

# THE ADOLESCENT: Development, Relationships, and Culture, 12/e

© 2008

Phillip Rice

Kim Gale Dolgin, *Ohio Wesleyan University*

ISBN-13: 978-0-205-53074-8

ISBN-10: 0-205-53074-5

---

Visit [www.ablongman.com/relocator](http://www.ablongman.com/relocator) to contact your local Allyn & Bacon/Longman representative.

## SAMPLE CHAPTER

The pages of this Sample Chapter may have slight variations in final published form.

## CHAPTER 5 BODY ISSUES

Health-Related Behaviors and Attitudes



## HEALTH STATUS

Mortality  
Health Decisions

**RESEARCH HIGHLIGHT** *Improving Adolescent Health*  
Adolescent Health in the Third World

## BODY IMAGE

Physical Attractiveness  
Body Types and Ideals

**PERSONAL ISSUES** *Plastic Surgery among Adolescents*

## EARLY AND LATE MATURATION

Early-Maturing Boys  
Late-Maturing Boys  
Early-Maturing Girls  
Late-Maturing Girls  
Off-Time Maturation

## WEIGHT

Obesity  
Personal Contributors to Being Overweight  
*In Their Own Words*  
Interpersonal Interactions and Being Overweight  
Environmental Influences  
Broader Social Influences

## EATING DISORDERS

Anorexia Nervosa  
Bulimia

## HEALTH-RELATED BEHAVIORS

Nutrition  
Exercise  
Sleep

## ACNE

Skin Gland Development  
Causes  
Treatment

## WOULDN'T YOU LIKE TO KNOW ...

- ▶ How healthy are adolescents?
- ▶ Why don't adolescents take better care of themselves?
- ▶ Are most adolescents happy with their bodies?
- ▶ Do most teens think they are fat?
- ▶ Is it hard to reach puberty earlier or later than everyone else?
- ▶ Why are more and more teens obese?
- ▶ What types of teens are at risk for developing anorexia?
- ▶ What kinds of foods should adolescents eat?
- ▶ Why can't you and your friends stay awake during 8 o'clock classes?

Adolescence is intrinsically a very healthy time of life. By the time we have reached the teenage years, we have passed through the fragile, vulnerable stages of infancy and early childhood but not yet developed the debilitating, chronic health concerns of older adulthood. Health not only comes from our physiology but also from the health-related behavioral choices that we make.

The choices we make during adolescence are crucially important. For one, it is choosing good behaviors that primarily determines our physical well-being during adolescence. In addition, many of the habits that we establish during adolescence linger into adulthood and help determine our health for the rest of our lives. Since many of these choices depend on and reflect adolescents' attitudes about their bodies, in this chapter we will not only describe the kinds of choices that adolescents make but also discuss teenagers' perceptions of their bodies and health needs.

## HEALTH STATUS

### Mortality

One of the most common ways to understand health concerns is to examine **mortality** or death rates. The *number* of deaths tells us how relatively healthy a certain group is, and the *causes* of death tell us where the most significant problems lie. Figure 5.1 shows the death rates of American children, adolescents, and adults. As you can see, the rate for younger adolescents (ages 10 to 14) is very low, but the rate for older adolescents (ages 15 to 19), while still less than those of the adults, is quite a bit higher (Centers for Disease Control, 2006).

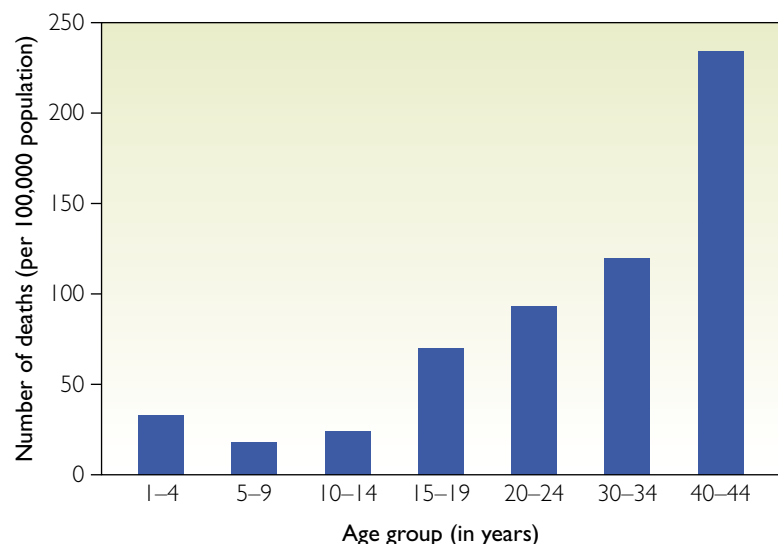
The reason for this rise can be inferred from Figure 5.2, which depicts the leading causes of death of American adolescents. The single most common reason that adolescents die is because they are involved in car accidents. (Note, however, that adolescents who wear seatbelts and drive only when sober are much less likely to die or be seriously injured in motor vehicle accidents.) About three-fourths of adolescent deaths are due to nonmedical reasons: Accidents, taken together, account for just about half of the deaths, and violence (homicide and suicide) accounts for about one-fourth (Centers for Disease Control, 2005). This pattern is a change from the past, when most adolescent deaths were due to natural causes (Ozer, Park, Paul, Brindis, & Irwin, 2003). Older adolescents are more likely to die from both accidents and violence than younger adolescents; hence, their increased mortality rate. Males, who are more likely to be violent and to take risks, are more likely to die than females. Remember, too, that accidents and violence can result in injury and disability as well as death and so greatly contribute to the health concerns of living adolescents.

### Health Decisions

Every day, each of us makes decisions that affect our health. We can make good decisions, such as following a healthy diet, exercising regularly, keeping medical appointments, and getting adequate sleep. Or we can make bad decisions and engage in risky behaviors, such as using drugs, practicing unsafe sex, and performing thrilling but risky stunts. The health decisions adolescents make result from a complex interplay of factors:

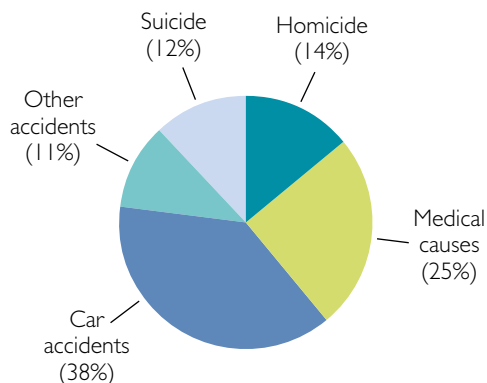
**FIGURE 5.1** DEATH RATES OVER THE LIFESPAN

Source: Data from Centers for Disease Control (2006).



**FIGURE 5.2 LEADING CAUSES OF DEATH OF AMERICAN ADOLESCENTS**

Source: Data from Centers for Disease Control (2005).



### ANSWERS WOULDN'T YOU LIKE TO KNOW ...

#### How healthy are adolescents?

Adolescents are not as healthy as they could be, since many of them put themselves in situations that increase their health risks. The majority of the serious health problems that teenagers face are preventable.

1. *Their own knowledge of the health consequences of particular behaviors.* This knowledge is, of course, based on what parents, peers, doctors, and teachers have taught teens, as well as the messages they have received from the media and society at large.

**mortality rate** the probability of dying.

## RESEARCH HIGHLIGHT IMPROVING ADOLESCENT HEALTH

Can we improve the overall health level of American adolescents? The U.S. government is trying to do just that as part of its *Healthy People 2010* initiative. The Centers for Disease Control have identified 21 critical health objectives for adolescents and young adults (Centers for Disease Control, 2004). The specific targets include reducing adolescent deaths, especially those caused by car accidents, homicides, and suicides; reducing adolescent substance abuse; decreasing the numbers of adolescents who have sexually transmitted diseases or who are involved in pregnancies; and increasing adolescent fitness levels.

What is especially interesting about the government's approach is that the government has acknowledged that poor health is a multifaceted phenomenon, stemming from multiple sources. In particular, government scientists identified nine societal institutions that affect adolescent health and recommended using all of these institutions to enact positive change.

1. *Families:* Reducing poverty, reducing access to guns in the household, having parents model good health behaviors and monitor their adolescents more closely could all have positive impacts upon adolescents' health.
2. *Schools:* Enhancing physical education, maintaining clean and safe buildings, serving nutritious foods, and providing students with accurate health-related information could make a difference.
3. *Colleges and universities:* College students, too, do not always have the most healthful lifestyles. They frequently drink to excess, do not get enough sleep, and engage in unsafe sexual practices.

4. *Health-care providers:* Adolescent access to health care could be improved by making medical insurance more affordable, easing fears about confidentiality so that adolescents will come in for treatment, enhancing preventative interventions, and making services physically accessible to teenagers.
5. *Community organizations:* Service to adolescents would be enhanced if services were affordable, convenient, culturally sensitive, and compassionate.
6. *Faith-based organizations:* In particular, these groups can help individuals from outside the community link with and gain the trust of community members.
7. *The media:* It would be beneficial if television and other media promoted healthy lifestyles and did not glamorize dangerous, risky behaviors.
8. *Employers:* Since long work hours are associated with poor health outcomes in teenagers, employers can limit the amount of time that they will allow any individual adolescent to work each week.
9. *Government agencies:* These groups develop policies, provide funding, and implement programs that can help efforts to improve adolescent health.

