

Health

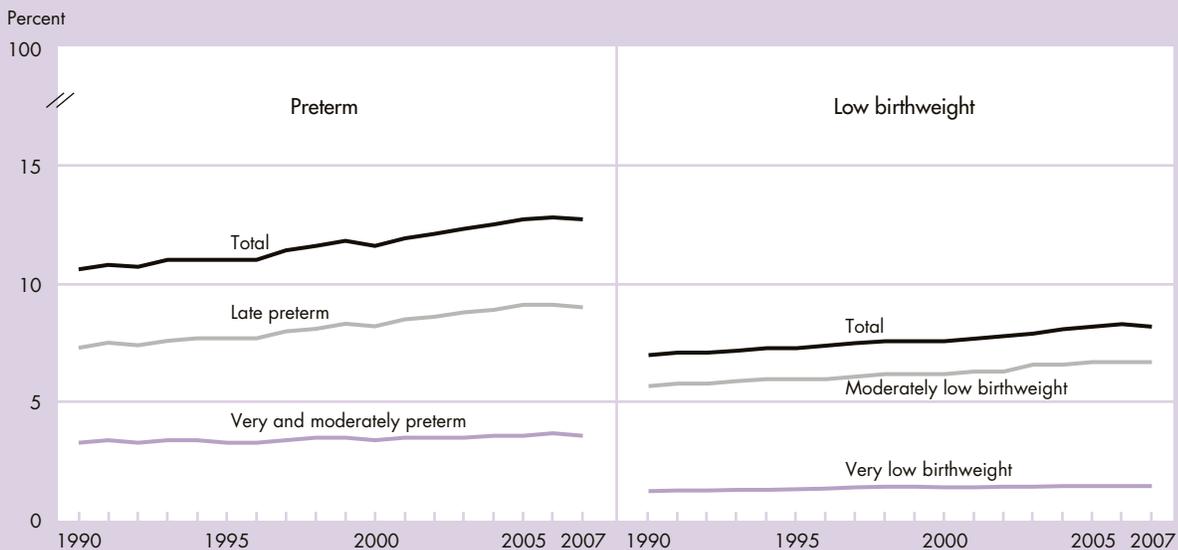
The World Health Organization defines health as a “state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.” This section presents indicators of several important aspects or determinants of child health. Some of the indicators in this section relate to birth outcomes such as low birthweight, preterm birth, and infant mortality. Other indicators describe key health conditions, including emotional or behavioral difficulties, adolescent depression, overweight, and asthma. An indicator on the quality of children’s diets compares children’s dietary intake to recommended national dietary guidelines. The indicator on activity limitation presents a global measure that gauges the effect of chronic health conditions on children’s functioning.

Preterm Birth and Low Birthweight

Infants born preterm (less than 37 completed weeks of gestation) or with low birthweight (less than 2,500 grams or 5 lbs. 8 oz.) are at higher risk of early death and long-term health and developmental issues than infants born later in pregnancy or at higher birthweights.^{9,114–115} Many, but not all, preterm infants are also low birthweight, and vice versa. In 2006, infants born preterm accounted for two-thirds of all low birthweight infants, and over 40 percent of preterm births were low birthweight.⁶ Preterm infants born at less than 34 weeks (very and moderately preterm) are at high risk for poor outcomes, including chronic health conditions, long-term disability, and death. The majority of preterm births are infants born at 34–36 weeks (late preterm). Late preterm infants are at lower risk of poor outcomes than infants born earlier but are at higher risk than infants delivered at term or later.⁹ Disorders related to preterm birth and low birthweight are the second leading cause of infant death in the United States.⁹

Indicator HEALTH1.A

Percentage of infants born preterm and percentage of infants born with low birthweight, 1990–2007



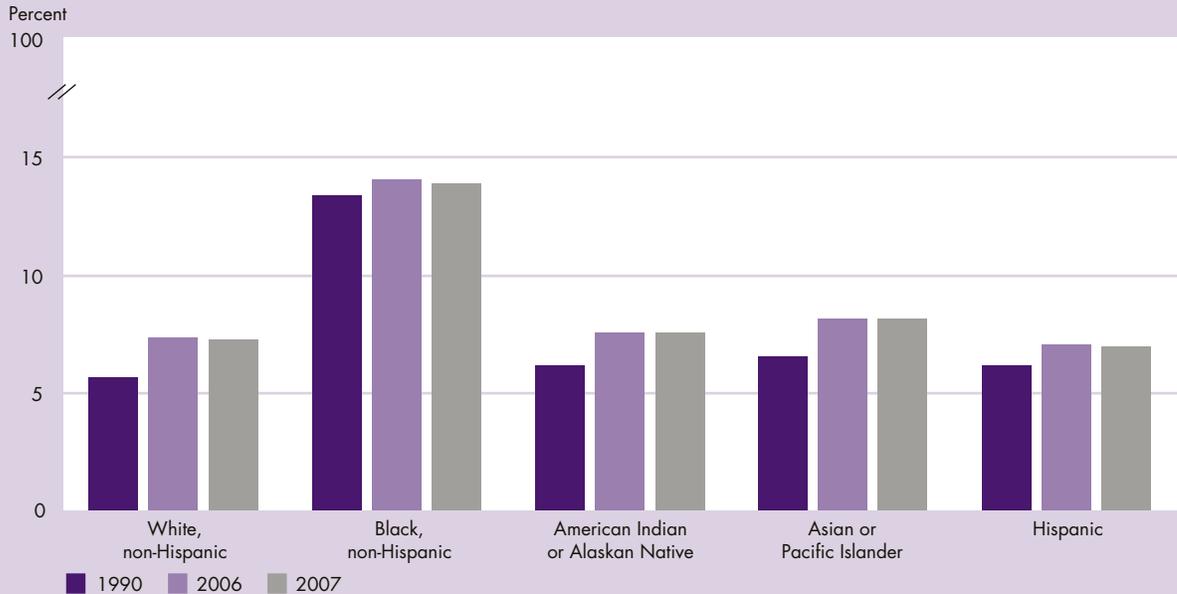
NOTE: Late preterm infants are born at 34–36 weeks of gestation; very and moderately preterm infants are born at less than 34 weeks gestation. Moderately low birthweight infants weigh 1,500–2,499 grams at birth; very low birthweight infants weigh less than 1,500 grams at birth.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

