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**SPECIAL
HEALTH ISSUE**

Our Super- Sized Kids

It's not just genetics and diet. An in-depth look at how our lifestyle is creating a juvenile obesity epidemic—and the scoop on how to cure it



How America's Children Packed On the Pounds

It wasn't easy to produce a generation of overfed kids—but it might well have been inevitable

BY JEFFREY KLUGER

AMERICANS DISAGREE ABOUT A LOT of things, but we rarely quarrel when it comes to our food. For a nation built on grand democratic virtues, there is still nothing that defines us quite like our love of chow time.

We have plenty of reasons to fetishize our food—not the least being that we've always had so much of it. Settlers fleeing the privations of the Old World landed in the new one and found themselves on a fat, juicy center cut of continent, big enough to baste its coasts in two different oceans. The prairies ran so dark with buffalo, you could practically net them like cod; the waters swam so thick with cod, you could bag them like slow-moving buffalo. The soil was the kind of rich stuff in which you could bury a brick and grow a house, and the pioneers grew plenty—fruits and vegetables and grains and gourds and legumes and tubers, in a variety and abundance they'd never seen before.

With all that, was it any wonder that when we had a chance to establish our first national holiday, it was Thanksgiving—a feast that doesn't merely accompany a celebration but in effect is the celebration? Is it any wonder that what might be our most evocative patriotic song is *America the Beautiful*, in which an ideal like brotherhood doesn't even get mentioned until the second-to-last line, well after rhapsodic references to waves of grain and fruited plains? “We've defined an American version of what it means to succeed,” says neuroscientist Randy Seeley, associate director of the Obesity Research Center at the University

of Cincinnati Medical School. “And a big part of that is access to an environment in which there is a lot of food to be consumed.”

The problem is, all those calories come at a price. Humans, like most animals, are hardwired not just to eat but to gorge, since living in the wild means never knowing when the next famine is going to strike. Best to load up on calories when you can—even if that famine never comes. “We're not only programmed to eat a lot,” says Sharman Apt Russell, author of *Hunger: An Unnatural History*, “but to prefer foods that are high in calories.” What's more, the better we got at producing food, the easier it became. If you're a settler, you eat a lot of buffalo in part because you need a lot of buffalo—at least after burning so many calories hunting and killing it. But what happens when eating requires no sweat equity at all, when the grocery store is always nearby and always full?

What happens is, you get fat, and that's precisely what we've done. In 1900 the average weight of a college-age male in the U.S. was 133 lb. (60 kg); the average woman was 122 lb. (55 kg). By 2000, men had plumped up to 166 lb. (75 kg) and women to 144 lb. (65 kg). And while the small increase in average height for men (women have remained the same) accounts for a bit of that, our eating habits are clearly responsible for most. Over the past 20 years in particular, we've stuffed ourselves like pâté geese. In 1985 there were only eight states in which more than 10% of the adult population was obese—though

the data collection then was admittedly spottier than it is now. By 2006, there were no states left in which the obesity rates were that low, and in 23 states, the number exceeded 25%. Even those figures don't tell the whole story, since they include only full-blown obesity. Overall, about two-thirds of all Americans weigh more than they should.

“Sit down on a bench in a park with a person on either side of you,” says Penelope Slade-Royall, director of the U.S. Office of Disease Prevention and Health Promotion. “If you're not overweight, statistically speaking, both of the other people sitting with you are.”

If there was any fire wall against the fattening of American adults, it was American kids. The quick metabolism and prodigious growth spurts of childhood make it a challenge just to keep up with all the calories you need, never mind exceed them. But even the most active kids could not hold out forever against the storm of food coming at them every day. In 1971 only 4% of 6-to-11-year-old kids were obese; by 2004, the figure had leaped to 18.8%. In the same period, the number rose from 6.1% to 17.4% in the 12-to-19-year-old group, and from 5% to 13.9% among kids ages just 2 to 5. And as with adults, that's just obesity. Include all overweight kids, and a whopping 32% of all American children now carry more pounds than they should. “There's no way to overestimate how scary numbers like this are,” says Seeley.

TODAY

Kids are increasingly sedentary, spending three hours a day in front of a TV or computer. Phys ed is vanishing too, with only 25% of kids still attending

Fitness by the Numbers

No matter how you break down the data, the obesity news does not look encouraging

19% | Percentage of 6-to-11-year-old American kids who were obese in 2004, up from just 4% in 1971

32% | Percentage of all American kids who are overweight, a recent plateau in the figures

90% | Percentage of overweight children who have at least one avoidable risk factor for heart disease

Sources: CDC; *Journal of the American Medical Association*; Children's Hospital

Obese boys and girls are already starting to develop the illnesses of excess associated with people in their 40s and beyond: heart disease, liver disease, diabetes, gallstones, joint breakdown and even brain damage as fluid accumulation inside the skull leads to headaches, vision problems and possibly lower IQs. A staggering 90% of overweight kids already have at least one avoidable risk factor for heart disease, such as high cholesterol or hypertension. Type 2 diabetes is now being diagnosed in teens as young as 15. Health experts warn that the current generation of children may be the first in American history to have a shorter life expectancy than their parents'. "The more overweight you are, the worse all of these things will be for you," says acting U.S. Surgeon General Steven Galson. And, warns Seeley, the worse they are likely to stay: "When you're talking about morbidly obese kids, zero percent will grow up to be normal-weight adults."

It's hardly a secret how American children have come to this sickly pass. In the era of the 64-oz. soda, the 1,200-calorie burger and the 700-calorie Frappuccino, food companies now produce enough each day for every American to consume a belt-popping 3,800 calories per day, never mind that even an adult needs only 2,350 to survive. Not only are adults and kids alike consuming far more calories than they can possibly use, but they're also doing less and less with them. The transformation of American homes into high-def,

Web-enabled, TiVo-equipped entertainment centers means that children who come home after a largely sedentary day at a school desk spend an average of three more sedentary hours in front of some kind of screen. Schools have contributed, with shrinking budgets causing more and more of them to slash physical-education programs. In 1991, only 42% of high school students participated in daily physical—already a troublingly low figure. Today that number is 25% or less.

Washington, too, is dropping the ball. Seven years ago, Congress allocated \$125 million for a smart new health campaign dubbed Verb, aimed at getting preteen kids to become more active. Boldface names such as teen star Miley Cyrus and quarterback Donovan McNabb headlined public-service ads, and volunteers set up booths at public events. In the program's first year, up to 80% of kids polled were aware of the Verb message, and communities began sponsoring their own Verb-based activities. But that success could not survive congressional budget cuts, and the program's funding was steadily slashed. By 2007, funds were shut off altogether, and Verb was past tense.

The government insists that the decision was a fiscally prudent one and that local and state programs, like the widely publicized fitness initiatives launched by California governor Arnold Schwarzenegger or the less publicized INShape program begun in 2005 by Indiana governor Mitch Daniels, are a more efficient way to get the message out. "Obesity is not the kind of problem that is going to respond to just the flow of federal funds," says Galson. The fact is, however, that in the case of Verb, responding was precisely what it was doing—even if only a little.

In all of this, there are flickers of hope. In May, epidemiologists were thrilled when the *Journal of the American Medical Association* published a study of 8,165 children, which showed that for the first time in decades, the increase in U.S. childhood obesity had leveled off. It's not certain if the plateau is a sign

that public-awareness programs and improved menus in many school cafeterias are producing results or merely that some kind of saturation point has been reached, with most kids genetically susceptible to gaining too much weight having done so. "Whether this is meaningful data, we don't know yet," says Seeley. "But anyone who wants to stick a flag in this and declare victory is just crazy."

Clearly, nobody is going that far. Victory may indeed come, but it will be only after a long,

multifront war, one that, as the following stories in this TIME special section show, is at last being joined. Parents are fighting it in the home as they learn how to make healthier meals available to their families, set better examples with their own food choices and manage the critical issues of self-esteem that can be so disabling for overweight kids. Policymakers are fighting it as they study the growing body of research showing how everything from income to race to education plays a role in how much kids weigh and as they craft local solutions to solve these local problems. Doctors are fighting it as they deal daily with the ills associated with childhood obesity and work to repair the damage that's been done. And perhaps most important, teachers, mentors and public role models are fighting it as they help kids navigate a culture that fosters fat but idealizes thin and as they teach them that what truly counts is getting themselves as fit as their body type and genes allow—and then loving that body no matter what.

Do all these things—and do them right—and the national obesity epidemic just might be brought under control before some kids struggling with their weight today even reach middle age. "If we got this way over the last 30 years," says Galson, "it's not going to take us centuries to get back. We could reverse things at the same speed or even faster." Americans will continue to love good food; the trick will be to learn to love good health even more. ■

THEN

In the 1950s, kids had three cups of milk for every cup of soda. Today that ratio is reversed, meaning they get all the calories and none of the nutrients

Safety

Community

Race

Education

It's Not Just

Genetics

The rise in childhood obesity is a single problem with a whole lot of causes. Like any epidemic, it hits some groups hard and leaves others mostly alone. Which group your family belongs to depends on income, ethnicity, geography and more

BY BRYAN WALSH

Environment

With plenty of parks and access to outdoor recreation, the city makes it much easier to stay fit

Income

Ludwig's obesity clinic serves both wealthy and working-class clients, but nationwide many lower-income kids do without such care

Diet

The highest levels of obesity tend to be found in the South; a regional diet traditionally heavy in fried foods probably contributes to the numbers

Neighborhood

Bad food is easier to come by than good in too many places. Here junk fare is sold right outside the school

Poverty

Since fatty food is cheap, low family income may be the single most powerful contributing factor in childhood obesity

YOU'RE A NATIVE-AMERICAN baby born into the Oglala Sioux tribe, living on the Pine Ridge reservation in South Dakota. There are a lot of things that are going to make life a challenge for you, but one of the most perilous will be your weight. Chances are very good that your parents already have a weight problem; obesity is rampant in the 30,000-member community, and half the residents over the age of 40 have Type 2 diabetes. Their genes—and yours, of course—are part of the problem: researchers theorize that Native Americans have a higher than average tendency to gain and store weight, a protection in times of famines past but a risk factor in an America of caloric abundance.

