

CHAPTER ONE

Childhood Obesity, Schools, and Society

Critical Question 1

Just how important is this issue of childhood obesity in our society?

THE ESSENTIAL TRUTHS

1.1. Childhood obesity is the number one public health problem of the twenty-first century.

1.2. In some children, there is a direct continuum from being overweight to becoming obese, and overweight children are at higher risk for becoming obese adults.

1.3. In your school, at least one out of four students is at an unhealthy weight.

1.4. Unhealthy weight of students has a major negative impact on their personal health and wellness.

1.5. Unhealthy weight impacts the academic achievement and emotional-social development of students.

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PRACTICAL GUIDES TO THE ESSENTIAL TRUTHS

1.1. Childhood obesity is the number one public health problem of the twenty-first century.

Some school children have medical problems that can be recognized by direct observation, such as eyeglasses, a body deformity, a bandaged ankle, facial characteristics of Down's syndrome, a cast on an arm—or excess weight. All provoke some degree of sympathy, but while you might ask a child with a cast, “What happened to you?” when you see the overweight child, you may think, “Why did you let that happen to your body? Where were your parents?” The reality is that being at an unhealthy weight is not simply a matter of self-neglect or self-control. It is much more complicated.

If there were obvious answers to why an increasing number of our children are becoming overweight, we would not be in the middle of an unhealthy weight epidemic. If there were obvious answers, parents and other caregivers would be able to intervene in the weight proliferation of our youth. If there were obvious answers, more than 61% of American adults would not have an overweight problem. If there were obvious answers, we would have corrected the overweight status of 2- to 5-year-olds—with 10% from this group being at an unhealthy weight and 16% of adolescents in the same predicament. These percentages will continue to increase as our nation gets fatter.

Locating, examining, and assessing the vast amount of instructional material in print and on the Web for practical use for school principals and teachers is an overwhelming job. Trying to then tease out the inaccurate materials may take someone with large amounts of time and medical and nutritional degrees. We have sifted through the many volumes to get to the essence of truth. With what we collected, selected, and designed, multiplied by our many years of experience in medical and educational practice and research as a physician and a principal, we have made the process more readily available to you and have identified what we believe will become known as “best practice” in this emerging field.

Lack of information about obesity is certainly not the problem, but with an overload of confusing and often conflicting information about nutrition, exercise, and lifestyle, however, reliable resources must be identified. Information is available both from credible and questionable sources. Bogus sources may be hard to identify, making it difficult to know what to trust, to follow, or to teach. With the correct materials, you must ultimately and directly address the weight problems of your students, and, perhaps, indirectly or directly address the weight problems of their teachers.

Exercise, for example, is a vital part of weight control, but information that claims rapid changes in muscle bulk and improvement in specific muscle groups by using a certain piece of exercise equipment should be considered suspect. Testimonials have no validity as proof of effectiveness in managing any aspect of being overweight or obese. Because we are all different, there is no best eating and exercise plan to lose weight. If the perfect approach existed, the national obesity crisis affecting more than 61% of adults and nearly 40% of children would either not exist or would come to an abrupt ending. School children are just as diverse as adults but are even less in control of their lives. The approach to the weight problem addressed during school must be based on science and broad enough in approach to protect students from becoming overweight and to help those in need of losing weight. With this focus, the overweight child is not isolated and the normal-weight child is reinforced.

Childhood and adolescent overweight and obesity are public health concerns of such magnitude that unhealthy weight is rapidly becoming the most prevalent nutrition problem of this age group in America and worldwide, according to William Dietz, MD, of the Centers for Disease Control (CDC). In fact, food-related diseases are the second leading cause of preventable death in the United States, and are readily poised to overtake the leading cause, cigarette smoking. William Dietz testified before the Committee on Health, Education, Labor, and Pensions Sub-committee on Public Health, U.S. Senate, that 60% of overweight children have at least one additional cardiovascular disease risk factor, and 25% have two or more heart-related risk factors (Dietz, Bland, Gortmaker, Molloy & Schmid, 2002). In a few words, the more weight gained, the more danger of developing medical complications. The causes of the childhood obesity epidemic and of weight problems among

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the entire population are beginning to be unraveled. Since the medical and environmental components are intertwined, the problem is both multiplex and difficult to treat.

