

Bigger kids?

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Youth getting heavier

by Cheryl Asmus, Ph.D., Director, Family and Youth Institute, Colorado State University

According to the Institute of Medicine (Sept., 2004), the childhood obesity rate has more than doubled in the past three decades for children ages 2 to 5 and adolescents ages 12 to 19. It has tripled for children in the age range of 6 to 11. Research shows that this rise may be due to several factors such as: environments that discourage physical activity (e.g., unsafe neighborhoods, urban/suburban design); decreased opportunities during school hours (e.g., distance to school too great for walking, decreased physical activity as part of school curriculum); constraints on family resources (e.g., availability of fresh foods, time to make healthy foods, increased use of fast food for meals); and, changes in leisure time activities (e.g., video games and television watching). Some argue (Michael Pollan, Oct. 12, 2003 New York Times) that the nation's agricultural policies are partially to blame in that the declining prices for commodities such as corn or beef allow companies to provide larger portions of cheap food that is highly processed and high in calories, fat and sugars. Though obesity is not limited to children, research shows that obese children tend to become obese adults and those with a lower family income are affected disproportionately.

A variety of diseases commonly linked to obesity include the fat-cancer link, heart disease, asthma and diabetes. Though some of these diseases are not commonly childhood diseases, asthma, depression, poor body image, and type 2 diabetes are

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b r i e f s COPAN aims for change

by Joan K. Brucha, Colorado Physical Activity and Nutrition Program (COPAN), Colorado Department of Public Health and Environment

Colorado enjoys the distinction of having the fewest obese and overweight citizens in the country. That statistic is to be applauded, but at the same time an alarming trend is emerging among the state's children and youth. The rates of overweight and obesity in this population are increasing steadily. These increases are due in part to diets that do not meet recommended nutrient levels and the lack of adequate physical activity. Partly because of these trends, children are acquiring diseases that usually show up in adults, such as heart disease and type 2 diabetes.

In 2003, 9.5 percent of Colorado adolescents in grades 9 to 12 were categorized as overweight. An additional 10.9 percent of 9 to 12th graders surveyed were at risk for becoming overweight. According to the 2005 Child Health Survey, developed by the Colorado Department of Public Health and Environment in conjunction with other community partners, 14.8 percent of children ages 2 to 14 were overweight and 13.8 percent were at risk for overweight. Body Mass Index (BMI), which is a measure of weight adjusted for height, is used to determine weight categories. However, because children's body composition changes over the years and because girls and boys grow at different rates, BMI for children is age-and gender-specific. Weight categories, based BMI, are as follows:

Underweight	<5 th percentile
Normal	5 th to <85 th perc.
Risk of overweight	85 th to <95 th perc.
Overweight	>95 th perc.

The Colorado Department of Public Health and Environment's Physical Activity and Nutrition Program (COPAN) is

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Project ENERGY educates through classrooms

by Art Campfield, Ph.D., Professor, Food Science and Nutrition, Colorado State University

In December 2001, Surgeon General David Satcher stated that 300,000 deaths per year are associated with excess weight and obesity, and projected the annual public health care cost of this condition at \$117 billion due to the life-threatening complications of diabetes, hypertension, heart disease, cancer, kidney failure and many other ailments. Since 2001, I have been leading a team of researchers in an integrated science education enrichment program, Program ENERGY (Education, Nutrition, Exercise, and Recreation, for Growing Youth), designed to reduce the rate of obesity and type 2 diabetes in elementary school-aged children. Past research demonstrates that prevention of

obesity and type 2 diabetes is largely achieved by healthy eating and active living. Teaching children to incorporate the elements of a healthy lifestyle is necessary to reduce these two preventable chronic diseases.

Program ENERGY has a long-term goal of bringing children to healthy behaviors in a supportive, positive environment that encourages discovery and inquiry into the world of science, nutrition and health.

This program is a partnership with Johnson & Wales University, 9HealthFair, Science Museums, Poudre

Valley Hospital Heart Center of the Rockies, and many local businesses.

