space, sidewalks, and safety are crucial in living environments. Even though 55% of Americans would like to walk more instead of driving (Ewing, et al., 2003), studies conducted by the Federal Highway Administration have shown that Americans make less than 6% of their daily trips on foot (NewUrbanism, 2003), most likely because they do not have the opportunity. Individuals surrounded by sprawl are less likely to walk for exercise than those who live in denser areas. However even those who do walk for exercise in sprawling counties are more likely to be overweight. This could mean that people in sprawling areas are missing out on the health benefits of routine daily activities such as walking

or biking to destinations. (Ewing, et al., 2003) Safety is an important factor contributing to physical activity. If individuals do not feel safe and comfortable when participating in physical activity they will be less likely to make the effort in the future. Safety includes more than being protected from criminal activity. It also includes protection from motorized vehicles. A study by John Pucher at Rutgers University found that American pedestrians and cyclists are two to six times more likely to be killed on the road than those living in Germany or the Netherlands (NewUrbanism.org, 2003). Another study, completed by William Lucy of the University of Virginia in Charlottesville, examined the relationship between traffic fatalities and homicides within the built environment. From this research, Lucy determined that traffic fatalities were highest in exurban areas and the combined traffic fatality and homicide rate was higher in some or all outer counties than in central cities or inner suburbs of the study areas (Lucy, 2003). This means that while people move to the suburbs because they perceive it as safe, in actuality it could be more dangerous than living in densely developed areas.

Air quality has been greatly affected by land use patterns and community design. Urban neighborhoods tend to be the home of multiple toxic sites such as brownfields. Furthermore, because automobiles have become a necessity for today's neighborhoods, pollution rates have increased. America is responsible for almost half of all greenhouse gases emitted by vehicles globally even though the nation's vehicles make up only 30% of those in use (Wilson, 2006). Increased pollution has led to increased deaths from respiratory and cardiopulmonary illnesses. (Perdue, et al., 2003) To combat air pollution, Congress passed the Clean Air Act in 1970 and updated it in 1990. Unfortunately, the legislation has had little effect on air quality. In fact, in 1999, 62 million people lived in areas where the air quality was determined to be unsafe to breathe. (Sierra Club, 2001)

The automobile may have increased our mobility, low-density may have prevented the spread of infectious diseases; but the combination has led to vast urban sprawl with many health consequences. Automobiles decrease physical activity. Vehicle emissions pollute air quality. Low quality food has become convenient. Fewer sidewalks have led to safety concerns in our neighborhoods and made it difficult for children to walk to school or neighborhood parks for physical activity. The sprawl based environment has had immense impacts on lifestyle choices, most of which are negative. However, with health conscientious planning, communities can have great potential in addressing the nation's greatest health concerns.

Additional Factors of Change

Our increased technology has caused unhealthy lifestyles in numerous other ways, including through our food selection. Technology has made food more varied and convenient. A team of economists from Harvard University claim that people are unable to cope with the temptation of quick and convenient food. Furthermore, convenient foods require fewer calories to prepare, especially when it can easily be picked up from a drive thru on the way home. This Harvard study suggests that while advances in technology may have made our lives easier in the short-term, it may also make our lives shorter as well (Arnold, 2003). As food eaten away from home has become more popular, the nutritional value of it becomes a concern. Data suggests that foods from sources outside the home are higher in energy and fat compared to at home foods. Frequently eating food outside the home can be associated with higher energy and fat intake which leads to excess weight gain. Part of the high fat content found in restaurant food is due to increasingly larger portions. For example, in 1916 Coca Cola was sold in 6.5 ounce bottles, in the 1950s 10 ounce and 12 ounce sizes were available, and today soft drinks intended for individual consumption are sold in 20 and 32 ounce bottles. Evidence has shown that people have trouble estimating portion-size information, especially as the portion size increases. (French, et al., 2001)

As described above, the easier food is to access the more humans seem to consume. The same may be true for smoking and alcohol consumption. Alcohol and tobacco accessibility can be defined in four categories: physical, social, economic, and subjective. Physical availability refers to the prevalence of outlets in the consumers' physical environment. Social availability is the prevalence within the consumers' social environments such as parties and dinners. Economic availability refers to cost in relation to income. Finally, subjective availability refers to the consumers' perception of the ease of access. Study findings have suggested that increased availability in any category of accessibility is related to increases in use (Gruenewald & Millar, 1993).

Over the decades, Americans have been devoting more and more time to watching television and related media such as video games, computers, and DVDs. The increase in sedentary behavior during leisure hours has often been contributed to the use of these devices.

Televisions are present in virtually all American households, and the number of homes with multiple TVs has increased dramatically over the years. In 1960 only 12% of US households had more than one TV. By 2000 76% of US households had more than one television. According to Nielsen surveys on television use, in 1999, the estimated hours of TV viewing for all persons over age 12 was 28 hours per week. (French, et al., 2001) One study conducted to determine the effects of television watching on physical activity used pedometers to approximate the recommended daily activity levels and compared this to the number of hours of TV the subject watched. According to this study, each hour of television watched equated to 144 fewer steps recorded on their pedometer. Overall, it was determined that for each hour of TV watched, participants were 16% less likely to achieve the goal of 10,000 steps per day (Dana-Farber Cancer Institute, 2006). Not only does TV viewing decrease physical activity, it may also increase the consumption of unhealthy foods. More than half of the TV advertisements viewed by children and adolescents are about food. A majority of the ads promote fast foods and less healthy foods that can easily be purchased by adolescents (Institute of Medicine, 2005). According to the Institute of Medicine, these advertisements influence children in their preference, request, and consumption of low nutrient foods (Institute of Medicine, 2006).

