



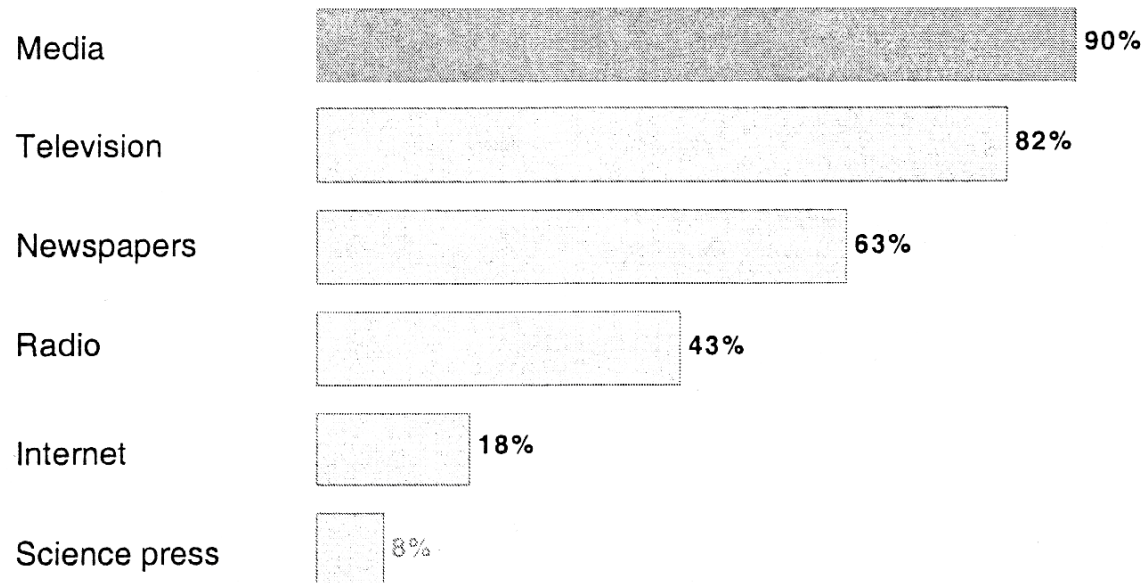
Science Media Centre

where science meets the headlines



Sources of Scientific Information

Q1 *Through which sources of information, if any, do you get most of your information about science issues or scientific research and its social and ethical implications?*



Base: All adults aged 15+ in Great Britain (1,987)

MORI ₂

From a survey conducted by MORI on behalf of the Science Media Centre, March 2002

The Observer 18 January 2004

Uproar at news conference as US fertility maverick drops genetic bid

Scientists pour scorn on doctor's human clone boast

By Jo Revill Health Editor

A US fertility specialist flew into Britain yesterday to announce that he had transferred the first cloned embryo into a woman - but he refused to give a shred of evidence to back up his astonishing boast.

With theatrical flair, Dr Panos Zavos, an IVF expert from Kentucky, told a packed press conference in London that he had created the first cloned pregnancy. He said that he had taken a skin cell from a man and fused it with the egg of a 35-year-old woman and that in two weeks' time they would know whether a full pregnancy was safely established.

This announcement was greeted with laughter and disbelief. A scientist compared it to recent claims by the alien-loving Raelian sect, who say they have created cloned babies.

No details were given to corroborate Zavos's evidence. He would say is that it happened outside Europe and the US and that it took place within the last fortnight.

but not in many other parts of the world, including the Middle East. Zavos defended using the technique, saying: 'I am simply doing this to help my patients and to give them the child that they long for.'

During the press conference Zavos presented pictures of himself as an astronaut walking on the Moon to convey his point that much was achievable in the future. He became annoyed when journalists persisted in asking questions about why he had previously claimed to have created cloned human embryos without ever providing any evidence to substantiate his scientific evidence that this is the case.

Zavos is no stranger to controversy. He claimed back in 2002 that he had created the world's first cloned embryo, saying he was sure he would oversee its birth by the end of last year. He said at the time: 'This is all about creating healthy children for childless people. It doesn't bother me at all that people can't accept it - they really ought to.'

