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.

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

By Patricia Markland Cole, MPH, MotherToBaby Massachusetts

I heard the pregnant mom on the phone say, "I get this miserable feeling at night with my legs. I feel this constant urge to move my legs and it feels like ants crawling all over. It only happens at night and I just cannot rest like I want to. What can I do?"

Although I haven't had many calls like this in my years with MotherToBaby, every now and then I get a call with a mom describing this condition with her legs and how miserable it makes her. She's trying to get a good night's sleep for the sake of her baby but this condition makes that impossible. Totally frustrating!

The condition she's describing is called Restless Leg Syndrome, or RLS.

RLS, also known as Willis-Ekbom Disease (WED), is a common sleep disorder that affects 5-15% of the US population with women being affected twice as often as men. Although not limited to pregnancy, RLS is commonly associated with pregnancy with approximately 10-34% of pregnant women experiencing RLS.

RLS is associated with an unpleasant feeling in the legs that tends to get worse in the evening (especially at bedtime) and produces an overwhelming desire to move your legs. The movement of your legs or massaging them relieves the sensation to move. As you can imagine, this is quite disruptive when you are trying to get a good night's rest, which is so important during pregnancy. Pregnancy is considered to pose an increased chance for developing RLS, and the symptoms appear to be the most intense during the last three months of pregnancy. When RLS occurs for the first time during pregnancy it is considered secondary RLS, compared to idiopathic RLS (a condition with an unknown cause). Fortunately for most women who experience RLS in pregnancy, the symptoms disappear soon after birth. Yet for some women the symptoms can last for weeks after childbirth. And depending on when the symptoms start, it can be a long time for a woman to experience many restless nights before any relief is seen.

I would just like to say to any woman who has experienced this during pregnancy, you have my deepest sympathies because this sounds very unpleasant.

So what is a pregnant woman to do?
The first thing to do is to have a conversation with your doctor or nurse. These are the four criteria that need to be met for a diagnosis with RLS:

- Urgent desire to move your legs, along with discomfort such as pain, restlessness, tingling, burning, aching, or a creeping feeling.

- The strong urge to move your legs and the unpleasant feelings in the legs occur just before a person is ready to fall asleep or has not been active for a while. At times the longer the person has been inactive, the worse the symptoms get.
- Moving or massaging your legs relieves the discomfort or greatly reduces it.
- The symptoms show a pattern of only getting worse in the evening or at night.

RLS needs to be properly diagnosed because other conditions that can mimic it must be ruled out. For example, nocturnal leg cramps (i.e., occurring at night) are painful but unlike RLS, moving the legs will not relieve or improve symptoms. Similarly, hypnic jerks are uncontrolled twitches that occur just when a person is falling asleep, but unlike RLS, they are not linked with a desire to move the legs and movement does not improve the symptoms.

What is the cause of RLS in pregnancy?
The answer to this remains unclear. Many hypotheses have been generated and not one agent appears to be solely responsible for RLS during pregnancy.

The most common suspected causes have been associated with folate, iron, and ferritin levels. There is data suggesting that pregnant women suffering from RLS have lower folate levels than women who do not have RLS, but the results have not been consistent. The same is true regarding iron deficiency and low ferritin levels. There have been some results that showed improvement with iron supplements, but there have also been cases where taking these supplements made little improvement. Also, improvement of symptoms after childbirth have not been linked to iron or folate levels. (Note: Glossary for underlined words are at the end of blog)

Another suspect has been Vitamin D. Low levels of Vitamin D are not uncommon in pregnancy and this can affect dopamine activity. Dopamine is a neurotransmitter (a chemical in the brain) in the brain that helps regulate movement (among other things). Since we are dealing with pregnancy (a time when a woman experiences hormonal changes), hormones have also been considered as a cause, especially because the symptoms of RLS disappear for the majority of women after childbirth when hormone levels return to normal.

Other factors that can increase the chance of RLS are a family history of this disorder, having RLS in a previous pregnancy, smoking and caffeine exposure, and inadequate blood flow through veins of the body.

