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BRAIN INJURY + STROKE + NEURO

Changing Views- How Parkinson's affects vision and visual perception

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SMALL STEPS. GIANT STRIDES.

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Objectives

- Identify common visual changes in Parkinson's Disease
- Describe the subcategories of visual perception and real-life examples of each
- Discuss task and environmental modifications to accommodate for visual and perceptual changes

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Why does do rehab therapists care about vision?

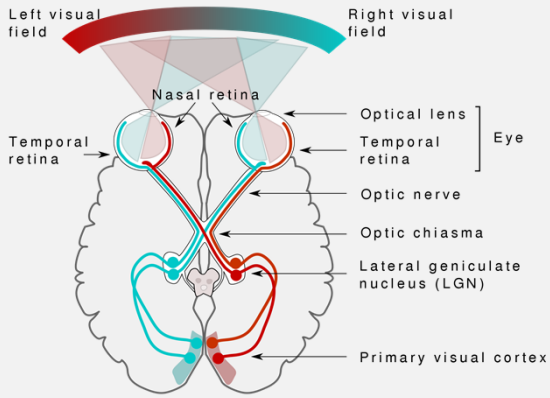
- It affects balance
- It affects our ability to do things
- Particularly to be able to drive
- Hallucinations

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1. Identify common visual changes in Parkinson's Disease



Left visual field

Right visual field

Nasal retina

Temporal retina

Optical lens

Temporal retina

Optic nerve

Optic chiasma

Lateral geniculate nucleus (LGN)

Primary visual cortex

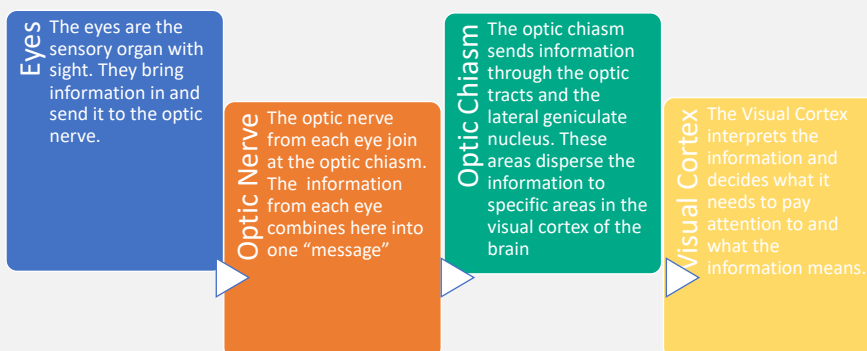
Eye

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How does vision actually work?

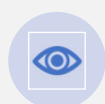


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Common changes with vision



Difficulty seeing things up close



Double vision



Dry eyes



Difficulty with seeing color



Decreased depth perception

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So what can we do about visual changes?

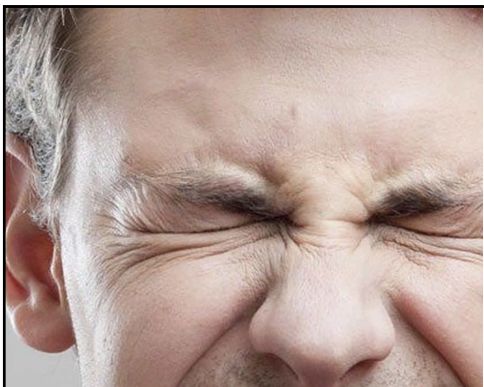
- Consult a physician and an optometrist/ophthalmologist
 - Neuro Optometry
- Changes in glasses
- Accommodations
- Occupational Therapy



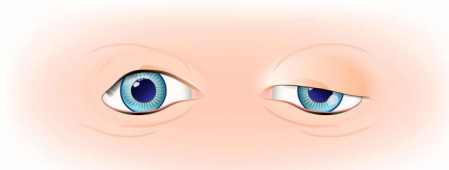
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PTOSIS



Normal eyelid
Falling of the upper eyelid

Eye lid control changes

- Excessive blinking vs diminished blinking
- Decreased ability to open the eye lid

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What about controlling the eye lids?

