



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.

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1. **Navigation** //,næv.i'gei.fən// (noun): The process of finding your way from one place to another.
2. **Spatial memory** //'spei.fəl 'mɛm.ər.i// (noun): The part of memory responsible for recording information about one's environment.
3. **Cognitive** //'kɑ:g.ni.tiv// (adjective): Related to the process of knowing understanding and learning something.



4. **Artificial intelligence** //ɑ:r.tɪ'fɪj.əl ɪn'tel.ɪ.dʒəns// (noun): The simulation of human intelligence processes by computer systems.
5. **Virtual reality** //ˈvɜ:rtʃuəl ri'æl.ɪ.ti// (noun): A computer-generated simulation of a three-dimensional environment.
6. **Maze** //meɪz// (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 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



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6. What is the process of providing or obtaining the food necessary for health and growth?
- Option: Restoration
 - Option: Hydration
 - Option: Nutrition
 - Option: Purification
7. What verb means to judge or determine the significance worth or quality of something?
- Option: Analyze
 - Option: Prescribe
 - Option: Evaluate
 - Option: Implement
8. What term describes something that continues to exist or endure over a prolonged period?
- Option: Brief
 - Option: Transient
 - Option: Intermittent
 - Option: Persistent
9. Which term refers to extreme tiredness resulting from mental or physical exertion?
- Option: Euphoria
 - Option: Vigilance
 - Option: Fatigue
 - Option: Elation
10. What is the body's response to injury or infection causing redness swelling and pain?
- Option: Circulation
 - Option: Inflammation
 - Option: Detoxification
 - Option: Oxygenation

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

11. Radiation _____ can lead to health concerns if not properly managed.
12. The _____ of fresh water is essential for human survival.
13. Accurate _____ is crucial when venturing into unknown territories.
14. The economic _____ of the decision are far-reaching.
15. Balanced diet ensures adequate nutrient _____ for the body.



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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