

## Nobel laureate: Ethics debate unstilled by stemcell success

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Japanese Kyoto University professor Shinya Yamanaka, who won the 2012 Nobel Prize in Medicine with John B. Gurdon of Britain, answers to journalists' questions in Paris. Yamanaka cautioned that stem cells could still spur sharp debate, despite his achievement in creating cells that are not derived from embryos.

Newly-crowned Nobel laureate Shinya Yamanaka on Monday cautioned that stem cells could still spur sharp debate, despite his achievement in

creating cells that are not derived from embryos.

The Japanese scientist was interviewed on a trip to Paris after co-winning the 2012 Nobel Prize for Medicine last month alongside Britain's John Gurdon.

Yamanaka was lauded for "reprogramming" [mature cells](#) so that they return to a versatile primitive state, called stem cells.

Researchers hope that stem cells may one day provide lab-grown tissue to replenish organs damaged by accident or disease.

Only the very first steps have been taken along this road, but the mission has been boosted by Yamanaka's work, for it implies that [stem cells](#) culled from embryos—until now the most potent but also a highly controversial source—may no longer be needed.

But Yamanaka warned that his induced [pluripotent stem cells](#) (iPS) are unlikely to escape a storm touching on the creation of life.

"Now we can avoid the use of [human embryos](#), so it's good. However, we are facing new [ethical issues](#)," he told AFP.

The question, he said, lies with the creation of so-called [germ cells](#)—cells that give rise to sperm or eggs.

"Can we make sperm from blood and can we fertilise these oocytes (eggs)?" he asked. "We really need discussion in society about how much we can do about this new technology."

Yamanaka said scientists in Kobe had already applied to the Japanese authorities for permission to carry out the world's first iPS trial on humans, using cells on patients suffering from [retinal disease](#).

And, he said, Japan was pushing ahead with a stem cell bank, which was approved in July.

"In theory, we can make iPS cells from each patient. But it would be very expensive and take six months to prepare the cells from each patient. So in reality, we cannot do that," he said.

A stem cell bank would be a good alternative, said Yamanaka.

The idea is to choose donors whose [DNA profile](#) is least likely to trigger rejection by a patient's immune system.

"We may be able to cover many patients by having only a handful of iPS stock, that's our plan," he said. "By our estimations, we identified 140 such specific donors, (and with these) we could cover up to 90 percent of the whole population."

Some scientists have been cautious about iPS technology, fearing that reprogramming errors as an adult cell is rewound to its infant state, using a batch of introduced genes, could cause tumours.

Yamanaka, 50, carried out his groundbreaking work in 2007, but was quick to pay tribute to Gurdon, who laid the conceptual foundations in 1962.

In 2007, "We thought maybe we will win the Nobel prize in the future if it goes" to clinical trials, he said.

"So we did not expect (it) at this time because it was too early. But we were awarded because of Sir John Gurdon and his discovery 50 years ago... Because of him I was very lucky to be awarded."

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