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Health

M-1 Obesity: Trends, Consequences, and Emerging Strategies

Although obesity is a complex issue, several trends have become clear:

- The percentage of adults and children who are overweight or obese continues to rise;
- Obesity has physical, mental, social, and economic consequences to both individuals and society; and
- States, the federal government, and others have begun to develop policies to reverse the trends.

Who is overweight or obese?

The most common method for measuring overweight and obesity in a population is the Body Mass Index (BMI).

Body Mass Index (BMI) for adults is calculated as weight in pounds divided by the square of height in inches, multiplied by 703.

BMI 19-24 = healthy weight	BMI 25 = overweight	BMI 30 = obese
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In children and adolescents, overweight is defined as a sex-and age-specific BMI at or above the 95th percentile of Centers for Disease Control and Prevention growth charts.

For a majority of individuals, the Body Mass Index is significantly correlated with body fat content. However, Body Mass Index calculations can overestimate body fat in very muscular people and can underestimate body fat in persons who have lost muscle mass, such as the elderly.

Some Kansas schools collect BMI data on children, but it is not reported to any state agency.

How many people are overweight or obese? Has this been increasing?

Although all rates of overweight and obesity have increased over the last twenty years, the rate of obesity is increasing faster than the number of people who are overweight but not obese. The rate of people who are morbidly obese, more than 100 pounds overweight, is reportedly increasing even faster.

- 60.5 percent of American adults were overweight in 2005 and 23.9 percent were obese (National Conference of State Legislatures).
- In the past three decades, childhood obesity rates have increased:
 - From 5.0 percent to 13.9 percent for children ages 2 to 5;
 - From 6.5 percent to 18.8 percent for children 6 to 11; and
 - From 5.0 percent to 17.4 percent for youth ages 12 to 19 (Centers for Disease Control and Prevention).
- Adult obesity rates have grown from 1.5 percent in 1980 to 32 percent in 2004 (Trust for America's Health).

Almost 61 percent of Kansas adults were overweight in 2005 and almost 24 percent were obese. In 1999, only 19 percent were obese and 56 percent were at least overweight. This represents a 20 percent increase in obesity and an 8 percent increase in adults that are at least overweight in six years.

Adult obesity rates in Kansas have increased almost 70 percent since 1992.

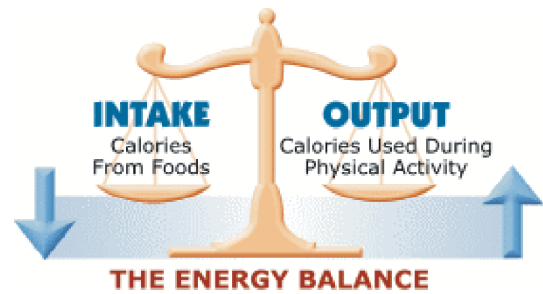
Kansas ranks 26th nationally in the percentage of adults who are obese.

Sources: *Behavioral Risk Factor Surveillance System Survey (BRFSS)* and *Trust for America's Health*

What causes obesity?

Obesity occurs when energy intake (calories) exceeds energy output (physical activity and metabolism).

A complex combination of behavior, environment, genetics, metabolism, culture and socioeconomic status influences intake and output and thus body weight.



*Graphic from the Centers for Disease Control and Prevention (CDC).

Intake. People consume more calories by making poor food choices, eating larger quantities, and eating more frequently.

- 2006 estimates indicate that an individual consumes 300 more calories per day than in the 1980s (Trust for America’s Health). People eat out more than in the past, where they tend to consume more calories.
- Restaurant portion sizes have increased steadily since the 1970’s.
- More inexpensive foods, high in sugar and fat, are widely available and fast food consumption has increased.
- Less than 20 percent of Kansas adults consume the recommended five servings of fruits and vegetables per day.
- In Kansas 19 percent of elementary students, 22 percent of middle school students, and 18 percent of high school students eat the recommended daily amount of fruits and vegetables. (2004-2005 Kansas Child Health Assessment and Monitoring Project)
- More school choices, including *a la carte* lunch items and vending machine items may contribute to childhood obesity. In Kansas, 45 percent of K-12 schools offer *a la carte* lunch items, and a little less than 60 percent of K-12 schools and 90 percent of high schools have vending machines. (2006 Kansas Health Institute Issue Brief)

(Adapted from Kendall Dix, University of Kansas School of Law Public Policy Clinic.)

