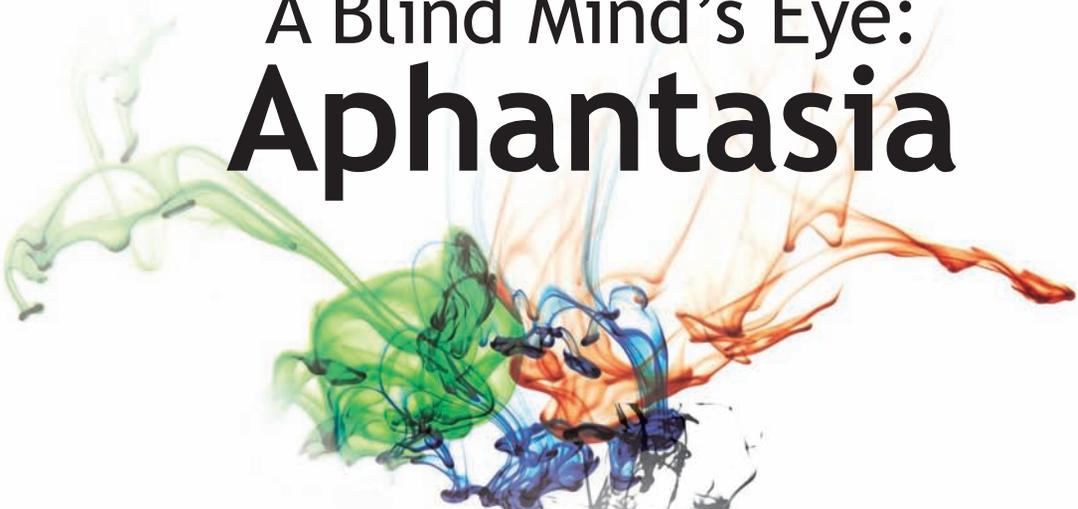


# A Blind Mind's Eye: Aphantasia



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*Take a moment to close your eyes and envision a sandy beach. Can you picture the breeze gently blowing through the trees, the waves splashing along the coastline? For the vast majority of people, picturing such images in their heads is no hard feat. For some, however, the concept of visualizing in their minds is an abstract one, and they are unable to recreate visual images in their minds. This is caused by a neurological condition, recently named “aphantasia,” in which the mind’s eye is nonexistent. Through this article, the Sungkyun Times (SKT) will further explore this condition and offer additional information on the process of visualization, in the hopes that readers will take on a new interest in such a novel discovery in the neurological field.*

## What Is Aphantasia?

The term aphantasia derives from the Greek prefix a-, meaning “without”, and phantasia, a term used by Aristotle to indicate the “power by which a [mental representation] is presented to us,” or simply put, the ability to visualize. True to its name, this neurological condition makes one unable to picture images in their heads. To specify, a condition differs from a disorder or disease. Disorders indicate that a part of the body does not function as it should, and diseases refer to specific illnesses. On the other hand, the term condition simply means that while there is nothing irregular with the health state of the person, the condition causes some difficulties in everyday life. Based on these definitions, aphantasia is classified as a neurological condition, meaning that it is a condition which affects the brain without any serious health risks, and is not a disorder or a disease.

### History and Research

Aphantasia was first suspected in 1880 in England, when a scientist, Sir Francis Galton, conducted a survey about the condition. Through this survey, he speculated that about 2.5% of the British population may have the condition, which indicates that around one out of 40 people could not see visual pictures in their head. However, no research focusing on the

condition was conducted; rather, there were sporadic cases of psychiatric patients reporting that they had lost the ability to visualize objects or people after developing mental disorders, which doctors simply assumed to be caused by disconnections within brain networks. More focused research, which analyzed aphantasia as a separate neurological condition, was first conducted in 2005 by Professor Adam Zeman at the University of Exeter, following a report by a patient stating that he had lost the ability to visualize. The patient, called MX in order to maintain anonymity, had lost visualization after a heart surgery, and claimed that his dreams had lost their visual properties as well. When Discover magazine published an article following this discovery, 21 people contacted professor Zeman, as they were also unable to visualize in their minds. What differentiated the 21 people from MX, though, was the fact that they had never been able to visualize, meaning they had been born without a mind’s eye, also known as congenital aphantasia.

