Memory and Parkinson’s Disease

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About us…

The Layton Aging & Alzheimer’s Disease Center at OHSU is one of 30 NIH Alzheimer’s Disease Centers in the United States and the only one of its kind in Oregon.

The Layton Center conducts studies of promising treatments, technologies for patient support, genetics, neuroimaging and pathology.

Along with research, we also provide evaluation and treatment for persons with dementia and their family members.
Outline

• Overview of normal aging
• Cognitive function
• Normal vs. Abnormal
• Memory and Parkinson’s disease
Age-related Changes

• What is normal?
Working
Manipulates, stores, evaluates
(calculating a tip)

Semantic
Memory for knowledge
(name of the US States)

Episodic
Memory of life episodes, autobiographical
(breakfast, graduation)

Executive
Organizing, planning, filtering
(coping with a rude clerk)

Cognitive Function

Processing Speed
Attention
What is abnormal?
Parkinson’s Disease

• There is a loss of dopamine producing neurons deep in the brain.

• PD motor signs emerge after 70-80% loss of dopamine producing cells.
Parkinson’s Disease Dementia

- Up to 50% of those with PD develop dementia
- Occurs in the later stages of PD
- Mild cognitive impairment may occur earlier
- Tends to affect executive function first
What's the difference between ALZHEIMER'S and DEMENTIA?

ALZHEIMER’S
the most common form

Vascular Dementia
Mixed Dementia
Frontotemporal Dementia
Normal pressure hydrocephalus
Huntington’s Disease
Wernicke-Korsakoff Syndrome

Parkinson’s
Creutzfeldt-Jakob disease

Dementia is an umbrella term that describes a wide range of symptoms including memory loss and mental decline. Alzheimer’s is the most common form of dementia, but there are many others.

Learn more at alz.org/relateddementias
Lewy Body Dementia
# PD Dementia vs. Lewy Body Dementia

<table>
<thead>
<tr>
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<th>PD Dementia</th>
<th>LBD</th>
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<tbody>
<tr>
<td>1st Symptom</td>
<td>Movement disorder</td>
<td>Cognitive Disorder or neuropsych symptoms</td>
</tr>
<tr>
<td>2nd Symptoms</td>
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Treatment for PD Dementia

• No Cure
• Medications: Rivastigmine
  – Increases choline in the brain
  – Can help with behavior, attention and hallucinations
  – FDA approved for PDD
What does this mean? Should I worry?
Psychological Changes

Personality typically remains stable over time:

- Neuroticism, extroversion, openness, agreeableness, conscientiousness (NEO Personality Inventory).

- When personality does change, pay attention
  - Depression
  - Dementia
  - Delirium
  - Substance abuse
Concerning Changes

Poor judgement

Inability to manage a budget

Losing track of the season

Difficulty having a conversation

Misplacing things and being unable to retrace your steps

Typical Changes

Making a bad decision once in a while

Missing a monthly payment

Forgetting what day it is, but remembering later

Sometimes forgetting what word to use

Losing things from time to time
Review

• Some changes are normal: Slower processing speed, occasional word-finding difficulties, losing the keys now and then

• Worry when you see:
  – Personality change
  – Functional change
  – Worried family
Practical First Steps

- Substance use
- Hearing
- Vision
- Exercise
Risk factors for dementia
The Lancet Commission presents a new life-course model showing potentially modifiable, and non-modifiable, risk factors for dementia.
Alcohol intake and dementia

Cognition and Hearing

• Greater hearing loss associated with lower cognitive scores
• Reduction in cognitive performance associated with a 25dB loss was equivalent to the reduction associated with an age difference of 7 years.
• Hearing aid use was positively associated with cognitive functioning

Pocket Talker
Mediterranean Diet Pyramid
A contemporary approach to delicious, healthy eating

- Meats and Sweets: Low calories
- Fish and Seafood: Often, at least twice times per week
- Fruits, Vegetables, Grains (mostly whole), Olive oil, Beans, Nuts, Legumes, and Seeds, Herbs and Spices: Base every meal on these foods

Illustration by George Middleton
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Mediterranean Diet

120 older adults randomized to:
1. Aerobic exercise group: moderate intensity 3 days/week (walking x 40 minutes)
2. Stretching control group

Exercise: Tai Chi

Meta-analysis: 28 studies, 2553 participants
Tai Chi improves cognitive function in persons with and without cognitive impairment

- Moderate aerobic activity
- Agility and mobility
- Learning and memorization
- Sustained attention
- Mediation and relaxation
- Social activity
Leisure Activity

- 124 participants over 5 years
- “Among leisure activities, reading, playing board games, playing musical instruments, and dancing were associated with a reduced risk of dementia…”

Vergheese 2013
Piano. Push. Play
Sleep

• Risk of mild cognitive impairment
  – Less than 6.5 hours of sleep/night
  – Excessive daytime sleepiness

• Limited risk
  – Insomnia

• Protective
  – Daytime naps
Sleep in Older Adults

- Quite variable
- More “frayed,” fragmented
- Older adults report feeling more sleepy during the day.
- More REM sleep
- Feel less rested
- Circadian rhythm shifts
Breathing Disorders and Cognitive Impairment

Treatment with CPAP can improve cognition
“Safer” Sleep Medications?

“The use of medications with anticholinergic activity increases the cumulative risk of cognitive impairment and mortality.” (Fox, 2011, Journal of the American Geriatrics Society)
Review

• Some memory changes are normal with aging
• Some are not
• If you are concerned, make an appointment for an evaluation
• If you are not concerned, listen to your friends and family
• Take action to preserve your memory and your health
Help protect your memory:

• Exercise! 40 minutes, 3-4 times/week
• Tai Chi, ballet, juggling
• Eat fruits and vegetables
• Avoid smoking
• Treat hearing loss (even minor)
• Assess and treat sleep concerns
• Spend enjoyable time with family and friends
Myth
Your doctor can predict your future. Many people with PD ask their doctor to predict their prognosis.

Reality
PD is highly variable from person to person. Even a PD expert has no way of knowing what the future holds for an individual with PD.

TIP: You can help to change your future.
Thank You