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Gestational Weight Gain — United States, 2012 and 2013

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The weight a woman gains during pregnancy, known as gestational weight gain (GWG), has important health implications for both mother and child (1). The Institute of Medicine (IOM) provides GWG recommendations that promote optimal health by balancing risks associated with too much or too little GWG and are specific to a woman's prepregnancy body mass index (BMI; weight [kg]/height [m]2) (1). In a recent study, 21% of pregnant women gained less than the recommended amount of weight, and 47% gained more than the recommended amount; however, state-specific prevalence was not examined (2). To estimate state-specific prevalence of GWG below, within, and above recommendations (referred to as inadequate, appropriate, and excessive, respectively), CDC analyzed 2013 birth data for U.S. resident women who delivered full-term (37–41 weeks gestation), singleton infants from 43 jurisdictions (41 states, New York City, and the District of Columbia [DC]) that used the 2003 revised birth certificate, which collects maternal height, prepregnancy weight, and delivery weight. In addition, 2012 data from the Pregnancy Risk Assessment Monitoring System (PRAMS) were analyzed to estimate prevalence for five states with available data that had not yet adopted the 2003 birth certificate. Overall, 32.1% of women had appropriate GWG. States varied in prevalence of inadequate (range = 12.6%–25.5%), appropriate (range = 26.2%–39.0%), and excessive (range = 38.2%–54.7%) GWG. The prevalence of inadequate GWG was ≥20% in 20 states and New York City; the prevalence of excessive GWG was ≥50% in 17 states. Stratification by prepregnancy BMI category indicated variation by state persisted; notably, overweight women had the highest prevalence of excessive GWG in nearly every state. Given the high prevalence of excessive GWG and its associated risks, including macrosomia and maternal obsesity (1), effective interventions to prevent excessive GWG during pregnancy are needed.

The primary data source was 2013 National Vital Statistics System birth data, a census of all births, for jurisdictions using the 2003 revision of the U.S. Standard Certificate of Live Birth,* which collects the maternal height, prepregnancy weight, and delivery weight data needed to examine GWG in relation to the BMI-specific IOM recommendations. Height and weight data are self-reported or abstracted from the medical record. The previous (1989)

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*Additional information available at: http://www.cdc.gov/nchs/births.htm.

birth certificate version reports only total GWG (self-reported or abstracted from the medical record), and therefore, cannot be used to examine GWG in relation to BMI-specific recommendations. As of January 1, 2013, 41 states,† New York City, and DC had adopted the 2003 birth certificate. Data from PRAMS for 2012 were analyzed for five states§ that had yet to transition to the 2003 birth certificate and that had PRAMS data available.¶ PRAMS is an ongoing, state-based surveillance system that systematically surveys a stratified, random sample of mothers from birth certificates.** At approximately 4 months postpartum, participating mothers complete a questionnaire that assesses pregnancy-related health characteristics, including height and prepregnancy weight. Questionnaire data are linked with birth certificate data, including GWG, and are weighted to represent all women delivering live infants in each state. For this report, women were included if they were U.S. residents delivering full-term, singleton infants and did not have missing values for prepregnancy weight, height, or GWG. The resulting sample represents approximately 79% of annual U.S. births.

Prepregnancy BMI was calculated using height and prepregnancy weight from the 2003 birth certificate or the PRAMS questionnaire. Prepregnancy BMI was categorized as underweight (BMI <18.5), normal weight (BMI = 18.5–24.9), overweight (BMI = 25.0–29.9), and obese (BMI ≥30.0). GWG was calculated by subtracting prepregnancy weight from delivery weight, and was categorized as inadequate, appropriate, or excessive if a woman gained below, within, or above the BMI-specific IOM recommendations, respectively. The IOM recommendations for GWG are 28–40 pounds for underweight women, 25–35 pounds for normal-weight women, 15–25 pounds for overweight women, and 11–20 pounds for obese women (1). Birth certificate and weighted PRAMS data were used separately to estimate state-specific prevalence and combined to estimate overall prevalence of inadequate, appropriate, and excessive GWG. The rationale for combining the data sets was based on a comparison of birth certificate data with data from an earlier analysis of PRAMS data in 28 states (2), which resulted in nearly identical estimates of inadequate, appropriate, and excessive GWG. Because prepregnancy BMI is an important determinant of GWG (1,2), prevalences of inadequate, appropriate, and excessive GWG were stratified by prepregnancy BMI category. Stratified, state-specific prevalences standardized by race/ethnicity and age were also estimated.

The overall prevalence of appropriate GWG was 32.1%, whereas the prevalence of inadequate GWG was 20.4% and the prevalence of excessive GWG was 47.5% (Table 1). States varied in prevalence of inadequate, appropriate, and excessive GWG. Inadequate GWG ranged from 12.6% in Rhode Island to 25.5% in Georgia; appropriate GWG ranged from 26.2% in Alaska to 39.0% in New Jersey; and excessive GWG ranged from 38.2% in New Jersey to 54.7% in Missouri. The prevalence of inadequate GWG was ≥20% in 20

†Alaska, California, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming.
§Arkansas, Hawaii, Maine, New Jersey, Rhode Island.
¶Data are unavailable for states that do not participate in PRAMS, do not reach the 65% response-rate threshold, or do not approve the analysis.
**Additional information available at http://www.cdc.gov/prams.

states and New York City (Figure 1) and the prevalence of excessive GWG was ≥50% in 17 states (Figure 2).

Stratified by prepregnancy BMI, the prevalence of inadequate GWG was 32.2% for underweight, 23.6% for normal weight, 12.6% for overweight, and 20.6% for obese women. The prevalence of excessive GWG was 23.5% for underweight, 37.6% for normal weight, 61.6% for overweight, and 55.8% for obese women (Table 2). Although the prevalence of inadequate and excessive GWG within each prepregnancy BMI category varied by state, overweight women had the highest prevalence of excessive GWG in nearly every state. Variation by state persisted after standardization by race/ethnicity and age.