## The Mind’s Eye and the Science Behind It

### Acquired and Congenital Aphantasia

In the case of traumatic injuries, or even in the case of patient MX, aphantasia is acquired, meaning that patients who previously had the ability to visualize became unable to do so due to external

forces. However, there is another type of acquired aphantasia: psychogenic aphantasia. A psychogenic effect, according to the Merriam-Webster dictionary, is an effect originating from the mind. More specifically, a psychogenic effect develops as a result of the mind influencing the body. In the case of aphantasia, if a person experiences severe depression or chronic anxiety, they may lose their ability to form mental images as an accompanying condition to the loss of self that is caused by these disorders. While researchers are still trying to determine the key causes for aphantasia, the fact that there might be a genetic factor as well as a psychological factor is a point of interest which attracts medical experts and scientists alike.

### Visualization and the Brain

A person's ability to visualize, while it may seem obvious, comes from different parts of the brain, and it is more commonly referred to as the "mind's eye." The main sections of the brain which are responsible for the process of visualization are the frontal and parietal lobes, responsible for retaining memories and integrating sensory information, and the occipital and temporal lobes, which process this information and project the desired image in the mind. Simply speaking, the process of visualization involves the areas of the brain pertaining to memory and visual recognition: the brain remembers what the object to be projected looks like, and then uses visual stimuli in order to recreate it in the mind. However, when someone has aphantasia, the connections and networks between these sections are destroyed, in the case of acquired aphantasia, or nonexistent in the case of congenital aphantasia. Even in the case of patient MX, his brain scans showed significantly decreased activity when attempting to conjure a mental image when compared to control groups. This shows that while aphantasia is not a crippling disability, it does point to the fact that there are missing or destroyed brain networks that the scientific community had overlooked until now.

### Aphantasia and Its Influence

How, then, does the inability to form mental images affect one's daily life? According to some of the 21 original participants of the research, who all had congenital aphantasia, finding out about their condition was confusing, although they did not consider it to be a disadvantage. Out of these 21 participants, some realized that they had the condition at a very young age, when they described being unable to count sheep to help them sleep. Others found out later on in their lives, some even

reaching their 20's before realizing their thought process was different from that of other people. As shown by these accounts, aphantasia does not have devastatingly negative effects which hinder day to day life, although some disadvantages still exist. For example, people with aphantasia have difficulty recalling the face of a person who is absent, although they could describe their general appearance, and many cannot jump from an abstract thought to a concrete example without contemplating about it first. Interestingly, though, when asked questions which normally trigger mental images, such as counting the number of windows in a building, participants with aphantasia were able to give the correct answer, as they process the number of windows based on "subvisual" information.

## Testing for Aphantasia

The University of Exeter, which is currently leading the research on aphantasia, tested people with aphantasia along with a control group using the Vividness of Visual Imagery Questionnaire, more commonly called VVIQ. The VVIQ is a simple test which consists of a series of questions asking the participant to consider 16 items, grouped by fours, and then think about the images that are formed when thinking about those items. Due to the overwhelming evidence as well as the countless results that the VVIQ has brought, it has been confirmed as a reliable measure for visual imagery. The test below is an abridged version of the VVIQ, made by the University of Exeter in order to make it more easily available to the public. The SKT hopes that through this test, readers will be able to evaluate how vivid mental images are for them.

**1** Conjure up an image of a friend or relative who you frequently see; how clearly can you see the contours of their face, head, shoulders and body?

- A. No image at all
- B. Vague and dim
- C. Moderately Clear
- D. Reasonably Clear
- E. As vivid as real life

**2** How strongly can you see the characteristic poses of their head and body?

- A. No image at all
- B. Vague and dim
- C. Moderately Clear
- D. Reasonably Clear
- E. As vivid as real life

**3** How well can you envision the way they walk?

- A. No image at all
- B. Vague and dim
- C. Moderately Clear
- D. Reasonably Clear
- E. As vivid as real life

**4** How vivid do the colors of their clothes look in your mind?

- A. No image at all
- B. Vague and dim
- C. Moderately Clear
- D. Reasonably Clear
- E. As vivid as real life

Choice A is worth one point, B is worth two, C is three, D 4, and E is worth five.

*What score did you achieve on the test above? If you have found yourself scoring below the average score of 15, you can contact the research team at the University of Exeter (at [a.zeman@exeter.ac.uk](mailto:a.zeman@exeter.ac.uk)) in order to request more information about this condition. Although for many people it may sound odd to be able to think without mental images, the SKT would like to emphasize once more that aphantasia is not classified as a disorder, and, therefore, should not be seen under a negative light. Rather, it should be perceived as a newly discovered condition that can give scientists more insight into the workings of the human brain.* 