GLOBAL ISSUES
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GROWING UP HEALTHY
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Editor, *eJournal USA*: Global Issues
IIP/T/GIC
U.S. Department of State
301 4th St. S.W.
Washington, D.C. 20547
United States of America
E-mail: ejglobal@state.gov

*Aly Wagner (right), Mia Hamm (left), and Abby Wambach celebrate a goal during a December 2004 game between the United States' and Mexico's Women's National teams. These female football players have inspired young girls to become more involved in team sports, which are widely viewed by experts as effective in helping adolescents grow up physically and emotionally healthy.*
About This Issue

The notion that “children represent the future” is an old one, but it has never been more true than today. Adolescents (defined in this journal as persons between childhood and adults—roughly age 10 to 24) make up fully 20 percent of the world’s population, a larger proportion than ever before.

This demographic phenomenon arises at the same time that medical and social scientists are gaining increased understanding of the many changes that lie along the path between youth and adulthood. Disease or injury, violence or substance abuse, recklessness or exploitation—any number of events may imperil the body or the mind of a young person. At the same time, the physical and mental changes that mark adolescence present important opportunities for growth and development. Scientists now know that physical and emotional well being are essential for youngsters as they grow to become healthy, educated, contributing adult members of their societies.

This edition of eJournal USA examines many of the latest findings about the risks and challenges that young people face today and strategies and solutions for dealing with them. Experts discuss the medical, social, and environmental conditions that can harm our youths. And some famous young athletes who have fresh memories of adolescence tell us how they coped with problems they encountered on the journey to adulthood. The journal also provides rich bibliographic and Internet resources for additional exploration of the issue. We hope readers will be informed and sometimes inspired by what they find here.
Adolescent Health: Global Issues, Local Challenges
ROBERT BLUM M.D., M.P.H., PH.D., WILLIAM H. GATES SR. CHAIR, THE DEPARTMENT OF POPULATION AND FAMILY HEALTH SCIENCES, JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH
Rapidly changing social and economic conditions around the world present new risks to the growth and development of young people.

Box: Students Against Violence Everywhere
SAVE, a national group working in violence-prevention programs, grew out of the shooting death of a single boy to become a nationwide movement.

My Own Words: Mia Hamm on Self-Esteem
America’s best-known female football player shares memories of her own adolescence and ideas on how to cope with life’s rough patches.

KidsHealth Offers Answers
NEIL IZENBERG, PEDIATRICIAN AND EDITOR-IN-CHIEF, KIDSHEALTH
An awarding-winning Web site gives youngsters straight talk online about health issues that matter to them.

Protecting Youth from AIDS in the Developing World
CONSTANCE A. CARRINO, DIRECTOR, OFFICE OF HIV/AIDS, BUREAU FOR GLOBAL HEALTH, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
The U.S. Agency for International Development sponsors several programs dealing with health and lifestyle that enable youngsters to better protect themselves from HIV infection.

My Own Words: Shawn Bradley on Being Different
A player with the National Basketball Association’s Dallas Mavericks recalls how he dealt with teasing and ridicule as a child.

The Global Epidemic of Obesity
WILLIAM DIETZ, M.D., PH.D., DIRECTOR OF THE DIVISION OF NUTRITION AND PHYSICAL ACTIVITY, U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION
The growing occurrence of obesity among the young is producing dangerous and potentially lifelong health problems.

My Own Words: Marvin Lewis on Finding Your Way
A star collegiate athlete who graduated from the Georgia Institute of Technology offers advice on choosing a life path.
Promises That Work
Marguerite W. Sallee, President and Chief Executive Officer, America’s Promise—Alliance for Youth
America’s Promise is a nonprofit alliance that rallies organizations of all kinds to keep promises that promote safety, security, and health care for youth.

My Own Words: Eliseo Quintanilla on Growing Up Fast
A professional football player with D.C. United describes his experiences entering professional sports and moving to the United States from his native El Salvador at a very young age.

Environmental Health Risks to Young People
Lynn R. Goldman, M.D., M.P.H., Professor of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health
Growing young people may have greater vulnerabilities than adults to risks and toxins in the environment.

Box: Turn That Music Down!
Everyday activities and appliances pose threats of long-term hearing damage.

Bibliography

Internet Resources
Over the past 20 years, dramatic social, political, and economic shifts have radically altered the landscape for adolescents around the world. A generation ago, AIDS was unknown; today, between a quarter and a third of adolescent females in Botswana, South Africa, and Zimbabwe are infected, and the threat of this disease casts a shadow over maturing young people everywhere.

A generation ago, infectious diseases predominated as the major sources of morbidity (disease) and mortality globally. Today, social, behavioral, and environmental factors (such as diet and smoking) predominate.

A generation ago, the age of marriage was significantly lower than it is today; more people lived in rural communities and fewer young people attended school. In one generation, school enrollment has dramatically increased in most countries in the developing world. In many countries, education is increasingly the same for young women as for young men.
Family size is shrinking, and, for the first time in history, many young women are able to control their reproductive futures. As economies shift from an agricultural and pastoral base to a service and industrial base, education and employment are more closely intertwined than ever.

These are but some of the key transitions that continue to have a profound impact on the health and well being of young people. This is the world that adolescents live in today.

**Population and Social Trends**

Today, young people aged 10 to 19 comprise 20 percent of the world’s population. More than 85 percent of these young people reside in developing countries. Between now and the year 2025, there will be an increase of about 150 million young people between ages 10 and 24 in the world, and most of this population growth will be in sub-Saharan Africa.

Today, in many countries of sub-Saharan Africa, the median age is between 28 and 41. In 2000, the median age in Europe was double that of Africa. In fact, the 10 youngest countries in the world are in sub-Saharan Africa.

Today’s generation is on the move, from countryside to city, from nation to nation. The United Nations estimates that during the next 30 years essentially all population growth will occur in urban areas, where young people go to look for work.

Globalization is another major force affecting the lives of young people around the world. As jobs move from industrialized to less-developed countries, young people are frequently the beneficiaries of these new work opportunities. While there has been income growth in most regions of the world as a result, this is not the case in much of sub-Saharan Africa.

**Mortality and Morbidity**

What are the major causes of death and disease among youths aged 15 to 29?

In all regions of the world, the five leading causes of death among young people (in various orders, depending on the region) include unintentional injuries, AIDS, other infectious diseases, homicide, war and other intentional injuries, and suicide and self-inflicted injuries.

Accidental injuries, particularly vehicular injuries, represent the leading causes of death for young people in most of the world. In South America, however, almost as many young people die from intentional injuries (such as suicide) as from accidents. In Africa, the leading cause of death for young people is AIDS, followed by other infectious diseases.

In much of the developing world, maternal mortality is a major cause of death among adolescent females, and these deaths result from pregnancy complications and unsafe abortions conducted illegally and secretly (an estimated 40 percent of maternal mortality).

In addition to maternal mortality, reproductive-health-related conditions are a major cause for disease among youths around the world. Specifically, the World Health Organization (WHO) estimates that in “high mortality countries, reproductive and sexual health problems account for 63 percent of DALYs [Disability, Adjusted Life Years—the sum of years of potential life lost due to premature death and the years of productive life lost due to disability], of which 37 percent is due to HIV.”

In much of sub-Saharan Africa, female genital cutting is still widely practiced (in countries like Egypt and Somalia it remains a nearly universal practice), and, while some evidence indicates a decline in the procedure in some countries, the practice carries with it very high risks of infection, sterility, and permanent sexual dysfunction.

