
Children and Family Health Services

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PREGNANCY WEIGHT GAIN AMONG HAMILTON COUNTY WOMEN

This issue of the Maternal and Child Health Report focuses on maternal weight gain during pregnancy. Using birth certificate data for 1994 we present a summary of maternal weight gain for Hamilton County women, by maternal race and gestational period. The data presented in this report is based on the birth certificate item that asks for the "weight gained during pregnancy" in pounds.

Maternal nutrition and weight gain are widely recognized as important influences of pregnancy outcome. In several studies maternal weight gain has been shown to have a statistically significant effect on intrauterine growth, including birth weight. This is likely because maternal caloric intake and nutritional stores are the primary source for fetal energy requirements.¹

According to the Institute of Medicine, maternal weight gain should be adjusted for the mother's prepregnancy weight for height, as measured by her body mass index. For women who are underweight (i.e., who have a low body mass index), the Institute of Medicine recommends a weight gain of 28-40 pounds. On the other hand, for women who are average weight, a 25-35 pound weight gain is recommended. In addition, teenage mothers and black women are advised to gain at the upper limit of these ranges.²

Since data on height is unavailable on the birth certificate to compute prepregnancy body mass index, we present data on weight gain only. Weight gains of less than 16 pounds are concerning in most pregnancies while weight gains of 25 pounds or more are generally appropriate for most women. Table 1 shows weight gain among Hamilton County women in 5 weight intervals (in pounds): less than 16, 16-25, 26-35, 36-45, and 46 and more.

In 8.1 % of all pregnancies (i.e., among all races and gestational ages), mothers gained less than 16 pounds during their pregnancies. Black women were more likely than white women to gain less than 16 pounds during their pregnancies. For white women, 6.2% gained less than 16 pounds and for black women, 13.3% gained less than 16 pounds. This race differential is observed nationally as well: in 1993 8.9% of white mothers and 16.3% of black mothers gained less than 16 pounds.³

Length of gestation is also associated with weight gain, as shown in Table 1. As gestational length increases, the percent of women who gain less than 16 pounds

decreases. Stated differently, the shorter the gestational length, the less the weight gained. This is because women who deliver prematurely will have less time to increase their weight. For the gestational period of under 37 weeks, 17.3% of all mothers gained less than 16 pounds. About 8% (8.3%) of all mothers with a gestational period of 37-39 weeks gained less than 16 pounds and 6.1% of all mothers gained this amount with a gestational period of 40 weeks and longer.

As stated earlier, weight gain and pregnancy outcome are associated. A recent study computed the risk for delivering a low birthweight infant, based on maternal weight gain. This study controlled for gestational age. The authors reported the population risk of low birthweight as 9.7% for women with an inadequate weight gain (i.e., less than 16 pounds). They also concluded that this risk is at least as great as that for smoking during pregnancy.⁴

Table 2 shows that low birthweight (less than 2,500 grams) declines with added weight gain. For instance, for all mothers the decline in low birthweight is from 21.2% for gains of less than 16 pounds to 6.5% for gains of 26-35 pounds for all gestational ages. Stated differently, for all women and for all gestational ages, 21.2% who gained less than 16 pounds delivered a low birthweight infant while 6.5% who gained 26-35 pounds delivered a low birthweight infant. A similar decline in low birthweight risk with increased weight gain is observed among the gestational periods under 37 weeks, 37-39 weeks, and 40 weeks and over.

¹Kramer, M.S. *WHO* 65(5): 1987.

^{2,3}Ventura, SJ et al. *Monthly Vital Statistics Report* 44(3): 1995.

⁴Taffel, S. et al. *Birth* 21(4): 1994.

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Table 2. Percent low birthweight by weight gain during pregnancy, period of gestation, and race of mother^a: Hamilton County.

Period of gestation and race of mother	Weight gain during pregnancy ^b				
	Less than 16 pounds	16-25 pounds	26-35 pounds	36-45 pounds	46+ pounds
<i>All gestational periods</i>					
All races.....	21.2	9.2	6.5	6.7	6.0
White	15.6	6.8	4.9	5.7	4.5
Black.....	27.8	15.0	11.1	10.2	9.3
<i>Under 37 weeks</i>					
All races.....	77.8	59.2	58.0	56.2	53.5
White	73.6	56.2	52.1	56.7	54.2
Black.....	80.9	62.9	68.1	55.9	52.7
<i>37-39 weeks</i>					
All races.....	9.3	5.5	3.7	4.1	3.6
White.....	5.8	4.1	2.8	2.9	1.9
Black.....	12.9	8.3	5.9	7.0	5.8
<i>40 weeks and over</i>					
All races.....	2.1	1.0	0.5	0.6	0.3
White.....	1.8	0.6	0.6	0.5	0.2
Black.....	2.5	2.0	0.0	1.2	0.6

^aAll races includes races other than white and black.

^bThere are 625 cases for which there is a missing value for the variable weight gain and 11 cases have a missing value for the variable birth weight. Source of data: Ohio Department of Health data file, 1994.