

Low Birthweight Infants

DEFINITION

Low birthweight infants is the percentage of infants born weighing less than 2,500 grams (5 pounds, 8 ounces). The data are reported by place of mother's residence, not place of infant's birth.

SIGNIFICANCE

An infant's birthweight is a key indicator of newborn health. Infants born weighing less than 5 pounds, 8 ounces are at greater risk for physical and developmental problems than infants of normal weights. Factors that influence infant birthweight include maternal smoking, poverty, periodontal health, level of educational attainment, violence, stress, prenatal nutrition, and environmental hazards.^{1,2,3}

Low birthweight often is a result of a premature birth but also can occur after a full-term pregnancy. In 2015 in the U.S., 58.1% of all preterm infants (under 37 weeks gestation) were born at low birthweight, while 2.8% of full-term infants (37 to 41 weeks gestation) were born at low birthweight.⁴

Cigarette smoking during pregnancy is a leading cause of low birthweight.^{5,6} In Rhode Island, 7.4% of babies born between 2011 and 2015 had mothers who smoked during their pregnancy. During that time, Rhode Island smokers (12.9%) were nearly twice as likely to deliver a low birthweight infant as women who did not smoke (6.8%).⁷

Children born at low birthweight face greater risks of physical and developmental health problems and death than those born at normal birthweight. Children born at very low birthweight (less than 1,500 grams or 3.3 pounds) are more than 100 times more likely to die within the first year of life than infants of normal birthweight. Those who survive are at significantly higher risk of severe problems, including physical and sensory difficulties, developmental delays, and cognitive impairments. Low birthweight babies are also at greater risk for long-term cognitive problems and school difficulties than their peers.^{8,9,10}

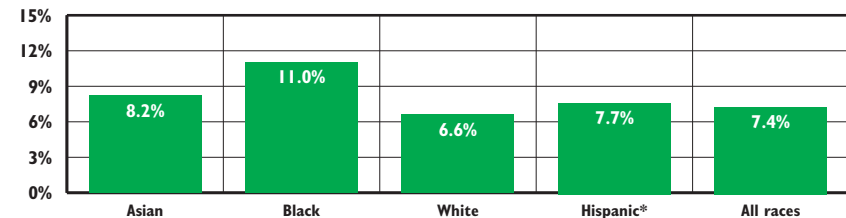
In the U.S. in 2015, 8.1% of infants were born at low birthweight, which was a 16% increase from 7.0% in 1990. Rhode Island's low birthweight rate increased from 6.2% in 1990 to 7.6% in 2015, a 23% increase.^{11,12} The *Healthy People 2020* national target is 7.8%.¹³

Low Birthweight Infants		
	2005	2015
RI	7.8%	7.6%
US	8.2%	8.1%
National Rank*		20 th
New England Rank**		5 th

*1st is best; 50th is worst
 **1st is best; 6th is worst

Source: For 2015: Martin, J. A., et al. (2017). Births: Final data for 2015. *NVSR*, 66(1), 1-69. For 2005: Martin, J. A., et al. (2007). Births: Final data for 2005. *NVSR*, 56(6), 1-104.

Low Birthweight Infants by Race/Ethnicity, Rhode Island, 2011-2015



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. *Hispanic infants can be of any race. Data for births in 2015 are provisional.

- ◆ There are racial and ethnic disparities in rates of low birthweight.¹⁴ In Rhode Island between 2011 and 2015, 11.0% of Black infants, 8.2% of Asian infants, and 7.7% of Hispanic infants were born at low birthweight, compared to 6.6% of White infants.¹⁵
- ◆ Factors that persist throughout a woman's life, such as increased stress, insufficient health care, and/or lack of social supports, have been shown to increase the likelihood of delivering a low birthweight baby, particularly among Black women and other racial and ethnic minorities.^{16,17}
- ◆ Between 2011 and 2015 in Rhode Island, 8.9% of births among women under age 20 were low birthweight compared to 7.4% of those over age 20; 8.6% of infants born to women living in the four core cities were low birthweight compared to 6.6% in the remainder of the state; and 8.3% of infants born to women with a high school degree or less were low birthweight, compared to 6.3% of those born to women with higher education levels.¹⁸
- ◆ Among women with private health insurance coverage in Rhode Island between 2011 and 2015, 6.5% of births were low birthweight, compared with 8.3% of those with public insurance (RIte Care or Medicaid) and 13.0% of births to women with no insurance.¹⁹
- ◆ Rhode Island women who deliver a low birthweight infant are more likely to report smoking while pregnant, delayed or no prenatal care, a depression diagnosis, and intimate partner violence than those with a normal weight baby, as well as health issues during their pregnancy such as high blood pressure, hypertension, preeclampsia, or toxemia.²⁰
- ◆ Between 2011 and 2015 in Rhode Island, 1.5% of all live births were born at very low birthweight (less than 1,500 grams).²¹

