

# 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, level of educational attainment, infections, 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. Fetal growth restriction results in low birthweight babies, and may be caused by infection, birth defects, or simply because the baby's parents are small.<sup>4</sup>

Cigarette smoking during pregnancy is a leading cause of low birthweight.<sup>5,6</sup> In Rhode Island, 6.8% of births between 2013 and 2017 were to mothers who smoked during their pregnancy. During that time, Rhode Island smokers (13.0%) 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 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 higher risk of long-term health issues, including heart disease, diabetes, obesity, and intellectual and developmental disabilities. Low birthweight babies are also at greater risk for long-term learning difficulties and mental health problems than their peers.<sup>8,9,10</sup>

In the U.S. in 2017, 8.3% of infants were born at low birthweight, which was a 10.7% increase from 7.5% in 1997. In Rhode Island in 2017, 7.5% of Rhode Island's infants were born at low birthweight, which was a slight increase from 7.4% in 1997.<sup>11,12</sup> The Healthy People 2020 national target is 7.8%.<sup>13</sup>

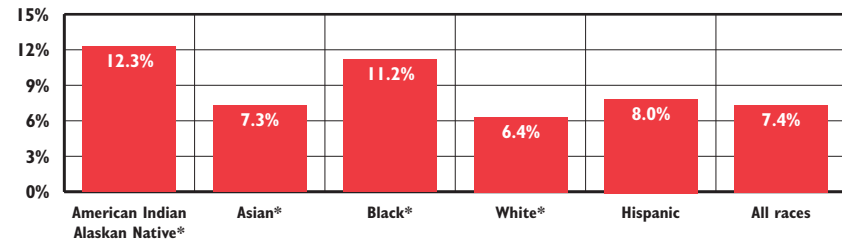
Low Birthweight Infants		
	2007	2017
RI	8.0%	7.5%
US	8.2%	8.3%
National Rank*	15th	
New England Rank**	4th	

\*1st is best; 50th is worst

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

Source: For 2007: Martin, J. A., et al. (2010). Births: Final data for 2007. *National Vital Statistics Reports*, 58(24), 1-88. For 2017: Martin, J. A., Hamilton, B. E., Osterman, M. J. K., Driscoll, A. K., & Drake, P. (2018). Births: Final data for 2017. *National Vital Statistics Reports*, 67(8), 1-49.

Low Birthweight Infants by Race/Ethnicity, Rhode Island, 2013-2017



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2013-2017. \* Race categories are non-Hispanic. Data for births in 2017 are provisional.

- ◆ There are racial and ethnic disparities in rates of low birthweight.<sup>14</sup> In Rhode Island between 2013 and 2017, 12.3% of American Indian Alaskan Native infants, 11.2% of Black infants, 7.3% of Asian infants, and 8.0% of Hispanic infants were born at low birthweight, compared to 6.4% of White infants.<sup>15</sup>
- ◆ Factors that persist throughout a woman's life, such as increased stress, income inequality, insufficient health care, toxic environmental exposures, lack of safe and affordable housing, and/or discrimination, have been shown to increase the likelihood of delivering a low birthweight baby, particularly among Black women and other racial and ethnic minorities.<sup>16,17</sup>
- ◆ Between 2013 and 2017 in Rhode Island, 9.5% of births among women under age 20 were low birthweight compared to 7.3% of those over age 20; 8.7% 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 8.5% 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>
- ◆ Rhode Island women who deliver a low birthweight infant are more likely to report smoking while pregnant, feeling unsafe in their neighborhood, 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 or hypertension.<sup>19</sup>
- ◆ Between 2013 and 2017 in Rhode Island, 1.5% of all live births were born at very low birthweight (less than 1,500 grams or 3.3 pounds).<sup>20</sup>

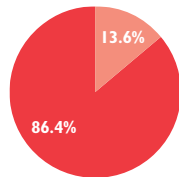
Table 20. Low Birthweight Infants, Rhode Island, 2013-2017