- After several decades of steady increases, the percentage of infants born preterm and the percentage born with low birthweight declined slightly in 2007. The percentage of infants born preterm was 12.7 percent in 2007, down from 12.8 percent in 2006; most of the decline was among late preterm infants (from 9.1 percent in 2006 to 9.0 percent in 2007). The percentage of infants born with low birthweight declined to 8.2 percent in 2007 from 8.3 percent in 2006; all of the decline was among moderately low birthweight infants.
- From 1990 to 2006, the percentage of preterm births rose from 10.6 percent to 12.8 percent. The increase in late preterm births (from 7.3 to 9.1 percent) accounted for most of this increase. The percentage of births that were very and moderately preterm changed little in recent years (3.6 percent in 2007).
- The percentage of low birthweight infants rose from 7.0 percent of all births in 1990 to 8.3 percent in 2006. In 2006 and 2007, 1.5 percent of infants were very low birthweight, up from 1.3 percent in 1990. The percentage of moderately low birthweight infants rose from 5.7 percent in 1990 to 6.8 percent in 2006, but declined slightly to 6.7 percent in 2007.
- The increasing multiple birth rate was a contributing factor to the rise in preterm birth and low birthweight between 1990 and 2006. However, both the percentage of preterm births and low birthweight infants rose substantially among singleton births as well.⁶

Indicator HEALTH1.B

Percentage of infants born with low birthweight by race and Hispanic origin of mother, 1990, 2006, and 2007



NOTE: Data for 2007 are preliminary. Race refers to mother's race. The 1977 OMB Standards for Data on Race and Ethnicity were used to classify persons into one of the following four racial groups: White, Black, American Indian or Alaskan Native, or Asian or Pacific Islander. Although state reporting of birth certificate data is transitioning to comply with the 1997 OMB standard for race and ethnic statistics, 2006 and 2007 data from states reporting multiple races were bridged to the single-race categories of the 1977 OMB standards for comparability with other states. Data on race and Hispanic origin are collected and reported separately. Persons of Hispanic origin may be of any race.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

■ The percentage of Black, non-Hispanic infants born with low birthweight was higher than that of other racial or ethnic groups. The Black, non-Hispanic percentage declined to a low of 13.1 percent in 1996 and 1997, rose to 14.0 percent in 2006, and declined to 13.8 percent in 2007. The percentage of low birthweight infants rose among White, non-Hispanic infants, from 5.6 percent in 1990 to 7.3 percent in 2006, but declined slightly to 7.2 percent in 2007. Between 1990 and 2006, low birthweight percentages increased for American Indian or Alaskan Native infants (6.1 to 7.5 percent) and Asian or Pacific Islander infants (6.5 to 8.1 percent); the percentages for both groups, however, were unchanged between 2006 and 2007. Among Hispanic infants, the percentage of low birthweight infants rose between 1990 and 2006 (6.1 to 7.0 percent) and declined slightly for 2007 (6.9 percent).

- In 2007, Black, non-Hispanic infants were also more likely to be born preterm (18 percent) than White, non-Hispanic (11 percent) and Hispanic (12 percent) infants.
- The percentage of Black, non-Hispanic infants born preterm declined from 19.0 percent in 1991 to 17.4 percent in 2000, rose to 18.5 percent in 2006, and declined slightly in 2007 (18.3 percent). From 1990 to 2006, the percentage of preterm births increased steadily for White, non-Hispanic infants (8.5 to 11.7 percent), then declined slightly in 2007 (11.5 percent). The percentage of preterm Hispanic infants increased from 11.0 to 12.3 percent between 1990 and 2007.

Bullets contain references to data that can be found in Tables HEALTH1.A and HEALTH1.B on pages 164–165. Endnotes begin on page 73.