Output. Physical activity has decreased as people live increasingly sedentary lives.

- Physical activity does not just mean strenuous exercise. It can mean things like walking short distances instead of driving, taking the stairs instead of the elevator, using a push mower, gardening, or any of a myriad of other activities.
- In 2007, 23.4 percent of Kansas adults reported they had no physical activity. (Trust for America's Health)
- 39 percent of elementary students and 43 percent of middle and high school students are not meeting recommended levels of physical activity by the 2005 Dietary Guidelines for Americans. (2004-2005 Kansas Child Health Assessment and Monitoring Project)
- 77 percent of elementary students and 54 percent of middle and high school students are not enrolled in daily PE classes. (2004-2005 Kansas Child Health Assessment and Monitoring Project)

(Adapted from Kendall Dix, University of Kansas School of Law Public Policy Clinic)

What influences people's intake and output?

Behavioral and environmental factors are large contributors to overweight and obesity and provide the best opportunities for interventions.

Behavior. Behavior includes the choices people make about caloric intake and their level of physical activity.

- Increases in technology usage (television, computers and video games), labor-saving home devices and reliance on automobiles are examples of behaviors that reduce physical activity.
- Choices to eat out rather than eating at home and how much or how often to eat are examples of behavior that affect caloric intake.

Environment. Communities, homes, and workplaces influence caloric intake and physical output.

- Environments can influence caloric consumption through things like the availability of healthy food, menu options available to school children, and portion sizes in restaurants.
- Environments also can influence opportunities to exercise. Factors such as the availability of parks and other free facilities, community designs lacking sidewalks, and safety concerns can affect physical activity. Increasingly automated worksites and reduced school physical education requirements also contribute to reductions in physical activity.

Other factors. A variety of other factors such as genetics, metabolism, culture, and socioeconomic status interact with the above factors to influence body weight.

- A person with a genetic predisposition to obesity is more susceptible to all of the environmental factors that contribute to obesity. But genetics cannot explain the recent rise in obesity rates as the U.S. gene pool has not changed dramatically in the last 20 years when obesity rates have seen the largest increases.
- People living in poor, urban areas generally have less access to healthy food choices. There are likely to be fewer grocery stores in those areas, and the healthy food in those stores, such as fresh fruits and vegetables, is likely to be more expensive than widely available high-fat, high-sugar foods.

How does obesity affect a person's health?

Obesity and, to a lesser extent, being overweight, have been connected to a number of chronic conditions and early death. Studies suggest the more overweight you are, the more likely you are to have health problems. Obese children are far more likely to be obese as adults, particularly if at least one parent is obese, leading to a higher chance of health problems from an earlier age.

The health consequences of obesity:

- Obesity is strongly associated with chronic conditions such as high blood pressure, high cholesterol, heart disease, stroke, Type 2 diabetes and some forms of cancer (uterine, gall bladder, breast, colon and kidney). Obesity also is connected with conditions such as sleep apnea, asthma, arthritis, reproductive complications and psychological disorders such as depression.
- The rate of "adult diseases" like Type 2 diabetes, high blood pressure and high cholesterol in children has risen along with the rates of obesity. Recent reports indicate that eight to 45 percent of newly diagnosed diabetes cases in children are Type 2, long referred to as "adult onset diabetes" because of the rare occurrence in children.
- Obesity also can affect a person's quality of life. Being obese can limit mobility, decrease physical endurance and result in discrimination in employment. Social and mental health problems are key consequences for children and adolescents.

How does an individual's weight affect other people?

Obesity has consequences for not only the individual, but also for others in society such as employers, taxpayers and other users of the health care system. Costs can be direct medical expenditures, such as preventive, diagnostic and treatment services related to obesity, or they can be indirect such as income lost from decreased productivity, restricted activity, absenteeism and bed days (morbidity costs) and the value of future income lost by premature death (mortality costs).