As this model illustrates, many of the avenues to improving adolescent health are indirect. Namely, creating safer communities, decreasing poverty, believing in the chance for a good life, having increased knowledge and decision-making skills, feeling connected to others, and gaining access to adequate services all lead to improved health by enhancing the overall quality of adolescents' lives. These same kinds of interventions can also serve to reduce levels of delinquency, school dropout, and pregnancy among teens.

2. *Their own abilities to judge risks and make rational decisions.* Cognitive development is taken up in later chapters of this book, but it is important to state here that adolescents' abilities to think abstractly, to appreciate the long-term consequences of actions, to evaluate information, and to weigh personal risk are not fully developed.
3. *Their parents' behaviors.* Adolescents mimic their mothers' and fathers' actions and values. So if parents are unconcerned about their own health, then their adolescents are likely to be lackadaisical, as well. Another factor is that parents who closely monitor and supervise their children do not give them as much opportunity to engage in dangerous behaviors.
4. *The resources available to teens and their families.* Some families may have the desire to lead a healthy lifestyle but not the means. For instance, some families have no choice but to live in a dangerous, polluted, or violent neighborhood. Likewise, some cannot afford to get regular medical and dental checkups.
5. *Peer pressure.* Peers can convince each other to be sexually active, to drink alcohol or use drugs, or to do something dangerous, like swim where there is a strong current. Conversely, peers can encourage each other to use condoms, to avoid drugs, and to participate in sports or exercise.
6. *Societal values.* Adolescents receive messages that it's important, for instance, to be slender and that it's cool to smoke and drink. The images they see on television and in movies and the advertisements directed at them in magazines and other media often encourage less than ideal health behaviors.

### Adolescent Health in the Third World

The health issues facing adolescents living in the less developed parts of the world are quite different than those confronting American teenagers (Call, Aylin, Hein, McLoyd, Petersen, & Kipke, 2002). Some of the problems of Third World teens stem directly from poverty and political instability. For example, adolescents in much of Asia, Africa, and Latin America are more likely to be malnourished and to contract illnesses than American youths. In many parts of the world, where political instability is the reality, war and terrorism take their toll on lives and health and disrupt the government's ability to provide needed health services. In addition, numerous children and adolescents in sub-Saharan Africa are infected with the human immunodeficiency virus (HIV) that leads to

### ANSWERS WOULDN'T YOU LIKE TO KNOW ...

#### Why don't adolescents take better care of themselves?

Adolescents are often oblivious to the risks of extreme dieting, driving without wearing a seatbelt, and using drugs. They feel personally invulnerable, finding it hard to believe that anything bad will happen to them. Moreover, some of the risks they face are simply too far in the future for them to worry about. Finally, parents and friends often encourage poor health habits, as do the mass media. The fact that popular singers and actors are often shown drinking alcohol and smoking doesn't help, either.

AIDS (acquired immune deficiency syndrome). Countless more have been left orphans because their parents have succumbed to this disease.

Other negative health consequences can be attributed to Westernization and rapid cultural change. For example, Third World youths today are smoking in greater and greater numbers. This is due, in good part, to the fact that American tobacco companies, which are facing ever greater restrictions in the United States, are increasingly turning their marketing efforts overseas (Verma and Saraswathi, 2002). And as sexual values change, adolescents from Southeast Asia, China, the Indian subcontinent, Latin America, and Africa (not to mention North America and Europe) are engaging in more nonmarital sex and beginning at earlier ages (Brown, Larson, and Saraswathi, 2002). This has greatly increased the likelihood that these teens will develop sexually transmitted infections.

## BODY IMAGE

The health-related choices that adolescents make are linked to the way they feel about themselves. Those who feel good about themselves are likely to avoid harmful behaviors, whereas those who do not, will not. Unfortunately, during adolescence, a large part of our self-esteem is tied up with how physically attractive we feel. Even more unfortunately, the standards we measure ourselves against are often unreasonably high. The following discussion focuses on adolescents' concept of physical attractiveness and their feelings about their own bodies.

### Physical Attractiveness

Physical attractiveness and body image have an important relationship to the adolescent's positive self-evaluation, popularity, and peer acceptance (e.g.,

Davison and McCabe, 2006). Physical attractiveness influences personality development, social relationships, and social behavior. Attractive adolescents are generally thought of in positive terms: warm, friendly, successful, and intelligent (e.g., Langlois, Kalakanis, Rubenstein, Larson, Hallam, and Smoot, 2000; Zebrowitz, Hall, Murphy, and Rhodes, 2002).

Partly as a result of differential treatment, attractive adolescents appear to have higher self-esteem and healthy personality attributes, are better adjusted socially, and possess a wider variety of interpersonal skills (Perkins and Lerner, 1995). Physical attractiveness is significantly related to the self-esteem of both males and females (Frost and McKelvie, 2004). Research has shown that adolescents who are ranked as physically attractive are also rated by teachers and by themselves as having better peer and parent relations than adolescents who are not considered as attractive (Lerner et al., 1991). Research has also shown that physical appearance affects girls' self-esteem more than boys' (Williams and Currie, 2000) and affects girls' social status more, as well.

### Body Types and Ideals

Three body types have been identified: ectomorph, endomorph and mesomorph. Most people are a mixture rather than a pure type, but identifying the pure types helps considerably in any discussion of general body build. **Ectomorphs** are tall, long, thin, and narrow, with a slender, bony, lanky build. **Endomorphs** are at the other extreme, with soft, round, thick, heavy trunks and limbs and a wrestler-type build. **Mesomorphs** fall

between these two types. They have square, strong, well-muscled bodies, with medium-length limbs and wide shoulders. They represent an athletic type of build and participate in strenuous physical activity more frequently than the other types.

The vast majority of Caucasian adolescent girls are dissatisfied with their bodies and would like to be ectomorphic (Button, Loan, Davies, and Sonuga-Barke, 1997; Gardner, Friedman, and Jackson, 1999). This feeling of dissatisfaction becomes more and more pronounced over the course of adolescence (Rosenblum and Lewis, 1999). Most researchers agree that the media is largely responsible for girls' desire to be slender (Levine and Harrison, 2004). The women portrayed as desirable in movies, television programs, television commercials, and magazines are uniformly tall, narrow, and small waisted. Incessant exposure to these images sends a clear message to girls and women: If you wish to be considered pretty, you must be thin. One study, for example, showed that after even a *brief* exposure to models with ideally slim physiques, subjects displayed increased body dissatisfaction (Thornton and Maurice, 1997). Thus, the cumulative effect of hundreds of hours of viewing can be pervasive and powerful.

<b>ectomorph</b>	tall, slender body build.
<b>endomorph</b>	short, heavy body build.
<b>mesomorph</b>	medium, athletic body build.



Adolescents come in all shapes and sizes. The girl at the far left is a muscular mesomorph, while the boy at the far right is endomorphic. Standing next to him is a tall, slender, ectomorphic girl.

## PERSONAL ISSUES PLASTIC SURGERY AMONG ADOLESCENTS

During the 1990s, it became more common for adolescents who were unhappy with their bodies to resort to the most extreme measure to correct their “flaws”: plastic surgery. More than 223,000 adolescents aged 18 years or younger underwent cosmetic or reconstructive surgery in 2003. The most common procedure, accounting for about one-half of all operations, was *rhinoplasty*, or nose reshaping. Breast reduction was also popular; more than 16,000 teens—3,000 of them boys—had their breasts surgically reduced that year. Breast augmentation, surgery to correct protruding ears, and liposuction to reduce fat deposits accounted for most of the rest of the procedures. Adolescents now represent about 4 percent of all cosmetic surgery patients (American Society of Plastic Surgeons, 2004; Zuckerman, 2005).

The American Society of Plastic Surgeons recommends that such procedures be limited to adolescents

who initiate the requests (that is, who are not being pushed into an operation by their parents), who have realistic goals and expectations, and who are sufficiently mature to handle the initial discomfort and disfigurement associated with surgery (Plastic Surgery Information Service, 2000b).

Adolescents who desire plastic surgery need to understand that changing one’s appearance is not a quick fix for becoming popular, enjoying athletic success, or regaining a lost boyfriend or girlfriend. The physical changes are permanent, the procedures are costly, and there is a risk of complications or unsatisfactory results. A far better solution, in most cases, is to encourage self-confidence based on the sum of the individual’s positive traits and to discourage the fixation on physical perfection.

Dissatisfaction with one’s body spills over into dissatisfaction with one’s self, especially for girls. In other words, girls who perceive themselves as being overweight have lower self-esteem than other girls (Guiney and Furlong, 1999) and are also more likely to feel depressed (Siegel, 2002). In fact, Siegel, Yancy, Aneshensel, and Schuler (1999) found that poor body image was the main reason adolescent girls in their study were more depressed than adolescent boys. This lowered sense of self-esteem may result, in part, from the fact that overweight individuals enjoy less satisfactory interactions with peers. Teenage girls certainly fear that they will be less attractive to boys, and less likely to date, if they are overweight. Interestingly, although teenage boys agree that a thin shape is more desirable in a girl than a plump one, thin girls are no more likely to date than heavier ones (Paxton, Nowis, Wertheim, Durkin, and Anderson, 2005).

