



# WHAT


# IS

# AN EMBRYO?

A human embryo is created through fertilization of an egg by a sperm. The first 7 days of embryo development are called the pre-implantation stages. After implantation into the uterus, embryo development progresses for an additional 7 weeks. During these 7 weeks, all major organs in the body develop. In rare circumstances, human embryos can develop from an unfertilized egg. These embryos are called parthenotes and are not viable. While scientists generally agree on the biological definition of an embryo (the product of fertilization), the legal and ethical implications of this term, particularly regarding research and personhood, can differ widely across cultures.

## How are Embryos Made?

Most human embryos are made in the body through the process of sexual reproduction. Some embryos are made in the lab with the help of In Vitro Fertilization (IVF). IVF increases family planning options for a wide-range of people. For example, individuals with infertility or same-sex couples may use IVF to have a family. Additionally, those who can reproduce sexually may choose IVF for genetic screening because one or both partners are known carriers of a genetic disease. In rare cases, embryos for reproductive purposes are made with a technique called mitochondrial replacement therapy (MRT). MRT embryos are made to prevent transmission of mitochondrial disease. Somatic cell nuclear transfer is a technique for generating cloned embryos which are used in the laboratory by scientists to study reprogramming. Cloned embryos are not used for reproductive purposes.

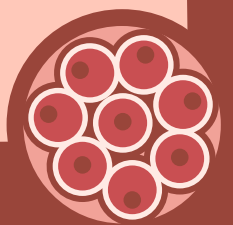


## What happens to embryos made in the body or the lab?

While the initial journey may be slightly different, embryos made in the body, or via IVF and transferred into the reproductive tract, will either implant into the uterus or be expelled from the body with menstruation.

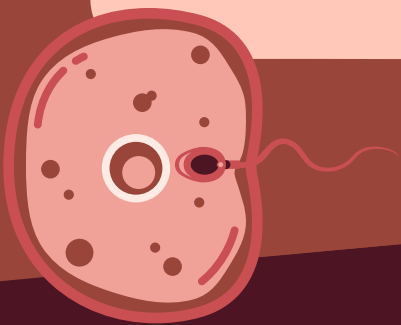
Even with implantation, a large fraction of human embryos will not survive. When embryos implant but do not survive, this leads to a miscarriage. Miscarriages are quite common and occur in 10-20% of known pregnancies.

If not transferred, IVF embryos are frozen and placed in storage. The choice to freeze an embryo is very personal and may occur when there is a need to wait to build a family, or because genetic testing is being done to screen for embryos that are affected with a genetic disease.



## Did you know?

Embryo freezing is very common in the United States. In 2021, 167,689 of the 413,776 ART cycles performed in the United States were egg or embryo banking (freezing) cycles.



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