Dementia and Memory loss: Prevention Strategies and Interventions
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Neurologists are the medical specialists that diagnose and treat disorders of the brain, spinal cord and peripheral nerves.

Neurological disorders are mostly *chronic* diseases, not “one and done”

- Alzheimer’s
- Parkinson’s
- Epilepsy
- Neuropathy
- ALS
- MS
- Migraine
• Northwest Neurology was founded in 1983
• Most doctors who start here spend their whole career here, no “revolving door”
• Focus on getting patients in, and also maintaining close follow up
• We spend more time with patients than most specialists
• Doctors all trained at Rush, Northwestern, University of Chicago, University of Illinois, Stanford, Mayo Clinic...
• A downtown opinion close to home
Access

• New patients can be seen in as little as 24 hours
• 24 total providers: 17 MDs, 5 nurse practitioners, 1 physician assistant, 1 neuropsychologist
• Largest independent neurology practice in Illinois
• Largest MS Center in Illinois
• Saturday office hours
• TIA clinic – same day/next availability
• Urgent and expedited appointments
• Concussion clinic
• Onsite diagnostic testing services available
• Patient centered care
• Coordinated and integrated care
  • Most services neurology patients need are available within our practice
    • Diagnostic testing
    • Neuropsychological testing
    • Infusion
    • Subspecialty care
• Testing and infusion treatment are less costly here than at a hospital
• Convenient, same day services available
What is dementia?

• Dementia is progressive loss of cognitive ability, severe enough to impact daily life

• Loss of functions such as memory, language, judgement, executive functions

• Executive functions are cognitive processes that help us attend to and monitor our behaviors, utilize our working memory, use a so-called “filter,” and show cognitive flexibility

• Higher order executive functions requires multi-tasking, filtering and planning
Types of Dementia

- Alzheimer's disease
- Vascular dementia
- Dementia with Lewy bodies (DLB)
- Mixed dementia
- Parkinson's disease
- Frontotemporal dementia
- Creutzfeldt-Jakob disease
- Normal pressure hydrocephalus
- Huntington's disease
- Wernicke-Korsakoff Syndrome
• Alzheimer’s is the most common cause of dementia
• Vascular dementia/stroke is second; there is a medical history of stroke
• Lewy body disease is associated with Parkinson’s as well
• Fronto-temporal dementia starts in younger age group, 50s-60s with personality changes more than memory loss
Risk factors:

• Age is a risk factor for dementia
• Are women more at risk than men?
  • Because more men die of other causes earlier in life, there are more 90 year old women than 90 year old men
  • Effect of menopause/loss of estrogen?
Risk factors for dementia

- Age
- Smoking
- Diabetes
- High cholesterol
- Dietary factors
- Genetics
- Inadequate rest/sleep
- Sedentary lifestyle
- Limited social interactions
- Poor diet
Prevention of dementia?

• Successful *prevention strategies* require identifying risk factors and intervening.

• For example, smoking is a known risk factor for lung cancer
  • Intervening (quitting smoking) does not eliminate all cases of lung cancer but lowers the risk

• Wearing a seatbelt does not eliminate the risk of injury in a car accident, but it *lowers the risk*

• *Identifying and addressing risk factors is key*
PREVENTION
There’s no cure for dementia but there are ways to reduce your risk of getting dementia.

1. Physically Active
Try getting at least 30 minutes of exercise at least 3 times a week. Physical activity can reduce your risk of vascular dementia.

2. Mental Stimulation
Keep your mind mentally stimulated by:
- Learning new stuff!
- Go back to school, learn a new skill, a new language, take up arts or learn to read music.
- Engage in cognitively stimulating activities, reading or writing.
- Stay in your job or volunteer.

DEMENTIA: WHAT CAN I DO?
1. Physically Active
2. Mentally Active
3. Socially Active
4. Adequate Rest
5. Beware of Stress

3. Healthy Diet
+ Eat in moderation
+ Eat your fruits and vegetables
+ Don’t forget your wholegrain, healthy fats and vegetables
+ Remember your vitamins C, B, D and E

4. Adequate Rest
Adequate rest or a restful sleep is better than any supplement. Sleep deprivation affects people negatively.

Ensure that you get regular sleep, packing in a good 8 hours of rest to keep you positive, active and alert!

5. Beware of Stress
Stress can have a negative effect on brain health. Chronic stress may lead to depression and other mental conditions that increase your risk of dementia.