Each child in the program is given the opportunity to discover, explore, inquire and learn about the basis of healthy behaviors in a challenging, scientific based setting, all with

the support of educators, scientists, health professionals, dietitians, chefs and Colorado State University graduate and undergraduate students.

Objectives:

- Prevent obesity and type 2 diabetes through science enrichment in elementary schools.
- Inquiry-based educational enrichment in science and math using disease-related examples and exercises.
- Teach children and their families to live a healthy lifestyle - healthy eating and active living.
- Increase awareness of science/health careers.
- Maintain active partnership between

educators, Colorado State University scientists and students, health and science professionals, museums, and local businesses.

The primary source of funding for the program comes from the National Institutes of Health (NIH). The initial version of the program (started in 2001) was developed during the National Center for Research Resources (NCRR), Phase I Science Education Partnership Award (SEPA) funding "Shaping Health Behaviors Through

Diabetes Primer

Type 1 diabetes is usually diagnosed in children and young adults, and was previously known as juvenile diabetes. In type 1 diabetes, the body does not produce insulin necessary for the body to be able to use sugar. Sugar is the basic fuel for human cells, and insulin takes the sugar from the blood into the cells. Treatment for type 1 diabetes includes taking insulin via shots or a pump, making wise food choices, exercising regularly, taking aspirin daily (for some), and controlling blood pressure and cholesterol. Type 1 diabetes is not believed to be preventable and is not as prevalent as type 2 diabetes.

Type 2 diabetes is the most common form of diabetes. People can develop type 2 diabetes at any age. This form of diabetes usually begins with insulin resistance, a condition in which fat, muscle and liver cells do not use insulin properly. At first, the pancreas keeps up with the added demand by producing more insulin. In time, however, it loses the ability to secrete enough insulin in response to meals. Being overweight and inactive increases the chances of developing type 2 diabetes. Treatment includes taking diabetes medicines, making wise food choices, exercising regularly, taking aspirin daily, and controlling blood pressure and cholesterol.

Science Enrichment." The program continues to receive the majority of its funding from a second five-year NCRR Phase I + II SEPA funding "Obesity and Diabetes Prevention Through Science Enrichment." In 2005, additional funding to establish three new

Project ENERGY *continued from page 2*

Program ENERGY sites was received from the American Honda Foundation for a grant period from May 2005 through May 2006. Program ENERGY also receives financial support from the Community Foundation of Northern Colorado and in-kind support from Wild Oats Market, Naked Juice, Lara Bar, 9Health Fair, CSU Bookstore, and CSU Alumni Association.

Program ENERGY is currently being delivered in 2nd, 4th and 6th grade classrooms at Tavelli Elementary School and in 2nd grade classrooms at Bennett and Dunn Elementary schools in Fort Collins, Colo. and in 2nd, 3rd and 4th grade classrooms at Manauh Elementary School in Cortez, Colo. It is also being delivered in 2nd grade classrooms near Princeton, WV and Garland, Tex. Target intervention schools, and similar companion control schools, have unmet needs in science and health, more than 25 percent of the students are eligible for the free/reduced price school lunch program, and 25 percent or more of the student population is Hispanic, African American and/or Native American. The program consists of biweekly classroom lessons (60 minutes) and physical

activities (40 minutes) as well as occasional field trips to a variety of locations.

Program ENERGY encourages the children to share the knowledge that they gain in the classroom with their family members at home. Periodically, specific programs, such as Project Healthy Home (an after-school cooking class) are offered to student participants and their parents. These programs encourage children and their parents to work, learn, and discover together and challenges are made to encourage this interaction at home. Such programs have been implemented and tested by Program ENERGY and have proven successful.