Other causes of increased sedentary behavior included occupational activities and labor saving devices. Occupational physical activity has declined over the last century. At the beginning of the 1900s the most prevalent occupations included farming, masonry, carpentry, and factory work. Today the most prevalent occupations are in service and technology. These types of occupations require little energy expenditure. However, even in job categories that are traditionally considered high in energy expenditure, technology has significantly reduced the energy required. (French, et al., 2001) New research has shown that sedentary jobs may negate the benefits of exercise. Researchers at the International Diabetes Institute in Melbourne Australia studied 8,000 adults over 35 and found that thirty minutes of exercise a day is not enough to prevent obesity or diabetes in people who spend long periods of time stationary. A follow up study found that if people break up their sitting time by walking around the office they are more likely to increase their metabolic rate and increase their health. (Macey, 2007)

With regards to labor saving devices, there is limited data available on their potential impact on physical activity levels. However, it has been hypothesized that the use of devices such as riding lawnmowers, snow blowers, and leaf blowers could contribute to lower physical

activity levels. (French, et al., 2001) A study by the Mayo Clinic attempted to test this hypothesis by measuring energy expenditure in participants as they performed structured tasks such as cleaning dishes, stair climbing, and washing clothes. These values were then compared with their respective mechanized activity. This research found that energy expenditure was significantly higher when daily domestic tasks were performed without the aid of machines. In fact, the difference was enough to contribute to the positive energy balance associated with weight gain. (Lanningham-Foster, Nysse, & Levine, 2003)

Summary

Most lifestyle changes that have affected American health occurred after World War II. The 1950s saw the rise of suburbia and automobiles. The effects of these reached their height in the 1990s with big box shopping and sprawling cities. These changes have decreased the need for physical activity and increased the availability of food, alcohol, and tobacco. Another change that occurred after World War II was the advent of the television. The popularity of the device has grown exponentially since its creation, especially with the invention of recording devices and video games. The computer is another leisure device that has become a staple for the American society since the 1990s. In addition to being a leisure device, computers are labor saving devices that have allowed businesses to increase their efficiency and decrease their physical demands. Today it is possible for millions of Americans to go to work and never get up from their computer chair, especially with the rise of email and internet. Other labor saving devices have also taken off since the 1950s include washers and dryers, dishwashers, riding lawnmowers, and leafblowers. All of these devices have decreased the amount of physical activity necessary to complete daily tasks.

Despite the fact that many individuals accept our environment as it is, communities have the capability to mold their environments. Conscientious community planning can provide a healthy environment for the citizens of the community. If utilized by the citizenry, these new environments can lead to a healthy lifestyle, thus potentially leading to a longer and healthier life. Research indicates that decisions have been made in the past which have been detrimental to fostering a safe and healthy environment for all citizens, and the consequences of those decisions are just now being realized. Many concerned officials today are more cognizant of the health trends and are working to reduce unhealthy lifestyle habits through planning. Many

aspects of our environment will not change rapidly even with community wide support. Efforts to undo some of the most harmful practices could take decades. Current generations will reap some of the benefits if we work toward health conscious communities. However, with a positive vision and hard work, future generations will be able to enjoy attractive communities designed to promote all-around healthy lifestyles.

CHAPTER 4 - Promoting Healthy Lifestyles through Planning

To decrease health problems in America, communities need to be planned and developed in ways that promote the five characteristics of a healthy lifestyle. If promoted and accepted by citizens, the country can decrease the occurrence of chronic diseases, increase the average lifespan, and decrease medical expenditures.

In social ecology the importance of the human environment in health is explained through the interrelations of personal and environmental factors (McLaren & Hawe, 2005). There are five classes of factors that influence health behavior. They are intrapersonal, interpersonal, organizational, community, and policy. Intrapersonal factors are those that are internal or within a single individual. This includes the individual's knowledge, attitude, and skills. Interpersonal factors that affect health are the relationships individuals have with family and friends. Organizational factors are individuals' memberships in certain institutions including schools, workplaces, and so forth. The next set of factors comes from the community. These factors focus on relationships with community agencies and environmental factors. The final class of factors is policy. Policy factors include regulations that promote or discourage specific actions. (McLeroy, Bibeau, Steckler, & Glanz, 1988) Planners are not able to control all of these classes of factors. However, planners are able, to some extent, control policy, community, and organizational factors. In turn, this control can affect intrapersonal and interpersonal factors. By intervening on multiple levels like this planners can increase the chances that their projects will be effective.

This chapter will examine some of the current initiatives underway throughout the country and internationally. From these initiatives, a guide to creating a healthy community was created. This guide includes the steps in creating a healthy plan, a health assessment checklist, and recommendations. The recommendations and checklist allow communities to ascertain whether or not their community can claim progress in becoming a health conscious community. The guide to creating a healthy community constitutes the final goal of this research project.

Current Initiatives

Over the last couple of decades, some planners and public health officials have recognized the problems created by automobile based environments and technology. Through their research and encouragement, several communities and organizations have begun work promoting healthy lifestyles. Organizations such as the World Health Organization, the US Department of Health and Human Services, the Centers for Disease Control and Prevention, and the cities of San Francisco, California and Washington DC have published planning guides and established healthy city programs to assist in these efforts.

World Health Organization – Healthy Cities

The term Healthy Cities was first used in an international workshop presentation in 1985. The speech meant to show that health was the result of more than medical care; nurturing environments and community involvement are also important. This began the movement highlighting the interconnections among elements and problems in society. (Healthy Communities Institute, 2010) Shortly thereafter in 1986, the World Health Organization, inspired by the 1985 speech, established the Healthy Cities program in the WHO Regional Office for Europe. The group who planned the program expected that it might attract six to eight cities. However when the project commenced with a Healthy Cities symposium in Lisbon, it became obvious that their estimates were modest. The symposium was attended by delegates from twenty-one cities and seventeen countries. Eleven cities were selected for the WHO project in 1986, but the program popularity led to the selection of another fourteen cities in 1988. By 1991 the program had already grown to thirty-five cities. (Hancock, 1997)

The purpose of the Healthy Cities program is to engage local governments in health development and promote comprehensive and systematic planning that emphasizes health inequalities (World Health Organization Regional Office for Europe, 1997). It also encourages communities to include health considerations in economic, regeneration, and urban development efforts. This program is a global movement with networks established in all six WHO regions. (World Health Organization Regional Office for Europe, 2009a)

The Healthy Cities concept is about the entire process, not just the outcome of the process. Any city can be a part of the program if it is committed to health and has a structure and

process to work towards improvement. The qualities that a city should strive for as a part of the program are those of a healthy city. (World Health Organization Regional Office for Europe, 2009a) According to the World Health Organization these qualities are as follows.