Furthermore, research suggests that appearance anxiety in women is related to negative social experiences in childhood and early adolescence. For example, studies have found that weight-related teasing by parents and peers increases a youth’s body dissatisfaction (Barker and Galambos, 2003; Paxton, Schultz, Wertheim, and Muir, 1999). This dissatisfaction is, in turn, related to appearance anxiety in late adolescence and early adulthood (Keelan, Dion, and Dion, 1992).

Body dissatisfaction among adolescent girls varies along racial and ethnic lines. African American females are less likely than girls of other races and ethnicities to judge themselves as being overweight (White, Kohlmaier, Varnado-Sullivan, and Williamson, 2003). Caucasian girls are quite dissatisfied with their body shapes, but Asian American and Hispanic American girls are more so. In particular, even very lean Hispanic and Asian

### ANSWERS WOULDN'T YOU LIKE TO KNOW ...

#### Are most adolescents happy with their bodies?

Most adolescents are not especially happy with their bodies. This is especially true of late-adolescent Caucasian, Latino, and Asian girls.

American females are apt to be unhappy with their weight and wish they were smaller (Robinson, Killen, Litt, and Hammer, 1996).

In contrast, boys are most likely to prefer having a mesomorphic body type (Ricciardelli and McCabe, 2004). In contrast to girls, generally only heavy adolescent boys feel that they are overweight (Field et al., 1999). Body dissatisfaction in more slender boys instead results from a lack of sufficient muscularity (Carlson Jones and Crawford, 2005). Tall men with good builds are considered more attractive than short men, and boys who are short or heavy are subjected to stigmatization and other psychosocial stressors (Barker and Galambos, 2003; Sandberg, 1999). Men with muscular, mesomorphic body builds are more socially accepted than those with different builds.

Adolescent males tend to feel better and better about their bodies as they move through adolescence (Allgood-Merten, Lewinsohn, and Hops, 1990), whereas adolescent females do not (Richards, Boxer, Petersen, and Albrecht, 1990). Therefore, not only are boys more satisfied with their bodies than girls during early adolescence (Rosenblum and Lewis, 1999), but these differences are even greater during late adolescence (Pritchard, King, and Czajka-Narins, 1997).



Media images of excessively slender women encourage adolescent girls to be overly critical of and dissatisfied with their own weight.

#### ANSWERS WOULD'N'T YOU LIKE TO KNOW ...

##### Do most teens think they are fat?

Adolescent girls tend to think that they are fat because their ideal is to be extremely slender. Adolescent boys are more divided about feeling too fat or too thin; their preference is to be lean but athletic.

## EARLY AND LATE MATURATION

As noted in the previous chapter, there is a great deal of variation in the age at which adolescents undergo puberty. Figure 5.3 further illustrates this point. The timing with which an adolescent experiences the physical changes of puberty can have a profound effect on how he or she feels about his or her body and self. For good or ill, it can also affect how others treat him or her and the expectations that they have of him or her. This is especially true for someone who is either earlier or later than average. Much research has been devoted to understanding the effects of the timing of

puberty on adolescents' self-esteem and behavior, including health-related behavior.

### Early-Maturing Boys

There has been a long-standing belief, based on older data, that early maturation is a positive experience for boys (Ge, Conger, and Elder, 2001). It seems logical that this would be the case. After all, early-maturing boys are large for their age, stronger, more muscular, and better coordinated than later-maturing boys, so they enjoy a considerable athletic advantage. Early-maturing boys are better able to excel in competitive sports and their athletic skills enhance their social prestige and position. They enjoy considerable social advantages in relation to their peers, participate more frequently in extracurricular activities in high school, and are often chosen for leadership roles. Early-maturing boys also tend to show more interest in girls and to be popular with them because of superior looks and more sophisticated social interests and skills. Early sexual maturation thrusts them into heterosexual relationships at an early age.

Data highlight the fact that some early-maturing boys cannot handle the freedom they are granted. Because they are less closely supervised by their parents and tend to associate more with older peers, early-maturing boys are more likely than others to engage in delinquent acts (Dubas, Garber, and Pedersen, 1991), to use drugs and alcohol (Wichstrøm, 2001), and to exhibit a broad range of psychopathological symptoms (Graber, Lewinsohn, Seeley, and Brooks-Gunn, 1997). These problems seem most likely to appear when the boys are experiencing detectable stressors in their lives. These problems by no means affect all early maturers, but they are common enough to raise the group average above that of later-developing males.

### Late-Maturing Boys

Late-maturing boys often experience socially induced inferiority. A boy who has not reached puberty at age 15 may be 8 inches shorter and 30 pounds lighter than his early-maturing male friends. Accompanying this size difference are marked differences in body build, strength, and coordination. Because physical size and motor coordination play such an important role in social acceptance, late maturers develop negative self-perceptions and self-concepts (Alsaker, 1992; Richards and Larson, 1993). They are characterized as less attractive and popular; more restless, bossy, and rebellious against parents; and as having feelings of inadequacy, rejection, and dependency. They often become self-conscious and some withdraw because of their social rejection.

Late maturers sometimes overcompensate by becoming overly eager for status and attention. At other

**FIGURE 5.3** VARIATIONS IN PUBESCENT DEVELOPMENT

All three girls are 12<sup>3</sup>/<sub>4</sub> years and all three boys are 14<sup>3</sup>/<sub>4</sub> years of age but in different stages of puberty.

Source: Adapted from J. M. Tanner, *Scientific American* (Sept. 1973): 38.



times, they try to make up for their inadequacies by belittling, attacking, or ridiculing others or by using attention-getting devices. An example would be the loud, daring show-off with a chip on his shoulder, ready to fight at the least provocation.

### Early-Maturing Girls

Early maturation is not as positive an experience for female adolescents as for male adolescents (Graber, Petersen, and Brooks-Gunn, 1996). Since girls usually reach puberty about two years before boys, the earliest-maturing girls are considerably out of step with their peers. Because they are taller and more developed sexually, they tend to feel awkward and self-conscious. Early maturers are also *heavier* than their friends, which, as discussed in an earlier section, is perceived negatively by most female adolescents. Being so different from their peers adversely affects these girls' self-esteem (Alsaker, 1992).

Given these stresses and the fact that early-maturing girls are more likely to hang around with older boys, they are at increased risk for a variety of problems. Early-maturing females are more likely to experience internalizing disorders, such as anxiety and depression (Graber, Lewinsohn, Seeley, and Brooks-Gunn, 1997; Hayward, Killen, Wilson, and Hammer, 1997). They are also more likely to be disruptive in school (Simmons and Blyth, 1987) and to perform delinquent acts (Caspi, Lynam, Moffit, and Silva, 1993). Finally, they are more likely to engage in early sexual behavior (Flannery, Rowe, and Gulley, 1993) and to drink (Tschann, Adler, Irwin, Milstein, Turner, and Kegeles, 1994). As with early-maturing boys, early maturation makes girls susceptible to other stressors in their lives (Ge, Congev, and Elder, 1996).

These effects are not limited to girls in the United States. For example, in a Slovakian study, Prokopcakova (1998) found that early-maturing girls were more likely to drink alcohol, smoke cigarettes, smoke marijuana, and spend more time with boys than their on-time or late-maturing peers.

### Late-Maturing Girls

Late-maturing girls are at a distinct social disadvantage in junior high school and high school. They look like little girls and resent being treated as such. They are largely bypassed and overlooked in invitations to boy-girl parties and social events. Girls who experience menarche at ages 14 to 18 are especially late daters. As a consequence, late-maturing girls may be envious of their friends who are better developed. They are generally on the same level with normal-maturing boys and so have much in common with them as friends. However, they avoid large, mixed groups of

#### ANSWERS **WOULDN'T YOU LIKE TO KNOW ...**

##### Is it hard to reach puberty earlier or later than everyone else?

It's easiest to deal with puberty if you are in the middle of the pack. Early maturers may get teased and find themselves in trouble because they often hang out with misbehaving older peers. Late maturers may also get teased and may be excluded by peers because they appear immature and childlike.

boys and girls, and their activities reflect the interests of those of younger age groups with whom they spend their time.

One advantage is that late-maturing girls do not experience the sharp criticism of parents and other adults as do girls who develop early. The chief disadvantage seems to be the temporary loss of social status because of their relative physical immaturity.

### Off-Time Maturation

Research on the timing of puberty suggests that being *off time* is problematic, whether one is early or late, male or female. This notion has been termed the *deviance hypothesis* (Brooks-Gunn, Petersen, and Eichorn, 1985). While the problems individual adolescents have will differ, depending on the interaction between maturity rate and gender, being out of step with one's peers leads to confusion and stress.

The undesirable behaviors that result from this upset may be superficially similar, but the same activity may be differently motivated for late and early maturers. Williams and Dunlop (1999), who found high delinquency rates in both early- and late-maturing boys, suggest that early maturers are motivated to misbehave when egged on by older peers, whereas late maturers misbehave in order to raise their self-esteem and gain social status. *All* adolescents want to be liked and admired by their peers, and they will engage in compensatory behaviors to ensure their acceptance.