Discussion

Gestational weight gain outside the IOM recommendations has important short- and long-term health consequences for mothers and infants. Whereas, inadequate GWG increases the risk for low birthweight; excessive GWG increases the risk for macrosomia, postpartum weight retention, future maternal obesity, and possibly future childhood obesity (1). Among women from 46 states, New York City, and DC who delivered a full-term, singleton infant, only one third had appropriate GWG, whereas 20% had inadequate GWG and approximately half had excessive GWG. Excessive GWG was more prevalent than inadequate or appropriate GWG in every state; in 17 states, the prevalence of excessive GWG was ≥50%. Other studies have reported similar findings (2) and indicate that during the past decade, the prevalence of excessive GWG has increased and prevalence of inadequate GWG has remained stable (3). These findings indicate that effective interventions during pregnancy, in addition to routine prenatal care, are needed to promote appropriate GWG.

The American College of Obstetricians and Gynecologists recommends that clinicians calculate a woman's prepregnancy BMI at the first prenatal care visit, educate her on the importance of appropriate GWG goals, and counsel her on appropriate dietary and physical activity behaviors to achieve these goals. Education, counseling, and monitoring of GWG should continue throughout pregnancy (4). The IOM developed an evidence-based toolkit that includes educational materials for clinicians and women and a BMI-specific weight gain tracker that can be used to monitor and compare GWG with recommended ranges throughout pregnancy.††

Interventions that might promote appropriate GWG combine several strategies, including dietary goals, physical activity, routine self-monitoring of weight, and frequent provider contact. Most women need to consume an additional 340–450 calories per day only during the second and third trimesters to support the metabolic demands of pregnancy (1); dietary goals might be helpful to meet these additional energy requirements (5,6). Physical activity, when combined with dietary goals, has been found to be an effective strategy in preventing excessive GWG (5,6). Pregnant women should engage in 150 minutes per week of

††Additional information available at http://iom.nationalacademies.org/About-IOM/Leadership-Staff/IOM-Staff-Leadership-Boards/Food-and-Nutrition-Board/HealthyPregnancy.aspx.

moderate-intensity physical activity, such as brisk walking (7). Routine self-monitoring of weight gain should begin early in pregnancy and continue frequently between prenatal care visits so that signals of inadequate or excessive GWG can be identified when small, corrective steps can be taken (5). Notably, excessive GWG early in pregnancy strongly predicts total excessive GWG (8), suggesting that women with early excessive GWG might need to be prioritized for interventions. Frequent, ongoing contact with health care providers beyond routine prenatal care, such as nurses or nutrition specialists, might also help women achieve appropriate GWG (5).

Prepregnancy BMI is an important determinant of inappropriate GWG: underweight and class II or III obesity (BMI ≥35–<40 or BMI ≥40, respectively) increase risk for inadequate GWG whereas overweight and any obesity increase risk for excessive GWG (1,2). Within prepregnancy BMI categories, risk for inadequate and excessive GWG has been found to vary by maternal race/ethnicity and age (2). After adjustment for prepregnancy BMI and demographic characteristics associated with inappropriate GWG, state variation in prevalence of inadequate and excessive GWG persisted, suggesting that social, environmental, and policy determinants of GWG should be considered. Public health campaigns designed to raise awareness about GWG recommendations and alter social norms around diet and physical activity during pregnancy might be needed to effectively promote appropriate GWG (9). Some women might also believe that physical activity during pregnancy is risky (9); however, physical activity is safe and recommended for most pregnant women and might reduce some pregnancy-related complications (7,10). Access to healthy foods, opportunities for physical activity, and expanded medical and nutrition services for pregnant women are plausible environmental and policy determinants of GWG; however, more studies are needed to evaluate these influences on inadequate or excessive GWG (1).

The findings in this report are subject to at least three limitations. First, weight data from the birth certificate were derived from medical records or self-reported and weight data from the PRAMS questionnaire were obtained approximately 4 months postpartum; consequently, prepregnancy BMI or GWG might be misclassified. Second, analyses were restricted to pregnancies resulting in full-term, singleton infants; thus, findings might not be applicable to all pregnancies. Finally, because nationally representative data are not available, two data sources with different sampling and variable ascertainment methodologies were used; this might affect some state-to-state comparisons and actual overall results. However, comparison of estimates of GWG using only birth certificate data from the current analysis with an analysis of PRAMS data from 28 states (2) found nearly identical inadequate, appropriate and excessive GWG prevalence estimates, suggesting that the two data sources are comparable in their aggregate prevalence estimates.

Fewer than one third of women had GWG within IOM recommendations. The high prevalence of excessive GWG, which varies by state and prepregnancy BMI, is of concern because excessive GWG increases the risk for macrosomia, postpartum weight retention, and obesity in mothers and possibly children. To improve maternal and child health, intensified, multifaceted strategies are important for increasing the proportion of women who achieve appropriate GWG.