Why is this happening to our children? The answer is complex and not yet fully understood. However, we do know there is a dynamic interaction between our brain and other body control mechanisms located in our muscles, stomach and intestinal tract, and organs such as the pancreas, liver, and even the fat cells. Hormones, enzymes, other body chemicals, and neurotransmitters play roles in trying to keep body fat content at a constant amount. Sometimes this control mechanism gets out of balance, and the body accumulates extra fat. There are both internal and external forces at play when this occurs. One force is our inherited makeup, that is, our body's potential to turn on our own latent obesity genes. Other components include family dynamics and social and environmental factors. Some of these factors are a constant, while others can, and usually do, change over time. As individual human beings, we are no better than our own unique family tree when it comes to inherited risks. Although the numbers vary from study to study, it is clear that when both parents are obese, almost 70% of their children have a high potential to become obese adolescents. If one parent is obese, 50% of their children have the same potential. This disease is so pervasive in our society that even if neither parent is obese, 9% of their children will potentially become obese adolescents. Children who are overweight have a higher probability of having overweight siblings. This family trait phenomenon is quite obvious to almost any observer. Anybody attending a family reunion of a non-family member has seen this phenomenon directly. Similarities in body shape as well as voice inflection, skin tone, and mannerisms are but a few characteristics that a family may share.

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For most of us, it is when genetics and an unhealthy lifestyle merge that weight gain begins. When the balance between incoming energy (what we eat) and outgoing energy (how active we are) gets out of phase, weight gain begins.

There are, however, the fortunate few who are genetically resistant to weight gain. Some of these people have the hardest time understanding obesity and may be the most critical toward overweight individuals. Skinny people are not better people, but they are luckier than those with a weight problem. Life functions such as pulse, blood pressure, breathing, sleeping patterns, bowel frequency, body weight, and even hunger are maintained as regularly as possible by the brain. Intricate and multileveled internal control mechanisms work as checks and balances to make the body harmony happen. This is known as homeostasis.

When our eating choices become less healthy and portions increase, we can lose some of our steady state mode. If at the same time we are not leading an active lifestyle, including structured physical activity, we will stop burning off excess fat and go into a fat storage, weight gain mode. The weight gain can be slow and progressive or seem to occur rapidly. With our body's tremendous capacity to store body fat, the problem can become a lifelong journey of gaining weight. Unfortunately, the overconsumption of calories and underutilization of calorie burning lead to excess energy being stored as body fat much more than muscle mass. Weight gain is usually a combination of fat and muscle, with fat predominating. Any lifestyle change that affects eating or activity patterns can potentially turn on a weight gain phase. As a result, we are witnessing and participating in the fattening of America, and we are putting our youngest generation at the greatest risk in history. A fact: we truly are both what we eat and how energetically we use our time, and we are quickly learning that poor eating habits and limited physical activity can play a direct role in the path to obesity.

1.2. In some children, there is a direct continuum from being overweight to becoming obese, and overweight children are at higher risk for becoming obese adults.

The difference between an overweight and an obese student is a matter of degree. In reality, obesity is a progression from normal to overweight, and, if initiated after the age of 6, and certainly during adolescence, it can lead to obesity in young adulthood that extends throughout life. The significant health and social

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consequences are a concern for both the developed and third world countries in what the World Health Organization calls a “global epidemic.” As poorer countries are introduced to modern Western ways, both weight gain and overweight are direct by-products from this change.

What will be required to break the cycle of obesity includes discipline, focus, and a willingness to change. It will require a redefinition and acceptance of what is healthy weight. The body shapes found in magazines and portrayed as normal in music, television, and movie celebrities present greatly distorted messages for children and adolescents. Most of us, as medical and education personnel, know that these body images are unrealistic, unhealthy, and misrepresentative of a reasonable weight. Instead, these represent a formula for failure, further encouraging unrealistic goals. Our youth, however, are greatly influenced by these images and the implied messages of related success. All educators strive for their students to succeed. We can play a role in educating about weight distortion, body image, healthy eating, and exercise, especially if such education will give the gift of a more self-confident student. The changes needed for our youth to be healthy must occur at the personal, communal, and societal levels. If changes are not made, then the next generation of children may not be able to afford the cost of their own health care due to the many medical complications of obesity. In fact, we strongly believe that without a major change in direction, the current generation of parents will most likely outlive their children—a frightening thought! If current projections continue and the epidemic is not stopped, related diabetes and heart disease will shorten children’s lives by 20 to 40 years.

