Nutrition and Dementia

BRAIN HEALTH ACADEMY

UsAgainstAlzheimer's

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Acknowledgements

This course is presented and developed in partnership with the American College of Lifestyle Medicine.

Presenters

Ayesha Z. Sherzai, MD, MAS, Vascular Neurologist, Research Scientist; Co-director, Alzheimer's Prevention Program, Loma Linda University

Dean Sherzai, MD, PhD, MPH, MAS, Behavioral Neurologist / Neuroscientist; Co-director, Alzheimer's Prevention Program, Loma Linda University

Course Description

Poor nutrition is a major health problem that affects every part of the body, including the brain. In fact, it is among the top risk factors for dementia. This course provides strategies to assess diet quality and use that information to help individuals make healthy dietary modifications to build cognitive resilience.

Learning Objectives

- Participants will be able to list 6 or more modifiable risk factors for dementia.
- Participants will be able to summarize the link between **nutrition** and dementia.
- Participants will be able to identify effective interventions and strategies to address **nutrition** with a special focus on adults 45+.
- Participants will be able to identify special considerations for high-risk populations.

Alzheimer's and Dementia Facts

Scope of the Epidemic (U.S.)[1]

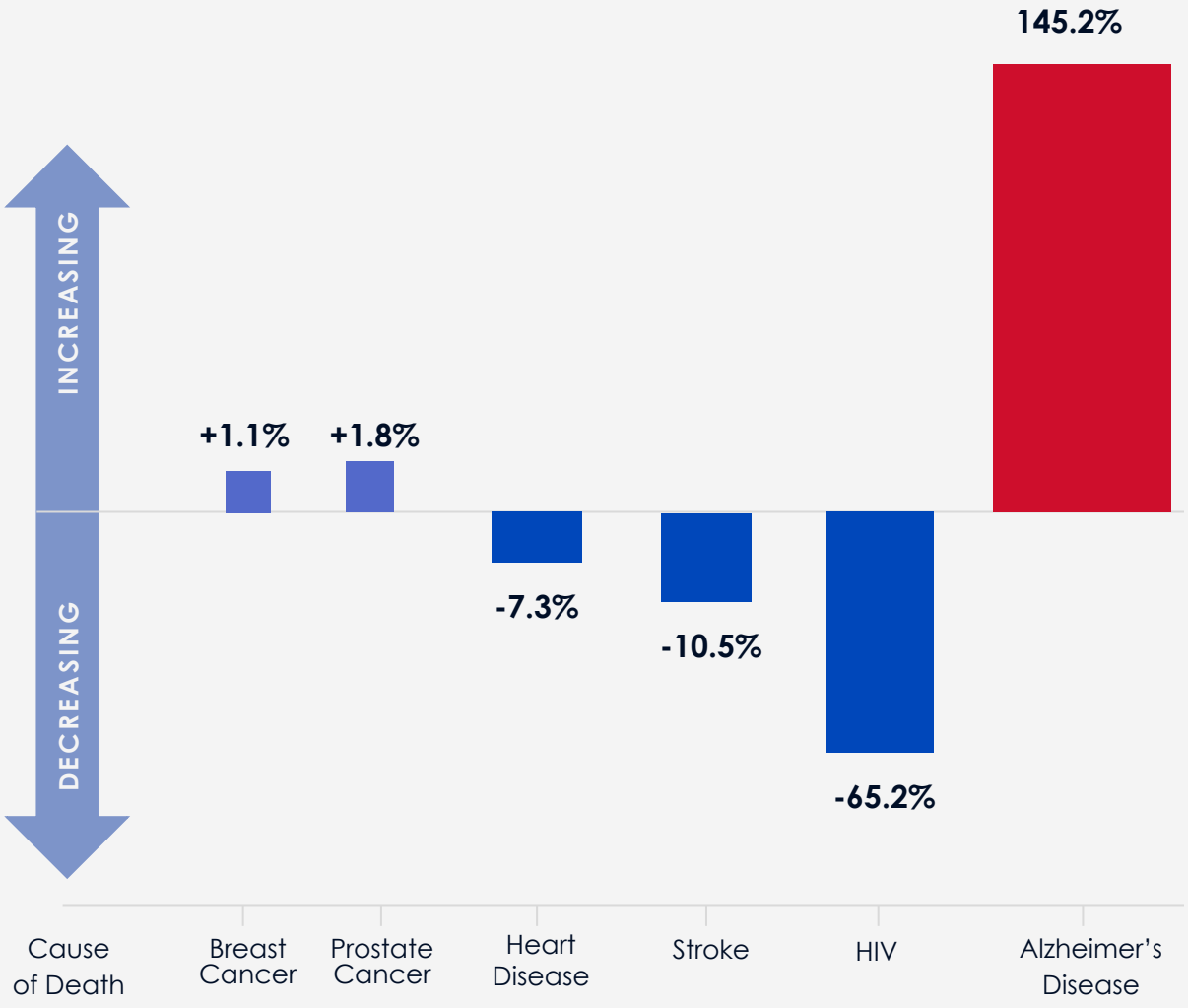
6.5 million adults

1 in 9 adults age ≥65

1 in 3 adults age ≥85

2/3 are women

Alzheimer's deaths increased 145% from 2000-2019, while other top causes of death have declined