The economic consequences of obesity:

Health care facilities see increased costs in caring for obese patients due to the need for special equipment (e.g., beds, wheelchairs, operating tables) and increased risk of injuries to workers who take care of heavier patients.

- Obesity has been shown to increase disability rates as people age, ultimately raising the costs of health care and long-term care for these individuals.
- Increased costs are passed on to others who use the health care system or who pay health insurance premiums that may be inflated by increased health care expenditures. In general, people who are healthy subsidize the costs of those who are less healthy and, thus, consume more health care.
- Employers and businesses also bear some of the costs through higher health insurance premiums due to increased health insurance costs, paid sick leave and lost productivity. A 1998 study found that obese employees take more sick leave and are twice as likely to have high-level absenteeism than non-obese employees.

In 1998, medical expenditures attributed to overweight and obesity accounted for 9.1 percent of U.S. medical costs, or \$78.5 billion, half of which were publicly funded through Medicaid or Medicare.

State-level estimates put the cost of obesity-related direct medical expenditures in Kansas at \$657 million per year, or 5.5 percent of all medical expenditures. Of this amount, at least \$143 million is estimated to be paid by the Medicaid program (funded 40 percent by the state and 60 percent by the federal government).

Annual health care expenditures of non-elderly obese people have been shown to be approximately 36 percent higher than for people of normal weight.

Sources: Centers for Disease Control and Prevention (CDC) and Obesity Research Journal

What is being done to reverse the trends?

The federal government and a number of states have implemented, or discussed, a variety of strategies to encourage healthier behaviors and reverse the trend in obesity rates. Other players attempting to reduce the prevalence of obesity include communities, schools, industry, foundations, health care/insurance industry, advocacy groups and others.

Federal Action. Federal agencies work on educating the public about the issue, improving access to healthy foods, increasing access to physical activities, researching medical approaches to weight control, and providing behavioral and medical interventions for people. The recent focus of activities is

not just on obesity but on the general principle of making healthier decisions about food and increasing physical activity.

The Surgeon General released a Call to Action in 2001 that presented five principles to be used as the basis for activities to address obesity. It also identified key settings where activities should take place. These key settings include: families and communities; schools; health care; media and communications; and worksites.

Five Principles for Addressing Obesity

- Promote the recognition of overweight and obesity as major public health problems.
- Assist Americans in balancing healthful eating with regular physical activity to achieve and maintain a healthy or healthier body weight.
- Identify effective and culturally appropriate interventions to prevent and treat overweight and obesity.
- Encourage environmental changes that help prevent overweight and obesity.
- Develop and enhance public-private partnerships to help implement this vision.

Source: Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity 2001

State Action. In the last few years, the number of states passing, or at least considering, obesity related legislation has increased, showing a keener interest among policymakers to attempt to reverse obesity trends.

A 2004 Kansas Health Institute study looked at legislation passed by state legislatures between 1999 and 2003. The study identified 79 initiatives passed in 30 state legislatures that either target obesity directly or attempt to increase physical activity. The legislation fell into eight categories: commemorative or advisory resolutions; advisory commissions and studies; insurance regulation; school food programs; nutrition education; physical education/children's physical activity; adult physical activity; and other miscellaneous policies. Of the obesity-related legislation, 22 bills focused on physical education, 16 bills created advisory commissions/studies, and 13 bills enacted resolutions.

Trust for America's Health, a nonprofit organization, tracks obesity-related legislation and activities, including both school and non-school related. School-related actions include:

- Eleven states set requirements for school meals that exceed the federal United States Department of Agriculture (USDA) nutrition standards;
- Sixteen states have nutrition requirements for food sales in schools which are not part of school meal programs, such as vending machines;

- Twenty states restrict times and locations of food sales in schools which are not part of the school meal program;
- Forty-nine states, including Kansas, have school physical education requirements;
- Seven states require Body Mass Index screening in schools; and
- Forty-four states and the District of Columbia have school health education requirements.

