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Putting All Our Eggs in One Basket

Is In Vitro Fertilization the Only Way Couples with Infertility Can Conceive?

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The American Association for Reproductive Medicine (ASRM), the primary medical society in the United States supporting the practice of in vitro fertilization (IVF), has become increasingly active politically through its Center for Policy and Leadership (CPL).[1] It presents itself as the factual authority on assisted reproductive technology even though it is also the primary financial beneficiary of the pro-IVF position. Restrictive policy makes the practice of IVF more difficult and potentially less lucrative for those who work in this field. Therefore, when lawmakers see very carefully crafted messages from the CPL, it would be prudent for them to consider potential bias cleverly disguised as patient advocacy.

Infertility is a chronic condition caused by multiple underlying anatomic and/or health-related issues.[2] The infertile couple experiences significant psychological pain and suffering due to the loss of what many take for granted: the ability to conceive and give birth to a child. Diagnostic procedures, needle sticks, and technical treatments for infertility add more stress and can harm the couple's relationship. Assisted reproductive technology (ART), a group of related, powerful procedures for conceiving that includes IVF and that handles either eggs or embryos outside of the woman's body,[3] treats infertility as an acute condition. Each procedure results in one attempt for pregnancy, with the success highly dependent upon the age of the woman. It is not therapeutic for the parents or the subsequent children, especially during the embryonic stage, and it does not cure the underlying issues that lead to infertility. While IVF is a significant technical development that has resulted in successful births for millions, it has suppressed investigation into ways to correct underlying diseases. A definitive diagnosis is not even necessary for IVF because the treatment remains similar regardless of the cause. This ambiguity about diagnosis often forces the patient to move quickly to IVF rather than doing the tedious work that getting a precise diagnosis would require. And since IVF doctors are paid handsomely to use their high-tech laboratories and highly trained embryologists, they may be hesitant to convince the patient otherwise. Today, many ART procedures are conducted for reasons that have nothing to do with infertility, such as egg and embryo banking, screening for genetic traits, and nontraditional family procreation.[4]

There is another form of treatment for infertility, however, that is not well known or widely taught or researched in mainstream academic medical schools. It is called restorative reproductive medicine (RRM). Clinicians trained in this science focus investigations and treatments on correcting abnormalities rather than suppressing, destroying, or bypassing normal reproductive function.[5] RRM

1 "About," American Association for Reproductive Medicine, accessed March 2, 2025, https://connect.asrm.org/cpl/about-the-cpl?ssopc=1.https://connect.asrm.org/cpl/about-the-cpl?ssopc=1.

2 "Infertility," World Health Organization, May 22, 2024, https://www.who.int/news-room/fact-sheets/detail/infertility.

3 Meaghan Jain and Manvinder Singh, "Assisted Reproductive Technology (ART) Techniques," StatPearls, last updated June 7, 2023, https://www.ncbi.nlm.nih.gov/books/NBK576409/.

4 "National ART Summary," Centers for Disease Control and Prevention, December 10, 2024, https://www.cdc.gov/art/php/national-summary/index.html.

5 "About," International Institute for Restorative Reproductive Medicine, accessed March 2, 2025, https://iirrm.org/about/.

started with physicians and women's health specialists who, in response to their patients' ethical or religious objections, found alternatives to the conventional approach to reproductive medicine. First, they scientifically defined how to use biomarkers of the woman's menstrual cycle such as bleeding, cervical mucus, basal body temperature, and urinary hormones to assist the woman in identifying her fertile window.[6] The couple could then use this information to target intercourse and either avoid or achieve pregnancy. Subsequently, physicians recognized the utility of this fertility awareness–based method (FABM) for the diagnosis of menstrual cycle abnormalities.