Acknowledgments

PRAMS Working Group. List of members available at http://www.cdc.gov/prams/pdf/workinggroup_7-2012.pdf

References

1. Rasmussen, KM.; Yaktine, AL., editors. Weight gain during pregnancy: reexamining the guidelines. Washington, DC: The National Academies Press; 2009.
2. Deputy NP, Sharma AJ, Kim SY, Hinkle SN. Prevalence and characteristics associated with gestational weight gain adequacy. Obstet Gynecol. 2015; 125:773–781. [PubMed: 25751216]
3. Johnson JL, Farr SL, Dietz PM, Sharma AJ, Barfield WD, Robbins CL. Trends in gestational weight gain: the Pregnancy Risk Assessment Monitoring System, 2000–2009. Am J Obstet Gynecol. 2015; 212:806, e1–e8. [PubMed: 25637844]
4. American College of Obstetricians and Gynecologists. ACOG committee opinion no. 548: weight gain during pregnancy. Obstet Gynecol. 2013; 121:210–212. [PubMed: 23262962]
5. Phelan S, Jankovitz K, Hagobian T, Abrams B. Reducing excessive gestational weight gain: lessons from the weight control literature and avenues for future research. Womens Health (Lond Engl). 2011; 7:641–661. [PubMed: 22040207]
6. Muktabhant B, Lawrie TA, Lumbiganon P, Laopaiboon M. Diet or exercise, or both, for preventing excessive weight gain in pregnancy. Cochrane Database Syst Rev. 2015; 6:CD0071457.
7. US Department of Health and Human Services. 2008 physical activity guidelines for Americans. Washington, DC: US Department of Health and Human Services; 2008. Available at http://health.gov/paguidelines/pdf/paguide.pdf
8. Knabl J, Riedel C, Gmach J, et al. Prediction of excessive gestational weight gain from week-specific cutoff values: a cohort study. J Perinatol. 2014; 34:351–356. [PubMed: 24577434]
9. Kraschnewski JL, Chuang CH. “Eating for two”: excessive gestational weight gain and the need to change social norms. Womens Health Issues. 2014; 24:e257–e259. [PubMed: 24794540]
10. American College of Obstetricians and Gynecologists. ACOG committee opinion no. 267: exercise during pregnancy and the postpartum period. Obstet Gynecol. 2002; 99:171–173. [PubMed: 11777528]

Summary

What is already known on this topic?

The amount of weight a woman gains during pregnancy, known as gestational weight gain (GWG), has important maternal and infant health implications. A recent study estimated that 68% of women had GWG outside Institute of Medicine guidelines, including both inadequate (below recommendations) and excessive (above recommendations) weight gain. However, little is known about state-specific prevalence of inadequate and excessive GWG.

What is added by this report?

Overall, 32.1% of women had appropriate (within recommendations) GWG. Prevalence of inadequate GWG ranged by state from 12.6%–25.5%; in 20 states and New York City, ≥20% of women had inadequate weight gain. Prevalence of excessive GWG ranged by state from 38.2%–54.7%; in 17 states, ≥50% of women had excessive GWG. Stratification by prepregancy BMI category indicated overweight and obese women had the highest prevalence of excessive GWG in nearly every state.

What are the implications for public health practice?

Interventions that might promote appropriate GWG combine several strategies, including calorie goals, physical activity, routine self-monitoring of weight, and frequent provider contact.

