



MOMENTUM

**2023 ANNUAL
MEETING & EXPO**

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Renaissance Schaumburg
Convention Center - Schaumburg, IL

**Dietary Strategies to Maintain and
Promote Long-term Brain Health**

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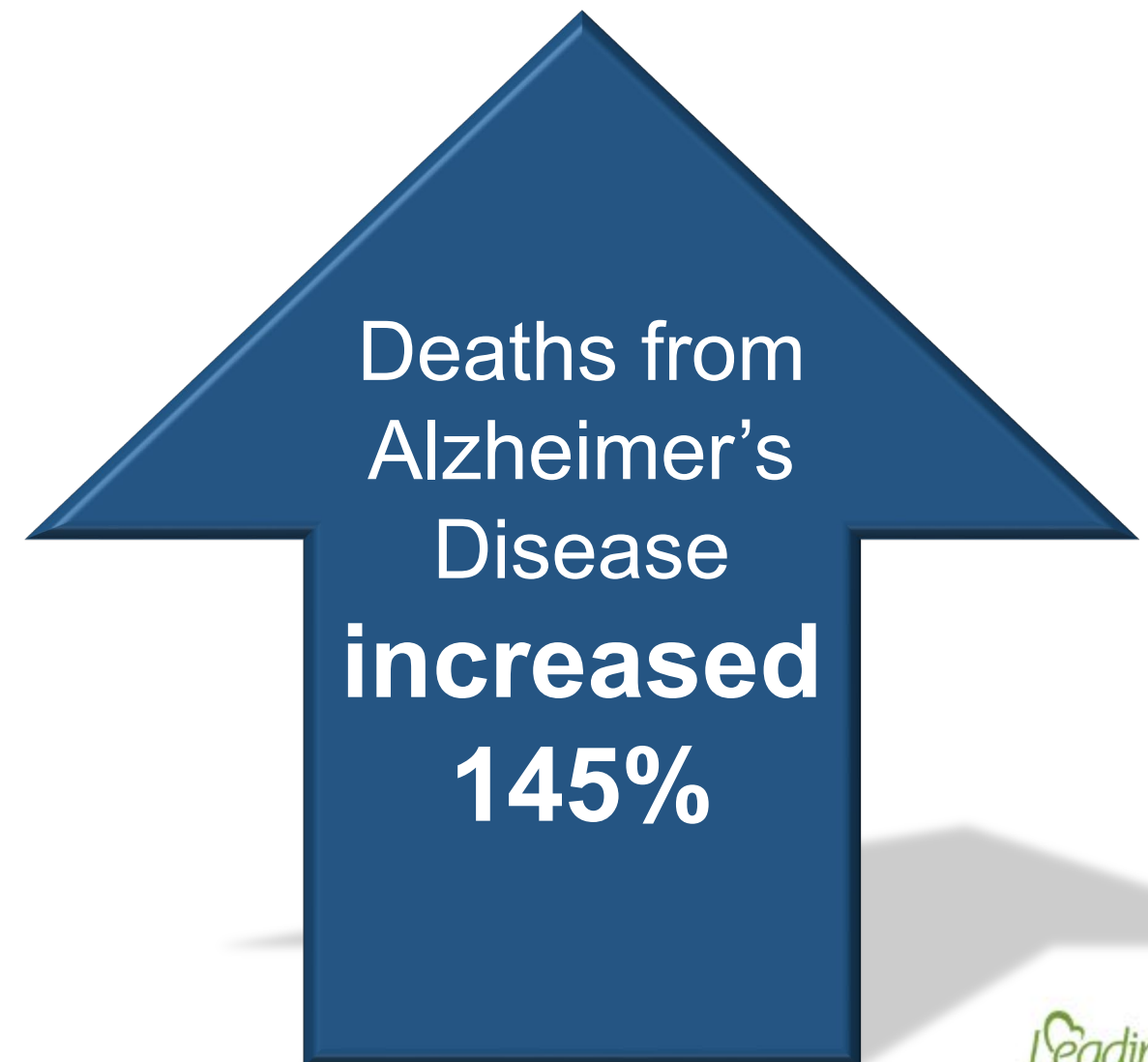
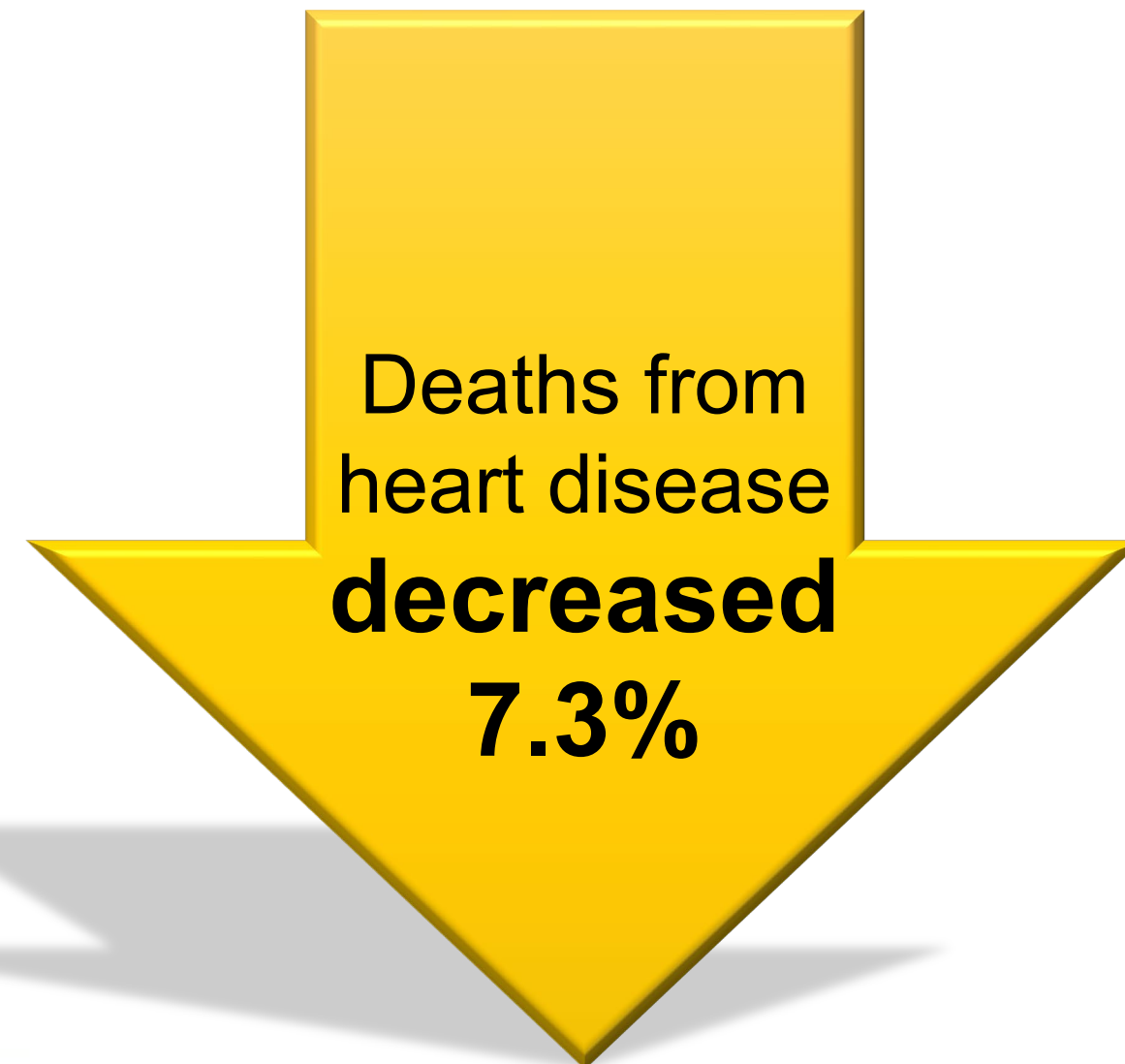
It all starts with the everyday

