

Test-Tube Baby ^[1]

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A [test-tube baby](#) ^[4] is the product of a successful human reproduction that results from methods beyond [sexual intercourse](#) ^[5] between a man and a woman and instead utilizes medical intervention that manipulates both the [egg](#) ^[6] and [sperm](#) ^[7] cells for successful [fertilization](#) ^[8]. The term was originally used to refer to the babies born from the earliest applications of [artificial insemination](#) ^[9] and has now been expanded to refer to children born through the use of [in vitro](#) ^[10] [fertilization](#) ^[8], the practice of fertilizing an [egg](#) ^[6] outside of a woman's body. The use of the term in both media and scientific publications in the twentieth century has been accompanied by discussion as well as controversy regarding the ethics of reproduction technologies such as [artificial insemination](#) ^[9] and [in vitro](#) ^[10] [fertilization](#) ^[8]. The [evolution](#) ^[11] of these terms over time mirrors the perception of our ability to manipulate the human embryo, as seen by the general public as well as the scientific community.

The term "test-tube baby," prior to the development of [in vitro](#) ^[10] [fertilization](#) ^[8] technologies in the twentieth century, was used to refer to babies born as a result of [artificial insemination](#) ^[9]. [William Pancoast](#) ^[12], a physician from Philadelphia, performed the first [artificial insemination](#) ^[9] that led to a successful birth in 1884, marking the birth of the first [test-tube baby](#) ^[4]. Despite the fact that this was the earliest instance of any sort of physician-assisted reproduction, the grandeur of the event was not recognized by the public or media in any notable way.

As reproduction technology continued to develop and [in vitro](#) ^[10] [fertilization](#) ^[8] research advanced in the mid twentieth century, the media began to pay more attention to the idea of test-tube babies and the impact their existence would have on the world. Publications began to publish articles in the early twentieth century that discussed the ethics behind the creation of children through means other than human [sexual intercourse](#) ^[5]. Such publications as *The New York Times*, *Scientific American*, and *Newsweek*, among others, published articles discussing test-tube babies and the technologies used to create them, focusing on what their existence meant for the development of the public's understanding of reproduction as well as the ethics involved with such an advanced understanding. The articles refrained from being overtly outraged in response to the experiments but recognized the controversy involved with these new scientific developments and included this in their coverage.

By the middle of the twentieth century, [in vitro](#) ^[10] [fertilization](#) ^[8] had been thoroughly researched and reported on, though no successful human reproduction had occurred from its practice. However, the successful [fertilization](#) ^[8] and reproduction of various species of animal besides [humans](#) ^[13] through [in vitro](#) ^[10] [fertilization](#) ^[8] was common practice by 1960. It was also around this time that the discussion of a child born from [in vitro](#) ^[10] [fertilization](#) ^[8] began to show up in numerous publications. Look magazine published an article in 1971 entitled "The Test Tube Baby is Coming," which reported on the work of [Landrum Brewer Shettles](#) ^[14], an American biologist who would eventually attempt the first human [in vitro](#) ^[10] [fertilization](#) ^[8] in America, which was not successful.

It was not until 25 July 1978 with the work of two British medical researchers, [Patrick Steptoe](#) ^[15] and [Robert Edwards](#) ^[16], that the revised definition of [test-tube baby](#) ^[4] became a reality. With their work, the first child born from a [zygote](#) ^[17] fertilized outside of a human body was created. The first baby born via [in vitro](#) ^[10] [fertilization](#) ^[8] was Louise Brown. It was also this breakthrough that really caught the attention of the world, made clear in the media's reaction to Louise Brown's birth. Newspapers reported the story as a significant scientific and medical breakthrough while tabloids and other similar publications treated the birth more like the arrival of a new celebrity into the world. The mixed media response to the birth of Louise Brown was also very foretelling of the diverse public reactions that would follow. Shortly after the birth, discussion of both legal and ethical implications regarding the existence of test-tube babies began in the international media as well as in scientific journals. These debates continue to this day as the ongoing research of embryos and reproduction leads to the development of new medical practices.

After the birth of Louise Brown, scientists in other countries around the world began pursuing the birth of their first child from [in vitro](#) ^[10] [fertilization](#) ^[8]. This goal was also accompanied by the development of numerous fertility clinics in various countries. The first fertility clinic in the United States opened at the [Eastern Virginia Medical School](#) ^[18] in Norfolk, Virginia on 1 March 1980. It was also here that [Jordan Elizabeth Carr](#) ^[19], the first child who was a product of [in vitro](#) ^[10] [fertilization](#) ^[8] in America, was born on 28 December 1981. By this time, the practice of [in vitro](#) ^[10] [fertilization](#) ^[8] was much more publicly accepted, as it was observed that children born under such circumstances developed normally. This was not to say that there were no opponents to the practice at this time, but rather that Carr's birth was received with excitement from the general public and the media captured this response when covering the event. More fertility clinics were established all over the world and the number of successful [test-tube baby](#) ^[4] births continued to grow as [in vitro](#) ^[10] [fertilization](#) ^[8] became both a more refined and more accepted practice.

Through the work of various scientists, the idea of traditional [fertilization](#) ^[8] and human reproduction through [sexual intercourse](#) ^[5] was no longer seen as the only means of fertilizing an [egg](#) ^[6] in order to create a human life. This concept was represented by

the existence of test-tube babies, the physical manifestation of a more advanced control over human reproduction. Through the work of such scientists as Pancoast, Steptoe, and Edwards, the definition of test-tube baby^[4] has changed over time but continues to refer to any child born from an embryo created by means of medical intervention that directly manipulates the sperm^[7] and egg^[6] cells.