In fact, it might be the presence or lack of acceptance that determines whether or not off-time maturers will have problems. In a recent study, Nadeem and Graham (2005) found that it was the early-maturing boys who were perceived as misfits or victims by peers who got into trouble. Apparently, the combination of being physically developed while at the same time not behaving in a sufficiently "masculine" fashion encouraged peer bullying, and the stress of this bullying provoked problematic behavior. Similarly, the small size of late-maturing boys can make them easy targets for bullies (Olweus, 1991). Off-time maturation may therefore interact with peer acceptance to affect adjustment.

## WEIGHT

### Obesity

Few adolescents desire to be obese, and even many children are concerned about their weight. For example, Ricciardelli, McCabe, Holt, and Finemore (2003) asked 500 Australian 8- to 11-year olds whether they worried about their weight and whether they had ever dieted to lose weight. The boys' and girls' answers were almost identical: about 45 percent sometimes, often, or always thought about their weight, and virtually the same number had attempted to lose weight by dieting. Almost as many young children report exercising to lose weight (Ricciardelli and McCabe, 2001).

Regardless, adolescent **obesity** is on the rise in the United States: The obesity rate rose significantly between the years of 1999 and 2004 (Ogden, Carroll, Curtin, McDowell, Tubak, and Flegal, 2006). Furthermore, the amount by which adolescents are overweight continues to rise; that is, overweight adolescents weigh more than they used to (Jolliffe, 2004).

As Figure 5.4 shows, teenage obesity rates began climbing rapidly in the mid-1970s. African American girls and Mexican American boys have the highest rates (both above 25 percent), and Caucasian girls and boys have the lowest rates (about 12 percent). Even these rates are too high, however, as they represent a tripling of obesity among teens since the mid-1960s (Ozer, Park, Paul, Brindis, and Irwin, 2003).

As most people know, obesity carries numerous serious health risks, even for children and adolescents. In particular, adolescent obesity is associated with a significantly increased risk for Type 2 diabetes, a disease previously almost unknown in children. Also, overweight adolescents are more likely than their slender

peers to develop high blood pressure and have a high cholesterol level, both of which are precursors to heart disease (U.S. Department of Health and Human Services, 2001). In addition, of course, overweight adolescents face social rejection and have lowered self-esteem.

The causes of obesity and the reasons it is becoming more common are complex. In order to understand this health crisis, we need to look (1) within individual adolescents; (2) at their interactions with others; (3) at the environments in which they spend their time; and (4) at broader societal influences.

### Personal Contributors to Being Overweight

A number of personal characteristics make individuals more likely to become overweight. These characteristics include their genetic makeup, their motivation to eat excessively, their eating patterns, their preference for high-calorie foods, and their lack of physical activity.

### Genetic Contributors to Obesity

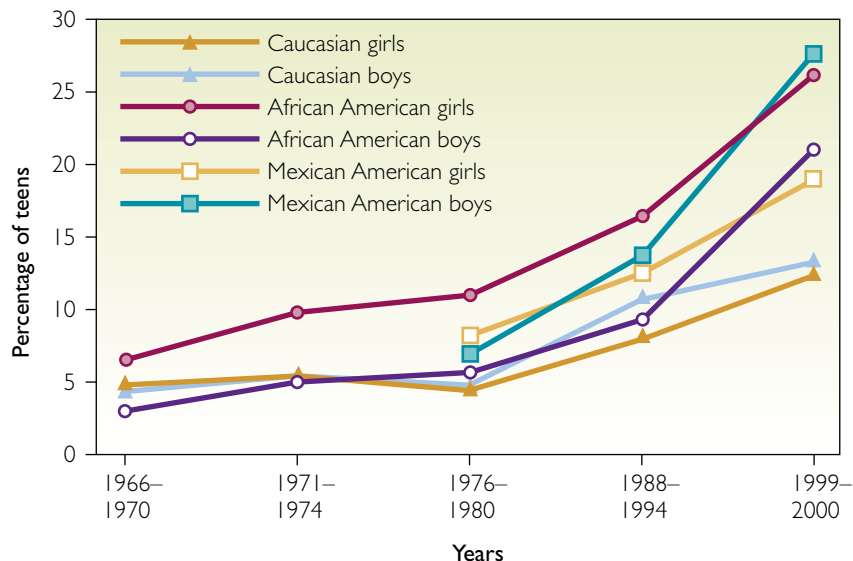
Several studies have provided clear evidence for a genetic link to body weight. For example, we know that biological siblings raised in different households are nearly as similar to each other in weight as pairs raised together (Grilo and Pogue-Geile, 1991) and that adopted children are more similar in weight to their biological parents than to their adoptive parents (Stunkard et al., 1986).

### Motivation to Eat

Obese individuals often eat for different reasons than their more normal-weight peers. For instance, eating is a greater positive reinforcement for obese people

**FIGURE 5.4** TEENAGE OBESITY RATES: 1966 TO 2000

Source: Data from Centers for Disease Control (2006).



### IN THEIR OWN WORDS

*“As far as I can remember, my body weight has been tightly connected to my self-esteem. This started while I was in high school. Dieting was something every girl practiced at some time or another. Not eating was something to be proud of! I must say that I was a normal weight, and this was true for all the other girls in my class, but we all thought we were extremely fat. Going to the gym after classes was a must, even though we all hated it.*

*“There was this notion that as long as you are skinny, you are beautiful. Plus, the boys were constantly making jokes about the overweight girls in school. Well, I do not think that what the boys thought of us was what motivated us the most. What motivated us was the thought that being skinny means being beautiful and sexy. When I was not eating, I was feeling good about myself, and when I ate, I was miserable. There were days when I could not think of anything else but food. If I ate a sandwich, I used to feel guilty and be mad at myself. I had these nightmares about becoming fat and everyone laughing at me.*

*“I used to buy these magazines with skinny girls in them, and every time I looked at them, even though I was hungry, my appetite disappeared. I wanted to look like them so much! I cannot believe I was so stupid—thinking that being thin would solve all my problems and make me happy.*

*“Even nowadays, I still watch my weight very closely. I don’t think I suffer from an eating disorder, but this feeling of guilt when I eat a piece of pizza is still there. But I’ve learned to live with it.”*

because they find it to be a more pleasurable activity than do people of normal weight. Jacobs and Wagner (1984) found that the reinforcement values of spending time with friends and family were higher for obese people than for people of normal weight. For other people, eating is a negative reinforcement of disturbed emotions—that is, it can eliminate anxiety, depression, and upset. Oral activity becomes a means of finding security and release from tension (Heatherton, Herman, and Polivy, 1992).

For still other people, eating becomes a means of punishment. They have poor self-esteem or hate themselves. Weight gain becomes a way of reinforcing their own negative self-conceptions and proving they are right in feeling that way.

### Eating Patterns

Since most heavy teens are unhappy with their weight, they frequently try to control their eating. For instance, they may not allow themselves to eat breakfast and

have only a small lunch (Keski-Rahkonen, Viken, Kapiro, Rissanen, and Rose, 2004), but then they get so hungry later in the day that they binge and eat late at night. Others frequently snack, even when they are not especially hungry. Some eat rapidly and so consume more food than normal in a set period of time (Marcus and Kalarchian, 2003).

### Food Preferences

Most of us have a variety of foods to select from when we are hungry. Those of us who reach for ice cream and potato chips are more likely to gain weight than those who enjoy fruits and other less calorie-laden alternatives. Some of the increase in average adolescent weight can be attributed to increased consumption of fast food. American adolescents now eat in fast-food restaurants almost one day out of every three (Bowman, Gortmaker, Ebbeling, Pereira, and Ludwig, 2004). Research has shown that overweight teens eat more in fast-food restaurants than their more slender counterparts, and that their total calorie intake is greater on days in which they eat at fast-food establishments than on days they do not (Ebbeling, Sinclair, Pereira, Garcia-Lago, Feldman, and Ludwigs, 2004).

### Lack of Exercise

Adolescents’ physical activity and sports participation will be discussed in a later section. Suffice it here to say that doing exercise both burns calories while you are doing it and increases the body’s **metabolic rate** (the rate at which it burns calories) for a period of time even after you have finished.

## Interpersonal Interactions and Being Overweight

Parents and peers can both influence adolescents’ tendency to gain weight.

### Family Contributors

Parents greatly influence what foods their children eat and how much they participate in physical activity. For example, parents can insist that the entire family eat dinner together and prepare healthy meals; alternatively, parents can leave their adolescents to fend for themselves, with the result that they live on peanut butter sandwiches, hot dogs, and fast food. Some parents use high-caloric foods as rewards and inadvertently train their children to expect cookies and candy when they have had success. Similarly, parents can

**obesity** overweight; excessively fat.

**metabolic rate** the rate at which the body utilizes food and oxygen.

model athletic participation by taking walks or playing tennis with their children, or they can spend their time watching television with them.

### Peer Contributors

Peers influence one another's weight, as well. For example, they help set behavioral norms, such that teenagers whose friends participate in sports are more likely to do so, as well. Conversely, teens whose friends hang out at fast-food restaurants or who make snacking a large part of the social scene will be discouraged from maintaining a normal weight.

### Environmental Influences

The places in which adolescents find themselves may or may not be conducive to weight gain.