Even without this so-called thrifty gene, you'd face an uphill battle to stay trim. Like many Americans in rural areas, the poorer Oglala Sioux have far less access to fresh fruits and vegetables than those in more connected settlements. This means you're likely to be filling up on high-calorie, processed foods, especially since fatty foods are cheaper than healthy ones, and your family—like more than half the families on the reservation—is probably poor. What's more, the calories you consume stick around, since you're not doing much to burn them off. Your school is probably too far away for you to reach it on foot. Playmates may be similarly distant. And don't even think about parks or playgrounds—multiple studies over the past several years have shown that low-income communities tend to have fewer recreational areas. Though it's all outside your control, nearly every aspect of your environment is pushing you toward gaining weight—which is why 43% of Native-American 5-year-olds in South Dakota are overweight or obese.

You're a Caucasian baby born in Boulder, Colo., and it's hard to count all your advantages in the good-health game. Chances are better than average that your parents are a healthy weight—only 11.9% of Boulder County residents are obese, compared with more than 30% for the U.S. as a whole. Colorado has the second lowest childhood overweight rate in the U.S., according to one survey. You live in a town blessed with parks and rugged natural beauty, where physical activity is all but mandatory and 14 triathlons were held last year—including one for kids as

young as 3. But Boulder, with a population of more than 90,000 people, is large and dense; if you live in town, you can probably walk or bike to school. Chances are your family is at least middle class—the median income in Boulder County is significantly higher than the U.S. average. That means your parents can afford to shop at the many health-food stores in the city, where the organic chain Whole Foods moved its regional headquarters last year. Nearly every aspect of your environment is pushing you toward maintaining a healthy weight.

It's no secret that the U.S. has a crippling weight problem and that our children are hardly exempt. Rising obesity threatens to condemn a significant share of the next generation to a lifetime of weight-related disease, overburdening the already struggling U.S. health-care system. Though a recent study by Centers for Disease Control and Prevention (CDC) researchers found that childhood-obesity levels may finally have leveled off, more than 30% of American schoolchildren are still overweight, with little indication that rates will drop anytime soon. The CDC defines as overweight those children with a body mass index (BMI)—a rough factoring of height and weight—higher than the 85th percentile of figures from the 1960s and '70s, before the obesity epidemic hit. Obesity is defined as the 95th percentile. That's far from healthy. "The childhood obesity epidemic is a tsunami," says David Ludwig, an obesity researcher at Children's Hospital in Boston and the author of *Ending the Food Fight*. "We can see the wave heading toward shore."

This tsunami, however, is a highly selective one. It discriminates by race: according to the CDC's 2006 figures, 30.7% of white American kids are overweight or obese, compared with 34.9% of blacks and 38% of Mexican Americans. It discriminates by income: 22.4% of 10-to-17-year-olds living below the poverty line—less than \$21,200 for a family of four—are overweight or obese, compared with 9.1% of kids whose families earn at least four times that amount.

It discriminates, perhaps most tellingly, by geography, with 16.5% of rural kids qualifying as obese, compared with 14.4% of urban kids, according to the 2003 National Survey of Children's Health. The poorest states of the South and Appalachia—Arkansas, West Vir-

ginia, Mississippi and Kentucky—have the heaviest children. Adult obesity levels triple when you cross north of 96th Street in Manhattan, leaving the mostly white and well-off Upper East Side for the predominantly minority, poorer neighborhood of Spanish Harlem. Even in trim Colorado, there are obesity hot zones.

All that provides a new way to look at—and attack—obesity. We tend not to talk about a problem like body weight in the language of infectious disease, but scientists do, knowing that like any other epidemic, the U.S.'s obesity scourge hits some communities harder than others. The skyrocketing increase in childhood obesity—the percentage of 6-to-11-year-olds classified as obese has nearly tripled since 1980—may argue strongly that the American environment has changed in a way that makes gaining weight much less avoidable. But the uneven distribution of the problem argues that who you are, where you are and how much your family has in the bank have a lot to do with whether your child will be claimed by the crisis or emerge unharmed.

"The environment makes it easier or harder for healthy choices to be the default choices," says Risa Lavizzo-Mourey, president of the Robert Wood Johnson Foundation, which last year pledged \$500 million to end the rise in childhood obesity by 2015. "And adults create the environment that kids live in."

The geography of childhood obesity is largely the geography of poverty. There's no pretending that the problem—and resultant disparities in income, education and opportunity—will be easy to address, but there's no denying that it's imperative that we try. "It's the poorest and most deprived neighborhoods that suffer the most," says Adam Drewnowski, director of the nutritional-science program at the University of Washington. "This has to be fixed."

The Front Lines

LUDWIG'S CLINIC AT CHILDREN'S HOSPITAL, Optimal Weight for Life, offers a glimpse of the diversity of childhood obesity in the U.S. The clinic straddles the border between the wealthy neighborhood of Brookline and the poorer areas of Roxbury and Dorchester, and Ludwig's patients—black, white, Hispanic—are drawn from around the city. Ludwig's unique weight-control program focuses

Fitness Factors. Although 32% of U.S. children are overweight, not all kids face the same odds

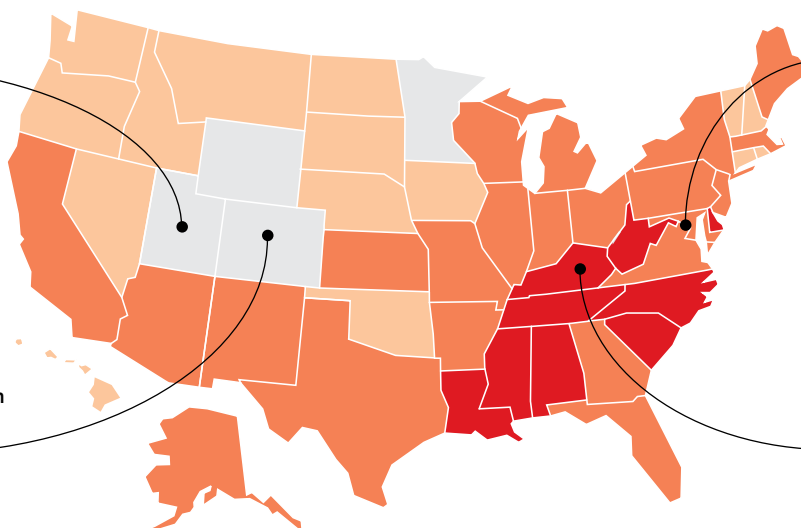
THE BEST

Utah

- 21% of children are overweight, including:
 - 36% of minority children living in cities
 - 30% of boys living in rural areas
- Key factor:
 - Just 13% of kids say their environment does not provide safe opportunities for recreation

Colorado

- 22% of children are overweight, including:
 - 32% of minority children living in cities
 - 49% of poor* children living in rural areas
- Key factor:
 - 38% of children use electronic entertainment more than 2 hr. a day (only Vermont has a lower figure)



THE WORST

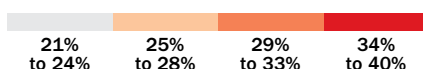
Washington

- 40% of children are overweight, including:
 - Whites: 13%
 - Minorities: 43%
 - Boys: 41%
 - Girls: 38%
- Key factor:
 - 50% of kids say their environment does not provide safe opportunities for recreation

Kentucky

- 39% of children are overweight, including:
 - 68% of minority children living in rural areas
 - 48% of poor* children living in cities
- Key factor:
 - 47% of children do not participate in after-school sports or lessons

Percentage of children who are overweight, by state



Source: South Carolina Rural Health Research Center, based on data from the 2003 National Survey of Children's Health

*For a family of four, poor is defined as earning no more than \$36,800 annually, which was twice the poverty level at the time of the survey

on the glycemic index of his patients' diets, attempting to reduce the sharp ups and downs in blood-sugar levels that he believes encourage children to overeat. That means cutting back severely on the highly processed carbohydrates that make up the backbone of the diet of too many kids. A first-time trip to the clinic includes a visit with a nutritionist, who listens as parents detail what a child has eaten over the past couple of days—and then informs them that almost all of it will have to go, to be replaced by lots of whole grains, fresh fruits and vegetables. "It can be challenging," says Suzanne Rostler, a top nutritionist at the clinic.

On a recent visit to Children's Hospital, 38-year-old Rachel (who, like many parents at this and other weight-loss clinics, prefers to use first names only with outsiders in order to protect her child's identity) listened to the changes she'd have to make in her 4-year-old son's diet and seemed a little daunted. "I'm still try-

ing to process it all," she said a few days later. But Rachel's child is more fortunate than many of Ludwig's patients. The family lives in Brookline—in fact, right next to a Whole Foods store—so buying the healthy staples of a new and better diet wouldn't be that difficult. (Weaning her son off the snack food Pirate's Booty, she admitted, might be another story.) But not everyone is so fortunate, like a patient who visits soon after, an 11-year-old African-American girl. Her father works days, and her mother works nights; trying to find the time and budget to search out and prepare healthier food was clearly going to be harder for this family. "It's not impossible, but it's absolutely tougher for the family from the inner city where the parents are working two jobs," says Ludwig. "These are the trenches in the war against obesity."