Overweight and obesity can be a continuum; weight usually increases over time, punctuated by intermittent periods of weight stability, weight gain, and even transient weight loss. The more unhealthy weight gained, the greater danger of developing medical complications. During childhood, however, weight loss is not always the goal. For younger children, prevention of unhealthy weight gain may be enough. For an overweight child, becoming thinner may mean growing into his or her correct weight, which occurs as the child grows in height along with increasing the muscle mass for support. Keeping weight stable, or having a proportional weight gain and spreading it over a longer body frame,

occurs with children who are still in their height and growth phase. Before the ages of 4 to 6, a higher weight may not be a potential marker of a lifelong overweight problem. By preventing or correcting abnormal overweight in school-age children, we can slow down the obesity problem that is spreading through our youngest generation. Understand that this is a problem that is out of control, and if not harnessed, it will undermine the health improvements modern medicine has made to date.

1.3. In your school, at least one out of four students is at an unhealthy weight.

Unhealthy weight in our schoolchildren is moving beyond 27%. That is an incredibly large number from a medical standpoint, and there is every indication that it will increase unless we do something about it. The rise has been steady and alarming since the late 1960s and more aggressive in the last two decades. It has been estimated that with the trend toward larger portions of food, less exercise, and inattention to the growing problem, about the same number of children and adolescents who are not currently overweight are at risk for becoming overweight (Ogden, Flegal, Carroll, & Johnson, 2002).

Of these overweight elementary, middle, and high school students, as much as 70% to 80% have the potential to become overweight or obese adults. There are CDC- and American Pediatric Society-approved pediatric charts available to compare age and sex with height and weight to determine weight definitions for underweight, normal weight, overweight, and severely overweight. The word *obesity* is not currently used publicly when discussing school-age children. It is considered too derogatory and offensive. These charts use BMI (body mass index) as the representative value for defining these weight categories. BMI is a mathematical representation of relative body fat content. For most individuals, the more the body fat, the higher the BMI, whether child or adult. There are exceptions to this BMI rule for those individuals who are very

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short, very tall, or very muscular. The Asian population is considered overweight or obese at lower BMI numbers than other ethnic groups.

Being overweight (having an elevated BMI) is a marker for potential or already-existing health problems that are associated with carrying too much body fat. Body shape is a visual reminder of the social, physical, and psychological problems that may coexist. Being an overweight student may affect academic and behavioral performance at school. Having an overweight child in school should alert a principal to potential discrimination from classmates and even from classroom teachers.

The prevalence of obesity is increasing at an alarming rate with no end in sight. In children and adolescents, it has doubled in the last two decades, and 13% of 6- to 11-year-olds and 15.5% of 12- to 19-year-olds have BMI levels in the severely overweight category. In the school-age population, changes must be directed toward maintaining a healthy weight and maintaining muscle without sacrificing body growth and development. Regular eating times are mandatory, with minimal sweet snacks, drinks, and desserts. Exercise is important, but unfortunately, the limited daily activity of children at school would not meet the lowest of standards. In fact, in most schools, physical activity is barely more than walking in and out of the school. Due to limitations of space in this book, we recommend that readers view Web sites that list ages, heights, and weights. Please keep in mind these are reported in percentages and should not be considered averages.

In the face of this full-force epidemic, there needs to be exercise for all Americans. For activity to be effective, it must go beyond the present sedentary lifestyles of most children and adults. A goal must be to reach 60 minutes of high-energy activity every day, seven days a week. That is a real challenge for almost every man, woman, and child in this country, requiring a major lifestyle change and commitment. Our lives have taken us in a direction almost void of simple physical activity. Our parents and grandparents moved more, walked more, and even played more. While their play may not have been intense, it was regular and consistent. Kids played with other kids as a neighborhood activity, not waiting for organized leagues. Current social and physical environments have made this less likely to occur for safety, logistical, or family reasons (such as no parent home after school). Somewhere along the way toward a growing prosperity, we lost the fundamentals of playtime. Sadder still, we

have lost recess, physical education, and structured and unstructured physical activities in most of our nation's schools during the day. Furthermore, in the past decades, we have lost any real physical activity before and after school. Almost no one gets enough activity daily to avoid being caught in this weight gain trap. With no plan of action, weight gain and the associated medical problems are occurring at younger ages, and the medical problems are getting more complicated.