- a high quality, clean, safe environment
- a stable ecosystem that is sustainable in the long term
- a mutually supportive and non-exploitative community;
- citizens have control over decisions affecting their lives, health and well-being
- all people's basic needs (food, water, shelter, income, safety and work) are met
- people have access to a wide variety of experiences, communication and resources
- a diverse, vital and innovative economy
- encouragement of connectedness with the past and heritage of city dwellers and others
- a form that is compatible with and enhances the preceding characteristics
- an optimum level of appropriate public health and care services, accessible to all
- a high health status (high levels of positive health and low levels of disease)

(World Health Organization Regional Office for Europe, 2009a)

All Healthy Cities projects have six common characteristics. They are a commitment to health, political decision making, intersectoral action, community participation, innovation, and healthy public policy (World Health Organization Regional Office for Europe, 1997).

There are numerous Healthy City projects completed and underway in cities across the world. One city that has always exemplified the hard work and dedication necessary to become a healthy city is Belfast, England. The city of Belfast, England was one of the first cities designated as a part of the European Healthy Cities Network in 1987. Since then, the city has been working hard to become a healthy city. Projects that have been completed by the city include developing a home safety check scheme, creating a traveler's health project, establishing health policies, creating a directory of contacts for the elderly, and developing a quality of life matrix. The city of Belfast has taken the Healthy Cities' goals seriously. Because of this they have been recognized as one of the leading cities within the European Healthy Cities Network. (Belfast Healthy Cities, 2009)

The cities that participate in the Healthy City program agree to strive to meet the criteria that are renewed and updated every five years. Each five years, the focus of the program and its core priorities build on the previous phase. The core priorities are launched with a declaration and a set of strategic goals. Currently, European cities are in Phase V which lasts until 2013. During this phase, the core priorities revolve around health and health equity in all local policies. With this theme, cities are focusing on fostering caring and supportive environments, promoting healthy living, and developing in a manner that promotes health through the use of urban design. (World Health Organization Regional Office for Europe, 2009b)

At the beginning of Phase V political representatives of the European cities gathered in Zagreb for the 2008 International Healthy Cities Conference. At this meeting the representatives declared their values and principles in regards to the core themes as the following. First, the cities endorse, understand, and are inspired by the World Health Organization's position on health because health is a precondition for well being and quality of life: "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition." Next, they recognized that action for health is more than accessible health care and includes disease prevention; health promotion and systematic action on inequality in health; the risk factors for noncommunicable diseases; injuries; and the social, economic, and environmental determinants of health. The third value of the representatives was that they have a unique leadership role to play in securing the highest level of political commitment to strengthen and scale up our efforts to improve and protect the health of our citizens. Next, the commitment to previous Healthy Cities declarations and political statements was reaffirmed. Then representatives declared they would build on these declarations and statements. Finally the political representatives called on national and regional governments to recognize the importance of cities in contributing to national health strategies. (World Health Organization Regional Office for Europe, 2008)

To supplement the goals and objectives presented by the Healthy Cities program, the World Health Organization has published several books and reports concerning healthy communities. A few of these titles include *A Working Tool on City Health Development Planning: Concept, Process Structure and Content*, *A Healthy City is an Active City: A Physical Activity Planning Guide*, and *How to Create and Implement Healthy General Plans*.

U.S. Department of Health and Human Services – Healthy People

The Healthy People program has set, and monitored, national health objectives since 1979. It encourages individuals to make informed health decisions and measure the impact of prevention activities. (Centers for Disease Control and Prevention & National Center for Health Statistics, 2009b) Every decade the Department of Health and Human Service uses scientific insight, lessons from the past decade, and innovations, to update the Healthy People agenda. (U.S. Department of Health and Human Services, 2009a) In January 2000 the Healthy People 2010 agenda was launched. It included 467 objectives designed to improve the health of all Americans. (Centers for Disease Control and Prevention & National Center for Health Statistics, 2009b)

Healthy People 2010 focused on two overarching goals, to increase quality and years of healthy life and to eliminate health disparities. Each of the 467 objectives was organized into one of 28 focus areas representing a sector of public health. In addition, Leading Health Indicators, were created to identify measures of public health, and to encourage participation in improving health. These indicators were chosen based on their ability to motivate action, ability to be measured, and relevance as public health issues. (Centers for Disease Control and Prevention & National Center for Health Statistics, 2009b)

As 2010 has now begun, Healthy People 2020 is now being proposed to continue the work of the 2010 agenda. The vision of the Healthy People 2020 program is, “A society in which all people live long, healthy lives.” The program strives to identify health improvement priorities; increase public awareness and understanding of health, disease, and disability determinants; provide measurable objectives that apply to all levels of government; strengthen policies and improve practices; and identify research, evaluation, and data collection needs. In doing this, Healthy People 2020 is attempting to reach four goals. The first goal is to attain high quality, long lives free of disease, disability, and injury. Next, the program will attempt to achieve health equity, eliminate disparities, and improve health. Another goal is to create environments that promote good health. Finally the program will promote quality of life and healthy behaviors across all life stages. (U.S. Department of Health and Human Services, 2009a) This year, the Healthy People 2020 objectives will be released along with guidance for achieving the new target objectives. (U.S. Department of Health and Human Services, 2009a) As of this writing only proposed objectives have been released.

Individuals, groups, and organizations are encouraged to integrate Healthy People objectives into current programs, special events, publications, and meetings. The framework can be used to guide health promotion activities in businesses and communities. Organizations can build an agenda for community health improvement based on the objectives and monitor results over time by tracking the leading health indicators online. (U.S. Department of Health and Human Services, 2009c)

Centers for Disease Control and Prevention - Publications

The Centers for Disease Control and Prevention publishes reports every year that deal with the prevention of diseases. In recent years, community health has become a greater concern. Two reports published by the Centers for Disease Control and Prevention include *Recommended Community Strategies and Measurements to Prevent Obesity in the United States* in 2009 and *The Community Health Promotion Handbook: Action Guides to Improve Community Health* in 2008.