For all the thousands of books published on obesity, body weight is the result of a pretty simple equation: calories

taken in vs. calories expended. Over the past few decades, the entire American environment has become much more obesogenic, or obesity-supporting. Think of the ever-increasing supply of fast-food outlets, where meal sizes have ballooned, or the fact that simple physical activity has been largely eliminated from the daily lives of children, who ride in cars where their grandparents might have walked and entertain themselves with an array of sedentary electronic pastimes that didn't even exist a generation ago. It shouldn't be surprising that many overfed, underactive kids lose the battle with their weight. "The environmental factors are much more compelling toward obesity than they were 30 years ago," says William Dietz, director of the division of nutrition and physical activity at the CDC.

It's the lack of good food choices that appears to play the greatest role in making poor kids fat, and the problem goes beyond parents' simply not having

74.6%

Rise in the real price of fruits and vegetables between 1989 and 2005. In the same period, the real price of fats fell 26.5%. If you're on a limited income, it's predictable which kind of food you'll buy

enough time away from the job to shop and cook. Often the healthiest foods—vegetables, fruits, whole grains—just aren't available. Many obese children live in what are called nutritional deserts, where there are few nearby supermarkets offering the produce nutritionists recommend. Instead, families may rely on corner delis and bodegas, which tend to stock fattening, processed food, in part for economic reasons: processed food-stuffs are cheaper and can sit on shelves indefinitely. (Between 1989 and 2005 the real price of fruits and vegetables rose 74.6%, while the price of fats fell 26.5%.) Supermarkets, where better choices are found, are three times as common in neighborhoods that are in the highest quintile of income as they are in communities in the lowest quintile. "What good is it to tell people they need to eat fresh produce if you have to take three buses to get apples?" asks Drewnowski. And if your parents are working long hours to pay the monthly bills, he notes, "making sure you have a salad at the end of the day is not the highest priority."

In Los Angeles' Pico-Union neighborhood, just west of downtown, you can see what kids and their parents are up against. Outside Union Avenue Elementary School in this mostly working-class Latino community, an army of street vendors selling potato chips, candy and ice cream has set up shop, waiting for schoolchildren to be released by the afternoon bell. Technically, it's against city ordinances for the vendors to operate near school grounds during the day, but no one is stopping them. Elizabeth Medrano—an activist with the Healthy School Food Coalition and the mother of a 9-year-old boy—tours the streets around the school, where nearly all the food options are found at a handful of liquor stores and bodegas. Each prominently displays candy and packaged snacks; only a few small retailers carry produce—and un-

appetizing produce at that. "Would you buy this?" she asks, pointing to a handful of bruised cantaloupes. "You walk in, and you see candy, soda and chips. Nothing healthy." It's no surprise that a recent study found that the obesity rate among fifth-, seventh- and ninth-graders in the 10 poorest communities in Los Angeles County was 32%, compared with 8% for the city's 10 wealthiest communities.

Another, often overlooked, factor is the simple matter of safety. Urban children should get at least one break in trying to stay healthy, since the greater density of city life makes it easier to walk to school, the park or just about anyplace else. But that advantage often evaporates in poorer neighborhoods, where recreational areas can be few and walking anywhere is perceived to be dangerous. Xuemei Zhu, a doctoral student at Texas A&M University, surveyed the neighborhoods of Austin and found that even in dense communities, parents often refused to allow kids to walk to school, fearing they would become victims of crime or traffic accidents. "In low-income neighborhoods, the walkability didn't matter," says Zhu. "Safety is the No. 1 factor influencing them." Antronette Yancey, a professor at UCLA's School of Public Health, sees the same phenomenon in her city. "Parents say they'd rather have a fat kid than a dead kid," she says.

But inner cities are only part of the problem. Despite the image we might have of the abundance and open spaces of the countryside, Americans living in isolated rural communities also tend to have few places to walk and play and few convenient options for decent food. "You have to drive miles and miles to find a grocery store," says Jan Probst, who directs the South Carolina Rural Health Research Center at the University of South Carolina. Indian reservations are often the most extreme example of this rural nutritional isolation. The Pine Ridge reservation is nearly 3,500 sq. mi. (9,000 sq km)—more than half the size of Connecticut—but there are just a handful of stores in the area that sell fresh produce. And with average income well below the poverty line, even Pine Ridge families who have access to the good stuff can't afford to buy it. "When you have families on a limited income, it gets difficult to make that decision to eat well," says

Bonnie Holy Rock, an Oglala Sioux from Pine Ridge. Holy Rock is the field-site coordinator for Bright Start, a University of Minnesota-sponsored program to reduce child obesity and diabetes on Pine Ridge. "What do you have to eliminate to buy fresh fruit and vegetables?" she asks.

And if you think rural kids at least spend more time outside, working off the extra calories they consume every day, think again. Country life isn't what it looked like on *Lassie*. "You say *rural*, and you think kids are on the farm, lifting hay bales," says Probst. "But they don't do that anymore." What they do is the same thing other kids do, which is to say they spend more and more time inside, in front of a screen—even more so since their homes are a lot likelier than those of suburban kids to lie next to a four-lane interstate or some other decidedly unsuitable place to play. "Kids need a support system for activity," says David Hartley, director of the Maine Rural Health Center. "And in rural areas, too often they don't have that."

Other cultural factors, harder to define, could influence the geography of obesity as well. Yancey, an African-American woman, points out that being overweight isn't looked down on as much in the black community as it is in the white community and that extremely high levels of adult obesity among African Americans—31.2% of black men and 51.6% of black women are classified as obese—may have shifted social norms. (Race isn't an absolute determinant, though—largely African-American Mississippi and overwhelmingly white West Virginia both have high obesity levels.) The same could be true among Hispanics, especially recently arrived immigrants, according to Amelie Ramirez, director of the Institute for Health Promotion Research at the University of Texas Health Science Center. "There's a perception in the community that a chubby baby is a healthy baby," she says.

Fighting the Fight

SO IF AN OBESOGENIC ENVIRONMENT IS responsible for our national weight problem, how can we fix our surroundings so we fix our health? "We have to realize that we're not going to get anywhere in getting people to eat healthy and be more physically active until we create an environment that supports that," says James

'The environment makes it easier or harder for healthy choices to be the default ones.'

—RISA LAVIZZO-MOUREY,
ROBERT WOOD JOHNSON FOUNDATION

Hill, director of the Center for Human Nutrition at the University of Colorado Health Sciences Center.

One place to begin that transformation is in schools, since that's where children spend much of their waking lives—and ingest up to 50% of their daily calories. Here, Arkansas—a state that has had one of the nation's highest rates of childhood obesity—is in the vanguard. Led by Joseph Thompson, director of the Arkansas Center for Health Improvement, the state in 2004 began tracking the BMI of more than 400,000 children, sending home confidential health reports to parents. BMI is an imperfect metric since it often mistakes a stocky or muscular kid for an obese one, but as a quick way to spot weight problems it can reveal a lot. Officials also eliminated junk-food vending machines in all elementary schools—a policy that's becoming more common around the U.S.—and added half an hour of daily physical education to the school curriculum. The plan has had its critics, but Thompson knows that without help, children in Arkansas—poor, relatively rural—face a lifetime struggle against obesity.

“This is not a disease that will be solved with medicines or vaccines,” says Thompson. “A social movement has to solve this.” So far, the interventions seem to be working—after years of increase, obesity rates among children in Arkansas have leveled off.

Arkansas isn't the only state trying to tackle childhood obesity. In 2003, California led the way by banning sugary sodas from public schools and was soon followed by states across the country, with the result that the major soft-drink companies agreed to withdraw all high-calorie sodas from schools by 2009. In Arizona, the Pima tribe of Native Americans, which has some of the highest obesity levels in the world, is growing school gardens in the desert to supply cafeterias with fresh vegetables and reconnect kids to a traditional cuisine. Today at least 17 states have set nutritional standards for school meals that are stricter than those demanded by the U.S. Department of Agriculture.

As part of its fight against childhood obesity, the Robert Wood Johnson Foundation is seeding local initiatives like the Healthy Schools Program, which will provide on-site support for more than 8,000 schools by 2010, improving access to healthy food and increasing opportunities for students to exercise. Last year 16 states supported policies to improve physical-education classes, which have been cut back severely in recent years, and just this month Florida governor Charlie Crist signed a bill requiring physical-education programs in the state's elementary schools. Denver has renovated more than 50 school playgrounds, significantly increasing children's activity levels, and towns and cities elsewhere have launched similar efforts to make it easier for kids to be active. “If you build a park or playground, people will come,”

‘When the only thing available is fast food, that’s what the kids will be eating.’

—Yael Lehman, Executive Director, The Food Trust

says James Sallis, a professor of psychology at San Diego State University and the director of the Active Living Research initiative.

But the school day has to end, and when it does, too many kids emerge into a world in which their food choices begin with Arby's and end with Wendy's. There are groups working to get different foods blooming in the nutritional desert, however. One of the most successful is the Food Trust in Philadelphia. Begun as a produce market in Philadelphia's Reading Terminal, the trust sponsors farmers' markets throughout the city, taking fresh fruits and vegetables to neighborhoods that lack them. The group is also working to improve the selection of corner stores and bring back supermarkets to poor neighborhoods that have lost them over the years.

The program has been a remarkable success: one part of it, increasing the availability of fresh fruits and vegetables in elementary schools, along with nutrition education, is credited with helping reduce the incidence of overweight students 50%, according to a study published in the journal *Pediatrics*. The Food Trust is expanding into New York, Louisiana and Illinois, and executive director Yael Lehman believes every American city could benefit. “When the only thing that is available is fast food, that's what kids will be eating,” she says.

