



## Recurrent Pregnancy Loss: Testing and Treatment Offer Hope

Miscarriage is a devastating experience that can be both physically and emotionally draining. It can take time, support and professional help to heal the mind and body after a pregnancy loss, especially when you've been trying to conceive for months or maybe even years. Many women have faced the devastation of one or more miscarriages, according to the American Society for Reproductive Medicine (ASRM), and 25% of all clinically recognized pregnancies result in miscarriage. While many women will experience a miscarriage, most will go on to have a normal pregnancy and deliver a healthy baby following a pregnancy loss. Some women (approximately 1%) experience the loss of multiple (three or more) pregnancies, which warrants a thorough medical evaluation for recurrent pregnancy loss.

Recurrent pregnancy loss (RPL) is typically defined as three or more miscarriages prior to 20 weeks gestation. These losses can be caused by hormonal imbalances, chromosomal abnormalities, maternal anatomical abnormalities, infections, or idiopathic or 'unknown' causes. Pinpointing a cause can help you and your doctor identify the most effective treatment to assist you in achieving and maintaining a healthy pregnancy. It is important to point out that even if an exact cause of RPL is not found, the odds are still in your favor. Over 60% of women who are diagnosed with idiopathic RPL will go on to have a healthy baby. According to the NIH, even if you have suffered 3 or more miscarriages, you are statistically more likely to carry your next pregnancy to term than to suffer another loss. Below, we discuss a few of the causes of RPL, along with the testing and treatments available to help increase your chances for maintaining a healthy pregnancy.

**Endocrine or hormonal causes** of RPL can include advanced maternal age (or a high FSH level), hyper or hypothyroidism, polycystic



ovarian syndrome (PCOS) or luteal phase defects. Advanced maternal age (>35 years) and a high blood FSH (follicle-stimulating hormone) level are usually seen together. The higher the level of FSH in the blood (tested on day 3 of the menstrual cycle), the lower the quantity and quality of eggs in the ovaries. This decreased quality can increase the risk for chromosomal abnormalities, which can cause abnormalities in the developing embryo, leading to miscarriage. Fertility treatment can help in most cases of advanced maternal age and increased FSH levels because it decreases the time spent trying to conceive, and fertility drugs increase the amount of follicles (eggs) recruited during a cycle, giving better odds that a good-quality egg will be released for conception.

Thyroid disease of any kind can have a negative impact on pregnancy, as the thyroid's purpose is to keep balance in the metabolic and hormonal processes in the body. Thyroid imbalances are easy to detect via lab work- and if abnormalities are detected and treated, it can improve the outcome of subsequent pregnancies.

PCOS (Polycystic ovarian syndrome) is a disorder of metabolic and endocrine systems in the body. In PCOS, an excess of male hormones is typically seen along with an increase in insulin in the blood and multiple

small cysts on the ovaries. Due to the hormonal disruptions seen in PCOS, women with PCOS may experience an increased risk of miscarriage. PCOS can be managed with lifestyle changes and/or medication to greatly decrease negative symptoms and increase healthy pregnancy outcomes. Weight loss and maintaining a low-carbohydrate diet, along with moderate exercise can help control PCOS. Metformin or other blood sugar-regulating drugs can help keep insulin levels in a normal range to further regulate the body and promote healthier obstetrical outcomes.

A luteal phase defect can coincide with another disorder, such as PCOS or thyroid disease. Luteal phase defects are caused by inadequate secretion of the hormone progesterone during the luteal phase of the menstrual cycle. The luteal phase of the cycle begins after ovulation and lasts right up until menstruation. This critical point in the cycle is when an embryo, if present, attempts to implant into the lining of the uterus. Progesterone is responsible for causing the lining of the uterus (the endometrium) to thicken in preparation for pregnancy; if this thickening does not occur, the lining of the uterus may not be adequate to support the proper implantation of an embryo and sustain a healthy pregnancy. If you suspect you may have a luteal phase defect or PCOS, consulting with a reproductive endocrinologist should be considered. Progesterone supplementation in the luteal phase can be prescribed to increase endometrial thickening and to prime the uterus for pregnancy. Ovulation induction or IVF can expedite the conception process, and early pregnancy monitoring can be offered until you are tapered off of progesterone supplementation and referred back to your OB/GYN. Getting the proper testing to identify an endocrine problem as the culprit in RPL is the first step to finding a cause, fixing or treating the problem and helping you go on to achieve a healthy pregnancy.

**Anatomical abnormalities** of the uterus can cause pregnancy loss by inhibiting the growth of the developing fetus or disrupting the delicate implantation process of the embryo and

placenta. Having an abnormally shaped uterus, uterine fibroid, polyp, adhesions (scar tissue), or septation can be identified by minimally invasive imaging procedures, like a hysterosalpingogram, sonohysterogram or hysteroscopy. If an anatomical abnormality is found, surgery may be able to correct the abnormality and can greatly improve future pregnancy outcomes.

