



In Vitro Fertilization: The Human Cost

In vitro fertilization (IVF) is marketed as a safe and effective way to help couples have children. However, it is responsible for well-documented injuries to children before and after birth, as well as to the health of women and the well-being of families.

I. High Death Rates for Embryonic and Fetal Human Beings

IVF clinics usually report their “success rates” in terms of births or pregnancies per 100 reproductive cycles. They have sometimes boosted their reported rates, and obscured the high death rate of embryos, by transferring two or more embryos per cycle to attempt one live birth. Deliberate destruction of unborn human beings may also occur before any attempt to transfer embryos to the womb (discarding embryos that do not receive a high “grade,”¹ or are not of the preferred sex or other traits), and after implantation in the womb through “selective reduction” (targeted abortion) if more embryos survive and develop than were wanted.

- Some public statements wrongly suggest that a 2024 court ruling in Alabama, allowing parents to sue an IVF clinic for causing the death of their frozen embryonic children, is entirely unprecedented. But a 2020 review found that 133 lawsuits had been filed in state and federal courts over loss of embryos between 2009 and 2019.² In 2021, a jury awarded \$15 million to families whose frozen eggs and embryos were destroyed due to the failure of a freezer that a California IVF clinic knew was defective. In 2018, at least 22 lawsuits were brought against an IVF clinic at University Hospitals in Cleveland for allowing over 4,000 frozen eggs and embryos to die because a remote alarm system to warn of temperature fluctuations had been turned off. “We understand that our patients are grieving and we grieve with them,” said the hospital system’s CEO. After five years of legal disputes, the lawsuits were settled for an undisclosed amount. Such cases are said to have led some clinics to improve their safety protocols.³ According to *The Washington Post*: “Most of the time, experts say, errors and accidents go unreported in the burgeoning

¹ American Fertility Services, “Embryo Grading and Success Rates” (2020), at <https://americanfertility.com/what-is-the-quality-grade-of-embryos/>. This IVF center admits: “Embryo grading results are not objective and reliable.”

² G. Letterie and D. Fox, “Lawsuit frequency and claims basis over lost, damaged, and destroyed frozen embryos over a 10-year period,” *Fertility and Sterility Reports* 1:2 (September 2020): 78-82, at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8244326/pdf/main.pdf>.

³ D. Hawkins, “Jury awards \$15 million in landmark case over embryos, eggs destroyed in fertility clinic tank failure,” *The Washington Post*, June 11, 2021, at <https://www.washingtonpost.com/health/2021/06/11/fertility-clinic-egg-embryo-verdict/>; L. Wamsley, “Ohio Fertility Clinic Says 4,000 Eggs And Embryos Destroyed When Freezer Failed,” *National Public Radio*, March 28, 2018, at <https://www.npr.org/sections/thetwo-way/2018/03/28/597569116/ohio-fertility-clinic-says-4-000-eggs-and-embryos-destroyed-when-freezer-failed>; M. Robins, “5 years since the University Hospitals fertility clinic failure: Looking back at the events leading up to and following the disaster,” *WKYC News* (NBC Cleveland), Nov. 15, 2023, at <https://www.wkyc.com/article/news/health/u-h-failure/5-years-since-university-hospitals-fertility-clinic-failure/95-f28648c0-618b-4d1b-baeb-992a3b55324b>.