Recommended Community Strategies and Measurements to Prevent Obesity in the United States was created to help communities assess the effectiveness of plans to create environments that promote good nutrition and physical activity. To meet this objective, strategies and measurements that communities could use to plan and monitor environmental changes were identified and recommended (Khan, et al., 2009).

The Community Health Promotion Handbook: Action Guides to Improve Community Health is an evidence based tool that connects recent research to practice. It is meant to guide public health practitioners and others interested in promoting health in implementing effective community strategies. The action guide not only includes recommendations and evidence, it includes tips to implementation and tools for planning and implementation. (Building a Healthier San Francisco, 2010) This guide focuses on diabetes management, physical activity, and tobacco-use treatment. (Partnership for Prevention, 2008)

City Plans – San Francisco and Washington D.C.

Health conscious planning is taking place nationally and internationally as well as on a small scale. Numerous cities have recognized the importance of planning to promote health and are making changes by including health objectives as primary indicators in planning

communities. Two such communities are San Francisco, California and Washington DC. These two cities were ranked in the top three healthiest cities according to Bert Sperling's Best Places and Centrum. The Centrum Healthiest Cities study was the first comprehensive health report of the 50 largest metro areas in America. The rankings were based on health status, nutrition and exercise, mental health, and life balance. (Sperling, 2009)

San Francisco and Washington DC, as well as others, are incorporating public health and wellness in their community plans by promoting parks, implementing traffic calming strategies, increasing walkability and bikeability, promoting sustainability and green activities, limiting the number of licenses given for alcohol and tobacco outlets, and through various other activities. As more and more cities engage in this reform, the factors behind poor public health such as automobile oriented sprawl and unsafe street designs can be substantially reduced.

San Francisco, California

The "Building a Healthier San Francisco" initiative provides the city with data and tools for making it a healthy place to live, work, and play. The initiative is intended to help planners, policy makers, and community members identify issues and improvements necessary in San Francisco. Building a Healthier San Francisco allows individuals to compare San Francisco's health with other communities, and the nation; through health indicators, learn about promising practices which improve community health, and review efforts to address San Francisco's health needs. (Building a Healthier San Francisco, 2010).

Another way San Francisco is attempting to address community health is through their Healthy Development Measurement Tool. (Building a Healthier San Francisco, 2010) This tool was introduced by the Department of Public Health in March 2007 to respond to the need for health and planning guidelines. Since its induction, the Public Health staff has applied the tool to a number of land use plans in San Francisco. Using the Healthy Development Measurement Tool is voluntary, however, it allows project developers and planners to create projects that incorporate healthy community practices. (San Francisco Department of Public Health, 2006)

The Healthy Development Measurement Tool connects public health and planning to answer a wider variety of social issues. (Building a Healthier San Francisco, 2010) This tool encompasses three core components, the Community Health Indicator System, Healthy Development Checklist, and the Menu of Policies and Design Strategies. These components can

be used together or independently to evaluate a project by answering the following questions. Does a place have healthy living and working conditions? Does a plan or project advance health-related conditions? What policies, implementing actions and/or design recommendations would advance community health objectives? (San Francisco Department of Public Health, 2006)

The Community Health Indicator System consists of 125 indicators used to evaluate and monitor social, environmental, and economic conditions in a community. The indicators are divided into six elements. The elements are environmental stewardship, sustainable and safe transportation, social cohesion, public infrastructure/access to goods and services, adequate and healthy housing, healthy economy, demographics, and health outcomes. (San Francisco Department of Public Health, 2006)

The Healthy Development Checklist is a checklist of development targets associated with the aforementioned indicators that can assess plans and projects progress toward community health objectives. To use the checklist, individuals review each target and check the appropriate box to indicate whether the project meets the target. Finally the Menu of Policies and Design Strategies is a listing of possible actions that could be taken by project coordinators to reach developmental targets from the checklist if they have not already been met. (San Francisco Department of Public Health, 2006)

The Healthy Development Measurement Tool has been well received not only by San Francisco, but by other cities as well. Galveston, Texas and Denver, Colorado are two cities that have recently adapted the tool to fit their cities needs (San Francisco Department of Public Health, 2006).

Washington DC

Washington DC's Healthy by Design is a citywide initiative meant to develop a healthier city. It is a framework for use by the government to encourage activity and health by increasing access to healthy food, primary care facilities, walkable destinations, and recreational opportunities (District of Columbia Office of Planning, 2009). As of 2009 DC had 39 full service grocery stores and 19 farmer's markets, 40 miles of bike lanes, and over 900 primary care providers. To build on these amenities Washington DC has created policies and plans that support healthy communities. Some of the healthy community planning policies are the DC

Childhood Health Action Plan, Supermarket Tax Exemption Act, School Wellness Policy, Traffic Calming Guidelines, Safe Routes to School and over 171 policies in the comprehensive plan. (Hairston, 2009)

Current improvements that are underway include the Healthy Corner Stores Initiative, Medical Homes and Clinic Expansion, and the Robert Wood Johnson Healthy Kids/Healthy Community Grant. The Healthy Corner Stores Initiative is meant to revitalize deserted corner stores by selling produce in them. In addition this initiative has created the DC Food Finder, a map based web tool that allows users to find healthy affordable food based on location. The Medical Homes and Clinic Expansion is using \$29 million to create 100,000 primary care visits and over \$100 million for clinic expansion. The Robert Wood Johnson Healthy Kids/Healthy Communities Grant is a \$400,000 grant to expand existing community based initiatives that provide access to health foods and recreational opportunities. (Hairston, 2009)

Washington DC has identified numerous options on the issues that they would like to tackle in the future. Their current options include the following. The first option is creating a Healthy Design Index to monitor improvements in health and access to healthy amenities. Next, investigate opportunities to reform zoning to improve accessibility to health care facilities and healthy food stores. The city is also considering the development of performance measures and a research agenda with interested organizations. Finally the city is considering bundling existing programs into a Healthy by Design incentive package. (Hairston, 2009)

Guide to Creating a Healthy Community

Planning is an important part of building a healthy community. As presented, planning and design have had a positive and negative impact on health. To help planners become conscious of how to promote and develop strong, vibrant, and healthy communities multiple tables have been created. The first depicts the steps in a healthy community planning process. The second is a checklist that will allow community members to get a clear picture of how healthy their community really is when it comes to alcohol consumption, smoking, physical activity, diet, and weight. The final table gives a list of recommendations within each of the five healthy lifestyle characteristics so communities can take what they have learned from the Health Assessment Checklist and determine ways to improve their weaknesses.