As a society, we are living longer than past generations, mostly due to modern antibiotics and sanitation advancements occurring in the last 60 years. The quality of that long life, though, is now being compromised by our wayward eating and activity habits as well as our emphasis on convenience and saving time. With this new culture emerging and the current weight epidemic expanding, we may be leaving a legacy of a shorter life span for future generations.

Economists have become keenly aware of the American obesity problem and many articles have been written from their perspective. At an event sponsored by the Economic Research Service, U.S. Department of Agriculture (2003), many interesting observations and conclusions were drawn about the American weight problem. What we, the authors, have learned about the economics of obesity has altered our approach to and understanding of the growing global epidemic. Economists in the government and private sector have emphasized the technological advances that have made work at home and in the office more sedentary and food prices lower through agricultural innovations. Physical activity has declined due to the shift to more sedentary occupations. Food intake has increased due to lower food prices, more availability, and 24-hour access. The explosion of women in the workforce has helped to create the demand for fast food chains, restaurants, convenience stores, and mass-produced foods that

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are now within easy travel distances for most Americans. The fast food industry has made buying a meal so convenient that there is a fast food location within a five-minute drive (or walk, in city living) for those residing in urban areas. Parents make food choices based on limited time and available income. A model presented at this meeting suggested that 40% of recent weight gain may be due to lower food prices and 60% due to decreased physical activity.

Though not intentionally, single women and mothers in the workplace have dramatically changed the eating patterns of both singles and families. A mother's employment may impact the likelihood of her child being overweight, and the number of hours a day a working mother is away from home predicts the probability of a child becoming overweight. The reduction in home time for mothers promotes children being fed less home-cooked meals and more fast food meals and convenience foods—most of which are high in fats and sugars. Eating fast food twice a week gives a person an 86% greater chance of becoming obese as compared with someone who eats fast food only once a week (Brownell & Horgen, 2004). Working mothers also appear to put much less emphasis on monitoring the exercise habits of their children.

Some Alarming Facts

Children of highly educated working mothers are significantly more likely to be overweight. African American and Hispanic children are significantly more likely to be overweight. This is further complicated by the level of the mother's education and other sociological factors beyond the scope of this book.

When someone else does the food preparation, such as when food is purchased from a restaurant or a fast food establishment or pre-made from the grocery store, content, quality, choice, and portions are much less monitored and less predictable. We have a tendency to eat the entire amount of prepared food we have purchased, even though we would have put less on our plate had we prepared it ourselves. People who are having trouble losing weight often underestimate their calorie consumption by as much as 50%.

The good news is that there are things that can be done, both to prevent and improve an unhealthy weight situation in an

individual. We can't currently alter our genetic makeup, but we can make an impact on life issues. Fat storage can be turned into fat burning. The potential exists to change the perception and the role of food as well as the value of activity in our lives. Creating a healthier, longer, and better life quality means lowering the risk for the medical diseases so strongly associated with being at an unhealthy weight. As we age, we are increasingly at risk to store fat. Our muscle mass will decrease and our fat mass will increase, even if weight remains the same. A focus on good nutrition and exercise can play a role in preventing this shift.

Adults characteristically put on 25 pounds between the ages of 20 and 45. Some of us put on even more. With greater than 61% of adults being in the overweight or obese categories, those of us in society who have an influence on children and adolescents may be in a position to educate, encourage, and change the weight status of our youth and influence unhealthy adult weight gain. Knowledge is power, and prevention efforts at the school level must be an effective communal and societal exercise. We may have to work on improving ourselves to be able to influence others successfully: "When school personnel embrace health, they act as role models for healthful living" (Andersen et al., 2004). Scientific research will lead to more and better answers, but until that happens, we need to concentrate on reversing the factors over which we have control. We *do* have some control over what our children and adolescents eat and their lack of physical activity. We *can* provide our youth with reasons why they should be concerned and give them support and incentives to comply.

Societal pressures and the current environment make it difficult for adolescents to do it on their own, and our younger children cannot make these decisions in a vacuum. Your position as a significant authority figure outside the home puts you in a unique position to make an impact on this problem that affects a significant number of your students. The school day provides a fixed place and frequent contact where a focus on nutrition and physical activity change can have a large positive effect. Goals go beyond taking away unhealthy foods from the cafeteria and removing sugar drinks and most candies from the vending machines. Those actions do not effect change in personal habits, they just limit access. We must get into the heads of our children. Education leads to understanding and sets the groundwork for

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change, and positive lifestyle changes promote better health. A healthier child has a better opportunity to learn.

