What Is Pregorexia?

In the summer of 2008, the mainstream media—including The Early Show and Fox News—leapt on a new term: *pregorexia* (1,2). Used by the press to describe pregnant women who will reduce calories and exercise in excess in an effort to control pregnancy weight gain, the buzz surrounding this issue may have started as far back as 2004, when *New York* ran a feature article entitled "The Perfect Little Bump." The piece detailed the lives of fashionable New York City women anxious to achieve a "perfect" pregnancy body, going so far as to work out every day with heart monitors in an effort to push their heart rates to the maximum safe limit (3).

But how real is pregorexia? Is it a media invention, or a real concern for food and nutrition professionals? This article is the latest to examine popular terms that have captured the attention of the media and the public. Previous *Journal* articles have discussed diabulimia and orthorexia (4,5).

IS PREGOREXIA REAL?

It is the position of the American Dietetic Association (ADA) that one of the key components of a health-promoting lifestyle during pregnancy is appropriate weight gain, which often includes a daily consumption of 2,200 to 2,900 kcal a day (although this can vary depending on prepregnancy body mass index, rate of weight gain, maternal age, and appetite) (6). ADA's position paper on proper nutrition for a healthful pregnancy outcome cited a long-term follow-up study of the Dutch famine during World War II, which linked undernutrition during pregnancy with chronic disease later in life (7); another cited study found that low birth weight followed by rapid postnatal catch-up growth can be a risk for metabolic syndrome in adulthood (8). Ensuring that pregnant women receive appropriate nutrition during pregnancy can be difficult when intakes of vitamin E, magnesium, potassium, fiber, and calcium are often found to be inadequate in pregnant or lactating women, and sodium and saturated fat intake is often found to be excessive (6).

However, while research does link poor nutrition with negative outcomes, experts interviewed for this article do not believe this is a reason to assume that pregorexia as defined by the popular press is a growing concern. In fact, many women are gaining too much weight while pregnant, according to the American College of Obstetricians and Gynecologists (ACOG), which issued a 2005 opinion urging physicians to discuss appropriate weight gain with their pregnant patients (9).

The Institute of Medicine (IOM) issued a report in 2007 that stated 46% of pregnant women in 2004 had gained more than the IOM's recommended amount, an increase from 1993 when 37% of pregnant women had gained above the suggested amount of weight (10).

"In my 15 years as a practicing dietitian, I have yet to see a specific case of [pregorexia]," says Stacey Nelson, MS, RD, LDN, senior clinical nutritionist at Massachusetts General Hospital in Boston and coauthor of *You and Your Baby: Healthy Eating During Pregnancy*. "I'm not discounting that something that could fall into this definition of pregorexia may happen, but the overwhelming issue is the increasing trend of obesity."

Nelson's coauthor, Laura Riley, MD, director of labor and delivery at Massachusetts General Hospital, concurs. A past chair of ACOG's Committee on Obstetric Practice, Riley says she has to caution her patients to make sure they don't gain too much weight, not the other way around.

"Perhaps in certain pockets of the country, this is an issue, but these women are a minority," says Riley. "I definitely do not see this as an epidemic."

The IOM's guidelines, which were last updated in 1990, call for women with low body mass indexes (BMIs) to gain between 28 and 40 lb, women with BMIs of 18.5 to 24.9 to gain between 25 and 35 lb, women with BMIs of 25 to 29.9 to gain between 15 and 25 lb, and women with BMIs of 30 or above to gain about 15 lb (11). All guidelines are for singleton pregnancies, says Riley.

According to Riley and Nelson, the almost–20-year-old guidelines were in reaction to a trend of low birth weights among newborns in the 1960s and 1970s, caused in part by women who smoked during pregnancy and did not gain appropriate amounts of weight.

"When the current guidelines were written, they were sort of a backlash to the low birth weights," says Nelson, a member of the Women's Health dietetic practice group whose members often serve as a resource for pregnant clients who need information on healthful eating during pregnancy. Now, adds Riley, those guidelines may have caused the pendulum to swing in the other direction.

