A Not-So-Silent Night: Restless Legs Syndrome and Pregnancy

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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By Bethany Kotlar, MPH, Teratogen Information Specialist, MotherToBaby Georgia

Anyone who has been pregnant knows it's no walk in the park. From the intense nausea, vomiting, and strange cravings of the first trimester, to all the aches and pains of the third trimester, carrying a baby can feel like a marathon! It's no wonder pregnant women look high and low for any form of relief. Two questions we are asked frequently here at MotherToBaby are-"Can I get a massage?" and "Is acupuncture safe during pregnancy?"

Want a massage? Here's the rub…

At 38 weeks pregnant, my feet hurt, my back hurt, sometimes it felt like even my hair hurt! All I wanted was someone to knead all my aches and pains away. I wanted a massage, so being a MotherToBaby information specialist, I set out to research massage during pregnancy. On the plus side, studies have shown that massage can benefit pregnant women. Massage during pregnancy not only helps with those aches and pains, it has also been shown to decrease stress, help ease symptoms of depression, and increase feelings of wellbeing. Sounds pretty good, right?

So, should you run out and book that massage right this second? Not too fast – there are a couple of things to keep in mind. The safety of massage in the first trimester hasn't been studied well. Because of this, some massage therapists and medical professionals recommend avoiding massage during the first three months of pregnancy. If you do decide to get a massage in the first trimester, it's better to choose a massage that doesn't use heat (like a hot towel or hot stones), especially around the stomach area or lower back. This is because overheating during pregnancy can increase the risk of birth defects. See our fact sheet on hyperthermia for more information: https://mothertobaby.org/fact-sheets/hyperthermia-pregnancy/.

When getting a massage at any point in pregnancy, choose a massage therapist who is trained to work with pregnant women. These therapists will know to avoid pressure in certain areas and will also know which places can get especially sore when you're carrying a baby. It's also best to avoid massages that apply a lot of pressure, like deep tissue massages, since these haven't been well studied. Finally, make sure your therapist knows whether you have any allergies to certain oils and that they are using products that are not known to increase risk during pregnancy.

If you're getting a massage in late pregnancy, the massage therapist may offer to apply pressure to certain points on your body that are thought to bring on labor. Studies have not shown that this actually induces labor, but to be on the safe side it's better to wait until you are at least 39 weeks pregnant to try.

What about acupuncture? A few points…

Acupuncture is a technique in which a trained practitioner inserts very small needles into certain points of the body. Stimulating these points is thought to help with pain, indigestion, infertility, and much more. Acupuncture is usually recommended to pregnant women to help with nausea and vomiting, and to relieve pain.

The available studies do not show an increased risk of birth defects or other pregnancy problems when pregnant women use acupuncture. The most common risk with acupuncture is to feel a little pain when the needles are placed.

While the risk from acupuncture is low, studies also haven't shown that acupuncture necessarily helps with nausea, vomiting, or pain during pregnancy.

If you do decide to get acupuncture during pregnancy, be sure to find a trained practitioner. You may want to find a practitioner with experience working with pregnant women as well. Make sure your practitioner is not re-using needles from other clients as this may increase the risk of certain infections. Like massage, there are a few acupuncture points that are thought to bring on labor. Studies haven't shown that this will bring baby earlier, but it's best to avoid these points unless you are at least 39 weeks pregnant.

As with any treatment, it's best to talk to your healthcare provider before starting. Remember, we're here to help too! If you have any questions about massage, acupuncture, or any other exposure during pregnancy, you can contact an expert at MotherToBaby by calling 866-626-6847, texting 855-999-3525, or by live chat or email at https://mothertobaby.org//a>.