fertility industry, which is largely self-policed.”⁴

- The federal government’s annual report of IVF success rates for 2021 (the most recent year available) states that U.S. clinics attempted retrieval of eggs in 413,776 cycles. 12% of successful egg retrievals resulted in no transfer of a live embryo to a womb or freezer. The percentage of embryo transfers resulting in a live birth ranged from 24% (for women over 40) to 49% (for women under 35). The average number of egg retrievals needed for one live birth was two for women under 35, and 13 for women over 40. Overall, out of 413,776 reproductive cycles, there were 91,907 live-birth deliveries (22% of cycles). Of all clinical pregnancies (detected by ultrasound), 77% resulted in the live birth of one child (including multiple pregnancies in which only one child survived) and 5% in the live birth of more than one child, with 21% of children lost to miscarriage or stillbirth.⁵
- More straightforward is a 2022 overview stating that “two-thirds of IVF embryos suddenly stop developing” before they can be transferred to a woman’s body, “with only around 1 in 4 treatment rounds leading to pregnancy in Europe.”⁶
- “Sex selection, banned in almost every other country, is big business in the United States.... This is illegal in Canada, Australia, and every European nation besides Cyprus, except in rare cases to avoid passing on X-chromosome-linked diseases. But in 2018, an estimated 75 percent of American clinics offered sex selection for nonmedical reasons, with the majority allowing people to undergo IVF solely to pick a son or a daughter.... Jeffrey Steinberg, a pioneer of the procedure who practices in California, estimates that trait selection comprises 5 to 10 percent of the American IVF market, or up to \$90 million annually.”⁷
- Polygenic screening of embryos is now being marketed in the U.S. despite limited predictive value for a wide range of relatively common conditions such as diabetes, the mere risk of which may now become a death sentence for some preborn conceived through IVF and amount to others being “designer babies.”⁸

⁴ L. Bernstein and Y. Torbati, “Inside the opaque world of IVF, where errors are rarely made public,” *The Washington Post*, April 28, 2024, at <https://www.washingtonpost.com/health/2024/04/28/ivf-errors-fertility-clinics-regulation/>.

⁵ Centers for Disease Control and Prevention, “2021 Assisted Reproductive Technology Fertility Clinic and National Summary Report,” U.S. Dept. of Health and Human Services, 2023, pp. 13, 15, 19, available at <https://www.cdc.gov/art/reports/2021/pdf/Report-ART-Fertility-Clinic-National-Summary-H.pdf>.

⁶ C. Wilson, “Why two-thirds of IVF embryos suddenly stop developing,” *New Scientist*, June 30, 2022, at <https://www.newscientist.com/article/2326772-why-two-thirds-of-ivf-embryos-suddenly-stop-developing/>; C. Wilson, “IVF success rates peak as only one in four attempts achieve pregnancy,” *New Scientist*, June 25, 2019, at <https://www.newscientist.com/article/2207514-ivf-success-rates-peak-as-only-one-in-four-attempts-achieve-pregnancy/>.

⁷ E. Nietfeld, “America’s IVF Failure,” *The Atlantic*, May 2, 2024, at <https://www.theatlantic.com/ideas/archive/2024/05/america-ivf-regulation-failures/678259/>.

⁸ Hannah Rahim, “Designer Babies? The Ethical and Regulatory Implications of Polygenic Embryo Screening,” The Petrie-Flom Center, Harvard Law School, March 11, 2024, at <https://petrieflom.law.harvard.edu/2024/03/11/designer-babies-the-ethical-and-regulatory-implications-of-polygenic-embryo-screening/>.



- The European Society of Human Reproduction and Embryology, reporting annually on IVF clinics across Europe that provide preimplantation genetic testing (PGT) to screen for genetically impaired embryos, concluded that in 2018, out of 5,191 embryos tested, there were 2,942 embryo transfers to a womb (57%), of which 1,673 produced a clinical pregnancy, and only 1,380 children were born alive (27% of those tested as embryos).⁹
- Even a 2018 article designed to “celebrate” four decades of progress in IVF said its efficacy remains “limited,” asking “can you imagine any other branch of medicine or surgery accepting and working with a 70% failure rate?”¹⁰

II. Risk of Health Problems for Children Conceived by IVF

When IVF became available in 1978, critics warned that there had been inadequate animal testing and that risks to children were largely unknown. Enough children have now been conceived and born from the procedure to produce statistically significant data on the risk of birth defects and other health problems. The higher incidence of such problems was once attributed largely to the higher incidence of twins and triplets from IVF pregnancies due to transfer of multiple embryos (as carrying more than one child increases the risk of preterm birth); but recent studies find an independent effect from the procedure. In 2021 in the U.S., 18% of the live births from singleton IVF pregnancies and 88% of the births of triplets were preterm births; low birth weight infants ranged from 8% to 85%.¹¹ Another factor is the common use today in IVF clinics of intracytoplasmic sperm injection (ICSI), the direct injection of a sperm into the egg to boost success rates; this bypasses natural safeguards that prevent damaged or defective sperm from reaching the egg in a woman’s body. In the U.S., ICSI is used in 78% of embryo transfers.¹²