### Schools

As mentioned earlier, adolescents spend much of their lives in school. School policies can therefore determine what they eat during those hours. What foods are served at lunch? Are vending machines available? If so, what foods do they contain? Are students allowed to leave the building to eat lunch elsewhere? (If they are, they are likely headed to a fast-food restaurant.) Recently (in 2006), America's largest beverage distributors agreed to halt sales of sodas to elementary and middle schools, and they agreed to sell only diet sodas in high schools. These steps will help ensure that younger adolescents drink more water, juice, and low-fat milk and will likely reduce high schoolers' sugar consumption.

School policies can also promote students' physical activity levels. For example, they encourage students who live within a close radius to the school to walk by discontinuing bus service. Alternatively, they can ensure that students must regularly enroll in physical education classes that make them sweat.

### Community

Communities can also encourage or discourage obesity. Do they provide parks and rec centers? Do they offer public basketball courts? Are these facilities open for extensive hours? Are there sidewalks, which encourage walking, and bike paths, which encourage riding?

### Broader Social Influences

Obesity has increased, in part, because food (and especially calorie-dense food) is far more available than in the past. In addition, we can now buy foods that are already or almost entirely prepared and ready for consumption, and this convenience encourages impulsive eating. What's more, the portion sizes served in restau-

### ANSWERS WOULDN'T YOU LIKE TO KNOW ...

#### Why are more and more teens obese?

Ever greater numbers of teens are obese, in part, because not only is junk food more available (even in school and at home), but it also comes packaged in larger portions. In addition, adolescents get less exercise than they did in the past because they spend more time sitting in front of the television, playing video games, and visiting chat rooms.

rants have increased enormously (Nielsen and Popkin, 2003).

Lack of activity is also an issue. Adolescents today spend more time in front of the TV and computer monitor than they did in the past, burning relatively fewer calories as they do. We have also become more and more dependent on automobiles to take us where we wish to go and as a result spend less time walking.

## EATING DISORDERS

Due to societal stereotypes of physical attractiveness, most adolescent girls desire to be slim. In fact, it has become the norm for adolescent girls to begin dieting in early adolescence (Tyrka, Graber, and Brooks-Gunn, 2000). Sometimes the desire to be thin is carried to such an extreme that an eating disorder develops. No longer a rarity, eating disorders are the third most common type of chronic illness among adolescent girls (Rosen, 2003). Two such disorders are discussed here: anorexia nervosa and bulimia.

### Anorexia Nervosa

**Anorexia nervosa** is a life-threatening emotional disorder characterized by an obsession with food and weight. It is sometimes referred to as the *starvation sickness* or *dieter's disease*.

In order to be diagnosed as anorexic, an individual must be at least 15 percent under normal body weight for his or her height and build. In addition, an individual must show an excessive fear of gaining weight and becoming fat and have a distorted body image such that he or she does not perceive himself or herself as being underweight. Furthermore, a female must experience *amenorrhea*, or the absence of menstrual cycling (American Psychiatric Association, 2000). It is not uncommon for anorexics to be clinically depressed (Kennedy, Kaplan, Garfinkel, Rockert, Toner, and Abbey, 1994) and to exhibit obsessive-compulsive traits (e.g., Fisher, Fornari, Waldbaum, and Gold, 2002). Some anorexics also engage in bingeing and purging behaviors.

**ANSWERS WOULDNT YOU LIKE TO KNOW ...****What types of teens are at risk for developing anorexia?**

Early adolescent Caucasian girls who are perfectionists and who have controlling, overly protective parents are at the highest risk for developing anorexia.

Anorexia is also associated with numerous medical conditions: slow heartbeat, cardiac arrest (a frequent cause of death), low blood pressure, dehydration, hypothermia, electrolyte abnormalities, metabolic changes, constipation, and abdominal distress (Becker, Grinspoon, Klibanski, and Herzog, 1999). Once the illness has progressed, anorexics become thin and emaciated in appearance. They feel cold, even in warm weather. The body grows fine silky hair to conserve body heat. A potassium deficiency may cause malfunction of the kidneys. Researchers have also found brain abnormalities coupled with impaired mental performance and lessened reaction time and perception speed due to malnutrition.

Although some anorexics have only one bout with the disorder, between 30 and 40 percent relapse (Herzog et al., 1999). Ultimately, more than 10 percent of anorexics die because of medical problems associated with malnutrition (Nye and Johnson, 1999; Reijonen, Pratt, Patel, and Greydanus, 2003). Their obsession with dieting is combined with a compulsion to exercise, which leads to social isolation and withdrawal from family and friends (Davis, 1999). Hunger and fatigue are usually denied, and any attempt to interfere with the regime is angrily resisted. Anorexics are very difficult to treat (Woodside, 2005).

Anorexia is less common among African American than Caucasian girls, even though African American girls tend to be heavier (Henriques, Calhoun, and Cann, 1996; Walcott, Pratt, and Patel, 2003). Anorexia is also much less common in males. Those males who do develop the disorder are often athletes, dancers, or models who must control their weight (Rolls, Federoff, and Guthrie, 1991). Wrestlers, body builders, and long-distance runners are especially at risk (Garner, Rosen, and Barry, 1998). Some 95 percent of anorexics are female, usually between the ages of 12 to 18. The disorder has become more common and now affects about 1 percent of all adolescent females (Dolan, 1994). It occurs among individuals from all economic classes and a wide variety of age groups.

Much of the recent research into the cause of anorexia has focused on anorexics' relationships with their families. Families with anorexic daughters are often described as noncohesive and unsupportive (Tyrka, Graber, and Brooks-Gunn, 2000). They raise their daughters

to be excessively full of feelings of guilt (Berghold and Lock, 2002), and mothers transfer their own concerns about weight and attractiveness to their daughters (Hirokane, Tokomura, Nanri, Kimura, and Saito, 2005). In other words, girls are more likely to diet if their mothers do as well, and they are more likely to engage in extreme weight-loss measures if their mothers are dissatisfied with their own bodies (Benedikt, Wertheim, and Love, 1998; Hill and Pallin, 1998). Eating disorders have also been linked to sexual abuse (Fornari and Dancyger, 2003).

Some of this research is longitudinal, and so it is possible to say that impaired family relationships are a strong predictor of disordered eating symptoms—stronger even than weight (Archibald, Graber, and Brooks-Gunn, 1999). This effect holds true in early adolescence but not in middle and late adolescence (Archibald, Linver, Graber, and Brooks-Gunn, 2002).

The fact that anorexia nervosa appears at puberty after the development of sexual characteristics suggests that sexual conflict is a central issue in the illness. Apparently, anxiety develops over feminine physiological changes. The girl's developing body symbolically demands coming to terms with her female sexual identification. She has the task of integrating her new body image with her concept of female sexual roles. If she cannot accept her female sexual identity, she seeks to repress her physical development to a stage of prepubertal development. She then actually distorts her body image through extreme weight loss and takes on a slim, masculine appearance. She may become severely emaciated in appearance, removing all outward signs of her secondary sex characteristics. In addition, she stops menstruating. These efforts represent the youth's desperate attempt to halt her sexual development. Instead of progressing forward through adolescence, she regresses to a prepubertal stage of development.

Anorexics have a pervasive sense of inadequacy and distorted body images that often lead to depression. They have low self-esteem and high anxiety (Button, 1990), reflecting negative attitudes about physical attractiveness (Canals, Carbajo, Fernandez, Marti-Henneberg, and Domenech, 1996). Anorexics are often described as compliant, self-doubting, dependent, perfectionistic, and anxious (McVey, Pepler, Davis, Flett, and Abdollell, 2002; Nye and Johnson, 1999). They are not very attuned to their body's internal signals of hunger (Wonderlich, Lilenfeld, Riso, Engel, and Mitchell, 2005). Adolescents with anorexia nervosa rarely look at themselves and, even when forced to, rarely perceive their body images

**anorexia nervosa** an eating disorder characterized by an obsession with food and with being thin.

accurately. They view their bodies with disgust, which is a projection of how they actually feel about themselves.

What are the various forms of treatment for anorexia nervosa? Medical treatment monitors the physical condition of the anorexic and tries to return her weight to the safe range. Behavior modification uses rewards and deprivation, contingent on eating behavior and weight gain. Family therapy seeks to solve underlying family interaction problems and to improve relationships with the anorexic (Dare, Eisler, Russell, and Szmukler, 1990). Individual counseling can be used to help the individual resolve her emotional conflicts. A recent review found that family therapy was most effective overall (Le Grange and Lock, 2005). The goals are to eliminate the anorexic symptoms and to enable the patient to feel and act as an independent person who likes herself, is confident about her capabilities, and is in control of her life. Accomplishing these goals may require long-term therapy (Lask, Waugh, and Gordo, 1997).

## Bulimia

**Bulimia** is a binge-purge syndrome. The name comes from the Greek *bous limos*, which means “ox hunger” (Ieit, 1985). The first cases of bulimia that appeared in the literature were in connection with anorexia nervosa (Vandereycken, 1994). Some clinicians diagnosed bulimia as a subgroup of anorexia; however, since binge eating occurs in both obese and normal-weight individuals, bulimia is now designated a separate eating disorder (American Psychiatric Association, 2000).

