

# 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.<sup>1,2,3</sup>

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 fullterm infants (37 to 41 weeks gestation) were born at low birthweight.<sup>4</sup>

Cigarette smoking during pregnancy is a leading cause of low birthweight.<sup>5,6</sup> In Rhode Island, 7.1% of babies born between 2012 and 2016 had mothers who smoked during their pregnancy. During that time, Rhode Island smokers (13.2%) were nearly twice as likely to deliver a low birthweight infant as women who did not smoke (6.9%).<sup>7</sup>

Children born at low birthweight are at a greater risk of physical and developmental health problems and death than those born at a 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.<sup>8,9,10</sup>

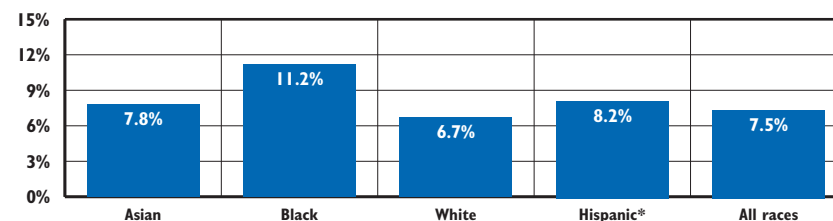
In the U.S. in 2016, 8.2% of infants were born at low birthweight, which was a 17% increase from 7.0% in 1990. Rhode Island's low birthweight rate increased from 6.2% in 1990 to 8.0% in 2016, a 29% increase.<sup>11,12</sup> The Healthy People 2020 national target is 7.8%.<sup>13</sup>

Low Birthweight Infants		
	2006	2016
RI	8.0%	8.0%
US	8.3%	8.2%
National Rank*		23rd
New England Rank**		6th

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

Source: For 2016: Martin, J. A., Hamilton, B. E., Osterman, M. J. K., Driscoll, A. K., & Drake, P. (2018). Births: Final data for 2016. *National Vital Statistics Reports*, 67(1), 1-55. For 2006: Martin, J. A., et al. (2009). Births: Final data for 2006. *National Vital Statistics Reports*, 57(7), 1-102.

Low Birthweight Infants by Race/Ethnicity, Rhode Island, 2012-2016



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2012-2016. \*Hispanic infants can be of any race. Data for births in 2016 are provisional.

◆ There are racial and ethnic disparities in rates of low birthweight.<sup>14</sup> In Rhode Island between 2012 and 2016, 7.8% of Asian infants, 8.2% of Hispanic infants, and 11.2% of Black infants, were born at low birthweight, compared to 6.7% of White infants.<sup>15</sup>

◆ 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 women of color.<sup>16,17</sup>

◆ Between 2012 and 2016 in Rhode Island, 9.0% of births among women under age 20 were low birthweight compared to 7.4% of those over age 20; 8.8% of infants born to women living in the four core cities were low birthweight compared to 6.7% in the remainder of the state; and 8.4% of infants born to women with a high school degree or less were low birthweight, compared to 6.4% of those born to women with higher education levels.<sup>18</sup>

◆ Among women with private health insurance coverage in Rhode Island between 2012 and 2016, 6.6% of births were low birthweight, compared with 8.4% of those with public insurance (RIte Care or Medicaid) and 12.3% of births to women with no insurance.<sup>19</sup>

◆ 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.<sup>20</sup>

◆ Between 2012 and 2016 in Rhode Island, 1.5% of all live births were born at very low birthweight (less than 1,500 grams).<sup>21</sup>

Table 20. Low Birthweight Infants, Rhode Island, 2012-2016

CITY/TOWN	# BIRTHS	# LOW BIRTHWEIGHT	% LOW BIRTHWEIGHT
Barrington	537	25	4.7%
Bristol	719	40	5.6%
Burrillville	645	39	6.0%
Central Falls	1,613	132	8.2%
Charlestown	238	10	*
Coventry	1,480	99	6.7%
Cranston	3,927	298	7.6%
Cumberland	1,661	98	5.9%
East Greenwich	576	46	8.0%
East Providence	2,347	156	6.6%
Exeter	246	13	5.3%^
Foster	166	9	*
Glocester	337	19	5.6%^
Hopkinton	288	20	6.9%^
Jamestown	115	4	*
Johnston	1,330	94	7.1%
Lincoln	977	66	6.8%
Little Compton	78	5	*
Middletown	804	49	6.1%
Narragansett	330	21	6.4%^
New Shoreham	58	5	*
Newport	1,305	107	8.2%
North Kingstown	1,081	76	7.0%
North Providence	1,625	135	8.3%
North Smithfield	415	31	7.5%
Pawtucket	4,885	439	9.0%
Portsmouth	583	35	6.0%
Providence	12,511	1,107	8.8%
Richmond	307	19	6.2%^
Scituate	385	21	5.5%^
Smithfield	641	25	3.9%
South Kingstown	854	54	6.3%
Tiverton	530	33	6.2%
Warren	434	32	7.4%
Warwick	3,831	252	6.6%
West Greenwich	223	15	6.7%^
West Warwick	1,741	118	6.8%
Westerly	873	46	5.3%
Woonsocket	2,890	241	8.3%
Unknown	166	11	6.6%
Four Core Cities	21,899	1,919	8.8%
Remainder of State	31,687	2,115	6.7%
Rhode Island	53,752	4,045	7.5%

### Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2012-2016. Data for births in 2016 and 2015 are provisional. 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 2012 and 2016.

\* The data are statistically unreliable and rates are not reported and should not be calculated.

^ The data are statistically unstable and rates or percentages should be interpreted with caution.

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

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

### References

- <sup>1</sup> 2017 KIDS COUNT data book: State trends in child well-being. (2017). Baltimore, MD: The Annie E. Casey Foundation.
- <sup>2,5</sup> Shore, R. & Shore, B. (2009). KIDS COUNT indicator brief: Preventing low birthweight. Baltimore, MD: The Annie E. Casey Foundation.
- <sup>3</sup> 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, 795-808.
- <sup>4</sup> 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.
- <sup>6</sup> Kim, H., Monteiro, K., Larson, E., & Derisier, D. M. (2017). Effects of smoking and smoking cessation during pregnancy on adverse birth outcomes in Rhode Island, 2012-2014. *Rhode Island Medical Journal*, 100, 50-52.
- <sup>7,15,18,19,21</sup> Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2012-2016.
- <sup>8,13</sup> Low and very low birthweight infants. (2016). Washington, DC: ChildTrends.
- <sup>9</sup> 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.
- <sup>10</sup> Child health USA 2014. (2015). Rockville, MD: U.S. Department of Health and Human Services, Maternal and Child Health Bureau.
- <sup>11,14</sup> Martin, J. A., Hamilton, B. E., Osterman, M. J. K., Driscoll, A. K., & Drake, P. (2018). Births: Final data for 2016. *National Vital Statistics Reports*, 67(1), 1-55.
- <sup>12</sup> The Annie E. Casey Foundation, KIDS COUNT Data Center, datacenter.kidscount.org
- <sup>16</sup> Lu, M. C., et al. (2010). Closing the black-white gap in birth outcomes: A life-course approach. *Ethnicity & Disease*, 20, 62-76.
- <sup>17</sup> Janevic, T., et al. (2010). Neighborhood deprivation and adverse birth outcomes among diverse ethnic groups. *Annals of Epidemiology*, 20(6), 445-451.
- <sup>20</sup> 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.