1.4. Unhealthy weight of students has a major negative impact on their personal health and wellness.

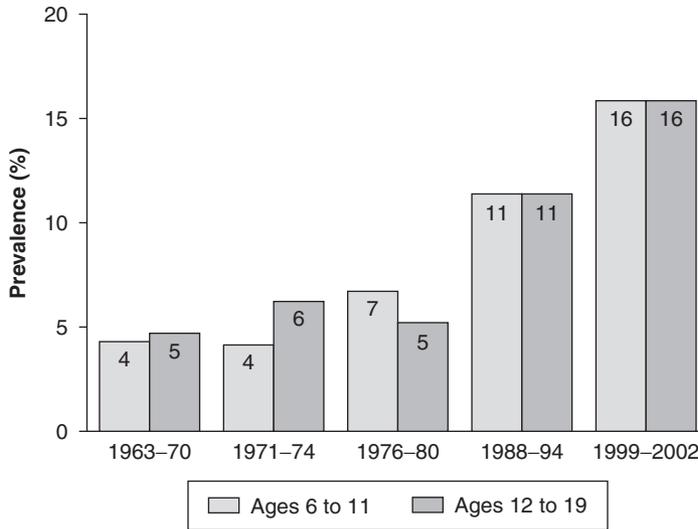
The negative impact of childhood obesity touches every aspect of a student's life.

The problems the childhood obesity epidemic creates for us are immense. There are far-reaching medical, personal, psychological, and social consequences that could begin prior to kindergarten. The health problems associated with overweight adults are now being seen in adolescents with greater frequency as the obesity epidemic expands. Weight-related health problems that are medically controlled in adults become more difficult to treat if they begin during childhood or adolescence. This may mean multiple medicines instead of a single drug. It could mean a higher dose of each drug. Multiple drugs and higher doses increase the cost of medications and can possibly lead to more drug side effects.

One out of every four severely overweight adolescents already has high blood pressure and is possibly taking a prescription medication. Diabetes of the adult type, called Type 2 diabetes, is now common in school-age children and not only carries with it all the problems of diabetes but also promotes the development of premature heart disease. High triglyceride fat and cholesterol are common, as is low HDL (this good cholesterol should be high), as weight increases in children. Most of these problems can be prevented or partially reversed by weight control and with increased physical activity. Childhood asthma symptoms decrease with weight loss. In addition to medical problems associated with increased weight, low self-esteem and feelings of decreased personal worth may begin to emerge. We will discuss these issues in later chapters.

With 80% of severely overweight adolescents becoming obese adults, the logic of working to prevent this disease in children is compelling. Dr. Dietz reports that by the time overweight children are of school age, unhealthy weight should be addressed (Dietz, Bland, Gortmaker, Molloy, & Schmid, 2002). Intervention at an early stage in the evolution of obesity makes success more likely and complications less frequent or easier to treat medically or psychologically.

Figure 1.1 Prevalence of Overweight Among Children and Adolescents Ages 6–19 Years



SOURCE: National Center for Health Statistics (n.d.); data from CDC/NCHS, NHES, and NHANES.

According to the Center for Health and Health Care in Schools (2003), overweight in childhood has more than doubled, and in adolescents has tripled, in the last 20 years.

Young Hispanics and African Americans have the highest rates of being at an unhealthy weight or obese. Older girls have a greater problem than boys, and of males, Hispanic boys are at the highest risk. Unless enlightened and innovative decision makers take a role in stemming the tide, the situation for our children will deteriorate further. The bottom line for educators is that all children come together in the melting pot of the school day. While the youth of America are not without personal responsibilities here, a direction to change must be afforded to them in a manner they understand so they can see the value and have ownership in the process. Recognition for participating is an incentive. Educators becoming aware of changes in weight and BMI will help identify the at-risk, overweight, or obese children who themselves may not be aware of their situation. Adolescent boys in particular can be unaware of being overweight, especially if they are

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comparing themselves to more seriously overweight family members. Monitoring will track the more recalcitrant youngsters and allow for more time to be spent with those with greater needs. This monitoring is not the role of educators, but the identification process may open the door for parents and health care providers to intervene.