In order to be diagnosed with bulimia, an individual must (1) participate in repeated episodes of binge eating over which he or she has no control; (2) engage in excessive compensatory behaviors to avoid gaining weight, such as fasting, vomiting, and abusing laxatives; and (3) unduly allow his or her weight to influence self-esteem. Moreover, the bingeing must occur at least twice per week over a period of at least three months (American Psychiatric Association, 2000).

Bulimia is characterized by a compulsive and rapid consumption of large quantities of high-calorie food in a short period of time (Holleran, Pascale, and Fraley, 1988). One study of the frequency and duration of bingeing episodes among bulimic clients in an outpatient setting revealed an average of 13.7 hours spent in binge eating each week (Mitchell, Pyle, and Eckert, 1981). Bingeing and purging may occur many times daily. Caloric consumption ranged from 1,200 to 11,500 calories per episode, with carbohydrates as the primary food. Many clients report losing the ability to perceive a sense of fullness. Episodes usually take place secretly, often in the afternoon or evening and sometimes at night. Induced vomiting is the usual aftermath of binge-eating episodes. Bulimics use lax-

atives, diuretics, enemas, amphetamines, compulsive exercising, or fasting to offset the huge food intake.

Bulimics are unhappy with the appearance of their bodies and yearn to attain the thin shape glamorized by society (Ruuska, Kaltiala-Heino, Rantanen, and Koivisto, 2005). However, they lack control over eating. The bulimic feels driven to consume food and, because of a concern about body size, to purge afterward. Binges usually follow periods of stress and are accompanied by anxiety, depressed mood, and self-deprecating thoughts during and after the episode (Davis and Jamieson, 2005; Wegner, Smyth, Crosby, Wittrock, Wonderlick, and Mitchell, 2002).

Who develops bulimia? It is more common, by far, in girls than boys; only about 10 percent of bulimics are male (Nye and Johnson, 1999). Bulimia tends to develop in mid to late adolescence and last into the twenties, which is a somewhat later age range than anorexia (Reijonen, Pratt, Patel, and Greydanus, 2003). Girls from lower-income families are relatively more likely to develop bulimia than girls from upper-income families (Gard and Freeman, 1996).

Bulimics wish to be perfect, yet they have a poor self-image, have a negative self-worth, are shy, and lack assertiveness (Bardone, Vohs, Abramson, Heatherton, and Joiner, 2000). Like anorexics, they are often perfectionistic and unsatisfied with the way they look. They believe themselves to be unattractive (Young, Clopton, and Bleckley, 2004). They feel pressured by others to be thin.

Because of unrealistic standards and the drive for perfection, pressure builds up, which is relieved through lapses of control during binge-purge episodes. This is followed by feelings of shame and guilt, which contribute to the sense of low self-esteem and depression. Bulimics are often difficult to treat because they resist seeking help or sabotage treatment.

The families of bulimics are somewhat different than those of anorexics. Whereas the families of anorexics tend to be overprotective, repressed, and enmeshed, the families of bulimics are better described as chaotic, stressful, and disengaged (Johnson and Flach, 1985; Tyrka, Graber, and Brooks-Gunn, 2000). The parents of bulimics typically place a great deal of emphasis on attractiveness, physical fitness, achievement, and success (Roberto, 1986).

Some of the most promising treatment programs involve cognitive-behavioral approaches that help clients identify unrealistic and self-defeating cognitions and assumptions (Phillips, Greydanus, Pratt, and Patel, 2003). Correcting these irrational beliefs is an essential step toward changing the bulimic's behavior. Family therapy has also been found useful (Vanderlinden and Vandereycken, 1991). Therapists have found that antidepressants can reduce bingeing and purging behaviors (Freeman, 1998).

**TABLE 5.1** COMPARISON OF ANOREXIA NERVOSA AND BULIMIA

CHARACTERISTIC	ANOREXIA NERVOSA	BULIMIA
Weight	Emaciated	Near normal
Prevalence	1% of adolescent girls	2% to 3% of adolescent girls
Age of Onset	Teens	Late teens, early twenties
Race/Ethnicity	Primarily Caucasian	No racial/ethnic differences
Eating Behavior	Barely eats	Periodically consumes large quantities and then purges
Personality	Dependent, anxious, perfectionistic	Moody, impulsive, unable to tolerate frustration
Emotional State	Denial	Guilt and shame
Desire to Change	No desire to change	Great desire to change
Behavior Motivation	Desire for control and rejection of femininity	Desire to be perceived as attractive
Family Background	Enmeshed and repressed	Conflicted and stress filled
Treatment Success	Very difficult to treat	Somewhat easier to treat

Many individuals find it difficult to distinguish between anorexia nervosa and bulimia. To help clarify the differences, Table 5.1 provides a point-by-point comparison of these two disorders.

## HEALTH-RELATED BEHAVIORS

Being healthy requires not only avoiding unhealthy behaviors but also practicing healthy behaviors. In order to stay healthy, adolescents must eat well, exercise sufficiently, and get enough sleep. But what does that mean?

### Nutrition

Adults sometimes think that adolescents are constantly eating. The fact is, during the period of rapid growth, adolescents *need* greater quantities of food, as well as certain nutrients, to take care of bodily requirements.

The stomach increases in size and capacity in order to be able to digest the increased amounts of food needed by adolescents. Research shows that the caloric requirement for girls may increase, on average, by 25 percent from ages 10 to 15 and then decrease slightly and level off. The caloric requirement for boys may increase, on average, by 90 percent from ages 10 to 19. Active adolescent boys need between 2,500 and 3,000 calories a day; girls, with their smaller stature and lower basal metabolic rate, need about 2,200.

Adolescents also need the right nutrients. Most studies of nutrition during adolescence show that many adolescents have inadequate diets (Venkdeswaran, 2000). The deficiencies may be summarized as follows:

### ANSWERS WOULDN'T YOU LIKE TO KNOW ...

#### What kinds of foods should adolescents eat?

The healthiest diet for adolescents includes a lot of fruits and vegetables (the green, red, and yellow kinds), whole grains (brown rice, not white bread), lean meats and fish, and lowfat dairy products. It includes little processed sugar, saturated fats (butter and ice cream), and starches (potatoes).

1. Insufficient calcium, due primarily to the inadequate intake of milk and dairy products—adolescents need 1,200 to 1,500 milligrams of calcium daily, which is equivalent to about three servings of dairy products.
2. Insufficient iron, especially in girls—girls need more iron than males (15 milligrams versus 12 milligrams) due to the blood loss that occurs with menstruation. Iron can be found in red meat, eggs, beans, and dark green vegetables, such as spinach.
3. Inadequate protein, primarily in girls who are dieting.
4. Too little Vitamin A, which can be found in yellow and green fruits and vegetables.
5. Insufficient Vitamin B6, which can be found in seeds, whole grains, and legumes.

**bulimia** an eating disorder characterized by binge-eating episodes and purging.



In an attempt to be slim and attractive, many adolescent girls constantly diet. Unfortunately, carrot sticks and diet soda do not provide adequate nutrition.

Adolescent girls have nutritional deficiencies more often than boys. One reason for this deficit is that girls eat less and so are less likely to get the necessary nutrients (Newell, Hammig, Jurick, and Johnson, 1990). Another reason is that girls diet more often (Adams, Sargent, Thompson, Richter, Corwin, and Rogan, 2000), depriving themselves of necessary nutrients. The additional need for some nutrients because of menstruation or pregnancy sometimes also imposes special problems.

Why do so many adolescents, both boys and girls, have inadequate diets? Here are some of the reasons:

1. They *skip breakfast* because of lack of time in the morning, because they would rather sleep late, and for other reasons.
2. *Snacks*, which make up about one-fourth of the daily intake of food, *do not compensate for meals missed*. This is because snacks are primarily fats,

carbohydrates, and sugars, and because the intake from snacks is not sufficient to make up for the food missed.

3. They eat only *small quantities of nutritious foods*, especially fruits, vegetables, milk, cheese, and meat. Girls usually need more eggs and whole-grain cereal than they eat. One-quarter of all vegetables eaten by teens are french fries (Washington State Department of Health, 2000)—hardly the most nourishing choice! Very few adolescents (20 percent) eat enough fruits and vegetables (Grunbaum, Kann, Kirchen, Williams, Ross, and Lowry, 2002). Since a diet low in fruits and veggies poses significant long-term health risk (Frazao, 1999), adolescents should be encouraged to eat more of these foods.
4. *Inadequate knowledge of nutrition* influences the development of poor nutrition practices. Many times, high school boys and girls know so little about nutrition that they cannot select a well-balanced meal in a cafeteria.
5. *Social pressures* may cause poor eating habits. Girls, in particular, may encourage each other to follow extreme, controversial diets in order to lose weight. Friends may also pressure one another to follow strict vegan and macrobiotic diets. While it is certainly possible to eat healthy under these regimens, adolescents need to consciously work to ensure an adequate protein intake.
6. *Troubled family relationships and personal adjustments* seem to accompany poor eating habits. Adolescents from broken or troubled homes may not have parents at home to cook for them or to see that they get an adequate diet. Those with emotional problems may have nervous stomachs, ulcers, or more complex reasons for not eating properly.
7. The *family is poor* and cannot afford to buy proper food. Altogether, about 12 percent of families in the United States are below the poverty level (U.S. Bureau of the Census, 2003b).