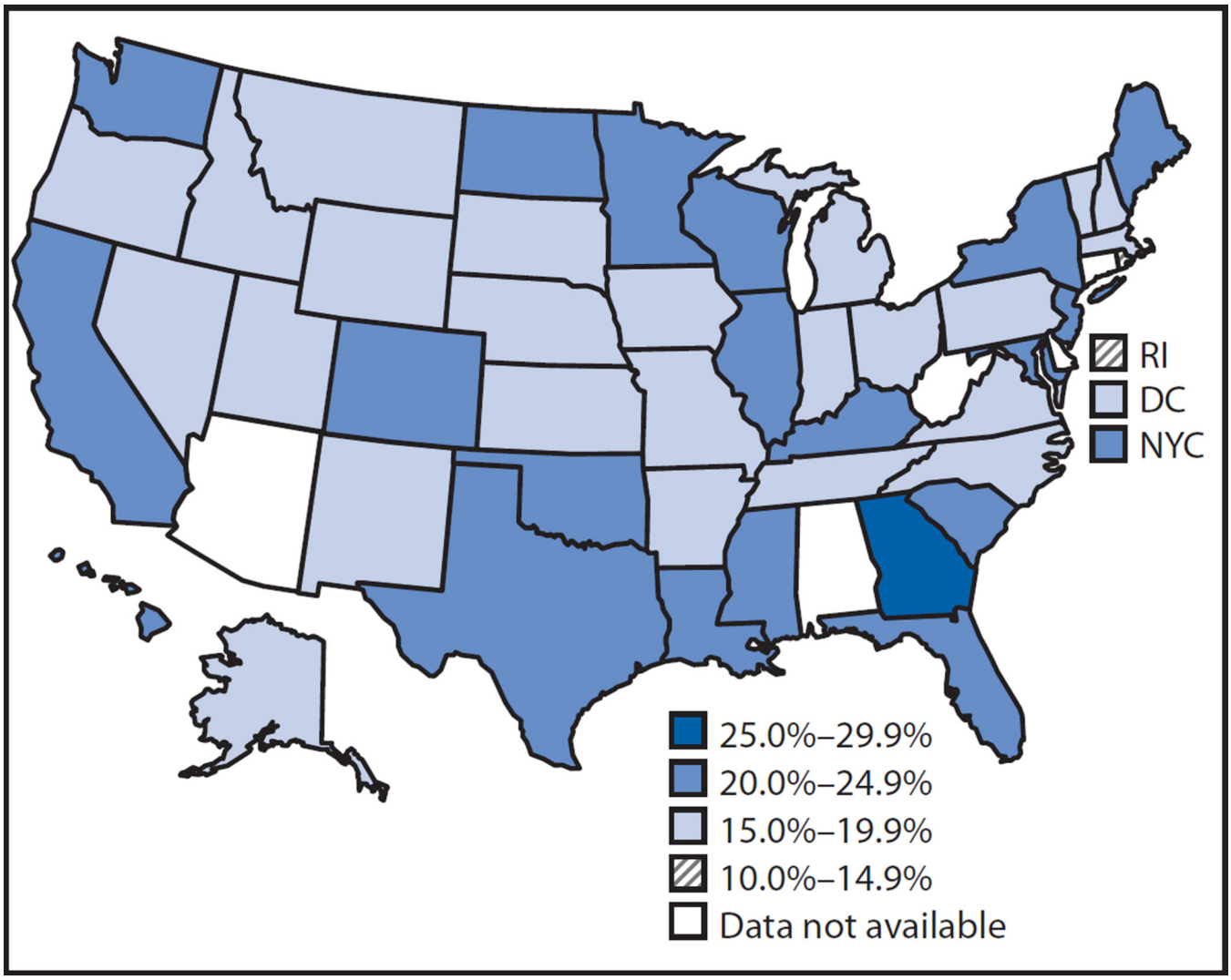

FIGURE 1. Prevalence of inadequate gestational weight gain (GWG)* — 46 states, New York City, and District of Columbia, 2012–2013

Sources: 2012 Pregnancy Risk Assessment Monitoring Systems for five states (Arkansas, Hawaii, Maine, New Jersey, Rhode Island) and 2013 birth certificates for 41 states, New York City, and District of Columbia.

*Gestational weight gain below Institute of Medicine recommendations, which are based on prepregnancy body mass index (BMI): 28–40 pounds for underweight women (BMI <18.5), 25–35 pounds for normal-weight women (BMI = 18.5–24.9), 15–25 pounds for overweight women (BMI =25.0–29.9), and 11–20 pounds for obese women (BMI ≥30.0).

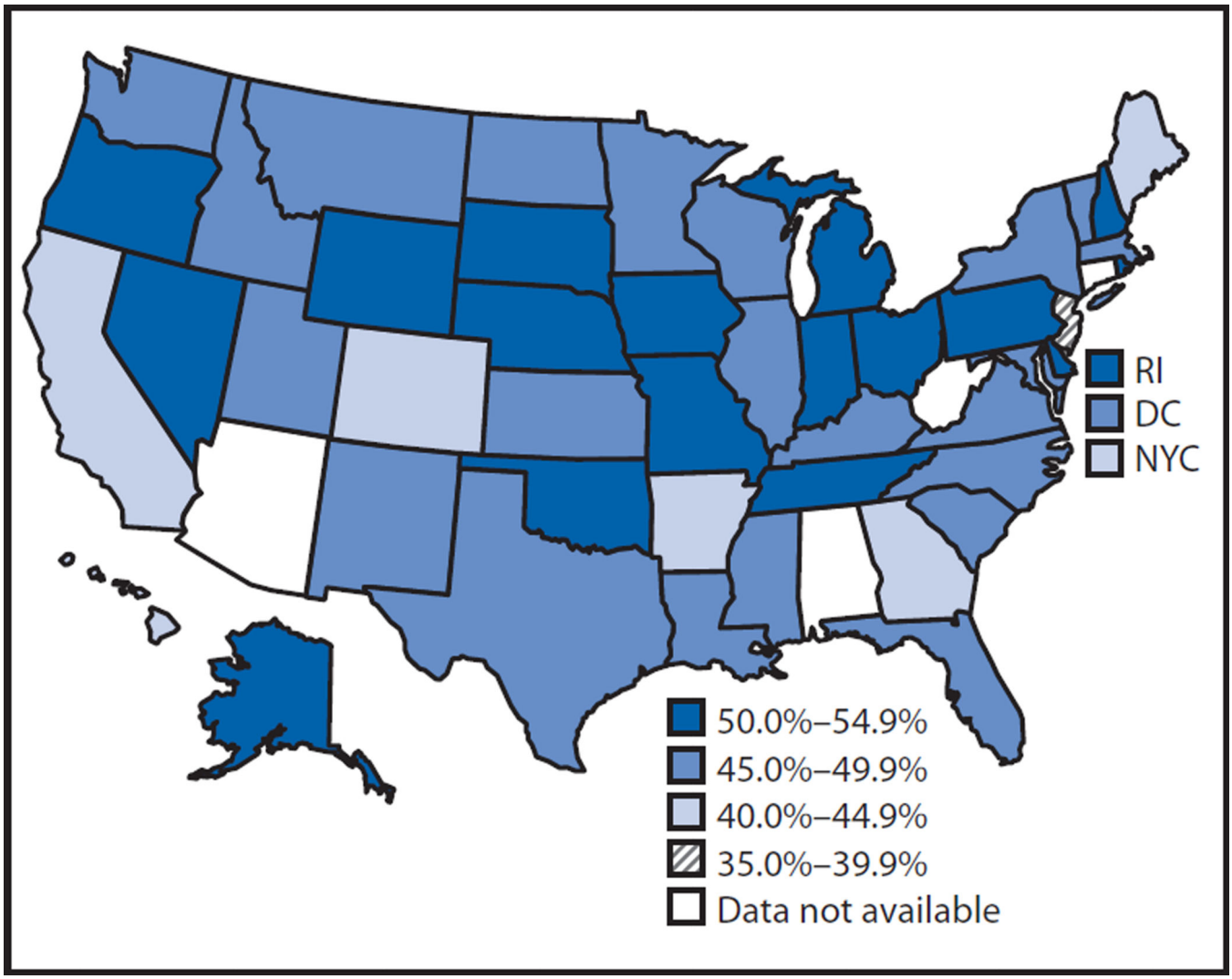

FIGURE 2. Prevalence of excessive gestational weight gain (GWG)* — 46 states, New York City, and District of Columbia, 2012–2013

Sources: 2012 Pregnancy Risk Assessment Monitoring Systems for five states (Arkansas, Hawaii, Maine, New Jersey, Rhode Island) and 2013 birth certificates for 41 states, New York City, and District of Columbia.

