Preterm Births

Infants born preterm are at increased risk for a number of health problems. The percentage of births that were preterm (occurring at least three weeks before an infant’s due date earlier than the 37th week of pregnancy), and especially late preterm births, increased markedly between 1990 and 2006, but has since decreased.

Importance

In 2010, more than a third of infant deaths were from complications related to preterm births, making prematurity the most frequent cause of infant mortality. (1, 2) Infants born preterm have higher rates of health complications and lifelong disabilities, including mental retardation, learning and behavioral problems, cerebral palsy, lung problems, vision and hearing loss, diabetes, high blood pressure, and heart disease. (3) Children born preterm may also have increasing difficulties with complex language functions between the ages of three and 12 years. (4) Children born moderately preterm are more likely than full-term infants to have lower intelligence and poorer visual-motor skills and executive functioning at age seven. (5) Even among children born at term, one recent study finds earlier gestational age is associated with lower reading and math scores at third grade. (6) There is some evidence linking preterm births with symptoms of autism. (7, 8) Babies born before the 34th week of pregnancy, very or moderately preterm, have the highest risk for early death and enduring health problems, but recent research has shown than even late preterm infants (at 34 to 36 weeks of pregnancy) have greater health risks than full-term babies. (9)

The underlying causes of preterm birth are poorly understood, although genetic, social, and environmental factors all likely play a role. (10) Women with a previous premature birth, a multiple pregnancy (twins, triplets, or more), certain cervical or uterine abnormalities, and a number of medical conditions are at increased risk of preterm birth. Lifestyle factors also can elevate risk: these include late or no prenatal care, cigarette smoking, alcohol and illicit drug use, domestic violence, very high stress levels, and prolonged work hours involving standing. (11) Maternal depression during pregnancy may be another risk factor for preterm birth. (12) Notably, however, about one-half (46 percent, in 2013) of premature births involve cesarean section. (13) Most of these procedures are in response to pregnancy complications or indicated health problems in the mother or fetus; however, some may occur without good medical justification, to suit preferences of the mother or attending physician. In addition, the fact that normal-term babies born by cesarean section are twice as likely as infants born vaginally to have respiratory problems (which are often signs of prematurity), may be related to the difficulty of accurately establishing a date of conception. (14)

Trends

The U.S. preterm birth rate rose by more than 20 percent between 1990 and 2006, accounting for nearly one in eight births.
births (12.8 percent) in 2006. Most of this increase was accounted for by the rise in the rate of late preterm births, which rose by 25 percent during this period. However, since then, the preterm birth rate has fallen by ten percent, and was at 11.4 percent in 2013. (Figure 1)

**Differences by Gestation Period**

In 2013, about 70 percent of preterm births were late preterm (34-36 weeks gestation); another 13 percent were moderately preterm (33-34 weeks); and 17 percent were very preterm (less than 32 weeks). The increase in preterm births between 1990 and 2006 is mostly accounted for by the rise in late preterm births, which (as a proportion of all births) rose from 7.3 to 9.1 percent—an increase by more than one-quarter. Similarly, the recent decrease in preterm births is also mostly accounted for by a decrease in late preterm births, which fell from 9.1 to 8.0 percent between 2006 and 2013. (Figure 1)

**Differences by Race and Hispanic Origin**[15]

Black women have the highest rates of preterm births (16.3 percent in 2013), followed by American Indians (13.1 percent), Hispanics (11.3 percent), whites and Asian/Pacific Islanders (10.2 percent, each). (Figure 2)

The gap between blacks and whites decreased between 1990 and 2004, but has remained steady since then, at around seven percentage points. The gap between whites and Hispanics decreased between 1990 and 2006, but has since increased. (Appendix 1)

**Differences by Plurality of Birth**

Preterm births are more likely to occur in the context of multiple births (twins, triplets, etc.). In 2013 9.7 percent of singleton births were preterm, compared with 56.6 percent of twin births and 93.1 percent of triplet births. (Figure 3) While the numbers of multiple births have risen in the past two decades, due in part to the use of fertility treatments and a greater number of older women bearing children, they accounted for just over three percent of all U.S. births in 2013 [16].

The rate of preterm singleton births rose from 9.7 percent in 1990, to 11.1 percent in 2006; it then fell to 9.7 percent in 2013. Similarly, the rate of preterm twin births rose from 47.3 percent in 1990 to 60.1 in 2007, before falling to 56.6 in 2013. (Appendix 1)
Differences by Age of Mother

Preterm births are more likely among teen mothers and mothers forty and older. In 2013, 13 percent of births to mothers under 20 years old were preterm, compared with 11 percent, each, to mothers ages 20 to 29 and 30 to 39, 16 percent to mothers 40 to 44, and 25 percent to mothers 45 and older. Increases since 1993 in the proportion of births that are preterm have been greatest among older mothers: nine percentage points among mothers 45 and older, three percentage points among births to mothers ages 40-44, and one percentage point among births to mothers ages 20 to 39. In contrast, the percentage of preterm births to mothers younger than 20 has decreased by one percentage point since 1993. (Figure 4)

State and Local Estimates

National Center for Health Statistics (NCHS) provides state-level data for 2013 by race, ethnicity, plurality, and birthweight. (table I-8)

Preliminary 2013 data for states (and some counties) are presented in the March of Dimesâ€™ 2014 Premature Birth Report Card.