Today, blood collection for diagnostic hormone analysis and therapeutic treatments are applied to the precise day of the menstrual cycle and represent an important component of RRM.[7] For example, day 21 of the cycle has conventionally been identified as important for diagnosing post-ovulatory hormone levels since it is twenty-one days after the start of a new menstrual bleed. Because of the variability of a woman's cycle, however, day 21 is also highly variable, leading to inconsistent results.[8] When a woman is using a scientifically validated fertility awareness method, this day corresponds to seven days after she experiences her peak fertility sign, and it is a very accurate marker for healthy ovulation by measuring the hormones estradiol and progesterone. If ovulation is dysfunctional, medications such as Letrozole and HCG are prescribed to correct this abnormality and optimize fertility. Diagnostic evaluation of systems such as thyroid, uterine, and metabolic functions is performed, sometimes leading to surgical repair and medications such as levothyroxine, naltrexone, metformin, and others used to treat these underlying health issues.[9] Cycle health is continuously monitored so that the treatments can be assessed. While this is going on, investigation and treatment of the man is also conducted.

This is just one example of how physicians, guided by cycle-tracking methods and apps used by their patients, can apply multiple and sustained interventions over time. Like conventional reproductive endocrinologists, RRM physicians use ultrasound, surgery, blood hormone analysis, and ovarian stimulation drugs, but their use is less about taking over reproductive function and more about assisting it so the function can proceed normally while both partners are healthy, leading to the best chance of a healthy pregnancy and baby.

Success rates for RRM are similar to or better than IVF for many couples, and they are free of IVF's host of unresolvable ethics and regulatory problems.[10] And when RRM-treated couples don't give birth to a child, they often still benefit from the treatments, which have been designed to improve their health and well-being. So they don't leave empty-handed. ART, on the other hand, is associated with increased adverse outcomes for the woman and her baby,[11] and those who are not successful often leave sick, broke, and brokenhearted.

By compiling data published by the Society for Assisted Reproductive Technology (SART)[12] for IVF success and comparing it to similar-year data published for RRM in 2008[13] and 2012,[14] we can make

6 Marguerite Duane, Joseph B. Stanford, Christina A. Porucznik, and Pilar Vigil, "Fertility Awareness–Based Methods for Women's Health and Family Planning," *Frontiers in Medicine* 9 (2022): 858977, https://pubmed.ncbi.nlm.nih.gov/35685421/.

7 Duane, Stanford, Porucznik, and Vigil, "Fertility Awareness–Based Methods."

8 Shahpar Najmabadi, Karen C. Schliep, Sara E. Simonsen, Christina A. Porucznik, Marlene J. Egger, and Joseph B. Stanford, "Menstrual Bleeding, Cycle Length, and Follicular and Luteal Phase Lengths in Women Without Known Subfertility: A Pooled Analysis of Three Cohorts," *Paediatric and Perinatal Epidemiology* 34, no. 3 (2020): 318–27, https://pubmed.ncbi.nlm.nih.gov/32104920/.

9 Phil C. Boyle, Joseph B. Stanford, and Ivana Zecevic, "Successful Pregnancy with Restorative Reproductive Medicine after 16 years of Infertility, Three Recurrent Miscarriages, and Eight Unsuccessful Embryo Transfers with In Vitro Fertilization/Intracytoplasmic Sperm Injection: A Case Report," *Journal of Medical Case Reports* 16, no. 1 (2022): 246, https://pubmed.ncbi.nlm.nih.gov/35729591/.

10 Craig Turczynski, "In Vitro Fertilization (IVF): A Comprehensive Primer," Charlotte Lozier Institute, December 17, 2024, https://lozierinstitute.org/in-vitro-fertilization-ivf-a-comprehensive-primer/.

11 Chantae S. Sullivan-Pyke, Suneeta Senapati, Monica A. Mainigi, and Kurt T. Barnhart, "In Vitro Fertilization and Adverse Obstetric and Perinatal Outcomes," *Seminars in Perinatology* 41, no. 6 (2017): 345–53, https://pubmed.ncbi.nlm.nih.gov/28818301/.

12 "Final National Summary Report for 2021," Society for Assisted Reproductive Technology (SART), accessed March 2, 2025, https://www.sartcorsonline.com/Csr/Public?ClinicPKID=0.

13 Joseph B. Stanford, Tracy A. Parnell, and Phil C. Boyle, "Outcomes from Treatment of Infertility with Natural Procreative Technology in an Irish General Practice," *Journal of the American Board of Family Medicine* 21, no. 5 (2008): 375–84, https://pubmed.ncbi.nlm.nih.gov/18772291/.