The benefits of Project ENERGY are far reaching, leading to both an awareness and prevention of type 2 diabetes and obesity in children's schools, homes and lives. After the first two years of its implementation, the program's effectiveness was demonstrated through statistically significant increases in health and science knowledge, health behaviors and attitudes. The children who participated in Program ENERGY also showed increased interest in science and health careers.◇

Active Living Partnership of Greater Stapleton (ALPS) plans for the future

by Helen Thompson, MA, RD, CDE, University of Colorado Health Science Center

ALPS is a project of the Active Living by Design (ALbD) program funded by the Robert Wood Johnson Foundation. As one of 25 grantees across the U.S., ALPS is charged with creating a partnership to deliver programs and create policy and environmental change to increase active living. The ALPS project area includes the Stapleton neighborhood and four surrounding neighborhoods in Denver, Colo.

The original plan for the project to involve children was to promote active living programs through schools. In year one, a program called Feet First was offered to six elementary schools to teach students about alternative modes of transportation and to encourage active means to get to and from school. Only one school actually chose to participate in the program. The biggest barrier faced by the schools is competing time to meet academic standards. Many of the schools surrounding Stapleton are considered low-performing schools and do not want to take time away from set curricula.

In year two, schools were encouraged to promote walk or bike-to-school days and were again offered Feet First. Several schools held walk-to-school day events this fall as a result of this program.

The signature program in ALPS is the Passport to Active Living. Residents of the five target neighborhoods are given the opportunity to participate in events and on-going activities promoting physical

activity. A Passport (formatted like an official U.S. passport) is used to tell them about events and activities that qualify for incentives and prizes. Overall participation continues to grow in this four-month program. 175 families are involved with the Passport program. While some original Passport activities are geared for children, it was decided that in year three ALPS would offer a student Passport specifically aimed at youth from K-12. Distribution will be through schools, recreation centers and youth organizations.

Greater participation is expected as ALPS has begun to partner with the Park Hill Thriving Communities project as well as America On the Move in Colorado. Partnering allows ALPS to reach a larger audience. Via students, ALPS hopes to also reach parents for participation in the original Passport program.

In order to sustain programs, policy and environmental change must take place to keep individuals active. ALPS' Policy and Community Design committee actively works on issues that affect an individual's ability to be active. This includes increasing the connectivity between Stapleton and the surrounding neighborhoods, addressing pedestrian safety issues, and monitoring new building design to promote active living (e.g., access to stairwells, installation of bike racks).

Creation and distribution of maps will help residents (including children and their families) to know bike

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routes, location of all of the parks in the area, and locations of interest. Maps will be marked with steps and miles and include mini tours.

Evaluation up to this point has been mostly process. Some focus groups were conducted to obtain opinions regarding the Passport. As a result, changes have been made to the program and increased participation resulted. Representatives from all of the neighborhoods participate in the decision making process for the ALPS project. As a result, ALPS has experienced positive response.

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on the rise for children who are overweight or obese. Also, children who are obese are more likely to have elevated cholesterol levels, blood pressure and other cardiovascular markers that often lead to heart disease over time. Experts, including Richard Carmona, the U.S. Surgeon General, warn us that obesity is a national epidemic that is “every bit as threatening to us as is the terrorist threat we face today.” Others (Summit on Obesity, June, 2004) state that because we are experiencing exploding health costs due to the overweight and obese, federal regulations, restrictions and lifestyle programs must be implemented.

On the other hand, according to both the National Center for Health Statistics and the American Heart Association, other chronic diseases typically related to adult obesity are actually on the downswing. For example, cancer deaths are declining 1 percent per year; heart disease is down 16.5 percent, coronary heart disease down by 25 percent, and stroke incidence is down 10 percent since 1990. This may be due to the decrease in tobacco use, but critics of the obesity crisis say that the decrease in tobacco smokers (25.4 percent in 1990 to 22.1 percent in 2001) is not enough to result in the recorded decreases in these diseases. In addition, a study done at Rockefeller University concluded that only the very obese have gotten significantly heavier while the average American is only six to seven pounds heavier than in 1990.

