

# Human Stem Cell Research Guidelines

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In news- Human Stem Cell Research Guidelines have been updated recently.

## About updated guidelines-

- The International Society for Stem Cell Research (ISSCR) in may 2021 released an updated version of its guidelines for basic and clinical research involving human stem cells and embryos.
- The ISSCR's changes include **recommendations for using human embryo models, lab-derived gametes, and human-animal chimeras** as well as an **end to the widely accepted two-week maximum for growing human embryos in culture.**
- As per the old guideline, after 14 days, an embryo should not be used for research and must be destroyed. ISSCR has removed this rule.
- The 14-day rule has served as an international standard since 1990 when it was included in the **Human Fertilisation and Embryology Act in the United Kingdom.**
- The new rule makes it possible to conduct research on human embryos that are at more advanced stages of development.
- **Drawbacks of the new guidelines** is that there is no longer any limit on the time frame for research. The longer a human embryo is allowed to grow, the more recognisably human it becomes.

## What is the 14-day rule?

- After an egg cell is fertilised by a sperm cell, the resulting embryo consists of a few identical cells. Most embryos will implant in the uterus after the 14th day.
- After this point, the 'primitive streak' appears, which

is the first sign of an embryo's developing nervous system.

- The rule also identified the point at which the embryo shows signs of individuation, because **it is no longer possible for the embryo to split into twins after 14 days.**
- Some people reason that due to these events, it is at this stage that a moral being comes into existence, and it would not be ethical to perform research on embryos after this time.

### Laws of embryo research across the world-

- Countries like Italy and Germany – don't allow it at all.
- Others, like the UK, allow research to continue until the embryo is 14 days old, after which it must be destroyed.
- Some countries like the United States do not have any law regulating it.
- In South Africa, embryos must not be older than 14 days.

### Are international guidelines binding?

The international guidelines are **not legally binding**. But the effect of the revised guidelines is that the international standard for best practice in scientific research has now changed. This means that countries which have implemented the rule in their laws will need to revise them so that they are in line with best practice in science.

### The International Society for Stem Cell Research(ISSCR)

- It is an independent nonprofit organization and the voice of the stem cell research community.
- It based in Skokie, Illinois, United States.
- The organization's mission is to promote excellence in stem cell science and applications to human health.

- It was formed in 2002 (incorporated on March 30, 2001) to foster the exchange of information on stem cell research.
- In June 2003, the International Society for Stem Cell Research held its first convention.
- The ISSCR produced its original standards for human embryonic stem cell research in 2006, followed closely in 2008 with guidelines for the use of such cells in clinical settings.
- In 2016, these two documents were combined and updated to form the ISSCR's Guidelines for Stem Cell Research and Clinical Translation.