- Consult with an optometrist
 - Modifications to glasses
 - Ptosis “crutch”
 - Specialty tape
- Consult the primary physician
 - Botox injections
 - Eye drops



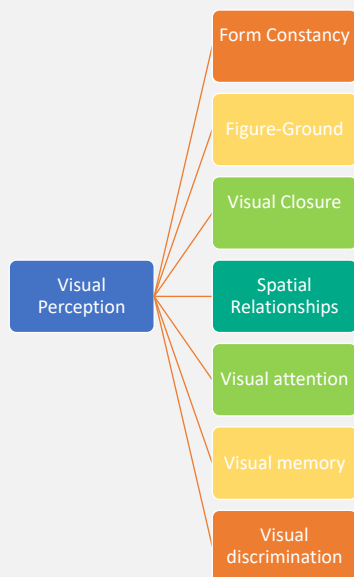
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Visual Perception

- Visual perception- How the brain understands what it sees
- Separate from vision or acuity
- Impacts our interactions with objects around us
- Impacts our ability to complete tasks from dressing to driving



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Form Constancy

Recognition that an object is the same, even if it has changed size or has been rotated.

What does this look like when it's impaired?

- Difficulty following directions with pictures (recipe)
- Building things using picture directions
- Problems recognizing unfamiliar handwriting or new fonts.
- Difficulty recognizing people wearing different clothing.
- Difficulty in letter recognition

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Figure Ground Perception

The ability to pick out or recognize individual things in a busy environment. IE - finding the parts that make up the whole.

What does this look like when it's impaired?

- Unable to sort and match socks while folding laundry
- Difficulty locating clothing in drawers during ADLs
- Missing road signs or vehicles when driving
- Unable to locate items in a drawer/cabinet

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Visual Closure

The ability to recognize an item even when part of it is covered. "Filling in what's missing"

What does this look like when it's impaired?

- Cannot identify traffic signs that are partially hidden behind a tree or other vehicle
- Difficulty locating items in the refrigerator that are partially covered

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Visual Memory

The ability to recall details about what has been seen

What does this look like when it's impaired?

- Cannot remember sight words
- Often transposes common words
- Gets lost in familiar routes, or newly learned routes
- Difficulty remembering faces or new people

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Visual Motor Integration

The ability to quickly and accurately physically interact with visual stimuli

What does this look like when it's impaired?

- Difficulty with letter formation and handwriting
- Decreased ability to complete a puzzle or construction of an object with pictorial instructions
- Difficulty engaging in physical leisure activities

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Visual Attention

The ability to focus on desired visual information despite background distractions.

What does this look like when it's impaired?

- Difficulty effectively scooping food during a family meal
- Poor attention in driving
- Difficulty reading
- Difficulty attending to task with background movement and noise

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Depth Perception

The ability to correctly estimate the distance between body and items.

What does this look like when it's impaired?

- Misjudging distances while pouring liquids
- Fender bender auto accidents, running stop signs
- Difficulty with grooming, putting in contacts, placement of makeup
- Difficulty reaching for items

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So what can we do to compensate?



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Simplify

- Reduce visual distractions
 - Less patterns on rugs/place mats
 - More spacing between items
- Cover the excess
 - Extra buttons on remote
 - Unnecessary options on microwave
- Reduce the choices
 - Make a routine to keep commonly accessed items in the same place all the time
 - Reduce the amount of choices
 - Spices, remotes, shoes, etc.

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Assistive Technology


- Line guides
 - Letter and check guides
- Highlighting book marks
- Ride services
 - GoGoGrandparent
- Voice-to-text
 - Siri
- GPS tiles
- Books on tape
 - Audible



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Lighting, contrast, and clutter

- Increase the color and contrast
- Increase lighting
- Reduce clutter
- Keep it organized and consistent

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Increase sensory input

- Add a sensory cue for depth perception
 - Care partner holds out pills in their palm
 - “Touch my hand” vs “here you go”
 - Care partner loudly taps an item the person needs to reach for
- Increase resistance for visual-motor
 - Weighted pens in handwriting
 - Weighted utensils in eating
 - Not only used for tremors
- LSVT-BIG exercises
 - Depth perception and Visual-motor



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