Supported by another fertility specialist, Dr Paul Rainsbury, Zavos also announced plans to offer couples embryonic splitting, a technique where one embryo is divided into two. One part is implanted into the womb of the woman and is born as normal, and the other is frozen and stored for use in 'spare parts' surgery in case the twin should fall ill later in life. Zavos tried to jus-



Kentucky fertility expert Dr Panos Zavos makes his announcement in London

tify the action yesterday, saying: 'Families in the future will be looking for possibilities of ensuring the general health status of their baby that is born by having another embryo that is similar. If the baby becomes ill, or develops any genetic abnormalities or deformities or injuries, then they can use that embryo to create stem cells to treat the baby's disease or deficiencies.'

He had to admit, however, that no one has ever successfully performed this on a human embryo, although it has been achieved in animal experiments. 'But all intentions are that we will,' he stated. He claimed that other scientists were 'bad mechanics' who had failed to use the right techniques to achieve the result they wanted.

'I am simply doing this to give my patients the children they long for'

Scientist attacks hype over clone research

Alok Jha Science correspondent

A leading fertility researcher has warned that the media storm surrounding an American doctor's claims to have produced a cloned embryo will only serve to paint a heavily distorted picture of work in this field.

Far from suddenly becoming a tantalising possibility for childless couples, reproductive cloning would take several decades of dedicated research to perfect, according to scientists. And that is assuming, of course, that it was actually possible - and ethically approved - in the first place.

Simon Fishel, a pioneer of the IVF technique in the 1970s and now director of the Centre for Assisted Reproduction in Nottingham, told the Guardian that the weekend's coverage of fertility specialist Panos Zavos's work might give the impression that there was serious debate among scientists over the use of human cloning for reproduction.

In reality, he said, any fertility researcher with credibility was firmly against the idea of using cloning techniques for anything other than research purposes.

And it is not only for ethical reasons: techniques of reproductive cloning are far from being safe for use in humans,

By Michael Knapp

AN American doctor who claimed that a woman may be about to conceive the world's first cloned baby sparked angry protests yesterday.

The patient was implanted with an embryo grown from skin cells from her husband, announced Dr Panos Zavos.

But there was only a 30 per cent of it developing into a pregnancy.



SHOCK: Dr Zavos making his claims in London. Human cloning is not allowed in the UK

clone a child in the UK. The Government has already acted to stop this happening.

'We are one of the few countries in the world who have passed legislation to ban this possibility. There will be no cloned babies in the UK while I am Secretary of State for Health.'

'This Government shares the widespread public repugnance that human cloning could be attempted and views this as a gross misuse of genetic science. "We made a



CLAIM: Dr Zavos

Clone doc baby bid attacked

By STEPHEN WHITE

AN American doctor who claims to be creating the world's first cloned baby has been accused of exploiting those desperate for children.

Dr Panos Zavos says he has transferred an embryo into an infertile woman, 35, and is waiting to see if she falls pregnant. But his work has been condemned by scientists.

Cloning expert Wolff Reik said: "He is exploiting the emotional pressure of people desperate to have children."

"In experiments 99 per cent of clones die in the womb and the others have problems. Therefore it remains as irresponsible as before to do it in a human."

A spokesman for pressure group Life said Dr Zavos had exposed the woman's vulnerability "to almost incredible risk".

The doctor, a passionate advocate of cloning, refused to give details about the woman, or the date of the implantation but said it was not done in Europe, America or Britain.



Panos Zavos: cloning 'first'

SHOULD WE CLONE HUMANS?

NO - 0901 566 5005

NO text DXVOTED to 82100

es at midnight tonight. Texts cost 25p plus network

go customers may have trouble using this service

0 Apr 03 | Science/Nature

Scientists 'clone' monkey

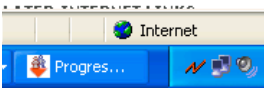
4 Jan 00 | Sci/Tech

Doctors defiant on cloning

9 Mar 01 | Sci/Tech

Cloning humans: Can it really be one?

8 Dec 02 | Sci/Tech





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The Independent

The Daily Mail

12th July 2004

The Guardian

Britons to head GM vaccines trial

£8million research program to grow pharmaceutical crops

BRITISH scientists are to lead an £8million biotech project, using genetically-modified crops to cultivate vaccines for a host of deadly diseases, it emerged yesterday.

Professor Julian Ma of St George's Hospital Medical School in London will lead a consortium of 39 research groups from 12 nations, aiming to trial pharmaceutical products produced through the manipulation of plants.