Learning Objectives

- Describe the risk factors for dementia and the impact nutrition can have on the progression of dementia.
- Provide a review of the various diets that have been studied for their impact on cognition with emphasis on the MIND (*Mediterranean-DASH Intervention for Neurodegenerative Delay*) diet.
- Review recent research to understand the close connections between food, lifestyle, dementia, and cognitive health.
- Review the various nutrients and foods that have shown to impact cognition and their mechanisms of action.

Just the Facts

- **6.5 million** Americans, 65 and older, currently have Alzheimer's Disease (AD)
- This is projected to **increase to 13 million by 2050!**
- Between 2000 & 2019:



Modifiable Risk Factors for Dementia

- Level of Education
- Air Pollution
- Head Injury
- Social Isolation
- Depression
- Hearing impairment
- Excessive Alcohol Consumption
- High Blood Pressure
- Obesity
- Diabetes
- Smoking
- Physical Inactivity

These 12 risk factors account for ~40% of worldwide dementias

Genetics & Lifestyle

- APOE4 gene → 3-12 x risk of AD
- Europeans with APOE4 gene had lower incidence of AD compared to Americans of similar descent
- Relative risk of developing AD:
 - Type II Diabetes alone - 1.8
 - Type II Diabetes & APOE4 Gene - 5.5



