

DIETS ARE HIGHER IN FAT. PORTIONS ARE LARGER. WORKPLACES, SCHOOLS AND COMMUNITIES ARE MORE SEDENTARY. OUR ENVIRONMENT HAS CHANGED, LEADING MORE OF US TO TIP THE SCALES AT DANGEROUS LEVELS.



Obesity's Heavy Burden

An Epidemic Threatens the Nation's Health

Among the nation's children 34% are overweight and 17% are obese, up from 28% and 14% at the beginning of this decade.

Where did this bulging waistline come from?

In the evolutionary equivalent of the blink of an eye, overweight is suddenly the overwhelming norm in the United States.

Two of every three U.S. adults – 129.6 million people – are classified as overweight. Nearly half of them – more than 60 million – are obese. The proportion of obese adults, now estimated at 32%, has more than doubled in 30 years.

Among the nation's children 34% are overweight and 17% are obese, up from 28% and 14% at the beginning of this decade. Since 1980, the prevalence of overweight U.S. children has doubled; overweight in adolescence has tripled.

A study by researchers at UCLA and RAND found that the effects of obesity are similar to 20 years of aging, and that obese adults have 30%-50% more chronic medical problems than those who smoke or drink heavily. Obesity-related health care conditions contribute as much as \$93 billion to the nation's annual medical bill, according to a 2003 study by the Centers for Disease Control and Prevention (CDC). A 2005 study in the journal *Health Affairs* estimated that such conditions accounted for 11.6% of total health care spending in 2002, up from just 2% in 1987.

Not long ago, medical students were taught that they were unlikely to see type 2 diabetes in anyone under 40; now, type 2 – no longer called “adult-onset”



– is being diagnosed at alarming rates in children under 10. That’s one reason U.S. Surgeon General Richard Carmona calls childhood overweight and obesity “the fastest growing, most threatening disease in America today.”

How big a threat? Dr. Linda Rosenstock, dean of the UCLA School of Public Health, raises this alarming specter: “It’s plausible that we’re going to see for the first time in 100 years that the generation coming up behind us will have a shorter life expectancy than the current one.”

What has happened? Why are so many people in this country carrying so many extra pounds? On the one hand, the calculus is simple: Excess calories going in for calories burned means people are gaining weight. But the fact that this equation applies to twice as many of us as it did a generation ago suggests that something is different.

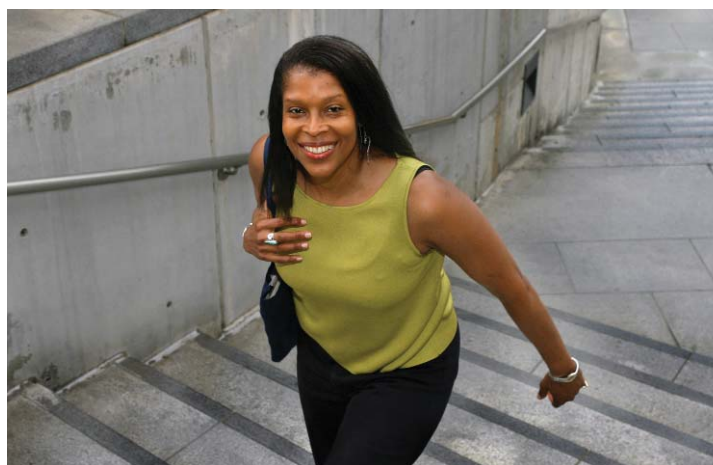
“We know several things about this epidemic,” says Rosenstock. “It came upon us very quickly; it is global, although one in which the United States not too proudly leads our counterparts in the developed world; and it likely reflects a number of factors, including genetic and physiologic factors, coupled with environmental factors such as increased food availability, decreased expenditure of energy due to

more sedentary work, and environments that aren’t conducive to walking or other forms of exercise.”

To be sure, we are eating differently than we were a few decades ago. Fast food – notoriously high in fat and calories – represented 4% of total U.S. food sales outside the home in the middle of the 20th century...and 34% by the end of it. A recent study by the UCLA Center for Health Policy Research, based in the School of Public Health, found that half of California teens eat fast food at least once a day. By comparison, less than 25% of the state’s teens meet the daily recommendation of five servings of fruits and vegetables.