14 Elizabeth Tham, Karen Schliep, and Joseph Standford, "Natural Procreative Technology for Infertility and Recurrent Miscarriage:

some comparisons between the two approaches. We also added unpublished data obtained from an established RRM clinic in Dublin, Ireland, called NeoFertility.[15] The IVF rates are based on one IVF retrieval and embryo transfer attempt, and the rates for RRM are based on a cumulative period of up to 18 months (NeoFertility) or 24 months (NaPro) of trying natural conception. The last column in the table below includes data from multiple embryo transfers, which adds all the subsequent transfers of frozen embryos that resulted from that one retrieval. Since each natural conception cycle ovulates one egg, resulting in about twelve eggs per year, and each IVF cycle results in an average of nine eggs,[16] this comparison may be the most valid. In addition, one can see the excessively high rate of twins, triplets, or higher number multiples that are born from IVF. Although these rates were significantly reduced between 2003 and 2019, they are still higher than RRM rates.

A review of SART 2019 data shows that IVF babies had more multiple pregnancies and even the singleton pregnancies had 3 times more premature deliveries compared to RRM, (14.4% vs 3.9%). The additional financial and health burden associated with multiples and premature delivery need to be considered in the analysis of cost involved with IVF treatment. Unfortunately, not all causes of infertility can be solved with a restorative approach. Severe forms of male infertility are beyond its scope; for example, if a man has a total absence of sperm in his ejaculate, he will not be able to conceive a child. Assisted reproductive procedures can retrieve the sperm surgically, and then injection of the sperm directly into an egg that has been retrieved through IVF will result in fertilization. Conception would otherwise be impossible, which is why some people choose this approach, but it must also be considered that it puts the burden of medical treatment on the woman. If instead research was applied to learn how to surgically reconstruct abnormal anatomy or regenerate sperm production, this treatment could restore fertility and lead to repeat conceptions.[17] This same IVF approach is offered to men with other forms of male infertility. Another example not currently solvable by RRM is that of a woman who has lost her fallopian tubes due to previous ectopic pregnancies or severe tubal blockage. Until the 1970s,

Outcomes in a Canadian Family Practice," *Canadian Family Physician* 58, no. 5 (2012): e267–e274, .https://pubmed.ncbi.nlm.nih.gov/22734170/.

15 Phil C. Boyle, Agnes Toth, Linda ONeill, and Craig J. Turcynski, "Restorative Reproductive Medicine: An Emerging New Treatment Process and a Prerequisite to Assisted Reproductive Technology for Treatment of Infertility," preprint, Preprints.org, January 8, 2024, https://doi.org/10.20944/preprints202401.0624.v1.

16 Sesh Kamal Sunkara, Vivian Rittenberg, Nick Raine-Fenning, Siladitya Bhattacharya, Javier Zamora, and Arri Coomarasamy, "Association Between the Number of Eggs and Live Birth in IVF Treatment: An Analysis of 400 135 Treatment Cycles," *Human Reproduction (Oxford, England)* 26, no. 7(2011): 1768–74, https://pubmed.ncbi.nlm.nih.gov/21558332/.

17 Joel L. Marmar, "Techniques for Microsurgical Reconstruction of Obstructive Azoospermia," *Indian Journal of Urology* 27, no. 1 (2011): 86–91, https://pmc.ncbi.nlm.nih.gov/articles/PMC3110422/.

Data source	Year	# of Patients	Avg. Age	Avg. % Live Birth	% Twins	% Multi
RRM-Stanford et al., 2008	1998-2002	1072	35.8	26%	4.6%	0.0%
IVF- SART 2003	2003	82930	35.7*	29%	30.0%	6.0%
RRM-Tham et al., 2012	2000-2006	108	35.4	38%	0.0%	0.0%
IVF-SART 2006	2006	90233	36.0*	29%	29.0%	1.8%
RRM-NeoFertility 2019	2019	193	36.4	40%	2.5%	0.0%
IVF-SART 2019 single-ET	2019	126935	36.5*	29%	6.0%	0.1%
IVF-SART 2019 multi-ET	2019	127175	36.5*	37%	6.7%	0.1%

a procedure was used to transplant the ovary into the uterus so the egg would ovulate in a location where a sperm could fertilize it. The procedure had a low success rate of about 10 percent but was abandoned even though IVF was less successful than that at the time.[18] These potential treatments deserve to be pursued.

