Duke dementia family support program

Caregiver Connections

An Educational Webinar Series With The Experts

The presentation will begin shortly.
Thank you for your patience!

dukefamilysupport.org

919-660-7510

Nutrition and Dementia

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DukeHealth

Agenda

- How food affects our brains
- Diets and cognitive function
- Malnutrition risk
- Challenges for caregivers
- Nutrition in advanced dementia

How food affects our brains

What we eat and drink impacts our brain health

Diet-related lifestyle practices for brain health

- BMI between 18.5 and 24.9 km/m2
- Physical exercise
- Manage diabetes, blood pressure, stress
- Avoid deficiencies in B12 or folic acid
- Reduce neuroinflammation
  - Inflammation can trigger amyloidosis, neuron death, and reduced brain size

Yu JT, et al. Evidence-based prevention of Alzheimer's disease: systematic review and meta-analysis of 243 observational prospective studies and 153 randomised controlled trials. *J Neurol Neurosurg Psychiatry. Nov 2020;91(11):1201-1209.*

Antioxidants

- Theory: brain has a high metabolic rate and generates oxidative stress → death of brain cells
  - Antioxidants can protect against oxidative stress
- Example antioxidants:
  - Vitamins A (beta-carotene), C, and E
  - Minerals: manganese, copper, selenium, zinc
- Mixed evidence in research
  - Variety of study methods
- Potential harm: vitamin overdose
- Take-home: +/-multivitamin, treat deficiency

Coley N, Vaurs C, Andrieu S. Nutrition and Cognition in Aging Adults. Clin Geriatr Med. Aug 2015;31(3):453-64.

B12 or folic acid deficiency

- Theory: Low folate and/or B12 → high levels of homocysteine in the blood → accumulation of amyloid and tau (proteins involved in Alzheimer's dementia)
- Mixed evidence in research
  - B vitamin supplementation lowers homocysteine
  - No evidence that it translates to protection from dementia or cognitive decline
- Take-home: treat B12 deficiency, eat a well-rounded diet

Coley N, Vaurs C, Andrieu S. Nutrition and Cognition in Aging Adults. Clin Geriatr Med. Aug 2015;31(3):453-64.

Folic acid sources:

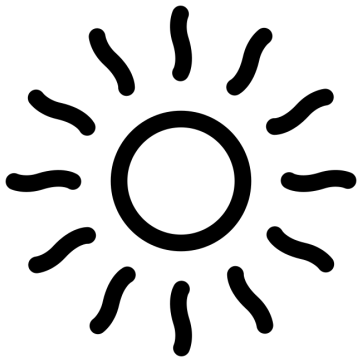
- Asparagus
- Avocado
- Beets
- Broccoli
- Eggs
- Leafy greens
- Oranges
- Peppers
- Seeds and nuts

B12 sources:

- Beef
- Eggs
- Fortified cereal
- Clams
- Greek yogurt
- Liver
- Milk
- Salmon
- Trout
- Tuna

Vitamin D

- Theory: anti-inflammatory, antioxidant
- Research: low vitamin D levels may be associated with cognitive decline
- Take-home: treat deficiency



15-30 min of sun

3 days / week

800-4000 IU/day

Coley N, Vaurs C, Andrieu S. Nutrition and Cognition in Aging Adults. Clin Geriatr Med. Aug 2015;31(3):453-64.

Poly-unsaturated fatty acids (PUFAs)

- Theory: PUFAs are an important building block for neuron membranes. They may help keep the membrane strong
  - Also may have anti-inflammatory or antithrombotic properties
- Fish, omega-3, docosahexaenoic acid (DHA)
- Mixed evidence in research
- Take-home: very little evidence

Coley N, Vaurs C, Andrieu S. Nutrition and Cognition in Aging Adults. Clin Geriatr Med. Aug 2015;31(3):453-64.

