

New study reveals a fascinating new indicator of cognitive decline and dementia in older individuals

Description

People often have trouble finding their way as they get older. This is usually because their **spatial memory** gets worse. However, a recent study from the US suggests that how people explore new places also changes with age.

The study found that middle-aged people are less good at exploring a **maze** than younger people. They focus more on certain spots instead of the whole layout. This change in how they explore could be a big reason why older people have more trouble with **navigation**.

The study, published in Frontiers in Aging Neuroscience, had middle-aged and young volunteers use **virtual reality** to navigate a maze. The results showed that middle-aged people traveled less distance, paused longer at decision points, and looked at more objects than younger people. These differences were so clear that **artificial intelligence** could tell how old a person was just by watching their behavior in the maze.

The researchers think that training to improve exploration behavior could help middle-aged people keep their **cognitive** abilities and slow down mental decline. This study might also help diagnose early cognitive decline in conditions like Alzheimer's disease by looking at changes in how people explore.

Vocabulary List

- 1. Navigation /?næv???e???n/ (noun): The process of finding your way from one place to another.
- 2. **Spatial memory** /?spe???l ?m?m?ri/ (noun): The part of memory responsible for recording information about one's environment.
- 3. Maze /me?z/ (noun): A network of paths designed as a puzzle through which one has to find a way.
- 4. **Virtual reality** /?v?rt?u?l ri?æl?ti/ (noun): A computer-generated simulation of a three-dimensional environment.
- 5. **Cognitive** /?k??n?t?v/ (adjective): Related to the process of knowing, understanding, and learning something.
- 6. **Artificial intelligence** /???rt??f???l ?n?t?l?d??ns/ (noun): The simulation of human intelligence processes by computer systems.

Vocabulary List:

- 1. Navigation //ˌnæv.ɪˈgeɪ.[ən// (noun): The process of finding your way from one place to another.
- 2. **Spatial memory** //ˈspeɪ.ʃəl ˈmɛm.ər.i// (noun): The part of memory responsible for recording information about one's environment.
- 3. Cognitive //ˈkɑːg.nɪ.tɪv// (adjective): Related to the process of knowing understanding and learning something.



- 4. Artificial intelligence //ˌɑ:r.tɪˈfɪʃ.əl ɪnˈtɛl.ɪ.dʒəns// (noun): The simulation of human intelligence processes by computer systems.
- 5. Virtual reality //ˈvɜːrtʃuəl riˈæl.ɪ.ti// (noun): A computer-generated simulation of a three-dimensional environment.
- 6. Maze //meiz// (noun): A network of paths designed as a puzzle through which one has to find a way.

Vocabulary quizzes

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

1. Which disease is caused by a virus that affects the nervous system?

Option: Rabies Option: Influenza Option: Malaria Option: Cholera

2. What preventive measure involves administering a vaccine to build immunity against a particular ESL-NEWS. disease?

Option: Medication Option: Surgery **Option: Vaccinating** Option: Physical therapy

3. What term is used to describe a sudden and significant increase?

Option: Decline Option: Plateau Option: Surge Option: Stabilize

4. What are measures taken in advance to prevent harm or danger?

Option: Compliments Option: Precautions Option: Reactions Option: Interventions

5. Someone who is averse to something strongly dislikes or has an opposition to it.

Option: Content Option: Impartial Option: Favorable Option: Averse



| 15 | 15. Balanced diet ensures adequate nutrient | for the body. | |
|----|---|-------------------------------|--|
| 14 | 14. The economic of the decision are | far-reaching. | |
| 13 | 13. Accurate is crucial when venturing | g into unknown territories. | |
| 12 | 12. The of fresh water is essential for | human survival. | |
| 1: | 11. Radiation can lead to health conc | erns if not properly managed. | |
| G | Gap-Fill (Fill in the blanks with the correct word from t | ne vocabulary list.) | |
| | Option: Oxygenation | | |
| | Option: Detoxification | | |
| | Option: Circulation Option: Inflammation | | |
| 10 | 10. What is the body's response to injury or infection causing re | edness swelling and pain? | |
| | 9. Which term refers to extreme tiredness resulting from menta Option: Euphoria Option: Vigilance Option: Fatigue Option: Elation | | |
| | Option: Euphoria | | |
| 9. | Which term refers to extreme tiredness resulting from mental or physical exertion? | | |
| | Option: Transient Option: Intermittent Option: Persistent | | |
| 8. | 8. What term describes something that continues to exist or en Option: Brief | dure over a prolonged period? | |
| | Option: Prescribe Option: Evaluate Option: Implement | | |
| 7. | 7. What verb means to judge or determine the significance wor Option: Analyze | th or quality of something? | |
| | Option: Restoration Option: Hydration Option: Nutrition Option: Purification | | |

6. What is the process of providing or obtaining the food necessary for health and growth?



| 16. Nurses and doctors are dedicated in healthcare facilities. | | |
|--|--|--|
| 17. The results of the medical tests were warranting further investigation. | | |
| 18. The of diabetes is increasing globally due to sedentary lifestyles. | | |
| 19. The chef was known for creating dishes using ingredients. | | |
| 20. Regular health is important for early detection of any issues. | | |
| Matching Sentences (Match each definition to the correct word from the vocabulary list.) | | |
| 21. The lion was to a large enclosure to ensure the safety of visitors. | | |
| 22. Maintaining a sense of can greatly impact one's overall well-being. | | |
| 23. The field of focuses on creating intelligent machines that can mimic human behavior. | | |
| 24. Using technology individuals can immerse themselves in a computer-generated environment. | | |
| 25. The participants had to navigate through a complex to reach the finish line. | | |
| 26. It is essential to the performance of the new system before full implementation. | | |
| 27. Improving one's can enhance navigation skills and memory retention. | | |
| 28. Engaging in challenging puzzles can help maintain sharp abilities. | | |
| 29. Fruits and vegetables are excellent sources of essential for the body. | | |
| 30. His efforts to master the skill paid off when he won the competition. | | |

Answer

Multiple Choice: 1. Rabies 2. Vaccinating 3. Surge 4. Precautions 5. Averse 6. Nutrition 7. Evaluate 8. Persistent 9. Fatigue 10. Inflammation

Gap-Fill: 11. exposures 12. availability 13. navigation 14. implications 15. consumption 16. caretakers 17. worrisome 18. prevalence 19. versatile 20. monitoring

Matching sentence: 1. confined 2. positivity 3. artificial intelligence 4. virtual reality 5. maze 6. evaluate 7. spatial memory 8. cognitive 9. nutrient 10. persistent



CATEGORY

1. Health - LEVEL2

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