As one might expect, decisions can be influenced by finances. A significant amount of revenue is needed to support an ART clinical program. The cost to set up the laboratory ranges from $500,000– $1,000,000.[19] Reproductive endocrinologist salaries range from $225,002–$733,793,[20] and the average embryologist earns $108,046.[21] This does not include administrative support and nursing staff. There is still a need for laboratory services with RRM for things like blood hormone monitoring and semen analysis, but these services are typically not performed in-house and don't contribute significantly to overhead. A single IVF can cost between $12,400–$25,000 per cycle depending on the extent of other procedures used, such as genetic testing, freezing, sperm injection, etc., and the cost per live birth can exceed $60,000.[22] The base IVF fee, which does not include diagnostics, surgery, or medications, ranges from $9,000–$14,000 per attempt.[23] This cost can be compared to the alternative RRM care provided by the NeoFertility clinic in Dublin, Ireland, which similarly does not include diagnostic testing, surgery, or medications.

Converted to U.S. dollars, the NeoFertility medical management plan, which would provide up to eighteen months of care, costs $2,647. A similar RRM clinic in the United States includes the cost of the initial baseline and monthly lab tests, eight hours with a dietitian or health coach, and monitoring during early pregnancy for a total charge of $9,000.[24] RRM clinicians are typically trained in family medicine or gynecology and are less highly compensated than reproductive endocrinologists,[25, 26,] and there is no need for a high-tech ART lab or laboratory personnel. These factors make the cost to the patient a fraction of IVF.

In conclusion, ART is a powerful and highly refined technology that has helped millions to conceive a child. But it has blossomed into an enormous industry that has supplanted the scientific pursuit of alternative therapeutic methods and is associated with a host of ethical and health-related issues.[27] RRM represents an emerging "medical treatment process" that is already demonstrating impressive results and is as effective as one IVF retrieval with multiple embryo transfers. Although the process is longer, it can be done at a fraction of the cost of ART. With additional awareness and research funding, tremendous progress could be made, reducing the need for many to use ART.

18 Y. Beyth and W. Z. Polishuk, "Ovarian Implantation into the Uterus (Estes Operation): Clinical and Experimental Evaluation," *Fertility and Sterility* 32, no. 6 (1979): 657–60, https://pubmed.ncbi.nlm.nih.gov/510567/.

19 "When Your Clinic Doesn't Have a Lab," Fertility IQ, accessed March 2, 2025, https://www.fertilityiq.com/fertilityiq/articles/when-your-clinic-doesnt-have-a-lab.

20 Justin Nabity, "Reproductive Endocrinologist Salary Range," Physicians Thrive, last updated November 18, 2024, https://physiciansthrive.com/physician-compensation/reproductive-endocrinologist/.

21 "Embryologist Salary in United States," Indeed, accessed March 2, 2025, https://www.indeed.com/career/embryologist/salaries.

22 Benjamin J. Peipert, Melissa N. Montoya, Bronwyn S. Bedrick, David B. Seifer, and Tarun Jain, "Impact of In Vitro Fertilization State Mandates for Third Party Insurance Coverage in the United States: A Review and Critical Assessment," *Reproductive Biology and Endocrinology* 20, no. 1 (2022): 111, https://pubmed.ncbi.nlm.nih.gov/35927756/.

23 Jeanette Tomasino, "IVF Cost: Understanding the Expenses of In Vitro Fertilization," *Carrot* (blog), July 6, 2023, https://www.get-carrot.com/blog/ivf-cost-understanding-the-expenses-of-in-vitro-fertilization.

24 "Financial Information," Radiant Clinic, accessed March 2, 2025, https://radiantclinic.com/financial.

25 "How to Compare Family Physician Salary and Compensation," American Academy of Family Physicians, accessed March 2, 2025, https://www.aafp.org/family-physician/practice-and-career/managing-your-career/find-a-job/comparing-physician-compensation.html.

26 "Obstetrician and Gynecologist Salary," *U.S. News & World Report*, accessed March 2, 2025, https://money.usnews.com/careers/best-jobs/obstetrician-and-gynecologist/salary.

27 Turczynski, "In Vitro Fertilization."

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