Another issue that has recently gained more visibility is the high prevalence of sexual abuse of young males and females in industrialized and developing countries around the world. Human trafficking and commercial sex work have been in the media and policy spotlight. Studies in Asia, Africa, and the Caribbean have revealed prevalence rates for sexual abuse between 19 percent and 48 percent among young women and 5 percent to 32 percent among adolescent males. Sexual vulnerability is emerging as a major issue that jeopardizes young people’s health.

In the past decade there have been important efforts to reduce smoking among adolescents in much of the industrialized world. In response, cigarette companies have shifted aggressive tobacco marketing toward less-developed countries, where there has been a noticeable increase in tobacco use. Smoking prevalence rates are widely divergent among regions of the world and in countries of each region, but overall trends are truly worrisome. The WHO estimates that 10 million deaths a year are due to cigarette smoking, and it predicts that will triple or quadruple in the next 30 years.

What factors reduce harm? A growing body of research from around the world identifies key factors associated with less involvement among young people in a wide range of negative health and social outcomes. Rick Little, founder of the International Youth Foundation in Balti-
more, Maryland, summarizes these important elements as the “4Cs”:

- **Confidence** in areas that improve the quality of young people’s lives, such as literacy, employability, and interpersonal, vocational, and academic skills that allow individuals to contribute to their communities

- **Connection** of youths to persons in the community who provide mentoring, tutoring, leadership, and community service opportunities

- **Character** through values such as individual responsibility, honesty, community service, responsible decision making, and integrity, and relationships that give meaning and direction to young people

- **Confidence-building experiences** that give youths hope and self-esteem through success in setting and meeting goals

It is clear from research that focusing on risk reduction alone is not sufficient to reduce risks and that most such strategies have proven ineffective. Rather, successful interventions build on the strengths and confidence of young people, creating meaningful roles and opportunities to contribute.

Effective interventions link young people with positive adult role models. They create safe places for young people to congregate, to have fun, to develop friendships, and to engage with adults. Effective programs provide opportunities for young people to contribute to others. A caring adult, opportunities to contribute, school and community activities, and a safe place for young people all appear to be part of a critical formula for improved health and social outcomes.

Youth is a time of opportunity but also a time of risk. The risk for us is that if we fail to support the rapidly growing population of young people around the world, we will be left to pick up the pieces. We have a choice but it is not a choice between action and inaction. Rather, it is a choice between whether we operate an ambulance at the bottom of the cliff to pick up the young people who fall, or climb the cliff and build a fence around it.

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My Own Words

Mia Hamm
On Self-Esteem and Sport

My dad was in the Air Force. When I was a kid, we moved every few years. That meant a lot of good-byes. It also meant getting used to a whole new community and a whole new school each time we moved. It was scary because I was really shy. I can still feel what it was like to have to walk into the new school—that sinking feeling in my belly, that lump in my throat. All the kids already knew each other. It would always take time for me to learn how everything worked, what was cool and what was not. It was always a struggle to find where I fit in—never a fun struggle either.

Feelings happen. Sadness, anger, stress, worry, nervousness, and all other emotions are normal. It’s what makes us human. But the emotion comotion can hit girls especially hard during the teen years. Changing bodies, changing friends, changing schools, and just growing up can make life confusing and hard. It’s totally normal.

But the battle to fit in wore on me. Already shy, I didn’t have much self-confidence in my friend-making abilities. I was the girl walking in the halls with her head down, fidgeting. I would check my clothes and hair every two seconds. When I spoke, you could hardly hear my soft voice. I was nervous and doubted myself a lot.

It’s a fact—girls are likely to face a drop in self-esteem during the teenage years. That means all those feelings about self-worth and competence take a big hit. I think part of that is due to wanting to fit in. And part of it is due to what girls see in the media. We are bombarded with nasty messages in videos, magazines, and television—about how girls are “supposed” to be.

Mia Hamm is the world’s best-known female football (known as soccer in the United States) player, an Olympic gold medalist, a World Cup champion, and a three-time All American collegiate star. She was named the Women’s World Player of the Year in 2001 and 2002 by FIFA, the Fédération Internationale de Football Association (the world football governing body). She retired from professional competition in December 2004. Go to www.gogirlo.com for more information about Mia, other athletes, physical activity, and sports.

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Low self-esteem might lead to some very serious consequences. Have you heard the statistics? Before graduating high school, nearly one out of every three girls will experience depression, anxiety, or eating disorders—almost twice the rate of boys. Now that’s scary!

It was very hard not having a history with everyone else. I was an outsider. But what I did have was soccer. Wherever I went, I knew that I could fit in with the soccer ball. The soccer team meant a familiar place and immediate friends for me. I could express myself on the field. Playing hard helped to get rid of all my nervousness. Girls who play sports and are physically active are more likely to feel good about themselves. And that goes for all kinds of physical activities, from yoga to basketball.

Even today, I am not confident all the time. I still think about getting people to like me. When I start feeling like that, I just call my mom or sister or a friend and talk about it. Or I’ll do things that make me feel good, like exercising, cooking, or reading.

There are always going to be things that make you nervous and uncertain. That’s life. And even in my lucky life, I still have those feelings—at the beginning of the new sports season, when meeting new people, or making important decisions. I keep a small, core group of really good friends. Most have been my teammates for years. We have shared a lot together. They have seen the good, the bad, and the ugly sides of me, and they still accept me. They have taught me that it’s how you treat others that makes you valuable in life. I guess I have history with friends now.

Throughout our lives, our self-esteem goes down when we feel like a failure, and it goes up when we feel successful. Doing something well, being praised, and feeling loved goes a long way. We all need to explore opportunities where we can be good at something and feel good about ourselves. Physical activity and sport participation is a terrific way to build up your sense of self-confidence and self-worth. You get to set goals for yourself, you get challenged, you feel good about your accomplishments, and you learn that after today’s failure—there’s tomorrow’s chance.
KidsHealth Offers Answers

Neil Izenberg

Sofia can’t sleep. She is worried that her friend may have an eating disorder and wonders what she can do to help.

Jamie, who is 11 years old, wants to learn about diabetes so he can understand why his grandfather needs to take insulin shots every day.

Thirteen-year-old Lori looks into the mirror and wonders why her friends are more physically developed than she. Is something wrong?

Where can kids and teens turn when they need to learn more about growth, emotions, and how their bodies work? They can talk to their parents, of course—but that’s not always easy—and sometimes their parents may not have the answers. Even during a doctor’s appointment there usually isn’t time to ask and answer questions that kids and teens may have.

Fortunately, there is a place that’s easy to understand, always available, and (according to its readers) even cool. It’s a Web site called KidsHealth, created by doctors and other health experts. The award-winning, friendly site has thousands of easy-to-understand articles, mini-movies, and even games to help answer just about any question that a teen, kid, or parent might have. Whether it’s to learn something new or to get help for a school project, every week about one million people visit KidsHealth, making it the most popular site of its kind on the Web.

KidsHealth encourages families to discuss topics with each other—that’s why most topics have separate articles written for parents, kids, and teens. To make each version of the article really fit the reader, KidsHealth editors use words and phrases that are appropriate and engaging—for example, words like “yucky” and “icky.”

