RMA of Connecticut
Reproductive Medicine Associates

Fertility Testing

The first step to building your family.

rmact.com

With the correct diagnosis, your chances of becoming pregnant increase significantly.

Cause(s) of infertility can be diagnosed through an extensive and comprehensive infertility workup on both partners, (if there is a partner involved).

FOR WOMEN: Tests focus on whether or not she is ovulating and any undiagnosed abnormalities in her fallopian tubes or uterus such as polyps, fibroids, or scarring. A crucial part of the diagnosis process for women is a thorough physical exam, including a transvaginal ultrasound and blood work. The physical exam and ultrasound can check for tubal and pelvic disease as well as cervical issues. Other diagnostic tests include a uterine evaluation which could be a hysterosalpingogram (HSG), or a saline infusion ultrasound also known as an SHG, cervical cultures, and infectious disease blood tests.

FOR MEN: A semen analysis and blood work can determine any impediments to male fertility, including low or abnormal sperm count.

With the correct diagnosis, you are on the path to building your family.

Chances are you may have already seen a physician about your fertility issues, and you may have had some preliminary lab work done. Bring those results and your complete medical records to your first appointment with us, so one of our fertility specialists can review them and discuss your history with you. Together, you will create a fertility testing plan.

At RMA of Connecticut, we're dedicated to helping you achieve your dreams of pregnancy and parenthood.

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Cycle Day 3 Testing

A woman's menstrual cycle is measured from the first day of her period (blood flow, not spotting), so "Cycle Day 3" is the third day of her period. **Cycle Day 3** blood work measures three important levels:

FSH

Follicle Stimulating Hormone

Secreted by the pituitary gland during the first half of the cycle, FSH stimulates the production of eggs. Certain levels can indicate poor ovarian reserve, polycystic ovarian syndrome, ovarian cysts, irregular vaginal bleeding, irregular menstruation, and infertility.

LH

Luteinizing Hormone

Also secreted by the pituitary gland, LH levels rise at mid-cycle; within 24 to 36 hours of the rise, ovulation occurs. Higher-than-normal levels of LH can indicate several disorders, including ovarian failure and polycystic ovarian disease.

E2

Estradiol

Estradiol is the most important form of estrogen. It is primarily made in and released from the ovaries, adrenal cortex, and the placenta, and it is responsible for the growth of the breasts, outer genitals, uterus, fallopian tubes, and vagina.

Together, these levels give a fertility specialist a snapshot of how your body behaves at the start of a cycle.

01

Cycle Day 21 Testing

On **Day 21 of your cycle**, your fertility specialist may want to check your progesterone and estradiol (E2) levels and the thickness of your endometrium (uterine lining).

Why do we test on the 21st day?

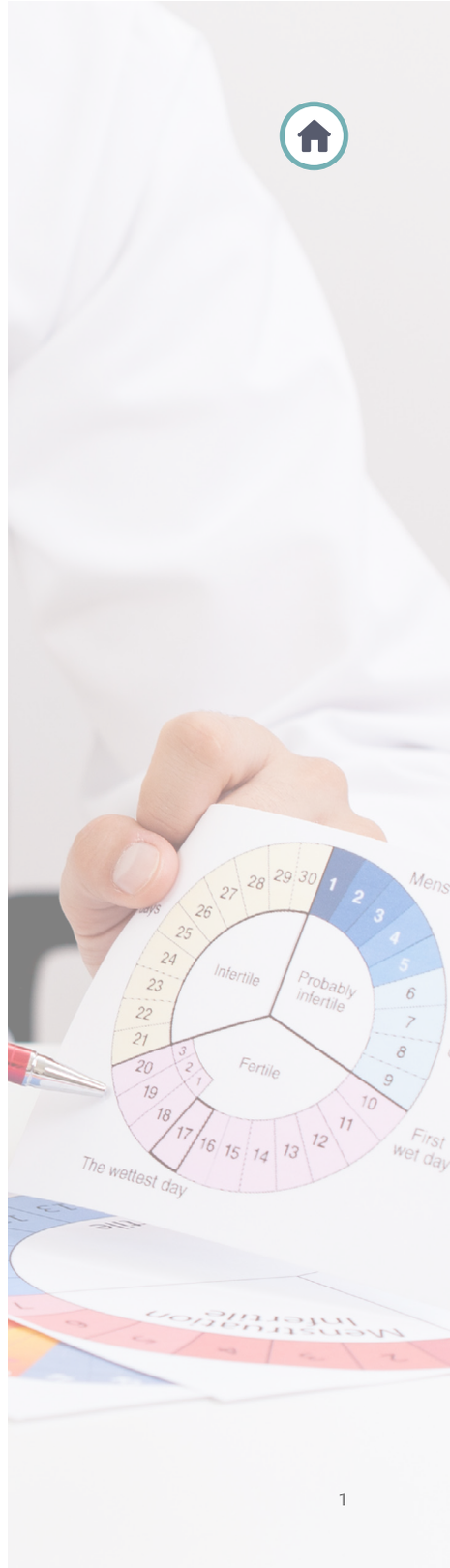
Progesterone spikes just after ovulation, so timing is crucial with this test. For all menstrual cycles, the time between ovulation and the next period is about two weeks. Therefore, progesterone is measured about seven days before the expected period, when it should still be elevated. For an average cycle of 28 days, that would be Day 21. However, if a woman's cycle is longer or shorter than 28 days, the testing day will be adjusted accordingly. For example, a woman with a 35-day cycle would be tested for progesterone on Day 28.

