

133 High Maternal Weight Gain

Definition/Cut-off Value

Pregnant Women:

1. A high rate of weight gain, such that in the 2nd and 3rd trimesters, for singleton pregnancies (1):

Pregnancy Weight Classification	BMI	Total Weight Gain (lbs.)/Week
Underweight	< 18.5	> 1.3
Normal Weight	18.5 to 24.9	> 1
Overweight	25 to 29.9	> 0.7
Obese	≥ 30	> 0.6
Multi-fetal Pregnancies:	See Justification for more information	

Note: A BMI is attached to assist in determining weight classification. Also, until research supports the use of different BMI cut-offs to determine weight categories for adolescent pre-pregnancies, the same BMI cut-offs will be used for all women, regardless of age, when determining WIC eligibility. (See Justification for a more detailed explanation.)

2. High weight gain at any point in pregnancy, such that using an Institute of Medicine (IOM)-based weight gain grid, a pregnant woman's weight plots at any point above the top line of the appropriate weight gain range for her respective prepregnancy weight category (see below).

Breastfeeding or Non-Breastfeeding Women (most recent pregnancy only):

Total gestational weight gain exceeding the upper limit of the IOM's recommended range (2) based on Body Mass Index (BMI) for singleton pregnancies, as follows (1):

Pregnancy Weight Classification	BMI	Total Weight Gain (lbs.)
Underweight	< 18.5	> 40
Normal Weight	18.5 to 24.9	> 35
Overweight	25 to 29.9	> 25
Obese	≥ 30	> 20
Multi-fetal Pregnancies:	See Justification for more information	

Note: A BMI is attached to assist in determining weight classification. Also, until research supports the use of different BMI cut-offs to determine weight categories for adolescent pre-pregnancies, the same BMI cut-offs will be used for all women, regardless of age, when determining WIC eligibility. (See

Pregnancy Weight Classification	BMI	Total Weight Gain (lbs.)
Justification for a more detailed explanation.)		

Participant Category and Priority Level

Category	Priority
Pregnant Women	I
Breastfeeding Women	I
Non-Breastfeeding Women	III, IV, V or VI

Justification

Women with excessive gestational weight gains are at increased risk for cesarean delivery and delivering large for gestational age infants that can secondarily lead to complications during labor and delivery. There is a strong association between higher maternal weight gain and both postpartum weight retention and subsequent maternal obesity. High maternal weight gain may be associated with glucose abnormalities and gestational hypertension disorders, but the evidence is inconclusive (1).

Childhood obesity is one of the most important long-term health outcomes related to high maternal weight gain. A number of epidemiologic studies show that high maternal weight gain is associated with childhood obesity as measured by BMI (1).

The 2009 Institute of Medicine (IOM) report: *Weight Gain During Pregnancy: Reexamining the Guidelines* (1) updated the pregnancy weight categories to conform to the categories developed by the World Health Organization and adopted by the National Heart, Lung and Blood Institute in 1998 (2). The reexamination of the guidelines consisted of a review of the determinants of a wide range of short-and long-term consequences of variation in weight gain during pregnancy for both the mother and her infant. The IOM prenatal weight gain recommendations based on prepregnancy weight status categories are associated with improved maternal and child health outcomes (1).

Included in the 2009 IOM guidelines is the recommendation that the BMI weight categories used for adult women be used for pregnant adolescents as well. More research is needed to determine whether special categories are needed for adolescents. It is recognized that the IOM cut-offs for defining weight categories will classify some adolescents differently than the CDC BMI-for-age charts. For the purpose of WIC eligibility determination, the IOM cut-offs will be used for all women regardless of age. However, due to the lack of research on relevant BMI cut-offs for pregnant and postpartum adolescents, professionals should use all of the tools available to them to assess these applicants' anthropometric status and tailor nutrition counseling accordingly.

For twin gestations, the 2009 IOM recommendations provide provisional guidelines: normal weight women should gain 37-54 pounds; overweight women, 31-50 pounds; and obese women, 25-42 pounds. There was insufficient information for the IOM committee to develop even provisional guidelines for underweight women with multiple fetuses (1). However, a consistent rate of weight gain is advisable. A gain of 1.5 pounds per week during the second and third trimesters has been associated with a reduced risk of preterm and low-birth weight delivery in twin pregnancy (3). In triplet pregnancies the overall gain should be

around 50 pounds with a steady rate of gain of approximately 1.5 pounds per week throughout the pregnancy (3). Education by the WIC nutritionist should address a steady rate of weight gain that is higher than for singleton pregnancies. For WIC eligibility determinations, multi-fetal pregnancies are considered a nutrition risk in and of themselves (Risk #335, Multi-Fetal Gestation), aside from the weight gain issue.