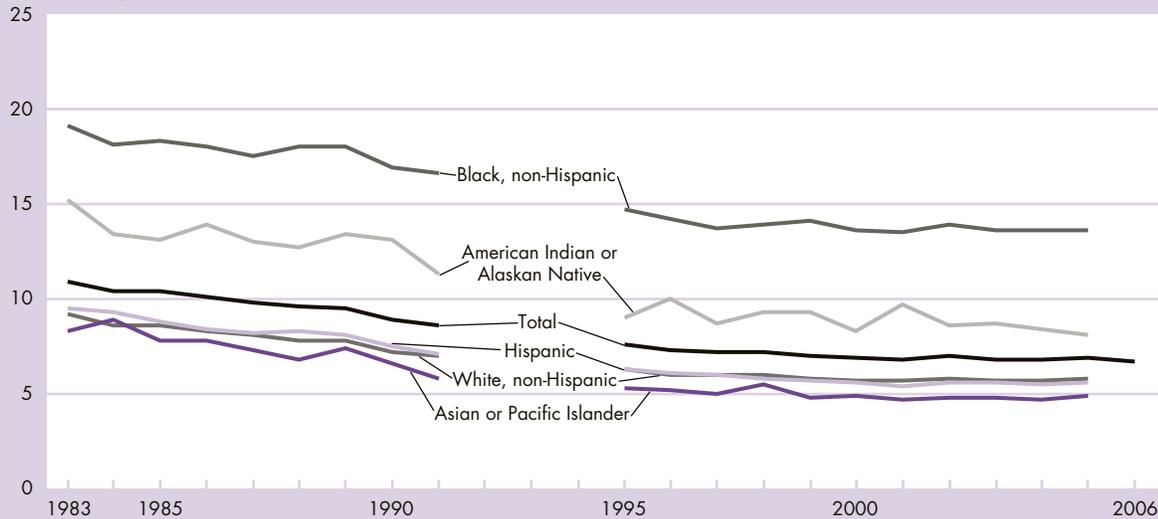
Infant Mortality

Infant mortality is defined as the death of an infant before his or her first birthday. Infant mortality is related to the underlying health of the mother, public health practices, socioeconomic conditions, and availability and use of appropriate health care for infants and pregnant women.¹⁰ In the United States, about two-thirds of infant deaths occur in the first month after birth and are due mostly to health problems of the infant, such as birth defects, or problems related to the pregnancy, such as preterm delivery.

Indicator HEALTH2

Death rates among infants by race and Hispanic origin of mother, 1983–1991 and 1995–2006

Infant deaths per 1,000 live births



NOTE: Infant deaths are deaths before an infant's first birthday. Data from the file linking live births to infant deaths are available for 1983–1991 and 1995–2005 only. The infant mortality rate for 2006 was obtained from unlinked death records from the National Vital Statistics System because data for 2006 are not currently available from the National Linked Files of Live Births and Infant Deaths. 2006 data for specific race and ethnicity groups in this figure are not available. Race refers to mother's race. The 1977 OMB Standards for Data on Race and Ethnicity were used to classify persons into one of the following four racial groups: White, Black, American Indian or Alaskan Native, or Asian or Pacific Islander. Although state reporting of birth certificate data is transitioning to comply with the 1997 OMB standard for race and ethnic statistics, data from states reporting multiple races were bridged to the single-race categories of the 1977 OMB standards for comparability with other states. Data on race and Hispanic origin are collected and reported separately. Persons of Hispanic origin may be of any race. Trends for the Hispanic population are affected by an expansion in the number of registration areas that included an item on Hispanic origin on the birth certificate.

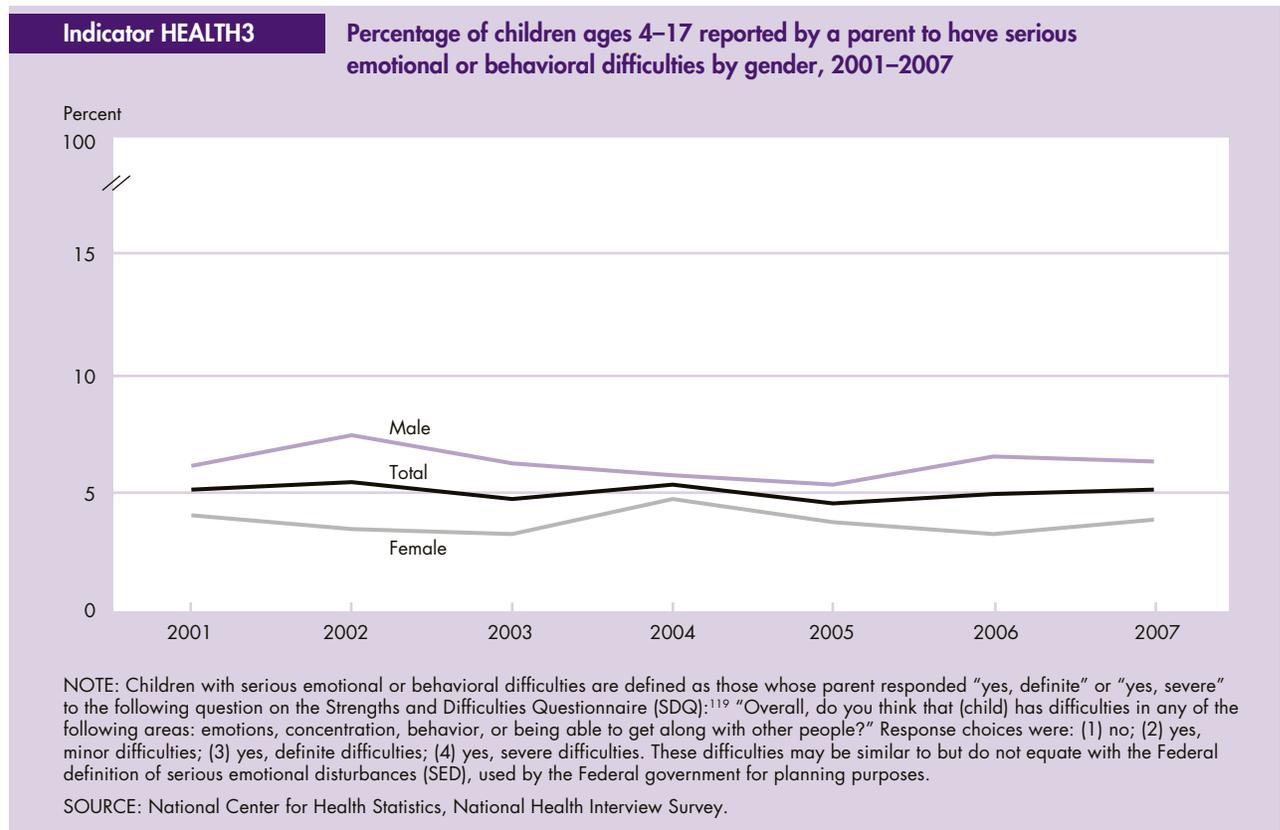
SOURCE: National Center for Health Statistics, National Vital Statistics System.