Preterm births by state and in major cities for 1990-2012 are available from the Kids Count Data Center.

International Estimates


National Goals

Healthy People 2020, an initiative of the U.S. Department of Health and Human Services, includes a goal of reducing preterm births from 12.7 percent in 2007 to 11.4 percent in 2020. There are also more specific goals to reduce late, moderate, and very preterm births.

More information is available here (Objective MICH 9).

What Works to Make Progress on This Indicator

Women should consult their health care provider, both when contemplating pregnancy and after pregnancy begins, in order to identify and treat potential risk factors early. Early and regular prenatal care is recommended for all women.

Taking folic acid daily (at least 400 mg) for at least a year prior to becoming pregnant may cut the risk of prematurity by half. Avoiding smoking, alcohol, and illicit drug use, as well as maintaining a healthy weight, also lower the risk of preterm birth.
Medications may be prescribed to speed lung maturation in the fetus (corticosteroids), or
to postpone labor (tocolytics).

For women who have had a preterm singleton birth in the past, the American College of
Obstetricians and Gynecologists (ACOG) recommends progesterone shots to reduce the
risk of a second preterm birth.[17]

A home-visiting program for very preterm infants, consisting of nine visits over the first
year of life, and focusing on topics of infant development, parent mental health, and the
parent-infant relationship, was associated, when children were age four, with lower
caregiver anxiety, and reduced child internalizing behaviors, compared with a group of
preterm infants who did not receive the intervention.[18]

Also, see Child Trendsâ€™ LINKS database (â€œLifecourse Interventions to Nurture
Kids Successfullyâ€), for reviews of many rigorously evaluated programs, including the
following which have been shown to be effective at preventing preterm births or improving
outcomes:

- CenteringPregnancy
- Nurse-Family Partnership
- Early Intervention Program for Low Birth Weight Infants
- Infant Health and Development Program (IHDP)
- Newborn Individualization Developmental Care and Assessment Program (NIDCAP)

Note: Child Trends does not provide medical advice or diagnosis. Readers are urged to
consult with a qualified health professional before embarking on any course of treatment.

Related Indicators

- Low and very low birth weight infants
- Late or no prenatal care
- Mothers who smoke while pregnant

Definition

Length of gestation is measured as the interval between the first day of the motherâ€™s
last normal menstrual period and the date of birth. Infants born prior to 37 full weeksâ€™
gestation are considered preterm.

Data Sources

Data for 1995-2013: Centers for Disease Control and Prevention, National Center for
Health Statistics, CDC Wonder online database. Available at:
http://wonder.cdc.gov/natality.html

Data for 1990-1995: Centers for Disease Control and Prevention, National Center for
www.cdc.gov/nchs/data_access/vitalstat/Deaths_Births.htm

Raw Data Source


www.cdc.gov/nchs/data_access/Vitalstatsonline.htm

Appendix 1 - Â Percentage of Births That Are Preterm, by Selected
Characteristics: Selected Years, Â 1990-2013

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>All Preterm Births (&lt;37 wks. gestation)</td>
<td>10.6</td>
<td>11.0</td>
<td>11.4</td>
<td>11.6</td>
<td>11.8</td>
<td>11.6</td>
<td>11.9</td>
<td>12.1</td>
<td>12.3</td>
<td>12.5</td>
<td>12.7</td>
<td>12.8</td>
<td>12.7</td>
<td>12.3</td>
<td>12.2</td>
<td>12.0</td>
<td>11.7</td>
<td>11.6</td>
<td>11.4</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Age of Mother</th>
<th>Singleton births</th>
<th>Twin births</th>
<th>Triplet births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 19 years</td>
<td>14.6 13.8 13.8 14.0 14.1 14.0 14.0 14.3 14.5 14.7 14.8 14.6 14.1 13.7 13.7 13.6 13.3 13.1</td>
<td>10.1 10.4 10.8 11.0 11.2 11.1 11.4 11.5 11.8 11.9 12.1 12.2 12.1 11.7 11.6 11.6 11.1 11.0 10.8</td>
<td>9.8 10.6 11.2 11.4 11.6 11.4 11.8 12.0 12.3 12.5 12.7 12.8 12.7 12.4 12.3 11.8 11.6 11.4</td>
</tr>
<tr>
<td>20 to 29 years</td>
<td>12.3 13.5 14.1 14.6 14.8 14.7 15.1 15.5 15.7 16.1 16.2 16.4 16.5 16.3 16.4 16.5 16.3 16.4</td>
<td>23.0 23.5 23.6 25.5 25.5 25.6 25.6 25.9 25.5 25.6 26.0 25.9 25.6 25.7 26.1 26.8 26.8 27.3 25.5 24.6</td>
<td></td>
</tr>
<tr>
<td>30 to 39 years</td>
<td>23.5</td>
<td>25.5</td>
<td>26.2</td>
</tr>
<tr>
<td>40 to 44 years</td>
<td>23.0</td>
<td>23.5</td>
<td>25.5</td>
</tr>
<tr>
<td>45 years or older</td>
<td>15.5</td>
<td>19.2</td>
<td>22.3</td>
</tr>
</tbody>
</table>

* Data for 2013 are preliminary. "-“ indicates data are not available. Note: Percentage calculations exclude records missing gestation period data.

1 Persons of Hispanic origin may be of any race.


Endnotes


Hispanics may be of any race. Estimates for whites and blacks in this report do not include Hispanics.


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