The supplemental foods, nutrition education, and counseling related to the weight gain guidelines provided by the WIC Program may improve maternal weight status and infant outcomes (4). In addition, WIC nutritionists can play an important role, through nutrition education and physical activity promotion, in assisting postpartum women achieve and maintain a healthy weight.

References

1. Institute of Medicine. Weight gain during pregnancy: reexamining the guidelines (Prepublication Copy). National Academy Press, Washington, D.C.; 2009. www.nap.edu. Accessed June 2009.
2. National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health (NIH). Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults. NIH Publication No. 98-4083, 1998. www.nhlbi.nih.gov. Accessed June 2009.
3. Brown JE and Carlson M. Nutrition and multifetal pregnancy. *J Am Diet Assoc.* 2000; 100:343-348.
4. Institute of Medicine. WIC nutrition risk criteria: a scientific assessment. National Academy Press, Washington, D.C.; 1996.

Additional References

1. Carmichael S, Abrams B, Selvin S. The pattern of maternal weight gain in women with good pregnancy outcomes. *Am.J.Pub.Hlth.* 1997; 87; 12:1984-1988.
2. Brown JE, Schloesser PT. Pregnancy weight status, prenatal weight gain, and the outcome of term twin gestation. *Am. J. Obstet. Gynecol.* 1990; 162:182-6.
3. Parker JD, Abrams B. Prenatal weight gain advice: an examination of the recent prenatal weight gain recommendations of the Institute of Medicine. *Obstet Gynecol*, 1992; 79:664-9.
4. Siega-Riz AM, Adair LS, Hobel CJ. Institute of Medicine maternal weight gain recommendations and pregnancy outcomes in a predominately Hispanic population. *Obstet Gynecol*, 1994; 84:565-73.
5. Suitor CW, editor. Maternal weight gain: a report of an expert work group. Arlington, Virginia: National Center for Education in Maternal and Child Health; 1997. Sponsored by Maternal and Child Health Bureau, Health Resources and Services Administration, Public Health Service, U.S. Department of Health and Human Services.
6. Waller K. Why neural tube defects are increased in obese women. *Contemporary OB/GYN* 1997; p. 25-32.

Clarification

The Centers for Disease Control and Prevention (CDC) defines a trimester as a term of three months in the prenatal gestation period with the specific trimesters defined as follows in weeks:

- First Trimester: 0-13 weeks
- Second Trimester: 14-26 weeks

- Third Trimester: 27-40 weeks

Further, CDC begins the calculation of weeks starting with the first day of the last menstrual period. If that date is not available, CDC estimates that date from the estimated date of confinement (EDC). This definition is used in interpreting CDC's Prenatal Nutrition Surveillance System data, comprised primarily of data on pregnant women participating in the WIC Program.

BMI Table for Determining Weight Classifications for Women (1)

Height (Inches)	Underweight BMI < 18.5	Normal Weight BMI 18.5-24.9	Overweight BMI 25.0-29.9	Obese BMI ≥ 30.0
58"	< 89 lbs	89-118 lbs	119-142 lbs	> 142 lbs
59"	< 92 lbs	92-123 lbs	124-147 lbs	> 147 lbs
60"	< 95 lbs	95-127 lbs	128-152 lbs	> 152 lbs
61"	< 98 lbs	98-131 lbs	132-157 lbs	> 157 lbs
62"	< 101 lbs	101-135 lbs	136-163 lbs	> 163 lbs
63"	< 105 lbs	105-140 lbs	141-168 lbs	> 168 lbs
64"	< 108 lbs	108-144 lbs	145-173 lbs	> 173 lbs
65"	< 111 lbs	111-149 lbs	150-179 lbs	> 179 lbs
66"	< 115 lbs	115-154 lbs	155-185 lbs	> 185 lbs
67"	< 118 lbs	118-158 lbs	159-190 lbs	> 190 lbs
68"	< 122 lbs	122-163 lbs	164-196 lbs	> 196 lbs
69"	< 125 lbs	125-168 lbs	169-202 lbs	> 202 lbs
70"	< 129 lbs	129-173 lbs	174-208 lbs	> 208 lbs
71"	< 133 lbs	133-178 lbs	179-214 lbs	> 214 lbs
72"	< 137 lbs	137-183 lbs	184-220 lbs	> 220 lbs

(1) Adapted from the Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults. National Heart, Lung and Blood Institute (NHLBI), National Institutes of Health (NIH). NIH Publication No. 98-4083.