Grass-roots groups like the Food Trust are a fragile shield against the onslaught of bad food all Americans—but especially American kids—face. In 2000 the average child watched 40,000 commercials, double the number in 1970, and many of the ads were for just the kinds of nutritional junk that's causing so many of our problems. The \$2 billion-plus marketing budget of a company like Coca-Cola dwarfs even the \$500 million over five years being spent on childhood obesity by the Robert Wood Johnson Foundation.

Perhaps it's American to take caveat emptor as our creed, to let the junk food we so clearly love flow freely into the marketplace—and if you can't be bothered to hunt up some vegetables or take a jog now and then, your weight problems are your own. But if that philosophy seems harsh when we're dealing with adults—not to mention blind to the enormous health-care costs that will burden the nation—it's positively heartless toward children. An Oglala Sioux on the reservation, a first-generation Hispanic American in L.A., a poor white kid in the hills of West Virginia—no one asks to be born into an environment where obesity seems to be the default fate. “This is probably the most important public-health problem facing the country today,” says Lavizzo-Mourey of the Robert Wood Johnson Foundation. “We are committed to doing what it takes, for as long as it takes.” So should we all be, until childhood obesity no longer has a geography.

—WITH REPORTING BY RITA HEALY/BOULDER, THOMAS FIELDS-MEYER/LOS ANGELES AND HILARY HYLTON/PHOENIX ■

22.4%

Percentage of 10-to-17-year-olds living below the poverty line who are overweight or obese. In families whose income is four times that level or higher, the childhood overweight or obesity rate is just 9.1%

School Cuisine

It can be a real meal or a tray full of trouble, depending on what's on the menu

BY CAROLYN SAYRE

THE LUNCHROOM WASN'T ALWAYS such a complicated place. Fifty years ago, kids would gulp down helpings of fatty pot roast and butter-soaked mashed potatoes without thinking twice about the impact on their waistlines. But that was before the rise of supersized portions and sedentary lifestyles.

Today it seems that what goes on students' trays has become everyone's business. And while efforts are being made by governments to ensure that cafeterias offer healthier meals, many schools are still failing to make the grade. According to a report issued by the U.S. Department of Agriculture last year, fewer than one-third of public schools meet the recommended standard for either total or saturated fat in their meals. Here's what kids used to eat, what they still do eat and, most important, what they could eat.

Meal Summary	
	% Daily Value
Calories: 936	39%
Sodium: 1,291 mg	57%
Fat: 33 g	44%

BASED ON A DAILY INTAKE OF 2,400 CALORIES, 2,250 MG OF SODIUM AND 74.5 G OF FAT, THE AVERAGE OF THE DIFFERING RECOMMENDED RANGES FOR BOYS AND GIRLS

A 1950s Lunch

Meat, potatoes and perhaps some grudging greens were the menu at home, so why not at school? The bread was white and the butter plentiful.

Whole Milk

150 calories

0 mg of sodium

8 g of fat

FACT: Avoid empty calories. Fatty milk is rich in nutrients but also calories. Go for 1% or 2% milk instead

Peas and Corn

60 calories

390 mg of sodium

0 g of fat

FACT: A healthy alternative to sides like fries. But fresh is best since it spares you the sodium in canned foods

Mashed Potatoes

194 calories

40 mg of sodium

4 g of fat

FACT: Bag the butter. Without that excess, this is a starchy dish that is fat-free

Pot Roast

200 calories

740 mg of sodium

2.5 g of fat

FACT: Meat is fine, but keep portions modest and trim the fat. Drop the gravy too—that's where the sodium is

Ice Cream

100 calories

55 mg of sodium

6 g of fat

FACT: It's a good idea to ditch the Dixie Cup. Satisfy your sweet tooth with low-fat alternatives like frozen yogurt

Apple

90 calories

1 mg of sodium

0 g of fat

FACT: Don't let the Atkins diet fool you. Packed with fiber, fruits are a healthy and nutritious snack choice

Bread and Butter

142 calories

65 mg of sodium

12.5 g of fat

FACT: Go for whole grains. Kids feel fuller when they replace white bread with whole wheat

From Bad To a Whole Lot Worse

Modern cafeteria food might be more exciting than it was in the 1950s, but that comes at a nutritional price. This Mexican-style meal—a popular staple in a lot of schools—is stuffed with calories, fat and sodium

Orange Juice

95 calories

0 mg of sodium

0 g of fat

FACT: Fruit juice is a better choice than soda, but sugary drinks like this can lead to rapid weight gain

Refried Beans

90 calories

560 mg of sodium

0 g of fat

FACT: It may be high in sodium, but this Mexican-style dish is at least low in sugar and high in fiber

Salsa

10 calories

75 mg of sodium

0 g of fat

FACT: A national favorite, it's low in calories—and when eaten in moderation, low in sodium too

Nachos

408 calories

629 mg of sodium

29.4 g of fat

FACT: This perfect storm of cheese, beef and chips accounts for more than a third of your daily fat allowance

Peaches

80 calories

10 mg of sodium

0 g of fat

FACT: A great dessert, packed with nutrients and fiber, but it's made less great by all the sugar. Fresh fruit is better than canned

Mexican Rice

190 calories

600 mg of sodium

0 g of fat

FACT: Although this starchy side dish doesn't contain fat, it's loaded with sodium. Rice can be tasty without all the salt

Chocolate-Chip Cookies

300 calories

190 mg of sodium

16 g of fat

FACT: Sugary desserts may feel satisfying in the short term, but they won't keep you feeling full for long

Meal Summary

	% Daily Value
Calories: 1,173	49%
Sodium: 2,064 mg	92%
Fat: 45.4 g	61%

Heaping portions of unhealthy food are a bad idea

‘Junk food can’t be an option. If it is, kids will steer clear of healthy foods.’

—DR. SANDRA HASSINK, A.I. DUPONT HOSPITAL FOR CHILDREN, WILMINGTON, DEL.

Lunch Like It Could Be

Some schools are offering healthy alternatives to the usual fare. Whole grains, fruits and lean protein like chicken are turning up on trays. Vending machines are slowly getting better too, but choose carefully

Strawberries

25 calories

0 mg of sodium

0 g of fat

FACT: High in fiber and low in fat, this fruit is a choice that's hard to quarrel with

Carrots and Dip

136 calories

224 mg of sodium

12 g of fat

FACT: Vegetables are always a sensible snack, but dipping sauces may carry hidden fats

1% Low-Fat Milk

100 calories

107 mg of sodium

2.4 g of fat

FACT: Rich in nutrients like calcium, low-fat milk is the perfect choice to accompany a healthy lunch

Vegetable Soup

100 calories

480 mg of sodium

2 g of fat

FACT: Foods like soup, which contains a lot of water, help kids feel full—but keep an eye on the salt

Grapes

71 calories

2 mg of sodium

0 g of fat

FACT: Perfect little packages—sweet, juicy and a great alternative to high-calorie desserts like cookies

Turkey Wrap

216 calories

580 mg of sodium

9 g of fat

FACT: With lean meat, whole wheat and a modest helping of cheese, it's well balanced—but the salt, again, is a worry

Meal Summary

% Daily Value

Calories: **648** 27%

Sodium: **1,393 mg** 62%

Fat: **25.4 g** 34%

'There are few green fats or carbs. The more colorful a lunch is, the healthier it is likely to be.'

—DR. JEFFREY LAMONT OF THE MARSHFIELD CLINIC, WESTON, WIS.

If you serve it, they will eat—even if it's salad

Living Large

Overweight children may be setting themselves up for a lifetime of health problems—if they don't take action now

BY ALICE PARK

HIGH CHOLESTEROL. SOARING blood pressure. A fatty liver. Dangerously elevated insulin levels. Even a first-year medical student could recognize the signs of a middle-aged patient struggling with weight problems and diabetes and probably heading for a heart attack.

And in most cases, that med student would be right. But increasingly, the same deadly mix of problems is appearing in a startlingly younger population: teens and adolescents barely through their second decade of life. While the obesity epidemic is starting to show signs of waning, doctors are bracing for the more lasting legacy it leaves behind—a cohort of kids who are getting sick earlier or, at the very least, are a whole lot likelier to develop serious problems later. “We are seeing conditions that we as pediatricians are not used to seeing in children,” says Dr. Seema Kumar of the Mayo Clinic in Rochester, Minn. “And we are seeing these a lot more.”

The comparative novelty of such early-onset diseases makes them particularly tricky to treat, since extensive studies on the long-term consequences of childhood obesity just don't exist yet. But doctors know enough from work on adults to be worried. Overweight people of any age are at risk of not only better-known ills like cardiac disease but also arthritis, joint damage and sleep apnea. Adults who were overweight as children have nearly twice the risk of dying from any cause in their 70s than are adults who were of normal weight as youngsters. Early evidence also suggests that heavier children are even 35%

more likely to develop cancer in their later years. “If you are a fat kid, you know you're in trouble,” says Dr. Robert Lustig, a pediatrician at the University of California, San Francisco, “and you know you need to do something about it now and not later.”

Of all the ills overweight kids risk (*see chart*), the two that may be the most complex—and thus earn a lot of new research attention—concern breakdowns in the function of the liver and pancreas. Mess with these organs, and you mess with some very fundamental metabolic systems that govern how well the body recruits and uses energy—a systemwide disruption that causes systemwide harm.