Pediatric medical literature is full of information linking parental involvement as one of the best predictors of short-term and long-term weight control in children ages 8 to 12 years. How parents approach making changes in how, when, and what the family eats and how individual parents address their children's eating habits vary greatly. The most well-meaning parent can cause conflict with their children and the habits they wish to change by misrepresenting their motives to their kids. Parents have both the right and the obligation to see to the health of their children and to control the degree of lifestyle change a family will make. Schools progressive enough to identify unhealthy-weight students could possibly channel families to the right kind of help in the community. This usually means asking a pediatrician for advice. This approach may help reinforce healthier attitudes and better compliance with eating issues and physical activity at home.

Nutrition issues are now centered on food choices, portion size, snacking, and the amounts of fruits and vegetables consumed in an effort to achieve a healthy weight and provide optimum nutrition. Children's eating habits have always been the concern of parents, doctors, and educators. Past efforts, however, were centered on providing enough food for survival, health, and being able to work. Those meals were usually cooked fresh and eaten at home, and most contained a high percentage of vegetables and fruit.

In our current living environment, nearly two-thirds of school-age children and adolescents are living with a single and employed parent or two working parents; for this modern busy family, "convenience rules." Ease of food preparation, time, and cost considerations loom large. Restraints of time, money, and convenience easily lead to many unhealthy food options. Technology has provided a faster life and a fatter body for adults and has helped create the same weight problem in our children. High-quality foods are usually more expensive than high-fat, calorie-dense foods and usually take more preparation time. This

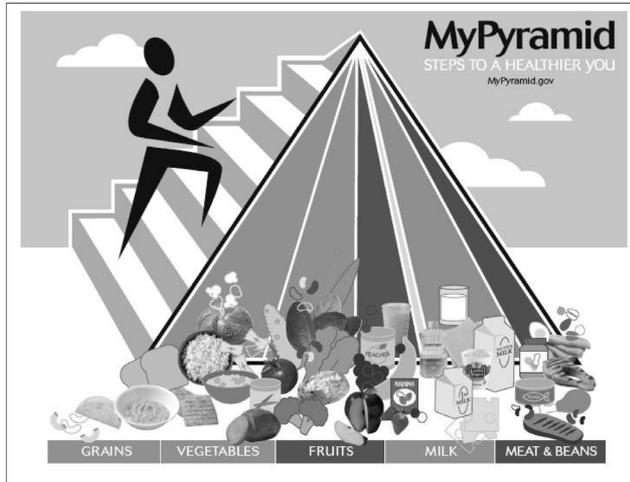
adds to the problem families have living on a tight budget and a limited schedule and contributes to the high percentage of unhealthy weight among the lowest income groups.

Of all foods, high-fat and high-calorie items are the easiest to obtain. They take the least amount of time out of a busy day to buy or prepare. Fast food restaurants are everywhere, and many of those foods are readily available 24 hours a day. Convenience stores are another outlet for fast foods and snack foods, as are vending machines, grocery stores, school cafeterias, and school drink/snack machines.

Today's parents don't cook as often as their parents did. Some families eat most of their meals outside the home. When the only reference point to portion size is a restaurant plate, a Chinese takeout portion, a super-sized fast food meal, or a pizza pie, a distorted view of a true portion size is created. The average restaurant main course, for example, if nonfried, without gravy or breading on meat or fish, and with steamed or fresh vegetables, is equal to about 1000 calories. To lose weight, consuming somewhere between 1000 and 2500 calories for the entire day is usually in order. The problem is further compounded by parents if they do not elect to send lunch to school for their children. By recent legal changes in most states, only healthy foods will be made available for children at lunch, but until that becomes universal, the cafeteria is a source of food choices that undermine the healthy needs of our students. Furthermore, meals that include fruits and vegetables likely decrease the health risks of many chronic diseases.

Insufficient consumption of fruits and vegetables is a big problem in adults and in our school-age population. The average woman eats one to two vegetables a day, and a man has one to none. With adults as the model for our children, the chances are small that they could possibly eat better without parental changes. The recommended servings of fruits and vegetables are five a day, and only 25% of adolescents and 20% of all school-age children meet this goal. Adding appropriate amounts of fruits and vegetables to a child's diet will help prevent or improve an overweight situation. The reasons may be that fruits and vegetables are filling and satisfying and there can be a decrease in total calories consumed. This would also mean that some of the more calorie-dense foods and snacks have been decreased in daily eating.