Table 20. Low Birthweight Infants, Rhode Island, 2011-2015

CITY/TOWN	# BIRTHS	# LOW BIRTHWEIGHT	% LOW BIRTHWEIGHT
Barrington	513	22	4.3%
Bristol	730	43	5.9%
Burrillville	648	42	6.5%
Central Falls	1,575	123	7.8%
Charlestown	249	8	NA
Coventry	1,448	93	6.4%
Cranston	3,916	312	8.0%
Cumberland	1,625	92	5.7%
East Greenwich	573	46	8.0%
East Providence	2,372	157	6.6%
Exeter	244	10	NA
Foster	172	12	NA
Glocester	344	19	NA
Hopkinton	306	15	NA
Jamestown	128	5	NA
Johnston	1,323	88	6.7%
Lincoln	952	69	7.2%
Little Compton	77	5	NA
Middletown	851	49	5.8%
Narragansett	346	21	NA
New Shoreham	53	4	NA
Newport	1,283	94	7.3%
North Kingstown	1,042	68	6.5%
North Providence	1,635	127	7.8%
North Smithfield	420	33	NA
Pawtucket	4,930	443	9.0%
Portsmouth	570	37	6.5%
Providence	12,724	1101	8.7%
Richmond	319	21	NA
Scituate	359	21	NA
Smithfield	620	31	5.0%
South Kingstown	874	50	5.7%
Tiverton	525	27	5.1%
Warren	454	37	NA
Warwick	3,844	242	6.3%
West Greenwich	231	13	NA
West Warwick	1,754	134	7.6%
Westerly	927	55	5.9%
Woonsocket	2,908	245	8.4%
Unknown	104	4	NA
Four Core Cities	22,137	1,912	8.6%
Remainder of State	31,727	2,102	6.6%
Rhode Island	53,968	4,018	7.4%

Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. Data for births in 2015 are provisional and 2014 birth data do not include births among Rhode Island residents that occurred out-of-state.

The denominator is the total number of live births to Rhode Island residents between 2011 and 2015.

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

Unknown: Births were to Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

References

- ¹ 2016 KIDS COUNT data book: State trends in child well-being. (2016). Baltimore, MD: The Annie E. Casey Foundation.
- ²⁵ Shore, R. & Shore, B. (2009). *KIDS COUNT indicator brief: Preventing low birthweight*. Baltimore, MD: The Annie E. Casey Foundation.
- ³ Chambrone, L., Guglielmetti, M. R., Pannuti, C. M., & Chambrone, L. A. (2011). Evidence grade associating periodontitis to preterm birth and/or low birth weight: I.A systematic review of prospective cohort studies. *Journal of Clinical Periodontology*, 38(9), 795-808.
- ^{4,11,14} Martin, J. A., Hamilton, B. E., Osterman, M. J. K., Driscoll, A. K., & Mathews, T. J. (2017). Births: Final data for 2015. *National Vital Statistics Reports*, 66(1), 1-69.
- ^{6,20} Kim, H., Cain, R., Viner-Brown, S., & Roach, C. (2014). *2014 Rhode Island Pregnancy Risk Assessment Monitoring System data book: 2009-2011 data to guide evidence-based decision making*. Providence, RI: Rhode Island Department of Health, Center for Health Data and Analysis.
- ^{7,15,18,19,21} Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015.
- ^{8,15} *Low and very low birthweight infants*. (2016). Washington, DC: ChildTrends.
- ⁹ Matthews, T. J., MacDorman, M. F., & Thoma, M. E. (2015). Infant mortality statistics from the 2013 period linked birth/infant death data set. *National Vital Statistics Reports*, 64(9), 1-30.
- ¹⁰ *Child health USA 2014*. (2015). Rockville, MD: U.S. Department of Health and Human Services, Maternal and Child Health Bureau.
- ¹² The Annie E. Casey Foundation, KIDS COUNT Data Center, datacenter.kidscount.org
- ¹⁶ Lu, M. C., et al. (2010). Closing the black-white gap in birth outcomes: A life-course approach. *Ethnicity & Disease*, 20, 62-76.
- ¹⁷ Janevic, T., et al. (2010). Neighborhood deprivation and adverse birth outcomes among diverse ethnic groups. *Annals of Epidemiology*, 20(6), 445-451.