Income, Education and Obesity

A Closer Look at Inequities in Colorado’s Obesity Problem

2008 Supplement to the Colorado Health Report Card
Index

Introduction
Defining the Obesity Problem
Disparities
Contributing Factors
Action Plan
Promising Initiatives to Combat Obesity
Resources
Colorado is the leanest state in the Union, but considering that nearly one in five Coloradans is obese, do we really deserve such a lofty title?

States from coast to coast have watched obesity rates soar during the past two decades. Thirty states now have populations that are 25 percent obese or more—three states top 30 percent. Just as in other states, obese Coloradans have higher rates of chronic diseases such as cardiovascular disease, hypertension and diabetes compared to normal weight Coloradans, driving up health care costs and adversely affecting quality of life. Each year, fewer Coloradans fit the active, healthy profile that most have come to associate with the state. And the obesity problem is worse among Coloradans who earn lower incomes or are less educated.

Variations in health statistics among different socioeconomic, racial or ethnic subgroups are known as disparities. Obesity is not the only condition that occurs at different rates among different socioeconomic classes. These inequities across income and education groups are seen in a range of health conditions from the beginning of life to old age, notes the Robert Wood Johnson Foundation in the February 2008 report, *Overcoming Obstacles to Health*.

This special report from The Colorado Health Foundation highlights the troubling disparities in obesity rates among less educated and poorer Coloradans and delves into what should be done about them.

This publication is an extension of the Foundation’s Colorado Health Report Card. For the past two years, the Foundation, in partnership with the Colorado Health Institute, has graded Colorado on a wide range of health-related factors. The Foundation uses the Report Card as a road map in its work to make Colorado the healthiest state in the nation. The trends illustrated in the Report Cards, beginning in 2006, make it clear that Colorado has a long way to go to reach that goal.
Since 1970, obesity rates in the United States have soared by more than 50 percent, according to Understanding the Numbers, a companion report to the 2007 Colorado Health Report Card. In early 2008, the Centers for Disease Control and Prevention (CDC) estimated that 60 million Americans—27 percent of people 20 years or older—are obese. Many more millions are overweight. At this rate, experts believe that only a quarter of Americans will be at healthy weights by 2015, according to a 2007 analysis published in the journal Epidemiologic Reviews. The other 75 percent will be overweight or obese.

The 2008 Colorado Health Report Card shows the Centennial State following this national trend. Last year, 19 percent of Coloradans 18 years and older were obese, an increase from 14 percent in 2000, according to CDC. About 13 percent of Colorado children also were obese—a slight drop from 15 percent in 2006. Limited data available for adolescents also show an increase in obesity rates to 10 percent in 2005 from 7 percent in 2001. (See graph 1.)

While Colorado is still ranked as the leanest state in the nation, its obesity rate has more than doubled since 1995 when less than 10 percent of the adult population was obese. If trends in obesity and overweight rates continue at their current pace, only 35 percent of Coloradans will be at healthy weights by 2017.

The health consequences of being obese can be devastating. Colorado data show:

- 11 percent of obese adults (18 years and older) have diabetes versus 2.3 percent of normal-weight adults.
- More than 36 percent of obese adults have high blood pressure compared with 13 percent of normal-weight adults.
- Heart disease is found among 7 percent of obese adults but only 4 percent of normal-weight adults.

Defining the Obesity Problem

If obesity continues at its current rate, only 35 percent of Coloradans will be of a healthy weight by 2017.

Obesity-related medical expenditures cost Colorado $874 million annually.
Obesity also is linked to higher rates of osteoarthritis, gallbladder disease, sleep apnea, certain psychological problems such as depression and some types of cancer such as colorectal and prostate cancer in men and endometrial, breast and gallbladder cancer in women. Obese people also may face challenges with social stigmatization and discrimination that can negatively impact their quality of life.

A significant percentage of obese children are developing type 2 diabetes, once thought of as only an adult disease. Worse, health experts fear that the poor eating and exercise patterns of obese children will continue into adulthood, putting them at risk of being obese adults with all the accompanying health risks.

