

Prenatal Nutritional Counseling for Maternal and Infant Health

Aviva Romm, MD

Q: What are the three most important points that clinicians should keep in mind regarding prenatal nutrition?

Aviva Romm: One of the most important things that I try to convey to physicians and to mothers about prenatal nutrition is that the mom's health and her nutritional habits in pregnancy set the tone not only for childhood health, but also for that child's long-term adult health. Prenatal nutritional advice, ideally, should begin before conception. In fact, preconception nutrition, starting as early as 6 months prior to conception, is as important as prenatal nutrition.

The second point is that nutrition is more than just what or how much we eat; nutrition also pertains to the *quality* of our foods. Unfortunately, when we eat, we also consume nonfood items. Environmental contaminants and toxins in food and beverage packaging can leach into our food. When a woman is pregnant, she downloads toxins out of her system into her baby. In a sense, pregnancy is like a chelating process.

As an example of this, there is an historical fact that in England, women who were heavily exposed to industry lead had black lines on their gums as a result. As these women became pregnant, the lines receded and faded until they were gone by the end of their pregnancies. The lead was basically being chelated by the babies who then bore the lead body burden.

The third issue is that the father's nutrition is also an important contributing piece to the genetic health of the baby. Sperm are produced on an ongoing basis, but the quality of sperm can be damaged by, for example, tobacco or alcohol use. When I engage in preconception counseling with couples, I tell both partners to work with a 3-month window prior to trying to become pregnant, and emphasize healthy habits and giving up habits that can be harmful to their DNA and their sperm and eggs.

Q: What are some of the essential nutrients that women need to be sure to take during the preconception and prenatal time periods?

Dr. Romm: Folic acid intake is important for at least 1 month prior to conception and through the first trimester to prevent neural-tube defects, and throughout the remainder of pregnancy to protect the fetus against autism. Data have shown that a high level of serum homocysteine prior to pregnancy, often a result of inadequate folate metabolism, is a positive predictive factor for development of preeclampsia. High homocysteine levels are also associated with an increased rate of miscarriage.

Thirty percent of the population has a genetic polymorphism in the genes that code for methylenetetrahydrofolate reductase [MTHFR]. This interferes with folate metabolism. For these women, regular folic acid or folate might not be utilized effectively. Given that most women have not had testing for genetic polymorphisms, I generally recommend that all women take 1 g of activated folic acid per day for optimal protection.

Taking a prenatal vitamin prior to conception and throughout pregnancy improves pregnancy outcomes. This is a simple, valuable step that women can take. Because so many of our diets are deficient in one nutritional element or another, taking a prenatal vitamin is like a nutritional "insurance policy." Many women find prenatal vitamins very nauseating while they are pregnant. I recommend that they try different brands until finding one that can be tolerated, and to take it with food later in the day, rather than in the morning when pregnant women might be more nauseated. Sometimes a liquid prenatal vitamin is tolerated better.

Essential fatty acids are also important for proper neurologic development in the baby. The data on omega-3 fatty acids in pregnancy have been somewhat controversial in terms of the extent to which these nutrients prevent atopic illness in children. However, there is some evidence that babies whose moms had adequate omega-3s do have slightly higher intelligence quotient percentage points. Overall, we know this fish oil is important for neural development. I encourage all pregnant women to take 1500 mg/day of a combined fish oil supplement.

Many women are iron-deficient from poor dietary intake, and this is particularly true if they are vegetarian or vegan. Women with histories of heavy menses may also become preg-

nant while in an iron-deficient state. While maternal iron deficiency does not appear to pose significant health risks for a baby, as most babies extract the iron that they need from the mom, iron deficiency anemia can increase symptoms of discomfort in pregnant women. Iron deficiency can lead to fatigue, shortness of breath, restless leg syndrome, and constipation. Iron deficiency also predisposes pregnant women to increased risks of poor outcomes from potential bleeding at birth. Any woman experiencing symptoms of iron deficiency in pregnancy should have a complete blood count and, if needed, iron studies, to ascertain the need for supplementation.

Iron supplements are often constipating. Iron chelate is the least so. Taking an iron supplement along with 500 mg of vitamin C increases absorption. Heme iron, in meats, is the most absorbable food source.

