Nutrition and Physical Activity

Health Objectives for the Year 2010: Improve the health, fitness, and quality of life of all Lancaster County residents and reduce their chronic disease risk by promoting regular daily physical activity and optimal nutrition status.

Health Implications

Nutrition

Nutrition is essential for sustenance, growth and development, health, and well-being. At the same time, nutritional (or dietary) factors contribute substantially to the burden of preventable illness and premature death in the United States and, consequently, to the nation's economic burden. For the majority of adults who do not smoke and do not drink excessively, what they eat is the most significant controllable risk factor affecting their long-term health. Dietary factors are associated with five of the ten leading causes of death: coronary heart disease, some types of cancer, stroke, Type 2 diabetes mellitus, and atherosclerosis.

Many factors are involved in the nutrition and health relationship. Chief among these is the disproportionate consumption of foods high in fat, often at the expense of foods high in complex carbohydrates, fiber, and other substances necessary for good health that are found in vegetables, fruits, and grain products. There is much evidence associating high dietary fat intake with increased risk of obesity, some types of cancer, and high blood cholesterol. With today's ready availability of high-fat snacks and fast foods, children and teenagers are likely to consume unhealthy amounts of high-fat foods. This can be a precursor to a lifestyle of poor nutritional habits, putting them at increased risk for chronic disease later in life.

An important dietary factor for good health is adequate intake of vegetables, fruit, and grains as a source of complex carbohydrates and fiber as well as vitamins and minerals. These foods are also generally low in fat. Populations consuming diets rich in these foods have significantly lower rates of cancers of the colon, breast, lung, oral cavity, larynx, esophagus, stomach, bladder, cervix, and pancreas. In addition, a fiber-rich diet may have a protective effect against certain types of cancer, including colon cancer. To aid in increasing dietary fiber and vitamin and mineral consumption, the National Cancer Institute in cooperation with the Produce for Better Health Foundation sponsors the "Five a Day for Better Health Program." This educational effort seeks to increase per capita consump-

Table 1. Nutrition and Physical Activity Indicators

	Lancaster Recent	Lancaster Objective 2010	Nebraska Recent	Nebraska Objective 2010	National Recent	National Objective 2010
Percent of young people grades 9–12 who engage in vigorous physical activity at least 20 minutes on three or more of the previous seven days	70.4[1]	85.0	64.2[2]	--	63.8[3]	85.0[4]
Percent of young people grades 9–12 who engage in moderate physical activity at least 30 minutes on five or more of the previous seven days[5]	20.0[1]	30.0	18.9[2]	--	20.4[3]	30.0[4]
Percent of people aged 18 and over who engage in any leisure time physical activity	73.4[6]	85.0	77.0[7]	--	72.3[8]	85.0[4]
Percent of people aged 18 and over who engage in “regular and sustained” physical activity[9]	30.4[6]	40.0	20.0[7]	--	20.4[8]	30.0[4]
Percent of population aged 18 and older who are overweight	30.9[6]	15.0	29.0[7]	--	32.4[8]	15.0[4]
Percent of people who meet the Dietary Guidelines average daily goals of no more than 30% calories from fat	--[11]	75.0	--	--	33.0[12]	75.0[13]
Percent of people who meet the Dietary Guidelines minimum average daily goal of at least five servings of vegetables and fruit	--[11]	75.0	--	--	40.0[12]	75.0[13]
Percent of people who meet the Dietary Guidelines recommendations for calcium	--[11]	90.0	--	--	45.0[12]	90.0[13]

tion of fruits and vegetables from the current national average of 2.5 servings per day to at least five servings per day.

Calcium intake in our population is another dietary factor that has long-term implications on health and quality of life issues. Low calcium intake throughout the lifespan appears to be one important risk factor in the development of osteoporosis. This bone disabling disease affects more than 25 million people in the United States and is the major underlying cause of bone fractures in postmenopausal females and the elderly, with more than 1.5 million fractures occurring annually at an estimated cost of $13 billion to $18 billion per year in medical charges and lost productivity from hip fractures alone. Females are especially susceptible to this bone disease. Because peak bone mass is established by the age of 30, calcium consumption is important throughout all age categories to promote bone formation in childhood, teen, and early adult years and to reduce bone loss after the age of 30.