"The IOM started to question the guidelines, that perhaps they were too wide," says Riley, who testified before the IOM committee in May 2006 (10). A prepublication report of new weight gain guidelines is due to

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doi: 10.1016/j.jada.2009.04.021

be released in June 2009*, and will include information for women carrying twins or higher order multiples (12). ADA's current position is that pregnant women follow the current guidelines, but greater attention to preventing too much weight gain is necessary (6).

In its 2005 opinion, ACOG cited research that links obesity to an increased risk of gestational hypertension, preeclampsia, and gestational diabetes as well as an increased need for a cesarean, and elevated risks to the babies of obese women include stillbirth, prematurity, babies that are large for their gestational age, neural tube defects, and higher rates of childhood obesity (9).

For example, a study of 120,251 pregnant, obese women delivering full-term singleton infants was examined to assess the risk of four pregnancy outcomes including preeclampsia, cesarean delivery, small for gestational age births, and large for gestational age births. Results showed that a gestational weight gain for overweight or obese pregnant women of less than the currently recommended 15 lb was associated with a significantly lower risk in all categories (13). A study of 94,696 women with *normal* prepregnancy body mass index found that women who stayed within the IOM's current guidelines also had a significantly lower risk of the same negative outcomes (14). And a recent study by the Kaiser Permanente Center for Health Research of more than 40,000 women and their babies discovered that more than 20% of the women who gained more than 40 lb while pregnant gave birth to heavy babies (15). Riley adds that research supports the claim that overweight and obese women will have children who grow up to be overweight.

IS THERE ANYTHING POSITIVE ABOUT THE PREGOREXIA BUZZ?

The fact that pregorexia may be mostly media hype doesn't discount the fact that many women may worry about weight gain or face body image issues when pregnant. Those interviewed for this article say that the buzz surrounding pregorexia can be a way for health professionals to have candid discussions with women about health and nutrition during pregnancy.

"Because this term is getting media attention, it can bring out the elephant in the room," says Victoria Shanta Retelny, RD, LDN, president of Living Well Communications in Chicago, IL. Retelny, a member of the Nutrition Entrepreneurs and Food and Culinary Professionals dietetic practice groups, has worked as a nutrition consultant and corporate wellness coach and wrote an article about pregorexia for the Winter 2009 issue of *ADA Times* (16). She says women need to be more educated about proper nutrition during pregnancy, and that includes the healthful way to gain the proper amount of weight.

"Often times, the conversation about weight and nutrition doesn't happen enough between women and their doctors," says Retelny. "Some women just end up throwing in the towel and think, 'Well, I'm eating for two.' "

Riley agrees, and adds that many doctors avoid discussing weight gain with patients for fear they will upset them and because they do not know how to best explain to patients how to follow a balanced diet. That is why, says Riley, food and nutrition professionals are needed to help educate pregnant women and provide needed support during a vulnerable time.

HOW CAN FOOD AND NUTRITION PROFESSIONALS HELP?

ADA suggests that food and nutrition professionals encourage pregnant women to use the MyPyramid for Moms, developed by the US Department of Agriculture, to select a balanced diet (6,17). ADA notes that special guidance may be needed to ensure that women are receiving enough vitamin E and potassium. With iron deficiency anemia affecting about 30% of low-income pregnant women, iron deficiency anemia is a concern, and 27 mg of iron daily during pregnancy is recommended (6). Vitamin D is also critical for pregnant women, with the Recommended Daily Allowance of 200 IU daily helping to prevent low serum calcium in the baby as well as problems with neonatal bone metabolism (6). Pregnant women should also consume 600 μg of synthetic folic acid daily from fortified foods or supplements in addition to food forms of folate in a varied diet (6). ADA also suggests that food and nutrition professionals stay up to date on fortification levels in certain foods to help women select appropriately—especially when working with clients whose cultural or religious practices may affect their diet (6).