(BAR GRAPH NOT TO SCALE)

Inequities in Brain Health[2, 3, 4]

African American people are
2X AS LIKELY
to have Alzheimer's

Latino people are
1.5X AS LIKELY
to have Alzheimer's

Less likely than White patients to receive a timely diagnosis;

More likely to report experiencing racial discrimination along their patient and caregiver journeys;

Less likely to be enrolled in cutting-edge Alzheimer's and brain health research.

Health Disparities & Comorbidities for Alzheimer's in the African American Community [5]

44% More Likely to have a stroke.

23% More Likely to live with obesity.

25% More Likely to die from heart disease.

72% More Likely to be diabetic.

2X AS LIKELY

TO HAVE ALZHEIMER'S

Health Disparities & Comorbidities for Alzheimer's in the Latino Community

10% More Likely to have a stroke.
24% More Likely to live with obesity.
22% More Likely to have poorly controlled blood pressure
63% More Likely to be diabetic.

1.5X AS LIKELY

TO HAVE ALZHEIMER'S

Modifiable Risk Factors for Dementia

Alzheimer's: Non-Modifiable Risk Factors[6, 1, 7, 8]

Age

Number one risk factor is advancing age.

Risk doubles every 5 years after age 65.

Family History

Genetics vs environmental factors.

Education

Fewer years of formal education and lower levels of cognitive engagement may be risk factors.

Sex

2/3 of those with Alzheimer's are women.

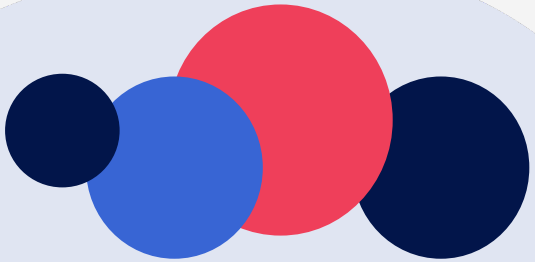
16% of women age ≥ 71 (11% of men).

After age 65, have more than 1 in 5 chance (1 in 11 for men).

Modifiable Risk Factors[9,10]

40-60%

of dementia cases could be prevented by addressing these lifestyle factors



INCREASE

- Healthy Diet
- Physical Activity
- Mental Activity
- Cognitive and social activity

DECREASE

- Hypertension
- High cholesterol
- Uncontrolled diabetes
- Obesity
- Smoking
- Depression
- Excessive Alcohol Intake
- Head Injury
- Air Pollution
- Hearing Loss

What Patients Think

What Matters Most Insights Survey: Nutrition

- **96%** believe that nutrition affects the brain and brain health with **71%** saying the impact is significant
- **Only 14%**s ay their health care provider has talked with them about how to eat well for brain health
- Top sources of information on how to eat well:
  - **62%** internet
  - **61%** news articles
  - **28%** family/friends
  - **25%** health care providers
  - **18%** social media
- Top factors impacting ability to maintain good nutrition:
  - **64%** exercising
  - **59%** education and understanding of nutrition
  - **57%** getting enough sleep **55%** access to nutritious food
  - **53%** moods/feelings
  - **49%** high stress or stressful situations

USAGAINSTALZHEIMER'S A-LIST

Respondents largely over age 50, Caucasian, female (75%), college educated or greater (87%)

N=719 (ADRD/MCI diagnosis: 36; high risk for ADRD: 205; current caregivers: 86; former caregivers: 190; general interest in brain health: 159)

The Link Between Nutrition and Dementia

Diet and Dementia Link[11,12]

- Food is the most important internal ‘environment’.
- Nutrients can protect the brain from oxidative stress — the "waste" (free radicals).
- Nutrients can reduce inflammation, which can damage cells and lead to brain dysfunction.
- Focus has shifted on dietary patterns instead of “super foods” or micronutrients.

Diet and Dementia Link

- There has been a shift towards considering the evidence for whole dietary patterns, particularly high plant intake such as in the Mediterranean diet (high intake of vegetables, legumes, fruits, nuts, cereals, and olive oil; low intake of saturated lipids and meat).