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Figure 1.2 New Food Pyramid

SOURCE: U.S. Department of Agriculture.

Only about 20% of school kids eat balanced meals, even in the school cafeteria. Milk drinking is down, and pediatricians now worry about the bone health of children and adolescents. A soft drink a day is not unusual for school kids, and one-third of teenagers average three soft drinks a day. At this rate, our children have little chance to develop good, healthy eating attitudes, to consume healthy balanced meals, and to enjoy good health through life. It is possible that in some unhealthy-eating households, a student's only semblance of a balanced meal is at school.

Eating habits are learned mostly, at home from family norms and social environments. Through the thousands of food advertisements a year seen by our TV-watching children, an interest in eating more unhealthy snacks, fast foods, and sweetened drinks has increased. If not educated on the subject, children and adolescents may not even know they are eating themselves to ill health and an unhealthy weight. Many parents are not in a position to teach their children what they themselves don't even know.

The fattening of America is partly a matter of ignorance and misconceptions, both of which are correctable. We are not stupid, just without the knowledge base we need. Although many

Figure 1.3 Pyramid Information

GRAINS Make half your grains whole	VEGETABLES Vary your veggies	FRUITS Focus on fruits	MILK Get your calcium-rich foods	MEAT & BEANS Go lean with protein
Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice, or pasta every day. 1 oz. is about 1 slice of bread, about 1 cup of breakfast cereal, or 1/2 cup of cooked rice, cereal, or pasta	Eat more dark-green veggies like broccoli, spinach, and other dark, leafy greens. Eat more orange vegetables like carrots and sweet potatoes. Eat more dry beans and peas like pinto beans, kidney beans, and lentils.	Eat a variety of fruit. Choose fresh, frozen, canned, or dried fruit. Go easy on fruit juices.	Go low-fat or fat-free when you choose milk, yogurt, and other milk products if you don't or can't consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages.	Choose low-fat or lean meats and poultry. Bake it, broil it, or grill it. Vary your protein routine – choose more fish, beans, peas, nuts, and seeds.
For a 2,000-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov .				
Eat 6 oz. every day	Eat 2 1/2 cups every day	Eat 2 cups every day	Get 3 cups every day; for kids aged 2 to 6, it's 2	Eat 5 1/2 oz. every day
Find your balance between food and physical activity <ul style="list-style-type: none"> Be sure to stay within your daily calorie needs. Be physically active for at least 30 minutes most days of the week. About 60 minutes a day of physical activity may be needed to prevent weight gain. For sustaining weight loss, at least 60 to 90 minutes a day of physical activity may be required. Children and teenagers should be physically active for 60 minutes every day, or most days. 		Know the limits on fats, sugars, and salt (sodium) <ul style="list-style-type: none"> Make most of your fat sources from fish, nuts, and vegetable oils. Limit solid fats like butter, stick margarine, shortening, and lard, as well as foods that contain these. Check the Nutrition Facts label to keep saturated fats, trans fats, and sodium low. Choose food and beverages low in added sugars. Added sugars contribute calories with few, if any, nutrients. 		



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teachers may have been educated in the area of nutrition, it may not be sufficient to fill this knowledge gap in parents and children. Doctors don't even have a full grasp of the situation, and they have the responsibility of dealing with the consequences of being overweight. In reality, teachers also deal with some of the negative consequences children have when overweight, so there is reason to do what is practical to prevent and minimize these consequences.

According to the CDC, there are more medications prescribed, more physician visits required, and more frequent hospitalizations needed due to poor exercise habits in kids. Lack of physical activity is related to direct medical costs totaling \$76 billion in the year 2000.

American children simply do not exercise, and neither do their parents. About 61.5% of children do not participate in any organized physical activity during nonschool hours, and 22.6% do not engage in any free-time physical activity. The policy statement from the American Academy of Pediatrics, "Prevention of Pediatric Overweight and Obesity," reviews national survey data and indicates that 20% of U.S. children reported two or fewer vigorous physical activity sessions per week, and more than 25% watched at least four hours of television per day. The heavier children watched more TV than average-weight children by 50%. African American and Hispanic children are significantly less likely than Caucasian children to report involvement in organized exercise activities. Low income and the education levels of these parents are additional factors.