IVF advocates once thought that use of IVF would *reduce* birth defects, by allowing for the testing of embryos for a wide array of genetically based conditions. But experts now warn: “The selection of embryos on the basis of these predictions is not yet supported by science.”¹³

- A 2020 study found: “The risk of congenital malformations is approximately one-third higher in children conceived with the aid of IVF technology than in other children.” Included are malformations of the cardiac, musculo-skeletal, and genitourinary systems. The authors suggest that IVF techniques themselves, not only paternal and maternal factors, are partly responsible. Even IVF singleton pregnancies are 1.7 times more likely to result in preterm births, and 1.5 times more likely to result in low birth weight, than

⁹ F. Spinella et al., “ESHRE PGT Consortium data collection XXI: PGT analyses in 2018,” *Human Reproduction Open* 2023:2 (2023): 6 (Table II), at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10121336/pdf/hoad010.pdf>.

¹⁰ P. Braude and M. Johnson, “Reflections on 40 Years of IVF,” *British Journal of Obstetrics and Gynaecology* 126:2 (January 2019): 135-137, p.135.

¹¹ Centers for Disease Control and Prevention, note 5 *supra*, p. 18.

¹² *Id.*, p. 13.

¹³ Editorial, “The alarming rise of complex genetic testing in human embryo selection,” *Nature* 603 (March 28, 2022): 549-50, at <https://www.nature.com/articles/d41586-022-00787-z#correction-0>.



non-IVF pregnancies.¹⁴

- In 2017, physicians at the University of Pennsylvania reached similar conclusions: IVF is “associated with adverse obstetric and perinatal outcomes as well as congenital anomalies,” and even singleton IVF pregnancies have higher adverse outcomes than non-IVF pregnancies. Like the German researchers cited above, they suggested that epigenetic changes arising from IVF itself may be responsible.¹⁵
- A 2014 study of the long-term health of children conceived through IVF found the following: “Otherwise healthy children conceived by IVF may have higher blood pressure, adiposity, glucose levels, and more generalised vascular dysfunction than children conceived naturally. These effects seem to be related to the IVF procedure itself rather than to underlying subfertility.”¹⁶
- A 2013 study found no evidence of increased risk of some cancers such as leukemia, but children born through IVF had a 2 to 3 times higher risk for a type of muscle cancer and a type of liver cancer: “Significantly increased risks were found ... for hepatoblastoma and rhabdomyosarcoma.”¹⁷
- A 2012 study found that children conceived through IVF are at higher risk of premature cardiovascular disease: “Healthy children conceived by ART [assisted reproductive technology] display generalized vascular dysfunction. This problem does not appear to be related to parental factors but to the ART procedure itself.” By contrast, “[v]ascular function was normal in children conceived naturally during hormonal stimulation of ovulation and in siblings of ART children who were conceived naturally.”¹⁸
- Dr. Rosanna Weksberg, a University of Toronto geneticist, warned colleagues in 2011 that children born through IVF are “up to 10 times more likely” to suffer from rare genetic disorders such as Beckwith-Wiedemann syndrome and Angelman syndrome, which can cause developmental delays, intellectual disabilities, and speech impairment.¹⁹

¹⁴ M. von Wolff and T. Haaf, “In Vitro Fertilization Technology and Child Health,” *Deutsches Ärzteblatt International* 117:3 (2020): 23-30, p. 23, at

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7026576/pdf/Dtsch_Arztebl_Int-117_0023.pdf.

¹⁵ C. Sullivan-Pyke et al., “In Vitro Fertilization and Adverse Obstetric and Perinatal Outcomes,” *Seminars in Perinatology* 41:6 (October 2017): 345-53, p. 345, at

<https://www.sciencedirect.com/science/article/abs/pii/S0146000517300733?via%3Dihub>.