Because the Family and Youth Institute’s Briefs are dedicated to providing unbiased information, we want to make it clear that we are aware and sensitive to the fact that more than one set of opinions/views on most issues do exist, this one being no exception. While it is a fact that more children are overweight and obese today than they were a decade ago, the debate whether obesity itself is a *national health crisis* should continue and hopefully be resolved based on facts. This Briefs does not address the debate around the impact of obesity on health care costs in this country; instead, it looks specifically at some noteworthy examples of how childhood obesity is being addressed today in Colorado.◇

ALPS, continued from column 1

Since June 2005, a sister project of ALbD has been in place at Philips Preparatory School located in Greater Park Hill, one of the ALPS neighborhoods. Healthy Eating by Design (HEbD), an 18 month pilot project, intends to increase access to healthy foods for children aged 3-12. Although the main focus of the project is healthy eating, HEbD promotes physical activity. Students at Philips have participated in Walk-to-School Day, instituted recess prior to lunch, and have an active and growing walking club. Any healthy eating programs are infused with messages to increase physical activity.

The ALPS project continues through October 2008. The goal is to integrate active living messages into all activities in the Stapleton neighborhoods. America On the Move is currently conducting focus groups with businesses in the area to help determine roles that businesses/organizations can play in healthy eating and active living. It is important that we assist all groups in understanding that everyone has something to offer. At the end of the project in 2008 it is anticipated that groups internal to the greater Stapleton area will take over the operation of the active living partnership and continue the work started through ALbD. ◇

San Luis Valley Healthy Family Project

By Julie A. Marshall, Ph.D., director, Rocky Mountain Prevention Research Center, professor of Epidemiology and Community Health, Department of Preventive Medicine and Biometrics, University of Colorado Health Sciences Center

Today’s children and youth are expected to have a higher lifetime risk of obesity and type 2 diabetes than previous generations. Overweight children have a higher risk of being overweight as adults and in a study of 167 obese children in Connecticut, 21 to 25 percent of children 4 to 18 years old had impaired glucose tolerance and 4 percent of obese adolescents already had type 2 diabetes. In adults, duration of obesity is a strong risk factor for diabetes independent of an adult’s current weight. In 2000, it was estimated that 30 percent of boys and 40 percent of girls born in the U.S. are at risk of being diagnosed with type 2 diabetes sometime in their lives. Recent research from the Diabetes Prevention Program has demonstrated that 58 percent of diabetes in high risk adults can be prevented or delayed with lifestyle changes. Diet and physical activity changes resulting in 5 to 7 percent weight loss reduced the development of diabetes regardless of age, gender or ethnicity. Hispanics, which comprise 47 percent of the San Luis Valley population in southern Colorado, have twice the diabetes risk as non-Hispanic whites making prevention an important priority in this region of Colorado.

The San Luis Valley Healthy Family Project (SLVHFP) is

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funded by the National Institutes of Health to translate diabetes prevention findings into a program that is effective in the community and complements current community resources. The SLVHFP is recruiting families at high risk for diabetes with the long-term goal to prevent diabetes in family members and to prevent diabetes complications. There are several important reasons for working with families of persons with diabetes:

- family members are known to have an increased risk for developing diabetes;
- having a family member with diabetes may increase motivation for behavior change;
- home is an important setting that can support healthy nutrition, physical activity and self-management behaviors; and
- multiple members of the family can simultaneously benefit from the intervention.

Lifestyle goals include: increase fruit, vegetable and whole grains; decrease dietary fat (especially saturated fat); increase physical activity; and achieve and maintain a

healthy weight. Among family members with diabetes, there are additional goals related to diabetes self-management.

Participating families are asked to help collect data. They receive free cholesterol and glucose tests and are offered a session on diabetes prevention and control before being randomly selected for intervention or control groups. Families in the intervention group receive up to 16 home visits over four to eight months with a trained lifestyle coach who honors the family's resourcefulness and ability to choose their own course. The coach also has a toolbox of fun, hands-on activities to facilitate understanding health risk, family values and ambivalence for behavior change as well as activities that build social support, positive environmental cues, skills, confidence and experience with new foods and community resources.