KidsHealth gives teens their own homepage that is written just for them—just the way they like it. During nearly a decade online, the site has received about 100,000 e-mails from readers, many from teens who write, “This site is so cool” and “I like it because it’s written with a low cheese factor.”

What subjects are most popular with kids and teens? Teens look for just about all topics, but some of the most

Neil Izenberg, M.D., is editor-in-chief and founder of the youth-oriented Web site KidsHealth. He is also a pediatrician and the author of several books on children’s health issues.
popular areas are sections about puberty and physical development, sexuality, diet and nutrition, and emotional concerns. Kids often go to the site to learn how the body works—usually for homework help or a school assignment.

KidsHealth, which features hundreds of articles in Spanish, has as much information as a 40-volume encyclopedia and is updated and expanded daily. Whether the article is about a serious, complex medical condition or a simple recipe for kids with special dietary needs, each article is reviewed multiple times by doctors and other health experts. We get rid of all the doctor-speak so people can really understand it.

KidsHealth has been growing and developing on the Web since 1995. In 2004, the site won the prestigious Webby Award for the Best Health Site on the Web—as well as the 2004 Parents’ Choice Gold Award and the 2004 Teachers’ Choice Award. KidsHealth was also chosen as one of the “50 Coolest Websites” by Time magazine.

KidsHealth goes to a lot of effort to earn its reputation. Everything we put on the site has to be current and accurate. Unlike books that become quickly outdated, KidsHealth is a resource that can be counted on as an up-to-date resource filled with lots of other great things—like interactive movies, sounds, and activities that you just can’t find on paper.

KidsHealth.org is a project of the non-profit Nemours Foundation. It has no pop-ups, advertisements, or privacy infringements. The staff of KidsHealth is a unique group of pediatricians, editors, graphic designers, and programmers based at the renowned Alfred I. duPont Hospital for Children in Wilmington, Delaware.

Other youth oriented sites are:

U.S. Centers for Disease Control and Prevention—Adolescents & Teens: http://www.cdc.gov/health/doc.do/id/0900f3ec80227093

Health Initiatives for Youth: http://www.hify.org/index.html


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Protecting Youth From AIDS in the Developing World
Constance A. Carrino

The emerging generation in the developing world will play a critical role in the future, and the U.S. Agency for International Development (USAID) works to help equip them for the challenges ahead. A USAID official discusses the emphasis placed on youth and HIV prevention in the President’s Emergency Plan for AIDS Relief.

Constance A. Carrino, Ph.D., is director of the Office of HIV/AIDS in the Bureau for Global Health at the U.S. Agency for International Development. Dr. Carrino holds a Ph.D. in economics, with emphases in public finance and trade, and is a recipient of the Arthur Fleming Award for excellence in administration in the U.S. government.

Numbering 1.7 billion, today’s youths are the largest generation ever to enter the transition to adulthood. Comprising 30 percent of the population in the developing world, young people present a set of urgent economic, social, and political challenges that are crucial to long-term progress and stability. The values, attitudes, and skills acquired by this generation of young men and women—and the choices they make—will influence the course of current events and shape our future world in fundamental ways.

Youths are encountering formative stages in life. When given a chance to participate, youths have played a catalytic role in promoting democracy, increasing incomes, helping communities develop, and slowing the AIDS epidemic. In Uganda and Zambia, teens and young adults have been key to reducing HIV infection rates through their adoption of more responsible behaviors.

Those who lack opportunities for education and advancement are more susceptible to crime and to being
YOUTH AND AIDS

HIV/AIDS is now a major threat to the lives of young people. About half of all new HIV infections occur among those aged 15 to 24. In the hardest-hit countries, nearly 75 percent of individuals now age 15 are projected to die eventually of AIDS. Yet youths represent a window of opportunity for reversing HIV rates, especially when effective prevention programs reach them before they engage in risky behavior.

The President's Emergency Plan for AIDS Relief, a $15-billion, five-year plan announced in 2003, reinforces the United States' commitment to HIV prevention. It seeks to avert seven million new infections and includes a special emphasis on youths through abstinence and behavior-change interventions. Twenty percent of the President's Emergency Plan funds are set aside for prevention, and one-third are for abstinence-until-marriage programs. USAID is expanding support for activities that reflect this focus.

The environment in which young people live profoundly influences their behaviors. USAID seeks to strengthen protective factors in society that help youths make healthy choices. In particular, close relationships with parents and other adults, school attendance, and supportive community norms lay foundations for positive youth behaviors. Conversely, young people who experience family instability, practice other risk behaviors, and have negative peer role models are more likely to engage in early and unsafe sex. Poverty, including the impact of AIDS on family income, forces many young people out of the protective environments of home and school, increasing their risk of exploitation and unsafe sexual behavior. Street youths and displaced and orphaned youths are at particular risk. Young people may also fail to recognize their personal risks because of a lack of knowledge and understanding of HIV.

Young women are at considerably higher risk of HIV infection. In some African communities, young women aged 15 to 19 have HIV rates six times higher than young men the same age. Poverty, vulnerability to sexual exploitation and coercion, and relationships with older, more sexually experienced men put girls at risk. Economic factors also pressure girls to trade sex for money. USAID helps communities recognize and address social norms that put young women—and youths more generally—at risk of HIV infection.

CHANGING BEHAVIORS

Behavior change is the cornerstone of HIV prevention. More than 70 percent of premature adult deaths are linked to behaviors begun in adolescence, such as smoking and risky sexual behavior. USAID endorses the “ABC” model, made famous by its success in Uganda. “A” stands for abstinence (including delayed sexual initia-
tion among youths), “B” for being faithful, and “C” for correct and consistent condom use. The ABC approach must be adapted to a particular country context or target population. For youths specifically, USAID gives primary emphasis to A and B. USAID supports skills-based HIV education to provide young people with a basic understanding of HIV, help them personalize risk, and develop the self-esteem, communication, and decision-making skills they need to make positive life choices.

In many countries hardest hit by HIV/AIDS, sexual activity begins early, before marriage. Surveys show that, on average, slightly more than 40 percent of women in sub-Saharan Africa have had premarital sex before age 20; among young men, sex before marriage is even more common. Moreover, a significant minority of youth have their first sexual experience before age 15. Abstinence-until-marriage programs are a particularly important resource for young people because fully half of all new infections occur in the 15- to 24-year-old age group. Delaying sexual debut by even a year can have significant impact on adolescents’ health and well-being and on the progress of the HIV/AIDS epidemic.

In 2004, USAID initiated $117 million in new multicountry central agreements for abstinence and behavior-change programs for youths in 14 of the 15 focus countries of the President’s Emergency Plan. Thirteen organizations won the five-year grants through a competitive awards process. One new faith-based partner will work with more than 1.8 million youths in Haiti, Kenya, Mozambique, and Rwanda, and with parents, churches, schools, and other local partners to support youths in choosing abstinence as the best means of HIV prevention. Another new partner will collaborate with Red Cross branches and volunteer networks in Guyana, Haiti, and Tanzania to reach more than 760,000 youths with an interactive peer education curriculum. Theatrical, sports, and musical events will help mobilize communities in support of healthy behaviors.

