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 and death than babies of normal weights. Factors that influence infant birthweight include maternal smoking, poverty, level of educational attainment, infections, exposure to violence, stress, prenatal nutrition, and environmental hazards.[1,2,3]

Low birthweight is often a result of a premature birth but can also 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.[4]

Smoking during pregnancy increases risk of low birthweight.[5,6] In Rhode Island between 2017 and 2021, 4.7% of births were to mothers who smoked during their pregnancy. During that time, Rhode Island smokers (13.8%) were more likely to deliver a low birthweight infant compared to women who did not smoke (7.3%).[7]

Children born at very low birthweight (less than 3.3 pounds or 1,500 grams) 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 issues than their peers.[8,9,10]

In the U.S. in 2021, 8.5% of infants were born at low birthweight, which is a slight increase from 8.1% in 2011. In Rhode Island in 2021, 7.9% of Rhode Island's infants were born at low birthweight, which is higher than 7.4% in 2011.[11,12] The low birthweight related infant mortality rate decreased between 2020 and 2019 but still remains a top cause of infant mortality in the U.S.[13]

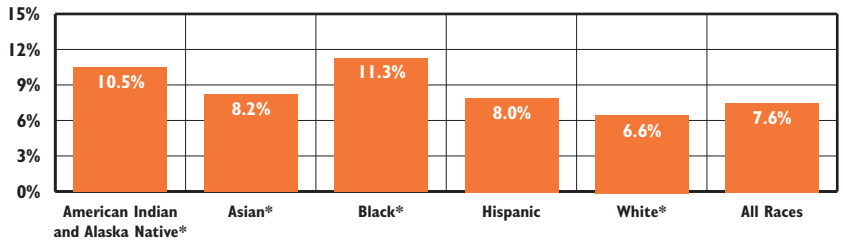
Low Birthweight Infants

	2011	2021
RI	7.4%	7.9%
US	8.1%	8.5%
National Rank*		*21st*
New England Rank**		*5th*

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

Source: For 2011: Martin, J. A., et al. (2013). Births: Final data for 2011. *National Vital Statistics Reports, 62*(1), 1-70. For 2021: Martin, J. A., Hamilton, B. E., Osterman, M. J. K., Driscoll, A. K., & Drake, P. (2023). Births: Final data for 2021. *National Vital Statistics Reports, 72*(1), 1-43.

Low Birthweight Infants by Race/Ethnicity, Rhode Island, 2017-2021*



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021. * Race categories are non-Hispanic.

◆ **In Rhode Island between 2017 and 2021, 10.5% of American Indian and Alaska Native infants, 8.2% of Asian infants, 11.3% of Black infants, and 8.0% of Hispanic infants, were born at low birthweight, compared to 6.6% of white infants.[14] Nationally, there are racial and ethnic disparities in low birthweight including for Black, Native American, and Native Hawaiian and Other Pacific Islander Infants.[15]**

◆ **Factors that persist throughout Women of Color's lives, —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.[16,17]**

◆ **Between 2017 and 2021 in Rhode Island, 10.3% of births among women under age 20 were low birthweight compared to 7.5% of those over age 20; 8.7% of infants born to women living in the four core cities were low birthweight compared to 6.8% in the remainder of the state; and 8.7% of infants born to women with a high school degree or less were low birthweight, compared to 7.0% of those born to women with higher education levels.[18]**

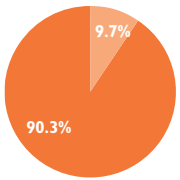
◆ **Rhode Island women who deliver a low birthweight infant are more likely to report smoking while pregnant, feeling unsafe in their neighborhood, delayed or no prenatal care, a depression diagnosis, and domestic violence; as well as health issues during their pregnancy (such as high blood pressure or hypertension) than those with a normal weight baby.[19,20]**

◆ **Between 2017 and 2021 in Rhode Island, 1.3% of all live births were born at very low birthweight (less than 1,500 grams or 3.3 pounds).[21]**