The health consequences of obesity exact a heavy financial cost as well as a human one. According to a 2004 study published in *Obesity Research*, obesity-related medical expenditures cost Colorado $874 million annually. Nationally, costs are in the tens of billions.

Poor diet and physical inactivity, which lead to obesity and its associated chronic diseases, together are the second leading cause of preventable death in the United States after smoking, and also are a major cause of disability. Obesity is challenging to address because of its complexities (influencers include the environment, genetics, physiology, metabolism) and the difficulties that go along with behavior change.

**Obesity** vs. **Overweight**

Obesity is gauged by calculating a person’s Body Mass Index (BMI)—a formula that measures body fat based on height and weight. BMI has four ranges:

- **Underweight:** under 18.5
- **Normal weight:** 18.5 to 24.9
- **Overweight:** 25 to 29.9
- **Obese:** 30 or more

To track obesity rates, CDC collects BMI information through the Behavioral Risk Factor Surveillance System (BRFSS) and other surveys. To figure your BMI, go to www.cdc.gov and click BMI Calculator under “Tools & Resources.”

This supplement addresses obesity only, although the growing number of overweight individuals also is a state and national concern. Overweight people, who weigh more than what is considered healthy for their height but not so much as to be obese, are considered “at risk” to become obese and also can suffer from weight-related health problems.
Disparities

Obesity tends to be more prevalent among people who are less educated or earn lower incomes. Other health indicators show disparities by education and income as well. The Robert Wood Johnson Foundation’s report, *Overcoming Obstacles to Health*, notes that Americans who are poor and those who have not graduated from high school experience considerably worse health on average than more affluent or educated people. People who are poor or less educated have higher rates of infant mortality, chronic disease, diabetes and heart disease, and shorter life expectancies compared to individuals with higher incomes or who have more education. Disparities continue up the income ladder: Even the middle-class suffers more from poorer overall health than the upper class, the report found.18

In Colorado, disparities in obesity rates related to economic status and education are evident. Data from 2007 show that the obesity rate for adults who have gone to four or more years of college or technical school was 15 percent, while it was 26 percent for Coloradans who did not graduate from high school.19 (See graph 2.)

Colorado’s 2007 income and obesity data show a strong correlation at the extremes of the income range. Coloradans making above $75,000 a year had a 16 percent obesity rate, while Coloradans making below $25,000 had a rate of 24 percent. (See graph 3.) Similarly, children in the poorest Colorado families were more likely to be obese than children in the wealthiest families (incomes greater than $75,000).20 (See graph 4.)

Adding to the concern, a recent study found the number of poor children also has grown dramatically in the state. A recent statewide study found the number of Colorado children living in poverty jumped 73 percent between 2000 and 2006 to 180,000, the highest rate of increase in the nation. This is particularly troubling given that the number of children in the state increased by only 6 percent during that period.21

Data show that as income increases, adults tend to eat healthier foods and exercise more frequently. Exercise coupled with a better diet are more effective at controlling weight than either exercise or diet alone.22
The reasons behind the income and educational disparities in obesity rates are complex. The higher cost of fresh produce and other nutritious foods is a barrier to healthy eating among poorer families, causing them to gravitate toward cheaper, higher-calorie foods that offer limited health benefits, according to a 2004 study in The American Journal of Clinical Nutrition.21 Several other studies have shown that poorer neighborhoods often have fewer grocery stores where fresh produce is available at affordable prices.24 Instead, poorer neighborhoods tend to have more fast-food restaurants and convenience stores that are more likely to stock cheaper foods that tend to be less healthy.

When it comes to physical activity, lower-income families are less likely to have disposable income to spend on health club memberships or for their children’s participation in organized sports. Their neighborhoods often do not have parks or community recreation centers to encourage exercise, or may be perceived as too dangerous to allow children to play outside.25

Researchers continue to examine the connection between education levels and obesity, but some of them hypothesize that education shapes a person’s knowledge of the value of good nutrition and physical activity, as well as the detrimental health effects of obesity.26

The links among education, income and obesity exact a toll on individuals and society. Because poorer, less educated people are less likely to have health insurance and to receive regular preventive health care, they are more likely to go untreated for medical conditions until crises occur and expensive emergency services are needed.27
It’s not only how much a person eats, but also what he eats and how much he exercises that influence weight.

