You are a student at the Department of Genetic Engineering. You are in an exam. You have been asked to answer the following question: “What are the differences between in-vitro births and natural births?” In response to this question, write the FIRST BODY paragraph of your essay, the introductory paragraph of which is provided. You can make use of the information given below and on the back side of this paper. Use only the relevant information and do not forget to paraphrase. You may use your own ideas.

**Suzi Leather of the Human Fertilisation and Embryology Authority reports:** “Since 1990 about 250,000 embryos have been frozen following IVF treatment in Britain. Around eight embryos are created in each IVF treatment cycle but only a maximum of two can be implanted, meaning that there are always spare embryos to be frozen, donated, experimented upon or destroyed. The success (live birth) rate for IVF patients of all ages is about 22%. Costs of IVF-treatment range between _20,000 and _30,000.”

**According to Dr. Nicholas, an Independent Consultant Ethicist,** the act which brings the child into existence is an act by which two persons give themselves to one another, but it is not an act that “gives the responsibility of the embryo to doctors and allows technology to dominate the origin and destiny of the human person”. He further claims that only the child possesses genuine rights: the right “to be the fruit of love between his parents,” and “the right to be respected as a person from the moment of his conception.”

’’Infertile couples are already a high-risk group for birth defects and other congenital problems. They are usually older than the general population and are more likely to have multiple pregnancies, which are both known to increase the risk of abnormalities”, says Brian Kaplan, MD, reproductive endocrinologist at the Fertility Centers of Illinois.

**Leana Webb, who conceived via IVF-technique says:**
“My husband and I went to the fertility clinic for IVF treatment after trying unsuccessfully for years to have a child. When my twins were born, we noticed that they both had oversized tongues and bladder defects. Now they have to undergo reconstructive surgery; we hope that they will lead a normal life after that.”
Reproduction is an essential biological mechanism for the continuity and diversity of all living species. While most fertile couples take this for granted, infertile couples have to struggle with alternative reproduction techniques, one of which is *in-vitro* fertilization. In-vitro fertilization (IVF) is a procedure designed to enhance the likelihood of conception in couples for whom other fertility therapies have been unsuccessful or are not possible. So far this technique has served one million infertile women as an alternative way to natural conception. Yet, as it becomes more and more widespread, it should not be ignored that there are striking differences between reproduction via *in-vitro* fertilization and natural reproduction in terms of the health risks and ethical norms.
The number of frozen embryos between 1999 and 2003

Risks

<table>
<thead>
<tr>
<th></th>
<th>IVF-births</th>
<th>Natural births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Pregnancy</td>
<td>25-35%</td>
<td>1%</td>
</tr>
<tr>
<td>Spontaneous Abortions</td>
<td>19-20%</td>
<td>19-20%</td>
</tr>
<tr>
<td>Birth Defects</td>
<td>9%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Birth weight less than 1,500g</td>
<td>2.6%</td>
<td>1%</td>
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</tbody>
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Table 1: Statistical data comparing IVF births and Natural births.