What can be done to manage symptoms?
Helping pregnant women to manage their symptoms is important because the lack of sleep, fatigue and sleepiness in the daytime can impact mood and your general sense of well-being. In addition, there are concerns that dealing with RLS can increase pregnancy complications including prolonged labor, preeclampsia, and a difficult delivery. The data is not strong in these areas and further research is needed.

Treating RLS can reduce the level of stress for the pregnant woman. Avoiding RLS triggers may help; this includes smoking (which in general is not recommended for a healthy pregnancy), caffeine, and medications that lower dopamine action in the body (like older antihistamines). Conservative treatments include massage and stretching the legs, wearing elastic compression stockings, taking warm baths and moderate exercise on a regular basis. If there is an iron and folate deficiency, supplements can be taken to increase levels, or in extreme cases supplementation by IV for increased iron levels. If these conservative measures have failed, then treatment with medications can be considered.

There are various medications for consideration like certain antiepileptics, benzodiazepine, dopaminergic (certain medications used in the treatment of Parkinson's disease) , opioids (for the most severe cases) and blood pressure medications; each has its positives and negatives. It appears that clonazepam (a benzodiazepine) and clonidine (a blood pressure medication) are the most favorable but neither one is risk-free. If medication is needed, the goal is to use the lowest dose for the shortest amount of time possible. Talk with your health provider about medication options for RLS, and feel free to contact a MotherToBaby specialist for a summary of what is known about these medications when used in pregnancy.

Overall, it is not uncommon for pregnant women to experience sleep disorders during pregnancy and RLS is one of them. It can occur for the first time during pregnancy and symptoms can increase with each stage of pregnancy. Women who have had a family history, had multiple pregnancies, a previous pregnancy with RLS and low levels of

some key vitamins and nutrients have a higher chance of experiencing RLS during pregnancy. For the majority of women the symptoms disappear after childbirth, but depending on the severity of symptoms and stage of pregnancy, waiting for childbirth may be unbearable. Fortunately, there are some conservative measures that have helped and, when all else has failed, there are medications as options for treatment. It is important to get a good night's rest, so pregnant women should discuss the matter with their doctors for proper diagnosis and appropriate treatment; and then who knows, maybe you can just "sleep in heavenly peace".

Wishing you a healthy holiday season and a very "silent night."



Patricia Markland Cole, MPH, is the Program Coordinator for MotherToBaby Massachusetts. She obtained her Bachelor's degree in Biology from Simmons College in Boston and her MPH in Maternal and Child Health from Boston University School of Public Health. She has been the serving the families of New England as a teratogen counselor since 2001 and provides oversight for the day-to-day functions and outreach of the program. She has also provides education to graduate students and other professionals.

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Glossary:

Folate is water-soluble (can dissolve in water) and must be taken in every day. Not enough folate can cause anemia (a condition in which the number of red blood cells is below normal), diseases of the heart and blood vessels, and defects in the brain and spinal cord in a fetus.

Ferritin is a protein in the body, especially found in the bone marrow, spleen, skeletal muscles and liver. It is responsible for storing iron in the cells. By binding with iron, ferritin is decreasing the toxicity of iron and enables its transport.

Dopamine is one of the brain's neurotransmitters—a chemical that ferries information between neurons. Dopamine helps regulate movement, attention, learning, and emotional responses.

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

By Men-Jean Lee, MD, a maternal-fetal medicine physician and member of MotherToBaby's sister society, the Society for Maternal-Fetal Medicine

From gender reveal parties to pregnancy photoshoots and prenatal massage, pregnancies are being celebrated in new and sometimes extravagant ways. The travel trend of "babymoons" continues to grow in popularity and most go off without a hitch. Unfortunately, as a maternal-fetal medicine physician in Hawaii, I've seen my fair share of trips that do not go according to plan. If pregnant, consult your doctor or midwife, especially when flying or traveling far from home. Also keep these tips in mind if you are a considering a babymoon.

Women with high-risk pregnancy issues should consult their local maternal-fetal medicine physician to discuss any medical and obstetrical issues before putting a deposit down for babymoon. And what do you do if you end up being grounded? Save the money for a really fabulous push present!

