

## Vision and Parkinson's

### Introduction

Approximately 75% of people with Parkinson's disease (PD) experience oculomotor symptoms (movements of the eye ball) along with changes in vision and in the function of their eye lids. Changes in vision can have a detrimental impact on quality of life and can increase the risk of falls.

**Discuss all eye-related problems with your neurologist** because, like other symptoms of PD, vision problems can relate to inadequate medication management. A medication review and adjustment may be necessary. **It is also important to be examined regularly by an ophthalmologist, preferably one specializing in neurological disorders. Do not make any changes to your medications without talking to your doctor.**

*It is very important to remember that PD does not cause blindness or loss of vision.*

### Age-Related Changes to the Eyes

Changes to vision due to aging are extremely common. As we age, many people require stronger glasses and some notice that their eyes are becoming dry. The following is a list of some vision-related problems that can be age-related:

- dry eyes
- changes in visual acuity (clearness or sharpness of vision)
- cataracts\*
- macular degeneration
- glaucoma

Dry eyes and changes in visual acuity can be more common to people with PD and treatment of these symptoms usually becomes part of overall PD management. Cataracts, macular degeneration and glaucoma are no more common with PD than in the general population.

\*Many people with PD are understandably concerned about eye surgery, particularly if they experience dyskinesia. People with PD can be candidates for cataract surgery and their dyskinesia can be effectively managed. Any concerns or fears about surgery should be discussed with your neurologist and ophthalmologist. [Grimes]

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## Eye Movement Disorders Relating to Parkinson's

Similar to movements such as walking or writing, movement of the eyes can be affected by a lack of dopamine in the brain. Rather than being smooth and effortless, eye movement can become jerky and require extra effort. The following are some of the important eye movements that may be negatively affected by PD.

- Saccadic eye movement  
This is defined as the rapid involuntary eye movements that redirect our gaze to an object of interest. Saccadic eye movement is required for activities such as driving, reading and walking.
- Pursuit eye movement  
Pursuit eye movement allows us to stabilize (or fix) an object on our retina and follow it as it moves, such as watching a dog chase a ball.
- Vergence eye movement  
This type of movement ensures the eyes remain focused together to avoid double vision.

## Eye Lid Problems and Parkinson's

- Blink reflex and dry eyes  
Normally we blink 16 to 18 times per minute but PD (specifically, bradykinesia) can reduce this motor function to 1 or 2 times per minute. This can cause the eyes to become very dry. You may want to consider using no-tears baby shampoo to avoid irritating the surface of the eyes and to bathe them in warm water. Ask your doctor about eye drops and artificial tears.
- Apraxia  
Apraxia is defined as the inability to open the eyes voluntarily.
- Blepharospasm  
Blepharospasm is a form of dystonia that causes involuntary closure of the eyes. It is often associated with levodopa "off" states or when PD is inadequately controlled. Improved medication management can alleviate this symptom and, in some cases, Botox injections can be helpful.

## Blurred Vision

Blurred vision is often a side effect of medication. Drugs most commonly associated with blurred vision are anti-cholinergics such as Artane and Cogentin.

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## Sensory Deficits

A decrease in motor function can lead to a loss of contrast and color sensitivity.

## Double Vision and Medications

People with advancing PD (on higher doses of medication) occasionally experience double vision (diplopia). Dopamine agonists such as ReQuip, Mirapex or Parlodel are more likely to be the cause. Some ophthalmologists will recommend special glasses containing a prism to address the problem of double vision.

### Sources:

*Grimes D. (2004). Parkinson's. Stepping Forward. Toronto.*

*American Parkinson Disease Association, Inc. (2007). Neuro-ophthalmology and Parkinson's Disease. Education Supplement #17. New York.*

*Ahlskog J. (2005). The Parkinson's Disease Treatment Book. New York.*

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