

# In Vitro Fertilization in the United States: The Urgent Need for Regulation

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## THE PROBLEMS

- Millions of human embryos are created through in vitro fertilization each year, but many are never implanted or are later discarded.
- The growing use of genetic testing and editing technologies opens the door to non-medical trait selection and “designer babies.”
- IVF can pose health risks to women and children, including higher rates of pregnancy complications, preterm birth, and congenital defects.
- The fertility industry has become profit-driven and largely unregulated, leaving families and embryos without consistent legal or ethical protection.

## THE SOLUTIONS

- Limit the number of embryos created per IVF cycle and restrict indefinite freezing, elective destruction, or the sale of embryos for experimentation.
- Require IVF clinics to obtain licenses, undergo ethical review, and report medical outcomes transparently.
- Guarantee informed consent by ensuring patients are fully briefed on medical risks, ethical alternatives, and available safeguards.
- Develop consistent federal and state laws that protect human life at its earliest stages while supporting families struggling with infertility.
- Mandate that clinics securely maintain the medical histories of all sperm and egg donors, ensuring this information is available to donor-conceived children later in life.
- Establish reasonable limits on how many times an individual may donate eggs or sperm to prevent exploitation and reduce the risk of large numbers of biologically related offspring.

## THE RISE OF IVF

In vitro fertilization (IVF) is a rapidly growing reproductive technology that has transformed infertility treatment over the past several decades.<sup>1</sup> Since the first IVF birth in 1978,<sup>2</sup> more than 10 million babies have been born through the procedure worldwide.<sup>3</sup> In the United States, IVF now accounts for approximately 2 percent of all births.<sup>4</sup> Originally designed to help couples struggling with infertility, IVF has evolved into a complex medical process that now includes technologies such as embryo freezing, preimplantation genetic testing (PGT), and gene editing tools like CRISPR.<sup>5</sup> These advancements have expanded the possibilities of assisted reproduction beyond its original purpose.

The demand for IVF continues to grow, fueled by delayed parenthood, fertility preservation, medical conditions that affect fertility, and social factors such as single parenthood and same-sex couples seeking to have children.<sup>6</sup> IVF has also become a major industry in the United States—quadrupling from about \$2 billion in annual revenue in 1992 to approximately \$8 billion by 2022.<sup>7</sup> Globally, the industry is valued at over \$25 billion and is projected to reach \$41 billion by 2026.<sup>8</sup>

While these developments have brought hope to many families, they have also introduced complex ethical, medical, and regulatory questions. The creation and freezing of embryos, the use of genetic testing and editing technologies, and the

growing commercialization of fertility medicine raise deeper questions about human life, patient safety, and the role of oversight in reproductive healthcare. These challenges form the basis of the following discussion.

## THE PROBLEMS WITH IVF

As IVF continues to expand, so do the challenges that accompany it. These issues generally fall into three areas: ethical concerns about the treatment of embryos and human life, medical concerns about risks to women and children, and the lack of regulation, oversight, and accountability. Understanding these problems is essential to creating policies that support families while protecting human dignity.

### *Ethical Concerns*

The creation, freezing, and destruction of embryos raises important questions about the moral status of human life in its earliest stages. Embryos are not merely biological material, but represent the genesis of human life. As human beings, they deserve the same legal and ethical protections as everyone else. Yet in practice, large numbers of embryos are never implanted.<sup>9</sup> It is estimated that in 2021, between 1.5 million and 1.8 million embryos created through IVF were never born.<sup>10</sup> Since 2013, most IVF patients who were under 30 when they froze their embryos have later chosen to discard them, effectively ending millions of lives.<sup>11</sup>

These patterns raise concerns about commodification, as embryos are often treated as disposable byproducts of fertility treatment.<sup>12</sup> Technologies such as preimplantation genetic testing (PGT) and CRISPR, which screen or alter embryos at the genetic level, further blur ethical lines. Although promoted as tools to prevent inherited disorders, their use necessarily involves evaluating, discarding, or even modifying human embryos. PGT enables selection for both medical and non-medical traits—such as sex or appearance—while CRISPR goes further, introducing the ability to edit the human genome itself.<sup>13</sup>

Because life begins at conception, neither PGT nor CRISPR can be considered ethically acceptable, as both depend on manipulating human life at its earliest



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stages. Together, these trends heighten fears about the rise of “designer babies” and the normalization of treating human life as a product to be optimized.<sup>14</sup>

Beyond embryo use and genetic selection, the rise of donor conception adds another moral dimension. Each year, an estimated 30,000 to 60,000 children are conceived using donated sperm or eggs, often without a clear understanding of their biological origins.<sup>15</sup> Studies show that many donor-conceived adults struggle with identity and attachment, emphasizing that IVF is not only a medical practice but one with deep human and emotional consequences.<sup>16</sup>

### *Health Risks*

In addition to ethical concerns, IVF presents several medical risks that affect both mothers and children. While the procedure has helped many families conceive, it is not without complications.

