Birth Defects Prevention Month Series: Planning a pregnancy? It is never too soon to reach a healthy weight!

By Lori Wolfe, CGC, MotherToBaby North Texas

Nicole called me in tears. She had been trying to become pregnant for the past nine months and was not having any luck. She asked if it could be due to being overweight. As I talked with Nicole, I found out she is about 100 pounds over a healthy weight for her height. As a MotherToBaby specialist, I often talk with women who are trying to become pregnant. It just so happened this question came along as I was reviewing tips for January's Birth Defects Prevention Month. Tip #4 is: **Before you get pregnant, try to reach a healthy weight.**

I explained to Nicole that studies have shown that women who are overweight can have a number of different problems trying to become pregnant, but she shouldn't worry. Many of the problems outlined below can be reversed when healthy eating and exercise are incorporated into her routine. Some of the issues which can result from being overweight while trying to conceive include:

- An increased chance of having irregular or absent periods, making it difficult to conceive
- Producing too much estrogen, which can also make it harder to get pregnant
- An increased chance of having complications during fertility treatments
- Having polycystic ovary syndrome , a hormonal disorder that is a major contributor to infertility in women of child bearing age

Once they get pregnant, women who are overweight or obese are at a higher risk for the following complications during pregnancy:

- Miscarriage
- Heart disease
- Increased chance for a birth defect in the baby
- Gestational diabetes
- High blood pressure and preeclampsia (a dangerous kind of high blood pressure that can happen during or right after pregnancy))
- Cesarean birth

After discussing all of this with Nicole, her next question to me was what can she do to reduce these possible risks? Fortunately, most women with overweight can expect to have a healthy pregnancy. I explained to Nicole that it is best to talk with her doctor and try to lose weight before becoming pregnant. Losing weight once you are pregnant is not advised. Start now to eat a healthy diet and exercise regularly before pregnancy, and keep this up once you become pregnant.

Healthy eating includes folic acid
Another important Birth Defects Prevention Month tip is Tip #1: **Be sure to take 400 micrograms (mcg) of folic acid every day.**

We all need folic acid every day in our bodies to help make new cells. Folic acid is a synthetic form of Vitamin B9, also known as folate. It is very important to take enough folic acid just before and during pregnancy. Many studies have

shown that taking 400 mcg of folic acid before and early in pregnancy every day reduces the chance that a baby will have serious birth defects of the spine and brain, called neural tube defects (NTDs). This is even more important in women who are overweight as their body requires more folic acid.

Nicole was relieved to hear that her weight didn't have to be an obstacle and that there were things she could do to increase her chance of becoming pregnant and having a healthy baby. Losing weight, eating healthy foods and daily exercise can increase her chances of becoming pregnant and can decrease her chances of miscarriage, birth defects and other pregnancy problems. She said she will call her health care provider right away to schedule an appointment to talk about everything and was excited that the future looked brighter to one day become a mom!

Lori Wolfe, CGC, is a board certified Genetic Counselor and the Director of MotherToBaby's North Texas affiliate. MotherToBaby aims to educate women about medications and more during pregnancy and breastfeeding. Along with answering women's and health professionals' questions regarding exposures during pregnancy/breastfeeding via MotherToBaby's toll-free number, text line and by email, Wolfe also teaches at the University of North Texas, provides educational talks regarding pregnancy health in community clinics and high schools.

About MotherToBaby
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By Lauren Bryl, MS, Certified Genetic Counselor, MotherToBaby IL

It's National Birth Defects Prevention Month, and you've found yourself here – standing in the pharmacy aisle in search of prenatal vitamins. You think, "I should start taking one of these if I want to have a baby, right? At least that's what I've heard…" Your eyes are swimming and head is spinning with all the options. "Should I choose the old-fashioned tablets, the fruit-flavored gummies, or the minty chewables? With DHA or without? Do I need extra calcium or vitamin D? Is 200% daily value better than 100%? This seems like a good one," you think to yourself. "Oh wait! Maybe this one is better…" Shelf after shelf of bottles of vitamins and supplements…but which one is right for you?

Give yourself a pat on the back.

First of all – well done, Mama! You've already made the most important decision by choosing to kick off your pregnancy journey with a solid supply of vitamins to support a growing baby! But why are prenatal vitamins so important anyway? Well, one of the main reasons is that deficiency of a vitamin called folate (also called folic acid) in very early pregnancy increases the risk for neural tube defects. Neural tube defects are a group of birth defects in which there is an opening in the spine. They include things like spina bifida. While the other vitamins and minerals may also provide benefits to mom and baby, the folic acid in the prenatal multivitamin is one of the most important for birth defect prevention. Taking folic acid prior to and during pregnancy is the best thing we can do to reduce the risk of neural tube defects.

Take a deep breath.