The SLVHFP will continue recruiting families until spring 2007. For more information, please call Jennifer Atencio, recruiter (877) 257-5184 or Julie Marshall, project director (303) 315-7596.◇

COPAN, *continued from page 1*

designed to increase the nutrition levels and physical activity of all Coloradans. The program is funded through a grant from the Centers for Disease Control and Prevention in Atlanta, and its mission is to prevent obesity and related chronic diseases, and to promote healthy lifestyles for all Coloradans. While the program is composed of task forces and work groups that address nutrition and activity, it also benefits from the expertise of community partners throughout the state. COPAN is involved in a wide variety of topics including breastfeeding, older adult wellness, early childhood education, worksite wellness, school site wellness and 5 A Day (a nutrition education program that encourages the consumption of five to nine servings of fruits and vegetables each day). COPAN is also working with schools to implement Senate Bill 04-103 that encourages schools to adopt healthier fare in 50 percent of their vending machines.

To combat some of the barriers to increased nutrition and physical activity, COPAN has instituted several programs to raise awareness and implement change. The Walk to School program has met with enthusiasm and success in several Colorado communities. At one school, Foothill Elementary School in Boulder, there is a program called "Wheeling Wednesdays," that puts special emphasis on having children and parents walk or ride bicycles to and from school on Wednesdays. The challenge with the Walk to School program is that there is no formal reporting structure to determine which schools around the state participate. To help meet this challenge, grants were awarded to schools to implement walk to school programs

between now and the end of May 2006.

School site grants in general have generated enthusiasm and excitement in Colorado because of the potential for change through the grant process. Providing dollars and technical assistance to achieve grant goals and potential long-term change both in schools and then in the larger community is a way to obtain long-lasting results.

Three different types of grants were awarded this year to school sites:

- programming grants to implement interventions designed to increase physical activity and/or improve nutrition among students and staff;
- capacity building grants to create or maintain a school health team, complete the *School Health Index* assessment modules for physical activity and nutrition, and create and implement a plan to address a need identified through the assessment; and
- 5 A Day and Walk-to-School grants to plan and implement both of these specific programs.

The COPAN staff provides technical assistance for the duration of the program/grant, which is an important component to ensure success. There are many hurdles to successful completion of grants and other initiatives, among them recognizing and developing a realistic work plan, creating buy-in from the community, and structuring the activity to ensure the most positive outcome. COPAN also provides ongoing evaluation as part of that technical assistance for each initiative, which helps schools formulate future plans and strategies based on staff feedback.◇

Watching health trends for Colorado youth – Where are we, really?

by Helen Cooney, Post-Doctoral Researcher, College of Applied Human Sciences, Colorado State University

This article will present some of the statistics and trends pertaining to youth and adolescent nutrition, activity and weight issues in Colorado. Larger samples would be desirable, but the Youth Risk Behavior Survey (YRBS) is the only known data collection of this type. Most of the data discussed are from the 749 responses to the 2003 YRBS that was administered to high school students in Colorado by the Colorado Department of Public Health and Environment (CDPHE). Overall, Colorado is below the national average in terms of body mass index, or BMI. Approximately 13 percent of children in the United States are overweight or obese and although that number is lower in Colorado (9.5 percent as of 2003), there is still room for improvement. CDPHE’s plan to increase physical activity and reduce obesity by the year 2010 – known as Healthy People 2010 – includes the specific goal of decreasing the percentage of overweight/obese high school students to 5 percent or less.

Healthy People 2010 goals also incorporates increasing the proportion of high school students who engage in vigorous physical activity for 20 minutes at least three days a week to 80 percent and decreasing the percentage of high school students watching over 3 hours of television to 22 percent. Relative to this, the 2003 Youth Risk Behavior Survey results indicate that approximately 64 percent of Colorado high school students exercised or participated in strenuous physical activity on three or more of the past seven days. The survey also revealed that 31.5 percent of students neither participated in 20 minutes of vigorous physical activity on three or more of seven days nor participated in at least 30 minutes of moderate physical activity on five or more days. For all high school students, 33 percent reported watching at least 3 hours of television per day on an average school day.