What are we testing?

Progesterone – certain levels confirm that ovulation has occurred. A low Day 21 progesterone level suggests the cycle was anovulatory (no egg was produced). If you are not ovulating, there are steps that can be taken to help release the eggs. Your fertility specialist will discuss these options with you.

Serial estradiol (E2) –often measured for monitoring superovulation in intrauterine insemination (IUI) and in-vitro fertilization (IVF) treatment cycles.

Uterine lining – an ultrasound will be administered to determine if the lining is thick enough for a fertilized egg to implant.



02 Vaginal Tests

SHG | Sonohysterogram
This saline infusion sonogram is a non-invasive procedure and only takes a few minutes. It begins like a transvaginal ultrasound but includes a slow flow of saline into the uterus through a catheter. SHG is used to evaluate uterine abnormalities (polyps, fibroids, adhesions, scar tissue, etc.) as well as other disorders.

HSG | Hysterosalpingogram
The HSG test is an X-ray procedure used to evaluate the status of a woman's fallopian tubes (the two structures that carry eggs from the ovaries to the uterus), examine the shape and size of the cavity, and identify uterine malformations, adhesions, polyps, fibroids, or any other fertility inhibitors. The entire procedure lasts 5-10 minutes and consists of a small catheter feeding contrast dye into the uterine cavity while an x-ray is administered over the abdomen.

Both the SHG and the HSG are performed at the clinic following the end of menstruation and before ovulation occurs, which allows for optimum viewing of the uterine walls.

Transvaginal Ultrasound
A transvaginal (meaning across or through the vagina) ultrasound uses sound waves to create images of the vagina, cervix, uterus, and ovaries. It is also used to diagnose pelvic pain, menstrual and gynecological problems, abnormal bleeding, and certain types of infertility.