For many communities, the road to healthy eating is arduous. Dr. Antronette Yancey, associate professor at the school, works locally with the CDC-funded Racial and Ethnic Approaches to Community Health (REACH 2010) project, which has hired and trained community members to document the quality and variety of healthy food options in low-income neighborhoods. Yancey’s group has found that stores in such neighborhoods offer half the variety of fruits and vegetables as those in affluent communities and that, on average, the quality of produce on the shelves in low-income areas is significantly poorer. These neighborhoods also tend to have fewer supermarkets per capita, and a higher proportion of fast-food restaurants. Exacerbating matters, Yancey notes, are print, billboard and broadcast advertisements for unhealthy foods and beverages – cheap sources of comfort in managing lives that are highly stressful.

In an era when adults are more likely to work in sedentary jobs than their parents and grandparents, their children are spending more time in front



“If two-thirds of the population is overweight, you have a societal issue, and individual solutions are not going to be enough.”

– Dr. Antronette Yancey

Stephanie Vecchiarelli, M.P.H. '01

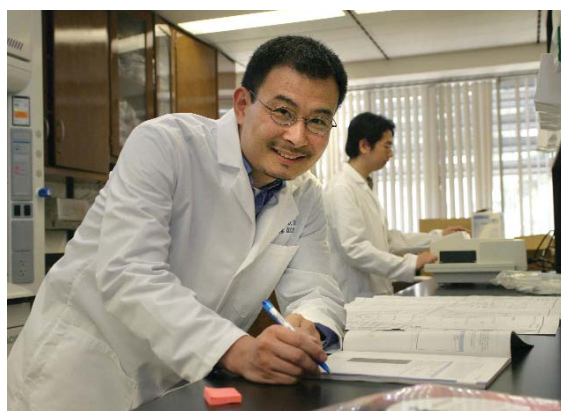
Vecchiarelli's experiences studying adolescent reproductive health and working for the Division of Adolescent and School Health at the Centers for Disease Control and Prevention during her internship as an M.P.H. student, along with her background in teaching, led to her desire to work in school health. "I strongly believe that if students are not healthy, they will not be able to reach their full academic potential," Vecchiarelli says. "If students aren't eating nutritionally, getting enough sleep, are worrying about violence in their homes, or don't receive proper medical, dental, or vision care, how can we expect them to concentrate in school? I also know that schools cannot do this work alone. They must work with parents and the entire community to make lasting changes." Vecchiarelli, who says she grew up in a family with poor dietary habits and has had to make major dietary and physical activity changes as an adult, is currently a project director for the UCLA School of Public Health's Nutrition Friendly Schools and Communities program, helping to determine the impacts of school-based environmental changes on student, staff, and parent dietary and physical activity knowledge, attitudes, and behaviors. She also completed a study of the development, implementation, and impact of the LAUSD soda and junk food ban as part of her doctoral dissertation in the UCLA School of Education.

of the TV or computer than previous generations – roughly a quarter of their waking hours. Many schools have cut back on physical education and after-school sports and dance programs, particularly in low-income areas, where obesity is rising most rapidly. The number of children who walk to school declined over a single generation from 80% to just 10%. Many urban neighborhoods are considered unsafe for walking, or are not conducive to exercise due to poor design and urban sprawl.

"A lot of people don't realize that there is a huge environmental component to this obesity epidemic," says Yancey. "Human beings didn't just suddenly become lazy and unwise in their eating choices. What has happened is that our environment has changed dramatically in a very short period of time."

The rapid rise in the epidemic has left researchers and public health professionals scrambling to determine how best to combat it. Federal funding supports studies aimed at everything from getting a better grasp of obesity's pathophysiology to identifying successful ways of influencing healthy eating and physical activity levels. "There are so many factors influencing this problem that it's going to take multiple approaches," says Dr. Mark Schuster, professor at the school and director of the UCLA/RAND Center for Adolescent Health Promotion.

On one front, researchers are attempting to better understand the gene-environment interactions that are fueling the epidemic. Dr. Simin Liu, professor of epidemiology at the school, has spent the last decade analyzing data from large long-term studies in an effort to home in on dietary patterns as they relate to obesity and type 2 diabetes risk. His work



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— Dr. Simin Liu

has been influential: For example, looking at historical data provided by the CDC along with dietary consumption data from the U.S. Department of Agriculture, Liu and colleagues at Harvard concluded that the increased consumption of rapidly absorbed, refined carbohydrates in the U.S. diet has paralleled the rise in obesity and type 2 diabetes. His findings helped to establish regulatory and labeling guidelines for the FDA's whole grains and heart disease health claims, and informed the Healthy People 2010 and 2005 Dietary Guidelines.