As a prenatal genetic counselor, I've had many patients ask me which prenatal vitamin is the best. While there are, of course, many factors that go into making a decision about which prenatal vitamin to take including cost considerations and personal preferences, I'm here to give some thoughts from a medical professional's perspective. First of all, you may not even have to make this choice yourself. Your doctor may prescribe you a prenatal vitamin with folic acid, so check with her first. But if she tells you to pick something up over the counter, don't panic.

Check the ingredients and their doses.

The exact vitamins and minerals that you, personally, will need in a multivitamin depends on a few things. One is whether you have any known vitamin or mineral deficiencies or risk factors for such a deficiency. For example, vegans and vegetarians are more likely to have deficiency of vitamin B12, a vitamin found in meat and other animal products. The amounts of vitamins and minerals you receive through your diet should be considered. It is common for women to need extra help getting the recommended amounts of calcium, iron, and vitamin D. The daily recommended intakes for pregnant women over 18 years are 1,000 mg (milligrams) of calcium, 27 mg of iron, and 600 IU (International

Units) of vitamin D. Some health care providers will also suggest docosahexaenoic acid (DHA) supplementation of 200 mg per day for those who do not eat fatty fish (like salmon and tuna) at least twice a week.

Regardless of your diet, folic acid supplementation is a must. The natural form of the vitamin found in certain foods (called folate) is not as well absorbed as the supplemental form (folic acid). Because of this, the U.S. Public Health Service recommends that all women of childbearing age take a folic acid supplement of 400 micrograms (0.4 mg) per day. Once you become pregnant, this dosage increases to 600 micrograms (0.6 mg) per day. If you are at higher risk for neural tube defects than the average woman because of family history or another factor, an even higher dosage may be recommended. You should consult with your health care provider for her recommendation.

With vitamins, more is not always better, though. While some vitamins are unlikely to be harmful even if taken at high dosages in pregnancy, this is not true for all. Specifically, very large amounts of supplemental vitamin A have the potential to increase the risk of birth defects and intellectual disabilities. For this reason, it is recommended that vitamin A supplementation not exceed 10,000 IU per day.

Don’t go too far off the beaten path.

Unlike medications and foods, vitamins and supplements are not regulated by the U.S. Food and Drug Administration (FDA). This means that the FDA does not test vitamins and other supplements to ensure that they contain the ingredients written on their labels at the doses indicated. The FDA also does not test for contamination with other, potentially harmful ingredients in vitamins and supplements. It is the responsibility of those who make the vitamins to perform these types of tests to ensure quality and safety.
Does this mean that most vitamins are dangerous? No, but it does mean that it may be safer to choose a widely available multivitamin rather than one produced by a small, specialized manufacturer. Companies with wider distribution are under more pressure to produce a safe product than those whose products you may only be able to buy in a specialty store or through their website. If in doubt, speak with your healthcare provider or a pharmacist.

Choose what works for you.

While perhaps the most obvious point, choosing a vitamin that you will actually take is arguably the most important one as well. The perfect multivitamin won’t do you any good if it is gathering dust in the medicine cabinet. If even just the thought of swallowing a pill half the size of a golf ball every morning has you queasy, you could consider trying a liquid or chewable form. Iron in your prenatal vitamin giving you constipation? Ask your health care provider if it’s necessary that you have iron supplementation if you receive adequate amounts through the foods that you eat.

So if you find yourself in the pharmacy aisle overwhelmed with all the multivitamin options, try not to stress! Remember these tips and save that energy for other difficult decisions down the road…like choosing a preschool!

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By Patricia Olney, MS, CGC

"I think I'll go out to the garage and work on the car for a while." This was Daniel's reaction after the birth of his second child with spina bifida. His wife, Rebecca, cried uncontrollably.
Sarah was born in 1989 after a healthy pregnancy, filled with the anticipation of first time parents. The nursery was decorated, the crib was set up, and an overnight bag packed. The only thing Rebecca didn't anticipate was a preterm delivery, c-section, and a baby born with a severe birth defect.

My oldest son was also born in 1989. Rebecca and I shared the same excitement, dreams, and hopes for a healthy baby. We ate a balanced diet, took our prenatal vitamins, exercised regularly, and attended childbirth classes. We talked about whether we wanted an epidural or not, a home birth, or delivery by a midwife. Our husbands advocated for a hospital birth…just in case there was a problem during delivery.

Rebecca remembers the details as if it happened yesterday. On the eve of March 24th, Rebecca's amniotic sac ruptured. Her first thought was "Oh no, I wet the bed!" She didn't realize it was not her urine, but amniotic fluid. She woke Daniel and frantically called her OB. On the way to the hospital, Rebecca was sobbing. She was scared, and worried. What if all the amniotic fluid leaked out? Daniel tried to be reassuring—her OB was a very competent doctor. Sarah was born the next morning by c-section at 34 weeks and quickly whisked away to the NICU by the neonatologist. The preterm delivery was now the least of their worries. Their baby was born with spina bifida.