Men-Jean Lee, MD, is a maternal-fetal medicine physician and associate professor at the John A. Burns School of Medicine at the University of Hawaii at Manoa practicing at the Kapiolani Medical Center for Women and Children. She is a member of MotherToBaby's sister society, the Society for Maternal-Fetal Medicine, the only national, professional organization specifically devoted to reducing high-risk pregnancy complications. Dr. Lee's research interests include maternal stress during pregnancy, diabetes, immigrant healthcare, and placental biology.

- **Bring Your Medications…And Use Them**

Do you need medications that you can only get in the U.S.? Certain life-saving medications cannot be obtained in other parts of the world. Or maybe you are supposed to be checking your blood sugars if you are pregnant and have diabetes? Just because you are on holiday, doesn't mean you can let yourself go! Stick to your carb-controlled diet and your insulin, so that you don't end up in a hospital where there is not a medical intensive care unit.

- **Is Your Pregnancy "High Risk"?**
  Are you pregnant with twins or triplets? Did you deliver any of your older children earlier than 37 weeks? If so, you are at increased risk of preterm birth. Be aware that if you go into preterm labor on the beaches of Hawaii, you might get stranded and hospitalized in paradise until the babies are born! And if they are born "premie" or prior to 36 weeks, you might need to book a hotel to stay there until the babies are big enough to fly home.
- **Don't Fly After 36 weeks…and for Some women, Don't Fly at All**
  Are you at the end of your pregnancy? Experts recommend that most pregnant women stop flying once they've reached 36 weeks gestation. Air travel is not recommended at any time during pregnancy for women who have medical or obstetric conditions that may be exacerbated by a flight or that could require emergency care (e.g. a history of DVT [blood clot in a vein] or a pulmonary embolus [blood clot in the lung], stroke, heart attack, uterine cramping, leakage of fluid from the vagina, shortened cervix, or vaginal bleeding). If you have one of these conditions or if your doctor told you it's not safe, stay close to your OB care provider and the hospital where you plan to deliver.
- **Be Mindful of Zika "Hot Spots"**
  The Zika virus poses serious threats to your developing baby (for more info, see MotherToBaby's Zika Virus Fact Sheet). If your idea of the perfect babymoon is a tropical getaway, check to see if your destination has Zika-bearing mosquitoes. Parts of Mexico, South America, and most Caribbean islands are still on the Zika watch list. Unless you and your partner are committed to trading in your sunscreen for insect repellant or staying indoors with the windows closed, you might want to book a trip to picturesque Prince Edward Island!
- **Skip the Glass of Wine**
  While in vacation mode, you may be tempted to indulge in a glass of wine, a beer, or a margarita, but don't do it. There is no known safe level of alcohol consumption during pregnancy. Prenatal exposure to alcohol is the leading preventable cause of birth defects and developmental disabilities. Check out MotherToBaby's Alcohol Fact Sheet for more info.

Women with high-risk pregnancy issues should consult their local maternal-fetal medicine physician to discuss any medical and obstetrical issues before putting a deposit down for babymoon. And what do you do if you end up being grounded? Save the money for a really fabulous push present!

Society for Maternal•Fetal Medicine
High-risk pregnancy experts

Men-Jean Lee, MD, is a maternal-fetal medicine physician and associate professor at the John A. Burns School of Medicine at the University of Hawaii at Manoa practicing at the Kapiolani Medical Center for Women and Children. She is a member of MotherToBaby's sister society, the Society for Maternal-Fetal Medicine, the only national, professional organization specifically devoted to reducing high-risk pregnancy complications. Dr. Lee's research interests include maternal stress during pregnancy, diabetes, immigrant healthcare, and placental biology.

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

By Rogelio Perez D'Gregorio, MD, MS, MotherToBaby UR Medicine

Not many people know this, New York is the only state that requires that every pregnant woman have her risk of lead exposure assessed at the first prenatal visit. As a doctor seeing pregnant patients regularly, this is unbelievable to me! Highlighting this topic is particularly appropriate during October as this month we'll celebrate National Lead Poisoning Prevention Week. This awareness week was created because lead exposure can have such serious consequences, for pregnant women and particularly for developing children.