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By Patricia Markland Cole, MPH, MotherToBaby Massachusetts

November is Diabetes Awareness Month and both of my parents in recent years have been diagnosed with Type 2 diabetes (a preventable form of diabetes where the body can no longer control the amount of sugar in the blood), so it's a particularly relatable month for me. Because "the apple does not fall far from the tree" the discussion with my doctor has started to change – Now I am at risk., Therefore, if I become pregnant, a family history of diabetes would put me at increased risk of developing diabetes during pregnancy (called gestational diabetes mellitus, or GDM). I have to think more about living a healthy lifestyle to lower my risk.

Here's what we know about GDM:

- GDM is still a common public health problem and could impact 1 in 10 women. It has been considered a national health priority.
- GDM poses an elevated chance for pregnancy complications such as:
    - Preeclampsia (high blood pressure, swelling and protein in the urine)
    - Preterm birth (birth before 37 weeks of pregnancy)
    - C-sections
    - Development of Type 2 Diabetes (35-70% of women who had GDM will develop Type 2 Diabetes 10 to 15 years after pregnancy; 15-25% will develop it within 1 to 2 years after pregnancy)
    - Renal disease (problems with kidney function)
    - Cardiovascular Disease (problem with the heart and blood flow)
- GDM also poses increased short- and long-term risks for the infant, including:
    - Increasing the chance of complications at birth
    - Difficulty breathing
    - Large in birth size and weight (over 10 pounds)
    - Increased chance of developing Type 2 diabetes
    - Childhood Obesity

There are quite a few risk factors for GDM that cannot be changed such as age, family history of diabetes, and race; those over age 35, those with a family history of diabetes, and non-whites are at higher risk. However, some risk factors are changeable like weight, diet and exercise. The funny or peculiar thing about diabetes and pregnancy is that while there are many reports of how beneficial diet, exercise and maintaining a healthy weight are in reducing general health risks, the studies that specifically examined the effectiveness of reducing the rate of GDM during pregnancy through lifestyle changes versus routine or standard care have been mixed. Sometimes the results showed that it did

reduce the rate of GDM, but other times it did not. Surprising, right? Here are some of those mixed results:

For women who did not have the typical risk factors, researchers studying diet and exercise interventions did not always find a difference in the rate of GDM between comparison groups. It has been stated that the risk of GDM was four to eight times higher in women who were overweight or obese. However, methods to reduce excessive weight gain during pregnancy found no significant change in GDM and increased physical activity had only a small effect. However not all of the results were mixed; some studies actually had strong results for other health benefits. For example, one study showed a 50% reduction in the rate of Type 2 diabetes diagnosis for women who had been previously diagnosed with GDM when lifestyle changes were introduced, while another study found a 95% reduced risk for gestational hypertension and a 90% reduction in preeclampsia for pregnant women with obesity. Why such mixed results? Some fault study design flaws. For example, the studies were different in the methods used to screen and diagnose GDM, the duration and time the study was conducted and the differences among the women that participated, just to name a few.

SO…Can gestational diabetes be prevented?
According to the author of one research article I read: "The answer remains optimistic." Do not let the mixed results give you a reason to not be the healthiest you can before going into pregnancy. There is overwhelming proof that a healthy weight, physical activity and a healthy diet are important to one's overall health and can reduce your chance of developing sickness and disease. The earlier that one starts living a healthy lifestyle, the more there can be an impact in reducing the rates for GDM and its associated risks for childhood obesity and Type 2 diabetes. Surprisingly, many women in the studies were not asked about their diets during pregnancy. It will take a multi-level approach and better study designs to come to some better conclusions. I am sure that once research designs and methods are tweaked, we'll have a much better idea of how GDM can be prevented or reduced because there will be more proof in the pudding … and how sweet that will be!