Experts believe such work could hold the key to meeting demand for potentially life-saving drugs for HIV, rabies, tuberculosis and diabetes.

But project leaders admit that such products will prove controversial, given widespread public opposition to GM food technology in Britain and Europe.

A location for the trial has not been chosen, but the projects leaders did not rule out the UK. They admitted they would have to consider the risk

of environmentalists opposed to crops that are being used to destroy trials. We're going to destroy trials.

GM opponents warned that proposals have the potential to spread negative impacts. A clear criteria must be established to ensure that human health and environment are protected, Clare Oxborrow, Friends of Earth's GM campaigner.

The EU-funded project, the first of its kind in Europe, would involve injecting genes effective in vaccines against or treating a disease and producing them into plants. The crops which could include maize and tobacco plants, would be cultivated until ready for harvest. The vaccine would then be removed and packaged as a drug

Professor Julian Ma of St George's Hospital Medical School in London, the scientific co-ordinator of the project, said that it will take about two years to develop the technique before the first crop is scheduled to be grown in 2006.

Clinical trials of the first vaccine derived from GM plants are planned to take place in 2009.

GM crops to be used

to create multi-million pound research program to grow pharmaceutical crops

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Science correspondent

Human trials of vaccines produced by genetically modified plants could begin within five years, scientists claimed yesterday.

The researchers outlined proposals to grow fields of crops that have been genetically modified to produce vaccines and other pharmaceuticals to treat HIV, rabies, diabetes and TB.

They said field trials of medicine-producing crops were likely to begin in 2006, with safety trials in humans beginning three years later at St George's hospital in London.

Although the team will consider carrying out trials on plots of a hectare (2.5 acres) in Britain, the unfavourable climate and risk of sabotage mean that field studies, and ultimately full-scale growing of the plants, is most likely to happen in South Africa or southern Europe.

Scientists have long known that GM technology can be used to trick a plant's molecular machinery into making a range of medically useful compounds. Instead of using expensive pharmaceutical factories, advocates envisage fields of GM crops being harvested to reap new medicines cheaply, a process known as "pharming".

According to Julian Ma of St George's Hospital Medical School in London, the leader of the £8m project, the

primary aim is to provide medicines for the developing world. "The major burden of disease is in the developing world, but these are the countries that do not have access to vaccines," Prof Ma said.

"The number of people dying each year from the six major diseases for which vaccines exist is around 3.3 million. The scientists have already identified genes that can be put into plants to make them produce antibodies or other compounds that can help treat rabies, TB and diabetes. While no vaccine yet exists for HIV, genes that produce antibodies capable of destroying the virus have been discovered. A cream containing the antibodies could help reduce the risk of HIV being transmitted during sexual intercourse, but the production technology cannot easily be scaled up. "Using traditional techniques, you just cannot produce enough," said Prof Ma. Prof Ma believes GM plants — probably tobacco or maize — offer a cheap way to make vast quantities of vaccines and other drugs. "It looks like the cost of plant-derived products will be 10- to 100-fold less than conventionally derived products," he said. If the technique is proved, it may be adopted by developing countries, helping to breaking their reliance upon pharmaceutical multinationals. "Growing and harvesting

Medical crops coming soon

Human trials of GM drugs could be five years away

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rehabilitate technology. He said his plans were not tied with the biotechnology. "My aim is to get medicine."

Philip Dale, an expert in GM safety issues at the John Innes Centre in Norwich, is advising on possible risks of contamination, where genes from the GM plants get into others.

"The ability to be able to isolate these from other crops is a crucial factor," he said. "There's a possibility of mixing with other crops and that's the basic challenge we have to wrestle with."

Land used to grow the crops will need to be remote from other crops and dedicated machinery will be needed to process them, so that the medicine cannot enter the food chain.

Sue Mayer of the lobby group GeneWatch said the researchers should pledge to make their technology free to all, to prevent it being claimed by pharmaceutical companies. Friends of the Earth's GM campaigner, Clare Oxborrow, said: "A clear set of criteria must be established to ensure that human health and the environment are protected. Any benefits must genuinely reach those that need them, rather than simply lining the pockets of the biotech and pharmaceutical industry."

guardian.co.uk/gm



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