How can teens be encouraged to eat better? Parents and other adults can model good eating habits and prepare nourishing meals. Since most teens cannot be bothered to count milligrams of calcium and other nutrients, they need to be taught guidelines that will help them take in the good (vitamins, minerals, protein) and leave out the bad (saturated fats, sugars). One widely used model is the U.S. Department of Agriculture's My Pyramid (see Figure 5.5). Adolescents who follow this model will take in all the nutrition they need. Also, making sensible selections within each food group will allow getting the proper nutrients without consuming excess calories.

**FIGURE 5.5 MY PYRAMID**

The government's newest eating recommendations. Each of the colored bars stands for a different food group. From left to right, the bars represent grains, vegetables, fruits, oils, milk, and meat and beans.

Source: <http://www.mypyramid.gov>.



## Exercise

American adolescents as well as adults are in the midst of a nationwide fitness craze—or at least, we say we are. Working out and staying in shape have become immensely popular—to talk about. The trendiest clothes include active wear and expensive athletic shoes. Every sizable community has fitness centers, gyms, pools, tennis courts, and bike trails.

Unfortunately, all the talk and attention has not translated into increased activity. Only about one-half of American adolescents regularly participate in vigorous physical activity. About 25 percent report no vigorous activity at all, and about 14 percent get no exercise at all. Adolescent girls are less likely to be physically active than adolescent boys, and Black females are even less likely to exercise than White females. The overall amount of physical activity declines during the course of adolescence, which means older teens get even less exercise than younger ones (Aaron, Stortin, Robertson, Kriska, and LaPorte, 2002; U.S. Department of Health and Human Services, 2001).

## Benefits of Exercise

People are finding that exercising is fun and beneficial in a variety of ways. One most obvious benefit is to *build physical fitness*. Exercise tones up the body system, builds muscles, strengthens the heart and lungs, and improves circulation. It also relieves nervous tension, depression, and anxiety. Similarly, a desire to *lose weight* motivates many adolescents to exercise. Nearly everyone knows that exercising consumes calories and that exercise can also depress the appetite (Vartanian and Herman, 2006; Watkins, 1992).

In addition, exercise *promotes psychological and mental health* (Carruth and Goldberg, 1990). Possessing a physically fit body that meets the cultural ideals of thinness and beauty can enhance body image and self-esteem (Ferron, Narring, Cauderay, and Michaud, 1999). Exercise may improve self-esteem by promoting feelings of competence and mastery (Maton, 1990). There is a positive correlation between physical activity and feelings of competence, including social competence. Also, physically active adolescents are less likely to feel depressed or anxious than less-active youth (Kirkcaldy,

Shephard, and Siefen, 2002; Sears, Sheppard, Scott, Lodge, and Scott, 2000). Boys and girls seem to benefit equally in this way from participation in sports and exercise (Gore, Farrell, and Gordon, 2001).

There is evidence that physical activity patterns developed in adolescence may continue into adulthood. A comparison of the physical activity levels of 453 young adult men, age 23 to 25, with their childhood fitness scores revealed that those who were physically active as adults had better childhood physical fitness test scores than those who were not physically active (Dennison, Straus, Mellits, and Charney, 1988).

How much exercise do adolescents need? According to the U.S. Surgeon General, they should average at least 30 minutes of moderately intense physical activity on all or most days of the week (U.S. Department of Health and Human Services, 2001). How can they best be encouraged to do this? The best way appears to be to enroll them in organized, after-school physical activities (Sallis, Prochaska, Taylor, Hill, and Geraci, 1999). This suggests that schools should place an emphasis on intramural as well as varsity sports. In addition, girls' participation could be increased by providing them environments in which they can be both awkward and sweaty without fear of embarrassment, since embarrassment is a barrier to athletic participation (Grieser et al., 2006).

## Sleep

Not only do adolescents need exercise to remain healthy, but they need adequate sleep, as well. In fact, however, many teenagers do not get as much sleep as they should.

Mary Carskadon and her colleagues have intensely studied adolescent sleep patterns and their consequences. In one study, they compared the sleep habits of students doing poorly in school (earning mostly Cs or lower) with those of students doing well. They found that compared to the A and B students, the C and D students got about 40 minutes less sleep per night and stayed up later on weekends (Wolfson and Carskadon, 1998). And no wonder: The participants who reported getting less sleep were both more tired and depressed during the day than those who reported getting more sleep. Students who lack sleep are also more inattentive (Fallone, Acebo, Arendt, Seifer, and Carskadon, 2001), which surely cannot help school performance. The seriousness of adolescent sleep deprivation was underscored even more strongly in one of Carskadon's more recent studies. About two-thirds of the adolescents she sampled reported driving badly due to tiredness, and 20 percent claimed that they had actually fallen asleep while behind the wheel! Males were more likely to drive while excessively tired than females (Carskadon, 2002b).

Although most adolescents believe that they should stay up later than they did when they were children, teenagers actually need *more* sleep than preteens

## ANSWERS WOULDN'T YOU LIKE TO KNOW ...

### Why can't you and your friends stay awake during 8 o'clock classes?

You're probably falling asleep in your early classes because you're staying up too late and not getting enough sleep. However, it's not entirely your fault, since the adolescent brain is primed to desire sleep at a later hour than the adult brain. Not leaving your term paper to the last minute couldn't hurt, though.

(9 hours), not less (Carskadon, Harvey, and Duke, 1980). Yet adolescents stay up later than children—and older adolescents stay up later than younger adolescents—because they are under increasing pressure to juggle the responsibilities of homework, sports, and jobs (Carskadon, 2002a). They are also more likely to socialize during late hours and to stay up late to play video games or watch TV (Owens, Stohl, Patton, Reddy, and Crouch, 2006). Another issue is that parents become less likely to enforce early bedtimes as their children age (Mercer, Merritt, and Cowell, 1998).

Why do so many adolescents, even those who are not especially busy, stay up late? Carskadon's research indicates that there is a real biological underpinning to this behavior. She found that an adolescent's peak secretion of **melatonin**—the hormone that your brain produces to make you sleepy—occurs two hours later during the night than that of a child or an adult (Carskadon, Wolfson, Acebo, Tzischinsky, and Seifer, 1998). This delay has been tied directly to pubertal status. When girls of the same age who had and had not entered puberty were compared, only the ones who had begun to develop had later melatonin surges (Carskadon, Vieira, and Acebo, 1993).

Ironically, as bedtimes get later, waking times get earlier. Middle schools generally start earlier in the morning than elementary schools, and high schools begin earlier yet, often before 8:00 A.M. (Most school districts have staggered starting times so that they can use the same school buses for students at all three levels.) Since adolescents' biological clocks are set so as to encourage them to sleep late, it is not surprising that middle school and high school students are not often alert during their first few class periods. These adolescent sleep experts, therefore, advocate starting adolescents' school days later and enforcing an earlier "lights out" (Carskadon, Wolfson, Acebo, Tzischinsky, and Seifer, 1998).

## ACNE

Although **acne** is not a serious medical concern, it is often an upsetting aspect of adolescent development. Many teens spend countless dollars purchasing and then

endless hours applying creams, astringents, and special soaps to try to control their acne. In addition, having acne can lead to self-consciousness and even social withdrawal, particularly when youths are teased or otherwise embarrassed by the condition of their skin. As such, having acne is an important adolescent phenomenon.

## Skin Gland Development

Three kinds of skin glands can cause problems for the adolescent:

1. **Merocrine** sweat glands, distributed over most of the skin surfaces of the body
2. **Apocrine** sweat glands, located in the armpit, mammary, genital, and anal regions
3. **Sebaceous** glands, which are the oil-producing glands of the skin

During the adolescent years, the merocrine and apocrine sweat glands secrete a fatty substance with a pronounced odor that becomes more noticeable. The result is body odor. The sebaceous glands develop at a greater speed than the skin ducts through which they discharge their skin oils. As a result, the ducts may become plugged and acne can develop. Almost 85 percent of adolescents develop acne at some point (University of California at Los Angeles Medical Center, 2000).

Acne can take a variety of forms, depending on its severity. Whiteheads and blackheads result when oil glands becomes blocked. In the case of blackheads, the plugs oxidize and turn dark. (Blackheads are not dark because they contain embedded dirt.) If the plug becomes infected, then a **papule**—a tender, inflamed, pink bump—or a **pustule**—a pus-filled pimple—will form. Large pustules, called **cysts**, can leave permanent scars. Acne is most common on the face, upper back, and chest.

## Causes

Acne is triggered by the increased amount of testosterone present during adolescence. Boys tend to develop acne more than girls because they have more testosterone in their systems. Acne has little to do with personal hygiene, since most people wash their faces once or twice per day. Masturbation does not cause acne, either. And contrary to popular belief, most peo-

ple can eat chocolate or greasy foods without exacerbating their acne. On the other hand, oily cosmetics, the friction caused by rubbing the skin, and stress can make acne worse.

## Treatment

Mild cases of acne often respond to over-the-counter medications. Creams containing benzoyl peroxide kill the bacteria that cause pustules and can reduce oil production. Salicylic acid helps keep pores from becoming clogged. More severe cases of acne require prescription medication. Topical vitamin A solutions (Retin-A) are one option; oral antibiotics, such as tetracycline and erythromycin, are another. Estrogen-containing birth control pills are usually effective, as well, because estrogen counters the effects of testosterone.