In her career counseling pregnant women about general nutrition, Nelson has also found it helpful to educate women about what makes up a healthful weight gain in pregnancy.

"Women are always pleasantly surprised to find out what makes up that weight," says Nelson. Whereas many women assume all weight gain is fat, much of the weight can come from fluids and the baby itself, says Nelson.

Nelson also sketches out a prenatal weight gain grid for patients to use as a general guide, asks patients to write down what they eat so she can get a sense of where they need guidance, creates shopping lists for patients, and encourages continued exercise with a doctor's approval.

"I try to focus on health and nutrition, not weight," says Nelson. "Everyone wants to look good, that's only normal. But through support and education, we can really assist women. Often, I share stories about other women who are concerned about weight gain or eating right and that tells them they are not alone."

She is often on the lookout for women who are drinking too many of their calories, or who are not eating enough during the day only to overeat at night.

"I had one client who was drinking three frozen juice drinks a day, and she didn't know each one was somewhere between 800 to 1,000 calories," says Nelson. "Sometimes it can be that simple to discover where the problem is."

But what about women with a history of eating disorders who become pregnant? While the media hype surrounding pregorexia has mainly focused on women who become concerned about weight gain after conception, women who have struggled with body image prior to becoming pregnant may need special care.

The good news is some existing research shows some women with eating disorders experience a reduction in the severity of their symptoms during pregnancy (18,19).

At the time of publication the revised Institute of Medicine guidelines were not published.

A BALANCING ACT: EATING TO OPTIMIZE A CHILD'S FUTURE WELL-BEING

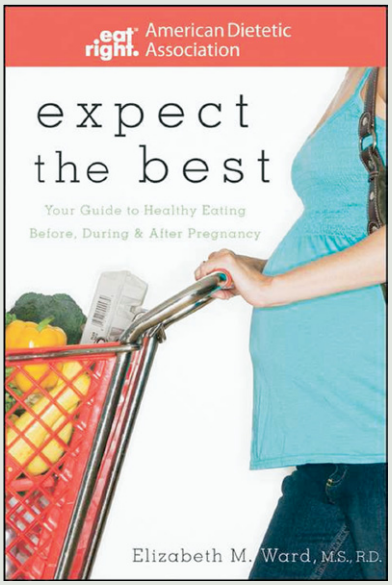
Is it possible for a pregnant woman to "program" her child's propensity for heart disease, diabetes, obesity, and other chronic conditions decades down the road with what she eats? The notion that a balanced pregnancy diet helps to head off certain diseases is gaining ground, particularly in light of improved understanding of how the availability of energy and nutrients in the womb influences fetal development in ways that affect health years later. Whether your patient is one of the rare "pregorexics" or falls into the more common overweight category, counseling her about pregnancy calorie needs is just as important as dispensing advice about food choices that help to optimize her child's well-being, at birth and beyond.

Achieving a healthy weight before pregnancy is ideal for minimizing complications to mother and child. However, most women seek care from a registered dietitian (RD) after conception has occurred, and the RD's task becomes promoting weight gain based on prepregnancy body mass index (BMI).

Undernutrition during pregnancy is associated with low birth weight, coronary heart disease, type 2 diabetes, stroke, hypertension, obesity, glucose intolerance and cardiovascular disease risk.*† However, given the current rate of obesity among American women in the childbearing years, it's likely that a developing fetus will encounter more, rather than less, energy in intrauterine environment. No matter: the consequences of too little nutrition and too much are often the same. In one study, Oken and colleagues examined the link between gestational weight gain and adiposity at age three in more than 1,000 mother-child pairs. They found that mothers with greater pregnancy weight gain had children with more adiposity at 3 years of age, regardless of parental BMI, maternal glucose tolerance, breastfeeding duration, fetal and infant growth, and child behaviors, including television viewing and consumption of fast food and sugar-sweetened beverages.‡ Another study found gestational weight gain was directly related with BMI and obesity risk in adolescent offspring.§

