



TESTS TO OPTIMIZE IMPLANTATION

Please note, this is not medical advice — just recommendations from a fertility coach who is also on the journey.

Here is an overview of various tests that can help identify potential causes of unsuccessful implantation. I hope it's not too overwhelming! I am super happy to walk with you through which tests and procedures are suggested based on your unique case, who can administer them, and what treatment strategies are available.

Tests For A Person With A Uterus

Uterine Environment and Anatomy:

- **Endometrial Biopsy:** A small sample of the uterine lining (endometrium) is taken and examined under a microscope. Assesses endometrial receptivity, inflammation, and other abnormalities.
 - Ask for a biopsy with CD138 stain to check for plasma cells and endometritis.
 - Ask for a CD56 staining to test for Natural Killer cells.
 - Ask for BCL6 staining, or do the Receptiva, which can be helpful to diagnose/test for endometriosis, although there are false positives, so the only way you can truly test for Endometriosis is through a Laparoscopy.
 - Emma/Alice biopsy can also be helpful, although ALICE only tests for specific bacteria linked to chronic endometritis and EMMA analyzes overall uterine microbiome, but may not detect every pathogen or subtle immune imbalance and thus treatment is not always effective.
 - The ERA is another test, that for some people with RIF (Recurrent Implantation Failure) has been helpful, although some doctors do not use it.
- **Hysterosalpingogram (HSG):** X-ray to assess the shape of the uterus and check if the fallopian tubes are open. Detects abnormalities like polyps, fibroids, or blockages.
- **Hysteroscopy:** Visual examination of the uterine cavity using a thin, lighted scope. Allows for direct visualization of anything abnormal
- **Saline Infusion Sonography (SIS):** Ultrasound of the uterus after injecting saline solution. This improves visualization of the uterine cavity and any abnormalities.

Blood Tests

- **Antinuclear antibodies (ANA):**
A positive ANA can suggest underlying immune activation, which in some cases may impact implantation and early pregnancy.
- **Antiphospholipid antibodies (APA):**
Also test lupus anticoagulant, anticardiolipin antibodies, β 2-glycoprotein I antibodies because they all can affect implantation.



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Blood Tests Cont.

- **Vitamin B 6:** Adequate B6 supports overall hormonal balance and may reduce subtle inflammatory signals in the uterus that could interfere with implantation.
- **Vitamin B 12:** Low B12 can increase homocysteine levels, which may impair blood flow to the endometrium and disrupt implantation signaling pathways.
- **CBC/CMP:** Provides a general assessment of overall health, anemia, liver and kidney function, all of which can impact implantation and early pregnancy support.
- **CoQ10:** Supports mitochondrial function and may help improve egg quality and cellular energy needed for embryo development and the endometrium.
- **CRP (C-reactive protein):** A marker of inflammation; elevated levels may interfere with implantation and overall fertility.
- **Cytokine profiling:** Th1/Th2 balance, TNF-alpha, IL-6, IFN-gamma measures key immune system signaling proteins to assess whether inflammation or immune imbalance could be affecting implantation.
- **Factor V Leiden and Prothrombin mutation:** Genetic tests to detect a blood clotting disorder. Normally for losses, but if you had had multiple unsuccessful implantations, why not test it. Genetic tests to detect blood clotting disorders that can impair uterine and placental blood flow and are strongly associated with pregnancy loss.
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- **Fasting Glucose:** Shows how well your body manages blood sugar, and imbalances can affect ovulation, egg quality, and implantation.
- **Fasting Insulin:** Measures how your body responds to sugar, and elevated levels (insulin resistance) can disrupt hormones, reduce egg quality, and impair implantation.
- **Ferritin:** Optimal ferritin levels support oxygen delivery and healthy endometrial function, which can impact implantation and early pregnancy.



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Blood Tests Cont.

