



## APHANTASIA: SCIENCE & TECHNOLOGY

**NEWS:** New study on aphantasia, when some people cannot 'see' in their mind

### WHAT'S IN THE NEWS?

Aphantasia is a condition where individuals cannot form mental images, affecting about 2% of the population. Recent studies reveal weaker visual cortex activity in those with aphantasia, highlighting diverse sensory integration in the brain.

### What is Aphantasia?

#### Definition:

- Aphantasia is the inability or limited capacity to create mental images, even when prompted by sensory inputs like sounds, words, or memories.

#### Prevalence:

- It affects approximately 2% of the global population.

#### Discovery and Terminology:

- First described by Francis Galton in the 1880s.
- Officially named in 2015 by neurologist Adam Zeman during studies on visual imagination.

### Key Findings from Recent Research

#### Study Methodology:

- Blindfolded participants listened to auditory scenes, such as forest sounds, traffic noises, and crowded spaces.
- Brain activity was monitored using imaging techniques like functional MRI (fMRI).

#### Observations:

- **In Non-Aphantasic Individuals:** Auditory stimuli triggered the **visual cortex**, showcasing strong brain sensory integration.
- **In Aphantasic Individuals:** Neural responses in the visual cortex were significantly weaker or absent, indicating limited sensory interplay.

#### Implications:

- Highlights that the brain's sensory systems (auditory and visual) are interconnected.
- Offers evidence of diverse neural mechanisms underlying imagination and perception.

### Aphantasia in the Context of Visual Imagination Spectrum

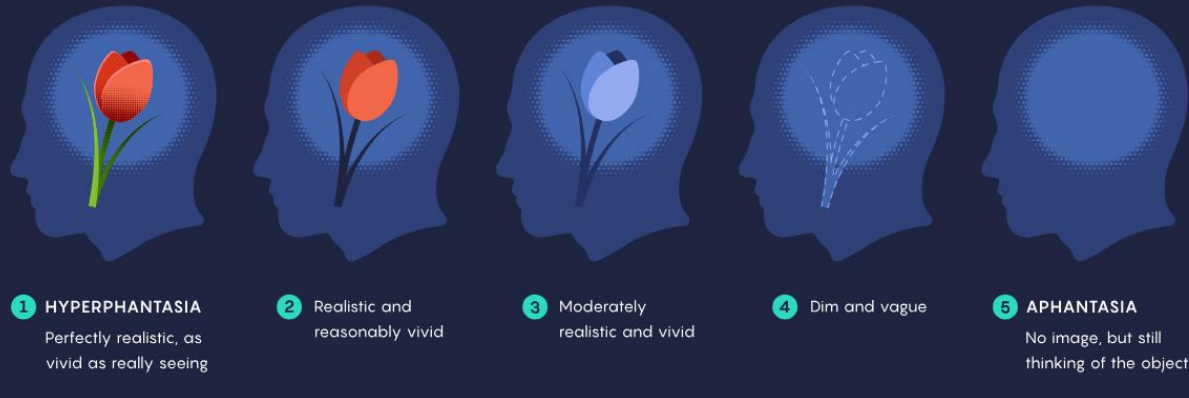
#### Spectrum of Visual Imagery:

- Aphantasia represents one extreme, with **hyperphantasia** (highly vivid mental imagery) on the opposite end.



### How Vivid Is Your Mind's Eye?

The vividness of mental imagery varies from person to person, from hyperphantasia (left) to aphantasia (far right). Tests such as the Vividness of Visual Imagery Questionnaire can help determine where you fall on the spectrum.



### Understanding Sensory Differences:

- Demonstrates the variation in how individuals process sensory information.
- Challenges assumptions that mental imagery is uniform across all humans.

### Challenges and Future Directions

#### Unknown Causes:

- The exact neurological or genetic basis of aphantasia remains unidentified, necessitating further research.

#### Diverse Human Perception:

- Highlights unique lived experiences and the need to consider different ways people perceive and interact with the world.

#### Potential Applications:

- Could inform personalized approaches in education, mental health, and cognitive training.

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