*Gestational weight gain above Institute of Medicine recommendations, which are based on prepregnancy body mass index (BMI): 28–40 pounds for underweight women (BMI <18.5), 25–35 pounds for normal-weight women (BMI = 18.5–24.9), 15–25 pounds for overweight women (BMI = 25.0–29.9), and 11–20 pounds for obese women (BMI ≥30.0).

TABLE 1

State-specific prevalence of inadequate, appropriate, and excessive gestational weight gain[*] — 46 States, New York City, and District of Columbia, 2012 and 2013[†]

	Gestational Weight Gain		
Location	**Inadequate No. (%)**	**Appropriate No. (%)**	**Excessive No (%)**
Alaska	1,770 (19.6)	2,369 (26.2)	4,896 (54.2)
Arkansas[§]	4,974 (17.2)	10,974 (38.0)	12,918 (44.8)
California	89,026 (21.4)	142,928 (34.3)	184,910 (44.4)
Colorado	12,804 (22.7)	19,291 (34.3)	24,230 (43.0)
Delaware	1,800 (19.2)	2,722 (29.0)	4,850 (51.8)
District of Columbia	1,316 (17.8)	2,600 (35.1)	3,491 (47.1)
Florida	36,208 (20.4)	55,701 (31.3)	86,042 (48.4)
Georgia	23,571 (25.5)	27,445 (29.7)	41,287 (44.7)
Hawaii[§]	3,411 (22.0)	5,809 (37.5)	6,276 (40.5)
Idaho	3,458 (17.5)	6,586 (33.2)	9,768 (49.3)
Illinois	27,448 (20.8)	42,849 (32.5)	61,491 (46.7)
Indiana	13,867 (19.1)	22,224 (30.7)	36,410 (50.2)
Iowa	5,615 (16.3)	10,059 (29.1)	18,871 (54.6)
Kansas	6,597 (19.2)	11,151 (32.4)	16,663 (48.4)
Kentucky	9,848 (20.7)	14,026 (29.4)	23,767 (49.9)
Louisiana	11,474 (22.0)	15,569 (29.9)	25,075 (48.1)
Maine[§]	2,518 (22.2)	3,783 (33.4)	5,033 (44.4)
Maryland	13,109 (22.1)	17,072 (28.8)	29,073 (49.1)
Massachusetts	9,956 (17.4)	19,128 (33.3)	28,305 (49.3)
Michigan	18,318 (19.2)	29,265 (30.6)	48,092 (50.3)
Minnesota	12,624 (20.9)	20,160 (33.4)	27,551 (45.7)
Mississippi	6,958 (21.5)	9,519 (29.4)	15,952 (49.2)
Missouri	10,899 (17.3)	17,614 (28.0)	34,378 (54.7)
Montana	2,010 (19.0)	3,343 (31.7)	5,211 (49.3)
Nebraska	4,140 (18.2)	6,689 (29.5)	11,885 (52.3)
Nevada	5,595 (18.6)	9,095 (30.3)	15,378 (51.1)
New Hampshire	1,712 (16.8)	3,140 (30.8)	5,350 (52.4)
New Jersey[§]	17,992 (22.8)	30,859 (39.0)	30,187 (38.2)
New Mexico	4,104 (18.6)	7,131 (32.3)	10,849 (49.1)
New York	20,482 (20.5)	33,010 (33.0)	46,527 (46.5)
New York City	22,329 (21.8)	37,060 (36.2)	42,945 (42.0)
North Carolina	20,226 (19.9)	30,831 (30.4)	50,455 (49.7)
North Dakota	1,884 (20.3)	2,833 (30.6)	4,549 (49.1)
Ohio	20,832 (18.6)	31,868 (28.5)	59,092 (52.9)
Oklahoma	9,631 (21.4)	12,860 (28.5)	22,564 (50.1)

Location	Gestational Weight Gain		
	Inadequate No. (%)	Appropriate No. (%)	Excessive No (%)
Oregon	6,875 (17.7)	12,343 (31.7)	19,702 (50.6)
Pennsylvania	19,820 (18.9)	31,359 (29.9)	53,844 (51.3)
Rhode Island[§]	970 (12.6)	2,792 (36.3)	3,940 (51.2)
South Carolina	10,345 (21.5)	14,469 (30.1)	23,246 (48.4)
South Dakota	1,924 (18.0)	3,142 (29.4)	5,631 (52.6)
Tennessee	12,269 (18.6)	19,180 (29.0)	34,587 (52.4)
Texas	69,056 (20.4)	111,958 (33.1)	157,578 (46.5)
Utah	8,087 (18.1)	15,811 (35.3)	20,838 (46.6)
Vermont	1,013 (19.2)	1,679 (31.9)	2,580 (48.9)
Virginia	11,578 (17.7)	22,398 (34.2)	31,569 (48.2)
Washington	15,351 (21.3)	23,391 (32.4)	33,503 (46.4)
Wisconsin	14,354 (24.9)	16,612 (28.8)	26,793 (46.4)
Wyoming	1,109 (16.8)	2,004 (30.3)	3,495 (52.9)
PRAMS jurisdictions[§]	29,865 (21.0)	54,217 (38.1)	58,352 (41.0)
BC jurisdictions	601,392 (20.4)	940,484 (31.8)	1,413,273 (47.8)
Overall	**631,257 (20.4)**	**994,701 (32.1)**	**1,471,625 (47.5)**

Abbreviations: BC = birth certificate; PRAMS = Pregnancy Risk Assessment Monitoring System.

[*] Gestational weight gain below (inadequate), within (appropriate), and above (excessive) Institute of Medicine recommendations, which are based on prepregnancy body mass index (BMI): 28–40 pounds for underweight women (BMI <18.5), 25–35 pounds for normal -weight women (BMI = 18.5–24.9), 15–25 pounds for overweight women (BMI = 25.0–29.9), and 11–20 pounds for obese women (BMI ≥30.0).