Diets and cognitive function

Diets

Mediterranean	DASH
Based on traditional Mediterranean diet	**D**ietary **A**pproaches to **S**top **H**ypertension
Anti-inflammatory	Cardioprotective
• High intake: Fruits, vegetables, whole grains, fish, nuts, legumes • Moderate intake: fish, poultry, red wine with meals • Low intake: red and processed meats • Extra virgin olive oil = main fat source	• High intake: fruits, vegetables, whole grains, nuts • Also: low fat dairy foods, low sodium • Does not recommend alcohol

Both are associated with **better cognitive function**

- **Reduced cardiovascular risk**
- Better adherence to diet = better cognitive performance
- Conflicting data exist

Both are **high in antioxidants and fiber, and low in saturated fat and sugar**

McGrattan AM, McGuinness B, McKinley MC, et al. Diet and Inflammation in Cognitive Ageing and Alzheimer's Disease. *Curr Nutr Rep. Jun 2019;8(2):53-65.*

MIND Diet

- **M**editerranean-DASH Diet **I**ntervention for **N**eurodegenerative **D**elay
- Created at Rush University, 1997-2013
  - 1545 community-dwelling older adults
    - Average age 81 years
    - 95% white, 98.5% non-Hispanic
  - Cognitively normal or mild cognitive imp.
  - Cognitive assessments annually
  - Food frequency questionnaires
- 10 years of follow-up

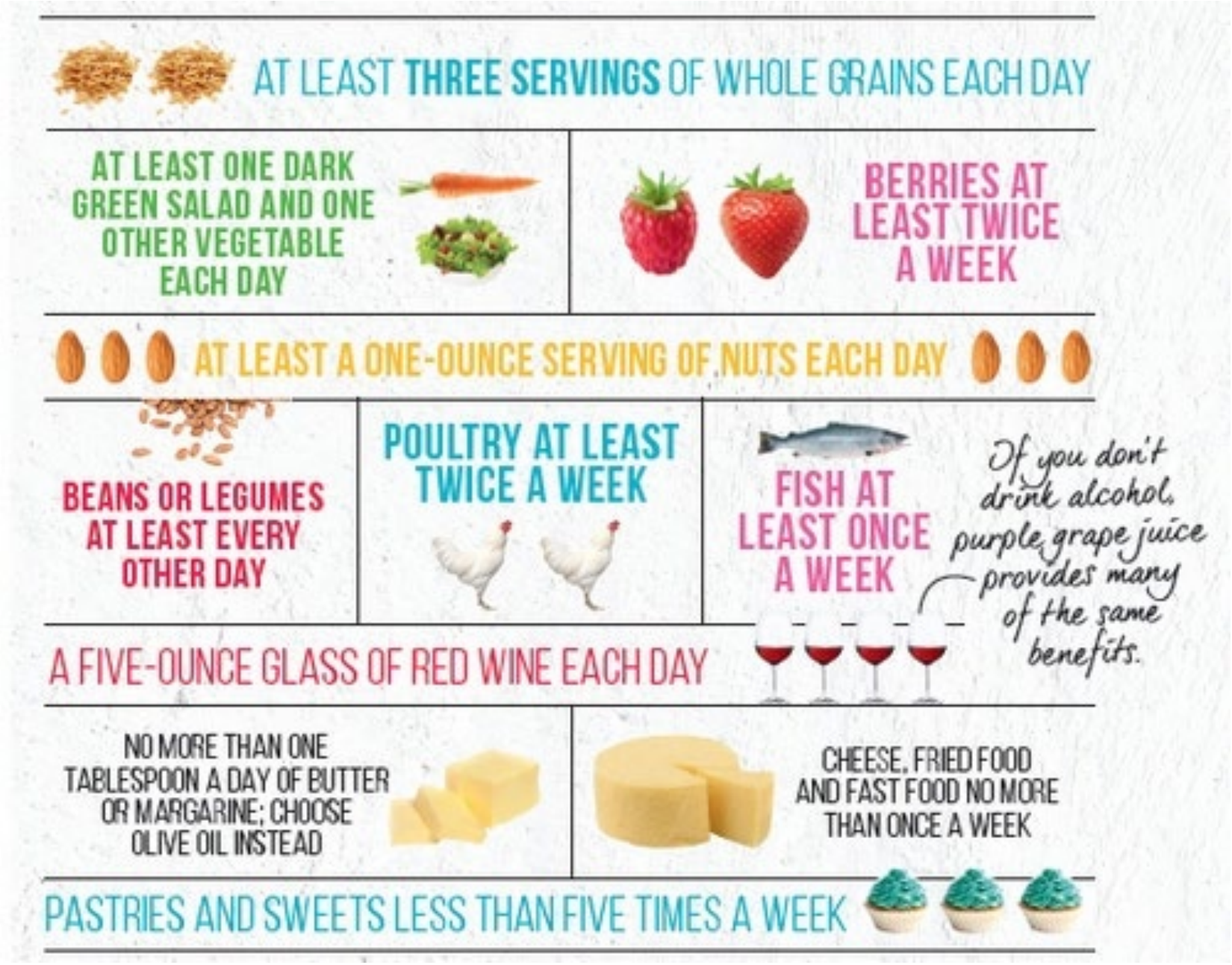
Morris MC, Tangney CC, Wang Y, et al. MIND diet slows cognitive decline with aging. *Alzheimer's & dementia : the journal of the Alzheimer's Association. Sep 2015;11(9):1015-22. doi:10.1016/j.jalz.2015.04.011*

