



**Sylvia R. Karasu M.D.**  
The Gravity of Weight

# 'When the Bough Breaks': Excessive Weight Before Pregnancy

Guidelines on how much weight a pregnant woman should gain

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Posted Jul 05, 2013



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Most people know the lyrics to the old nursery rhyme, “Rock-a-Bye Baby.” “Rock-a-bye baby in the treetop. When the wind blows, the cradle will rock. When the bough breaks, the cradle will fall. And down will come baby, cradle and all.” Just as, in retrospect, it may seem like poor judgment to place a baby-laden cradle on a treetop bough, it may be just as poor judgment to begin a pregnancy with excessive weight. Our nursery rhyme--the heavy bough broken by the wind-- is a metaphor for all the complications that can arise when a woman begins her pregnancy already either overweight or obese.

Back in Ancient Greece, Hippocrates had called attention to the fact that “unnaturally fat women” may have irregular menstrual periods, cycles without ovulation, and even difficulty conceiving as “fat presses against the womb.” As obesity has increased worldwide, though, so have the numbers of pregnant women who begin their pregnancy already overweight or obese. In fact, Buscher and Kim, writing in the *International Journal of Gynecology and Obstetrics* (2012) refer to “pre-conception (i.e., pre-pregnancy) obesity” as a “growing epidemic.”

What are some of the problems associated with pre-pregnancy obesity, as defined as a body mass index (BMI) of 30 kg/m<sup>2</sup>. (weight in kilograms



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divided by the height in meters squared)? The range of complications is extensive. In fact, Galliano and Bellver, writing in *Gynecological Endocrinology* (2013), note that obstetrical complications in obese women can occur in all three trimesters of pregnancy, as well as during labor and delivery. Obese women are more likely to suffer from diabetes that develops during pregnancy (i.e., gestational diabetes mellitus, a significant predictor of future type 2 diabetes in the mother), hypertension (including preeclampsia, a potentially deadly hypertensive condition during

pregnancy for which there is no treatment except premature delivery), dysfunctional labor, delivery by Caesarian section, and even pre-term birth. Maternal pre-pregnancy obesity has also been linked to spontaneous abortion, stillbirths, neural tube defects, and macrosomia (babies large for gestational age, or greater than the 90th percentile for birth weight,) as well as wound, genital tract, and urinary tract infections and even post-partum hemorrhaging in the mother. Furthermore, pre-pregnant overweight and obesity were also associated with fetal distress, longer hospital stays, and even need for referral to a neonatal intensive care unit. In fact, Sujatha et al (2012), writing in the *Journal of Clinical Gynecology and Obstetrics*, believe that with all these increased risks associated with a pregnancy complicated by initial excessive weight, these women should be considered in the “high risk” pregnancy category. Say Galliano and Bellver, “In short, women should attempt to conceive at a normal weight if they wish for better obstetric outcomes.”

Despite overnutrition, obese pregnant women may actually have nutritional deficiencies. Thornburgh (2011) in the journal *Seminars in Perinatology*, note that despite excessive caloric intake, obese women may have deficiencies in iron, folic acid, and B12. Dao and colleagues, from Boston, for example, have reported in a 2013 article in the *Journal of Perinatology*, that obesity may lead to impaired iron stores in the fetus and newborn, through a process of chronic low-grade inflammation and consequently, this iron deficiency may have a major impact on the developing nervous system and lead to “lifelong and irreversible effects on neurodevelopment.” Babies of obese women are themselves also more likely to develop obesity, type 2 diabetes, cardiovascular disease, and even cancer. (Galliano and Bellver, 2013) This is the concept of “fetal programming” or the importance of the environment of the womb on subsequent development. In other words, through epigenetic changes, there may be a “metabolic memory” for inflammation, insulin resistance, etc. that leads to possible increased risks for metabolic disorders and even certain cancers, etc.

Excessive weight before pregnancy leads to complications  
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In 2009, the prestigious Institute of Medicine (IOM), in response to the increasing age of women who become pregnant as well as increasing



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gestational weight gain, issued general guidelines for weight gain based on pre-pregnancy BMIs. Those who begin their pregnancy in the normal range of BMI should gain between 25 to 35 pounds; those who are overweight initially should gain only 15 to 25 pounds; and those who are obese initially should gain only 11 to 20 pounds. Significantly, though, Gaillard et al, in a large study in the journal *Obesity* (2013), report that pre-pregnancy overweight and obesity were associated with more adverse pregnancy outcomes compared with excessive weight gain that occurred just during pregnancy. To maintain these recommended values, pregnant women should exercise daily, monitor their food intake by watching calories, and weigh themselves frequently. It is crucial, as well, that those women with excessive initial weight have regular follow-up after delivery, with concern for their weight control. Thornburg reports that obese women, particularly those who gain excessive weight during their pregnancy, often fail to lose their weight after giving birth and this complicates subsequent pregnancies. They are also less likely to

breastfeed and if they do begin breastfeeding, are more likely to discontinue it by six months.

## About the Author



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**In Print:** *The Gravity of Weight: A Clinical Guide to Weight Loss and Maintenance*

**Online:** my own website