Rebecca and Daniel were shocked, then angry, and found themselves searching for answers. The book "What to Expect When You're Expecting" didn't cover having a baby with a birth defect. After a long discussion with the neonatologist, they learned Sarah had a type of neural tube defect called myelomeningocele. They heard the words…"she may have neurologic deficits below the level of the defect, and may develop hydrocephalus." Sarah eventually developed hydrocephalus, wasn't able to walk, and didn't have bowel or bladder control.

Spina bifida is a type of neural tube defect (NTD) that affects the spine, or spinal cord. With this condition, the neural tube does not close completely. Myelomeningocele is the most serious type of spina bifida—a sac of fluid with part of the spinal cord comes through an opening in the baby's spine damaging the nerves. Neural tube defects happen in the first month of pregnancy, often before a woman even knows that she is pregnant.

At first, Rebecca and Daniel couldn't imagine having another child since Sarah required so much care, but two years after Sarah's birth, Rebecca and Daniel decided they wanted Sarah to have a sibling. They consulted their OB and decided to have a blood test that screens for neural tube defects called maternal serum AFP. They didn't want to have an amniocentesis, a more sensitive test for NTDs, because of the small chance of miscarriage. Plus, they never thought it could happen twice.

Emma was born in June of 1991 with a less severe type of spina bifida, lower on her spine than Sarah's. At that time, the maternal AFP blood test detected about 80-85% of NTDs. Prenatal ultrasound may not detect one that is small, and covered with skin. In general, when the opening is lower along the spine, fewer nerves are damaged, resulting in less serious disability.

A worldwide effort to prevent recurrence and occurrence of neural tube defects began in the early 1990's. Women who had a pregnancy that resulted in a baby with an NTD have an increased risk of 2-3% to have another affected pregnancy. In August 1991, U.S. Public Health Service provided guidelines for women who already had a pregnancy affected with a NTD. The guidelines called for consumption of 4 milligrams (4000 micrograms) of folic acid daily beginning one month before trying to get pregnant and continuing through the first three months of pregnancy (CDC: MMWR; Aug. 2, 1991).

Folic acid is a water-soluble B vitamin. Foods that are naturally high in folic acid include leafy vegetables, fruits (such as bananas, melons, and lemons) beans, yeast, mushrooms, meat (such as beef), orange juice, and tomato juice. ***Most women would not consume enough folic acid by diet alone.***

In order to reduce the frequency of NTDs and their resulting disability, in September, 1992, the U.S. Public Health Service recommended:

"All women of childbearing age in the United States who are capable of becoming pregnant should consume 0.4 mg (400 micrograms) of folic acid per day for the purpose of reducing their risk of having a pregnancy affected with spina bifida or other NTDs. Because the effects of higher intakes are not well known but include complicating the diagnosis of vitamin B12 deficiency, care should be taken to keep total folate consumption at less than 1 mg per day, except under the supervision of a physician. Women who have had a prior NTD-affected pregnancy are at high risk of having a subsequent affected pregnancy. When these women are planning to become pregnant, they should consult their physicians for advice (CDC MMWR: September 11, 1992)."

In 1998, the Institute of Medicine's Food and Nutrition Board added this to the recommendation:

"To reduce their risk for an NTD-affected pregnancy, women capable of becoming pregnant should take 400 micrograms of synthetic folic acid daily, from fortified foods or supplements or a combination of the two, in addition to consuming food with folate from a varied diet."

Since 1998, folic acid has been added to cold cereals, flour, breads, pasta, bakery items, cookies, and crackers, as required by federal law. CDC reports that fortification is now mandatory practice in 57 countries and voluntary in many others. Three key results are:

• World-wide, at least 22,000 fatal or disabling birth defects such as spina bifida are prevented annually. That's 60 babies a day.
• Countries around the world report 30% to 70% declines in NTDs after fortification begins.
• Countries save millions of dollars in healthcare cost when spina bifida is prevented.

Since one-half of U.S. pregnancies are unplanned and because these birth defects occur very early in pregnancy (3-4 weeks after conception), CDC recommends all women of childbearing age consume folic acid daily. CDC estimates that most of these birth defects could be prevented if this recommendation were followed before and during early pregnancy. Rebecca and Daniel could never change what happened to their babies, but sharing their story may help spread the word about the benefits of folic acid.

Questions? For your FREE personalized risk assessment, call MotherToBaby toll-FREE (866) 626-6847 or email an expert here. MotherToBaby is a service of the international non-profit Organization of Teratology Information Specialists (OTIS), a society that supports and contributes to worldwide initiatives for teratology education and research. MotherToBaby affiliates and OTIS are suggested resources by many agencies, including the Centers for Disease Control and Prevention (CDC), and are dedicated to providing evidence-based information to mothers, health care professionals, and the general public about medications and other exposures during pregnancy and while breastfeeding. Learn more at MotherToBaby.org.

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