Steps in Creating a Healthy Community Planning Process

There are seven major steps in the healthy community process. They are build support, create a vision, assess existing conditions, determine priorities, create plans, implement plans, and evaluate progress. Under each major step there are several subtopics that should be considered before moving on to the next step. These steps are presented in Table 4.1.

Table 4.1 Steps in a Healthy Community Planning Process

Steps in a Healthy Community Planning Process
Build support for a healthy community.
<ul style="list-style-type: none"> Identify and reach out to potential partners. Organize a presentation or training on the topic of the built environment and health. Form a Healthy Community coalition. Identify funds and resources. Propose a Healthy City/County resolution.
Create a community health vision.
<ul style="list-style-type: none"> Consult the public and stakeholders. Determine what you want your community to be in the future.
Assess existing health and lifestyle conditions.
<ul style="list-style-type: none"> Collect health data to begin a baseline health assessment. Conduct environmental audits.
Determine priorities and objectives.
<ul style="list-style-type: none"> Review current plans, policies, standards and programs. Evaluate input from community and review assessments. Define scope of overall program. Establish criteria for priorities and select priorities. Establish criteria for objectives and select objectives. Outline standard information to include within all priorities and objectives. Identify potential indicators and measures for objectives.
Create plans, programs, policies, and standards.
<ul style="list-style-type: none"> Include health goals in a health element or integrate goals into other elements. Determine if plan will meet priorities and goals. Develop indicators, measurements, and standards. Establish design guidelines.

Implement plans, programs, policies, and standards.
<ul style="list-style-type: none"> Identify projects to complete health impact assessments. Identify which health effects to consider. Assess risk and benefit. Suggest changes to promote positive or mitigate adverse health effects. Evaluate effects. Incorporate changes or continue with implementation.
Evaluate progress towards established goals.
<ul style="list-style-type: none"> Monitor measurements. Determine progress towards goals. Determine whether actions are reaching goals. Determine what additional initiatives, if any, are necessary.

Sources: Stair, et al. 2008; World Health Organization Regional Office for Europe, 1997; San Francisco Department of Public Health, 2006; Edwards & Tsouros, 2008; Baker, Conrad, Béchamps, & Barry, 2002

Health Assessment Checklist

In Table 4.2 a Health Assessment Checklist is presented. To use this checklist, each subtopics questions should be reviewed and responded to using all available information and reports. Some questions may best be answered through the use of graphics or maps. Once all of the questions under a specific subtopic have been answered, they should be reviewed and a rating from poor to excellent should be assigned. After completing all of the subtopics, an overall rating for the entire topic should be assigned. Once this process has been completed for all six topics and overall community health rating can be established. Once this health assessment has been completed, a community will be able to determine on which areas to focus.

Table 4.2 Health Assessment Checklist

Health Assessment Checklist				
	Excellent	Good	Fair	Poor
General Community Health				
Overall General Level of Community Health				
General Level of Community Health				
What are important health problems in the city?				
What are the leading causes of death and disease?				
What causes of disease are caused by the built environment?				
What is the geographic distribution of mortality?				
Are there any populations with severe health problems?				
What is the percentage of children, elderly, and infants?				
What is the geographic distribution of them?				
How many health facilities are there and where ?				
	Excellent	Good	Fair	Poor
Alcohol Health				
Overall Alcohol Health				
Level of Alcohol Consumption				
What is the proportion of heavy to moderate alcohol consumers?				
What percentage of people binge drink?				
Accessibility of Alcohol				
Is there a geographic concentration of liquor stores?				
What is the density of alcohol outlets?				
Handling Negative Impacts Associated with Alcohol				
What is the hospitalization rate for alcohol abuse per year?				
How many DUI cases are presented each year?				
How many alcohol related vehicle crashes occur annually?				
How many alcohol related violence reports are filed annually?				
What policies discourage excessive alcohol consumption?				
	Excellent	Good	Fair	Poor
Smoking Health				
Overall Smoking Health				
Prevalence of Smoking				
What percentage of citizens smoke?				
How many nonsmokers are exposed to secondhand smoke?				
How many smokers have attempted to quit and failed?				
How many adolescents under 18 have used tobacco products?				
Accessibility of Tobacco				
Is there a geographic concentration of tobacco retail stores?				
What is the density of tobacco retail stores?				
How many health facilities offer tobacco cessation counseling?				

Are tobacco products advertised within the community?				
How many retailers were caught selling tobacco to minors?				
Cessation Promotion				
What is the current tax rate on tobacco products?				
Are there any tobacco cessation groups or support systems?				
Does the community have a tobacco control program?				
Where are tobacco free environments located?				
What percentage of land uses are tobacco free?				
	Excellent	Good	Fair	Poor
Physical Activity Health				
Overall Physical Activity Health				
Level of Activity				
What percentage of people meet recommended activity levels?				
Do activity levels vary by neighborhood?				
What prevents people from being active?				
How many elders participate in fitness?				
What recreational facilities exist within the community?				
What recreational facilities do community members prefer?				
Do health facilities offer exercise counseling or education?				
Does the community host any athletic events or activities?				
Availability of Parks				
What is the proximity of parks to residential areas?				
How many people live within a 1/4 mile of recreation facilities?				
What is the parks-to-people ratio?				
Does the parks-to-people ratio vary by neighborhood?				
Land Use				
What is the mix of land uses?				
How close are people to a variety of uses?				
What is the density of development?				
Is there an open space zone district?				
General Transportation				
How many traffic accidents involve pedestrians?				
What are the rates of driving, walking, and biking?				
How do transportation rates differ by neighborhood?				
What is the average annual vehicle miles traveled per capita?				
What is the street intersection density?				
How many miles of bike paths and walking trails are there?				
Can people safely meet their daily needs without a car?				
What percentage of residents work within the jurisdiction?				
Does the community have a network of trails or paths?				
What percentage of children walk or bike to school?				
Does the community have a walking or biking group?				