03

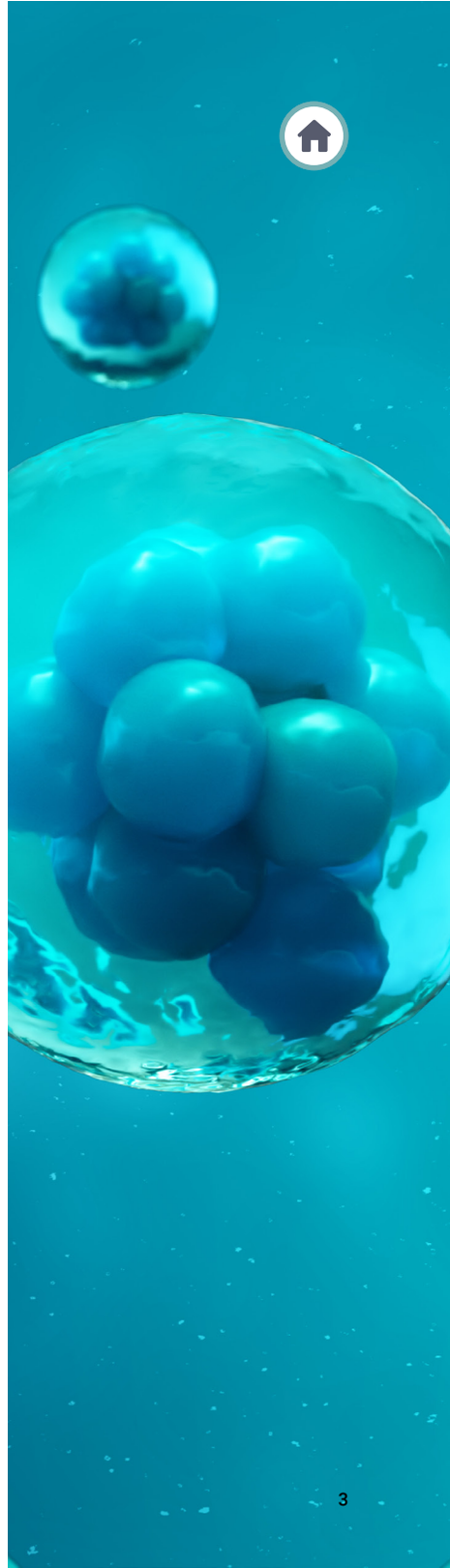
Ovarian Reserve Testing

Ovarian reserve is a concept that correlates the number and quality of eggs that are available in the ovaries and projects your fertility potential. Basically, it measures “how much gas is left in the tank?” We can use multiple methods to asses this.

Females are born with a finite number of eggs, which decreases over time. When a girl reaches puberty, her eggs are released on a monthly basis; by the time a woman reaches menopause, her egg supply is exhausted.

Method 1: Anti-Mullerian Hormone (AMH)
Anti-Müllerian hormone (AMH) is a hormone secreted by the small follicles in a woman’s ovaries. It has emerged as a new and better way to measure ovarian reserve that is becoming more commonly used.

The Perks of the AMH Test
AMH has become as an important tool that has very specific advantages over the other tests: it can be measured at any point of the menstrual cycle (not just on day three of your period, like FSH) and does not require a sonogram (like basal antral follicle count). A woman can also have her AMH tested while still on birth control pills.



03

Ovarian Reserve Testing

Method 2: Basal Antral Follicle Count

The Basal Antral Follicle Count test is a transvaginal ultrasound study that counts the number of antral (resting) follicles on Cycle Days 2, 3, or 5. If you're going through IVF and have a higher the number of follicles (eight or more), your fertility specialist will expect to be able to retrieve a good number of eggs and the pregnancy rates are higher than average. If the count seems low, your fertility specialist might cancel your cycle and try for better results next month.

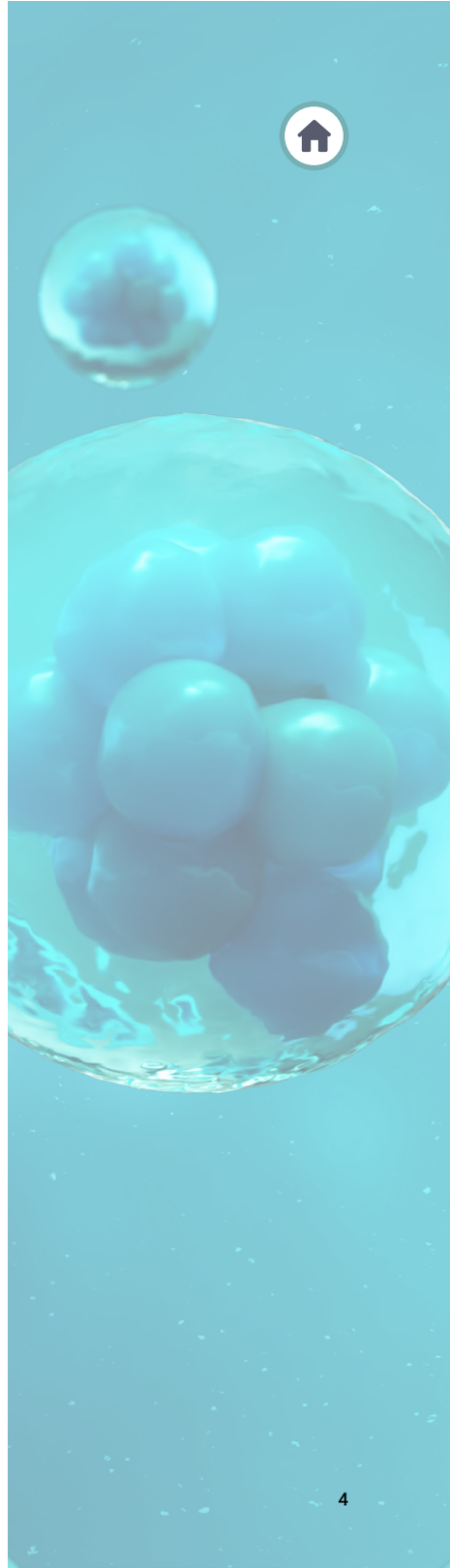
The Basal Antral Follicle Count, along with the woman's age, and Cycle Day 3 hormone levels, are used as indicators for estimating ovarian reserve.