What is lead?
Lead is a heavy metal found in many different places, like dust, air, soil, water, food and inside our homes. For generations, lead has been used in many products, like paint. People didn't even realize it was there and that is could be harmful. It was also used in gasoline, and continue to be used in batteries, electronics, pipes, solder, ceramics, glass, toys and jewelry among many other things. In 1978, lead was removed from the manufacture of household paints. But even today the remodeling of homes with old lead paint that had been applied years before continues to be a common source of lead exposure, especially when the paint is peeling or chipping off of the walls.

What is lead poisoning?
Lead poisoning may result in one symptom or many vague symptoms that sometimes are overlooked by health care providers. They can sneak up on an exposed person and he/she may not even realize he/she's sick. Symptoms of lead poisoning can include abdominal pain, constipation, diarrhea, aggressiveness, anxiousness, hyperactivity, shortened attention span, muscle pain, weakness, weight loss, learning disabilities, convulsions, and (with significant lead exposure) even death. Someone with lead poisoning might also develop anemia (low blood iron).

It can be devastating for developing babies and kids.
In pregnancy, lead can cross the placenta and reach the baby; so if a pregnant woman is lead-exposed, so is her baby. In addition, young children tend to put everything in their mouths, so their risk for possible exposure is high. Low doses of lead can do lasting damage to infants and young children, as well as babies developing in mom's womb. Potential effects include:

- Lower IQ
- Distractibility and hyperactivity
- Hearing loss
- Anemia
- Growth and behavioral problems
- Kidney and brain damage
- Bone weakness/osteoporosis

So what can you do to reduce your and your child's exposure to lead?

- All pregnant women should consider being tested for lead exposure. It is a simple and inexpensive test that can be included with the blood tests being done at your first prenatal visit. If your obstetric health-care provider does not suggest testing, ask your provider to order a blood lead test.
- Have your child tested for lead starting before age 1, with regular testing occurring until age 6. Children under 6 are especially at risk, and the long-term effects of lead in a child can be severe!
- Keep your house clean. Dust contaminated with lead that is accessible to young children can cause an increased blood lead level. Help young children wash their hands with soap and water frequently and discourage them from putting their fingers in their mouths. Use a wet mop to dust, clean windowsills regularly and wash toys frequently.
- Lead in soil does not break down with time; it remains there forever. Don't allow children to play in areas of bare soil.
- Don't burn painted wood, as it may contain lead.
- If you work with lead, shower and change your clothes before going home.
- Don't remove lead paint yourself; it's a job best left to the professionals.
- Run the cold water in your kitchen faucet at a high rate for at least 30 seconds before drinking it, using it for mixing infant formula or for cooking, especially if it hasn't been used in several hours.
- Don't store food or drink in lead crystal glassware or old pottery.
- Beware of herbal products that are not certified because a range of heavy metals have been found in uncertified herbal products.
- Make sure children have adequate amounts of calcium, iron and Vitamin C in their diets. If their diets are low in these minerals or vitamins, they can potentially absorb more lead if they ingest it.

As much as I am discouraged to see the lack of testing required nationwide for lead exposure, I am still filled with hope. My hope is that awareness, like this blog, will prevent one more child from being exposed to lead. Spread the word, share this info and remember, lead poisoning is entirely preventable! #kNOwLEAD this month and every month!



Rogelio Perez D'Gregorio, MD, MS is an Assistant Director of MotherToBaby UR Medicine and Assistant Professor of Obstetrics and Gynecology at the University of Rochester.

Other blog contributions were made by:

Stanley Schaffer, MD, Director of the Western New York Lead Resource Center in Rochester and an Associate Professor of Pediatrics, at U of R.

Richard K. Miller, PhD, Director of MotherToBaby UR Medicine and Co-Director of the Finger Lakes Children's Environmental Health Center. He also Professor of Obstetrics/Gynecology, of Environmental Medicine and of Pathology and Clinical Laboratory Medicine at U of R.