Choosing a handful of chips is not equal nutritionally to choosing an apple even though both contain approximately 100 calories. The bottom line: Many Americans are consuming more calories than they are burning off and what they are consuming is not very nutritious.

**Fruits and Vegetables**

Lower in calories than many prepared foods, fruits and vegetables contain vitamins, minerals and fiber that promote health and help protect the body from chronic disease. The dietary guidelines issued by the U.S. Department of Health and Human Services (HHS) recommend that children, adolescents and adults consume a variety of fruits and vegetables daily.28

CDC and Produce for Better Health Foundation are promoting the Fruits and Veggies—More Matters initiative to increase Americans’ consumption of these healthy foods. More Matters builds on the older Five a Day campaign. The amount of fruits and vegetables an individual should eat varies with age and activity, but the initiative recommends that produce makes up about half of all food eaten.

Unfortunately, few Coloradans—young or old, slender or fat—meet the recommended levels of fruit and vegetable consumption. Data from Colorado show that only 8 percent of children, 19 percent of the state’s adolescents and 26 percent of Colorado adults do so.29 The findings for children and adolescents are worrisome since good childhood nutritional habits are important for growth and academic performance, and set positive patterns for adulthood.

Obese adults are even less likely to meet the guidelines. (See graph 5.) Among normal-weight adults, 30 percent ate recommended levels of fruits and vegetables, but only 19 percent of obese adults did. There do not appear to be significant differences among normal, overweight and obese children.

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**Contributing Factors**

Only 8 percent of Colorado’s children meet the recommended levels of fruit and vegetable consumption.

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with respect to fruit and vegetable intake; all groups of children, however, have low levels of fruit and vegetable consumption—only about 8 percent of children report eating two to three servings of fruits and vegetables daily.30

**Exercise**

Exercise, another important component for weight control and good health, also fails to get the participation it should. HHS recommends that children, adolescents and adults engage in 60 minutes or more of moderate to vigorous physical activity on most days of the week.31 Regular exercise burns calories, improves mood, helps combat chronic diseases such as heart disease, high blood pressure and osteoporosis, and strengthens the heart and lungs, according to the Mayo Clinic.32

Improved academic performance is an additional benefit of exercise. A 2002 statewide study in California compared 5th, 7th and 9th grade students’ scores on state-mandated academic tests with the children’s scores on the FITNESSGRAM®, a physical skill test developed by the Cooper Institute of Texas. The students who did well in at least three of six components of the FITNESSGRAM scored higher than other students on the academic tests. Students who did well in all six fitness skills scored highest of all on the tests.33

In Colorado, 56 percent of children, 37 percent of adolescents and 55 percent of adults meet recommended exercise guidelines.34 Nationally, 50 percent of adults meet guidelines.35 Children and adolescents do not tend to get enough exercise in schools. While most states require physical education at some level of school, kindergarten through 12th grade, Colorado does not. It is left to individual local school districts to require PE or not.

The low percentage of Colorado children and adolescents meeting exercise guidelines is another area of concern since inactive kids and teens are more likely to become inactive adults, raising their risk of becoming overweight or obese and develop associated chronic conditions.

Obese Coloradans are even less likely to get sufficient exercise. While just over 60 percent of normal weight Coloradans meet physical activity guidelines, only 43 percent of obese Coloradans do.36 (See graph 6.)
There is no easy solution to stopping and reversing the obesity epidemic, especially among groups that struggle daily with financial and educational inequities. Policies, programs and personal decisions must go into the fight.