- The infant mortality rate was 6.7 deaths per 1,000 live births in 2006, a decline from 6.9 in 2005.
- Substantial racial and ethnic disparities in infant mortality continue. Black, non-Hispanic and American Indian or Alaskan Native infants have consistently had higher infant mortality rates than those of other racial or ethnic groups. For example, in 2005, the Black, non-Hispanic infant mortality rate was 13.6 infant deaths per 1,000 live births and the American Indian or Alaskan Native rate was 8.1; both rates were higher than the rates among White, non-Hispanic (5.8), Hispanic (5.6), and Asian or Pacific Islander (4.9) infants in 2005.
- Infant mortality rates also vary within racial and ethnic populations. For example, among Hispanics in the United States, the infant mortality rate for 2005 ranged from 4.4 deaths per 1,000 live births for infants of Cuban origin to a high of 8.3 for Puerto Rican infants.

Bullets contain references to data that can be found in Table HEALTH2 on page 166. Endnotes begin on page 73.

Emotional and Behavioral Difficulties

Good emotional and behavioral health enhances a child’s sense of well-being, supports satisfying social relationships at home and with peers, and leads to achievement of full academic potential.¹¹⁶ Children with emotional or behavioral difficulties may have problems managing their emotions, focusing on tasks, and/or controlling their behavior. These difficulties, which may persist throughout a child’s development and can lead to lifelong problems, are usually noticed first by parents.¹¹⁷ Parents play a crucial role in informing health professionals about a child’s emotional and behavioral difficulties and obtaining mental health services.¹¹⁸



- In 2007, slightly more than 5 percent of children ages 4–17 were reported by a parent to have serious difficulties with emotions, concentration, behavior, or being able to get along with other people.
- Between 2001 and 2007, the percentage of children with serious emotional or behavioral difficulties remained stable at about 5 percent.
- In 2007, the percentage of children with serious emotional or behavioral difficulties differed by gender. More males than females ages 4–17 years were reported by a parent to have such difficulties.
- In 2007, 7 percent of children living below the poverty level or in families with incomes 100–199 percent of the poverty level had serious emotional or behavioral difficulties, compared with 4 percent of children with family incomes 200 percent or more of the poverty level.

- Among the parents of children with serious difficulties, 86 percent reported contacting a health care provider or school staff about their child’s difficulties, 46 percent reported their child was prescribed medication for their emotional or behavioral difficulties, and 51 percent reported their child had received treatment or help other than medication.¹²⁰

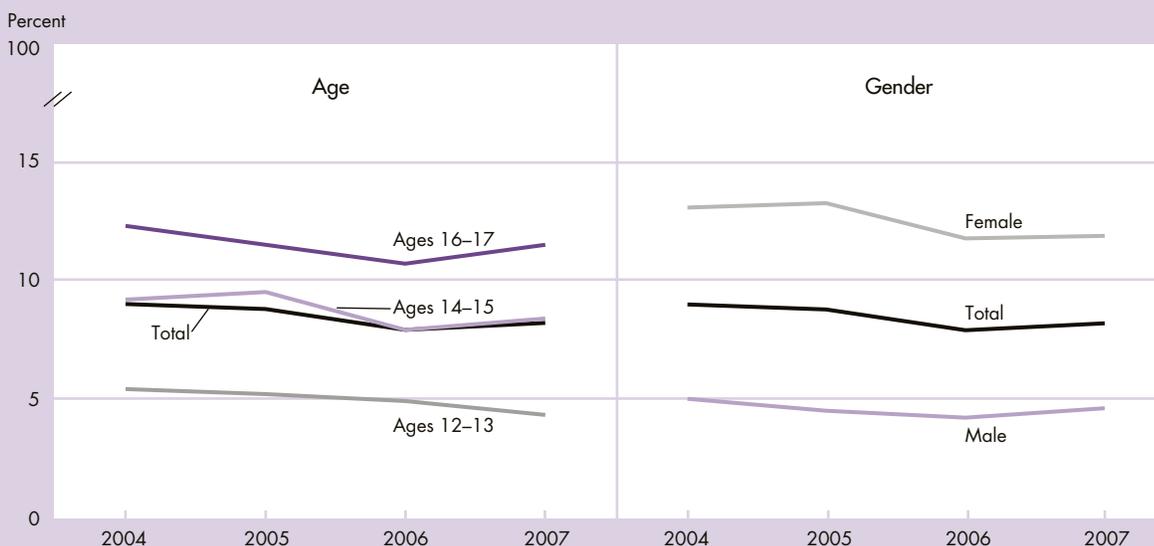
Bullets contain references to data that can be found in Tables HEALTH3.A and HEALTH3.B on pages 167–168. Endnotes begin on page 73.