To understand the damage that obesity can do, investigators first have to understand the very dynamics of fat, and that knowledge has been slow in coming. The accepted wisdom had long been that we're all born with a fixed number of fat cells, and gaining or losing weight is simply a matter of filling or emptying them. But things are more complicated than that. As children de-

velop, they continue to add fat cells to their body—at least until a certain age. Scientists don't yet know if kids who eat more food accumulate more cells, but studies in the 1960s pointed in that direction. However many fat cells you have, it becomes increasingly hard, as that fat bank grows, to pare it down, even in adulthood.

And far from being inert, excess fat, researchers now know, is actually an active participant in the body's biological ballet—particularly if it's visceral fat, which can surround and even suffuse organs like the liver. Relatively shallow subcutaneous fat, which sits just under the skin, imposes a weight burden on the body but remains biologically dormant—more a repository for energy than anything else. Visceral-fat cells can secrete hormones and cytokines that help control inflammation and guide energy use by all the body's other cells. Normally this regulation of cellular fueling is maintained by a well-balanced relay of metabolic signals. As food calories are absorbed, the pancreas secretes insulin, which prompts the liver to convert sugars into fat. Fat cells then release leptin, a hormone that puts the brakes on eating. Leptin does this by passing along the message that the body is satisfied with the deposit of calories it has received.

Overloading the body with too many calories and keeping insulin levels high short-circuits this loop and can lead to insulin resistance and Type 2 diabetes, in which organs no longer respond to changing insulin levels. The result: a brain and body that are constantly hungry and in need of more food. Disrupting the insulin threshold usually takes

When Diet and Exercise Aren't Enough

Gastric bypass Surgeons staple off a walnut-size part of the stomach and connect it directly to the intestines

Adult medication Some 1.2 million U.S. kids take medication for obesity-related diseases like diabetes and sleep apnea, which are more common in adults

Knee surgery Carrying extra weight throughout childhood can damage hip and knee joints during adolescence

decades—which explains why this form of diabetes was generally more common in adults over age 30 and why the more genetically driven Type 1 diabetes was more prevalent among children. Before 1994, only about 5% of school-age children with a diabetes diagnosis had Type 2, but today anywhere from 30% to 40% of diabetic kids are told they have Type 2. And use of insulin-controlling medications to treat the disease in children rose 150% from 2001 to 2007.

Even more alarming to doctors are the changes that excess weight can wreak on the liver. It's this organ, after all, that orchestrates the breakdown and distribution of fats and sugars from the diet. When too much of either comes in, the liver starts to keep some of the excess for itself, converting sugars from soft drinks and the ubiquitous high-fructose corn syrup into fat that remains within its tissues.

Many overweight children already show abnormal levels of liver enzymes, and fully one-third suffer from fatty liver, a condition in which the organ becomes streaked with fat. "I worry about the outcome of these children 10 to 20 years from now," says Dr. Miriam Vos, a pediatrician and liver expert at Emory University. "In adults, we know that 3% to 5% of those with fatty-liver disease will progress on to cirrhosis or to an advanced stage where you might need a liver transplant." While not all cases reach such a dangerous state, Vos

notes that in about 23% of children with fatty-liver disease, excess fat can lead to inflammation and scar tissue in the organ—the first signs of trouble.

During the early stages of these liver changes, however, there is hope. Vos' work shows that just as fat can be recruited into the liver, it can also be coaxed out, as long as the child eats properly and stays active enough to keep calorie input in line with what's burned off. Kumar says the key to reversing liver abnormalities—not to mention all the additional burdens excess fat places on the heart, bones and other organs—is to detect signs of weight gain in kids early. "We don't want to get to the point where children are so overweight, they have trouble moving," she says. "If that happens, we've lost the battle." As any parent of an overweight child knows, in the war on obesity, every battle counts. ■

'If you are a fat kid, you know you're in trouble, and you need to do something about it now.'

—DR. ROBERT LUSTIG, UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Extreme Measures

Reducing Obesity by Rebuilding the Stomach

ABOUT 32% OF U.S. CHILDREN are overweight or obese, and about 1 out of 10 of those is considered morbidly obese, or 150 lb. to 250 lb. over a healthy weight. For those kids, dieting and exercise are probably not enough, so more and more are relying on the extreme step of surgery.

Bariatric surgeries—the most popular are gastric bypass and gastric banding—give obese kids a better chance of reducing their weight to something approaching normal, not to mention help them avoid some of the long-term health consequences of obesity. Less than 1% of the bariatric operations performed in the U.S. are done on children, but that small number more than tripled from 2000 to 2003. Still, they're not procedures doctors or patients come to casually—nor should they.

In banding surgery, a removable, adjustable belt is cinched around the stomach, reducing it to a fraction of its original capacity, which helps the patient eat less before feeling full. In the case of bypass, which is irreversible, most of the stomach is stapled closed and food is rerouted from the

small portion that's left to the intestines.

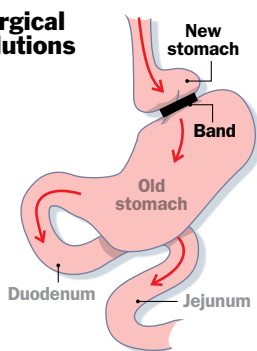
No extensive controlled studies of children exist to document whether bypass or banding is more effective and how great the benefits are. The first comprehensive trial, involving 160 children at five centers who underwent

surgery and were followed for 10 years, will report initial results in 2009.

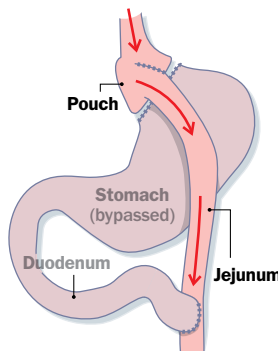
Until then, doctors can advise parents only on the basis of information from adults. From such data, they know that while 25% of patients can lower their risk of death from obesity-related ills, the procedures aren't always effective and do have risks. One in 200 to 300 patients dies from complications, and up to 20% of patients regain the weight in a few years.

Still, most adolescents can expect to lose about half their body weight in the first year after surgery. But keeping the pounds off requires changes in diet and exercise that the entire family must make. Says Dr. Thomas Inge, a pediatric surgeon at Cincinnati Children's Hospital: "It is a rescue operation in teens." —A.P.

Surgical solutions



LAP-BAND
An adjustable band sections off part of the stomach, reducing it to a fraction of its original capacity



GASTRIC BYPASS
The stomach is stapled shut, and food is redirected through a small pouch and then into the intestines

3%

Percentage of American children who are now by diagnosis morbidly obese, which is defined as being 150 lb. to 250 lb. over the ideal weight for their height and age

Watching What They Eat

From sugary cereals to fruity late-night snacks, a day in the dietary lives of three American teens

BY JEREMY CAPLAN

THE U.S. IS A NATION OF DIETARY extremes: even as a third of American teens are overweight, more than a million others suffer from undereating disorders. But sandwiched between those who eat far too much and those who voluntarily eat too little are millions of American teens in the moderate middle. Because their eating habits are varied and so difficult to study, it's easy to lose track of what's on their menus—but it's worth trying to find out. In a few years, those teens will be making food decisions not just for themselves but also for their own kids.

To get a snapshot of the choices they're making now, TIME found three teens willing to let us glimpse a day in their lives, then reported back to Marion Nestle, professor of nutrition at New York University and author of *What to Eat*, for her opinion. There are worrisome signs in what we saw, but hopeful ones too. Teens, clearly, are aware of the epidemic of inactivity and excess calories threatening their generation and—now and then, at least—

are trying to fight back.

For Jasmine Ledezma, 13, eating is often about speed. “There are days when I’m superhealthy,” says the resident of Austin, Texas, “but then there are days when I’m in such a rush.” When we caught up with her, Ledezma had her usual Lucky Charms for breakfast but barely touched the chicken-nugget lunch on her cafeteria tray before hustling off to recess. She and her family later ate a quick dinner at Burger King, which Ledezma says was a special treat.

Unlike Ledezma, Jacob Goddard, 13, has a diet few urban teens would recognize. A typical meal at his family’s Montana ranch includes beef carved fresh from local cattle, served with homemade bread and garden-grown vegetables. “Our beef tastes better than what you get at the store,” God-

dard says proudly, “because it’s not full of antibiotics and it’s fed grass, not corn.” We watched the homeschooled Goddard as he worked off calories wrestling calves on branding day.

Nicholas Richards, 14, started his day with a bowl of cereal and lunched on a bagel. Later the Californian stopped at 7-Eleven for another favorite, Gatorade. Richards likes helping in the kitchen, so he made himself a ham-sandwich snack that afternoon and tossed the salad his family would have with pork loin for dinner.

Nestle, who’s seen it all when it comes to American eating, was not appalled by any of this but wasn’t satisfied either. “I would look for ways to introduce more fruits, whole grains and veggies into these diets,” she says. That’s not a suggestion adults always follow, never mind kids, but Nestle says parents should take the lead for all teens. She suggests they tweak their kids’ diets by encouraging them to add fruit to their cereal, carrot sticks to their snacks and lettuce and tomatoes to their sandwiches. ■

‘I would look for little ways to introduce more fruits, whole grains and veggies into these diets.’