Physical Activity

In addition to proper nutrition, the adoption and maintenance of a physically active lifestyle is an essential part of a healthy life. On average, physically active people outlive those who are inactive. Regular physical activity helps to maintain functional independence of older adults and enhance the quality of life for people of all ages. Physical activity provides some protection against many chronic diseases including coronary heart disease, hypertension, some types of cancer, Type 2 diabetes mellitus, osteoporosis, arthritis, and depression and anxiety. Regular physical activity can also help in management of Type 1 diabetes mellitus, maintaining appropriate body weight, and combating stress.

Physical activity has a wide range of benefits for participants. Physical activity provides some protection against several chronic diseases, and its role in preventing coronary heart disease is of particular importance. Physically inactive people are almost twice as likely to develop coronary heart disease as people who engage in regular physical activity. This risk factor is almost as significant as cigarette smoking, high blood pressure, and high blood cholesterol and is more prevalent than any one of these other risk factors.

The 1990s has brought a new perspective on exercise, fitness, and physical activity by shifting the focus from intensive aerobic exercise to a broader range of health-enhancing physical activity. Research over the past decade has made it clear that virtually all Americans will benefit from regular sustained physical activity. Although vigorous physical activity is necessary for improved cardiovascular fitness, increasing evidence suggests that physical activity that is less intense and accumulated throughout the day can have significant health benefits, including a decreased risk of coronary heart disease, diabetes, osteoporosis, colon cancer, and high blood pressure. For those who are inactive, even small increases in physical activity show measurable health benefits. It is important to develop a pattern of regular physical activity that begins in early childhood and lasts throughout life.

Overweight Americans

A common health objective of both good nutrition and increased physical activity is the reduction in number of Americans who are overweight. Overweight is defined as body weight that exceeds the normal or standard weight for a particular person, based on height and frame size and a body mass index (BMI) of 27.3 for males and 27.8 for females. The prevalence of people in this country who are overweight based on BMI calculations has increased at an alarming rate, so that more than one-third of American adults are now considered overweight. Obesity is linked to five of the ten leading causes of death in the United States. Of all the diseases for which unhealthy weight is a contributing factor, Type 2 diabetes is most strongly associated with obesity. However, overweight is also a major risk factor for coronary heart disease and hypertension. Certain types of cancer are also linked to overweight. For example, the risk of developing colon cancer is 50% to 70% greater in overweight men compared to those who are lean, with an estimated one in ten colon cancers being attributable to obesity.

The prevalence of overweight is particularly high in minority populations, especially among young women and low-income persons. Furthermore, the increasing prevalence of overweight is not limited to adults but is observed in children above six years of age, in both genders, and in all subpopulations. Morbidity associated with overweight is considerable and will worsen as our population continues to become more overweight. These health problems often can be reversed through proper weight loss and weight maintenance.

Medical researchers have estimated the cost of obesity to be $100 billion annually. This amount includes $45.8 billion in direct costs, such as hospital care and physician services, and another $33 billion for weight reduction services and products. Obesity also costs the economy $18.9 billion a year for such indirect costs as lost output caused by death and disability from weight-related diseases.

Current Status and Trends

Nutrition

Data from 1994 to 1996 reveal that Americans aged two and older consumed about 33% of their total calories from fat, down from 34% in 1994 and 36% in 1980. In addition, the percentage of Americans aged two and older who consumed less than 10% of calories from saturated fat was 35%. (Comparable data is not available for Nebraska or Lancaster County.) However, the 1990 Behavioral Risk Factor Survey has identified Nebraska population segments that are more likely to have high dietary fat intake. “High” fat consumers were defined as those who were above the 75th percentile for fat consumption for the state. Among young men aged 18 to 34, the percentage with high fat intake was much greater, with 45% categorized as “high” fat consumers in Nebraska.

Teenagers were also likely to consume unhealthy amounts of high-fat foods. One-third (34%) of high school students participating in the 1993 National Youth Risk Behavior Study had eaten three or more servings of foods typically high in fat content during the day preceding the survey. Female students (24%) were significantly less likely than male students (42%) to have eaten three or more servings of such foods. Of the Nebraska students, there was an even higher percentage who reported eating three or more servings of high-fat foods the previous day (61%).

