



Fatherhood Significantly Rewires the Brain, Scans Show

Description

The male brain changes significantly after the birth of a baby, according to a new study. Researchers from RWTH Aachen University in Germany studied brain scans of 25 new fathers. They found that the male brain restructures itself to help with parenting.

In the first 12 weeks after childbirth, the gray matter in the male brain shrinks. After 12 weeks, some areas of the brain increase in size. This suggests that the brain is changing to improve caregiving skills. The most significant changes happen within the first six weeks after a child is born.

During this period, scientists noticed a decrease in gray matter across many brain regions. However, after 24 weeks, these reductions mostly returned to normal, although some areas continued to shrink. This is similar to what happens in women's brains during pregnancy.

The study also observed changes in areas of the brain linked to emotions and reward. These changes may support parenting skills and the emotional bond between parents and children. While this research is only in its early stages, it shows that fatherhood also causes important changes in the brain. More studies are needed to understand the long-term effects of these changes on fathers.

Vocabulary List:

1. **significantly** //sɪg'nɪfɪkəntli// (adverb): to a large or important degree
2. **restructures** //ri:'strʌk.tʃəz// (verb): changes how parts are arranged or organized
3. **shrinks** //ʃrɪŋks// (verb): becomes smaller in size or amount
4. **caregiving** //'keɪ,gɪvɪŋ// (noun): looking after and helping someone who needs care
5. **bond** //bʌnd// (noun): a close emotional tie between two people
6. **observed** //əb'zɜːvd// (verb): saw or noticed something in the study

Comprehension Questions

Multiple Choice

1. What did researchers from RWTH Aachen University study?
Option: Brain scans of new mothers
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- Option: Brain scans of new fathers
Option: Brain scans of children
Option: Brain activity during pregnancy
2. What happens to the gray matter in the male brain during the first 12 weeks after childbirth?
Option: It increases
Option: It shrinks
Option: It remains the same
Option: It disappears
3. How long after childbirth do some areas of the male brain begin to increase in size?
Option: 6 weeks
Option: 12 weeks
Option: 24 weeks
Option: 30 weeks
4. What is observed in the brain after 24 weeks post-childbirth?
Option: All areas return to normal
Option: Gray matter increases in all regions
Option: Reductions mostly return to normal
Option: Brain activity decreases
5. What significant changes occur in the male brain after childbirth?
Option: Increased focus on work
Option: Restructuring for parenting
Option: Decreased emotional responses
Option: Reduced social interactions
6. Which areas of the brain showed changes related to parenting skills?
Option: Areas linked to physical movement
Option: Areas linked to emotions and reward
Option: Areas linked to memory
Option: Areas linked to language

True-False

7. The study found that the male brain does not change after the birth of a baby.



8. The most significant changes in the male brain occur within the first six weeks after a child is born.
9. Gray matter in the male brain increases during the first 12 weeks after childbirth.
10. The changes observed in the male brain are different from those in women's brains during pregnancy.
11. The study included brain scans of 25 new fathers.
12. Further studies are needed to understand the long-term effects of brain changes on fathers.

Gap-Fill

13. The male brain reshapes itself to help with parenting after the birth of a baby for _____.
14. During the first 12 weeks, gray matter in the male brain _____.
15. After 24 weeks, most reductions in gray matter _____ to normal.
16. Scientists noticed a decrease in gray matter across many brain _____.
17. The emotional bond between parents and children may be supported by changes in areas of the brain linked to _____.
18. The research shows that fatherhood causes important changes in the _____.

Answer

Multiple Choice: 1. Brain scans of new fathers 2. It shrinks 3. 12 weeks 4. Reductions mostly return to normal 5. Restructuring for parenting 6. Areas linked to emotions and reward

True-False: 7. False 8. True 9. False 10. False 11. True 12. True

Gap-Fill: 13. improvement 14. shrinks 15. return 16. regions 17. reward 18. brain

Vocabulary quizzes



Multiple Choice (Select the Correct answer for each question.)

1. What is primarily associated with providing care to others?
Option: Business management
Option: Caregiving
Option: Engineering
Option: Education

2. Which term describes a response of the body that can cause redness, swelling, and heat?
Option: Asymptomatic
Option: Inflammatory
Option: Chronic
Option: Acute

3. Which term refers to the ability to move freely and easily?
Option: Stability
Option: Mobility
Option: Immobility
Option: Rigidity

4. What molecule is crucial in the photosynthesis process as an electron carrier?
Option: NADH
Option: ATP
Option: NADPH
Option: FADH₂

5. What process do plants use to convert light energy into chemical energy?
Option: Respiration
Option: Photosynthesis
Option: Fermentation
Option: Transpiration

6. Which hormone is often released in response to stress?
Option: Oxytocin
Option: Adrenaline
Option: Cortisol
Option: Insulin

7. Who studies the structure and function of the nervous system?
Option: Psychologist
Option: Neuroscientist
Option: Biologist



Option: Chemist

8. What term describes a general direction in which something is developing or changing?

- Option: Trend
- Option: Change
- Option: Static
- Option: Stability

9. Which of the following is a method used to assess understanding by filling in blanks?

- Option: Essay
- Option: Multiple Choice
- Option: Gap Fill
- Option: True/False

10. What term describes something that successfully produces a desired result?

- Option: Ineffective
- Option: Effective
- Option: Counterproductive
- Option: Unproductive

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. To meet the needs of the present without compromising the ability of future generations to _____ their own needs is a definition of sustainability.

12. Certain species have _____ to their environments to improve their chances of survival.

13. Cell _____ control the movement of substances in and out of the cell.

14. In order to see progress, it's important to maintain _____ in your daily habits.

15. The program _____ participants to be active and engage in healthier lifestyles.

16. The new policy has _____ improved employee satisfaction across the board.

17. As temperatures drop, certain materials _____ in size.

18. The scientists conducted an _____ to test their hypothesis on cell growth.



19. The _____ between a parent and child is vital for healthy development.
20. Developing good _____ early on can lead to lasting success.

Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. Communication is considered vital for team success and collaboration.
22. Microorganisms play an essential role in various ecosystems.
23. When facing challenges, a well-thought-out approach can lead to effective solutions.
24. Infrasound refers to sound waves that are below the audible range of human hearing.
25. Thylakoids are membrane-bound structures found in chloroplasts where photosynthesis occurs.
26. Many species of birds were observed nesting in the trees during the spring.
27. A noticeable trend in technology is the increasing use of artificial intelligence.
28. Caregiving requires patience and compassion to effectively support others.
29. Cortisol levels in the body can affect stress response and mood.
30. An effective marketing campaign can significantly boost sales and brand awareness.

Answer

Multiple Choice: 1. Caregiving 2. Inflammatory 3. Mobility 4. NADPH 5. Photosynthesis 6. Cortisol
7. Neuroscientist 8. Trend 9. Gap Fill 10. Effective

Gap-Fill: 11. sustain 12. adapted 13. membranes 14. consistency 15. encourages 16. significantly 17.
shrinks 18. experiment 19. bond 20. habits

Matching sentence: 1. vital 2. micro 3. approach 4. infrasound 5. thylakoids 6. observed 7. trend 8. caregiving
9. cortisol 10. effective

CATEGORY

1. Health - LEVEL2

POST TAG

1. brain



2. ESL learning
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