Individuals with acne tend to want to scrub with harsh, abrasive soaps and douse their faces with harsh astringents in an attempt to wash away blackheads and dry out the skin. Neither remedy is desirable, however, since both will irritate the skin and often make acne worse. Instead, individuals with acne should treat their skin gently by using mild soap and avoiding scouring (National Institute of Arthritis and Musculoskeletal and Skin Diseases, 2006).

**melatonin** the hormone that the brain produces to induce sleep.

**acne** pimples on the skin caused by overactive sebaceous glands.

**merocrine glands** sweat glands distributed over the entire body.

**apocrine glands** sweat glands located primarily in the armpits and groin whose secretions cause body odor.

**sebaceous glands** oil-producing skin glands whose secretions can cause acne if the glands' pores become blocked.

**papules** tender, raised red bumps that are precursors to pimples.

**pustules** the medical term for *pimples*.

**cysts** large, deep pimples that can cause scarring.

## SUMMARY

1. Adolescence is intrinsically a healthy time of life. Most of the health concerns that teens face are due to their own behaviors and are thus preventable. The three leading causes of death for American adolescents are car accidents, homicide, and suicide.
2. Adolescents often make poor health-related decisions because they lack knowledge and fail to perceive the hazards that risky behaviors entail. They may also bow to peer pressure and societal messages that glorify unhealthy and even dangerous activities.

3. Adolescents in developing countries face different health risks than American adolescents. Malnutrition, lack of medicine and health services, and war-related violence are of more concern in the Third World than in the United States.
4. Adolescents are concerned about body image: physical attractiveness, body-type concepts of the ideal, body weight, and timing of their own development in relation to what is considered normal. Adolescents who are physically attractive are treated in more positive ways, develop more positive self-perceptions and personalities, and are more popular and better adjusted socially.
5. The three body types are ectomorph, mesomorph, and endomorph. Boys prefer to be mesomorphic: solid and muscular. Girls hope to be ectomorphic: tall and slender. A soft, round, endomorphic build is least preferred by both genders.
6. Most adolescents are not happy with their bodies. This is more true of girls than boys, and their discontentment increases over the course of adolescence. Unfortunately, not liking one's body can have a negative effect on one's overall level of self-esteem.
7. The timing of physical maturation is important. Some adolescents mature earlier or later than average, with a differential effect. Early-maturing boys may enjoy athletic, social, and community advantages but they are also under more pressure to act older than their age and are at a heightened risk to engage in antisocial activities at a young age. Late-maturing boys suffer socially induced inferiority.
8. Girls who mature in elementary school tend to feel awkward and self-conscious because they look different. Early maturity results in precocious heterosexual interests. Late-maturing girls are at a social disadvantage. They look like little girls, resent being treated as such, and are envious of their friends who have matured. These social advantages are temporary and are overcome when maturation takes place.
9. Current research suggests that off-time maturation—whether relatively early or relatively late—puts adolescents at risk for poor psychological and behavioral adjustment.
10. An ever-increasing number of American adolescents are obese, which poses health risks and increases their likelihood of social rejection. Obesity is on the rise because adolescents are eating more and exercising less than they did in the past.
11. Anorexia nervosa is a life-threatening emotional disorder characterized by an obsession with food and weight. Symptoms include constant preoccupation with food and dieting, body image disturbances, excess weight loss, amenorrhea, hyperactivity, moodiness, isolation, and strong feelings of insecurity, helplessness, depression, and loneliness. Anorexia is also associated with numerous medical conditions.
12. Anorexia is found primarily in teenage girls and usually appears at puberty. Anorexics often have disturbed relationships with their parents.
13. Bulimia is a binge-purge syndrome characterized by compulsive and rapid consumption of large quantities

of high-calorie food, followed by efforts to purge the food.

14. Bulimics are unhappy with the appearance of their bodies, yet they are impulsive, lack control over eating, and are anxious and depressed with low self-esteem. Bulimics usually come from families that are characterized by strife and conflict.
15. Nutrition is extremely important to individual health. Adolescents may suffer a variety of deficiencies: calcium, iron, protein, and vitamins A, C, and B6. There are a number of reasons for deficiencies: Adolescents skip breakfast; snacks of junk food do not make up for meals missed; small quantities of the right foods are eaten; inadequate knowledge of nutrition results in poor food selection; social pressures and troubled family relationships result in poor eating habits; or the family cannot afford to buy good food.
16. Exercise is not only fun but physically and psychologically beneficial. Many adolescents participate in sports of some kind, but too many American youths do not get sufficient exercise.
17. Most adolescents do not get enough sleep because they stay up late and get up early. This sleep deprivation has both psychological and academic ramifications.
18. Adolescents worry about body odor and acne caused by the increased secretion of skin glands during puberty. Prompt attention and treatment of acne may prevent its becoming severe.

## KEY TERMS

acne	112	merocrine glands	113
anorexia nervosa	106	mesomorph	99
apocrine glands	113	metabolic rate	105
bulimia	108	mortality	96
cysts	113	obesity	104
ectomorph	99	papules	113
endomorph	99	pustules	113
melatonin	112	sebaceous glands	113

## THOUGHT QUESTIONS

### Personal Reflection

1. Do you ever think about your own health? Do you have any health problems? What steps do you take to ensure that you stay healthy? What changes could you make to stay healthy or become healthier?
2. Did you mature earlier or later than your classmates? How did you feel? How did it affect you? What happened? What did you do?
3. Have you ever been overweight? What helped you deal with this condition?
4. What changes should you make in your diet and why? What are you eating too much or too little of?
5. Do you eat breakfast? Lunch? Why or why not?

6. Do you follow a regular routine of exercise? Why or why not? What prevents you from doing so, if you do not?
7. Do you usually get enough sleep? If not, why not? What effects have you noticed when you fail to get enough sleep?

### Group Discussion

8. Have you known anyone who died during adolescence? If so, what was the cause? Was it either accidental or violence related?
9. What are the similarities and differences between the health issues faced by American adolescents and those in the developing world?
10. Why is adolescents' self-esteem so tied to their feelings about their appearance? Why does that change as youths move into adulthood?
11. Have you ever known anyone who was anorexic? Describe the person and explain why you think the person became that way.
12. Have you ever known anyone who was bulimic? Describe the eating behavior of the person, something about the personality of the individual, and why you think the individual was bulimic.
13. What do nutritionists consider to be a balanced diet?
14. What helps most in the prevention and/or treatment of acne?

### Debate Questions

15. In order to improve adolescent health, should schools require that all students participate in more extensive physical education activities?
16. Should adolescents who desire it be permitted to have plastic surgery procedures?
17. In order to decrease adolescent obesity, should school cafeterias serve only healthy, nutritious foods?
18. Can the media be held responsible for the widespread body dissatisfaction and high prevalence of eating disorders found in today's adolescents?
19. Cigarette companies are not allowed to advertise on television. Should fast-food commercials also be banned?

## SUGGESTED READING

**Burniat, W., Coke, T. J., Lissau, I., and Poskitt, E. M. E. (Eds.).** (2002). *Child and Adolescent Obesity: Causes and Consequences, Prevention and Management*. New York: Cambridge University Press.

**Carskadon, M. A. (Ed.).** (2002). *Adolescent Sleep Patterns: Biological, Social, and Psychological Influences*. New York: Cambridge University Press.

**Hayward, C., Hurrelmann, K., Curie, C., and Rasmussen, V.** (2003). *Gender Differences at Puberty*. New York: Cambridge University Press.

**Kalodner, C. R.** (2003). *Too Fat or Too Thin? A Reference Guide to Eating Disorders*. Westport, CT: Greenwood.

**Rew, L.** (2003). *Adolescent Health: A Multidisciplinary Approach*. Thousand Oaks, CA: Sage.

**Romer, D. (Ed.).** (2003). *Reducing Adolescent Risk: Toward an Integrated Approach*. Thousand Oaks, CA: Sage.

**Smoll, F. L., and Smith, R. E.** (2002). *Children and Youth in Sports: A Biopsychological Perspective*. Dubuque, IA: Kendall/Hunt.

**Thompson, J. K., and Smolak, L. (Eds.).** (2001). *Body Image, Eating Disorders, and Obesity in Youth: Assessment, Prevention, and Treatment*. Washington, DC: American Psychological Association.

## USEFUL WEB SITES

ACNE.org

**www.acne.org**

*This site contains "Answers to Frequently Asked Questions" about acne, a list of common myths about acne, and many links to other related sites.*

Anorexia Nervosa and Related Eating Disorders (ANRED)

**www.anred.com**

*This site, which is especially clearly written, contains information on the three most well-known eating disorders (anorexia, bulimia, and obesity) as well as information on less common disorders.*

Kansas State University Nutrition Links

**www.oznet.k-state.edu/humannutrition/nutlink/n2.htm**

*This site provides numerous links to other sites concerned with all aspects of nutrition.*

National Eating Disorder Association (NEDA)

**www.edap.org/p.asp?webpage\_10=294**

*Click on the button at the top of the page, labeled "Eating Disorder Information." This site is especially useful for those interested in information about eating disorders in males and body image.*

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

**www.niams.nih.gov/hi/topics/acne/acne.htm**

*This site is an up-to-date, comprehensive information source about acne.*