

Space travel changes astronauts' DNA

8th September, 2022



Scientists have found a new risk to space travel. They have discovered that our DNA can change when going into space. DNA mutations could increase the risk of space travellers getting cancer. The scientists did research on 14 NASA

astronauts who took part in the Space Shuttle programme between 1998 and 2001. The astronauts provided blood samples ten days before they went into space and three days after returning to Earth. The blood has been frozen for the past 20 years. Professor David Goukassian said: "Astronauts work in an extreme environment where many factors can result in...mutations." He added: "Space radiation...means there is a risk that...mutations could develop."

Professor Goukassian said his study could be important for the future of space travel. In particular, several nations are working on sending astronauts to Mars. Other countries are preparing to build bases on the moon. There is also a race by commercial companies to start the business of space tourism. Goukassian said there were possible health risks to space travel and to exploring deep space. He said more research was needed to study the harmful effects of space travel on the body. This could be important for NASA's Artemis project. This aims to send people back to the moon for the first time in 50 years. The last time humans went to the moon was during the Apollo 17 mission in December 1972.

Sources: dailymail.co.uk / thehill.com / universetoday.com

Writing

We should spend money on helping people on Earth, not going into space. Discuss.

Chat

Talk about these words from the article.

scientists / risk / space travel / risk / cancer / research / astronauts / blood / radiation study / the future / Mars / the moon / health risks / space travel / project / Apollo

True / False

- 1) Space in our DNA changes when we travel. T / F
- 2) Researchers tested the blood of 14 astronauts. T / F
- 3) The astronauts gave blood 10 weeks before going into space. T / F
- 4) The astronauts' blood was frozen for 20 years. T / F
- 5) A professor said his research wasn't important for future space travel. T / F
- 6) Many companies are preparing to build moon bases. T / F
- 7) NASA is working on sending people to the moon again. T / F
- 8) The last time anyone went to the moon was in 1972. T / F

Synonym Match

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

- | | |
|---------------------|------------------|
| 1. found | a. plans |
| 2. mutations | b. gave |
| 3. provided | c. coming back |
| 4. samples | d. a number of |
| 5. returning | e. changes |
| 6. several | f. investigating |
| 7. exploring | g. discovered |
| 8. harmful | h. expedition |
| 9. aims | i. damaging |
| 10. mission | j. specimens |

Discussion – Student A

- a) What do you think of space travel?
- b) Would you like to be an astronaut?
- c) Why are we going into space?
- d) What do you know about DNA?
- e) What do you think of space tourism?
- f) How dangerous is it to change DNA?
- g) Would you like to go to Mars?
- h) Would you like to live on the moon?

Phrase Match

- | | |
|-----------------------------------|--------------------------|
| 1. our DNA can change | a. samples |
| 2. The astronauts provided blood | b. astronauts to Mars |
| 3. The blood has been frozen for | c. of space travel |
| 4. Astronauts work in an extreme | d. could develop |
| 5. there is a risk that mutations | e. went to the moon |
| 6. important for the future | f. when going into space |
| 7. nations are working on sending | g. space |
| 8. space | h. environment |
| 9. exploring deep | i. tourism |
| 10. The last time humans | j. the past 20 years |

Discussion – Student B

- What do you think about what you read?
- What do you think of astronauts?
- How do you become an astronaut?
- How worrying is it that space travel changes DNA?
- Should we stop going into space?
- Would you prefer a vacation to a beautiful city or the moon?
- What will space travel be like in 100 years from now?
- What questions would you like to ask an astronaut?

Spelling

- nercaise the risk
- getting anccer
- The astronauts provided blood ampsels
- Astronauts work in an trexmee environment
- space adirtiaon
- uttmoians could develop
- the tufure of space travel
- In particular, vsreeal nations are working
- mmreccoail companies
- polxrenig deep space
- important for NASA's Artemis rojepct
- during the Apollo 17 ssiimon

Answers – Synonym Match

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

Role Play

Role A – Going into Space

You think going into space is the most exciting expedition. Tell the others three reasons why. Tell them what is wrong with their expeditions. Also, tell the others which is the least attractive of these (and why): the bottom of the ocean, the South Pole or inside a volcano.

Role B – The Bottom of the Ocean

You think the bottom of the ocean is the most exciting expedition. Tell the others three reasons why. Tell them what is wrong with their expeditions. Also, tell the others which is the least attractive of these (and why): going into space, the South Pole or inside a volcano.

Role C – The South Pole

You think the South Pole is the most exciting expedition. Tell the others three reasons why. Tell them what is wrong with their expeditions. Also, tell the others which is the least attractive of these (and why): the bottom of the ocean, going into space or inside a volcano.

Role D – Inside a Volcano

You think inside a volcano is the most exciting expedition. Tell the others three reasons why. Tell them what is wrong with their expeditions. Also, tell the others which is the least attractive of these (and why): the bottom of the ocean, the South Pole or going into space.

Speaking – Expeditions

Rank these with your partner. Put the best expeditions at the top. Change partners often and share your rankings.

- | | |
|------------------|---------------------------|
| • Space | • The Sahara Desert |
| • The jungle | • The bottom of the ocean |
| • Mt Everest | • Around the world |
| • The South Pole | • Inside a volcano |

Answers – True False

1	F	2	T	3	F	4	T	5	F	6	F	7	T	8	T
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Answers to Phrase Match and Spelling are in the text.