Average daily intake of vegetables, fruits, and grain products among people aged two years and over has increased since the start of this decade, as has the proportion of the population who meets the minimum average daily goal. However, the majority still do not meet the recommendation of five or more fruits and vegetables every day. Data from 1996 indicates that only 40% of the population aged two and older met this goal. Nebraska data indicate for adults aged 18 and older that 22% of the population met the Dietary Guidelines’ minimum average daily goal of consuming fruits and vegetables five or more times every day. According to the 1993

YRBS, only 15% of American high school students had eaten five or more servings of fruits and vegetables during the day preceding the survey. Boys (18%) were more likely than girls (13%) to have eaten the recommended "Five a Day." Results of Nebraska students were nearly identical to those for the nation. The percentage of Americans aged two or over who meet the Dietary Guidelines' minimum average goal of at least six servings of grain products increased to 52%; however, consumption of whole-grain products remains low.

Since the start of this decade, the proportion of the population who met recommendations for consumption of calcium-rich foods decreased or changed little, with consumption falling short of recommendations for the majority of the population. In 1996, fewer than one in ten females aged 11 to 24 years consumed an average of three or more servings of milk and milk products daily.

Another nutritional trend in this country is eating meals away from home. Studies indicate that 40% of a family's food budget is spent in restaurants and carry-outs. Foods eaten away from home are generally higher in fat, saturated fat, cholesterol, and sodium and lower in fiber and calcium than foods prepared and eaten at home. People may also have a tendency to eat larger amounts when they eat out, eat higher calorie foods, or both.

Physical Activity

With the introduction of the 1996 Surgeon General's Report on Physical Activity and Health came a recognition of the benefits of less intense but accumulated physical activity in addition to the established benefits of vigorous exercise. Unfortunately, few Americans engage in regular physical activity despite the potential benefits. According to the BRFS of Nebraska, 21% of people aged 18 and older reported participating in weekly physical activity, and 23% of people in this same age category reported having no leisure-time physical activity. This compares to national rates of 20% and 28%, respectively. In Lancaster County, 32.5% of residents reported participating in weekly physical activity, while 19% reported having no leisure-time physical activity. Less than 10% of the U.S. population report regular, vigorous physical activity that involves the large muscle groups in dynamic movement for 20 minutes or longer, three or more days per week.

Regular physical activity among youth is important because of health benefits (cardiorespiratory function, lower blood pressure, and weight management) and because the adoption of a physically active lifestyle may continue into adulthood. Data demonstrate that major decreases in vigorous physical activity occur during grades 9–12, and this decrease is more pronounced in girls than boys. Twenty-one percent of young people in grades 9–12 engage in moderate physical activity for at least 30 minutes each day, whereas the national average of young people in grades 9–12 who participate in daily physical education at school is 25%. The Lancaster County rate for this same category is 39%. Nebraska data were not available.

Worksite physical activity and fitness programs provide a mechanism for reaching large numbers of adults. Employer-sponsored programs can be offered on-site or in conjunction with community organizations. Worksite fitness programs have been shown to have at least short-term effectiveness in increasing the physical activity and fitness of program participants. Evidence that worksite programs are cost effective is also growing, and such programs may even reduce employer costs for insurance premiums, disability benefits, and medical expenses. Additional benefits for employers include increased productivity, reduced absenteeism, reduced employee turnover, improved morale, enhanced company image, and enhanced recruitment. In 1992, approximately 57% of the nation's worksites with 50 or more employees offered employee-sponsored physical activity and fitness programs. In addition, 18% offered some form of nutrition education, and 14% offered weight-management programs.

Overweight Americans

The prevalence of overweight has increased in the United States over the past decade, up from 25% of adults in 1980 to 34% in 1993 (as measured by the National Health and Nutrition Examination Survey). As a result, more than 60 million adult Americans (more women than men) are thought to be overweight. The most recent data for Nebraska shows that 29% are overweight. This prevalence is based on self-reported data from the 1995–96 BRFS and is not comparable to national statistics where data are derived from measured heights and weights.

Health Disparities

The prevalence of overweight is particularly high in minority populations, especially among women and low-income persons. Currently, about 47% of Hispanic and 49% of African-American women are classified as overweight. Studies show that non-Hispanic low-income women have an obesity rate of 39%, compared to 25% for their higher-income-level counterparts. A similar situation exists among Mexican-American women: 46% of the population's low-income women are overweight compared to 40% for those with incomes above the poverty level.

Overweight is a serious health problem for American children and is considered a pediatric epidemic. Childhood obesity has been increasing since the 1970s, with the result that 21% of all 12-year-olds to 19-year-olds are now seriously overweight. A study of 1,456 youths aged 9–12, conducted by the Centers for Disease Control and Prevention between 1988 and 1991, found that one in five preteens is overweight.