**Parents**

Fitness and healthy eating can be a family affair, regardless of socioeconomic status. Parents can join their children in exercise, sports or active play, and also provide role models by exercising regularly and eating well themselves. Buying and serving healthy foods in reasonably sized portions, limiting computer and television time, and encouraging outdoor play are other ways parents can help children become healthier.

**Schools**

Because children spend large amounts of their time in school, it’s an obvious place to promote nutrition and exercise. By encouraging physical education, nutritional education, longer playground breaks and healthy cafeteria meals—while limiting access to candy and pop machines—schools can help children and teens form good habits around eating and exercise that they can carry into adulthood.

**Communities**

Across the nation, leaders of many towns and cities have recognized the personal and societal burden obesity entails and are helping citizens live healthier lives. Communities are designing or redesigning infrastructure to encourage walking and bicycling; ensuring children can safely walk or bike to school; and adopting land-use and development policies that foster healthy living. They have encouraged the creation of community gardens and the sale of fresh produce in farmers markets—often in underserved communities—and urged restaurants, groceries and other food retailers to offer more healthy choices.

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**Programs that are alert to cultural, educational, ethnic or socioeconomic differences are particularly important to solving the obesity problem.**

Small changes in diet or exercise can result in big improvements.
State Government

Policymakers have numerous opportunities to open doors to increase fitness and improve access to better nutrition. In education, these range from policies that require schools to offer healthy foods in cafeterias and vending machines to mandating and funding physical education in schools. In government, leaders can set policies that enable or encourage the construction of recreation and fitness facilities, and mandate insurance companies to treat obesity prevention as generously as they treat obesity-related illnesses. Funding for school fitness, physical education and nutrition education also is key.

The Colorado Health Foundation

To reach its goal to make Colorado the healthiest state in the nation, the Foundation supports numerous Colorado programs that promote exercise and better nutrition, including some that address the disparities among less educated and lower-income Coloradans.

The Foundation’s strategies include improving school meals and vending-machine offerings; increasing the time students spend in physical education or in recess; making nutritious foods more available in poorer neighborhoods; expanding the availability of safe recreational facilities in poorer neighborhoods; and educating parents about the importance of exercise and healthy foods.

There are many promising initiatives and programs working to tackle this serious health threat, including one of the Foundation’s best-known programs—LiveWell Colorado, which encourages healthy eating and physical activity in 17 communities. For more examples of programs and initiatives aimed at addressing this serious problem, please see “Promising Initiatives” on page 12.

We Can Do it Together

Those who initiate and implement programs must remember that obesity has many facets, each requiring its own approach. Programs that are alert to cultural, educational, ethnic or socioeconomic differences are particularly important.

Each person can pledge himself or herself to exercise more and eat better. A healthier life doesn’t require losing 100 pounds or running a marathon. Even small changes in diet or exercise can result in big improvements. According to HHS, an overweight person who is at risk for developing diabetes and who loses just 5 percent of his or her weight—10 pounds for a 200-pound person—can effectively delay diabetes and increase longevity.

Nor does this have to be a solitary struggle. Help is available from a person’s family doctor, neighborhood health clinics, or outstanding community-based programs such as LiveWell Colorado and other efforts across the state promoting healthy living.

Working together, we can reverse Colorado’s expanding obesity trend.

Updated data is now available for the 2008 Colorado Health Report Card at www.ColoradoHealth.org. The Foundation plans to update data yearly, and will print and publicize Report Card findings every other year, beginning in 2009. On alternate years, the Foundation publishes a special report focused on a specific health indicator or indicators from the Report Card.
Scientists have found that obesity is a complex problem, influenced by genetic, hormonal, behavioral, environmental, cultural and other factors.

Promising Initiatives to Combat Obesity

If you eat more calories than you burn, you gain weight. While the equation seems so simple, the solutions to reverse this epidemic are not. Scientists have found that obesity is a complex problem, influenced by genetic, hormonal, behavioral, environmental, cultural and other factors. Disparities, as highlighted in this report’s previous pages, also play a role. Still, recognizing that the health and economic impacts of obesity are too serious to be ignored, federal agencies such as HHS and CDC are tackling the problem. The Colorado Health Foundation, in its efforts to make Colorado the healthiest state in the nation, funds many innovative projects, all focused on lower-income people, who are more likely to be obese than wealthier people, according to research. Following are some of the programs funded by the Foundation and others that illustrate positive action steps taken to address obesity.

