

HALLUCINATIONS IN PARKINSON DISEASE

UNDERSTANDING PARKINSON DISEASE PSYCHOSIS AND WHAT THEY MEAN FOR DAILY LIFE

Parkinson's disease (PD) is frequently accompanied by neuropsychiatric manifestations, with visual hallucinations (VH) and minor hallucinatory phenomena being the most common. Delusions, illusions, and hallucinations in other modalities, such as hearing (auditory), touch (tactile), or smell (olfactory), are relatively less common^{5,7,8}. When a patient diagnosed with PD experiences symptoms of misperception, either periodically or continuously for more than one month in the absence of other causes, a physician may diagnose Parkinson's Disease Psychosis (PDP)^{8,10}. PDP typically occurs in the later stages of the disease, with an estimated prevalence of 40% after an average disease duration of 10 years^{5,6,7,8,9,10}, increasing to 75% over a 20-year period⁴. Unfortunately, high rates of misconceptions and a poor understanding of these neuropsychiatric complications are reported among patients and families affected by Parkinson's disease⁴.

Hallucinations

Hallucinations are abnormal perceptions without a physical stimulus that can involve any sensory modality⁵. The duration of individual hallucinatory episodes is usually between a few seconds and half an hour^{4,5,6,7,8}.

Minor Hallucinations

Minor hallucinations tend to occur early in the disease course and can even precede the onset of motor symptoms and the formal diagnosis of Parkinson's disease⁵. These subtle misperceptions include experiences such as a sense of presence, passage hallucinations, and illusions. They often predict the later emergence of visual hallucinations (VH)⁷. Patients frequently experience one or more of these episodes, which can occur alongside hallucinations in other sensory modalities; however, they do not appear to be disabling⁵.

Sense of Presence

It is the most common minor hallucination; it refers to the vivid sensation that someone is present in the room, for instance, standing behind or looking over one's shoulder, though upon further examination, no one is there. Sometimes, the person is perceived to be a deceased relative or an animal^{5,8,9}.

Passage Hallucinations

It involves seeing something move quickly across the periphery of the visual field. These are usually perceived as people or animals (sometimes a previous pet), though shadows and undefined objects have also been described^{5,8,9}.

Illusions

These are misperceptions based upon real, physical objects. Notable examples include:

Object Misidentification

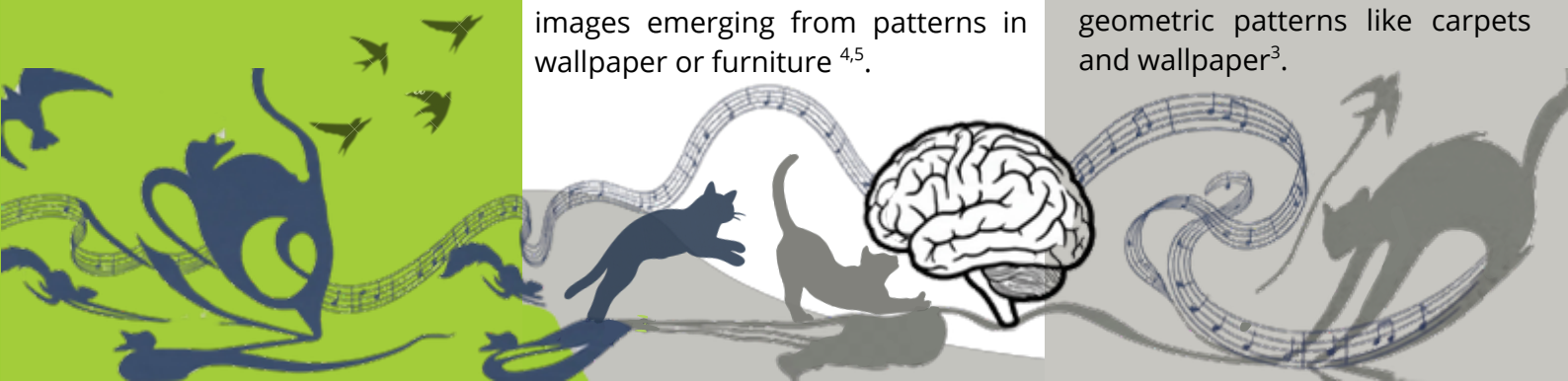
An item is misperceived as another, such as seeing a person when there is actually a coat on a hanger^{4,5}.