[†] Based on analysis of data from 2012 Pregnancy Risk Assessment Monitoring System for 5 states and 2013 birth certificate for 41 states, New York City, and District of Columbia.

[§] Data are from Pregnancy Risk Assessment Monitoring System and are presented as weighted frequencies and percent.

TABLE 2

State-specific prevalence of inadequate, appropriate, and excessive gestational weight gain by prepregnancy body mass index category[*] – 46 States, New York City, and District of Columbia, 2012 and 2013[†]

	Underweight (n = 116,287)			Normal weight (n = 1,460,476)			Overweight (n = 793,191)			Obese (n = 727,628)		
State	**Inadequate No. (%)**	**Appropriate No. (%)**	**Excessive No. (%)**	**Inadequate No. (%)**	**Appropriate No. (%)**	**Excessive No. (%)**	**Inadequate No. (%)**	**Appropriate No. (%)**	**Excessive No. (%)**	**Inadequate No. (%)**	**Appropriate No. (%)**	**Excessive No. (%)**
Alaska	58 (24.4)	113 (47.5)	67 (28.2)	758 (17.9)	1,427 (33.7)	2,048 (48.4)	364 (15.6)	436 (18.7)	1,533 (65.7)	590 (26.5)	393 (17.6)	1,248 (55.9)
Arkansas[§]	¶	¶	¶	3,013 (23.2)	5,759 (44.4)	4,199 (32.4)	¶	2,209 (29.5)	4,761 (63.6)	¶	2,480 (32.7)	3,688 (48.6)
California	5,350 (33.8)	7,155 (45.3)	3,308 (20.9)	51,251 (25.6)	80,041 (39.9)	69,182 (34.5)	14,395 (13.1)	32,108 (29.3)	63,039 (57.6)	18,030 (19.8)	23,624 (26.0)	49,381 (54.2)
Colorado	771 (37.1)	902 (43.4)	407 (19.6)	7,537 (26.3)	11,517 (40.2)	9,599 (33.5)	2,146 (14.9)	3,965 (27.5)	8,300 (57.6)	2,350 (21.0)	2,907 (26.0)	5,924 (53.0)
Delaware	94 (30.5)	135 (43.8)	79 (25.7)	872 (21.0)	1,500 (36.2)	1,775 (42.8)	316 (12.7)	562 (22.6)	1,612 (64.7)	518 (21.3)	525 (21.6)	1,384 (57.0)
District of Columbia	89 (29.6)	142 (47.2)	70 (23.3)	841 (21.2)	1,722 (43.4)	1,407 (35.4)	161 (9.8)	396 (24.1)	1,088 (66.1)	225 (15.1)	340 (22.8)	926 (62.1)
Florida	2,465 (30.8)	3,394 (42.3)	2,157 (26.9)	20,336 (23.8)	31,173 (36.5)	33,837 (39.7)	5,944 (13.0)	11,826 (25.8)	28,037 (61.2)	7,463 (19.2)	9,308 (24.0)	22,011 (56.8)
Georgia	1,155 (32.5)	1,581 (44.5)	818 (23.0)	10,012 (25.5)	14,394 (36.7)	14,855 (37.8)	4,861 (20.2)	5,722 (23.7)	13,547 (56.1)	7,543 (29.8)	5,748 (22.7)	12,067 (47.6)
Hawaii[§]	¶	¶	¶	2,557 (27.3)	4,049 (43.2)	2,771 (29.6)	¶	860 (29.0)	1,875 (63.2)	¶	682 (26.8)	1,508 (59.3)
Idaho	201 (30.6)	306 (46.7)	149 (22.7)	1,906 (19.6)	3,925 (40.3)	3,915 (40.2)	511 (10.1)	1,249 (24.8)	3,281 (65.1)	840 (19.2)	1,106 (25.3)	2,423 (55.5)
Illinois	1,440 (33.6)	1,921 (44.8)	928 (21.6)	14,834 (25.0)	23,260 (39.1)	21,338 (35.9)	4,480 (12.6)	9,722 (27.4)	21,257 (60.0)	6,694 (20.5)	7,946 (24.4)	17,968 (55.1)
Indiana	796 (30.1)	1,176 (44.5)	672 (25.4)	7,319 (23.1)	11,745 (37.1)	12,602 (39.8)	2,082 (11.1)	4,771 (25.4)	11,959 (63.6)	3,670 (18.9)	4,532 (23.4)	11,177 (57.7)
Iowa	297 (28.6)	487 (46.9)	254 (24.5)	2,802 (17.8)	5,933 (37.7)	6,991 (44.5)	750 (8.4)	1,837 (20.5)	6,366 (71.1)	1,766 (20.0)	1,802 (20.4)	5,260 (59.6)
Kansas	375 (33.0)	495 (43.5)	267 (23.5)	3,563 (22.4)	6,416 (40.4)	5,920 (37.2)	997 (11.3)	2,221 (25.3)	5,571 (63.4)	1,662 (19.4)	2,019 (23.5)	4,905 (57.1)
Kentucky	621 (29.7)	937 (44.8)	532 (25.5)	4,541 (22.3)	7,321 (36.0)	8,471 (41.7)	1,640 (13.6)	2,808 (23.4)	7,579 (63.0)	3,046 (23.1)	2,960 (22.4)	7,185 (54.5)
Louisiana	730 (34.2)	911 (42.7)	493 (23.1)	5,740 (25.2)	8,281 (36.3)	8,791 (38.5)	1,815 (13.9)	3,115 (23.9)	8,118 (62.2)	3,189 (22.6)	3,262 (23.1)	7,673 (54.3)
Maine[§]	¶	¶	¶	1,459 (27.3)	2,075 (38.8)	1,810 (33.9)	¶	853 (28.7)	1,740 (58.5)	¶	¶	1,394 (54.8)
Maryland	632 (32.6)	855 (44.1)	453 (23.4)	6,071 (22.0)	10,424 (37.7)	11,148 (40.3)	2,579 (16.6)	3,220 (20.8)	9,718 (62.6)	3,827 (27.0)	2,573 (18.2)	7,754 (54.8)
Massachusetts	624 (29.6)	950 (45.1)	533 (25.3)	5,878 (19.4)	12,831 (42.4)	11,557 (38.2)	1,518 (10.6)	3,167 (22.1)	9,640 (67.3)	1,936 (18.1)	2,180 (20.4)	6,575 (61.5)
Michigan	952 (31.3)	1,333 (43.8)	760 (25.0)	9,841 (23.1)	15,837 (37.2)	16,844 (39.6)	2,757 (11.2)	6,200 (25.1)	15,766 (63.8)	4,768 (18.8)	5,895 (23.2)	14,722 (58.0)
Minnesota	506 (37.0)	624 (45.6)	238 (17.4)	6,907 (25.0)	11,340 (41.0)	9,396 (34.0)	2,129 (13.0)	4,397 (26.9)	9,817 (60.1)	3,082 (20.6)	3,799 (25.4)	8,100 (54.1)
Mississippi	468 (31.4)	653 (43.8)	369 (24.8)	3,408 (26.2)	4,459 (34.3)	5,144 (39.5)	1,116 (13.9)	1,984 (24.7)	4,942 (61.5)	1,966 (19.9)	2,423 (24.5)	5,497 (55.6)
Missouri	664 (26.2)	1,099 (43.4)	772 (30.5)	5,397 (18.3)	10,537 (35.6)	13,635 (46.1)	1,524 (10.0)	3,080 (20.1)	10,716 (70.0)	3,314 (21.4)	2,898 (18.7)	9,255 (59.8)
Montana	116 (31.5)	174 (47.3)	78 (21.2)	1,116 (21.5)	1,985 (38.3)	2,083 (40.2)	292 (10.8)	643 (23.8)	1,771 (65.5)	486 (21.1)	541 (23.5)	1,279 (55.5)
Nebraska	224 (31.3)	306 (42.8)	185 (25.9)	2,126 (19.7)	4,041 (37.4)	4,641 (42.9)	639 (10.9)	1,236 (21.0)	3,999 (68.1)	1,151 (21.7)	1,106 (20.8)	3,060 (57.6)
Nevada	345 (26.3)	615 (47.0)	350 (26.7)	2,949 (20.4)	5,314 (36.7)	6,226 (43.0)	968 (12.7)	1,780 (23.3)	4,899 (64.1)	1,333 (20.1)	1,386 (20.9)	3,903 (58.9)