Rates of iodine deficiency are going up in the United States, which is significant as iodine deficiency is the primary cause of mental retardation worldwide in children. Pregnant women should ensure that their prenatal vitamin contains at least 150 mcg of potassium iodide.

Vegans and vegetarians also need to make sure they are getting adequate B₁₂ through supplementation because this is a nutrient that is hard to obtain in a vegan diet.

Q: What other general nutrition guidelines do you recommend to pregnant women?

Dr. Romm: It is a common misconception that pregnant women need to eat for two. Caloric needs are really only minimally increased during the first trimester of pregnancy, and even though the need increases as pregnancy continues up until the last trimester, the maximum increased caloric needs are

“It is a common misconception that pregnant women need to eat for two.”

only the equivalent of about a half a sandwich and a glass of milk per day.

A lot of women take food liberties when pregnant, believing that indulging in every craving is acceptable. Many women truly have cravings for carbohydrates and sweets caused by improperly balanced blood sugar. However, this can lead to excess weight and an increased risk for gestational diabetes. Rates of gestational diabetes, which predisposes women to an increased risk of surgical deliveries, have gone up dramatically in the past decade along with the general social trend of obesity, which is now, itself, recognized as a disease. Women with gestational diabetes often require a cesarean section [C-section] because the condition leads to an increase in the size of their babies. C-sections, compared with vaginal deliveries, lead to heightened risks for both the mom and the baby. A mom who develops gestational diabetes in pregnancy is also predisposing that

To Contact Dr. Aviva Romm

Aviva Romm, MD

The UltraWellness Center
55 Pittsfield Road, Suite 9a
Lenox MA 01245
E-mail: aviva@avivaromm.com
Website: www.avivaromm.com

child to developing diabetes as a young adult. We know that the rates of childhood diabetes are escalating, and 15–20 years ago, we did not see type 2 diabetes as a pediatric condition. Now, it is a fairly common pediatric condition.

I encourage women to focus on keeping a healthy blood sugar balance, so that they are not craving sweets and to consume a good source of protein, a good-quality fat, and a healthy carbohydrate (such as a whole grain) at every meal. It is very common for pregnant women to crave carbohydrates for the extra energy. Women need to avoid extra bread and extra pasta, which are both pro-diabetogenic; instead, women should eat good-quality complex carbohydrates. Adequate protein should be anywhere from 80 to 100 g/day of good quality protein, and this can be from a vegetarian or meat-based source.

Snacks should be very high quality and protein-rich, for example, nuts. Emphasizing vegetables at every meal, especially lunch and dinner, and vegetables for snacks is also very important. Pregnant women tend to get constipated, and the fiber can prevent constipation, which leads to hemorrhoids—another common problem during pregnancy.

I do not emphasize drinking milk during pregnancy. Women can get their calcium through green vegetables, fish, and through nuts and seeds, as well as supplemental prenatal vitamins.

Women do need to be careful about fish intake during pregnancy. The recommended fish intake right now is 2 servings per week of low-mercury fish and to not eat certain fish that contain high levels of mercury. The recommendations do allow the consumption of albacore tuna even though it has more mercury than canned light tuna.¹ However, I am firm in my advice to pregnant women that they should try to limit fish consumption to no more than 2 servings per week of low-mercury fish, and avoid high-mercury fish, including tuna, completely. High-mercury fish include swordfish, shark, tuna, or any of the large fish that are high on the food chain. The Environmental Working Group (EWG) has a great list of specific fish that women should avoid, particularly when they are pregnant.²

This issue is a bit of a double-edged sword, because pregnant women are encouraged to eat fish, but this advice is primarily for the fish oil. I usually always promote food over supplements. However, we do know that the high-quality fish-oil products that are on the market are tested for heavy metals and have largely been found to be free of heavy metals. Unfortunately, the same cannot be said about fish that are available on the market. There is a lot of variation in the quality of fish found in stores, and it is unclear how much mercury is in any particular type of fish. There have even been recent suggestions in the popular media that, when we eat in restaurants or when

we purchase fish, we do not actually know what type of fish we are buying, because fish is commonly mislabeled.