For women, IVF and the hormone treatments that accompany it can lead to a range of side effects and pregnancy-related risks. These include ovarian hyperstimulation syndrome (OHSS), multiple pregnancies, pelvic infections, and, in rare cases,

injury to surrounding organs during egg retrieval.<sup>17</sup> Research also shows that women who conceive through assisted reproductive technology experience higher rates of pregnancy complications compared to those who conceive naturally.<sup>18</sup>

Children created through IVF face distinct and often greater health risks. The most immediate and serious harm is the loss of life that occurs when embryos are discarded, destroyed, or indefinitely frozen. Only a small fraction of embryos created during IVF are ever implanted, leaving the rest unused. For example, according to data released by the United Kingdom's Human Fertilisation and Embryology Authority and reported on in 2012, roughly 3.5 million embryos had been created through IVF in the United Kingdom since 1991, resulting in about 235,000 implantations—meaning approximately 93 percent went unused.<sup>19</sup> As already noted, many embryos are eliminated simply because they are considered “non-viable” or “undesirable,” such as being the wrong sex or carrying unwanted genetic traits.<sup>20</sup>

The children who do survive the IVF process face higher rates of a range of medical complications. Studies have found increased risks of preterm birth and low birth weight among babies born after fresh embryo transfer, and a greater likelihood of large-for-gestational-age and high birth weight among those born after frozen embryo transfer.<sup>21</sup> Research has indicated that children created through IVF have higher rates of cardiovascular disease, certain cancers, and neurological and developmental impairments.<sup>22</sup> For instance, a 2024 study found babies conceived through IVF face about a 36 percent higher risk of major heart defects,<sup>23</sup> while a 2019 study found that IVF-conceived children were 58 percent more likely to experience intellectual disabilities by age eight or older.<sup>24</sup>

### **Lack of Regulation**

Over time, IVF has shifted from a physician-led medical service to an industry increasingly driven by investor-backed companies. Private enterprises with aggressive marketing practices now dominate much of the fertility market.<sup>25</sup> When profit motives shape healthcare, conflicts of interest can arise, creating pressure to prioritize financial gain over patient well-being and ethical responsibility.<sup>26</sup>

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The absence of clear national standards compounds these risks. The U.S. fertility industry operates with minimal federal oversight, relying largely on voluntary guidelines and market forces.<sup>27,28</sup> As a result, regulation varies widely by state, and the industry has become one of the most permissive in the world—often cited as a destination for “reproductive tourism.”<sup>29</sup> Without stronger safeguards, there is a growing danger that profit will outweigh accountability, leaving families and embryos without consistent protection. These tensions were highlighted recently by the Alabama Supreme Court’s ruling that embryos created through IVF should be considered children, underscoring the legal confusion that results when clear or uniform regulation is absent.<sup>30</sup>

By contrast, many European countries—such as Germany, Italy, and Poland—have enacted laws that protect embryos from creation through implantation.<sup>31</sup> The United States, however, lacks a comprehensive federal framework, leaving practices such as embryo creation, destruction, and freezing largely unregulated.<sup>32</sup> Oversight is instead left to individual clinicians and professional organizations, producing inconsistent standards and limited transparency. This regulatory void raises important questions about human dignity, patient safety, and ethical responsibility in reproductive medicine.

## POLICY RECOMMENDATIONS

There are clear benefits to in vitro fertilization, but the lack of consistent regulation in the United States creates serious ethical, medical, and legal concerns. Congress and state legislatures should start developing laws that give embryos full protection. Without stronger oversight, courts are being left to handle these questions one case at a time, creating laws through court rulings instead of through the proper legislative process.

New laws should limit the number of embryos created in a single cycle to reduce surpluses and prevent embryos from being frozen indefinitely. They should also set clear rules for how embryos are handled, separating legitimate medical needs from elective destruction or abandonment.

Policymakers should also create oversight at both the national and state levels, such as ethical review boards, licensing requirements for fertility clinics, and mandatory reporting of outcomes. Clinics must guarantee informed consent by clearly explaining risks, alternatives, and safeguards before any treatment begins.

Clinics should also be required to maintain secure records of the medical histories of all sperm and

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egg donors, ensuring that this information can be made available to donor-conceived children later in life. Such records must be protected with the same care as other sensitive medical data. In addition, reasonable limits should be placed on how many times an individual can donate eggs or sperm to prevent exploitation and reduce the risk of large numbers of biologically related offspring.

Ultimately, IVF practices in the United States should support families who face infertility while protecting human life in its earliest stages. By putting clear and ethical standards in place, lawmakers can help promote both medical progress and respect for human dignity.

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