Figure 1 shows the eating habits and preferences of Colorado high school students according to the YRBS. Ideally, 100 percent of the students should consume five or more servings of fruits and vegetables per day and the equivalent of three or more glasses of milk each day. Figure 2 goes on to show some of the trends in health behaviors between 2001 and 2003, showing a general decrease in physical activity and an increase in overweight and risk of overweight.

Figure 1. Nutrition for Colorado High School Students over a Seven-Day Period



Figure 2. Health Habits for High School Students - 2001 and 2003

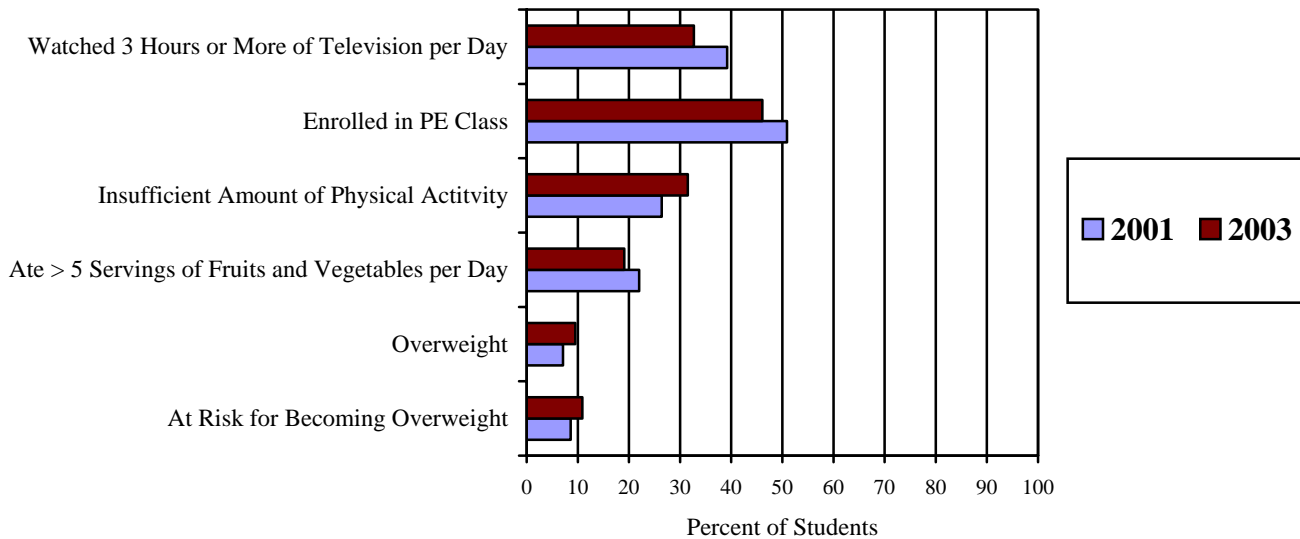
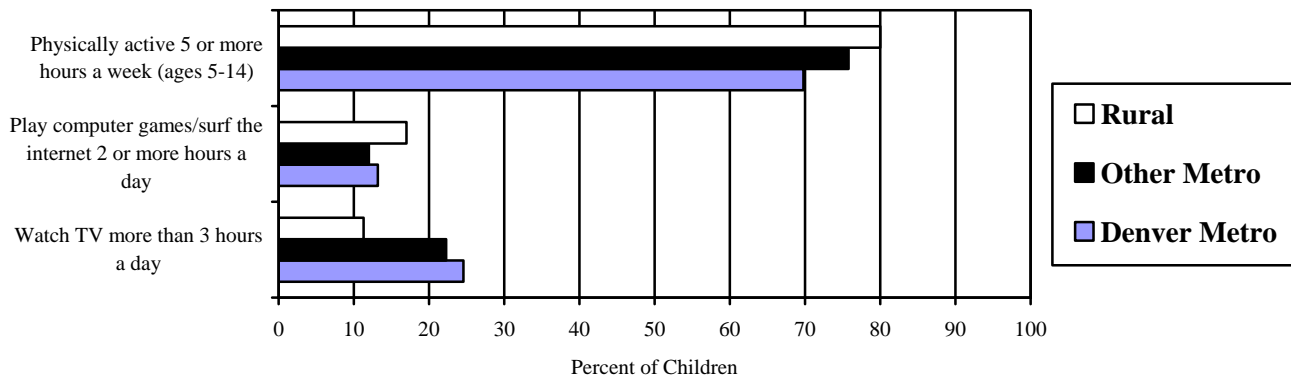