Pedestrians and Sidewalks				
Do sidewalks offer enough room on which to walk?				
Do pathways start and stop, or are they continuous?				
Are sidewalks well maintained?				
Is it easy to cross streets at designated intersections?				
Do drivers pay attention to pedestrians?				
Is the scenery of the community pleasant to view?				
Are there any undesirable features near the sidewalks?				
Are sidewalks littered with debris?				
How walkable is the jurisdiction?				
What percentage of roads have included sidewalks?				
What are the block lengths in different areas?				
Are water fountains located in areas used for walking?				
Bicycles and Bike Paths				
Can cyclists bike safely on streets?				
Do bicycle paths start and stop?				
Are roadways lit well?				
Do paths go where individuals want to travel?				
Do paths intersect with roads that are difficult to cross?				
Are paths crowded?				
Are paths safe and comfortable?				
What is the path surface?				
Are the paths damaged?				
Are paths littered with debris?				
Are there any hazards along the path?				
Does the community have signs, or road markings for cyclists?				
Are there secure places to leave bicycles?				
What is the geographic distribution of bike changing facilities?				
What is the geographic distribution of bicycle racks?				
Are water fountains located in areas used for biking?				
	Excellent	Good	Fair	Poor
Fruit and Vegetables Health				
Overall Prudent Diet Health				
Fruit and Vegetable Consumption				
How many fruits and vegetables do individuals eat per day?				
Are there education programs that promote fruit and vegetables?				
Accessibility to Fruits and Vegetables				
Where are the stores that offer healthy food?				
How accessible are stores, farmers' markets, and gardens?				
How much food do local farms provide for the community?				
What portion of local farms are organic?				
What distribution networks bring local produce to the area?				
Are there any community gardens within the community?				

Does the community offer support on creating gardens?				
Do any areas exist where gardens could be developed?				
How many produce/farmer's markets are within the community?				
What is the geographic distribution of these markets?				
	Excellent	Good	Fair	Poor
Weight Health				
Overall Weight Health				
Prevalence of Overweight and Obesity				
How many individuals are overweight or obese?				
What percentage of children are overweight or obese?				
What percentage of adults are overweight or obese?				
Are those who are overweight clustered in neighborhoods?				
Accessibility to Factors that Contribute to Weight				
What is the number of fast food locations in relation to markets?				
Does the number vary by neighborhood?				
How many fast food restaurants are located in the community?				
What is the density of fast food restaurants?				
Are healthy food choices available in public service venues?				
What is the geographic distribution of supermarkets?				
How many people live within a 1/2 mile of a market?				
Do health facilities offer weight management counseling?				
Overall Community Health Rating				

Sources: Stair, et al. 2008; World Health Organization Regional Office for Europe, 1997; San Francisco Department of Public Health, 2006; Edwards & Tsouros, 2008; Baker, et al., 2002

Recommendations

From the plans and programs discussed in the current initiatives, recommendations have been compiled, generalized, and expanded so that they may be a basic guide for what cities should strive to do within the five healthy lifestyle characteristics. Once a community has completed a health assessment, it will be able to refer to these recommendations to determine how to improve the communities' health. The recommendations ascertained are shown in the tables below.

Alcohol Consumption Recommendations

Table 4.3 below lists recommendations to lower alcohol consumption within communities. A majority of these recommendations focus on limiting actual and perceived accessibility and availability. Research from several studies has shown that small increases in

alcohol availability lead to increases in consumption and alcohol related incidents (Ashe, Jernigan, Kline, & Galaz, 2003). A study examining the effects of alcohol restrictions on consumption over a 25 year period from 1955 to 1980 found that certain laws and regulations play a significant role in decreasing consumption rates. In fact, based on the researchers' findings, it was predicted that if a state's regulatory laws shifted from being relatively loose to being relatively strict then a decrease of two drinks per month per person could be expected. This decrease would lower the median state's consumption level by 25%. (Schuckit, Schuckit, & Schuckit, 1984) Another study, using 1990 data from Los Angeles County found that the density of restaurants, liquor outlets, and convenience stores is strongly correlated to motor vehicle crashes (Scribner, MacKinnon, & Dwyer, 1995). This leads to the importance of preventing drinking and driving-another main focus of the alcohol consumption recommendations.

Table 4.3 Alcohol Consumption Recommendations

Alcohol Consumption Recommendations
Limit the hours of alcohol service in establishments that serve and sell alcohol.
Decrease density of and limit addition of alcohol outlets through zoning ordinances
Educate public in order to increase the proportion of persons who remain alcohol free.
Increase sales taxes on alcoholic beverages.
Implement a citywide safe ride program to reduce driving under the influence.
Create and promote alcohol support groups.
Increase the number of DUI checkpoints on nights and weekends.
Provide incentives for alcohol free establishments.
Increase the number of coalitions that conduct substance abuse prevention efforts.
Reduce alcohol advertising and promotion through signage controls.
Extend license revocation laws for persons who drive under the influence.

Sources: Stair, Wooten, & Raimi, 2008; San Francisco Department of Public Health, 2006; U.S. Department of Health and Human Services, 2009b; District of Columbia Office of Planning, 2009; Keener, Goodman, Lowry, Zaro, & Kettel Khan, 2009; World Health Organization Regional Office for Europe, 1997

Smoking Recommendations

The recommendations found in Table 4.4 focus on smoking and tobacco use. These recommendations focus on restricting availability to prevent tobacco use and promoting cessation. By limiting where and when smoking can occur, the number of people exposed to secondhand smoke can be limited. Availability and the perception of availability is one of the best predictors of adolescent experimentation with cigarettes. According to one study, 57% of 10th graders and 38% of 8th graders perceive that it would be easy to obtain cigarettes from a retail store. (Ashe, et al., 2003) Finally, much like alcohol consumption, decreased cigarette and tobacco availability could result in decreased usage.