CITY/TOWN	# BIRTHS	# LOW BIRTHWEIGHT	% LOW BIRTHWEIGHT
Barrington	537	25	4.7%
Bristol	713	33	4.6%
Burrillville	660	41	6.2%
Central Falls	1,606	131	8.2%
Charlestown	239	14	5.9% <sup>^</sup>
Coventry	1,469	91	6.2%
Cranston	3,912	274	7.0%
Cumberland	1,717	112	6.5%
East Greenwich	558	37	6.6%
East Providence	2,331	168	7.2%
Exeter	238	15	6.3% <sup>^</sup>
Foster	169	11	6.5% <sup>^</sup>
Glocester	333	20	6.0% <sup>^</sup>
Hopkinton	308	18	5.8% <sup>^</sup>
Jamestown	116	2	*
Johnston	1,328	93	7.0%
Lincoln	997	62	6.2%
Little Compton	83	4	*
Middletown	844	51	6.0%
Narragansett	316	22	7.0% <sup>^</sup>
New Shoreham	57	5	*
Newport	1,303	108	8.3%
North Kingstown	1,097	78	7.1%
North Providence	1,627	143	8.8%
North Smithfield	407	30	7.4%
Pawtucket	4,848	428	8.8%
Portsmouth	618	32	5.2%
Providence	12,453	1,095	8.8%
Richmond	280	18	6.4% <sup>^</sup>
Scituate	394	21	5.3% <sup>^</sup>
Smithfield	673	31	4.6%
South Kingstown	817	48	5.9%
Tiverton	597	45	7.5%
Warren	455	28	6.2%
Warwick	3,862	248	6.4%
West Greenwich	230	12	5.2% <sup>^</sup>
West Warwick	1,720	114	6.6%
Westerly	913	55	6.0%
Woonsocket	2,925	242	8.3%
Unknown	217	13	6.0% <sup>^</sup>
Four Core Cities	21,832	1,896	8.7%
Remainder of State	32,135	2,122	6.6%
Rhode Island	53,967	4,018	7.4%

## Low Birthweight by Mother's Insurance Type, Rhode Island, 2013-2017

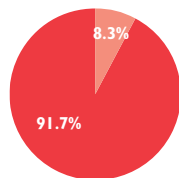
### Uninsured

13.6% Low Birthweight  
86.4% Normal Birthweight



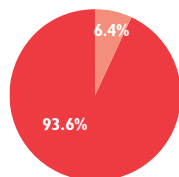
### Public Insurance (Rite Care)

8.3% Low Birthweight  
91.7% Normal Birthweight



### Private Insurance

6.4% Low Birthweight  
93.6% Normal Birthweight



Source: Rhode Island Department of Health, Center for Health Data and Analysis. Maternal and Child Health Database, 2013-2017. Data for births in 2017 are provisional.

### Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2013-2017. Data for births in 2017 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 2013 and 2017.

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

<sup>^</sup>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>15</sup> 2018 KIDS COUNT data book: State trends in child well-being. (2018). Baltimore, MD: The Annie E. Casey Foundation.
- <sup>24,10</sup> March of Dimes. (2018). *Low birthweight*. Retrieved March 14, 2019, from www.marchofdimes.org
- <sup>3</sup> Gage, T.B., Fang, E., O'Neill, E., & DiRienzo, G. (2013). Maternal education, birth weight, and infant mortality in the United States. *Demography* 50(2), 615-635.
- <sup>6</sup> Centers for Disease Control and Prevention. (2017). *Tobacco use and pregnancy*. Retrieved March 14, 2019, from www.cdc.gov
- <sup>7,15,18,19,20</sup> Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2013-2017.
- <sup>8</sup> American Psychological Association. (2017). *Low birth weight babies at higher risk for mental health problems later in life*. [Press release]. Retrieved from https://www.apa.org/news/press/releases/2017/02/low-birth-weight
- <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.

(continued on page 180)