Kinetopsia

A stationary item is perceived to be moving; for example, a carpet pattern appearing to swirl, the sensation of doorknobs moving or images emerging from patterns in wallpaper or furniture^{4,5}.

Pareidolia

A specific class of illusion where faces or objects are seen in formless visual stimuli, such as clouds, flames, or tree bark, or in geometric patterns like carpets and wallpaper³.





Visual Hallucinations (VH)

In many patients, these occur preferably in the evening, at night, or under conditions of reduced lighting, commonly appearing at least weekly. In some patients, VH occur preferentially in specific rooms^{5,8,9,10}. These hallucinations tend to be complex and are composed of simple or detailed, often vibrantly coloured images of familiar or unfamiliar people and animals; objects are seen less frequently. Frank visual hallucinations usually commence as brief glimpses that gradually increase in duration and acquire additional sensory attributes⁴; a combination with non-visual hallucinations often predominates in advanced stages⁷. These images can be incomplete, miniature, or kinetic (moving), and they are typically non-threatening^{5,8,9,10}. Common visions include shadowy strangers sitting on a sofa or small children in the yard. Descriptions range from intricate filigree or leaf patterns to complex visions with paranoid themes, such as people invading the house. However, in most cases, patients visualize them without interaction and with neutral emotions⁹.

Olfactory Hallucinations (OH)

OH are uncommon, occurring in approximately 10% of PD patients. Generally, these hallucinations can be difficult to describe and may be either pleasant or unpleasant. They tend to occur regardless of the presence of hyposmia or dementia and can precede the onset of motor symptoms in PD by one to five years⁵. Some studies have described these olfactory experiences as the smell of burned or spoiled food, flowers, or stinky and unpleasant odors. Other reported scents include a rainy day, wet dog, perfumed candles, fruits, or burning grass⁵.

Gustatory Hallucinations (GH)

A GH is a false taste sensation occurring without a physical cause; it is extremely rare in Parkinson's disease. Because of this, there is very limited information available, with only five cases reported in scientific studies to date and no detailed descriptions provided^{5,1,7}.

Auditory Hallucinations (AH)

AH are less commonly than visual hallucinations. While they can accompany VH, they frequently occur independently of other sensory modalities^{5,8}. AH can be simple, such as rustling sounds, footsteps, or chimes, or more complex, such as voices and music. These voices may be familiar or incomprehensible, and while they are generally not paranoid or threatening, they can range from neutral in content to negative comments directed at the affected person⁸. Musical hallucinations are less common and can range from nonspecific melodies or symphonies to familiar childhood songs, folk music, or repetitive popular tracks⁵. Some studies have also described hearing one's own name called or quiet piano music, sounding much like background audio or a distant radio⁵.

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Tactile Hallucinations (TH)

This is another uncommon type of hallucination seen in PD. TH is the perception of being touched or the sensation of something being under the skin. In general, TH are described as insects or small animals crawling on the skin, entering the body, or biting. Other descriptions include the sensation of oil on the body, the feeling of a sheet moving across the skin, or something entering the eye. Studies have also reported more complex sensations, such as a snake around the foot, a small animal on the abdomen, the feeling of a "lost tooth," nibbling on the legs, or even the sensation of laser rays causing burning.

Most patients experiencing TH also report having visual, auditory, olfactory, or minor hallucinations^{5,10}. In the majority of reported cases, that different hallucination modalities interact. For example, a visual hallucination (VH) of an insect often matches the tactile sensation of it crawling on the skin.