Dietary Approaches to Stop Hypertension Diet (DASH)

Type of food	Servings on a 2000 Calorie diet
Grains and grain products (at least 3 <u>whole grain</u> foods each day)	7 - 8
Fruits	4 - 5
Vegetables	4 - 5
Low fat or non fat dairy foods	2 - 3
Lean meats, fish, poultry	2 or less
Nuts, seeds, and legumes	4 - 5 per week
Fats and sweets	limited

*Sodium Intake \leq 2300mg

- Developed to prevent/control blood pressure (BP)
- Vastly different than typical American diet
- ↓ BP & LDL (bad) cholesterol
- ↓ weight & ↑ insulin-sensitivity
- Follow-up study showed ↓ in cognitive decline
- Difficult to follow and maintain

The Mediterranean Diet

- Cultural eating habits from Greece and Italy
- Popularized in U.S. in 1990's
- Similar to DASH + fish, olive oil, & wine
- Includes physical activity
- ↓ LDL (bad) cholesterol
- ↓ risk of cardiovascular mortality & overall mortality
- ↓ incidence of cancer, Parkinson's Disease (PD), and Alzheimer's Disease (AD)



The Ketogenic Diet

- High fat & very low carbohydrate intake
- Three variations have been studied
- Body converts fat → ketone bodies which are used as energy in lieu of glucose (carbs)
- Significantly ↑ cognition in mild to moderate AD
- Partially blocked the accumulation of plaques & tangles



The Nordic Diet

- Similar to Med Diet emphasizes abundant fruits & vegetables, whole grains, and fatty fish while restricting saturated fats & red meat
- Uses canola oil instead of olive oil
- Allows moderate consumption of chicken & game meat
- Focus on local berries (bilberries, lingonberries, blueberries), apples, & pears
- ↓ inflammation, ↓ LDL, & ↓ BP
- ↑ global cognition and ↓ cognitive decline
- ↑ beneficial gut microbiota



The MIND Diet

- **Mediterranean-DASH Intervention for Neurodegenerative Delay**
- Combo of DASH and Med diets & designed to preserve cognitive function

Foods That Are Encouraged

Whole Grains
Green Leafy Vegetables
Other Vegetables
Berries
Fish
Poultry
Beans
Nuts
Alcohol/wine
Olive Oil as primary oil

Foods to Limit

Fast/fried foods
Red meat/meat products
Butter, margarine
Cheese
Pastries/Sweets



MIND Diet Study Results

- Those with who followed the MIND diet most closely had a **53% lower risk** of developing AD as compared to those who followed it the least
- Even those that followed **some** of the MIND diet components had a **35% lower risk** of developing AD
- Those with the highest intake of green leafy vegetable had the equivalent of being **11 years younger in age**
- Associated with better cognitive function **independent of brain pathology!**

What is the Science Behind These Diets?

Nutrients Found to be Protective

- Folate & other B Vitamins
- Vitamins C, D, E, and K
 - Fiber
 - Flavonoids
 - Carotenoids
- Non-flavonoid polyphenols
 - Omega-3 fatty acids
- Medium-chain triglycerides

Mechanisms of Protection

- Vascular
 - Anti-inflammatory
 - Antioxidant
 - Neural
- Improved gut microbiota
- Improved insulin sensitivity
- Blocking plaque & tangle formation
 - Synergistic effects

Which Foods Are These Found In?

- Berries
- Green Leafy Vegetables
- Fish
- Red Wine
- Beans & Nuts
- Coconut Oil
- Besides Vitamin D & Ginkgo Biloba, oral supplements have not been proven to have a protective effect





Dementia's Impact on Nutritional Status

- Anorexia or loss of initiative to eat or drink
- Forgetting or refusing to eat or drink
- Dysphagia
- Difficulty feeding themselves or using eating utensils
- Distraction – wandering/pacing
- Medication side effects
- Sundowning
- Behaviors during meals

What Can We Do?

- Socialization at mealtimes
- Increased assistance at mealtimes - cueing
- Offer meals at the time of day when the individual appears most responsive
- Minimize distractions at mealtimes
- Provide small frequent meals or between meal snacks
- Provide portable, hand-held foods that do not require cutlery

Key Takeaways

- The sooner you incorporate these dietary strategies the greater the impact on future cognition
- Consider incorporating these foods into our IL and AL resident menus to possibly delay the transition of care
- Physical activity and social engagement are just as important to cognitive health
- More research is needed on how some of these diets impact cognition

Q&A



Thank You!

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