Adolescent Depression

Depression has a significant impact on adolescent development and well being. Adolescent depression can adversely affect school and work performance, impair peer and family relationships, and exacerbate the severity of other health conditions such as asthma and obesity.^{121–125} Depressive episodes often persist, recur, or continue into adulthood.¹²⁶ Youth who have had a Major Depressive Episode (MDE) in the past year are at greater risk for suicide and are more likely than other youth to initiate alcohol and other drug use, experience concurrent substance use disorders, and smoke daily.^{127–129}

Indicator HEALTH4

Percentage of youth ages 12–17 who experienced a Major Depressive Episode (MDE) in the past year by age and gender, 2004–2007



NOTE: Major Depressive Episode (MDE) is defined as a period of at least 2 weeks when a person experienced a depressed mood or loss of interest or pleasure in daily activities plus at least 4 additional symptoms of depression (such as problems with sleep, eating, energy, concentration and feelings of self-worth) as described in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*.¹³⁰

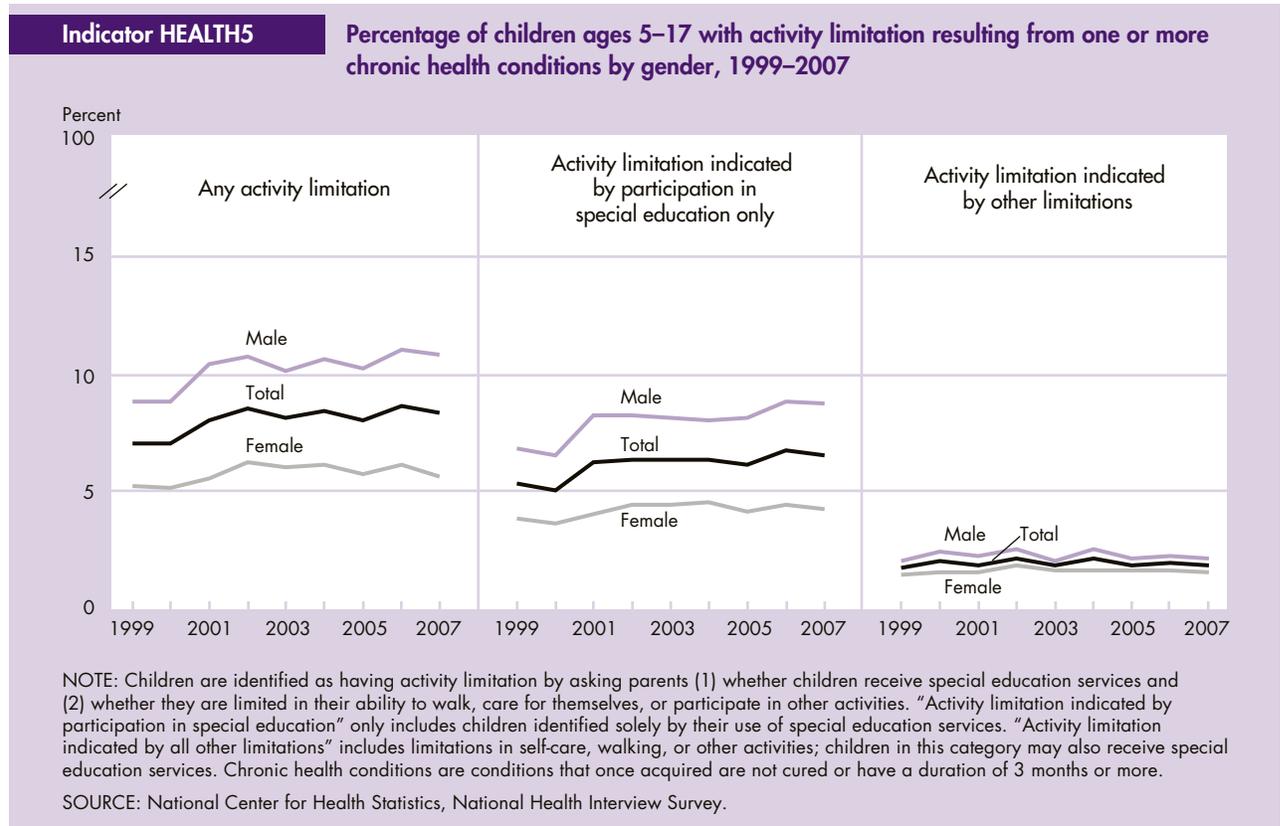
SOURCE: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health.

- In 2007, 8 percent of the population ages 12–17 had a Major Depressive Episode (MDE) during the past year, a lower rate than that reported in 2004 (9 percent).
- From 2004 to 2007, the prevalence of MDE among youth was more than twice as high among females (12 percent to 13 percent) as among males (4 percent to 5 percent).
- The past-year prevalence of MDE in 2007 was lowest in youth ages 12–13 (4 percent), compared to youth ages 14–15 (8 percent) and youth ages 16–17 (12 percent).
- In 2007, 67 percent of youth with MDE (5.5 percent of the population ages 12–17) reported that the MDE caused severe problems in at least one major role domain (home, school/work, family relationships, social life).
- The percentage of youth with MDE receiving treatment for depression, defined as seeing or talking to a medical doctor or other professional about the depressive episode and/or using prescription medication for depression in the past year, remained stable from 2004 to 2007 (40 percent in 2004 and 39 percent in 2007).