- Studies have shown that dietary changes are involved in prevention of many conditions that increase the risk of dementia, such as diabetes, hypertension, hypercholesterolemia and CVD.[13.14.15]

Diet and Dementia Link

- Higher saturated fat intake has been associated with a poor trajectory of cognition. In Women's Health Study, saturated fat intake was associated with a faster decline in memory by 70%. Women with the lowest saturated fat intake had the brain function of women six years younger.[16]

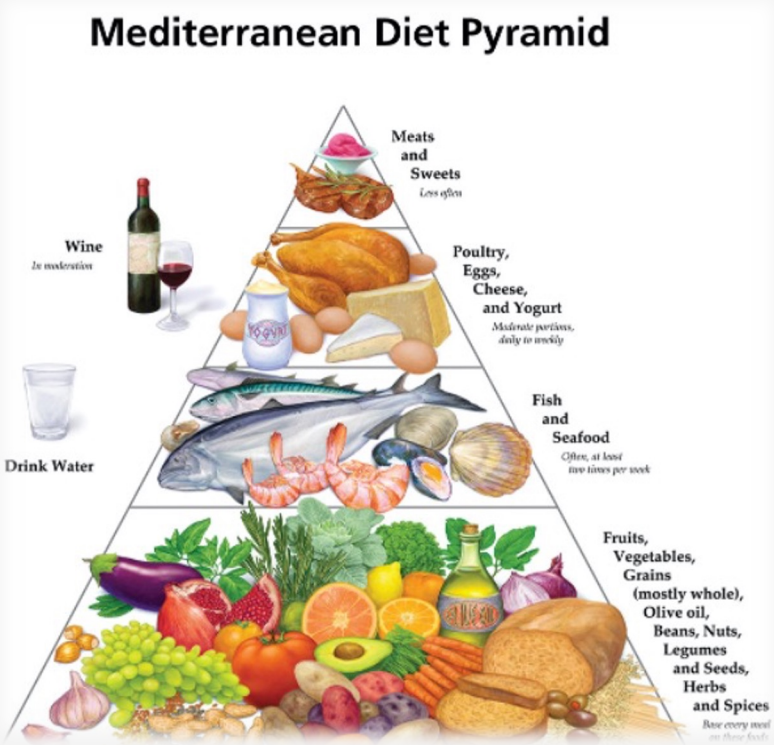
- A plant predominant diet such as the Mediterranean, DASH (dietary approaches to stop hypertension), and the hybrid thereof, the MIND (Mediterranean and DASH Intervention for Neurodegenerative Delay) diet has been associated with significant prevention of cognitive decline.

Mind Diet Associated With Reduced Incidence of Alzheimer's Disease[17]

- Rush University Memory and Aging Project.
- 1000 patients, ages 58-98.
- Strict adherence to the MIND diet (promotes plant-based diet, limits meat and dairy) resulted in a 53% reduction in risk for Alzheimer's.
- Even moderate adherence to the diet was associated with a 35% risk reduction.
- Participants who showed high adherence to the diet had cognitive functioning equivalent to a person who was seven and a half years younger.

Morris, et al. (2015). Alzheimer's & Dementia, 11(9), 1007–1014.

Mediterranean vs. MIND Diet



MIND Diet

Increased

- 3 servings of whole grains.
- At least once dark leafy green salad.
- Berries twice at least week.
- One-ounce serving of nuts daily.
- Beans and legumes daily.
- Vegetables.

Reduced

- Fish down to once a week.
- Chicken down to 1-2 times a week.
- Cheese once a week.
- Switch butter with olive oil.
- Wine.

Diet and Dementia Link[18,19,20]

- There is a direct association between a "Western diet" and cognitive decline and depression.
- Strong evidence shows that excessive dietary intake of unhealthy high-fat, processed, or low nutritional value foods may be detrimental to brain, cardiovascular, and mental health.
- Adhering to diet patterns, specifically the MIND diet, is equivalent to being 7.5 years younger in brain age.
- For these reasons, clinicians should assess the quality of their patients' diet and promote a brain-healthy dietary modifications is an optimal way to build cognitive resilience and prevent ADRD while improving modifiable risk factors to enhance brain health.

Nutrition and NCDs

Nutrition and other Chronic Conditions

- A healthy diet throughout the life course plays a crucial role in optimal development, and in maintaining health and preventing chronic disease.

- Adults who eat a healthy diet live longer and have a lower risk of:
  - Obesity.
  - Heart disease.
  - Type 2 diabetes.
  - and certain cancers.

- Obesity, heart disease and diabetes are risk factors for dementia.

Nutrition Interventions

Nutrition Interventions[19]

- Assess dietary eating patterns and habits.
- For individuals who indicate a less than optimal diet, counsel patients about the value of a healthy diet and share resources about brain-healthy diets, such as MIND or DASH.
- For individuals who indicate a less than optimal diet, clinicians should counsel patients about the value of a healthy diet,[f] and should broach the topic of culturally acceptable dietary interventions that directly and indirectly impact brain health at each annual encounter to suggest beneficial nutritional modifications.
- For complicated needs, refer to a dietician.