- **Folate (B9):** Low folate can contribute to abnormal cell signaling, which may make implantation less likely.
- **General CBC/CMP/Lipids (Lipid Panel):** Healthy cholesterol levels support hormone production and overall reproductive health.
- **Hemoglobin A1c (HgbA1C):** Reflects your average blood sugar levels, and elevated levels are linked to hormonal imbalance, inflammation, and reduced implantation success.
- **Homocysteine:** Elevated homocysteine can impact blood flow and inflammation, potentially affecting implantation and early placental development.
- **Hormone levels:** FSH, LH, estradiol, progesterone, AMH, DHEA to evaluate ovarian reserve and hormonal balance, which can impact implantation.
- **Iron and Total Iron Binding Capacity:** Iron status affects energy, hormone production, and uterine lining health—all important for conception and implantation.
- **Leptin:** Leptin is a crucial hormone for implantation and early pregnancy, with optimal levels required for successful embryo-maternal communication and placental development.
- **MTHFR:** Variants may affect folate metabolism, which can influence egg quality, implantation, and early pregnancy development.
- **Natural killer (NK) cell assay:** Measures the activity of NK cells in the blood, which may be associated with implantation failure in some cases.
- **Prolactin:** Elevated prolactin levels can interfere with ovulation and implantation.
- **Sed Rate by Modified Westergren (ESR):** Reflects general inflammation in the body, which can impact hormonal balance, implantation, and overall reproductive health.
- **Thyroid function:** TSH (Pregnancy), Free T4, Reverse T3, T3, Thyroid peroxidase antibodies (TPO), Thyroglobulin antibodies (TgAb) to check thyroid function. Thyroid hormones directly influence endometrial receptivity and embryo implantation.
- **Vitamin D:** Supports hormone balance and healthy endometrial receptivity, both important for implantation.
- **Zinc Plasma:** Plays a role in hormone regulation and cell division, both essential for ovulation, fertilization, and implantation.



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Other Tests/Procedures:

- **Laparoscopy:** Surgical procedure that allows doctors to look inside the pelvis to identify and remove issues like endometriosis, adenomyomas, scar tissue, ovarian cysts/endometriomas, uterine fibroids etc, which can affect fertility and implantation. Not necessary for everyone.
- **Uterine Microbiome Testing:** More thorough than checking for endometritis, because it can tell you exactly what bacteria/infections are present. Emma/Alice test can be helpful, but testing from Fertilysis is the absolute most comprehensive.
- **Vaginal Microbiome Testing:** Evaluates the presence of infections, bacteria, or yeast in the vagina that can affect the uterine environment and implantation success. Examples are BV, Ureaplasma etc. Can order this test at home using companies [MicroGenDX](#) [Evvy](#) or [Fertilysis](#).

Tests for the Person Providing Sperm (If Possible)

- **Semen Analysis:** Evaluates sperm count, motility, morphology (shape), and other factors.
- **Sperm culture:** Tests for bacterial or infectious imbalances in semen, which can affect sperm quality, motility, and overall fertility. Can be tested by multiple companies at home as well.
- **Sperm DNA Fragmentation:** Measures the amount of DNA damage in sperm. High levels of fragmentation can affect fertilization and implantation.

Tests for Both People (If Applicable)

- **Genetic Carrier Screening:** Detecting whether you and your partner carry recessive or X-linked genetic conditions. Can look at 200–500+ conditions depending on the panel.
- **Karyotype:** A genetic test that examines the number and structure of chromosomes in you and/or your partner (donor). It can identify genetic abnormalities that might contribute to recurrent pregnancy loss, implantation issues, or fertility challenges.

Tests for Embryo (If doing IVF)

- **Preimplantation Genetic Testing for Aneuploidy (PGT-A):** Screens embryos for chromosomal abnormalities before transfer. Not 100% reliable, and not available or best choice for everyone.
- **Preimplantation Genetic Testing for Monogenic/Single Gene Defects (PGT-M):** Tests embryos for specific genetic disorders if the parents are carriers.

Additional Considerations

It's important to note that testing is never "one size fits all." The specific tests and procedures recommended depend on your unique medical history, lifestyle factors, and previous testing and treatment outcomes.

My goal as a Fertility Coach and Educator is to help you identify potential issues and advocate for a tailored approach that improves your chances of a successful pregnancy. While I provide the suggestions and research to empower your journey, a thorough consultation with your medical team—including your RE, endocrinologist, naturopathic doctor, reproductive immunologist, etc.—is crucial to finalizing your clinical plan.

I am here to help you prep for those appointments, make sense of the results, and assist with next steps. Please reach out with any questions!



Hi, I'm Mariah Tuffy Joseph, MSW — a Fertility Coach and Educator. I offer personalized support, guidance, education, tools and resources to help you navigate the practical, physical, emotional and relational challenges of fertility, pregnancy loss, and sexual health. I specialize in helping clients uncover and address root causes of fertility challenges and recurrent pregnancy loss, as well as providing guidance for natural and IVF conception, especially for women over 35.

I lead One on One and Couples Sessions. I also hold Online and In Person Support Groups for women (South Florida, USA).

My goal is to help you go from feeling shame, confused, overwhelmed and alone, to empowered, clarity, calm and connection on your journey.

I am on this intense life changing fertility journey with you—after 3 years, 3 losses, multiple fertility programs, and 3+ IVF cycles, we still don't have our baby...



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