Liu believes that studies seeking to understand the molecular underpinnings of obesity have the potential to strengthen the argument for a population approach to prevention as well as improving efforts by enabling more targeted messages to be delivered about diet, based on people's genotypes. But he shares the view of many in public health that prevention efforts aren't failing for lack of knowledge about obesity's causes. "A molecular understanding alone is not going to provide the solution," Liu says. "We already know that people need to eat less and exercise more, but there are many forces that are working against their ability to do that."

Yancey contends that much can be gained by learning about the role of the sociocultural environment in encouraging or discouraging healthy eating and physical activity. While a growing body of research is documenting the impact of access to parks, walking trails and health clubs on people's exercise levels, Yancey is addressing the potential health benefits of changing the culture of a workplace or organization. Corporate strategies such as encouraging gym membership through subsidies or on-site facilities are important, she notes, but Yancey believes workplaces also need to be more proactive, to the point where healthy on-the-job lifestyles become almost unavoidable. If healthy snacks replace doughnuts at meetings and events, structured group exercise breaks become an entitlement on par with coffee breaks, and parking near work facilities is limited to people with physical disabilities, employees will have an easier time getting, and staying, in shape. "The public is so unfit right now that most people have lost touch with how much better it feels to be active," she says.

Yancey is currently co-leading a project with a Georgia Tech researcher to assess the potential influence of architectural design in that regard. Their study compares the physical activity levels of employees on either end of a downtown Los Angeles building: On one side, there is easy access to stairs in an aesthetically pleasing location, providing a desirable alternative to elevators that don't go to every floor; on the other, the stairs are tucked away in an inconvenient location and elevators stop at each floor.



Fast food, notoriously high in fat and calories, represents 34% of U.S. food sales outside the home.

“One of the key questions is whether engaging in more physical activity in the work environment will translate to doing more to stay in shape in one’s spare time,” Yancey explains.

Other faculty are working to improve the school and home environment for children. The Nutrition-Friendly Schools and Communities program established by Drs. Charlotte Neumann, Michael Prelip and Wendelin Slusser provides schools in the Los Angeles Unified School District (LAUSD) with a flexible, low-cost roadmap for creating a positive environment for good health. The effort has identified 15 steps schools can take toward becoming more “nutrition friendly,” including increasing parental involvement around health issues, providing healthy school lunches, integrating nutrition education in the curriculum, and promoting physical activity. In a pilot study involving eight schools, the researchers found that outlining these steps and providing a program liaison who works closely with educators and parents to tailor strategies to individual schools and communities resulted in significant changes in the school environment.

Schuster was recently awarded a grant from the National Institutes of Health to work with LAUSD, the Los Angeles County Department of Health Services, and other community partners in developing and testing a strategy for obesity prevention in middle-school-age youth. “As children grow older, parents and schools have less influence over what they eat,” he notes. “They’re going off on their own to buy food for the first time, and the choices they are making are often unhealthy ones.”

Interventions aimed at this population need to take into account the delicate issue that adolescents tend to be particularly self-conscious about their bodies. “At a time when they are developing their self-confidence, we don’t want the health care system to be undermining it in the process of trying to help them be healthier,” Schuster says. Nonetheless, he adds, parents should be assisted in recognizing that they can still have an influence on their child’s lifestyle during adolescence; all parents, Schuster contends, should be encouraged to provide a good example by exercising and eating well.

Targeting not only parents but also others with the potential to influence behaviors is viewed as an important strategy. With a grant from the National

Shauna Harrison

As a schoolteacher, Harrison noticed the poor health habits of her students and how that affected their in-class behavior. Although she was teaching Spanish, she also used the classroom to educate her students on proper nutrition and lifestyle habits. Harrison wanted to create an entire class dedicated to such health topics, but her school’s administration failed to embrace the idea. “This created a fire in me to want to improve the nutrition and fitness of children,” she says. Harrison came to UCLA for the joint M.P.H. and M.A. program in Latin American Studies. She spent her internship (supported by funds from the school’s Neumann-Drabkin-Bixby program) teaching nutrition to preschool children in Costa Rica, where she had gone as an undergraduate to study the influence of American media on body image in Costa Rican girls. This fall, she will start a Ph.D. program in health communications at Johns Hopkins University. “I plan to examine the spectrum from obesity to eating disorders, with attention to the importance of mental health and the role of the media,” says Harrison, a certified personal trainer and group fitness instructor. “I hope to bring health education that improves nutrition, increases physical activity and builds self-esteem to our schools so that children have the opportunity to make healthier choices as they grow older.”

