

1. Human-Monkey Embryo Day 1.notebook

I
do

Embryos – A small cluster of fertilised cells that will develop into a new organism. Research on human embryos is limited to the first 14 days of development but the exact point it becomes a living being is a hotly debated and highly emotional issue.

a process that once started creates many complicated problems

Scientists make first human-monkey embryo



Monkey business: Human cells injected into macaque embryos survived for up to 20 days. © Getty

Are scientists opening a Pandora's box? The latest breakthrough could make it possible to grow human organs inside animals. It will save lives, but the ethical implications are enormous.

An organ is a group of different tissues that work together to do a particular job. Examples of organs include heart, lungs and liver.

The consequences that research may have on everybody.

Do you know the definitions of these words? Use our reading strategies to help.

Glossary

laboratory

transplants

modified

organisms

organ donations

accomplished

procedure

suppress

moral

harvest

Strategies

*Look at each part of the word.

*Look at the prefix/suffix of the word.

Does this tell us anything?

*Read the full sentence again. Is the word use as a noun, verb or an adjective?

*Is the word familiar to another word you are familiar with?

Glossary

laboratory - a room with special equipment to carry out experiments

transplant- take (living tissue/organ) from one body and put into another.

modified - changed

organisms - an individual animal, plant or single-celled life form.

organ donations - the process when a person allows an organ of their own to be removed and transplanted to another person.

accomplished - achieved

procedure - a surgical operation

suppress - prevent a reaction

moral- behaving in the right way

harvest - remove organs to experiment on

Glossary

Embryos – A small cluster of fertilised cells that will develop into a new organism. Research on human embryos is limited to the first 14 days of development but the exact point it becomes a living being is a hotly debated and highly emotional issue.

Stem cells – A special embryonic cell with the ability to develop into many different cells and repair damaged tissue. In 2006, researchers discovered how to reprogramme adult cells to become stem cells, overcoming ethical concerns surrounding embryo research.

Chimeras – In Greek mythology, the fire-breathing Chimera had the head of a lion, the body of a goat and a snake for a tail.

Red market – Iran is the only country where it is legal to sell organs. In the rest of the world, they are traded illegally by criminal gangs who exploit vulnerable and desperate groups.

Immune response – The body attacks the organ, treating the transplant like an invading virus.

Bioethicist – Bioethics is the study of moral and philosophical questions arising from advances in biology and medicine.

Pandora's box – In Greek mythology, a jar that, when opened, released sickness and death into the world.

Dystopian – For example, in Kazuo Ishiguro's 2005 science fiction novel *Never Let Me Go*, self-aware clones discover their fate as organ donors.

3D bioprinting – Instead of ink and plastic, tissue engineering uses a "bio-ink" of living cells to make artificial tissue and organs.

Alvin Roth – The Nobel Prize-winning economist devised a "kidney exchange", using economic theory to link up matching pairs of patients and donors.

LO: to find information in the text to answer questions.

we
do

you
do

1st Read: Read the text

Read the text with your partner - take it in turns to read a sentence or paragraph each.

Use the glossary to help you understand the unfamiliar words.

Find the information in the text to answer the questions.

LO: to find information in the text to answer questions.

you
do

1. Where was the world's first human-monkey embryo created?
2. What did the US-Chinese team inject into 132 embryos?
3. What are chimeras?
4. Why did the human-pig chimera have limited success?
5. Why create a chimera?
6. What is xenotransplantation?
7. Why did the transplanted baboon heart fail?
8. How could chimeras solve this problem?
9. What is the key issue with growing human organs in animals?
10. Name an alternative to chimeras.

LO: to find information in the text to answer questions.

we
do

1. Where was the world's first human-monkey embryo created?

Laboratory in China

2. What did the US-Chinese team inject into 132 embryos?

human stem cells

3. What are chimeras? **organisms with two sets of DNA**

4. Why did the human-pig chimera have limited success?

the cells were too different

5. Why create a chimera? **to solve the global shortage in organ donations**

LO: to find information in the text to answer questions.

we
do

6. What is xenotransplantation? **a procedure where organs are taken from animals**
7. Why did the transplanted baboon heart fail? **body rejected foreign tissue**
8. How could chimeras solve this problem? **allow human organs to grow inside animals for transplants**
9. What is the key issue with growing human organs in animals? **moral status of animal/rights of the animal/ethical question**
10. Name an alternative to chimeras.
3D bioprinting and tissue engineering/change the transplant system to encourage people to donate.

LO: to find information in the text to answer questions.

we
do



Should animals be used to grow chimeras?

After reading the article, I believe.....

When the article talked about....., it made me think.....

On the one hand, I believe it is..... because.....

However, there are arguments such as....