

Speech Impairments

Reading Passage:

Speech impairments, also known as speech disorders, affect a person's ability to produce sounds correctly or fluently. These impairments can be categorized into several types, including articulation disorders, fluency disorders (such as stuttering), and voice disorders.

One of the most common speech impairments is stuttering, which is characterized by involuntary repetitions, prolongations, or blocks in speech. Research suggests that stuttering has both genetic and neurological components, and while it often begins in childhood, it can persist into adulthood. Various therapies, including speech therapy, cognitive-behavioral approaches, and assistive technologies, have been developed to help individuals manage stuttering.

Another category of speech impairment is articulation disorders, where individuals have difficulty pronouncing certain sounds. For example, children with a lisp may struggle with the "s" or "z" sounds. Speech therapy is the most common treatment, focusing on muscle coordination and sound production.

Voice disorders, on the other hand, affect the pitch, loudness, or quality of a person's voice. Conditions like vocal nodules or laryngitis can lead to hoarseness or a loss of voice. Some voice disorders may result from overuse, illness, or neurological conditions such as Parkinson's disease.

Advancements in technology, such as speech-generating devices and AI-driven voice recognition software, have greatly improved communication for those with severe speech impairments. These technologies provide alternative ways for individuals to express themselves, reducing the social and professional barriers they often face.

Questions

Questions 1–5: True, False, Not Given

Do the following statements agree with the information in the passage? Write:

- **True** if the statement agrees with the information
 - **False** if the statement contradicts the information
 - **Not Given** if there is no information on this
1. Stuttering is purely a psychological disorder.
 2. Articulation disorders can affect the pronunciation of specific sounds.
 3. Speech-generating devices have completely eliminated communication barriers for individuals with severe speech impairments.
 4. Voice disorders only occur due to neurological conditions.
 5. Some voice disorders can result from overuse or illness.

Questions 6–10: Fill in the blanks

Choose NO MORE THAN TWO WORDS from the passage for each answer.

6. Stuttering often begins in _____ but may continue into adulthood.
7. Speech therapy helps improve _____ and sound production for articulation disorders.
8. _____ or laryngitis can cause a person's voice to become hoarse.
9. Technology such as _____ has helped individuals with severe speech impairments communicate.
10. Cognitive-behavioral approaches can be used as a form of _____ for people with speech disorders.

Aphantasia: A Life Without Mental Images

For most people, closing their eyes and imagining a familiar face, a scenic landscape, or a past event is effortless. However, for individuals with aphantasia, the ability to voluntarily create mental images is absent. Coined by neurologist Adam Zeman in 2015, the term "aphantasia" describes a condition in which people lack a "mind's eye." While those with aphantasia can understand and describe objects, people, or places, they do so without the aid of visual recall. Research suggests that aphantasia affects approximately 2-5% of the population, though many remain unaware of their condition until adulthood. Aphantasia does not impair intelligence or abstract thinking, but it may influence memory, learning, and creativity. Individuals with aphantasia often struggle with autobiographical memory—the ability to mentally "re-live" past experiences with sensory detail. Instead, they tend to recall facts rather than images. This can lead to differences in emotional connection to past events, as mental imagery is often tied to the intensity of emotional memory. Despite these differences, people with aphantasia excel in various professional fields, particularly those that rely on logic, language, and analytical reasoning. Many mathematicians, engineers, and computer scientists report having aphantasia, suggesting that visual imagination is not essential for success. However, it may pose challenges in careers requiring strong visualization skills, such as architecture, design, or visual arts. Some artists with aphantasia rely on reference images rather than internal visualization when creating their work. Neurological studies indicate that aphantasia stems from reduced connectivity between the brain's visual cortex and frontal regions responsible for conscious thought. While functional MRI (fMRI) scans show activity in the visual cortex when most people imagine an object, those with aphantasia exhibit significantly lower activation. This suggests that their brains process visual information differently, leading to a lack of voluntary mental imagery. While there is no "cure" for aphantasia, individuals often develop alternative cognitive strategies. Many

rely on verbal descriptions, spatial reasoning, or conceptual associations instead of visualization. Some have reported using other senses, such as touch or sound, to compensate for the absence of visual imagery. Ultimately, aphantasia highlights the diversity of human cognition and the many ways people can process and interact with the world.

Questions 11–15: Multiple Choice

Choose the correct answer, **A, B, C, or D**.

11. What does the passage suggest about the impact of aphantasia on emotional memory?

- A) It enhances emotional responses to past experiences.
- B) It prevents individuals from recalling factual information.
- C) It may weaken the emotional connection to memories due to the absence of sensory detail.
- D) It primarily affects memories related to traumatic events.

12. Why do some professionals with aphantasia excel in fields such as mathematics and engineering?

- A) Their condition strengthens their ability to visualize abstract problems.
- B) They compensate for a lack of visualization by relying on verbal and logical reasoning.
- C) They have superior autobiographical memory, which enhances problem-solving skills.
- D) Their brains process numerical and spatial data more efficiently than those without aphantasia.

13. Which statement best describes the role of the visual cortex in aphantasia?

- A) It fails to generate images because it is structurally damaged.
- B) It shows reduced activation during attempts at mental imagery.
- C) It compensates for the lack of visualization by strengthening other cognitive functions.
- D) It is overactive, leading to an inability to control mental images.

14. What can be inferred about aphantasia's relationship with intelligence?

- A) Aphantasia significantly lowers an individual's problem-solving ability.
- B) People with aphantasia are less capable of learning new concepts.
- C) Aphantasia does not directly affect intelligence or abstract thinking.
- D) Those with aphantasia struggle to follow logical arguments.

15. According to the passage, how might an artist with aphantasia adapt to their condition?

- A) By relying solely on imagination rather than external references.
- B) By using reference images instead of mental visualization.
- C) By switching careers to a non-visual field.
- D) By avoiding artistic expression altogether.

Questions 16–18: Matching Features

Match the following characteristics with the appropriate explanation from the passage.

16. **Aphantasia's effect on career choices**

17. **Neurological basis of aphantasia**

18. **Alternative cognitive strategies for individuals with aphantasia**

A) Reduced communication between the visual cortex and frontal regions of the brain

B) Reliance on verbal descriptions, conceptual associations, or other senses

C) Success in logic-based professions, challenges in visualization-heavy fields

Questions 19–20: Sentence Completion

Complete the sentences below using **NO MORE THAN TWO WORDS** from the passage.

19. Research suggests that individuals with aphantasia often realize their condition in _____.

20. Scientists have observed significantly lower _____ in the visual cortex of people with aphantasia when they attempt to generate mental images.