¹⁶ E. Kamphuis et al., “Are we overusing IVF?” *British Medical Journal* 348 (January 1, 2014): g252, at

<https://www.bmj.com/content/348/bmj.g252.full>.

¹⁷ C. Williams et al., “Cancer Risk among Children Born after Assisted Conception,” *New England Journal of Medicine* 369 (2013): 1819-27, at <https://www.nejm.org/doi/full/10.1056/NEJMoa1301675>.

¹⁸ U. Scherrer et al., “Systemic and Pulmonary Vascular Dysfunction in Children Conceived by Assisted Reproductive Technologies,” *Circulation* 125 (2012): 1890-96, p. 1890, at

https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.111.071183?url_ver=Z39.88-2003&rft_id=ori:rid:crossref.org&rft_dat=cr_pub%20%200pubmed.

¹⁹ T. Blackwell, “In-vitro fertilization linked to rare genetic disorders,” *National Post* (Canada), September 25, 2011, at <https://nationalpost.com/news/in-vitro-fertilization-linked-to-rare-genetic-disorders>.



- In 2009, *The New York Times* reported on a finding by the Centers for Disease Control and Prevention “that babies conceived with IVF, or with a technique in which sperm are injected directly into eggs, have a slightly increased risk of several birth defects, including a hole between the two chambers of the heart, a cleft lip or palate, an improperly developed esophagus and a malformed rectum.”²⁰
- A Canadian study published in 2009 found that children born after use of AHR (assisted human reproduction) have a higher rate of birth defects, such as gastrointestinal, cardiovascular, and musculoskeletal defects, than other children. The risk of these defects in non-AHR children was 1.86%; the risk for AHR children ranged from 2.35% for children born after ovulation induction to 3.45% for IVF, almost double the risk.²¹
- A 2005 study following children up to the age of five who were conceived by IVF found the following: “A higher proportion of ICSI and IVF children required surgery (24% ICSI, 22% IVF, 14% natural conceptions; $P < 0.001$), particularly genitourinary surgery other than circumcision.” After adjusting for age and country, risks of major malformation were 2.8 times higher for ICSI children and 1.8 times higher for IVF children. Even in the neonatal period, minor malformations were more common in IVF and ICSI children (15%) than in naturally-conceived children (8%).²²
- In a systematic review of 25 studies published by March 2003 on birth defects in infants conceived by IVF and/or ISCI compared with spontaneously-conceived infants, “two-thirds of these showed a 25% or greater increased risk of birth defects in [IVF/ICSI] infants. ... all twenty-five studies suggest a statistically significant 30-40% increased risk of birth defects” associated with these technologies.²³

III. Health Risks to Women

Studies also indicate increased health risks to women who conceive by IVF, including risks from the use of superovulatory drugs to stimulate women’s ovaries to produce many eggs at one time for the IVF procedure. These drugs have been associated with an increased risk of some cancers and may lead to a condition known as ovarian hyperstimulation syndrome (OHSS), whose effects can include reproductive problems, kidney failure, and even death.

- In 2023, one of the largest studies on the association of assisted reproductive technologies and post-partum hemorrhage found that “women who conceived through IVF/ICSI were

²⁰ G. Kolata, “Picture Emerging on Genetic Risks of IVF,” *The New York Times*, Feb. 16, 2009, at <https://www.nytimes.com/2009/02/17/health/17ivf.html>.

²¹ D. El-Chaar et al., “Risk of birth defects increased in pregnancies conceived by assisted human reproduction,” *Fertility and Sterility* 92 (2009):1557-61, p. 1557, at [https://www.fertstert.org/article/S0015-0282\(08\)03574-7/fulltext](https://www.fertstert.org/article/S0015-0282(08)03574-7/fulltext).

²² M. Bonduelle et al., “A multi-centre cohort study of the physical health of 5-year-old children conceived after intracytoplasmic sperm injection, *in vitro* fertilization and natural conception,” *Human Reproduction* 20 (2005): 413-9, pp.416, 417, at <https://academic.oup.com/humrep/article/20/2/413/603229>.