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By Jennifer Namazy, MD,
Allergist & Immunologist, MotherToBaby Pregnancy Studies Asthma Study Consultant

My first patient of the day was an urgent visit for a woman with shortness of breath. Her name was Heather and she had found out she was pregnant about two months ago. She was thrilled since she had been trying to have a baby for about two years. Once she found out she was pregnant she did three things: she shared the wonderful news with family, she began plans on her new nursery and she stopped all of her asthma medications. She is in her 30s and prior to her pregnancy had been on no medications other than those needed to control the asthma she has had since she was a toddler. These medications include an inhaled corticosteroid, a long acting bronchodilator and rescue medicine in the form of a short acting bronchodilator. She felt that since she was lucky to have become pregnant, she did not want to harm the tiny baby now growing inside her – thus her decision to stop taking her asthma medications. So while she started plans on bringing this baby into the world, the inflammation in her lungs began to go unchecked. At first, she noticed that when she would go to the gym it was harder for her to catch her breath. Then she noticed she was waking up at night feeling like an elephant was sitting on her chest. She attributed the symptoms to being "out of shape" and "anxiety" about the new baby. Finally, while she was having lunch with some friends, someone told a funny story, and her laugh quickly became a wheezy cough. That's when she ended up in my office.

Asthma is one of the most common serious medical problems to complicate pregnancy. We know that asthma can get

better, get worse or stay the same during pregnancy. Uncontrolled asthma may cause problems for both mom and baby. Having flares of asthma during pregnancy can lead to low oxygen levels in mom which translates to low oxygen levels for baby. This may lead to problems with baby's growth.

As we embark on May's National Asthma and Allergy Awareness Month, I thought it'd be a perfect time to go over some critical reminders if you have asthma and find out you're pregnant. Here are some things you should do to keep you and your baby healthy:

Don't stop your asthma medications – Managing asthma during pregnancy is not different than before you were pregnant. The majority of commonly used medications such as those used by Heather that are described above, which include inhaled corticosteroids, are generally safe. If you have questions about the safety of the medications you are taking, call your doctor or contact MotherToBaby.

Keep those appointments – Since asthma can change during pregnancy, it is important to visit with your doctor on a monthly basis to assess your asthma. Waiting until you have symptoms can often be too late. Lung function testing can detect small changes in airway blockage that can then be treated right away.

Join an Asthma and Pregnancy study – Fewer than 10% of all medications have enough information to determine their safety for use in pregnancy. You can help change that by joining a pregnancy study! These studies provide more safety information on commonly used medications during pregnancy, and they do not require you to change your medications. To learn more, visit MotherToBaby's Asthma and Pregnancy Study page.

Don't forget your allergies – While having bad allergies during pregnancy has not been shown to have an effect on the baby, it can affect your sleep and general quality of life. Avoiding those triggers, such as: dust, pet dander, pollens, etc. and using allergy medications when needed, can make for a less stuffy, and more pleasant, pregnancy.



Dr. Jennifer Namazy is an allergist and immunologist, specializing in treating asthma and other respiratory conditions in children, adults and pregnant women. She practices at Scripps Clinic Medical Group in La Jolla, CA. She currently serves as an expert consultant for MotherToBaby's asthma in pregnancy studies.

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During my work at MotherToBaby, I have received calls from pregnant woman who want to know what can they safely take to sleep? Usually they are looking at natural remedies like melatonin for information. For some who have been on medications like Ambien before they were pregnant, they now wonder if they can use it because they are having a hard time catching those Zzzz's. Even though I am not pregnant, I am sure all of us can relate to a night where we wake up and cannot fall back to sleep. We slowly see the time ticking by 10 min, 30 min, 1 hr, 2hrs. It can be so frustrating, especially if you look over at your partner in a state of blissful slumber as you toss back and forth on the bed.

Many women have come to accept a lack of sleep or quality of sleep in pregnancy. In the early part of pregnancy, sleep is interrupted by nausea, vomiting, back pain and an increased need to urinate/pee. In the middle of pregnancy, women are uncomfortable in bed because the baby is moving and kicking, and then there is heartburn, cramps or tingling in the legs.