Jabar Akbar, M.P.H.

Obesity is affecting the health outcomes of the general population, particularly the poor and many underserved minority communities. Akbar, a doctoral student at the school, works with a team of researchers from Georgia Tech University and UCLA on a project that assesses the utilization of stairs in a building whose architectural design is mostly conducive to physical activity. The main elevators stop at select floors, forcing employees to use the stairs to get to a desirable floor, while employees who work on the other side of the building don’t have access to the “skip” elevator design. Akbar is collecting data on the amount of stair usage by employees on both sides. For another project, Akbar helped to create a research tool that is assessing the weight-related outdoor advertising appearing in geographical areas that are predominantly African American, Latino or white in five U.S. cities. “The media have been used to market unhealthy products such as junk food, alcohol, and tobacco to specific consumer populations,” Akbar says. “With the growing disparities debate, many communities are being unfairly singled out as targets of these products.” Akbar hopes eventually to use his doctoral degree to pursue further obesity-related community intervention research as a junior faculty member and researcher.

Lauren Neel

Before coming to UCLA, Neel was an AmeriCorps member serving the Yolo County Health Department, First 5 Yolo and the Yolo County Children's Alliance. She coordinated the efforts of each of these organizations in promotion of the community goal: to reduce the incidence of childhood obesity in Yolo County. "My favorite project was going into the high schools and presenting a health education workshop using the film *Super Size Me*," Neel says. "Getting into the schools and having the opportunity to talk directly with the students was a great opportunity and made me excited to continue working toward my goals." Her experience as an M.P.H. student has solidified Neel's commitment to promoting healthy eating and increased physical activity. She works with the Nutrition Friendly Schools and Communities study investigating nutrition and physical activity behaviors in elementary school students in LAUSD. Through a summer internship at Neutrogena Health and Fitness Corporation, she is designing employee wellness materials, creating fitness challenges and coordinating healthy eating initiatives. Ultimately, she plans to get a personal training license and is considering becoming a registered dietitian after completion of her M.P.H. "At the end of the day," Neel says, "I hope I end up somewhere where I can help people reach their health goals and make a real difference."

Judith Mercado, M.P.H. '04

As part of her M.P.H. program, Mercado completed an internship in which she helped design, implement and evaluate a summer fitness and nutrition program for children at a church in Inglewood. "It was really fulfilling to expose the kids to nutrition and fitness in a fun, healthy way," she says. That summer, as she realized that her younger sister, then 7, had been gaining weight considerably, Mercado developed an even stronger inclination to pursue a career in which she could help. Now a wellness coordinator for the Johnson & Johnson company Biosense Webster, Mercado coordinates, markets, implements and evaluates health education/behavior change programs around weight management, physical activity, smoking cessation, blood pressure and cholesterol management. She also teaches nutrition to overweight children for an organization called PowerPLAY MD. Her sessions for these children and their families help them with understanding portion sizes, reading labels, healthy snacking, and navigating fast food choices. "I have been fortunate to see very positive changes and understand what lies underneath many overweight children's struggles," Mercado says. "In some cases, parental involvement is the key to helping their children take the excess weight off. In other cases, the children's own motivation is much stronger than their parents' lack of understanding and support, and to witness that is beyond inspirational."



Adults are more likely to work in sedentary jobs than their parents and grandparents. Children spend one-fourth of their waking hours in front of the TV or computer.

Center for Minority Health and Health Disparities, Yancey is attempting to promote healthy eating and physical activity among health and social services workers with the idea that if they are successful it will, in turn, make them more likely to promote those behaviors among their clients.

Similarly, a study led by Dr. Judith Siegel, professor of community health sciences at the school, aims to enhance opportunities for teachers and staff at eight LAUSD elementary schools to engage in physical activity and healthy eating at work. The project came out of observations from the Nutrition Friendly Schools and Communities program that the rate of overweight and obesity among the faculty and staff at the schools mirrored the high rate in the overall population. "We felt that by helping these individuals work toward becoming healthier, we might also improve the likelihood that they would be good role models and enthusiastic supporters of promoting healthy behaviors among the children and families at their schools," Siegel explains.

The study uses a participatory approach, allowing a committee of teachers and staff at each school to develop their own worksite health promotion program within the project's financial constraints. "We're trying to find success with interventions that cost little, if anything, and are sustainable," says Prelep, co-principal investigator on the study. Activities chosen have ranged from walking clubs, yoga and exercise classes to healthier food options at staff meetings and in lunch rooms.