Method 2: CCCT

The Clomiphene Citrate Challenge Test (CCCT) is used to determine a woman's fertility potential and her response to fertility stimulation. A CCCT is administered over several days:

- **Cycle Day 1**: patients are asked to call the office and schedule bloodwork.
- **Cycle Day 3**: they are given a blood test to measure the levels of FSH, LH and estradiol.
- **Cycle Day 5**: they begin a 5-day course of clomiphene citrate.
- **Cycle Day 10**: they return to the clinic for another FSH/LH/estradiol blood test.

Those test results can show a positive response to the drug clomiphene citrate and therefore, a promising outlook for IVF. They can also show a negative response, indicating a lower ovarian reserve and a poor chance at IVF success without a donor egg.



04 Semen Analysis

For men, fertility hinges on having healthy sperm, so a semen analysis is the most important test for the male. It is an inexpensive test that is often covered by insurance and should be done early in any infertility evaluation.

The analysis requires abstinence for two to three days. The specimen is collected directly into a clean container.

What is tested?

- Concentration (quantity)
- Motility (movement)
- Total Mobile Sperm (number of moving sperm in the ejaculate)
- Morphology (shape and structure)
- Color
- Any presence of infections or blood

When trying to conceive, men are advised to avoid smoking, excessive drinking and illegal drugs, maintain a healthy weight, and stay out of sources of excessive heat (like hot tubs and saunas) that can reduce sperm count.

05

Genetic Testing

It is estimated that genetics are a contributing factor in up to 10 percent of couples who experience infertility or recurrent pregnancy loss, so it stands to reason that genetic testing has the potential to help many of those couples in their quest to have a family.

Genetic testing examines DNA, or the "chemical database" that carries instructions for the body's functions and can reveal gene changes that may cause illness or disease, including infertility. Since both men and women can have fertility issues, they can all benefit from genetic testing.

How is Genetic Testing helpful?

- Identifying a genetic cause for your infertility can help you make the right decision on how to proceed by choosing the treatments that are most likely to help.

- Testing can reveal if either you, your partner, or perhaps both of you, carry a copy of an altered gene that would put a child at risk of developing a disorder, such as sickle cell anemia, Tay-Sachs disease, or cystic fibrosis.

06

Embryo Screening

Embryo screening is an advanced assisted reproductive technology (ART) that consists of 3 steps:

1. Harvesting an embryo (through the IVF process)
2. Taking a biopsy of the embryo
3. And completing a genetic analysis of the biopsy.