Bullets contain references to data that can be found in Tables HEALTH4.A–HEALTH4.C on pages 169–171. Endnotes begin on page 73.

Activity Limitation

Activity limitation refers to a person's inability, due to a chronic physical, mental, emotional, or behavioral condition, to participate fully in age-appropriate activities. Age-appropriate activities for children ages 5–17 consist of a child's ability to complete regular school work and perform other activities, including self-care and walking. Activity limitation is a broad measure of health and functioning affected by a variety of chronic health conditions. The causes of activity limitation most often reported by parents of children ages 5–17 include learning disabilities, speech problems, and other mental, emotional, and behavioral problems.¹³¹



- In 2007, approximately 8 percent of children ages 5–17 were reported by parents to have activity limitation due to chronic conditions. Seven percent of children ages 5–17 were identified as having activity limitation solely by their participation in special education, and 2 percent had limitations in their ability to walk, care for themselves, or participate in other activities.
- Activity limitation, particularly when identified only by participation in special education, was reported more often for male children than for female children.
- In 2007, approximately 12 percent of children living below the poverty level and 10 percent of children living in families with incomes 100–199 percent of the poverty level had activity limitation, compared with 7 percent of children with family incomes 200 percent or more of the poverty level.

- Among children of different racial and ethnic origins, Hispanic children were less likely than White, non-Hispanic and Black, non-Hispanic children to have a parental report of activity limitation.²

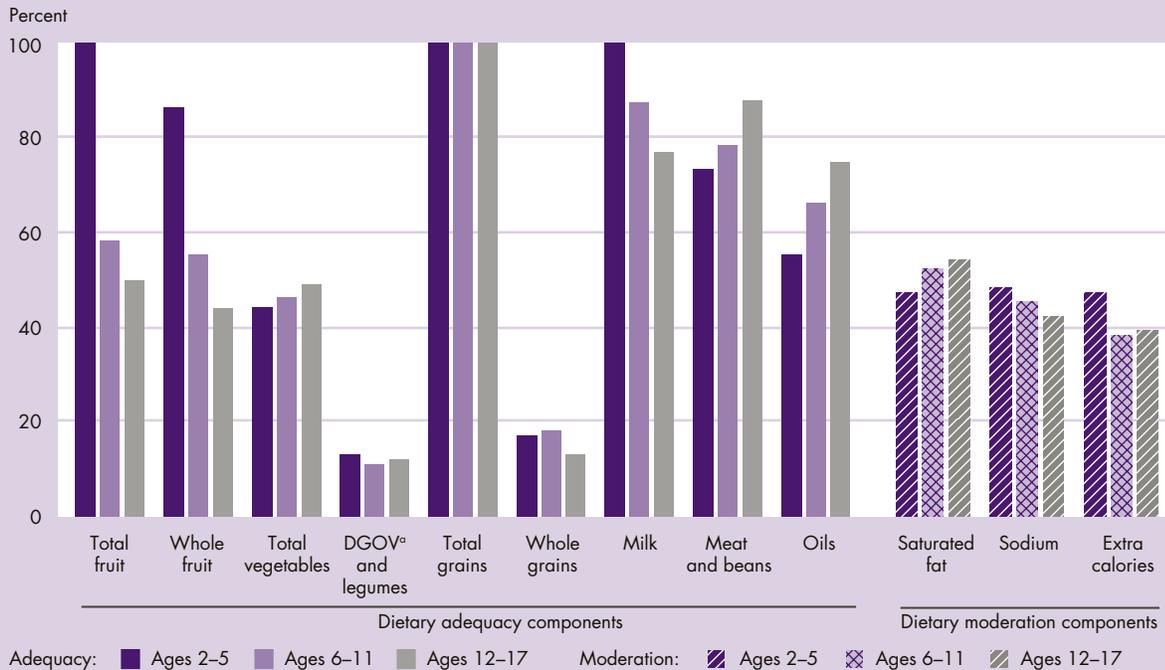
Bullets contain references to data that can be found in Table HEALTH5 on page 172. Endnotes begin on page 73.

Diet Quality

The diet quality of children and adolescents is of concern. Poor eating patterns established in childhood may transfer to adulthood; such patterns are major factors in the increasing rate of childhood obesity over the past decades and are contributing factors to related health outcomes (see HEALTH7). The Healthy Eating Index-2005 (HEI-2005) is a dietary assessment tool comprising the 12 components shown below. HEI measures quality in terms of how well diets meet the recommendations of the 2005 Dietary Guidelines for Americans and MyPyramid, USDA's food guidance system (www.MyPyramid.gov).¹³²⁻¹³⁴ The HEI-2005 component scores are averages across all children which reflect usual dietary intakes.¹³⁵ Nine components of the HEI-2005 address nutrient adequacy. The remaining three components assess saturated fat, sodium, and extra calories, all of which should be consumed in moderation.

Indicator HEALTH6

Average diet scores for children ages 2–17 expressed as a percentage of Federal diet quality standards by age group, 2003–2004



^a DGOV means dark green and orange vegetables.

NOTE: HEI-2005 scores are expressed as percentages of recommended dietary intake levels. A score corresponding to 100 percent indicates that the recommendation was met or exceeded on average. A score below 100 percent indicates that average intake does not meet the recommendations for that component. For the adequacy components, higher scores reflect higher intakes. For the moderation components, higher scores reflect lower intakes because lower intakes are more desirable. For all components, a higher percentage indicates a higher quality diet. "Extra calories" refers to calories from other sources, such as solid fats and added sugars.

SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey, 2003–2004 and U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, Healthy Eating Index-2005.

- In 2003–2004, on average, the quality of the diets of younger children was better when compared with that of older children with regard to fruit, milk, and extra calories. The quality of the diets of older children was better with regard to meat, oils, and saturated fat.
- The average diet score for all age groups (2–5, 6–11, and 12–17) met the quality standards for total grains, but only children ages 2–5 met the standards for total fruit and milk.
- The average diet score across all age groups, especially those of children ages 6–11 and 12–17, did not meet quality standards for a number of food groups, indicating a need to increase intakes of all types of fruit and vegetables, but especially dark green and orange vegetables (DGOV) and cooked dry beans and peas (legumes); whole grains; and oils.¹³⁶
- Average intakes of sodium, saturated fat, and calories from solid fats and added sugars in foods and beverages did not meet the quality standards in any age group. This indicates a need to limit intake of foods high in salt, added sugar (i.e., not naturally occurring), and solid fat. For example, non-fat or low-fat milk and lean meat products should replace foods that have a higher fat content.¹³²

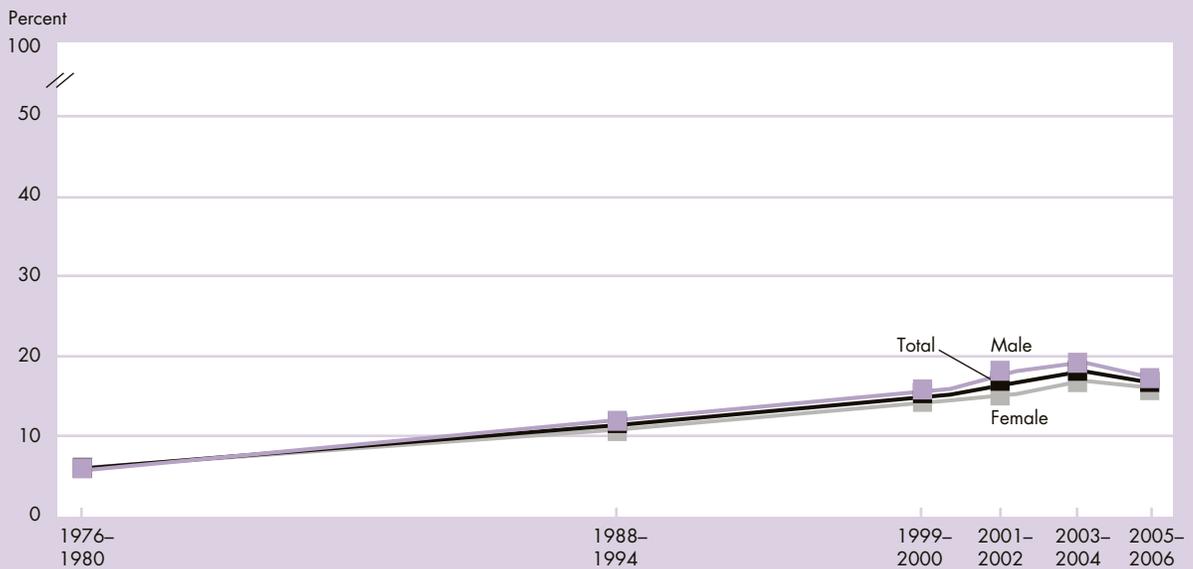
Bullets contain references to data that can be found in Table HEALTH6 on page 173. Endnotes begin on page 73.

Overweight

Overweight adolescents often become overweight adults, with increased risks for a wide variety of poor health outcomes, including diabetes, stroke, heart disease, arthritis, and certain cancers.^{137,138} The immediate consequences of overweight in childhood are often psychosocial, but also include cardiovascular risk factors such as high blood pressure, high cholesterol, and the precursors to diabetes.¹³⁹ The prevalence of overweight among U.S. children changed relatively little from the early 1960s through 1980; however, after 1980 it increased sharply.¹⁴⁰ Between 1999 and 2006, the prevalence of overweight was stable in both boys and girls.¹⁴¹ Recent national estimates indicate that only 35 percent of adolescents meet current physical activity recommendations and only about 21 percent eat the recommended five or more servings of fruits and vegetables per day.¹⁴² In addition to individual factors such as these, social, economic, and environmental forces (e.g., advances in technology and trends in eating out) may contribute to the increasing prevalence of being overweight.

Indicator HEALTH7

Percentage of children ages 6–17 who are overweight by gender, selected years 1976–2006



NOTE: Overweight is defined as body mass index (BMI) at or above the 95th percentile of the 2000 Centers for Disease Control and Prevention sex-specific BMI-for-age growth charts. BMI is calculated as weight in kilograms divided by the square of height in meters.

SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey.

- Since the 1980s, there has been an increase in the percentage of children who are overweight. During the period 1976–1980, only 6 percent of children ages 6–17 were overweight. By 1988–1994, this percentage had risen to 11 percent of children ages 6–17, and in 1999–2000 it was 15 percent. In 2005–2006, 17 percent of children were overweight. There was no significant change in the percentage of overweight children between 2003–2004 and 2005–2006.
- In 2005–2006, there was no difference between boys and girls in the percentage of children who were overweight.
- In 2005–2006, 15 percent of children ages 6–11 were overweight and 18 percent of adolescents ages 12–17 were overweight. There was no statistical difference between the percentages of the younger and older age groups.

