

## VISUAL DISTURBANCES IN PARKINSON'S DISEASE

Visual-sensory abnormalities can occur in Parkinson's disease. Patients report vague and ill-defined complaints of poor vision. Regular eye examinations are often normal; and sometimes the symptoms are attributable to unrelated issues, such as ill-fitting glasses, cataracts, or macular degeneration.

One of the reasons for visual complaints in PD is impaired contrast sensitivity (CS): the ability to distinguish objects of different contrasts. A black bar can be easily distinguished from a white bar, but, if CS function is impaired, it would be more difficult to distinguish a light gray bar from a white one. CS is a discriminating measure of visual function. CS makes it possible to process spatial information from complex visual scenes. It allows detection of different patterns that span a wide range of human spatial vision. In a complex environment, objects, people and background scenery all form contrast relative to each other, allowing them to be distinguished from each other. Degraded CS function makes this task difficult, leading to symptoms of **blurred and distorted vision.**

Impaired CS function in PD patients has been attributed to reduced levels of dopamine in the brain, specifically in the visual pathways that conduct images from the eye to the brain, and perhaps in the retina (the back part of the eyeball). **The degree of impairment is not related to disease severity. Levodopa readily corrects the dysfunction.**

Although some studies suggested that color discrimination is affected by PD, this issue remains unclear. More disturbing visual symptoms in PD are visual hallucinations and visual disorientation to the environment. These are either signs of underlying dementia or side effects of medications.

Some patients complain of difficulty reading due to double vision up-close. This is caused by the inability of the eyes to converge and therefore to focus on reading material. This issue of convergence is easily treated by prism glasses.