1.5. Unhealthy weight impacts the academic achievement and emotional-social development of students.

The effect of unhealthy weight on academic achievement is not clear. What does occur is a loss of continuity of learning through missed school days due to illness associated with being overweight. Other issues are social and psychological ones that interfere with learning, such as a lack of self-confidence, teacher prejudice, peer discrimination, and nonacceptance into the group.

A Case Study

One such example is that of an overweight student who showed poor classroom participation and who answered meekly when called upon in class. His attitude in class was misunderstood by one of his teachers, who accused the student of having outside help with his homework and project scores since they were consistently excellent. His lack of expression in class, however, was a reflection of poor self-confidence and self-image, not academic acuity. He did well on class examinations. This student found a mentor in a teacher who understood his image issues and helped him realize he had things to contribute. This same student could have been a poor overall student were it not for a concerned teacher.

Unhealthy eating undermines expected growth and cognitive function development. Unhealthy weight promotes the development of many chronic diseases we have already discussed and weakens body response to infection.

Since a significant percentage of our youth are either at an unhealthy weight or at risk for it, everything points to attempting innovative, aggressive prevention measures. In a study conducted by the California Department of Education, Delaine Eastin, State Superintendent of Public Instruction, reported a positive relationship between academic achievement and the physical fitness of California public school students. Results were based on matching mathematics and reading scores from the spring 2001 state achievement test with a mandated physical fitness test of 600,000 students in Grades 5, 7, and 9. Higher levels of achievement were associated with higher levels of fitness at each of the three grade levels (2002). Dr. Eastin feels that there is proof available that children learn more when physically fit. Teachers overwhelmingly appreciate the relationship between being physically active and having a better ability to learn (Robert Wood Johnson Foundation, 2003). It has been widely accepted that relationships exist between good physical fitness and positive self-esteem and lower negative effects of unchecked stress.

In a later study conducted in Chicago, a wellness approach in instruction used one hour a day of stretching yoga and good nutrition. The Namaste School principal, Allison Slade, stated that

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the K-1 program is working great. The approach is to integrate health instruction, practice good nutrition, and focus on physical fitness to increase academic achievement—and they are getting great results (personal communication, May 8, 2005). The school is located on Chicago's southwest side. In *The Learning Connection: Value of Improving Nutrition and Physical Activity in Our Schools* (Satcher, n.d.), the author in this report estimated that well-nourished students tend to be better students, while poorly nourished ones have weaker academic performance and score lower on standardized achievement tests. Lower math scores and likelihood of repeating a grade were also reported.

An interesting point for all principals to consider is if students miss meals, their cognitive development and school performance can be negatively affected. Increased participation in the nation's School Breakfast Program has been associated with increased academic test scores, daily attendance, and class participation. It has also been linked to reductions in tardiness and absenteeism. These same students are reported by teachers and parents to be calmer in class and to have more energy to study, according to Dr. Satcher, the former surgeon general of the United States and founder of Action for Healthy Kids, a national initiative addressing the obesity epidemic.

We cannot emphasize enough: *American children simply do not exercise, and neither do their parents.* Physical education at schools has been seriously compromised in recent years, and there is little exemplary exercise behavior demonstrated on the part of teachers for their own good or as role models for students.

In a brief interview with Dr. Satcher in Orlando after his address to the attendees at the Annual Conference of the Association of Supervision and Curriculum Development,

"American children simply do not exercise, and neither do their parents."

Dr. Queen had the opportunity to talk with Dr. Satcher about the growing epidemic. Responding to the question of what we must do, he stated that it will take "multi-

ple partnerships between the medical and educational professions," in addition to other organizations, to significantly slow the process of childhood obesity and the related consequences (personal correspondence, April 4, 2005).

Parents have always told children, "To be strong and healthy and to do well at school, you must start your day with a healthy breakfast. To have energy, to be able to concentrate in class, and to compete in sports, you must not skip meals, and you may only have a snack or dessert if you finish your meal." There is now scientific evidence behind these intuitive truths, and the documented relationship between performance and proper eating is growing; this is also true in students who participate in the School Breakfast Program. Dr. Satcher (1995) quickly shared and promoted strongly in the organization he founded, Action for Kids, that an increase in test scores, daily attendance, and class participation has been reported by educators teaching in schools with the School Breakfast Program. Furthermore, tardiness and absenteeism appears to have been reduced (Tufts University School of Nutrition, 1995).