USAID’s decentralized nature allows it to respond to varying needs in diverse settings, harmonizing prevention messages at the community level. Mass media campaigns involve the creative use of videos, concerts, radio, and television programs that appeal to young people. In Tanzania, 35,000 youths recently celebrated Youth Week, a popular holiday, by participating in sports, music, drama, and writing competitions. More than 1,000 participants, 40 chosen from each of 32 primary schools, wore T-shirts that said, “Praise work, exercise and studies, NOT SEX” or “One minute of pleasure does not pay, WAIT.” Educational messages on abstinence and faithfulness in sexual relations were integrated into the competitions, and there were quizzes, question-and-answer games, and other activities. In Jamaica, a mass media campaign encouraging abstinence for younger youths and responsible behavior for older youths has produced a significant decrease in teen pregnancies.

Peer education builds on existing youth-oriented networks to provide a safe and comfortable environment for adolescents to explore sensitive issues. In Kenya, USAID supports the national Girl Guides Association to raise HIV awareness among its membership by holding HIV contests and having guides work toward merit badges relating to various aspects of HIV. The program provides a forum for girls and young women to discuss HIV and support each other in avoiding risky behaviors.

While prevention is paramount in working with youths, programs must include the continuum of HIV services, including care and treatment. HIV-positive youths need an array of services, including psychosocial support, prevention of mother-to-child transmission, palliative care, and antiretroviral therapy. USAID supports expanding access to services for sexually active youths, including education on correct and consistent condom use, treatment for sexually transmitted infections, and HIV testing.

HIV testing is important for youths to learn their status and adopt safer behaviors. In Zimbabwe, USAID supports 14 New Start centers that provide high-quality HIV counseling and testing services. These services are promoted to individuals at risk of HIV, including young couples and adolescents. For HIV-positive and -negative clients, New Start provides counseling to encourage behaviors that avoid and reduce risk.

**Our Future**

Youth today are our most precious resource, and their well-being in the world now and in the future is a cornerstone of continuing development. The world’s poorest and often most politically unstable countries will have the largest youth populations through 2020. Accordingly, USAID and its partners are striving to expand youth programs across health, education, skills-training, democracy and governance, and other areas. Investing in youths will help developing countries advance healthier lifestyles, equitable economic growth, and stronger civil society. Investing in these young men and women will create hope for a better future for generations to come.

1. Youths are individuals in transition from childhood to adulthood. This figure refers to 10- to 24-year-olds.
Castle Dale is a small town in central Utah. My grandfather’s farm is a few miles to the north. I grew up here. Castle Dale has about 2,000 people and just about as many cattle. Milking a cow, feeding the chickens, chopping the wood, and walking the fields to tend the water were daily chores. Grandpa had me carrying a shovel when it was actually taller than I was. This was work and we learned to do it at a young age.

People in this small town knew your business but they also looked out for you. I was tall, very tall at a really young age. This caused all sorts of problems and opportunities. I remember going to an amusement park for my fourth birthday. We arrived at a bumper car ride and everyone got to ride the cars except me. They said I was too old. I remember feeling sick inside because the worker didn’t believe me. I was not lying. My folks taught me not to lie. I sat down and started to cry, watching all my friends ride the cars. Finally, my mother realized what was happening and explained the situation. I wasn’t too old, I was just taller than kids my age. I was able to ride with my friends after that.

We carried my birth certificate with us everywhere we went after that until I was in high school. My unusual height caused people to look, ask questions, laugh, tease, and sometimes even challenge me to fight. I was teased relentlessly as a kid. It wasn’t fair, I knew, but that was just the way it was. Luckily, I was taught at a very young age a very important lesson. I matter and I’m important. No one could ever take that away from me. God loved me no matter what. If everyone in the entire world hated me, God did not. I knew this then, and I know this now. That alone helped me through the frustrations and heartaches of normal life.

When I was in junior high school, I realized something else that helped me cope. Most teasing and harassing came from one of two places—people who were either jealous or ignorant. I couldn’t
change the way they were, but I could affect the way I felt. I was not going to feel bad because of their ignorance or jealousy. It wasn’t worth it! Realizing this didn’t stop them, or change the fact that these comments hurt. It did, however, give me a way to understand these people and deal with their treatment in a way that was okay for me.

These things still happen today. It will probably happen the rest of my life. I will always be 7 feet, 6 inches (2.29 meters) tall. I wouldn’t change that for anything. People will always look because it is not every day that you see someone that tall. I learned that at a young age and I now try to teach my own children that they are important! They matter and, most importantly, God loves them. That is the message I give to you. Regardless of your race, religion, ethnic background, or circumstances ... God loves you!
Obesity is an epidemic in nearly every country in the world. The most likely explanation for the spread of this health problem is substantial lifestyle changes—from more reliance on automobiles and less on everyday physical activity to the increasing availability of processed foods.

The prevalence of obesity among children and adolescents around the world is growing at an alarming rate. This epidemic—some call it a pandemic—has causes and possibly cures. In this interview, obesity and nutrition expert Dr. William Dietz from the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, discusses the reasons for this escalating problem and what can be done to prevent it. Dr. Dietz’s work includes the first study to demonstrate the relationship between television viewing and obesity (1985), the earliest report that overweight was increasing among children and adolescents in the United States (1987), and the first suggestion that children and adolescents have critical periods for becoming overweight (1994). Dr. Dietz talked with Global Issues science writer Cheryl Pellerin.

Question: How do you define obesity?

Dietz: In the United States, obesity in adults is defined as a body mass index (BMI) greater than or equal to 30. Body mass index is defined as weight in kilograms, divided by height in meters, squared. This definition identifies people at significant risk of diseases related to obesity, such as type 2 diabetes, cardiovascular disease, and cancer.

[Type 1 diabetes is usually diagnosed in children and young adults and used to be called juvenile diabetes. In type 1, the body does not produce insulin. The body needs insulin so it can use sugar, the basic fuel for cells in the body. Type 2 diabetes is the most common form of diabetes. In type 2 diabetes, the body produces insulin at high levels, but the levels are not adequate to allow the body to process sugar properly.]

The definition of obesity in children and adolescents corresponds to a BMI of 30 in a young adult, but because children and adolescents are growing, their BMIs change throughout childhood and adolescence until growth is complete. So instead of using a BMI of 30 to define obesity, we use a BMI greater than or equal to the 95th percentile in CDC growth charts [http://www.cdc.gov/growthcharts/] that are specific for the U.S. population.
We know that adolescents who have a BMI greater than or equal to 30 have biochemical evidence of risk factors that predict type 2 diabetes and cardiovascular disease in adulthood. Risk factors for those diseases are already present in 5- and 10-year-olds. More than 60 percent have at least one additional cardiovascular disease risk factor, such as elevated blood pressure, elevated insulin or glucose levels, or elevated lipid levels (low HDL or elevated LDL cholesterol).

Type 2 diabetes, which was rare in children and adolescents 20 years ago, is seen with greater frequency. In some communities, type 2 diabetes now accounts for almost 50 percent of all new cases of childhood diabetes. We also know that overweight in an adolescent is likely to persist into adulthood and seems to be associated with more severe obesity in adulthood than adult-onset obesity.

In 2000, international growth charts were released by the International Task Force on Obesity and were published as a study in the British Medical Journal. The study aimed to develop an internationally acceptable definition of child overweight and obesity, and it used data from six large nationally representative cross-sectional growth studies from Brazil, Great Britain, Hong Kong, the Netherlands, Singapore, and the United States.

Q: Why do we say that obesity is epidemic?