Farm-raised fish are a problem because the fish are known to be contaminated with BPA [bisphenol-A] from the tanks and from the feed. So, farm-raised salmon is not a good alternative to wild salmon.

In general, I encourage women to get their protein from other sources, such as organic free-range eggs, organic free-range chicken, or grass-fed beef. I also suggest that women focus on obtaining their essential fatty acids from a good quality fish-oil supplement. It is just safer.

Q: What are some caveats regarding food packaging and the contaminants that foods may contain, as well as other toxic exposures that pregnant women should try to avoid?

Dr. Romm: There are excellent data showing that a pregnant woman's exposure to a variety of environmental toxins—ranging from BPA to heavy metals—can have deleterious effects on the baby. There is some concern that these toxins might be associated with an increased risk of the behavioral problems that we are commonly seeing in children. In the United States, 1 in 8 children has a behavioral problem, and 1 in ~ 80 children is on the autism spectrum.³ Avoiding toxins is critically important.

In addition, we know that some environmental chemicals—particularly the xenoestrogens—are associated with the development of type 2 diabetes. Even prenatal exposure is likely to increase the child's risk of developing diabetes in adolescence or adulthood. I encourage all pregnant women to avoid foods that come in soft plastic wrap, and to avoid heating or warming foods in these types of plastic containers. Instead, these women should use glass containers and drink out of glass water bottles rather than plastic ones.

Body products, including cosmetics, may also contain a variety of chemicals and metals—including lead, which has been found in lipstick. Pregnant women need education about using more environmentally friendly cosmetics during pregnancy. Household cleaning products can also be sources of these contaminants for women, as well as pesticide residues on foods.

Whether to eat organic only is a cost issue for many women. Women can visit the EWG website and focus on avoiding what are called the “dirty dozen” foods and emphasize eating the “clean 15,” which are products that do not have significant amounts of pesticide residues.⁴ If a woman has to pick and choose between organic and nonorganic, then the clean 15 might be purchased nonorganically. Given that the fats in

dairy and meat are repositories for environmental chemicals, buying these organically (or from antibiotic- and hormone-free sources) is one way of protecting the baby.

Q: What are your concluding thoughts and advice for clinicians regarding prenatal nutrition?

Dr. Romm: Counseling about healthy preconception and prenatal nutrition is the foundation of not only a healthy pregnancy for the mom, but for the lifelong health of her children, well into adulthood. All health care providers—whether they are family physicians, pediatricians, obstetricians, gynecologists, midwives, or naturopaths—are in a position to educate not only pregnant women, but also women who are in their childbearing years or who come in with children for pediatric visits. We need to use every clinical appointment and encounter with childbearing women as an opportunity to discuss and educate them about optimal nutrition and its impact on the lifelong health of the mom and the baby. ■

References

1. United States Environmental Protection Agency. What You Need to Know about Mercury in Fish and Shellfish. Online document at: http://water.epa.gov/scitech/swguidance/fishshellfish/outreach/advice_index.cfm Accessed July 2, 2013.
2. Environmental Working Group. Brain Food: Fish Women Should Avoid. Online document at: www.ewg.org/research/brain-food/fish-women-should-avoid Accessed May 20, 2013.
3. Autism and Developmental Disabilities Monitoring Network Surveillance Year 2008 Principal Investigators; Centers for Disease Control and Prevention. Prevalence of autism spectrum disorders—Autism and Developmental Disabilities Monitoring Network, 14 sites, United States, 2008. *MMWR Surveill Summ* 2012;61:1–19.
4. Environmental Working Group. EWG's 2013 Shopper's Guide to Pesticides in Produce: Executive Summary. Online document at: www.ewg.org/foodnews/summary.php Accessed May 20, 2013.

Aviva Romm, MD, practices integrative and functional medicine at The UltraWellness Center, in Lenox, Massachusetts where she specializes in women's and children's health. Dr. Romm is also an adjunct professor of medicine at Tufts University and is the medical director of the American Herbal Pharmacopoeia, in Scotts Valley, California.

To order reprints of this article, e-mail Karen Ballen at: Kballen@liebertpub.com or call (914) 740-2100.