Parents

Parents usually are the ones to buy groceries, prepare meals, limit computer or TV time, encourage exercise and model healthy behavior. But they may need help with these tasks.

In Colorado, Operation Frontline receives Foundation funding to offer nutrition and cooking classes that are led by volunteer chefs and nutritionists. The program targets adults, teens and kids living on low incomes.

Nationally, Nemours Health & Prevention Services (NHPS) has launched the initiative 5-2-1-Almost None as part of a campaign to make Delaware’s children the nation’s healthiest. The initiative works through pediatricians, child care providers, schools and community groups to educate parents and children about the daily goal of eating five servings of produce, limiting screen time to two hours, encouraging one hour of physical activity and drinking very few sugared drinks. NHPS is a nonprofit that is a division of Nemours, one of the country’s largest pediatric health services.
Schools

School is an obvious place to reinforce good nutrition and the importance of exercise. More than 95 percent of American youth, ages 5 to 17, are enrolled in school, and no other institution has as much contact with children during their first two decades of life.

In Colorado, one initiative focused in part on schools is the Colorado Physical Activity and Nutrition Program. Its school site task force works with school administrators, teachers, food staff and others to encourage access to healthy foods and regular exercise.

Nationally, Arkansas has halted the state's rise in childhood obesity rates through a five-year-long effort in which it improved the nutrition of school meals, curtailed vending machine sales of candy and pop, monitored students’ BMI regularly and reported BMIs to parents, and increased physical activity in schools.

The El Paso (TX) Independent School District launched a program to require physical education and fitness testing that has achieved good results. Some 70 percent of third-grade girls and 56 percent of third-grade boys were able to pass all six components of the FITNESSGRAM, a fitness test developed by The Cooper Institute. Statewide, only 32 percent of girls and 28 percent of boys achieved that goal.

Communities

Many communities have recognized that they can encourage healthier living through better community design and other anti-obesity efforts.

LiveWell Colorado encourages healthy eating and physical activity in 17 communities, which cover a broad range of socioeconomic profiles. Each community adopts strategies to address its specific wellness needs. Some have set up community gardens in poorer neighborhoods while others have incorporated “walkability” into urban design. LiveWell receives support from the Foundation, the Colorado Department of Public Health and Environment and Kaiser Permanente.

Nationwide, the National Complete the Streets Coalition intends to adopt and implement policies in five states and 25 communities to ensure safe access to streets for pedestrians, bicyclists, buses and all other users. The coalition expects its work to benefit citizens’ health and the environment.

Learn More

Understanding the Numbers, part of the Foundation’s 2008 Colorado Health Report Card, describes more outstanding programs in the Healthy Beginnings, Healthy Children, Healthy Adolescents, Healthy Adults and Healthy Aging sections relating to obesity, nutrition and exercise.
Resources

Note: Much of the data analysis for this report was conducted by the Colorado Health Institute and the Colorado Department of Public Health and Environment using the 2007 Behavioral Risk Factor Surveillance System, 2005 Youth Risk Behavior Survey, and 2007 Child Health Survey. Other sources are cited below.

Text

Charts
5. Source: 2007 Behavioral Risk Factor Surveillance System. Analysis conducted by Colorado Health Institute. (Note: rate is calculated based on the percent of adults who reported consuming five or more servings of fruits and vegetables per day.)
6. Source: 2007 Behavioral Risk Factor Surveillance System. Analysis conducted by Colorado Health Institute. (Note: rate is calculated based on the percent of adults who report participating in either moderate physical activity defined as 30 or more minutes per day for 5 or more days per week or vigorous activity for 20 or more minutes per day for three or more days per week.)
Working together, we can reverse Colorado’s expanding obesity trend.