**Dietz:** Obesity is epidemic because of how rapidly it has increased and how many people are affected. Between 1980 and 2000, there was a two-fold increase in the prevalence of overweight 6- to 11-year-old children in the United States, and a three-fold increase in the prevalence of overweight adolescents. Internationally, in every place where longitudinal [over time] data have been collected, there has been an increase in the prevalence of overweight. An international epidemic is called a pandemic, and that term has been used to describe what is going on internationally. I don't have good comparative data on children, but a couple of years ago I looked at changes in the prevalence of obesity in British women compared to U.S. women, and the rate of increase was exactly the same.

Q: Why is there an obesity epidemic?

**Dietz:** The most likely explanation is because of very substantial environmental changes. In the United States, reliance on fast food, soft drink consumption, and variety in the food supply have increased, and family meals and physical activity as part of everyday life have declined.

Fewer children walk to school, and there is more reliance on cars to get from one place to another or do errands because of the way communities are designed, particularly in the Southeast and Southwest. You can't do errands by walking because the communities are not walkable—they lack sidewalks. Even if they had sidewalks, they would lack schools and shopping facilities that you could walk to. Similar things seem to be happening in new communities elsewhere. The food supply has also changed internationally as urbanization has progressed. I think that obesity is associated with substantial dietary changes elsewhere in the world because people are moving from a diet that was largely plant-based and one that they grew themselves to a diet of primarily processed, higher-fat food.

Q: Are there countries around the world that don't have an obesity problem?

**Dietz:** Not that I am aware of. The prevalence differs a lot from country to country. Even countries like China and Japan, which have not had this problem in the past, are increasingly concerned about it.

Q: What can be done about obesity?

**Dietz:** This problem requires both medical and community-based approaches. Medical approaches are essential for the more severely affected individuals. Community approaches are those that are implemented in schools and communities. For example, daily physical education at school is a recommended strategy to increase physical activity.

I think it's important to recognize that at some level physical activity will prevent the development of obesity, but its most important effect is that it reduces the consequences associated with obesity. Physical activity should be fun and something that adolescents want to do.

The Centers for Disease Control and Prevention is promoting six strategies for fighting obesity in children, and physical activity is one of them. The first three are strategies for which we think there's relative scientific certainty. The other three strategies are promising strategies.

As I mentioned, physical activity is a crucial strategy for reducing the risk of diseases associated with obesity. The *Guide for Community Preventive Services,* published by the Task Force on Community Preventive Services, provides evidence-based approaches to increasing physical activity. Physical education in schools is one of those recommended strategies.
For early prevention of obesity, breastfeeding seems to be an effective strategy. We don't know why it's effective, but I think it has to do with the fact that when a mother is nursing her infant, the infant's cues help tell her the infant has had enough. There's no way of knowing that other than by seeing the infant's cues. In contrast, in bottle-fed babies, the tendency is to look at the bottle, not at the infant, and use that as a gauge as to whether the infant has had enough or not.

There are data that suggest that the more parents try to control children's food intake, the less capable children are at controlling food intake themselves. That's been shown in cross-sectional [one point in time] studies, but it's not clear in those cross-sectional studies whether parents try to control children's food intake because they recognize that the child is incapable of doing so, or whether the child is less capable of controlling their food intake because the parents are controlling it. It's an external versus an internal control.

Control of television time is another important factor. In this country, the average household has more than three television sets. Twenty-five percent of children younger than two years of age have a television in their room, and 65 percent of all children have a television set in their room.

In the United States, children often eat while watching television, and they tend to eat the foods advertised on television, which tend to be high-caloric-density foods. One effect of controlling TV time is to reduce children's eating episodes. Increasingly, the Internet is a source of food advertising. If you go on the Internet and look up some foods children eat, those Web sites have games that children can play, and the games have frequent mention of those products. It's another food-promotion source.

Fruit and vegetable intake. Fruits and vegetables are things that all people should be eating as much of as they can get. People don't eat calories. Fullness is determined by the volume of food they eat. Therefore, foods that are of low-caloric density—meaning they have a high water content and fewer calories per gram—are more filling and provide fewer calories than calorically dense food. For example, if you start a meal with a salad, you'll have less room for other high-calorie foods. The same is true for soups. The gap is that we don't really know whether people who eat lots of fruits and vegetables are at lower risk for obesity.

Soft drink consumption. There's a growing body of data that suggests that increased soft drink intake may be associated with excess weight and that reducing soft drink intake may be an effective way to control weight. For the average adolescent in the United States, soft drinks, which include both soda and 10-percent juice, account for 13 percent of the average adolescent's daily caloric intake. Substituting a lower-calorie choice like water or diet soft drinks is a good strategy for reducing calorie intake from soft drinks.

Portion size. The larger the portion an individual is presented with, the more of that portion they're likely to eat. But we don't have good data that link portion size to obesity, and I'm not sure we're going to get it because it's hard to measure portion size. The strategy is to serve a small portion first and let people go back for second helpings if they want them, rather than loading up plates with large portions to begin with.

Q: What is important for adolescents to know about obesity?

Dietz: I think that adolescents should be encouraged to be active and to do things with their friends. Seventh and eighth graders don't think watching television is fun; it's a default activity they do when they don't have anything better to do. Another strategy is to think of things that are fun to do in place of watching television, like spending time with friends or doing active things with friends. Teenagers should be encouraged to drink water when they are thirsty and to start meals with soup or a salad.

Q: Is obesity as serious a problem in its magnitude and consequences as malnutrition and undernutrition?

Dietz: Malnutrition covers a broad waterfront. The way the term is broadly used, malnutrition means both obesity and undernutrition. The problem is that micronutrient malnutrition—that is, vitamin and mineral deficiency—is still a major problem worldwide, particularly iodine, iron, and vitamin A deficiencies.

If you look strictly at morbidity [the burden of disease], micronutrient malnutrition is still a bigger problem than
obesity. But in many countries in the developing world, there is a growing problem with children who are stunted and overweight. Stunted means they're short, and that's a consequence of chronic undernutrition. Now we're adding obesity to this problem, so they're suffering from a double problem.

I think it's fair to say that in countries in nutritional transition—that is, the transition from a traditional agriculturally or plant-based diet to a more processed diet—that stunted people seem to be at double risk because of their history of stunting and overweight. It's happened in a couple of places. The data I'm most familiar with came from Brazil and Peru.

Q: What is a good way to increase physical activity among adolescents?

Dietz: School-based approaches offer a good example. As I mentioned earlier, daily physical education classes are a recommended strategy for increasing physical activity. That recommendation comes from the Task Force on Community Preventive Services.

Walk-to-school programs are a strategy for restoring physical activity to everyday life. The problem is that only one-third of U.S. children who live within a mile of school walk to school, partly because the schools are not accessible and partly because the neighborhoods are not safe. Another strategy is TV turnoffs. Controlling television time in school-based interventions is an effective way to reduce weight gain or obesity. A couple of years ago, libraries initiated a TV Turnoff Week. Now there is a national TV Turnoff Week program.

Another strategy is to make it easier for children to eat healthful foods at school. “Competitive foods” are foods like ice cream and cookies that are served in the lunch line as a profit-maker for schools. Schools do this to raise money. “Pouring contracts” are contracts schools sign with soft drink vending machine companies to sell those products in schools. Many schools depend on this revenue.

At CDC, we're trying to create a revenue-neutral situation—to allow schools to make the same amount of money but help increase consumption of healthful items. One strategy is to increase the prices of less healthful items and use that income to subsidize more healthful items that you sell at a lower price. It appears that children are price-sensitive, and when you raise the prices of less healthful foods and lower the prices of more healthful foods, it is revenue-neutral for the school and consumption changes in the right direction.