While it's not clear how maternal diet during pregnancy affects fat mass in children, it may alter mechanisms that regulate appetite control, metabolism, and genetic expression. Food choices during pregnancy and nursing may also play a role in a child's food preferences and appetite. A 2007 *British Journal of Nutrition* animal study found that when pregnant and nursing mothers ate a steady diet of biscuits, marshmallows, jam, doughnuts, potato chips, and candy bars, their offspring gained more weight after birth than those born to mothers who dined on rat chow. The authors theorize that the heavier baby rats were less able to switch off their appetites when full, and that high levels of fat and sugar in the blood before birth may have altered the pathways in the brain that regulate hunger and feelings of fullness.‖

—Written by Elizabeth M. Ward, MS, RD, author, The American Dietetic Association's Expect the Best: Your Guide to Healthy Eating Before, During, and After Pregnancy.



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"Some women with eating disorders actually report feeling better while they're pregnant," says Jessica Setnick, MS, RD, CSSD, the author of the *Eating Disorders Clinical Pocket Guide* and chair of the Behavioral Health Nutrition dietetic practice group. "Researchers have theorized that the hormonal changes experienced during pregnancy may counter the negative neurobiology that can contribute to eating disorders." Setnick adds that feeling free from a beauty ideal while pregnant and concern for the developing baby may also contribute to a reduction of eating disorder symptoms during pregnancy.

Both Riley and Nelson agree that patients with a history of eating disorders who run a risk of relapsing may need extra help when pregnant. In addition

PREGOREXIA: WARNING SIGNS

While obesity in pregnancy is much more common than pregorexia, food and nutrition professionals with pregnant clients should be on the lookout for any signs that a woman is overly focused on body image over proper health and nutrition. Experts interviewed for this article agree such warning signs include:

- A documented history of eating disorders
- Talking about the pregnancy as if it were not real
- Focusing on calorie counts instead of general health
- Eating alone
- Skipping meals
- A weak or nonexistent support system

Food and nutrition professionals with clients who fit this profile should consider:

- Referring the client to a licensed mental health counselor
- Referring the client to a support group
- Having clients keep a food journal
- Seeing clients regularly during the pregnancy

to seeing a food and nutritional professional while pregnant, Setnick recommends such patients see a mental health professional such as a licensed counselor or psychotherapist. When working with clients, Nelson keeps an eye out for such warning signs as patients who only want to talk about calorie counts as opposed to general health, who tend to eat alone or who skip meals, who cannot talk about the baby as a separate and real entity, or who lack a support system.

"If a patient came to me that fit this model, I would want to see them every 3 to 4 weeks, and I would have them keep a food journal that also recorded how they were feeling, and I would most likely refer them to a social worker or therapist or support group," says Nelson.

Setnick, also a member of the Nutrition Entrepreneurs, Nutrition Educators of Health Professionals, and Sports, Cardiovascular, and Wellness Nutrition dietetic practice groups, adds, "In my experience, the majority of individuals with eating disorders focus on food and weight as a method of coping with feelings. If a patient tells you she is up at three in the morning to read about weight gain and food on the computer, it's not about what she's eating, it's about her being preoccupied and feeling anxious."

Whether or not a patient has a history of eating disorders, all those interviewed for this article stressed that pregnancy can have an impact on a woman's body image and emotions, no matter how healthy she is or how appropriate her weight gain.

"Women may feel alone or bossed around when they're pregnant by people who should not be giving them advice, and they may feel anxious about being a good mother," says Setnick. But if food and nutrition professionals, doctors, and women have honest, frequent conversations about healthful eating during pregnancy, everyone will benefit.

"This word, pregorexia, has given us an entrance into talking about eating disorders and women and health, and that's never a bad thing," says Setnick.

For more information on overweight and obesity during pregnancy, see the position paper on "Obesity, Reproduction, and Pregnancy Outcomes" in the May 2009 issue of the *Journal*.

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