By the latter part of pregnancy, it is reported that over 97% of pregnant women cannot get a decent night's sleep. They are waking up and staying awake for longer periods of time. I do recall how surprised I was when I sent an email to one of my colleagues at MothertoBaby in her third trimester of pregnancy, at the crack of dawn her time (I was on the East Coast, she was on the West). I was so surprised when she responded to my email and I knew it was way too early for her to be at the office. When I asked, she stated, she was up and couldn't sleep and decided to make the most of her time. While many women and clinicians have come to accept this as just a part of pregnancy, the data is starting to show that we need to pay more attention to how pregnant women are sleeping during pregnancy.

What is Insomnia?
Insomnia is one of 3 common sleep disorders during pregnancy. Insomnia includes difficulty falling asleep or staying asleep, waking up very early in the morning, waking up not feeling rested or a combination of these symptoms. Many pregnant women do not view insomnia as a disorder or a problem in their pregnancy, but when it starts to impact how you function during the day especially when it is accompanied with sleepiness, lack of energy, increased irritability, agitation and stress, it should be considered more carefully especially if insomnia starts to occur more regularly and last longer. Having a good night's rest is important for the well-being of the mother and child.

The concern with persistent insomnia is that it could increase the chance of hypertension and diabetes, which is just as

concerning in people who aren't pregnant too. Another concern is that people who suffer from insomnia have higher levels of substances that increase inflammation in the body (proinflammatory cytokines). These higher levels of cytokines are also seen in women who have experienced preterm birth, postpartum depression and other pregnancy complications. While no association with insomnia and adverse pregnancy effects have been made, researchers have started to take a closer look at the effects of insomnia due to some results. For instance one report observed a higher rate of preterm birth for pregnant women that were sleeping less than 5 hours a night in the latter part of pregnancy. And there were other observations that women who were sleeping less than 5 hours a night in the last month of pregnancy had longer labors and were more likely to have C-sections.

In light of these observations, health care providers are being asked to screen their patients for sleep disorders during pregnancy. The majority of pregnant women consider their insomnia to be mild but in some cases there could be more that is going on like undiagnosed depression or anxiety that can be responsible for the insomnia.

So what's a tired mom-to-be to do?
Expectant mothers can do their part by being more proactive. It is suggested that expectant moms keep a daily sleep diary which would include your bedtime routine, how long it takes you to fall asleep, if you have difficulty falling back to sleep after waking up, how long you are awake at night and if you feel rested. Talk with your health care provider even if they have not brought it up with you. Sometimes changes in behavior can help, called 'sleep hygiene' which involves things like avoiding stimulants (caffeine), not eating late at night, getting exposure to adequate sunlight and using your bed for only sleeping (not watching TV). Other actions that pregnant women can try includes acupuncture, massage, yoga and exercise. In some cases a referral to a sleep specialist may be needed and if all else fails some women may require medications.

Sometimes moms start looking at a natural remedy like melatonin. Melatonin, a hormone that is produced by the pineal gland, is often taken as a supplement to help with sleep. Melatonin is available in two forms, either as a synthetic product or a product that is from animals, usually beef cattle. Most health care professionals recommend avoiding the melatonin from animals due to a very small chance of contamination or viral transmission. Also, melatonin is a supplement and not a medication. That means it's not regulated by the Food and Drug Administration. Some studies have suggested avoiding use of melatonin during pregnancy due to a concern that the exposure might interfere with mom's or baby's sleep cycles.

Others want to know about prescription medications, like Ambien (zolpidem). Ambien has not been shown to increase the risk for birth defects when used in the first trimester of pregnancy. Since Ambien is a sedative hypnotic type of medicine, and has some features similar to benzodiazepines, it is thought that when used near the time of delivery, there may be temporary withdrawal-like symptoms in the baby.

Overall it is important to develop a plan with your health care provider and if a medication is needed, you can call MothertoBaby and we can provide information on medications suggested for use in pregnancy. Remember do not take sleeping lightly during your pregnancy; as one commentator put it, you are "sleeping for two." You, your baby and even your partner will appreciate your effort.



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