Comprehensive school-based interventions are another strategy. A really good program in Massachusetts called Planet Health [http://www.hsph.harvard.edu/prc/proj_planet.html] combined four strategies—a low-fat diet, more fruits and vegetables, less television time, and more physical activity. The program showed a significant reduction in overweight among middle-school girls. The study was published in 1999, and the program is now being expanded to the Boston school system.

Q: How does the health care system deal with obesity?

Dietz: The kind of care delivery system necessary for chronic diseases like obesity is different from the traditional patient-provider relationship. So many patients in this country are overweight that the one-to-one provider-patient relationship is probably archaic. It's based on an acute-care model—our medical system has evolved to treat infectious diseases or injuries. It didn't evolve to treat chronic diseases, and it didn't evolve around prevention. Providers are not financially rewarded when they prevent disease; they're rewarded when patients get sick or need hospitalization.

In an ideal system for treating overweight and obesity, we need better strategies that are of proven effectiveness. Physicians will oversee care, but people other than physicians, like nutritionists or nurse practitioners, will likely deliver the care. Self-management has to be the cornerstone of therapy. The notion that providers manage problems for patients is archaic; patients manage problems for themselves. The role of the provider should be to help patients solve problems, or to help patients identify the problem and its priority and help them solve problems that make it difficult for them to deal with it.

That such changes are needed is increasingly widely recognized, but it's not clear how to solve the problem because it goes to the heart of the medical-care delivery system.

The CDC National Center for Disease Prevention and Health Promotion homepage is located at http://www.cdc.gov/nccdphp/.


I remember what it was like being a teenager, wanting to fit in, but still feeling like maybe I never would, that I’d never find what was right for me. You want to find that place, find that niche of friendship and feel like you belong. So what I did was get involved in a lot of extracurricular activities, trying to find something that I enjoyed.

I did a little bit of everything. I played multiple sports, not just one sport. I played basketball, football, baseball. I also joined after-school activities just to see what I liked, and to see what type of people I liked, and figure out if that was something that I wanted to do.

Sometimes you find out you’re lousy. Sometimes you screw up and you’re afraid people are going to laugh at you, but so what? You have to do your best to not be afraid of people laughing or not agreeing with what you’re doing. You have to stand up and be your own person first of all. And second, when you find that thing you do enjoy doing, that thing you’re good at, keep at it.

And it’s not like you have to figure all this out by yourself. I remember I had one really good friend who was my age. He could kind of tell me the positives and negatives about things I was doing. I also had relatives who could be objective and tell me if things I was into were good or bad. And they didn’t judge me. That was a really big thing. I was really looking for somebody who wouldn’t judge me for what I was doing. They would just support me as much as they could.

Maybe you’re thinking, “Sure, Marvin. Who’s going to help me?” You’d be surprised. If you go out and ask for help, people are more than willing to help you. If you need somebody to talk to, if that’s in school, if it’s a guidance counselor or a relative, they’ll probably help you. You just have to ask.

Marvin Lewis, outstanding student and athlete, graduated from the Georgia Institute of Technology in 2004, after leading the basketball team all the way to the semi-finals of the National Collegiate Athletic Association tournament. His career achievements on the court put him in the Georgia Tech record book for total games played and career scoring. Marvin won the Tech team’s top student athlete award in 2003 and was twice named to the regional Atlantic Coast Conference All-Academic team for men’s basketball in his four-year college career. Now 22, he is employed by an accounting firm in Atlanta, Georgia, and is studying to become a certified public accountant.

Marvin drives down the court during a February 2004 game in which he led all scorers with 24 points. (© AP/WP)
Promises That Work
Marguerite W. Sallee

America’s Promise—The Alliance for Youth is dedicated to mobilizing people from every sector of American life to build the character and competence of our nation’s youth by fulfilling Five Promises: ongoing relationships with caring adults, safe places with structured activities, a healthy start, marketable skills, and opportunities to give back. When consistently fulfilled, the Five Promises can significantly advance the health and well-being of the next generation—increasing the chances of youth becoming successful adults.

In 1997, leaders from across the United States attended the Presidents’ Summit for America’s Future in Philadelphia, Pennsylvania, to address the needs of children and youth. President Clinton, and former Presidents Bush, Carter, and Ford, and former First Lady Nancy Reagan representing her husband, challenged the nation to make youth a national priority. Joining them in their call to action were approximately 30 governors, 100 mayors, 145 community delegations, business leaders, and thousands of concerned citizens.

Colin Powell, who in 2001 would become Secretary of State, served as chair of the summit and subsequently as founding chairman of America’s Promise—The Alliance for Youth, the organization that grew out of the summit. President George W. Bush affirmed his commitment to the organization after becoming president in 2001. The current chair is Alma J. Powell, wife of Colin Powell.

America’s Promise is the managing partner of a broad alliance of communities and local and national organizations dedicated to bringing their collective
power together to fulfill our nation’s obligation to assure that all young people have five fundamental resources:

- **Caring adults** in their lives, as parents, mentors, tutors, coaches
- **Safe places** with structured activities in which to learn and grow
- **A healthy start** and healthy future
- An effective education that equips them with **marketable skills**
- **An opportunity to give back to their communities** through their own service

These fundamental resources also are known as the Five Promises. And, research reveals that the Five Promises work. Children who experience the Five Promises are less likely to engage in negative behaviors and are five to 10 times more likely to succeed as students, citizens, parents, and employees who make meaningful contributions to their communities.

**STRENGTH IN NUMBERS**

The United States is a large and diverse country. America’s Promise—The Alliance for Youth brings together corporations, faith-based institutions, civic groups, and other nonprofit partners committed to the belief that children are key to our nation’s future. With national organizations and community champions working as one, the Alliance is producing positive outcomes for children and youth, one promise at a time. Here are several examples from around the country:

- In Charleston, South Carolina, WCIV-TV has been informing viewers about the Five Promises and how they can help fulfill them locally. The station also adopted five schools in 2004 and sponsored Charleston’s Promise School Event Days, an initiative to bring the Five Promises to the area’s neediest children and raise community awareness. “We’re really trying to get mentors into the schools, because a mentor can help change a child’s mindset and help them redefine their expectations of themselves,” says Ava Swain, sales coordinator for WCIV-TV.

- In Bloomington, Minnesota, the Allen family—David, Mary, and sons Treb (age 20) and Matt (age 18)—is actively involved in the Bloomington Youth Coffeehouse Initiative. With help from community volunteers and support from the Points of Light Foundation, which honored the family with its National Family Volunteer Award, the Allens raised funds to open a coffeehouse to serve as a safe place where Bloomington youths could spend time during non-school hours. Their coffeehouse is part of a community-wide effort to combat the high rates of alcohol, tobacco, and drug use among high school students.

- A group of industrious youths in Alleghany County, North Carolina, led food drives in each of the county’s schools, collecting 30,000 pounds of food for the local food bank that serves the county’s poor residents. Alleghany County is one of many counties in which the U.S. Department of Agriculture administers food and nutrition assistance programs to help give youths a healthy start. Among these programs is the National School Lunch Program, which operates in more than 100,000 schools and residential child-care institutions.

From Kids from scouting troops, after-school programs, classrooms projects, bake sales, and car washes will be distributed to those in need.