Public Health Infrastructure

Physical inactivity and obesity go hand in hand. Ultimately, it is the individual's responsibility to take action to combat personal inactivity and overweight; however, education and environment can be major determinants in whether or not the individual takes positive action.

Public education about long-term health consequences and risks associated with overweight and how to achieve and maintain a preferred weight is necessary. Equally important is establishing an environment that is conducive to safe and pleasurable physical activity. Crime-free neighborhoods, unbroken sidewalks, good lighting, bicycling and walking trails, and pedestrian-friendly streets all encourage leisure-time physical activity. Community initiatives that promote walking or biking to school or work, eating five or more fruits and vegetables each day, and incorporating the Food Guide and Physical Activity Pyramids into daily life can be instrumental in achieving a healthier population. Such initiatives must be embraced by homes, schools, worksites, and the community with the goal of helping citizens establish and maintain healthful behaviors in both diet and physical activity.

Recommendations

- Maintain in the schools an up-to-date quality of nutrition education that utilizes most recent data and technology and ensures that teachers are giving the most current nutritional information.
- Increase the number of schools that teach essential, age-appropriate, current nutrition education topics to all levels of students and throughout the child's entire school career.
- Increase the proportion of children and adolescents who take advantage of school breakfast and lunch programs through positive promotion of these programs.
- Encourage employers to develop a worksite culture that promotes healthful diet and adequate physical activity for employees.
- Develop a community partnership to address ways in which safe and sustained physical activity can be encouraged for the citizens of Lincoln. Partners will include urban planning, law enforcement, health promotion, educators, citizens, employers, public works, trails activists, and others.
- Encourage primary and allied health care providers to routinely assess and counsel their clients to incorporate healthy diet and adequate physical activity into their daily routines.
- Nutrition professionals and nutrition organizations must actively work with legislators and insurance carriers to provide coverage for nutrition education and counseling for clients whose conditions demand appropriate nutrition intervention.
- Consistent physical education in schools must be recognized as an important mechanism to promote increased physical activity in children and adolescents that can carry over into adulthood as lifetime activities for good health.
- Public and private schools should be encouraged to provide access to their physical activity spaces and facilities for young people and adults outside of normal school hours.
- As a community, take advantage of nationally recognized campaigns such as "Five A Day" and "Physical Activity, It's Everywhere You Go," to promote messages of good health to the citizens.

Notes

Related discussion or indicators are located in the chapters on *Maternal and Child Health*, *Healthy Children*, *Older Adults*, and *Oral Health*.

Table 1

-- Currently no data source.

1. Lincoln–Lancaster County Health Department, Youth Risk Behavior Survey, 1997.
2. Buffalo Beach Company, Lincoln, NE. *1997 Summary Tables*, Nebraska Youth Risk Behavior Survey.
3. Centers for Disease Control and Prevention, *MMWR* Surveillance Summary, 47(SS-3), "Youth Risk Behavior Surveillance – United States, 1997."
4. U.S. Department of Health and Human Services, Office of Public Health and Science, *Healthy People 2010 Objectives: Draft for Public Comment*, September 1998.
5. Percentage of students reporting that they walked or bicycled for at least 30 minutes at a time on five or more days in the past week.
6. Lincoln–Lancaster County Health Department, Behavioral Risk Factor Survey, 1999.
7. Nebraska Health and Human Services System, *Nebraska 1995–1996 Behavioral Risk Factor Surveillance System Report*.
8. National Center for Chronic Disease Prevention and Health Promotion, Division of Adult and Community Health, *1998 BRFSS Summary Prevalence Report*.
9. "Regular and sustained" physical activity as measured by the Behavioral Risk Factor Survey represents the accumulation of 30

minutes or more of physical activity, five or more days per week.

10. Overweight, as measured by the Behavioral Risk Factor Survey, is a Body Mass Index greater than or equal to 27.8 for men and 27.3 for women.
11. No data currently available. An appropriate data collection method needs to be determined.
12. U.S. Department of Health and Human Services, Office of Public Health and Science, *Healthy People 2010 Objectives: Draft for Public Comment*, September 1998. 1994–1996 data on individuals aged two and older from the Continuing Survey of Food Intake by Individuals, U.S. Department of Agriculture (2-day average).
13. U.S. Department of Health and Human Services, Office of Public Health and Science, *Healthy People 2010 Objectives: Draft for Public Comment*, September 1998. The national objective based on those individuals aged two and older due to data source (see note 12).