**Inherited chromosomal abnormalities** are not the same as the random chromosomal abnormalities that can occur during cell division and cause early miscarriages. Inherited chromosomal abnormalities are not common and account for less than 5% of couples facing RPL. Performing a blood karyotype (chromosome analysis) on both partners can diagnose an inherited genetic cause to RPL. A parent can carry a genetic abnormality in their DNA and be completely asymptomatic and unaffected, but a developing embryo that receives inadequate genetic material due to parental abnormalities has a high likelihood of miscarriage. According to the American Society of Reproductive Medicine, balanced translocations (when part of one chromosome is attached to another chromosome) are the most common inherited chromosomal abnormality. Patients found to carry an inherited chromosomal abnormality should seek genetic counseling, and may benefit from IVF with pre-implantation genetic diagnosis (PGD), in which an embryo can be tested for genetic disorders prior to being transferred into the uterus. IVF/PGD technology has brought hope to one of the most difficult to treat causes of RPL.

**Chronic inflammation** caused by a low grade infection in the uterus (endometritis) can increase the chances for miscarriage and infertility. The cervix is designed to keep bacteria out of the uterus, but during miscarriage the cervix may dilate when expelling the tissue from the uterus. This dilation, or a surgical dilation for any intra-uterine procedure (including D&C procedures following a miscar-

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riage) could potentially allow bacteria into the uterus. An endometrial biopsy can diagnose a condition like endometritis by taking a small tissue sample from the inside of the uterus. The tissue sample is examined under a microscope to identify signs of infection and inflammation, and antibiotics can be prescribed if an infection is found.

**Thrombophilia (hypercoagulability) disorders** can affect the way your blood clots and can interrupt blood flow during pregnancy. According to the March of Dimes, 15% of people in the United States have an inherited thrombophilia. While some women have a history of abnormal blood clots, those without a history or symptoms will not know, without proper testing, that they have this disorder that can lead to RPL. Because the embryo and placenta need adequate blood supply upon implantation in the uterus, tiny blood clots that impede blood flow can be devastating and cause loss of pregnancy at any stage. A blood test, known as the 'thrombophilia panel' can detect many of the common thrombophilia disorders. Treatment with low-dose aspirin and/or heparin can improve blood flow and ward off blood clots which can increase positive pregnancy outcomes in women with this disorder.

Most lifestyle factors do not cause RPL, but optimizing your health can help you physically and emotionally, as you work with your doctor to overcome RPL. Cigarette smoke must be avoided-it can damage the quality of your eggs, increase blood pressure and interfere with blood flow to the uterus, increasing the risk for miscarriage. Alcohol intake is obviously off-limits during pregnancy, but excessive alcohol intake even before you know you are pregnant can increase the risk of miscarriage. Recent studies have shown an association between caffeine intake and miscarriage, so try to eliminate it (or strictly limit it) from your diet. Prenatal vitamins containing folic acid should be taken daily prior to conception and during pregnancy to reduce the risk of neural tube and other birth defects, and to ensure you do not develop iron-deficiency anemia. A healthy diet and moderate exercise

can boost physical and emotional health, and promote good blood flow in the body. It is important to know that pregnancy loss is not a result of something you did or did not do. Unfortunately, so many factors are out of your (and even your doctor's!) control when it comes to conception and pregnancy, so learning what we can control in regards to our own health can be empowering and helpful long-term.

While RPL is a disease separate from infertility, a reproductive endocrinology and infertility specialist, like the physicians at Fertility Solutions™, can offer great hope to patients through the use of advanced technology to test and treat the many conditions associated with RPL. Fertility Solutions™ physicians have vast experience testing and treating RPL conditions including, but not limited to, genetic abnormalities that require IVF with PGD, uterine abnormalities that require surgical intervention, and hormonal disorders, such as PCOS or luteal phase defects. The good news is that even with the diagnosis of RPL most patients will go on to achieve and maintain a healthy pregnancy.

Miscarriage is an experience that can leave you feeling sad, helpless, angry, guilty and depressed, and can affect every aspect of your life. It is important to take care of yourself and reach out for support when you need it most. Support groups and counseling are a good way to help channel your emotions and find the best coping strategies as you heal. While you will never forget your losses, always have hope: advances in medicine have created many new options for the testing and treatment of recurrent pregnancy loss and have helped millions of women overcome the medical obstacles that once stood in the way of their dreams. 

*October is pregnancy and infant loss awareness month. Miscarriage is devastating. Join a support group to talk to others who understand first-hand what you are going through.*

## Fertility Solutions Welcomes Dr. Vasiliki Moragianni, M.D.

Fertility Solutions was founded by a team of award-winning female physicians with decades of experience. Their goal was to create a center that would provide a uniquely personal approach to fertility treatment. By providing affordable, compassionate care and utilizing one of the nation's most advanced IVF laboratories, patients can see and feel the difference at Fertility Solutions. Dr. Moragianni, the newest member of the Fertility Solutions family, shares in that vision. She states *"I am personally available to all of my patients at all times. I carefully listen to their needs and wishes, design individualized treatment plans, and help them navigate through the difficult pathway to parenthood."*



For more information or to read Dr. Moragianni's full bio, visit [www.fertilitiesolutionsne.com](http://www.fertilitiesolutionsne.com)

Dr. Moragianni has published numerous peer-reviewed articles, has written 8 book chapters and continues to be involved in several clinical and translational research projects and presentations locally and around the world. Dr. Moragianni is a reviewer for several journals, including Fertility and Sterility and Obstetrics and Gynecology. Her significant contribution to the fields of Obstetrics & Gynecology and Reproductive Endocrinology & Infertility is illustrated by the many prestigious awards she has received.

Dr. Moragianni is accepting new patients at the Providence, RI and Dedham, MA locations. To schedule a consultation, call 877-813-0159.

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