Creating Babies in Space Proves More Challenging Than Expected

Description

NASA has identified five dangers of space travel: space radiation, isolation and confinement, distance from Earth, lack of gravity, and hostile environments. While the human body can adapt in some ways, such as in cardiovascular health and balance, other areas like bone density and reproductive functions show delayed recovery. There is also limited evidence that space travel might negatively affect hormone signals and gamete quality. This could mean issues may not fully correct once back on Earth.

For those who stay in space long-term, reproducing could be even more dangerous. Palmer, a researcher, stated that prolonged exposure to space conditions could harm reproductive health. This could lead to genetic changes that affect future generations' fertility and health.

We understand some effects of radiation on the body, but there is still much to learn. Radiation can harm DNA and disrupt gamete formation, making reproduction harder and increasing the risk of health defects in children. The long-term effects of living in microgravity are even less clear, but changes in gravity can influence hormonal regulation and early development in ways we do not fully understand.

Due to the risks of reproduction in space, Palmer stressed the importance of creating clear ethical guidelines. These would focus on informed consent, transparency, gender equality, and protecting future children.

Vocabulary List:

1. **Radiation** /ˌreɪ.diˈeɪ.ʃən/ (noun): Energy that is emitted in the form of waves or particles.
2. **Isolation** /ˌaɪ.səˈleɪ.ʃən/ (noun): The state of being alone or separated from others.
3. **Confinement** /kənˈfaɪn.mənt/ (noun): The act of restricting someone or something within certain boundaries.
4. **Hormonal** /hɔːrˈmoʊ.nəl/ (adjective): Relating to hormones which are regulatory substances produced in organisms.
5. **Guidelines** /ˈgaɪd.laɪnz/ (noun): Statements or principles that provide direction in decision-making.
6. **Fertility** /fɜːrˈtɪl.ɪ.ti/ (noun): The ability to conceive and produce offspring.

Comprehension Questions

Multiple Choice

1. Which of the following is NOT one of the dangers of space travel identified by NASA?

   Option: Space radiation
   Option: Isolation and confinement
   Option: Lack of oxygen
   Option: Hostile environments

2. In what areas can the human body adapt to space travel according to the text?

   Option: Bone density and reproductive functions
   Option: Cardiovascular health and balance
   Option: Hormone signals and gamete quality
   Option: Genetic changes and fertility

3. What is one of the long-term effects of living in microgravity mentioned in the text?

   Option: Decreased risk of health defects in children
   Option: Influence on hormonal regulation and early development
   Option: Increased bone density
   Option: Improved cardiovascular health

4. According to Palmer, what could prolonged exposure to space conditions lead to?

   Option: Improved fertility in future generations
   Option: Damage to reproductive health
   Option: Decrease in genetic changes
   Option: Enhanced efficiency of gamete formation

5. What did Palmer emphasize in regards to the risks of reproduction in space?

   Option: Creating artificial gravity
   Option: Developing advanced medical technology
   Option: Creating clear ethical guidelines
   Option: Sending only female astronauts on long missions

6. Which area in the human body might show delayed recovery after space travel according to the text?

   Option: Hormone signals
   Option: Cardiovascular health
   Option: Bone density
   Option: Gamete quality

True-False

7. The human body cannot adapt to space travel in any way.

8. Changes in gravity in space do not have any effect on early development.

9. Reproduction in space carries no risks according to NASA.

10. Prolonged exposure to space conditions cannot harm reproductive health.

11. There is complete understanding of the long-term effects of living in microgravity.

12. Palmer emphasized the importance of protecting future children in relation to reproduction in space.

Gap-Fill

13. NASA has identified five dangers of space travel: space radiation, isolation and confinement, distance from Earth, lack of gravity, and _____.

14. Ratan Naval Tata was the interim chairman of Tata Group from 2014 to _____.

15. According to Palmer, prolonged exposure to space conditions could harm _____ health.

16. Radiation can harm DNA and disrupt _____ formation.

17. Palmer stressed the importance of creating clear ethical guidelines focusing on informed consent, transparency, gender equality, and protecting future _____.

18. The human body can adapt in some ways to space travel, such as in cardiovascular health and _____.

Answer

Multiple Choice: 1. Lack of oxygen 2. Cardiovascular health and balance 3. Influence on hormonal regulation and early development

4. Damage to reproductive health 5. Creating clear ethical guidelines 6. Bone density
True-False: 7. False 8. False 9. False 10. False 11. False 12. True
Gap-Fill: 13. hostile environments 14. 2017 15. reproductive 16. gamete 17. children 18. balance

Answer

CATEGORY

1. Sci/Tech - LEVEL3

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2. ESL learning
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