Low Birthweight by Mother's Insurance Type, Rhode Island, 2017-2021

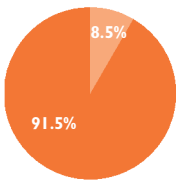
Uninsured

9.7% Low Birthweight
90.3% Normal Birthweight



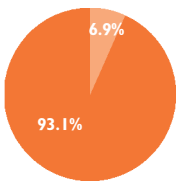
Public Insurance (RIte Care)

8.5% Low Birthweight
91.5% Normal Birthweight



Private Insurance

6.9% Low Birthweight
93.1% Normal Birthweight



Source: Rhode Island Department of Health, Center for Health Data and Analysis. Maternal and Child Health Database, 2017-2021. Data for births in 2021 are provisional.

Table 20. **Low Birthweight Infants, Rhode Island, 2017-2021**

CITY/TOWN	# BIRTHS	# LOW BIRTHWEIGHT	% LOW BIRTHWEIGHT
Barrington	567	36	6.3
Bristol	679	46	6.8
Burrillville	650	41	6.3
Central Falls	1,540	127	8.2
Charlestown	270	19	7.0^
Coventry	1,463	84	5.7
Cranston	3,797	286	7.5
Cumberland	1,713	109	6.4
East Greenwich	551	33	6.0
East Providence	2,247	166	7.4
Exeter	237	13	5.5^
Foster	205	16	7.8^
Glocester	345	23	6.7^
Hopkinton	334	15	4.5^
Jamestown	136	10	*
Johnston	1,338	103	7.7
Lincoln	898	59	6.6
Little Compton	76	2	*
Middletown	805	58	7.2
Narragansett	266	23	8.6
New Shoreham	25	1	*
Newport	1,092	72	6.6
North Kingstown	1,098	63	5.7
North Providence	1,576	136	8.6
North Smithfield	469	24	5.1
Pawtucket	4,417	395	8.9
Portsmouth	665	39	5.9
Providence	11,913	1,040	8.7
Richmond	307	14	4.6 ^
Scituate	432	26	6.0
Smithfield	734	42	5.7
South Kingstown	830	48	5.8
Tiverton	565	38	6.7
Warren	419	27	6.4
Warwick	3,620	250	6.9
West Greenwich	247	15	6.1 ^
West Warwick	1,512	128	8.5
Westerly	907	73	8.0
Woonsocket	2,668	227	8.5
Unknown	*234*	*17*	*
Four Core Cities	*20,538*	*1,789*	*8.7*
Remainder of State	*31,075*	*2,105*	*6.8*
Rhode Island	*51,847*	*3,911*	*7.5*

Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.

The denominator is the total number of live births to Rhode Island residents between 2017 and 2021.

*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

[1] Low birth weight. (n.d.) Stanford Medicine Children's Health. Retrieved February 13, 2023, from stanfordchildrens.org

[2,4,10] March of Dimes. (2021). *Low birthweight.* Retrieved February 13, 2023, from marchofdimes.org

[3] Echevarria, E., Lorch, S. (2022). Family educational attainment and racial disparities in low birth weight. *Pediatrics 150*(1):e2021052369

[5] Healthy Children (2019) *Where we stand: Smoking during pregnancy.* Retrieved April 6, 2022, from www.healthychildren.org

[6] Centers for Disease Control and Prevention. (2020). *Tobacco use and pregnancy.* Retrieved February 25, 2022, from cdc.gov

[7,14,18,19,21] Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.

[8] American Psychological Association. (2017). *Low birth weight babies at higher risk for mental health problems later in life.* [Press release]. Retrieved February 25, 2022, from www.apa.org

[9] Ely, D. M. & Driscoll, A. K. (2021). Infant mortality in the United States, 2019: Data from the period linked birth/infant death file. *National Vital Statistics Reports 70*(14), 1-12.

(continued on page 181)