Children who experience the Five Promises are less likely to engage in negative behaviors and are five to 10 times more likely to succeed as students, citizens, parents, and employees who make meaningful contributions to their communities.
to provide free or reduced-price lunches to an average 28 million children from low-income families every school day.

• Sappi Fine Paper North America sponsored a poster contest for sixth graders at the five elementary schools in Muskegon Heights, Michigan, where the company has a paper mill. Based on marketable skills, the contest asked students to consider their career ambitions and to draw a poster illustrating their goals and the skills they would need to achieve them. The contest drew dozens of creative entries. DeMario Thomas won first prize, receiving a $500 U.S. Savings Bond. Four runners-up each received a $100 U.S. Savings Bond. Sappi printed 2,000 copies of Thomas’s poster, donating 1,500 copies to the five participating schools so they could be sold to raise funds.

• Following the series of hurricanes that devastated parts of southwestern Florida in 2004, the ManaTEEN Club, a youth service group in Manatee County, Florida, seized upon an opportunity to serve. Its 11,000 members worked side-by-side with volunteers for AmeriCorps*VISTA, a government-sponsored program, and United Way, a nonprofit organization, to collect food and help find shelter for thousands of displaced neighbors.

    All these local efforts, which span the nation and involve various sectors, were successful because the communities that led them believed in the power of the Five Promises to effect real change for children and youth. More importantly, the communities put their belief into action.

*Information about America’s Promise—The Alliance for Youth is available at http://www.americaspromise.org.*

*The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. government.*
I began playing soccer [football] when I was 11 and then went on to represent the national team of El Salvador. I became a professional athlete at age 16.

On the team that I played for when I was young, we would train in the afternoon, and in the morning I would go to school. My family helped me a lot; they always supported me in my education and also my playing soccer. I owe a lot to my family. Even today, although my parents are not with me, their support is most important in my life.

Fortunately for me, I did not encounter any barriers in my goal to be a professional soccer player. If I didn't succeed as a player, I planned to continue in my studies. While with the Club Aguila of El Salvador, I played in a match in Los Angeles. The management at D.C. United watched the game tapes and signed me with the club in 2002.

Adjusting to a new country and professional life is a very difficult experience, especially for a young person. Going to the supermarket, living in a different climate and culture, and getting adjusted to new surroundings were all challenges. The biggest barrier was language—communicating with my teammates and coaches, both on and off the field. My teammates helped make the transition easier.

I've always had to deal with much older people in the soccer profession, and this has forced me to mature. Sports have taught me a lot about discipline and also about how to be humble and how to lead a healthy lifestyle. Most of all, I value the bonds of friendship I have developed with teammates and coaches.

In 2004, I was injured at a preseason training camp and was unable to play the season. When setbacks like that happen, you can get down on yourself or even go into a state of depression. There was a time when I asked myself if I would ever play soccer again. Fortunately for me, I had a circle of friends who supported me during rehabilitation, and I kept busy with different activities to stay motivated.

I have a lot of contact with young people, especially fans, both in the United States and in El Salvador. I try to relate to them my own experiences, because these young people also have aspirations and dreams. I try to tell them that, first and foremost, you have to have an objective in life and choose what you want to do. Second, you have to dedicate yourself to the goal you choose. And you have to stay motivated every day to be the best that you can be.
Medical science has been pursuing the connection between environmental factors and human health for just a few decades. Only a fraction of that research has specifically focused on young people, and there is much to learn. Science has revealed enough for us to offer some advice, however, on steps to protect the health and development of young people.

Health at any age depends on a number of factors, including biology (gender, age, genes, and stage of physical development), social factors, behavior, and environment, which broadly is defined as any external influence, from hazardous exposures to smoking to dietary influences. This article focuses on adverse exposures in the environment and the impact on young people's health, recognizing that many factors influence human health.

To understand a youngster's vulnerability to environmental exposures, one needs to look at biological processes that are underway with puberty—with its rapid growth and change—remaining mindful of the potential for development of lifelong problems during this formative stage of life. We also need to understand patterns of exposure to substances in the environment and hazards associated with materials to which youngsters may be exposed.

Susceptibility

Changes associated with puberty and the adolescent growth spurt are well known. What is less well appreciated is the potential for harm during this period. Pubertal changes are under the control of hormones, and, at least theoretically, exposures to chemicals that have hormonal properties (called endocrine disruptors) could alter this process, either advancing or delaying these changes.
Only very recently have researchers begun to assess whether exposures during adolescence affect the onset of puberty.

Some laboratory and animal studies in the United States have linked precocious puberty (abnormal early onset of puberty) to toxic exposures, but to date there are no studies to support this in people. Other environmental exposures may delay puberty. Most notably, a study from a national survey of growth in the United States found that exposure to lead in adolescent girls is associated with a delay in puberty. For girls, this is a time of rapid development of breasts and, for boys, prostate glands. Some scientists have hypothesized that small changes in development of these organs, and exposures during the time of their rapid growth, could be involved in cancer risk later in life.

Adolescence is a time of very rapid growth of bones, muscles, lungs, and organ systems. On a theoretical basis, any time of rapid growth is a time of greater vulnerability to cancer-causing agents. Very little research has been done on exposure to carcinogens in this age group. One study, of tobacco smoke, found that adults who had started smoking at a younger age had much more evidence of generic damage in lung tissues than smokers who started later, even after adjusting for years of smoking. This is because the lung grows very rapidly during this time period.

This model suggests that it is especially important for young people to avoid exposure to carcinogens, of which there are a variety in cigarette smoke. Such exposures during this period could result in cancers later in life, though it may be difficult to directly connect these cases to the earlier exposures.

We now know that brains also go through a particularly important stage of development during adolescence and early adulthood. Modern brain imaging techniques have allowed us to see and appreciate the complex changes that are unfolding, while psychologists report that young people continue to develop in areas of executive decision making and abstract reasoning during this time.

These data have come to light only in the last decade; at this time we know very little about the impact of neurotoxic substances on these developmental stages. It has been suggested that faulty brain maturation at this stage of development is responsible for the development of schizophrenia; however, this is unproven and no evidence links this and other neurological conditions during this time to environmental exposures.

Young adults often are on the verge of becoming, or already have become, parents in their own right. Thus, exposures to pollutants and toxins at this time of life can have a direct impact on the lives of two generations. Such exposures can affect fertility for young men by causing changes in sperm counts and morphology.

Exposures for young women can cause the buildup of toxic materials such as lead (which accumulates in bone) or persistent organic pollutants (which accumulate in body fat). These body burdens are transferred to the fetus during pregnancy and to the infant in breast milk. Other exposures are transmitted to the fetus only when exposures occur around the time of conception and during pregnancy.

**Exposures**

Young people's behavior is inextricably linked to patterns of environmental exposure. Worldwide there is much variability in behavior patterns, yet some universal patterns are of interest. Generally, as people emerge into adulthood, they gradually become more independent of their parents. With independence comes mobility, which often confers additional risk for injuries, such as those that occur in vehicular accidents.

Young people are vulnerable to these because often they are more impulsive and more likely to take risks, because they have less experience as drivers or cyclists, in many instances because of alcohol or drug use (which impairs judgment), and, at the younger end of the scale, because their bodies are smaller and thus more vulnerable to injury. In many parts of the world, young people emerging into adulthood also are more exposed to violence and homicide.