—MARION NESTLE, PROFESSOR OF NUTRITION AT NEW YORK UNIVERSITY

Jasmine Ledezma, 13

AUSTIN, TEXAS

A Day in Jasmine's Life

7:00 a.m. Wakes up and pours a bowl of **Lucky Charms** cereal with whole milk

9:00 a.m. Plays kickball in physical-education class at school

11:45 a.m. Eats a few chicken nuggets but barely touches her steamed broccoli, carton of 1% chocolate milk or orange

3:30 p.m. Snacks on spicy chicken wings while her grandmother eats pork tamales

4:00 p.m. Watches her favorite cartoons on the living-room couch

7:00 p.m. Bikes to the playground

8:00 p.m. Has dinner at **Burger King**: a burger, fries and an iced mocha

10:30 p.m. Bedtime

The Nutrition Expert Says:

"She didn't have much to eat during the school day," says Nestle. "I wonder if that makes it hard for her to study." As for dinner, Nestle says fast-food fare like this tends to be high in saturated fat, calories, salt and sugar, and often doesn't include enough vegetables or whole grains. "You can't judge anyone after a day," she says, "but this is a typical American meal."

Jacob Goddard, 13

BRIDGER, MONT.

A Day in Jacob's Life

4:30 a.m. Wakes up

5:00 a.m. Gets dressed and prepares for a day on the ranch

9:00 a.m. After riding his horse, begins roping cattle for branding

9:15 a.m. Snacks on a doughnut

10:00 a.m. Drinks half a can of **Mountain Dew** while gathering and branding calves

11:15 a.m. Rides a bucking dummy, which simulates the lurching of a horse or rodeo bull

11:30 a.m. Eats lunch: shredded barbecued beef on a bun, mashed potatoes, watermelon and water

12:00 p.m. Break time. Plays **Guitar Hero**, a video game, and has a peanut butter cookie, then a bottle of water

12:30 p.m. Eats another cookie and drinks some more water

1:00 p.m. Back at home, eats a slice of watermelon

2:15 p.m. Has another cookie

3:15 p.m. Snacks on sunflower seeds

4:15 p.m. Has some watermelon and deviled eggs

4:45 p.m. An early dinner begins with a slice of turkey, then two toasted open-faced turkey-and-cheddar-cheese sandwiches with mayonnaise on bread Jacob's mom made. A sliced apple on the side.

Normally Jacob eats at 8 p.m. or 9 p.m., once it's too dark for his family to work outside

9:30 p.m. Bedtime

The Nutrition Expert Says:

"Growing boys need a lot of food," says Nestle. "They eat everything in the house. When Jacob is working hard, he's expending a huge amount of energy in physical activity. He didn't have breakfast, but I'm not one of those people who says it's the most important meal. He has some protein later on. A few carrots thrown in at some point might be nice."

Visit time.com/dailyfood to hear Jacob Goddard narrate a slide show about a day in his life

Nicholas Richards, 14

MILL VALLEY, CALIF.

A Day in Nicholas' Life

7:15 a.m. Wakes up

7:30 a.m. Has breakfast: a bowl of **Cinnamon Toast Crunch** cereal with 2% milk

8:00 a.m. Bikes to school, which begins at 8:45

12:00 p.m. Has lunch: a plain bagel with light cream cheese

3:30 p.m. After school, bikes home, stopping at 7-Eleven for a 32-oz. **Gatorade** and some chewy candy

4:00 p.m. Skateboards at home, then has a snack of two homemade ham sandwiches with lettuce, tomato and mustard on

buttermilk bread

5:00 p.m. Has some strawberries and a pear while at the computer doing science research for homework

6:15 p.m. Helps mom prepare dinner by making salad

6:30 p.m. Eats dinner: pork

loin, salad and corn muffins

7:00 p.m. Walks the dog after dinner, then more homework

8:30 p.m. A little TV

9:00 p.m. Has strawberries and a piece of French toast with a glass of 2% milk

9:30 p.m. Reads; goes to bed

The Nutrition Expert Says:

"Sugary cereals are all pretty much alike, with too much sugar and very little fiber," says Nestle. "How about having some fruit with cereal? Or better yet, how about oatmeal, which has less sodium and is less processed?" Nestle says the dinner looks good. "At least there are a variety of foods." As for the late snack, "That sounds like a good breakfast," Nestle says, "but if you're going to have a late-night snack, that's not bad. It's even got some fruit in it. Yay!"

Weighty Issues

Life can be hard for obese kids—and just as hard for their parents. Scolding and diets and tough love usually fail, so where do you turn? There are ways to improve an overweight child's menu, health and self-esteem—but the whole household needs to play a role

BY LORI OLIWENSTEIN

IT'S NOT EASY WATCHING YOUR own history repeat itself. At first, Jo—a 49-year-old mother of two from Georgia—thought she would be spared having to witness her children relive her long struggle with obesity. Indeed, when Jo's second child Renee was born 12 weeks early, weighing just 2 lb. 11 oz. (1.2 kg), obesity was the last thing on Jo's mind.

Today, things are different. Now 11 years old, Renee (a pseudonym, as is Jo) weighs 126 lb. (57 kg) and stands 4 ft. 5 in. (135 cm) tall—and Jo worries about obesity all the time. She worries about the health consequences of Renee's weighing too much, the ones she has experienced throughout her own life. She worries about her daughter's being teased or ostracized on account of her weight, just as Jo was teased and ostracized as a child. And she worries that she's not doing enough—or that she's doing too much—to change things, as she tries to avoid the mistakes she feels her parents made during her childhood. Most of all, Jo worries about losing sight of Renee amid all her own concerns surrounding her daughter's weight. "I feel like she's experiencing my weight issues all over again, living my obsession with food," Jo says. "I feel like I'm watching a train wreck, and I can't do anything about it."

She's not alone. As more and more kids pack on more and more pounds—climbing inexorably from a healthy weight to excess weight to full-blown obesity—parents find themselves grappling with questions they never had to deal with when the only weight problems they had to think about were their own. How do you effectively control another person's eating behavior? How

do you motivate someone—especially a young, impulsive, pleasure-driven someone—to make smart food choices, to get up off the couch, to turn off the television? And how do you accomplish that without making that young person feel deprived, coerced or—worse yet—judged and found wanting? Perhaps most vexing for parents who are themselves veterans of weight-loss wars, how do you credibly persuade a child to take hold of an issue that you may never have been able to control yourself?

The stickiness of the childhood-obesity problem begins with a simple truth: most of us just don't think our kids are fat. It's right there in the stats; one study found that only 36% of parents of overweight or obese children ages 2 to 17 identified them as such. An Australian group found that only 11% of parents of overweight 5- and 6-year-olds and 37% of parents of overweight 10-to-12-year-olds were aware that their children had a weight problem. And a 2005 British study found that fewer than 2% of parents of overweight kids from ages 3 to 5—and just over 17% of parents of obese kids of the same age range—saw things for what they were.

Part of this blindness may come from parents' not really believing that kids—especially very young kids, swaddled in no-longer-quite-so-delicious layers of baby fat—can actually be obese. Part of it may have to do with our fears about using such pejorative terms about our children, especially if they were once hurled at us by playground bullies. And part of it may be that, in a society in which obesity is omnipresent, a slightly hefty child looks pretty normal, relatively speaking, says psychologist Susan Car-

QUESTION

How can parents and pediatricians tell if a child has a weight problem, and what should they do about it?

First, be honest. In one study, just 36% of parents of overweight children recognized that fact. Second, don't blame. This is a health issue, so treat it that way.

nell, the lead researcher for the British study on parental perceptions, who is now at the New York Obesity Research Center at St. Luke's-Roosevelt Hospital. "The parents are likely to be overweight. The clinician who sees the child could well be overweight. It's a sensitive issue from all sides."

All of which might begin to explain why so many physicians report finding it difficult to talk to parents about their child's weight. According to a 2005

study, only 12% of pediatricians admit to feeling effective about a child's weight problem during office visits, even if that problem is an obvious one. For many practitioners, there's a fear that not only are the parents unaware of the situation but also they will be angered or upset by the information. More worrisome is how the news will make the child feel, particularly during the emotional storms and ego swings of adolescence.

The problem is, with such a huge and growing population of overweight kids, sparing a family's feelings may be a luxury we can no longer afford. That's why obesity experts believe that not only does the message have to be delivered but it also has to be delivered in a way that is sure to get through. In 2007 a group of pediatric-obesity experts convened by the American Medical Association (AMA) and co-funded by the Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention issued a report on childhood obesity, which included a strong argument that the language of weight gain had to change. A decade ago, kids whose body mass index (BMI) tracked at or above the 85th percentile for their age were dubbed "at risk of overweight." The new recommendations urge doctors to cut to the chase and simply call such children overweight. Similarly, a child with a BMI above the 95th percentile—who would previously have been labeled overweight—would now officially be called obese.

The idea behind the language discussion in the recommendations, says Dr. Samantha Rosman, a fellow in pediatric emergency medicine at Boston Medical Center and a trustee of the AMA, was to make sure parents hear what their kids' doctors are telling them. "The stronger wording was a call to action," Rosman says. "This is a really important health problem that has the potential to be devastating to our society if we don't do something about it."

Doing something about it, of course, is going to take more than a vocabulary lesson. But the time is now. According to the HHS, 7 out of 10 overweight adolescents will become overweight adults. If the adolescent has an overweight parent, that figure rises to 8 out of 10. Parents have heard the recommendations a million times: Children should be eating

five or more servings of fruits and veggies daily. They should be eating breakfast. They should be getting at least one hour of moderate physical activity each day. They should be spending fewer than two hours in front of a TV, video or computer screen each day.

Or, rather, the entire family should be doing these things. In fact, if you were to boil down the myriad recommendations for preventing and dealing with childhood obesity to a single word, you would come up with this: modeling. We need to think about the messages our behaviors send to our kids, the experts insist. If your daily diet revolves around bologna, potato chips and Ben & Jerry's Chunky Monkey ice cream eaten straight out of the carton, guess what Junior's going to start craving? And if you can name every celebrity from the past five seasons of *Dancing with the Stars*, chances are your kid can too.

