The Guardian Weekly

Koreans succeed in cloning human embryos

Level 2 | **Intermediate**

1 Key Vocabulary

Match the words with the definitions.

1. cloning
2. embryo
3. diabetes
4. blatocyst
5. chromosome
6. stem cell
7. milestone
8. identical

a. A part of the nucleus of a human cell containing genes.
b. A disease when your body does not produce enough insulin to reduce the level of sugar in the blood.
c. An event or achievement that marks an important stage in a process.
d. The procedure of creating an exact copy of an animal or plant cell using DNA.
e. A tiny ball of cells that becomes an embryo.
f. Exactly the same.
g. The agent that turns a fertilised egg into 10 trillion cells during pregnancy.
h. A human or animal before it is born.

2 Scanning

Look in the text and find this information as quickly as possible.

1. Find 3 diseases that could be treated by stem cell research.
2. How many eggs were used to clone the blatocysts?
3. Find 6 animals that scientists have cloned in the past.
4. Is President George Bush in favour of stem cell research or opposed to it?
5. Who is Leon Kass?

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Stem cell breakthrough brings hope of cures for genetic diseases, but raises alarm

South Korean and American scientists have cloned human embryos and successfully extracted stem cells from one of them. The research opens the way for once-undreamed of treatments for long-term diseases such as diabetes, Parkinson's and Alzheimer's. It also reignites the debate about human cloning. The team used 242 eggs from 16 women to clone 30 blastocysts - the tiny ball of cells that become an embryo. Stem cells are the agents that turn a single fertilised egg into up to 10 trillion cells in just nine months' gestation.

Scientists around the world have cloned sheep, mice, rats, rabbits, horses, and even a mule. But despite dramatic yet unsupported claims from European fertility clinics, primates and humans were thought to be almost impossible to clone.

The Korean and US scientists sucked the original DNA out of the egg, and substituted it with chromosomes from an adult cell. Then they "tricked" the egg into thinking it had been fertilised. "Nobody has cloned a human here," said Donald Kennedy, a biologist and editor in chief of Science.

Dr Kennedy hoped that it might prompt American politicians to think again about the ban on using government money for such research. It could offer the possibility that people with degenerative diseases such as Alzheimer's could be given tissue transplants with their own genetic "signature".

But the White House responded to the news of the breakthrough with a reminder that President George Bush is opposed to stem cell research. "The age of human cloning has apparently arrived: today cloned blastocysts for research, tomorrow cloned blastocysts for baby-making," said Leon Kass, chairman of the president's council on bioethics. Last week's announcement was the culmination of years of research into the potential benefits of therapeutic cloning. But for those benefits to be realised, researchers must now work out how to turn the cells into replacement human tissue needed to treat disease.

In the long term, some scientists believe it could be possible to grow entire organs. Linda Kelly of the Parkinson's Disease Society in the UK said: "This announcement is clearly a milestone in medical research." But the pressure group Human Genetics Alert warned that researchers had given a big boost to those who want to make cloned babies. Such fears arise because the initial steps in therapeutic cloning and reproductive cloning are identical.

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3 Comprehension Check

Match the beginnings and the ends of the sentences:

1. The extraction of stem cells from cloned human embryos …
2. The human body …
3. Previously people thought that …
4. The original DNA …
5. The US government …
6. Opponents of stem cell research …
7. Researchers now need …
8. Some people regard this research …

a. … does not allow government money to be used for stem cell research.
b. … was substituted by chromosomes from an adult cell.
c. … to find out how to change stem cells into replacement human tissue.
d. … as a milestone in medical research.
e. … could lead to treatments for long-term diseases.
f. … it was impossible to clone humans and other primates.
g. … believe it could lead to cloning babies.
h. … consists of up to 10 trillion cells.

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4 Vocabulary: Collocations

Fill the gaps using verbs from the text

1. To _____ a human embryo.
2. To _____ a debate.
3. To _____ a disease.
4. To _____ to news.
5. To _____ stem cells from a cloned embryo.
6. To _____ a possibility.

5 Vocabulary: Word Builder

Complete the table

	Verb	Noun
1.	develop	_____
2.	succeed	_____
3.	research	_____
4.	substitute	_____
5.	discover	_____
6.	reproduce	_____
7.	remind	_____
8.	announce	_____

6 Discussion

What are the points for and against stem cell research? Do you think it is morally acceptable to create a human clone?

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7 Key

1 Key Vocabulary

Match the words with the definitions.

1. d; 2. h; 3. b; 4. e;
5. a; 6. g; 7. c; 8. f.

2 Scanning

1. Diabetes, Parkinson's and Alzheimer's;
2. 242;
3. Sheep, mice, rats, rabbits, horses and a mule;
4. He is opposed to it;
5. Chairman of the president's council on bioethics.

3 Comprehension Check

1. e; 2. h; 3. f; 4. b;
5. a; 6. g; 7. c; 8. d.

4 Vocabulary: Collocations

1. To clone a human embryo;
2. To (re)start a debate;
3. To treat a disease;
4. To respond to news;
5. To extract stem cells from a cloned embryo;
6. To offer a possibility.

5 Vocabulary: Word Builder

1. development;
2. success;
3. research;
4. substitution;
5. discovery;
6. reproduction;
7. reminder;
8. announcement.

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