²³ M. Hansen, “Assisted reproductive technologies and the risk of birth defects—a systematic review,” *Human Reproduction* 20 (2005): 328-38, p. 328, at <https://academic.oup.com/humrep/article/20/2/328/603230>.



at higher risk.” Postpartum hemorrhage if not treated promptly can have effects including shock and possibly maternal death. The study also found that women who conceived through IVF/ICSI were more likely to develop gestational diabetes and hypertensive disorders in pregnancy. They were also more likely to have placental abnormalities, conditions which can lead to postpartum hemorrhage and pose a threat to the life of both mother and child.²⁴

- A 2022 study published in the *Journal of the American Heart Association* found that women who conceived with “assisted reproductive technology” such as IVF were much more likely than other mothers with hospital deliveries to suffer from “adverse obstetric outcomes” including acute kidney injury, arrhythmia, and placental abruption, even after correcting for cardiovascular disease risk factors and multifetal pregnancy.²⁵
- Commenting in 2021 on a study of 16 million pregnancies in China, experts at the Emory University School of Medicine report: “Conception with IVF *in and of itself* was associated with increased rates of almost all reported adverse maternal and neonatal outcomes, including hypertensive diseases of pregnancy, gestational diabetes, placental disorders, cesarean delivery, and low birth weight deliveries.” The increased risk persisted even when correcting for number of children born at a time, maternal age, and the absence of chronic disease prior to pregnancy.²⁶
- A 2019 Canadian study comparing severe maternal morbidity/mortality outcomes among women who received different types of assisted reproduction technology found that “severe postpartum hemorrhage (i.e., requiring transfusion of red blood cells or other interventions), maternal admission to an intensive care unit (ICU), puerperal sepsis, hysterectomy and cardiac conditions... [were] more common in pregnancies achieved through infertility treatment than in untreated pregnancies.” They recorded “significant associations between infertility treatment and the 3 most common indicators of severe maternal morbidity...among pregnancies achieved through invasive treatment [IVF].”²⁷
- A nationwide cohort study of over 250,000 Korean women in 2018 found that “women who underwent IVF-ET [embryo transfer] had an approximately 1.5-fold higher risk of SMM [severe maternal morbidity] than those who did not.” Severe maternal morbidity was measured by serious complications of pregnancy and childbirth such as eclampsia, acute renal failure, need for blood transfusion, and hysterectomy. The study also found that “women who underwent IVF-ET had approximately 1.6-fold and 1.9-fold higher

²⁴ D. Tang, et al., “The use of IVF/ICSI and risk of postpartum hemorrhage: A retrospective cohort study of 153,765 women in China.” *Frontiers in Public Health* 11:1016457 (March 21, 2023), at <https://pubmed.ncbi.nlm.nih.gov/37026146/>.

²⁵ P. Wu et al., “In-Hospital Complications in Pregnancies Conceived by Assisted Reproductive Technology,” *Journal of the American Heart Association* 11:5 (2022), at <https://pubmed.ncbi.nlm.nih.gov/35191320/>.

²⁶ D. Diego and H. Hipp, “Reducing Obstetric Morbidity in In Vitro Fertilization Pregnancies,” *JAMA Network Open* 4:9 (September 10, 2021), at <https://pubmed.ncbi.nlm.nih.gov/34505891/>.

²⁷ N. Dayan, et al., “Infertility treatment and risk of severe maternal morbidity: a propensity score-matched cohort study.” *Canadian Medical Association Journal* 191:5 (February 4, 2019): E118-E127, at <https://pubmed.ncbi.nlm.nih.gov/30718336/>.



risks of blood product transfusion and sepsis, respectively.” The researchers also noted that the study might “underestimate the association between ART and SMM risk.”²⁸