Table 4.4 Smoking Recommendations

Smoking Recommendations
Restrict additional tobacco retail store locations and decrease density through zoning.
Provide incentives for tobacco and smoke free establishments.
Increase penalties for selling tobacco products to minors.
Increase the number of comprehensive evidence-based tobacco control programs.
Educate public on harmful effects of smoking.
Promote the establishment of cessation support groups.
Reduce the number of nonsmokers exposed to secondhand smoke by enacting smoking bans.
Increase tobacco-free environments through smoking bans.
Reduce tobacco advertising and promotion through signage control.
Eliminate laws that preempt stronger local tobacco control laws.
Increase the tax on tobacco products.
Promote tobacco cessation counseling in health care settings.

Sources: Stair, Wooten, & Raimi, 2008; San Francisco Department of Public Health, 2006; U.S. Department of Health and Human Services, 2009b; District of Columbia Office of Planning, 2009; Keener, Goodman, Lowry, Zaro, & Kettel Khan, 2009; World Health Organization Regional Office for Europe, 1997

Physical Activity Recommendations

Physical activity recommendations are presented in Table 4.5. These recommendations focus on increasing accessibility to recreational facilities, promoting walking and biking, and decreasing motor vehicle usage. Recreation facilities provide space for physical activity including parks, green space, trails, playgrounds, pools, and sports fields. According to a review of ten different studies, increased access to recreational facilities combined with educational outreach can increase physical activity (Kahn, Ramsey, & Brownson, 2002). Promoting walking and biking through enhanced infrastructure can also increase the frequency of these practices (Khan, Sobush, Keener, Goodman, Lowry, Kakietek, & Zaro, 2009). In turn, researchers have concluded that long distances and safety concerns between individuals and bicycle paths were associated with non use of those paths (Troped, Saunders, Pate, 2001). When it comes to distance to recreational facilities, one way to increase proximity is through mixed use development. This type of development decreases the distance between destinations, and according to a study done by Saelens, Sallis, and Frank, mixed land use is associated with increased walking and cycling. In fact, residents of high walkability neighborhoods, those with mixed uses and greater connectivity, reported twice as many walking trips per week than residents from low walkability neighborhoods (Saelens, Sallis, & Frank, 2003).

Table 4.5 Physical Activity Recommendations

Physical Activity Recommendations
Preserve and enhance parks and open spaces to meet recreational needs.
Distribute parks throughout neighborhoods.
Establish an Open Space zone district.
Provide new parks and open spaces in areas of expected employment growth.
Provide a variety of recreational facilities.
Conduct surveys to better understand recreational preferences and future needs.
Develop a network of trails, paths, and linear parks to link and improve access to open space.
Provide schools with incentives to improve the usefulness of recreational facilities.
Support efforts to preserve open space and create greenbelts and hiking trails.
Require sidewalks and bike lanes on all new streets and retrofit older streets.
Keep sidewalks in a well maintained state.
Require open space land dedications for all new developments.
Ensure that plans facilitate connections between different modes of travel.
Provide urban squares, public plazas, and similar areas that stimulate pedestrian street life.
Design roads with pedestrian and cyclist safety and comfort in mind.
Increase parks, open space, and recreation facilities.
Require cross walks for pedestrians and cyclists.
Implement recycling to promote the beauty, safety, and cleanliness in public spaces
Establish a community based physical activity groups such as walking, biking, etc.
Educate public on importance of physical activity.
Establish auto free zones.
Reduce amount of parking or increase the price of parking.
Create accessible transit routes.
Use zoning to limit big box infrastructure.
Limit block size in new developments.

Establish sport leagues for businesses, communities, and youth.
Require high density and transit orientated development.
Install maps and signage for pedestrian and cyclists.
Provide incentives to businesses that install exercise facilities and exercise programs.
Install water fountains in strategic locations.
Promote walking to school with cross walks and crossing guards.
Improve the pedestrian environment through universal design principles.
Create a network of bicycle facilities throughout the city that link key destinations.
Connect with neighboring cities through bicycle networks.
Schedule cycling and walking events and activities such as marathons, 5Ks, etc.
Launch cycling commute campaigns.
Establish bicycle parking and clothes-changing facilities throughout the community.
Implementing education programs that teach cycling skills.
Zone for mixed use development and require it in development.
Invest in pedestrian-oriented transportation improvements at or around transit stations.
Ensure that the redesign of bridges includes improved provisions for pedestrians.

Sources: Stair, Wooten, & Raimi, 2008; San Francisco Department of Public Health, 2006; U.S. Department of Health and Human Services, 2009b; District of Columbia Office of Planning, 2009; Keener, Goodman, Lowry, Zaro, & Kettel Khan, 2009; World Health Organization Regional Office for Europe, 1997

Fruit and Vegetable Consumption Recommendations

In Table 4.6 recommendations to promote fruit and vegetable consumption are provided. These recommendations focus on increasing the availability and accessibility of fruits and vegetables. Currently the United States does not produce enough fruits and vegetables for all citizens to eat the quantity of these foods recommended by the USDA Dietary Guidelines for Americans (Khan, et al., 2009). To promote consumption, increasing availability is necessary. One study showed that a 32% increase in the amount of fruits and vegetables consumed by

persons living in a census tract is associated with each additional supermarket within that census tract (Morland, Wing, Diez Roux, & Poole, 2002).

Table 4.6 Fruit and Vegetable Recommendations

Fruit and Vegetable Recommendations
Encourage the development of community gardens on public and private land.
Provide support to residents who wish to plant backyard and rooftop gardens.
Work with schools to make appropriate portions of grounds available for gardens.
Establish and maintain farmers' markets and community gardens.
Install community gardens in open space and sell produce locally.
Limit the number and density of fast food restaurants through zoning.
Provide incentives for production and distribution of food from local farms.
Educate public on importance of fruits and vegetables.