Trust for America's Health notes that it is difficult to enforce the requirements established for physical and health education. In addition, 24 states, including Kansas, have passed legislation limiting the liability for obesity or obesity-related health programs. Seventeen states and the District of Columbia have taxes on snacks or sodas.

Kansas. The 2005 Legislature created a new law directing the State Board of Education to develop nutritional guidelines for all foods and beverages made available to public school students during the school day. Particular attention is to be given to providing healthful foods and beverages, physical activities, and wellness education. The goal of the standards is prevention and reduction of childhood obesity. All schools participating in the National School Lunch Program are required to have a wellness policy. The 2006 Kansas House of Representatives passed a resolution urging the Kansas State Board of Education to require some type of physical education class for kindergarten through grade 12.

For the 2008-2009 school year, the Kansas State Department of Education has implemented the following health and wellness programs and projects:

- School Nutrition Programs
 - School Breakfast Program
 - After School Snack Program
 - Special Milk Program
 - Fresh Fruit & Vegetable Program provides additional fruits and vegetables to students outside of lunch and breakfast. Only available to elementary schools with a priority given to those with 50 percent or more eligible free or reduced price school lunches.
- Summer Food Service Program provides free, nutritious meals to low-income children during school vacations.
- Child and Adult Care Program provides free nutritious meals to children enrolled in licensed child care centers and in registered or licensed family day care homes.
- Team Nutrition is a nationwide initiative designed to encourage children to eat a variety of foods; to eat more fruits, vegetables and grains; to eat lower fat foods more often; and to be physically active.

- Body Venture is an educational program that teaches children about the importance of good nutrition and other healthy lifestyle choices through entertaining, and experiential activities.
- Eat, Exercise, Excel focuses on improving students' nutrition and increasing their physical activity. The goals are for students to learn healthy eating habits, enjoy the benefits of physical activity, and to excel in academics.

Other non-school strategies include efforts to bolster active living programs and improve recreational areas and facilities and programs addressing food cost and accessibility issues, including supermarket access in urban and rural areas. The following list describes current programs sponsored by the Kansas Department of Health and Environment.

- Kansas LEAN (Leadership to Encourage Activity and Nutrition) campaign is a group of more than 50 organizations and agencies working together to improve the health of Kansans.
- Coordinated School Health Program works to create healthy Kansans by having youth focus on three main areas of physical activity, nutrition, and tobacco use prevention.
- Chronic Disease Risk Reduction provides grants to 45 local health agencies.
- Statewide survey establishes baseline measures of childhood risk of overweight (K-CHAMP).
- Women, Infants and Children (WIC) programs to promote healthy eating, encourage breast-feeding, promote physical activity and education materials on nutrition and physical activity.
- Grants to develop recommendations for using employee benefits design to influence health behaviors related to tobacco use, physical activity and nutrition.
- Sunflower Foundation grant to study nutrition education and physical activities.
- 5 A Day campaign to promote consumption of fruits and vegetables.
- Kansas Council on Fitness encourages Kansans to make health lifestyle changes by increasing physical activity, promote healthy diets, and tobacco prevention.
- Healthy Kansans 2010 Planning Process grant works to improve the health of Kansans through their priorities of health indicators which may include: physical activity; overweight and obesity; tobacco use; substance abuse; responsible sexual behavior; mental health; injury and violence; environmental quality; immunizations; and access to health care.

Other Local Activities. The following list shows examples of community-based strategies that can be used to increase healthy eating and physical activity:

- Ensure daily physical education for all school grades;
- Ensure healthful food options on school campuses;
- Make community facilities more available for physical activity;
- Enact zoning and city planning codes that promote non-motorized transportation such as sidewalks and bike paths;
- Create more physical activity opportunities at work sites;
- Reduce time spent watching television and other sedentary behavior;
- Educate expectant parents about the benefits of breastfeeding;
- Change perceptions of obesity to focus on health – not appearance;
- Educate health care providers and health profession students on the prevention and treatments of obesity; and
- Educate families on strategies for healthful eating and physical activity.

(Adapted from Kendall Dix, University of Kansas School of Law Public Policy Clinic.)

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