- In 2017, University of Pennsylvania researchers who found increased health risks to children born following IVF also found increased risks to their mothers. These women had more hypertensive disorders of pregnancy (such as preeclampsia and eclampsia) and gestational diabetes.²⁹
- A 2013 study found that “women having IVF had 2.5 times the risk of borderline [ovarian] tumours compared with women having infertility treatment but not IVF.”³⁰
- In 2012, *The New York Times* reported that IVF clinics in the U.S. use high doses of fertility drugs, stimulating women’s bodies to produce many eggs at once, to boost their success rates, despite the risk of inducing ovarian hyperstimulation syndrome (OHSS). “According to the National Institutes of Health, high-dose stimulation leads to OHSS in 10 percent of IVF patients. The ovaries become swollen and ... can leak fluid into the chest and abdomen. Symptoms can range from mild to serious; in rare cases, OHSS can be life-threatening.”³¹
- A 2008 study found that “women who were treated for ovulation induction experienced a significantly higher overall risk of cancer. This increased risk was especially evident for cancer of the uterus following treatment with clomiphene citrate. Furthermore, this study’s results suggest increased risks of breast cancer, malignant melanoma, and non-Hodgkin lymphoma following ovulation induction treatment that were more pronounced among women who waited more than 1 year to conceive, perhaps representing a dose-response relation.”³²

IV. “Mix-ups” and Other Scandals Harming Families

By producing human embryos outside the womb, IVF clinics expose them to various forms of manipulation, such as the risk that they will be “mixed up” between families without parents’ knowledge or consent or exploited by clinicians. This has led to scandals, aggrieved parents, and lawsuits.

²⁸ J. Y. Nam, et al., “Effects of assisted reproductive technology on severe maternal morbidity risk in both singleton and multiple births in Korea: A nationwide population-based cohort study.” *PLoS One* 17:10 (October 10, 2022), at <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0275857>.

²⁹ C. Sullivan-Pyke et al., note 15 *supra*, p. 347.

³⁰ L. Stewart et al., “In vitro fertilization is associated with an increased risk of borderline ovarian tumours,” *Gynecologic Oncology* 129:2 (2013): 372-376, abstract at [https://www.gynecologiconcology-online.net/article/S0090-8258\(13\)00064-4/abstract](https://www.gynecologiconcology-online.net/article/S0090-8258(13)00064-4/abstract).

³¹ J. Mroz, “High Doses of Hormones Faulted in Fertility Care,” *The New York Times*, July 16, 2012, at <https://www.nytimes.com/2012/07/17/health/research/high-doses-of-hormones-add-to-ivf-complications.html>.

³² R. Calderon-Margalit et al., “Cancer Risk After Exposure to Treatments for Ovulation Induction,” *American Journal of Epidemiology* 169:3 (2008): 365-75, p. 370, at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2720715/pdf/kwn318.pdf>.



- “The number of disturbing ‘fertility fraud’ cases that claim dozens of women unknowingly gave birth to children fathered by more than 50 doctors across the United States continued to rise this year as medical professionals in Washington and Vermont faced new accusations they illegally used their own sperm to artificially inseminate patients.”³³
- In December 2023, the *New York Post* reported that an American couple of Asian descent reached a settlement with a California IVF clinic that in 2019 impregnated the wife with unrelated embryos from two other families. The couple reportedly had been told they were having twin girls, but the babies were male and not of Asian descent. The children ultimately were united with their genetic parents, but the Asian couple still did not know the fate of their own embryonic children. In 2022 the *Post* reported that “mix-ups” and other misconduct had been happening for years and may affect thousands of families. “The current state of regulation is the Wild West,” said an attorney working in this area.³⁴
- “IVF mix-ups are a regular occurrence at fertility clinics across the UK, an expert has said. Dr. Sammy Lee, a scientific consultant at the Portland Hospital in London, said the case of a white woman giving birth to black twins which hit the headlines earlier this month is probably not an isolated incident.... He said: ‘Every day, someone somewhere in the UK is inadvertently messing up.... I am aware of the wrong embryos being transferred to the wrong patients at several NHS [National Health Service] units during the past 10 years. I have also confidentially been told about a number of cases where the wrong sperm were used to inseminate eggs.’”³⁵
- “The [University of California] Board of Regents has quietly settled a dozen lawsuits stemming from fertility fraud uncovered nearly 15 years ago – drawing closer to an end a scandal that has dogged UC Irvine and left behind dozens of heartbroken couples.... In all, the University of California has paid out more than \$24 million for 137 separate incidents in which eggs or embryos were either unaccounted for or given to other women without consent. Three cases are still pending. The two doctors at the center of the malpractice ... fled the country and continue to evade criminal prosecution, leaving the university to deal with the civil lawsuits that followed.”³⁶
- “Within four days of finding out she was pregnant, Carolyn Savage went from the high of