State	Underweight (n = 116,287)			Normal weight (n = 1,460,476)			Overweight (n = 793,191)			Obese (n = 727,628)		
	Inadequate No. (%)	Appropriate No. (%)	Excessive No. (%)	Inadequate No. (%)	Appropriate No. (%)	Excessive No. (%)	Inadequate No. (%)	Appropriate No. (%)	Excessive No. (%)	Inadequate No. (%)	Appropriate No. (%)	Excessive No. (%)
New Hampshire	86 (27.6)	137 (43.9)	89 (28.5)	990 (19.7)	1,879 (37.4)	2,158 (42.9)	202 (7.9)	584 (23.0)	1,757 (69.1)	434 (18.7)	540 (23.3)	1,346 (58.0)
New Jersey[§]	¶	¶	¶	12,379 (28.6)	19,079 (44.0)	11,872 (27.4)	¶	6,114 (31.7)	11,424 (59.3)	2,360 (17.6)	¶	6,458 (48.2)
New Mexico	269 (30.9)	380 (43.6)	222 (25.5)	2,274 (23.0)	3,746 (37.8)	3,882 (39.2)	668 (11.4)	1,565 (26.8)	3,613 (61.8)	893 (16.3)	1,440 (26.4)	3,132 (57.3)
New York	1,083 (35.2)	1,340 (43.5)	657 (21.3)	11,693 (25.2)	18,339 (39.6)	16,333 (35.2)	3,143 (11.8)	7,439 (28.0)	15,983 (60.2)	4,563 (19.0)	5,892 (24.5)	13,554 (56.5)
New York City	1,899 (34.7)	2,549 (46.5)	1,031 (18.8)	14,910 (27.2)	22,447 (41.0)	17,443 (31.8)	3,142 (12.6)	7,775 (31.0)	14,128 (56.4)	2,378 (14.0)	4,289 (25.2)	10,343 (60.8)
North Carolina	1,288 (32.0)	1,731 (43.0)	1,005 (25.0)	10,740 (23.3)	16,980 (36.8)	18,481 (40.0)	3,060 (11.8)	6,396 (24.8)	16,378 (63.4)	5,138 (20.2)	5,724 (22.5)	14,591 (57.3)
North Dakota	55 (26.8)	99 (48.3)	51 (24.9)	930 (23.5)	1,516 (38.4)	1,507 (38.1)	331 (13.2)	600 (23.9)	1,583 (63.0)	568 (21.9)	618 (23.8)	1,408 (54.3)
Ohio	1,251 (28.6)	1,939 (44.4)	1,179 (27.0)	10,143 (19.5)	18,762 (36.0)	23,147 (44.5)	3,097 (11.2)	5,716 (20.7)	18,858 (68.2)	6,341 (22.9)	5,451 (19.7)	15,908 (57.4)
Oklahoma	579 (29.8)	795 (40.9)	569 (29.3)	4,516 (22.8)	6,956 (35.2)	8,305 (42.0)	1,740 (15.3)	2,611 (22.9)	7,044 (61.8)	2,796 (23.4)	2,498 (20.9)	6,646 (55.7)
Oregon	339 (27.1)	581 (46.5)	330 (26.4)	3,828 (20.2)	7,341 (38.8)	7,758 (41.0)	990 (10.2)	2,303 (23.8)	6,395 (66.0)	1,718 (19.0)	2,118 (23.4)	5,219 (57.6)
Pennsylvania	1,146 (29.0)	1,801 (45.5)	1,010 (25.5)	10,353 (20.1)	19,394 (37.7)	21,757 (42.2)	3,013 (11.7)	5,513 (21.5)	17,173 (66.8)	5,308 (22.2)	4,651 (19.5)	13,904 (58.3)
Rhode Island[§]	¶	¶	¶	632 (15.7)	1,788 (44.5)	1,595 (39.7)	¶	433 (23.5)	1,292 (70.1)	110 (7.2)	¶	981 (64.3)
South Carolina	584 (31.7)	808 (43.8)	453 (24.6)	4,925 (24.1)	7,529 (36.8)	8,008 (39.1)	1,731 (14.3)	2,955(24.4)	7,411 (61.3)	3,105 (22.7)	3,177 (23.3)	7,374 (54.0)
South Dakota	87 (26.7)	158 (48.5)	81 (24.9)	982 (19.5)	1,869 (37.0)	2,199 (43.5)	303 (10.9)	600 (21.6)	1,872 (67.5)	552 (21.7)	515 (20.2)	1,479 (58.1)
Tennessee	824 (28.1)	1,259 (42.9)	850 (29.0)	6,367 (20.7)	11,164 (36.4)	13,174 (42.9)	1,846 (11.5)	3,546 (22.0)	10,715 (66.5)	3,232 (19.8)	3,211 (19.7)	9,848 (60.5)
Texas	4,251 (32.9)	5,641 (43.6)	3,043 (23.5)	39,514 (25.1)	62,032 (39.4)	55,859 (35.5)	10,784 (12.3)	24,372 (27.8)	52,461 (59.9)	14,507 (18.0)	19,913 (24.7)	46,215 (57.3)
Utah	614 (31.3)	963 (49.1)	385 (19.6)	4,731 (19.5)	10,348 (42.6)	9,201 (37.9)	1,029 (10.0)	2,530 (24.7)	6,688 (65.3)	1,713 (20.8)	1,970 (23.9)	4,564 (55.3)
Vermont	58 (37.7)	68 (44.2)	¶	532 (20.9)	1,061 (41.6)	955 (37.5)	143 (11.1)	270 (21.0)	872 (67.9)	280 (21.8)	280 (21.8)	725 (56.4)
Virginia	792 (31.8)	1,135 (45.5)	567 (22.7)	6,688 (20.9)	13,441 (42.0)	11,911 (37.2)	1,611 (9.7)	4,281 (25.6)	10,808 (64.7)	2,487 (17.4)	3,541 (24.7)	8,283 (57.9)
Washington	637 (30.1)	954 (45.1)	526 (24.9)	7,774 (23.4)	13,231 (39.8)	12,272 (36.9)	2,646 (13.9)	4,946 (25.9)	11,483 (60.2)	4,294 (24.2)	4,260 (24.0)	9,222 (51.9)
Wisconsin	447 (32.6)	616 (44.9)	310 (22.6)	5,537 (22.2)	9,453 (37.9)	9,973 (40.0)	3,101 (20.2)	3,335 (21.7)	8,946 (58.2)	5,269 (32.9)	3,208 (20.0)	7,564 (47.2)
Wyoming	74 (30.3)	94 (38.5)	76 (31.2)	649 (19.3)	1,279 (38.0)	1,439 (42.7)	130 (8.3)	326 (20.7)	1,118 (71.0)	256 (18.0)	305 (21.4)	862 (60.6)
PRAMS jurisdictions[§]	**2,068 (39.5)**	**2,186 (41.7)**	**984 (18.8)**	**20,041 (26.7)**	**32,750 (43.6)**	**22,248 (29.6)**	**2,987 (8.6)**	**10,469 (30.3)**	**21,092 (61.1)**	**4,769 (17.3)**	**8,811 (31.9)**	**14,029 (50.8)**
BC jurisdictions	**35,336 (31.8)**	**49,312 (44.4)**	**26,401 (23.8)**	**324,081 (23.4)**	**534,190 (38.6)**	**527,167 (38.1)**	**96,694 (12.7)**	**194,108 (25.6)**	**467,841 (61.7)**	**145,281 (20.8)**	**162,874 (23.3)**	**391,864 (56.0)**
All	**37,404 (32.2)**	**51,498 (44.3)**	**27,385 (23.5)**	**344,122 (23.6)**	**566,940 (38.8)**	**549,415 (37.6)**	**99,681 (12.6)**	**204,577 (25.8)**	**488,933 (61.6)**	**150,050 (20.6)**	**171,685 (23.6)**	**405,893 (55.8)**

Abbreviations: BC = birth certificate; PRAMS = Pregnancy Risk Assessment Monitoring System.

[*] Gestational weight gain below (inadequate) and above (excessive) Institute of Medicine recommendations, which are based on prepregnancy body mass index (BMI): 28–40 pounds for underweight women (BMI <18.5), 25–35 pounds for normal-weight women (BMI = 18.5–24.9), 15–25 pounds for overweight women (BMI = 25.0–29.9), and 11–20 pounds for obese women (BMI ≥30.0).

[†] Based on data from the 2012 Pregnancy Risk Assessment Monitoring System for 5 states and 2013 birth certificate for 41 states, New York City, and District of Columbia.

[§] Data are from Pregnancy Risk Assessment Monitoring System and are presented as weighted frequencies and percent.

[¶] Data suppressed because of small (<30) sample size.