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- For additional Information – MotherToBaby@urmc.rochester.edu

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By Dr. Sarah Običan, OBGYN, MotherToBaby Florida

I feel really lucky. I have had the pleasure and privilege to live and work in some great cities and universities as an OBGYN. I spent my formidable residency years in Washington, DC and loved the diversity of my patients. Being that I was located in the heart of our nation's capital, in one room I would deliver a princess of some far off nation, in the next, it'd be a dignitary from "the Hill." But it wasn't always rosy. Working in such a busy labor and delivery unit meant I would also take care of a 36-week pregnant mother who almost overdosed on cocaine and heroin. The experience was humbling and arguably taught me more about medicine and life than any other. My fellowship years at Columbia University I spent living in Harlem. I brought into the world my first son and delivered him into that beautiful and diverse community. It is a community that's strong and steeped in history where every stroll on the city sidewalk is a moment from a great photo essay. It is also a community of struggles, hard lives, and injustice. It's unfortunately a "perfect" setting for the drug market to make its mark.

Still nothing could have prepared me for my first job out of fellowship. I relocated to a great university center in Florida. With my training behind me, I was ready to tackle the hardest maternal and fetal diseases. If I'm being honest, though, my first week on the job was an eye-opener. Even with all my training, I was not ready for the sheer volume of patients suffering from opioid use and addiction.

I was seeing pregnant women with chronic opioid use almost every day. To say I was disheartened and scared for my patients would not give the feelings justice. I realized I needed to learn more. I studied the opioid crisis, read more on the subject than ever before, found physicians who were willing to treat pregnant women with opioid addiction and put them on my speed dial. I connected with a local treatment center and found the scarce resources in my new community. My new job was challenging but I wanted to somehow help the new community I serve and love.

So why should you care about all this?
Just like in the general population, ***opioid use during pregnancy is on a steep rise***. Alarmingly, death rates from overdoses are up too. Babies are also suffering; neonatal abstinence syndrome (NAS – drug withdrawal in the baby after birth) happens in more than a third of the newborns born to mothers with chronic opioid use. These babies can

experience poor feeding, sleeping, and irritability. Drug abuse during pregnancy also increases the risk of preterm birth (early delivery), decreased fetal growth, and fetal death. In just under 15 years, the rate of NAS-affected live births quadrupled, significantly increasing the emotional, medical and economic burden on society.

Moms with opioid addiction need our help.
Opioid abuse is lonely. Sooner or later, many of my patients feel isolated. They are scared and feel shunned from their community. They can be addicted with very little resources extended to them for their care. You don't need to be a doctor to know that good prenatal care leads to healthier pregnancies. However, women who abuse opioids are much less likely to get appropriate prenatal care. These moms often suffer from anxiety and depression and may use substances along with opioids that have an impact on their pregnancy, such as alcohol and tobacco.

Hope.
For sure we are in an epidemic. We have heart wrenching clinical scenarios of mothers and their children, but we have some great stories too. Mothers who receive the support they need, babies born to healthier moms now capable to take care of their children. We have to fight for more resources in each of our communities, locally and nationally. It's not enough to show burden of disease, but more important to enrich our communities with possibilities. That is all of our jobs, no matter if you are a doctor, mother or neighbor.

> ***Dear Moms Struggling with Opioid Addiction,***
> ***Please know that I see you and I want to help.***
>
> ***Dear Healthcare Professional,***
> ***You may feel lonely, too, scared that you don't know enough or that you don't have the resources to find answers to appropriately help the patients you love. I've been there and I want to help.***

It begins and ends with all of us.

Resources for Moms and Health Care Providers:

- MotherToBaby's opioid-specific Fact Sheets and free information over its confidential helpline (866) 626-6847, text service (855) 999-3525 and live chat/email on https://mothertobaby.org/opioids/
- Substance Abuse Treatment Services Facility Locator, (800) 662-4357, https://findtreatment.samhsa.gov/
- National Council on Alcoholism and Drug Dependence, (800) 622-2255, https://ncadd.org/
- American College of Obstetricians and Gynecologists, www.acog.org/More-info/OpioidUseinPregnancy
- NCHS Data on Drug-poisoning Deaths, https://www.cdc.gov/nchs/data/factsheets/factsheet_drug_poisoning.htm



***Sarah G. Običan, MD**, is an OBGYN and Maternal Fetal Medicine specialist at the University of South Florida. She is the director of the new MotherToBaby Florida affiliate based in Tampa. She has particular research and clinical experience in teratology, fetal echocardiography and fetal therapy. She is the proud*

mom of two little boys.

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