³³ M. W. Roeloffs, “Doctors Impregnating Patients: Major Cases In 2023 Allege ‘Fertility Fraud’ Lead To ‘Secret Children,’” *Forbes*, December 15, 2023, at <https://www.forbes.com/sites/maryroeloffs/2023/12/15/doctors-impregnating-patients-major-cases-in-2023-allege-fertility-fraud-lead-to-secret-children/>.

³⁴ K. Boniello, “NYC couple in heartbreaking ‘twin’ embryo mix-up settles lawsuit against Calif. Clinic,” *New York Post*, December 30, 2023, at <https://nypost.com/2023/12/30/metro/nyc-couple-in-twin-embryo-mix-up-settles-suit-against-california-clinic/>; A. Klein, “More baby mix ups will happen if IVF clinics don’t clean up their act,” *New York Post*, February 13, 2022, at <https://nypost.com/2022/02/12/ivf-clinics-need-to-clean-up-their-act-to-end-baby-mix-ups/>.

³⁵ “IVF mix-ups ‘occur regularly,’” *BBC News: Health*, July 24, 2002, at <http://news.bbc.co.uk/2/hi/health/2148423.stm>.

³⁶ K. Yoshino, “UCI settles dozens of fertility suits,” *The Los Angeles Times*, September 11, 2009, at <https://www.latimes.com/archives/la-xpm-2009-sep-11-me-uci-fertility11-story.html>.



anticipating the child she had tried so hard to conceive to the unfathomable low of knowing the baby was not hers to keep. Carolyn Savage had had a history of miscarriages, and she and her husband, Sean Savage, turned to in vitro fertilization, hoping to have a fourth child. But on Feb. 16, 2009, the Sylvana, Ohio, couple learned that the frozen embryo of another couple had been mistakenly transferred into Carolyn's womb.... On Sept. 24, 2009, the Savages returned their newborn son, whom they'd held for 30 minutes, to his biological parents.”³⁷

V. IVF: Oversold and Unnecessary?

For all of its human and other costs, there is evidence that IVF is often unnecessary for its own stated aims, and is increasingly oversold.

- In 2022, researchers in the United States, Israel, and Austria raised concerns about “profound changes” in IVF practice since 2010. First, IVF is increasingly used not only for medical but for “social” reasons (for example, women want the option of having a child long after the usual reproductive age). Second, “industrialization” and “commoditization” of the practice has led to greater attention to profits than to quality concerns such as reproductive outcomes. Third, the promotion of “add-ons” to the procedure (for example, genetic testing of embryos before transfer), although their usefulness has not been validated, has led to declining pregnancy and birth rates, higher costs per reproductive cycle, and “declining patient satisfaction.” The authors say these concerns have received “surprisingly little attention” in the medical literature.³⁸
- In 2021, researchers in Japan studied the likelihood of parenthood after discontinuing fertility treatments such as timed intercourse, intrauterine insemination, and IVF (with IVF generally offered if the first two have failed). They concluded that “dropping out of infertility treatment did not preclude any chance of a future pregnancy. Our descriptive analysis showed that 33.2% of the individuals who experienced an infertility treatment became pregnant after treatment discontinuation. It is reasonable that this rate was lower than the rate of becoming pregnant for those who continued the treatment (45.7%); however, it was not much lower than that.”³⁹
- In 2012, researchers in France reviewed past reports of couples having a BSP (birth from spontaneous pregnancy) after being unsuccessfully treated by IVF, and reported the results of their own survey of 2,134 couples who had tried IVF in that country. The rate of BSP was 17% among couples who had earlier had a child from treatment and 24% among those who had remained childless during treatment. The rate was higher among

³⁷ S. James, “Embryo Mix-Up: Grieving a Baby Who Didn’t Die,” *ABC News*, February 24, 2011, at <http://abcnews.go.com/Health/sean-carolyn-savage-describe-embryo-mix-giving-baby/story?id=12993374>.