Be aware of your stress levels and learn how to manage it. Call a friend or family member if you are unable to manage your stress. Make sure that you seek professional advice.
Maintaining Brain health

• A balanced diet consisting of more fruits and vegetables, more vegetable oils, especially olive oil, less animal fat, more nuts, more fish

• Optimize B12, folic acid and Vitamin D

• Low stress

• Adequate sleep

• Physical exercise

• Social activities
Reducing the risk

- Social activity and active lifestyle
  - Reading
  - Exercise
  - Treat hearing loss
  - Interaction with others
  - Pets
  - Art
  - Music

- Physical activity
  - Walking every day lowers risk
  - 30 minutes a day 5 days a week
• The Mediterranean Diet is characterized by the balanced use of foods rich in fiber, antioxidants and unsaturated fats, and reduced consumption of animal fats. At least 30% of consumed fats should come from olive oil or fish and at least 15% of protein should come from fish.

Does the **Nordic diet** lower risk of dementia?

What is the Nordic diet?

- The Nordic diet emphasizes locally grown and sustainable food sources such as locally grown fruits and vegetables.

- **Eat often:** Fruits, especially berries, vegetables, legumes, potatoes, whole grains, nuts, seeds, rye breads, fish, seafood, low-fat dairy, herbs, spices and rapeseed (canola) oil.

- **Eat in moderation:** Game meats, free-range eggs, cheese and yogurt.

- **Eat rarely:** Other red meats and animal fats.

- **Don't eat:** Sugar-sweetened beverages, added sugars, processed meats, food additives and refined fast foods.
Studying the Nordic diet:

• Nutrients. 2018 Feb 17;10(2) The Nordic Prudent Diet Reduces Risk of Cognitive Decline in the Swedish Older Adults: A Population-Based Cohort Study. Shakersain et al.

• Nordic diet was associated with slower cognitive decline compared to the Mediterranean-DASH Intervention for Neurodegenerative Delay. A total of 2223 dementia-free adults aged ≥60 were followed for 6 years. Mini-Mental State Examination was administrated at baseline and follow-ups. Dietary intake was assessed by 98-item food frequency questionnaire, and the Nordic Prudent Dietary Pattern (NPDP) was identified.

• Moderate-to-high adherence to the Nordic diet may predict better-preserved cognitive function and lower risk of dementia, among older adults in Nordic countries.
• **Blueberries**, the well-known 'super fruit,' could help fight Alzheimer's

• March 14, 2016: American Chemical Society Summary: The blueberry, already labeled a 'super fruit' for its power to potentially lower the risk of heart disease and cancer, also could be another weapon in the war against Alzheimer's disease.
What about the role of genetics?

- **Genetics**: we have 2 copies of each gene
- “Early” onset is more likely to be determined by genetics
- “Late” onset is more complex and influenced by many different genes and by lifestyle
• Genetics: we have 2 copies of each gene
• The APOE gene comes in 4 types. Possibilities are APOE 1-4 at each gene
• APOE4-4 is highly associated with Alzheimer’s
• Genetics accounts for a relatively small proportion of cases

• Lifestyle accounts for more!

• Does prevention work?

• Healthy Lifestyles Reduce the Incidence of Dementia: Evidence from the Caerphilly Cohort Study, Peter Elwood et al. (2013): 5 healthy habits reduced dementia risk by 60% in 35 year study
  • Healthy diet: 3 or more portions of fruit and/or vegetables a day was accepted as ‘healthy’, together with less than 30% of calories from fat
  • Low alcohol intake
  • Healthy body weight
  • Regular exercise
  • No smoking
The common thread amongst the Nordic, Mediterranean and other healthy diets:

- More fruits/vegetables especially leafy vegetables, berries and foods rich in antioxidants
- More fish, nuts
- Less animal fat
- Less sugar

• Just eat healthy?
• **Prognosis** is variable from person to person
• We don’t die “from” dementia
• Having otherwise good health can make a big difference
  • Frail patients (e.g. CHF, COPD, poorly controlled DM) with dementia are more likely to deteriorate from pneumonia, influenza, heart attacks, etc., than patients who are in better overall health
  • Otherwise healthy patients can live more than 10 years with dementia
• Prognosis depends on how well blood sugar, blood pressure and overall health are managed
TREATMENT OF DEMENTIA

As you get older three things happen. The first is your memory goes, and I can’t remember the other two.

-Sir Norman Wisdom
• Cholinesterase inhibitors
  • Donepezil (Aricept), Rivastigmine (Exelon)

• Glutamate antagonists
  • Memantine (Namenda)

• New treatments
  • Prevagen (jelly fish extract)?
  • Ginko?
  • **Aducanumab phase 3 studies**
    • antibody targets aggregated forms of β-amyloid (Aβ) in the hopes of reducing its buildup