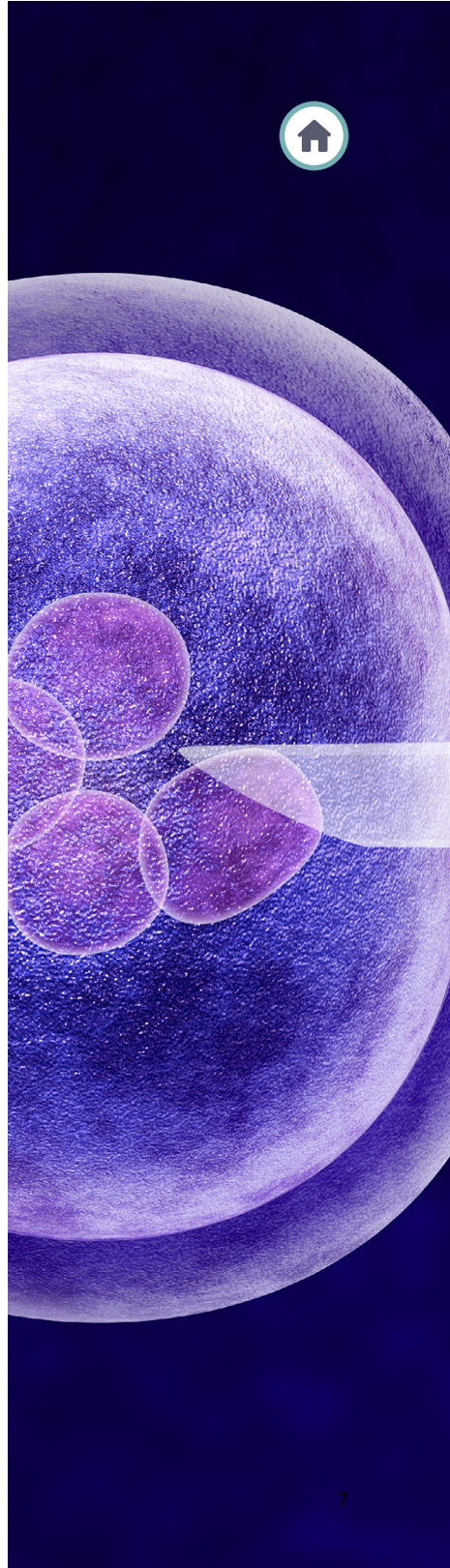
This genetic screening can identify numerous characteristics, particularly genetically inherited diseases and chromosomal imperfections. Embryo screening prevents implantation of embryos that carry chromosomal abnormalities which would likely cause a pregnancy to miscarry, thus improving the chance for a successful pregnancy.

3 Main Preimplantation Embryo Tests

PGT-A – Preimplantation Genetic Testing for Aneuploidy
Are there 23 perfect pairs of chromosomes? This test makes sure that the embryo has 46 chromosomes, no more, no less, no mutations.

PGT-M – Preimplantation Genetic Testing for Monogenic Disorders
Are there any single gene disorders? This test helps you reduce the risk of having a child with an inherited disorder caused by a single gene mutation, like cystic fibrosis.

PGT-SR – Preimplantation Genetic Testing for Structural Rearrangements
Are there any abnormalities in the chromosome pair structures? This test looks for extra or missing genetic material and unbalanced pairs due to inversions or translocations of genes, which will typically result in pregnancy loss.