Other exposures in the environment, while more subtle, can be just as lethal in the long run. Air pollution can harm the lungs of young people, particularly outdoor athletes who breathe more air per minute than nonathletes. Nutrition is critical during growth spurts, and young
people’s food intake can be greater than for adults. During such times, a young person would have greater exposure per body weight than an adult to contaminants in food.

Young people are more likely than older people to spend time in such institutional settings as schools, military training camps, and recreational campgrounds. Some settings have well-controlled environments; in others, there is a greater likelihood of contaminated food and drinking water (campgrounds), indoor air contaminants (as have been found in many U.S. schools), or poorly understood exposures in the environment (military service).

Young people may be involved in hobbies or pastimes that include the use of any number of potentially hazardous materials, including hunting (lead shot), art (chemicals in glues and paints), cosmetic products (fingernail glue), and automobiles and other machines (fuels, lubricants, paints, exhaust fumes). In some parts of the world, chemicals like glue and gasoline are used as substances of abuse, leading to enormous intentional (and harmful) exposures.

Young people work in large numbers worldwide. Work can be of great value to children by improving financial circumstances for them and their families, preparing them for adulthood, and encouraging initiative. All too often, however, young people are employed under hazardous conditions, depending on the emphasis on control of workplace exposures in countries. The International Labor Organization has estimated that 60 percent of working children have been exposed to hazardous conditions.

In the United States, and in much of the world, children are often engaged in farm work, particularly children who are members of farm families. Such children have been found to have high injury rates associated not only with poor judgment and greater risk taking, but also because equipment designed to be safe for adults often has poor ergonomic design for smaller people.

In developing nations, high exposure levels have been associated with working with hazardous substances such as lead and pesticides, doing outdoor work in highly polluted urban areas, and coming into contact with chemicals when scavenging reusable or recyclable materials from waste dumps. Laws that restrict certain kinds of work for the youngest children, and assure workplace safety for all people, have been most effective at preventing some of these exposures.

**Conclusion**

We know that young people often are more susceptible and more exposed to certain environmental risks. At the same time, much of the basis for concern comes from our knowledge of biology and from animal studies and not from direct observation of health effects on young people as they encounter exposures in their environments. Over the next few years this situation should change given that, worldwide, a wealth of new scientific data is emerging, both on biological changes that occur during this stage of life and on long-range impacts of environmental exposures.

In this regard, it is important that the many critical studies underway to evaluate childhood environmental exposures be continued to include adolescents and young adults. At the same time, it seems sensible to take a precautionary approach to assure that young people are protected from potentially harmful effects, for their health now and in the future, and for the health of the next generation, their children.

The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. government.
Turn That Music Down!

Loud music may not be just annoying your parents. It could be damaging your hearing. Check out what the hearing experts say.

Both the amount of noise and the length of time you are exposed to the noise determine its ability to damage your hearing. Noise levels are measured in decibels (dB). The higher the decibel level, the louder the noise. Sounds louder than 80 decibels are considered potentially hazardous. Examples of noise levels considered dangerous by experts are a lawnmower, a rock concert, firearms, firecrackers, headset listening systems, motorcycles, tractors, household appliances (garbage disposals, blenders, food processors/choppers, etc.), and noisy toys. All can deliver sound over 90 decibels and some up to 140 decibels. The noise chart below gives an idea of average decibel levels for everyday sounds around you.

**Painful:**
- 150 dB = rock music peak
- 140 dB = firearms, air raid siren, jet engine
- 130 dB = jackhammer
- 120 dB = jet plane take-off, amplified rock music at four to six feet [1.2 to 1.8 meters], car stereo, band practice

**Extremely loud:**
- 110 dB = rock music, model airplane
- 106 dB = timpani and bass drum rolls
- 100 dB = snowmobile, chain saw, pneumatic drill
- 90 dB = lawnmower, shop tools, truck traffic, subway

**Very loud:**
- 80 dB = alarm clock, busy street
- 70 dB = busy traffic, vacuum cleaner
- 60 dB = conversation, dishwasher

**Moderate:**
- 50 dB = moderate rainfall
- 40 dB = quiet room

**Faint:**
- 30 dB = whisper; quiet library

Bibliography

Additional readings on the health and well being of young people


Windle, Michael. “Alcohol Use Among Adolescents and Young Adults,” Alcoholic Research and Health, vol. 27, no. 1, 2003, pp. 79-85 http://www.findarticles.com/p/articles/mi_m0CXH/is_1_27/ai_112937517/pg_1


The U.S. Department of State assumes no responsibility for the content and availability of the resources from other agencies and organizations listed above. All Internet links were active as of December 2004.
Internet Resources
Online resources promoting the health and well being of young people

America's Promise—The Alliance for Youth
http://www.americaspromise.org/

Campaign for Tobacco-Free Kids
http://www.tobaccofreekids.org/

Global Health Council
Child Health
http://www.globalhealth.org/

Health Initiatives for Youth
http://www.hify.org/index.html

The Healthy Refrigerator
http://www.healthyfridge.org/

Insurance Institute for Highway Safety
http://www.iihs.org/safety_facts/teens/teenager.htm

KidsHealth
http://www.kidshealth.org/

National Longitudinal Study of Adolescent Health
http://www.cpc.unc.edu/projects/addhealth

National Organizations for Youth Safety
http://www.noys.org/

National Youth Anti-Drug Media Campaign
http://www.mediacampaign.org/

National Youth Anti-Drug Media Campaign Free Vibe
http://www.freevibe.com/

National Youth Development Information Center
http://www.nydic.org/nydic/

National Youth Violence Prevention Resource Center
http://www.safetyouth.org/scripts/teens.asp

Para los Niños
http://www.paralosninos.org/home.html

President's Council on Physical Fitness and Sports
http://www.fitness.gov/

Prevention Institute
Children and Youth
http://www.preventioninstitute.org/children.html

Search Institute
http://www.search-institute.org/

Students Against Violence Everywhere
http://www.nationalsave.org/

Teen Advice Online
http://www.teenadviceonline.org/

United Nations Office on Drugs and Crime
Global Youth Network
http://www.unodc.org/youthnet/

U.S. Centers for Disease Control and Prevention
Health Topic: Adolescents and Teens
http://www.cdc.gov/health/adolescent.htm

Division of Adolescent and School Health
Healthy Schools, Healthy Youth
http://www.cdc.gov/HealthyYouth/index.htm

U.S. Department of Health & Human Services
Administration for Children and Families
http://www.acf.hhs.gov/acf_about.html

U.S. Department of Health & Human Services
Office of Adolescent Pregnancy Programs
http://opa.osophs.dhhs.gov/titlexx/oapp.html

U.S. National Highway Traffic Safety Administration
New Driver Safety
http://www.nhtsa.dot.gov/people/injury/newdriver/

U.S. National Institute on Alcohol Abuse and Alcoholism
Underage Drinking: A Major Public Health Challenge

U.S. National Institute of Child Health and Human Development
http://www.nichd.nih.gov/

U.S. National Institute of Environmental Health Sciences
Centers for Children's Environmental Health and Disease Prevention Research

U.S. National Institute on Deafness and Other Communication Disorders
Wise Ears
U.S. National Institute on Drug Abuse
http://www.nida.nih.gov/

U.S. Office of National Drug Control Policy
http://www.whitehousedrugpolicy.gov/

USA Freedom Corps
Youth Achievement
http://www.usafreedomcorps.gov/content/priorities/youth/index.asp

World Health Organization
Youth Violence

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