For more information, see Nutrition Clinician Guide at https://www.dropbox.com/sh/6mwuj0zqe4icrx4/AACylzJUH0wBY9ut-O-Zbjwla?dl=0&preview=Nutrition.pdf

Helpful questions to assess diet quality[19]

- Are you concerned about your diet?
- Do you think you get enough fruits, vegetables, legumes and whole grains in your diet? How many servings do have per day?
- How many times per week do you eat butter, cheese, red meat, or fried foods? In what quantities?
- How many meals per day (or per week) are you eating processed food?

Diet modification approaches [19]

- Modifications through **shared decision-making** should focus on decreasing the intake of high-fat dairy products (e.g., butter, cheese), red meat, fried foods, and processed foods or sweets.
- Motivate patients to increase relative intake of leafy green and cruciferous vegetables, berries, beans, high-fiber nuts and whole grains, and sources of omega-3 fatty acids.
- Note for patients that diet changes may be accompanied by temporary abdominal discomfort that could occur for up to a month due to "your body changing to process the new foods"; this can be minimized by introducing incremental changes to the diet.

Considerations for Implementation

Additional considerations[19]

- Determine underlying motivations as well as potential barriers to diet.
- Change is important and should be addressed to prevent "relapse."
- Access to healthy foods should be discussed with patients.
- Objective measures (including vitals like heart rate and blood pressure), physical measures (like waist circumference and BMI), and lab values (specifically, lipid panel and hemoglobin A1C) should be tracked from recorded patient data to help ensure individuals maintain healthy weight.

Additional considerations [19]

- Additional trending for comprehensive metabolic panels and complete blood count ions, minerals, and hyperglycemic hyperosmolar can also be considered.
- If you have prescribed supplements to your patients, they should continue taking them. But you should relay to your patients that foods provide a much more diverse nutrient and bioactive profile than supplements and should be prioritized.
- Correct nutrient or ion abnormalities as needed.
- Monitor for unplanned or unexpected weight loss, which often precedes dementia.
- Patients might benefit from referral to a dietician, particularly if patient nutritional needs are complicated.

Patient Resources

Provider-Patient Resources

The following resources for brain-healthy diets can be shared with patients to help them introduce diet modifications:

- MIND diet handout: https://khn.org/wp-content/uploads/sites/2/2017/04/mind_ph_module-1_mind-diet_v2.pdf
- DASH diet information: https://www.nhlbi.nih.gov/health-topics/dash-eating-plan
- Mediterranean diet information: https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition-basics/mediterranean-diet

Social Determinants and Nutritonal Health Equity

Equity and Social Determinants
Social determinants affect nutrition and have impact on health equity[21]

Accessibility and Transportation

- Avg. distance from house to nearest supermarket = 2.19 miles.
- Lack of vehicle, public transportation or food venues with healthy choices within walking distance = have limited access to foods that support healthy eating patterns.
- A study in Detroit found that people living in predominantly black low–income neighborhoods travel an avg.1.1 miles farther to the closest supermarket than people living in predominantly white low-income neighborhoods.
- Transportation and distance to sources of healthy foods impact low–income and rural communities, especially older adults living in rural communities.
- Overall, for those who do not have access to a car or public transportation, the cost of travel time to find healthier options in addition to out–of–pocket expenses may be too high.

Equity and Social Determinants
Social determinants affect nutrition and have impact on health equity[21]

Availability and "food deserts"

- In food deserts, food sources are lacking or limited, particularly in low-income areas that are more also likely to have a higher share of convenience stores and small food markets.
- These options tend to carry foods of lower nutritional quality compared to large chain supermarkets, which may have a wider variety of healthy options.
- Lack of access to foods that support healthy eating patterns may have a greater impact on members of racial and ethnic minority communities, residents of low–income communities-and those living in rural areas.

Equity and Social Determinants
Social determinants affect nutrition and have impact on health equity[21]

Availability and "food deserts"

- Residents of these communities are more likely to be affected by poor access to supermarkets, chain grocery stores, and healthy food products. For example, predominantly black and Hispanic neighborhoods have fewer large chain supermarkets than predominantly white and non–Hispanic neighborhoods. These disparities may decrease access to healthy food options for minority populations.

Equity and Social Determinants
Social determinants affect nutrition and have impact on health equity [21]

Affordability

- Low–income groups tend to rely on foods that are cheap and convenient to access but are low in nutrient density. Fresh fruits and vegetables and other healthier items are often more expensive at convenience stores and small food markets than in larger chain supermarkets and grocery stores.
- A summary of recent research on this issue indicated that "in neighborhoods without supermarkets, residents likely face higher prices for many healthy foods, because small stores typically charge more for items such as fresh produce."
- Research also shows that price reductions of healthier food choices can contribute to increased purchasing of those choices.

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