Sources: Stair, Wooten, & Raimi, 2008; San Francisco Department of Public Health, 2006; U.S. Department of Health and Human Services, 2009b; District of Columbia Office of Planning, 2009; Keener, Goodman, Lowry, Zaro, & Kettel Khan, 2009; World Health Organization Regional Office for Europe, 1997

Weight Recommendations

Weight recommendations are presented in Table 4.7. The recommendations listed are centered on limiting the availability of unhealthy foods while promoting healthy ones. The limited availability of healthy food can create a barrier for eating nutritious foods. Studies have indicated that the presence of venues offering healthier food choices is associated with increased consumption of fruits and vegetables and lower BMIs. (Khan, et al., 2009) On such study indicated that increased availability of supermarkets decreased adolescent BMI scores while increased availability of convenience stores was related to higher BMIs (Powell, Auld, & Chaloupka, 2007).

Table 4.7 Weight Recommendations

Weight Recommendations
Implement higher taxes on unhealthy foods.
Provide incentives for increasing affordable healthy foods and beverages.
Provide incentives for supermarkets to establish in underserved areas.
Limit the number of fast food outlets in regards to the number of markets.
Reduce fast food advertisement through signage control.
Promote affordable and high-quality food access and sustainable agriculture.
Promote weight management classes and support groups.

Sources: Stair, Wooten, & Raimi, 2008; San Francisco Department of Public Health, 2006; U.S. Department of Health and Human Services, 2009b; District of Columbia Office of Planning, 2009; Keener, Goodman, Lowry, Zaro, & Kettel Khan, 2009; World Health Organization Regional Office for Europe, 1997

Limitations

While this study does cover five of the main healthy lifestyle characteristics, it is not all inclusive. There are limitless factors that contribute to healthy lifestyles. It would be nearly impossible to determine all of these factors as they can vary from person to person and from culture to culture. This research project focused on the five issues that researchers have determined to be the primary barriers to healthy living in the United States. By addressing these five issues, planners can begin to take action against the damaging practices. However, it may not contribute to the increased health of all community members as these issues may not be the underlying reason for everyone's health problems. As previously mentioned there are numerous factors that affect health including genetics, stress, and sleep. Yet, many of these factors cannot be controlled through planning and land use regulations. For example, it would be impossible for planners to develop a community that accounts for health problems caused by genetics.

It is also important to note that planning has its limitations. Neither planners nor anyone else can force behavior modification. Even with a perfect plan to encourage physical activity and healthy lifestyles, the problem remains that living a healthy life is a personal choice. If

people do not want to adopt a healthy lifestyle it cannot be forced upon them. Planners merely set the stage for easier access to healthy options. They cannot create healthy people

Conclusions

Over the last century our society has created environments that promote unhealthy lifestyles through improperly studying the impact of decisions made to address other concerns. This report has attempted to educate communities about the health issues the country faces and promote healthy planning practices to mediate these problems and increase the quality of life for all citizens. To do this, five lifestyle characteristics were examined. The US Centers for Disease Control and Prevention through the Behavior Risk Factor Surveillance Survey has provided statistics which point to the problems which need to be addressed by the planning profession if a healthier environment is desired. As noted earlier, providing healthy solutions to the problem may not produce a healthy community, since being healthy is a choice to be made by the populace. However, ignoring the problem is a risky business and does not challenge those in need of becoming healthier citizens.

Through the use of BRFSS data, it was determined that the most widespread problem that Americans have when it comes to healthy lifestyles is consuming the recommended amount of fruits and vegetables. Maintaining a healthy weight and participating in the recommended amount of physical activity respectively are the next biggest problems. Of the five characteristics examined, consuming no or moderate amounts of alcohol and not smoking were observed by the highest percentage of Americans. Overall, less than 3% of individuals adhere to all five characteristics (Reeves & Rafferty, 2000). Communities need to take these statistics seriously and plan for health because if individuals are willing to change their lifestyles 80% of chronic disease can be avoided (Church, 2009).

Age, income, and education all have an effect on adherence rates. When it comes to age, youth are more likely to be physically active and maintain a healthy weight. However, elder members of a population are more likely to consume the recommended number of fruits and vegetables, not smoke, and only drink in moderation. Individuals with higher incomes are more likely to be active, consume fruits and vegetables, maintain a healthy weight, and not smoke. However, they are more likely to be heavy alcohol consumers. Those with higher education levels are more likely to maintain a healthy weight, be active, consume fruits and vegetables and

be nonsmokers. Education, income, and age should all be kept in mind when making healthy planning decisions as some populations are in a greater need of support than others.

A large number of environmental and technological changes have occurred since the end of World War II. These changes have included the rise of suburbia, automobiles, sprawling cities, big box shopping, leisure devices, and labor saving devices. These changes have decreased the need for physical activity and increased the availability of food, alcohol, and tobacco.

To benefit communities, the planning profession must revisit or revise some of the common practices of physical design in our cities and communities, as well as the neighborhood. Before the 1950s neighborhoods were centered on schools and parks. Sidewalks were mandatory because walking and bicycling were common modes of transportation. Sprawl caused by the automobile brought about meandering streets. Group play was replaced by individual play that requires no physical activity such as the internet and video games. Suburbs and sprawl do not support walking or biking through their physical design. Mom and Pop stores disappeared as big box shopping opportunities expanded. All of these things have had a large impact on public health, whether through physical activity, pollution, or the promotion of unhealthy practices.

Many aspects of our environment cannot be changed quickly. Undoing some of the most harmful practices could take decades. However, concerned individuals and organizations are working to reduce unhealthy lifestyle habits through planning. As a result future generations may be able to enjoy communities designed for a greater health. Nations, states, cities, and organizations across the world have experienced what lifestyle changes can do to decrease diseases, increase length and quality of life, and decrease medical expenditures. Now it is time to bring these practices to the mainstream. Through land use regulations, zoning, education, financial incentives, and managed growth; planners and community officials can promote health and safety within their communities.

There is recognition of the need for more activity, dieting, exercise, and nutritional habits amongst the general populace. However, much community development contradicts this. Where we go from here is a dichotomy which must be addressed. Individuals need to eat healthy, act healthy, and think healthy, in order to be healthy. This will never happened until communities give their citizens the opportunity to pursue a lifestyle conducive to the health

movement. The time for change has arrived; it is now up to Americans to transform the environment and themselves.

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