Of course, whether a child can—or, rather, should—diet is a more complex question. Most clinicians don't even like to use the word; instead, they talk about "lifestyle changes" and "weight-management protocols." Says nutritionist and family therapist Ellyn Satter of Madison, Wis., considered by many a pioneer in the field of child feeding: "Even the most conventional people will say, 'Don't put kids on diets,' but then they'll go on to talk about how you should reduce their sugar or fat intake. There's an awful lot of dieting in disguise."

Does dieting even work for kids? Many clinicians say no. "We actually find that children who diet gain more weight than their peers," says pediatrician Dr. Alison Field from Children's Hospital Boston, who has been following the weight-control behaviors of almost 17,000 kids. It's not just that kids who diet tend to gain back the weight later; it's that

dieting brings up all sorts of unbidden psychological responses that sabotage the process. After all, self-deprivation is one thing; being told by someone else that you can't eat—even when you feel hungry—is another.

"Renee whines to me about being hungry all the time," says Jo. "She knows I'm a softie and might just let her have another snack. I've done nothing but diet all my life, and I know how it feels." That feeling of deprivation, according to Satter, is a recipe for disaster. "You end up putting a lot of pressure on food," she says, "and the kids end up losing track of how hungry or full they are. They get into a habit of eating while the eating is good, instead of simply eating until they are full."

There's evidence to suggest that she's right. One study of preschoolers, for instance, found a link between overeating and overweight children—and an even stronger link between overeating and kids whose parents regularly control their portions. And so, Satter says, we need to start making the process of eating less fraught by letting kids decide whether they are hungry and how much to eat of the foods we provide at the times and in the places we provide it.

Carnell, who has also looked at the eating behaviors of children whose food choices are restricted, says the key is the way in which you seek to limit a child's food intake. "If you have a house full of goodies and say, 'Johnny, you can't have this,' then that could be damaging," she says. "But if the way you restrict your child is just to provide a healthy home environment where you allow them a little bit of choice—apples or grapes for dessert, for instance—then you're giving children a chance to decide for themselves while also helping them develop healthy habits."

QUESTION

How can parents teach their children to be in control of their own eating habits?

Kids should have choices, but you set the limits. Fruit for dessert? Good idea. But let your child pick which type. Experiment with portions of healthy foods; it's good for kids to learn to stop eating after feeling full.

QUESTION

How does a parent deal with an overweight child's self-esteem issues?

Kids tease, and our culture celebrates thinness—two things that can hit a child hard. Parents can combat both by focusing less on the child's weight and more on making healthy lifestyle choices.

For experts focusing on the best ways to control weight or increase activity, the job pretty much ends here. Parents, however, have it harder; they have to think about the whole child. "If dealing with my daughter's weight issues was as simple as following a few nutritional and exercise guidelines, she wouldn't be overweight," says a Southern California mom. "But the whole thing is so much bigger and messier than that. I don't just care about what she weighs; I care about her growing up healthy and happy and feeling good about herself. And that is where it gets difficult."

Dr. Beth Marcus, a family physician at Verdugo Hills Hospital in Glendale, Calif., knows all about these difficulties. "I don't think there's any way in our culture to have kids feeling 100% good about themselves when you're telling them they need to lose weight," she admits.

If that has always been the case, it's getting to be more so all the time. When billboards, magazines and TV shows are filled with Photoshopped, Pilates-toned, silicone-enhanced models, it's hard to maintain any kind of perspective on what a real person is supposed to look like. And while that's long been true for girls, it's increasingly true for boys, who now must measure themselves against waxed and buff athletes and models who are steadily raising the male-attractiveness bar higher and higher.

Then too there are the messages kids are bombarded with from well-meaning strangers ("Oh, he's a chunky one, isn't he?") and critical relatives ("Ah, she's going to grow up to be just like fat Aunt Sue!"). Schoolmates—at least those not yet claimed by the obesity epidemic themselves—may soon join in the chorus. All of this can hit a child's still developing ego hard. On the whole,

overweight children are more likely than healthy-weight kids to be anxious, unhappy and depressed. The science is mixed on which kids suffer the most. One study finds that self-esteem takes a bigger hit in black kids than in white kids; another sees the problem as being worse for Hispanic children. One study finds significantly higher rates of depression in overweight girls; another finds overweight boys taking a huge self-

'Kids get into a habit of eating while the eating is good, instead of eating until they are full.'

—ELLYN SATTER, NUTRITIONIST AND FAMILY THERAPIST

esteem hit when teased by their peers. No matter who feels the most pain, however, they're all getting hurt.

What parents, who suffer all this pain by proxy, must realize is that they are never going to change the hard realities of schoolyard taunts and a thin-obsessed culture. What they must do instead is teach their kids to value those things less—and value other things more. Kelly Lowry, a postdoctoral fellow in the de-

partment of child and adolescent psychiatry at Children's Memorial Hospital in Chicago, says the key lies in accentuating the positive. "Parents need to emphasize health behaviors, not the numbers on a scale," she says.

Those behaviors should be positive. Maybe your son tends to scarf his food; rather than criticize him, get him to scarf fruits and vegetables instead. Maybe your daughter spends too much time on the couch; rather than scold her for it, applaud when she gets some physical activity. The reward of your approval may be enough to encourage her to seek more.

In addition, any changes made in terms of the kinds of foods served or the time allotted for TV viewing should be made "at the family-wide level," Lowry says. "This will prevent the overweight child from feeling targeted." And new self-esteem standards should be applied to the whole household too. If you're walking around commenting on how fat your butt looks in your new jeans, not only is your daughter going to hear you, but she may also begin making generalizations about how she looks.

Finally, you can try to lighten the guilt load a bit. "There's a lot of parent-blaming that goes on," says the New York Obesity Research Center's Carnell, part of a British team trying to tease out just how genetics affect appetite, "and I think that's probably unfair. Parents are a powerful influence, but there are other influences as well—like genes." Recognizing that at least some cards in the obesity hand are dealt even before a child is born can be an important first step for parents and kids accustomed to thinking their weight woes are all their own fault. Recognizing that there are a lot of cards they can still play is the next—even more important—one. ■

QUESTION

Why is it so important for parents to set a good dietary example for their kids?

Any household can benefit from good eating habits. If you're digging into cookies, so will your kids. And overweight children in particular feel singled out if they're denied treats that everyone else gets.

Fit at Any Size

Trimmer may still be healthier, but staying active is replacing weight as the true standard of beauty

BY KATHLEEN KINGSBURY

NIKKI BLONSKY IS EXACTLY the role model most parents dream of for their kids. She's happy, she's successful, she's overcome obstacles—no wonder her young fans adore her. She's also overweight—by some measures very overweight—in a culture that fetishizes thin.

There was a time when that alone would have been enough to keep the 19-year-old star of the movie *Hairspray* out of the fan magazines and off the posters decorating grade-schoolers' bedroom walls. But that time may at last be ending. The national obesity epidemic did not happen in a vacuum. It occurred in an era in which fashion models have got thinner and thinner, the tolerance for even a little flab has grown lower and lower, and the rates of eating disorders like anorexia have climbed higher and higher. In that environment, children and adolescents trying to develop a healthy—and realistic—body image have almost no chance at all.

Now they might. Plus-size celebs like Blonsky—or, for that matter, her *Hairspray* co-stars John Travolta (albeit in a latex fat suit) and Queen Latifah—are increasingly spreading the message that svelte is not the last word in happy. Fit means happy too; so does staying active; so does loving your body no matter its shape. The key is to get that body healthy and keep it that way. The numbers on the scale—pediatricians, nutritionists and psychologists now argue—should start to come second to physical fitness as a gauge for health. After all, says Kelly Brownell, director of Yale University's

Rudd Center for Food Policy & Obesity: "If your child experiences shortness of breath walking upstairs, it's problematic whether he's fat or skinny."

More important, at least when it comes to selling that idea to kids, are the other dividends good health pays. "Staying fit gives me the energy to make movies," Blonsky says. "In school, I always made sure to try new sports and was a quick runner. It made me strong against the people trying to hold me back." Not all doctors agree that it's possible to be overweight and fit—or at least, as fit as kids should be—and in that lies a debate. But everyone agrees that the shape so many kids find themselves in today—obese, sedentary and manifestly unfit—is a dangerous one. Changing things even a little makes a lot of children not only happier but a great deal healthier.

Behind the push to get kids fit is the growing recognition that, in many cases, there's just no fighting the natural rhythms or shape of a child's body. Throughout childhood and adolescence, hormones may cause weight to fluctuate dramatically. Plus, nature determines whether we're all going to be stocky, a beanpole or something in between before we're even born. "Most body weights and types for children and adults are genetically determined," says Glenn Gaesser, a professor of exercise physiology at the University of Virginia. "There are a lot of kids who are just naturally heavier than their peers but may be even healthier."

Milwaukee Brewers first baseman Prince Fielder is a good example. He has athletic talents very few people

have, but the professional slugger has weighed in at more than 200 lb. since age 12. Scouts frequently labeled the teenage Fielder too heavy to have big-league potential. But, like his father Cecil, another generously proportioned major leaguer, he's proved them all wrong. Now 24, Prince plays with about 270 lb. packed on to his 5-ft. 11-in. frame, but he also led the National League with 50 home runs last year and earned a start at first base in the 2007 All-Star Game. "Prince knows his body type," Brewers manager Ned Yost told reporters in April. "He's on that [stationary] bike and on that treadmill and on that elliptical trainer, making sure he does everything he can to maintain his fitness."