07

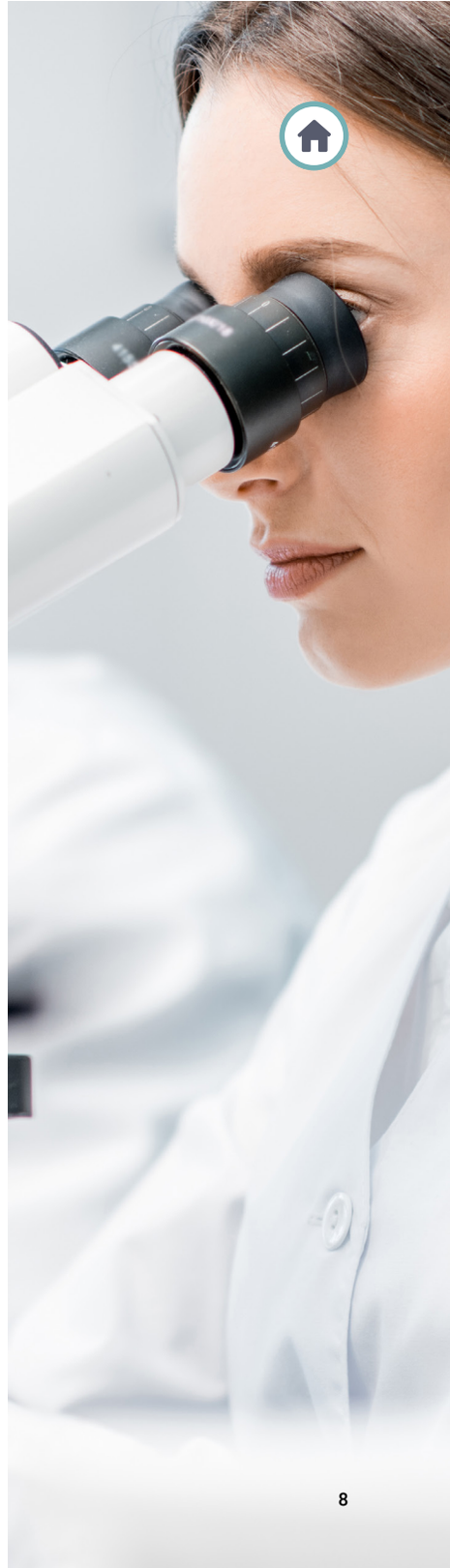
ERA Testing

In-vitro fertilization (IVF) with embryo transfer, is the single most successful fertility treatment for infertility across all age groups and diagnoses.

But how do we ensure the embryo transfer works?

The ERA, or Endometrial Receptivity Analysis, is a test that evaluates the expression of genes within the endometrial lining, or the special tissue within the uterus where the embryo burrows and grows. This determines whether or not it is properly developed to accept an embryo. This involves a small biopsy and using the latest and greatest technology to analyze the gene expression.

The results will alert your reproductive endocrinologist of the optimal time to place an embryo into the uterus to promote a successful implantation and pregnancy.



07

ERA Testing

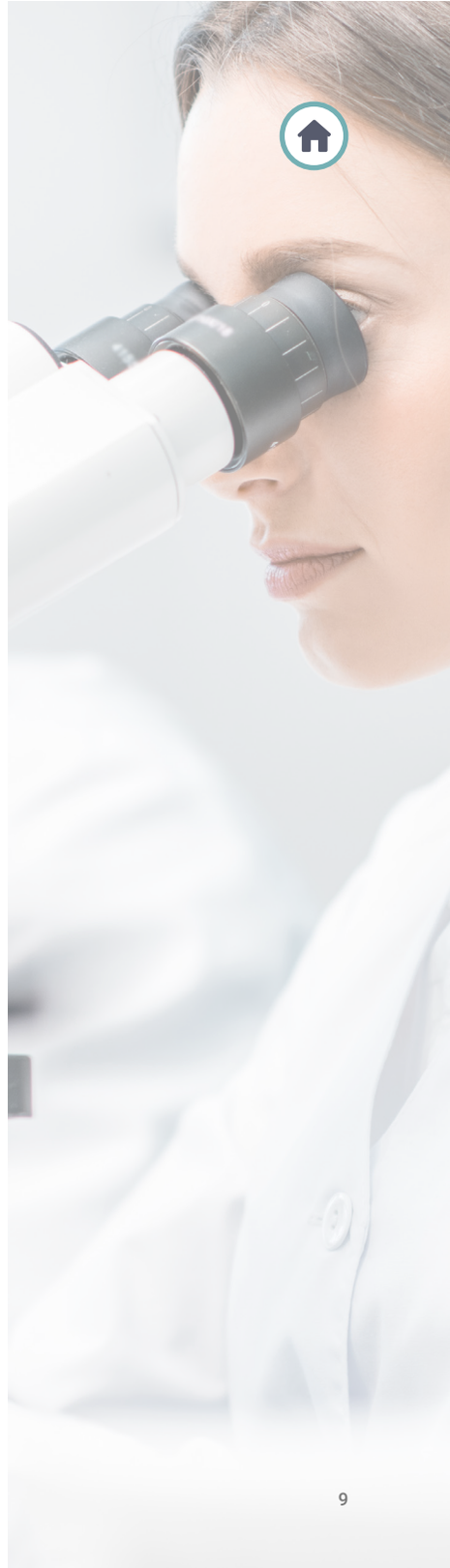
Why is this necessary?
Because not every woman has the same implantation window.

80%
of Women

Normal Window of Implantation
Follows Typical Embryo Transfer Timing

20%
of Women

Unique Window of Implantation
Adjusted Protocol for New Transfer Time



Are you ready to start your fertility testing?

Contact our patient liaison today to set up your consultation.

Call us at
203-956-2265

Visit one of our four Connecticut locations

Fill out this form