Figure 3. Physical Activity Levels of Colorado Children (by Region) ages 1-14



The Colorado Child Health Survey, initiated in 2004 by CDPHE, collected 1,000 random phone surveys regarding the health behavior data of children from 1 to 14 years of age. Data will be assessed by region (Denver metro, other metro, or rural) as well as watching for trends over time. The survey includes questions ranging from asthma to television time to eating habits. Figure 3 shows some of the results for 2004. Interestingly, though rural youth tend to be more overweight (21 percent) than Denver metro youth (11 percent), they report more physical activity and less idle “screen time.”

In summary, although it is encouraging that Colorado ranks better than the national average in terms of youth obesity rates, there is clearly room for improvement. These limited health trends for Colorado youth show many children and adolescents consuming insufficient quantities of fruits, vegetables, and dairy products as well as spending insufficient time for physical activity. The CDPHE’s goals for 2010 appear to address these issues with quantifiable outcomes and realistic benchmarks. The resulting data will help experts and policy makers determine “where are we, really?”◇

Obesity Surveillance

By Julie A. Marshall, Ph.D., director, Rocky Mountain Prevention Research Center (RMPRC), professor of Epidemiology and Community Health Department of Preventive Medicine and Biometrics, University of Colorado Health Sciences Center

As can be seen from the several projects highlighted in this Briefs issue, numerous initiatives are being pursued to address the issue of childhood overweight and obesity. However, there currently is no systematic collection of Colorado height and weight information to answer the question, “Is there

an ongoing problem of overweight among our children and youth?” Collaboration between various state agencies, along with local public health agencies and schools is ongoing to develop a system for collection of information on height and weight in school age children.

As children get older, the appropriate weight for a given

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height changes and this needs to be compared with normal growth curves to determine weight status. RMPRC is working toward a system through which schools will be able to submit student height and weight data (without identifiers) and will receive summary reports based on percentiles of body mass index (BMI) for age. At the local level, these data can be used for program planning, obtaining funding, and evaluating effectiveness of programs or policies. By compiling information from schools across the state, the database will also allow for monitoring by region, over time and in high risk populations. It will be useful in defining program needs, determining distribution of resources, and assessing progress toward Healthy People 2010 objectives.

In the spring of 2005, a pilot was conducted with interested schools to assess feasibility of measuring heights and weights in a school setting and to develop methods and materials. In 2005, a statewide random sample of 50 schools was selected to measure students in the 1st and 5th grades. These schools will participate in a phase 2 pilot, to further assess feasibility. Future plans include expanding surveillance to 7th and 9th grades. Please email julie.marshall@uchsc.edu for more information.◇

Youth and Weight Resources

American Obesity Association, *Obesity in Youth Fact Sheet*
www.obesity.org/subs/fastfacts/obesity_youth.shtml

Center for Disease Control and Prevention, *Overweight and Obesity: State Based Programs – Colorado*
www.cdc.gov/nccdphp/dnpa/obesity/state_programs/colorado.htm

Colorado Department of Public Health and Environment, *Colorado Physical Activity and Nutrition Program*
www.cdphe.state.co.us/pp/COPAN/COPAN.html

Institute of Medicine of the Academies, *Progress in Preventing Childhood Obesity*
www.iom.edu/CMS/3788/25044.aspx

USDA Food and Nutrition Information Center, *Childhood Obesity Resource List*
www.nal.usda.gov/fnic/pubs/bibs/topics/weight/childhoodobesity.html