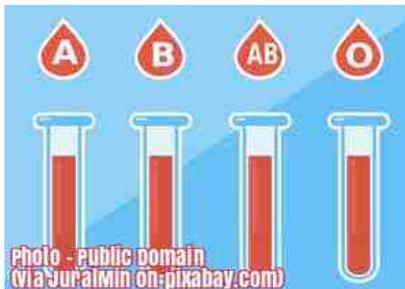


Scientists find way to mass produce blood

27th March, 2017



Scientists from Bristol University in the UK say they have found a way to mass produce blood that would be suitable for patients who need it in hospitals. For a number of years,

they have been able to produce red blood cells in a laboratory. However, the process to do that was very slow and they could not produce a lot of blood. The new technique means scientists can make an "unlimited supply" of blood. Researcher Dr Jan Frayne said: "Previous approaches to producing red blood cells have relied on various sources of stem cells which can only presently produce very limited quantities." She added: "We have demonstrated a feasible way to sustainably manufacture red cells for clinical use."

Professor David Anstee, another of the researchers, told the BBC that his team has found a way to mass produce blood, but they now need the technology to actually do this on a large scale. He said: "There is a bioengineering challenge. To produce that much [blood] is quite a challenge....The next phase of our work is to look at methods of [producing more]." He told reporters that to begin with, they would produce only rare types of blood, as these can be difficult to find with traditional blood donation sources. He said: "The first therapeutic use of a cultured red cell product is likely to be for patients with rare blood groups, because suitable conventional red blood cell donations can be difficult to source."

Sources: bbc.com / nature.com / onmedica.com

Writing

Scientists should not be making blood. It's unnatural. Discuss.

Chat

Talk about these words from the article.

scientists / produce / blood / laboratory / technique / sources / stem cells / clinical / researchers / technology / large scale / challenge / rare / donation / patients

True / False

- The new mass produced blood is not suitable for hospital patients. T / F
- Scientists have never been able to make blood before now. T / F
- Scientists can now make as much blood as they want. T / F
- The new method of producing blood is not sustainable. T / F
- A professor said he needed no technology to mass produce blood. T / F
- The professor said mass producing blood is a challenge. T / F
- The professor said he would produce only rare blood types to begin with. T / F
- It is difficult to find blood for people with rare blood types. T / F

Synonym Match

(The words in **bold** are from the news article.)

- | | |
|-------------------------|----------------|
| 1. found | a. size |
| 2. a number of | b. currently |
| 3. technique | c. make |
| 4. presently | d. tough |
| 5. manufacture | e. several |
| 6. scale | f. traditional |
| 7. phase | g. discovered |
| 8. difficult | h. uncommon |
| 9. rare | i. step |
| 10. conventional | j. method |

Discussion – Student A

- What do you know about blood?
- What do you think of the idea of scientists making blood?
- What does blood do?
- What do you think of the sight of blood?
- Why do scientists need to make blood?
- What is your blood type?
- What would it be like to be a scientist on this project?
- What do you think of these scientists?

Phrase Match

- | | |
|--|----------------------|
| 1. produce blood that would be suitable for | a. scale |
| 2. produce red blood cells in a | b. supply of blood |
| 3. make an unlimited | c. rare blood groups |
| 4. stem | d. patients |
| 5. manufacture red cells for clinical | e. to find |
| 6. the technology to actually do this on a large | f. challenge |
| 7. To produce that much blood is quite a | g. donation sources |
| 8. these can be difficult | h. use |
| 9. traditional blood | i. cells |
| 10. likely to be for patients with | j. laboratory |

Discussion – Student B

- What do you think about what you read?
- How do you think the scientists will find the technology?
- What is a 'bioengineering challenge'?
- What do you know about different blood types?
- Does our blood type tell us about our personality?
- Should we all donate blood?
- What three adjectives best describe blood?
- What questions would you like to ask the researchers?

Spelling

- bliaesut for patients
- the prsoecs to do that
- uopervsi approaches
- osriauv sources
- produce very iiemdl quantities
- tfcurmaaneu red cells
- they now need the yctgeoohnl
- on a large lcsea
- quite a nllcgheea
- look at dtsoehm of producing more
- blood aonoitdn
- a cultured red cell product is kiyell

Answers – Synonym Match

1. g	2. e	3. j	4. b	5. c
6. a	7. i	8. d	9. h	10. f

Role Play

Role A – Blood

You think blood is the most important thing for scientists to mass produce. Tell the others three reasons why. Tell them why scientists shouldn't mass produce their things. Also, tell the others which is the least important of these (and why): hair, teeth or eyes.

Role B – Hair

You think hair is the most important thing for scientists to mass produce. Tell the others three reasons why. Tell them why scientists shouldn't mass produce their things. Also, tell the others which is the least important of these (and why): blood, teeth or eyes.

Role C – Teeth

You think teeth are the most important things for scientists to mass produce. Tell the others three reasons why. Tell them why scientists shouldn't mass produce their things. Also, tell the others which is the least important of these (and why): hair, blood or eyes.

Role D – Eyes

You think eyes are the most important things for scientists to mass produce. Tell the others three reasons why. Tell them why scientists shouldn't mass produce their things. Also, tell the others which is the least important of these (and why): hair, teeth or blood.

Speaking – Mass produce

Rank these with your partner. Put the best things for scientists to mass produce at the top. Change partners often and share your rankings.

- | | |
|-------------|----------------------|
| • eyes | • blood |
| • hearts | • hair |
| • brains | • teeth |
| • knee caps | • young-looking skin |

Answers – True False

a	F	b	F	c	T	d	F	e	F	f	T	g	T	h	T
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Answers to Phrase Match and Spelling are in the text.