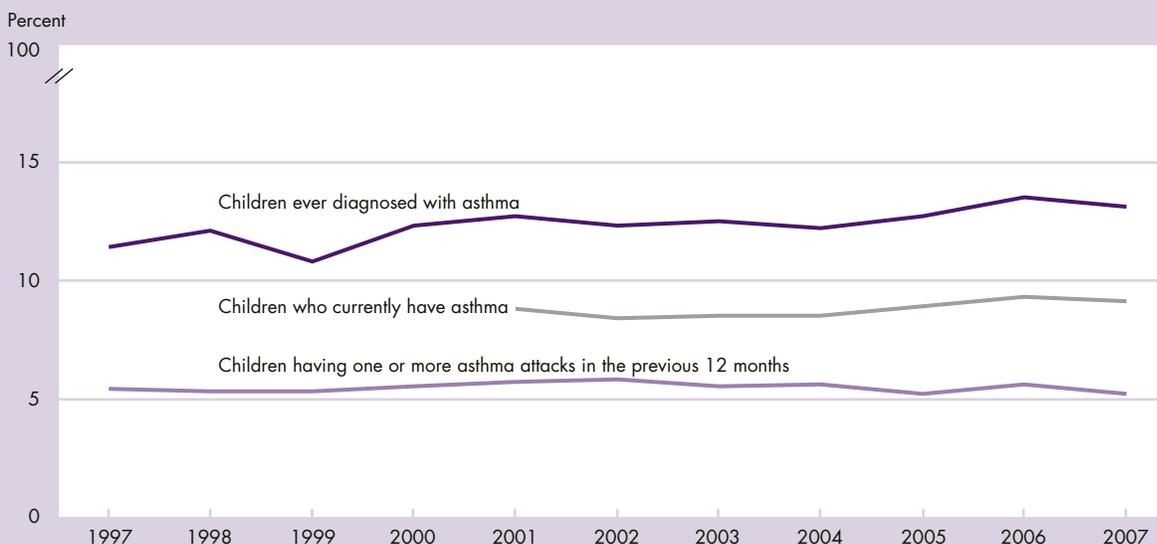
Bullets contain references to data that can be found in Table HEALTH7 on page 174. Endnotes begin on page 73.

Asthma

Asthma is a disease of the lungs that can cause wheezing, difficulty in breathing, and chest pain. It is one of the most common chronic diseases among children and is costly in both health and monetary terms. Asthma varies greatly in severity. Some children who have been diagnosed with asthma may not experience any serious respiratory effects. Other children may have mild symptoms or may respond well to management of their asthma, typically through the use of medication. Some children with asthma may, however, suffer serious attacks that greatly limit their activities, result in visits to emergency rooms or hospitals, or, in rare cases, cause death. Environmental factors such as air pollution and secondhand tobacco smoke, along with infections, exercise, and allergens, can trigger asthma attacks in children who have the disease.^{143–145}

Indicator HEALTH8

Percentage of children ages 0–17 with asthma, 1997–2007



NOTE: Children are identified as ever diagnosed with asthma by asking parents, “Has a doctor or other health professional EVER told you that your child has asthma?” If the parent answers YES to this question, they are then asked (1) “Does your child still have asthma?” and (2) “During the past 12 months, has your child had an episode of asthma or an asthma attack?” The question “Does your child still have asthma?” was introduced in 2001 and identifies children who currently have asthma.

SOURCE: National Center for Health Statistics, National Health Interview Survey.

- In 2007, about 13 percent of children had been diagnosed with asthma at some time in their lives.
- About 9 percent of children were reported to currently have asthma in 2007. These include children with active asthma symptoms and those whose asthma is well controlled.
- Approximately 5 percent of all children had one or more asthma attacks in the previous 12 months. These children have ongoing asthma symptoms that could put them at risk for poorer health outcomes, including hospitalizations and death. About 3 children out of 5 who currently have asthma have ongoing asthma symptoms.
- In 2007, about 15 percent of Black, non-Hispanic children were reported to currently have asthma, compared with 7 percent of White, non-Hispanic

and 9 percent of Hispanic children. Disparities exist within the Hispanic population such that 15 percent of Puerto Rican children were reported to currently have asthma, compared with 9 percent of children of Mexican origin.

- From 1997 to 2007, the trends for these three asthma indicators remained fairly stable. Between 1980 and 1995, childhood asthma more than doubled (from about 4 percent in 1980 to approximately 8 percent in 1995). Methods for measurement of childhood asthma changed in 1997, so earlier data cannot be compared to data from 1997–2007.

Bullets contain references to data that can be found in Tables HEALTH8.A and HEALTH8.B on page 175. Endnotes begin on page 73.

Indicator Needed

Health

National indicators on several key dimensions of health are not yet available because of the difficulties in reaching consensus on relevant definitions and measurements. The following health-related area has been identified as a priority for indicator development:

- *Disability.* The Forum has had a longstanding interest in developing an improved measure of child disability based on the functional difficulties experienced by children. The recently adopted *International Classification of Functioning, Disability, and Health for Children and Youth (ICF-CY)*¹⁴⁶ provides a broad conceptual framework and terminology that may be a useful guide for the development of a new measure of child disability. Currently, there is little agreement about which domains of functioning should be included in a child disability measure and how functioning difficulties within these domains should be measured for children of different ages. However, recent progress in the development of an adult disability measure derived from regularly collected survey data is encouraging and underscores the need to devise a similar concise measure of child disability.