

Double the time limit on embryo tests, urge scientists

Katie Gibbons

Scientists should be able to keep human embryos alive in the laboratory for 28 days — double the current legal limit of 14 days, a conference will be told this week.

Lengthening the period of observation and experimentation would bring major insights into congenital conditions, heart disease and cancers, fertility experts will argue at the event in London.

Under the 1990 Human Fertilisation and Embryology Act scientists can create human embryos for research, but only for a maximum period of 14 days. It was agreed that before 14 days there were no beginnings of a spinal cord so the embryo was unable to feel anything. Until recently, no scientist had been successful in keeping an embryo alive for a longer period, with the average lifespan of a laboratory embryo being three to five days.

However, this year scientists in Cambridge succeeded in keeping an embryo alive for 13 days.

Professor Robin Lovell-Badge, of the Francis Crick Institute in London, and Professor Simon Fishel, head of the Care Fertility Group, claim that the period from seven to 28 days after conception, known as gastrulation, is critical for understanding how human cells develop. Their call for a 28-day limit is likely to be opposed by members of the religious right and supporters of the original testing guidelines who warn that any relaxation of the strict rules could lead to unrestricted research being carried out on living embryos.

Professor Fishel said: "Being able to generate embryos beyond 14 days will lead to very meaningful research.

There is so much that we need to understand about what drives cells and what goes wrong and causes genetic abnormalities or tumours. We can't do these studies at 14 days but at 28 days there's more we can achieve in understanding disease. It will be a huge benefit to human health. We know so much more about it in the earthworm, the fruit fly, mice — but nothing in our own species.

"It's not a human embryo we are testing, it's human embryonic cells. The only concern is that in raising this issue we risk pushing things backwards if the backlash is extreme."

Prof Fishel will also face opposition from the British philosopher Baroness Warnock. Her report in 1984 outlined the 14-day limit to enable research on human embryos within strictly regulated parameters and formed the cornerstone of the 1990 Act.

"We should note that every time the law about embryo research has been changed or amended the opposition has rallied its forces, and it would do so again if we try to get the 14-day rule extended," she told *The Observer*. "The risk is that all the progress we have made since 1990 would be lost. We should stick to the 14-day limit."

The proposal to extend the period will be made at the Progress Educational Trust meeting in London on Wednesday. Prof Fishel said: "If we don't extend to 28 days [it] will become a major frustration in trying to improve precision-based medical approaches for disease.

"Everything will continue to be regulated and assessed on a case by case basis. Nothing worse can come from it, all this talk of slippery slopes is just scaremongering."

Q&A

What is human embryo testing?

Since the late 1970s scientists have been carrying out research on human embryos created in laboratories through in vitro fertilisation (IVF) to deepen medical understanding of development, disease and genetic abnormalities

What are the rules and proposed changes?

The 14-day rule became law in the Human Fertilisation and Embryology Act 1990. It was informed by a 1984 report by Baroness Warnock who argued that 14 days was the point at which an

embryo could no longer split into two identical twins, so is the point at which the individuality of an embryo is asserted. Scientists want the testing period to be extended to 28 days to enable research into gastrulation, a process that normally occurs in the third week after fertilisation

What has changed?

The rule had been largely uncontested because no scientist had been able to keep an embryo alive for that time until this year when Magdalena Zernicka-Goetz, at Cambridge University, published a paper in the journal *Nature* on how her team had succeeded in keeping human embryos alive in oxygenated environments for 13

days – beyond the point they would normally embed in the womb

Who disagrees?

The majority of scientific opinion favours extending the 14-day period to enable further discoveries about early development, investigate the causes of early miscarriages, and ways to produce stem cells to treat diseases. Many religious groups, ethicists and politicians fear that extending the testing period to 28 days is a "slippery slope" to unrestricted embryo testing which could result in babies being grown in laboratories to full term

Who decides?
Parliament.