³⁸ A. von Schondorf-Gleicher et al., “Revisiting selected ethical aspects of current clinical in vitro fertilization (IVF) practice,” *Journal of Assisted Reproduction and Genetics* 39 (2022): 591-604, p. 591, at <https://doi.org/10.1007/s10815-022-02439-7>.

³⁹ M. Hirakawa et al., “Chances of pregnancy after dropping out from infertility treatments: Evidence from a social survey in Japan,” *Reproductive Medicine and Biology* 20 (2021): 246-52, pp. 246, 249, at <https://onlinelibrary.wiley.com/doi/epdf/10.1002/rmb2.12377>.



younger women, those who had undergone fewer IVF attempts, and those with an unexplained cause of infertility.⁴⁰

- French researchers in 2009 reported on an effort to survey 724 patients who had undergone IVF. Taking into account 204 patients who could not be contacted, a minimum of 53% and a maximum of 81% of all couples (with an intermediate estimate of 66%) ultimately became parents – 40% from IVF and 26% by other means. Among those contacted, parenthood after discontinuing IVF was largely due to adoption (46%) or birth from a spontaneous pregnancy (42%). The authors note that dropout rates from IVF are very high: Even in countries where the government subsidizes up to three IVF cycles, about two-thirds of patients drop out before the third attempt.⁴¹

Restorative reproductive medicine, on the other hand, offers an ethical alternative to IVF. It involves a deeper and more comprehensive diagnostic study, combined and optimized with detailed cycle monitoring, to inform surgical, hormonal, and/or lifestyle treatments that can frequently work to truly heal patients.⁴²

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⁴⁰ P. Troude et al., “Spontaneous pregnancies among couples previously treated by in vitro fertilization,” *Fertility and Sterility* 98 (2012): 63-8, p. 68, at [https://www.fertstert.org/article/S0015-0282\(12\)00396-2/pdf](https://www.fertstert.org/article/S0015-0282(12)00396-2/pdf).

⁴¹ E. de La Rochebrochard et al., “Long-term outcome of parenthood project during in vitro fertilization and after discontinuation of unsuccessful in vitro fertilization,” *Fertility and Sterility* 92 (2009): 149-156, p. 149, at [https://www.fertstert.org/article/S0015-0282\(08\)01181-3/fulltext](https://www.fertstert.org/article/S0015-0282(08)01181-3/fulltext).

⁴² See M. Duane, MD, and T. Brown, MD, “Restorative Reproductive Medicine for Infertility: A Safe, Effective, Affordable Alternative,” FACTS About Fertility, February 27, 2025, at <https://www.factsaboutfertility.org/restorative-reproductive-medicine-for-infertility-a-safe-effective-affordable-alternative/>; T. Arnold, “‘NaPro Technology’ Offers a Pro-Life Alternative to IVF for Infertility Treatment,” National Catholic Register, March 26, 2024, at <https://www.ncregister.com/cna/napro-technology-offers-a-pro-life-alternative-to-ivf-for-infertility-treatment>; “What If We Addressed The Root Of Infertility Rather Than Pushing The Questionable IVF Quick Fix?,” *The Federalist*, March 25, 2024, at <https://thefederalist.com/2024/03/25/what-if-we-can-heal-infertile-women-rather-than-turning-to-expensive-unethical-ivf-treatments-first/>; see also <https://naprotechnology.com/>; “‘Isn’t NaProTechnology Just Charting?’ and other questions: A Natural Womanhood NaPro FAQ,” Natural Womanhood, June 11, 2020, at <https://naturalwomanhood.org/naprotechnology-answers-to-your-frequently-asked-napro-questions-2020/>; H. Klaus, MD, “Reproductive Technology: Evaluation and Treatment of Infertility: Guidelines for Catholic Couples,” U.S. Conference of Catholic Bishops, 2025 ed., at <https://www.usccb.org/resources/Reproductive%20Technology%20Guidelines%20for%20Catholic%20Couples%20updated.pdf>.