A similar refocusing on fitness over fashion pages can pay other dividends for kids. Difficult as it is to hear that your child is overweight, placing a child on an enforced diet may do more long-term harm than good. Doctors have yet to find a weight-loss program that has proved universally effective and safe, especially for children. More often, dieters will lose weight in the short run only to regain it. Research suggests that the yo-yo cycle can lead to loss in bone density and lean muscle mass, organs and bones, jeopardizing overall health. In fact, at least 15 major studies have shown higher death rates for adults after yo-yo weight cycling. "Research consistently links repeat dieting to increased weights instead of lower ones," says Frances Berg, a nutritionist and author of the book *Underage and Overweight*. Meanwhile, Berg adds, "Children can suffer nutrient deficien-

cies, immune suppression and dangerous stress levels.”

It's as a result of that stress that the problem of eating disorders can arise. As many as 10 million women and 1 million men in the U.S. suffer from an eating disorder, according to the National Eating Disorder Association (NEDA). Nearly 90% of those afflicted are under the age of 20, and females between the ages of 15 and 24 are 12 times as likely to die from anorexia as any one other cause of death. A 2005 study published in the journal *Pediatrics* determined that of 10,000 teens surveyed, less than half of the males and about a third of the females were happy with their bodies. “Parents face a complicated situation,” Brownell says. “They have to promote healthy weight, but they also don't want to change children into diet-crazed fanatics.”

Yet if parents are confused, so are physicians and medical researchers. There's little doubt that being obese puts inactive youngsters at a higher risk for several health conditions, including Type 2 diabetes, high blood pressure and heart disease. But almost no studies have been done evaluating the pros and cons of kids being fat yet active. Plus, reports on adults in similar situations have conflicted. Since the 1970s, doctors at the nonprofit Cooper Institute in Dallas have gathered data from more than 100,000 patients who have been weighed, measured and made to run on treadmills while their vital signs are monitored. “We've long concluded that people who are overweight and active can be healthier than those who are thin but sedentary,” says Dr. Kenneth Cooper, the institute's director. “There's no reason to believe that conclusion doesn't apply to our children too.”

But can overweight kids stay healthy with exercise alone as they age? The jury's still out. For adults, Cooper's theory has recently been challenged. A Harvard-affiliated study released

in April showed that being active can lower but does not eliminate heart risks faced by heavy women. Assessing nearly 39,000 middle-aged women over a period of 11 years, researchers determined that the odds for developing heart disease were 54% higher in overweight active women and 87% higher in obese active women compared with normal-weight active women. Women who were normal weight but inactive faced only an 8% increase in risk. “If you're overweight or obese, you can't really get back to that lower risk entirely with physical activity alone,” says lead author Dr. Amy Weinstein of Boston's Beth Israel Deaconess Medical Center.

Doctors do know that obese kids nearly always bloom into obese adults. CDC epidemiologist David Freedman evaluated 30-plus years of data and found that of the children who technically qualified as obese, two-thirds grew up to be very obese adults. “Even down to the youngest ages that I've worked with, age 5, overweight kids have maybe a tenfold increased risk of becoming obese adults,” Freedman says.

A report, published last year in the *New England Journal of Medicine*, went further, comparing the medical records of 276,835 Danish citizens born between 1930 and 1976. In that data, scientists found a direct and linear correlation between a higher childhood weight and a greater chance of future heart disease. “Our study shows that even a few excess pounds can damage future health,” says co-author Dr. Jennifer Baker of the Center for Health and Society at the Institute of Preventive Medicine in Copenhagen.

Amid all this back-and-forth, however, there is one point that everyone agrees on: exercise definitely improves a child's overall sense of well-being. Cooper, who invented aerobics a generation ago, has been testing the physical fitness of schoolchildren over the past decade and has consistently found that active kids do better academical-

ly, have fewer disciplinary issues and maintain better medical histories. “A child doesn't need to be a star athlete or a long-distance runner,” Cooper says. “Even taking the stairs instead of an elevator has positive effects.”

Parents leading by example will do the most to persuade kids to stop obsessing over weight and start getting fit. “Exercise has to stop being a daily chore,” says Dana Schuster, president of the Association for Size Diversity and Health. “Make it about playing and fun again.”

Actress KayCee Stroh, a by no means slender star of Disney's hit *High School Musical*, knows all about that. After gaining nearly 50 lb. following knee surgery, she could not lose the weight with exercise alone. So she turned to a longtime love, dancing. “Riding the elliptical just couldn't motivate me enough,” she says. “Dancing was a way to trick myself into being active.” Shortly after, Stroh answered a casting call for *High School Musical*, scoring her part over dozens of other actors. “I am not a size 2, never will be,” she says. “I can just be me, and that confidence lets me stand out to directors.”

For generations of chubby kids getting teased in school hallways, standing out was something very much to be avoided—at least, if it was because of their size. The idea that size can be not only a liability but also an asset is a true paradigm shift. Says Jennifer Berger, executive director of About Face, a San Francisco-based nonprofit that promotes size acceptance: “The word *health* has been made to mean skinny, and that has to change.” That's especially so since the word *happy* was too often defined the same way. Blonsky herself admits middle-school classmates' heckling made her dislike her figure. Until, that is, she realized, “I could always keep up with the thin girls, anyway.” Actually, she seems to have passed them by. —WITH REPORTING BY TIFFANY SHARPLES/NEW YORK ■

90%

Percentage of Americans with eating disorders who are younger than age 20. Females between the ages of 15 and 24 are 12 times as likely to die from anorexia as from any other cause of death

10 Tips To Get Your Kids Moving

Get over the notion of exercise as a chore. Here's how to make activity a fun part of even the most reluctant kid's day

BY DAVID BJERKLIE

EVERY PARENT WANTS TO DO the right thing. A recent survey found that 80% of parents of kids ages 6 to 11 feel they are responsible for their child's weight and physical fitness—and the fact is, in many ways they are. So why the disconnect between intentions and results? “This is a classic example in which parents need to literally walk the walk,” says Dr. David Katz, of Yale University's School of Public Health. “We know that kids will be more active if their parents are more active.” The key, says Katz, is to get the entire family to be more imaginative about what *activity* means. Not everyone likes to play soccer or climb trees, and most kids won't sit still for an hour-long workout—or more likely, sitting still is exactly what they will do. But none of that is necessary. Katz has developed school programs based on short bursts of activity five or more times a day. The goal is not to follow a single regimen but to create your own.

1) Pull the Plug

The stranglehold that TV, video games and the Internet have on kids can seem unbreakable. But parents, who are used to laying down the law when it comes to drinking, drugs and smoking, need to be, well, parents. Set limits for screen time and make physical activity mandatory. Elevate fitness to a priority.

FACT: Kids spend nearly six hours daily glued to a screen

2) Walk This Way

There is no better way to begin any fitness program than by walking. You already do it, so just do more of it. No matter where kids live—in cities, suburbs or small towns—there are opportunities to walk. Find places to stride, like a mall, and stairs to climb, and get friends to join you.

FACT: Log 10,000 steps on a pedometer and you've covered nearly five miles

3) Stay Flexible

A regular routine can be a boon for discipline, but don't be too strict. Perfect attendance isn't the goal. Get kids to do their best to stay active on busy days, but also schedule longer activities for days when they have more time. Plan friends-and-family fitness dates.

TIP: Set modest goals and keep a record of successes

4) Game Your Play

Fitness is easier when it's fun, and you don't have to limit your-

self to traditional sports. Active video games like *Dance Dance Revolution* or many of those available on Wii are good options. But kids can also improvise games—balloon volleyball in the rec room, beach-ball tag in the backyard. The point is to move.

TIP: The CDC has a website that helps kids make up games at verbnow.com/game_generator

5) Make It a Contest

Challenge friends and family members to see who can do the most jumping jacks or push-ups, who can dribble a basketball the fastest or who can hop 100 yards on one leg. Start slow but build up, and be creative: use a pedometer to track steps and miles, and see who can be the first to “climb” Mount Everest and “walk” across your state.

FACT: The world nonstop hula hoop record is nearly four days

6) Mighty Milers

Running is a great way for kids to boost their confidence while getting fit. And running can be a great social experience too. Most towns have “fun runs” open to all ages. Think kids in big cities don't run? The New York Road Runners Foundation (NYRRF) has a program that involves 30,000 kids from 182 schools and community centers.

FACT: NYRRF plans to expand the program to all 50 states

7) Spin Your Wheels

Forget the car and locomote by

other means. Get kids rolling on bikes, scooters, Rollerblades or skateboards. Need a birthday idea? A new set of wheels can be the perfect way to lure kids off the couch.

FACT: Nearly 20 million bikes are sold yearly in the U.S.

8) You Know You Can Dance

Can the inhibition, crank up the music and shake, bounce and move it. Pick a style, fake it or make one up. And yes, air guitar counts. The beauty of dance, says Yale's Katz, is that it often appeals to kids who say no to conventional exercise.

FACT: Dancing 15 minutes a day can trim 10 pounds in a year

9) Take a Hike

Organize a weekend outing. You don't have to tackle the Appalachian Trail; simply find a nearby large park to explore or make it an urban hike. Plan a picnic and bring a ball or Frisbee.

FACT: There are nearly 4,000 state parks in the U.S.

10) Start Young

Get kids moving with games of tag or hide-and-seek. And for tinier tots? Easy, says Dr. Edward Laskowski, co-director of Sports Medicine at Mayo Clinic. Ask them to run like a gorilla, walk like a spider, hop like a bunny or stretch like a cat. Just try to get them to stop.

FACT: 14% of kids ages 2 to 5 are already overweight ■