While the researchers hope that promoting healthier lifestyles among the faculty and staff will ultimately have a more far-reaching influence, their immediate concern is how it will affect the participants. "There are major advantages to doing health promotion in the workplace," says Siegel. "It's where people spend the largest proportion of their waking hours, and if there is collective involvement and enthusiasm for these programs, that creates a good environment for behavior change that can carry over to other aspects of people's lives."

For all California schools, the nutrition environment will be improved by two new state laws that go into effect next year, implementing the nation's most rigorous standards on the nutritional content of a la carte foods, snacks, and beverages sold on K-12 public school campuses. The signing by Gov. Arnold

Ying-Ying Goh,
M.D.

Goh, a research fellow pursuing an M.S. in health services, is a pediatrician who has seen firsthand the health consequences – from asthma exacerbations to diabetes – of children being overweight. “It made me interested in pursuing research about both medical and environmental causes of overweight in children – in particular, how public policy can help to reduce childhood overweight,” she says. While in residency training at Children’s Hospital Boston, Goh conducted a survey of pediatric residents and found that most viewed childhood overweight as an important problem, but that there were significant barriers to being able to address it as a physician. Currently, she is working on a study with a team at the UCLA/RAND Center for Adolescent Health Promotion and the Los Angeles Unified School District (LAUSD). The Adolescent Healthy Living Study is a research partnership to develop and pilot an intervention that addresses weight-related health issues among LAUSD middle school students. Goh is conducting interviews with a wide range of community leaders, and will assist with parent and student focus groups in order to inform the development of an intervention that will be implemented in middle schools. She is also interested in the impact of media use on children’s health, and plans to pursue projects in that area.

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— Dr. Judith Siegel



ents to buy products that we know to be unhealthy for them – it’s impossible to say this is all a matter of personal responsibility. When there’s fast food on every corner and physical education is being taken out of the schools, it’s not just the individual who needs to be held accountable.”

“If two-thirds of the population is overweight, you have a societal issue, and individual solutions are not going to be enough,” agrees Yancey. “Certainly education and motivation are important, but we also need to figure out, as a society, ways we can share in the cost of adopting and maintaining healthy lifestyles.”

Rosenstock also agrees that more proactive action is needed – and that focusing too heavily on individual-level behaviors is a mistake. “So much of what is happening with regard to obesity is truly beyond the control of the individual,” she says.

More than just trying to educate people about the importance of healthy diet and exercise, she believes a partnership among the medical and public health systems as well as industry, communities and all levels of government is needed. “We have to get ahead of this one,” she says, “because the obesity problem has been worsening while we’ve been taking baby steps to address it.”

California Gov. Arnold Schwarzenegger signs legislation establishing the nation’s most rigorous nutrition standards for foods and beverages sold on K-12 public school campuses. The legislation was championed by the California Center for Public Health Advocacy, led by Dr. Harold Goldstein (M.S.P.H. ’89, Dr.P.H. ’97), pictured third from left.

Schwarzenegger of the laws – which establish limits on fat and sugar content and portion size, effectively banning sales of “junk food” and soda at the schools – culminated six years of work by the California Center for Public Health Advocacy (CCPHA). The center, under the leadership of UCLA School of Public Health alumnus Harold Goldstein (M.P.H. ’89, Dr.P.H. ’97), was established in 1998 to raise awareness about public health issues and mobilize communities to promote the establishment of effective health policies. CCPHA has helped lead efforts to improve children’s food and physical activity environment, helping to ensure that they can make healthy eating and activity choices.

Following up on the success of its campaign for new nutrition standards, CCPHA is sponsoring legislation that would provide funding to train elementary school teachers in new guidelines on how to teach physical education. “With all of the academic testing going on, physical education has fallen by the wayside,” says Goldstein, “and it’s time to make children’s physical health as important as their intellectual health.” CCPHA is also backing a bill in the California Legislature that would create an incentive for companies to open grocery stores in low-income communities or refurbish ones that are already there, improving residents’ access to healthy foods.

Goldstein is finding considerable support for both bills. “The passage of the school nutrition standards was a landmark, but it was a small first step in creating environments in schools and communities that support adults and children in making healthy food and physical activity choices,” he says.

“Too many policy makers have had the mistaken belief that the obesity epidemic is all a matter of personal responsibility. But they are starting to understand that it’s also a matter of government responsibility and corporate responsibility. When the food industry in the United States spends billions of dollars advertising unhealthy foods and beverages to our children – hiring psychologists and marketers to figure out the best ways to convince kids and par-

