Stem cells – the future

Quick quiz

Age 16+

1. Tissue stem cells are found in our bodies. They can…

All make every type of cell in our body	A
Make only the cells found in their own tissues	B
Make embryonic stem cells	C
Make only red blood cells	D

2. Embryonic stem cells are 'pluripotent'. This means they can…

Make only the types of specialized cells found in the early embryo	A
Make all the different types of specialized cells found in the body	B
Make special 'factors' that change all other cells into stem cells	C
Copy themselves	D

3. What did Shinya Yamanaka discover?

That embryonic stem cells are pluripotent	A
That sometimes development goes backwards in our bodies	B
That specialized cells can be reprogrammed to behave like tissue stem cells	C
That specialized cells can be reprogrammed to behave like embryonic stem cells	D

4. Reprogrammed cells are also called iPS cells. What does 'iPS cells' stand for?

Induced pluripotent stem cells	A
Induced particulate stem cells	B
Inductable pluripotent stem cells	C
Individual pluripotent stem cells	D

5. A major difference between embryonic stem cells and iPS cells is…

iPS cells can make more types of specialized cells than embryonic stem cells	A
iPS cells can only be made from animal cells	B
iPS cells can be made from an individual patient's cells	C
iPS cells are found in our adult bodies	D

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6. Scientists expect iPS cells to be useful for…

Studying what goes wrong in diseases	A
Testing drugs on human cells	B
Making cells to be transplanted into patients	C
All of the above	D

7. Can iPS cells already be used to make cells for transplantation into patients?

Yes but only for genetic diseases	A
No and scientists are sure they will never be used to make cells for transplants	B
Not yet. Scientists need to understand reprogramming better to develop therapies	C
Yes but only if the patient requests iPS cells	D

8. Why do some people think iPS cells might help answer some ethical questions?

iPS cells can be made without destroying an embryo	A
iPS cells are artificial so we don't have to worry about ethics	B
Shinya Yamanaka is a doctor so we can trust him	C
iPS cells are easy to make so it's too late to think about ethics	D

9. iPS cells could in theory be used to make sperm and egg cells. This means…

Scientists have already made a new human being from a piece of skin	A
In the future, iPS cells may be useful for helping infertile couples	B
iPS cells can breed with each other in a dish	C
None of the above	D

10. What do scientists think are some important advantages of iPS cells? Mark all the answers that apply.

They could be used to make cells for an individual patient that would not be rejected	A
They will make it easier to identify drugs that are likely to work in humans	B
They are very useful for studying inherited diseases	C
All of the above	D