MIND Diet

"Brain healthy foods"	Unhealthy foods
Green leafy vegetables	Red meats
Other vegetables	Butter and stick margarine
Nuts	Cheese
Berries	Pastries and other sweets
Beans	Fried / fast food
Whole grains	
Seafood	
Poultry	
Olive oil	
Red wine	

Morris MC, Tangney CC, Wang Y, et al. MIND diet slows cognitive decline with aging. *Alzheimer's & dementia : the journal of the Alzheimer's Association. Sep 2015;11(9):1015-22. doi:10.1016/j.jalz.2015.04.011*

MIND Diet

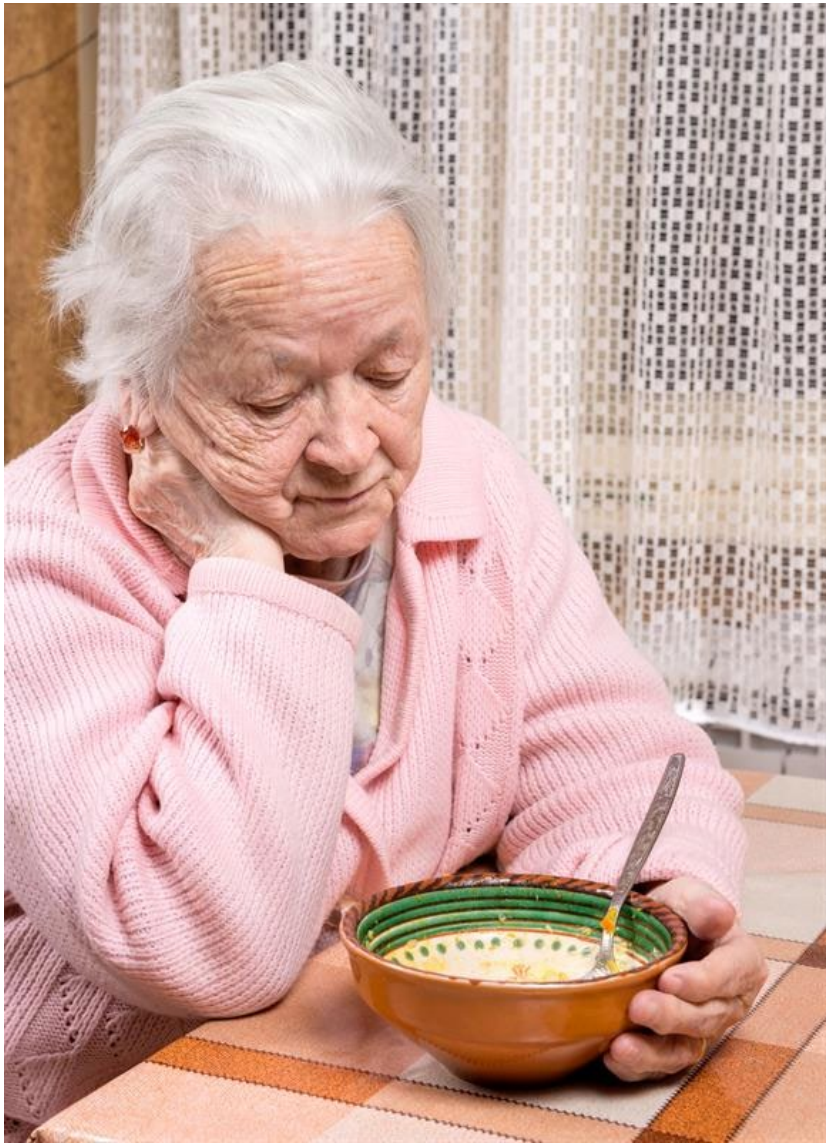


https://www.huffpost.com/entry/the-new-mind-diet-may-hel_b_10435866

Heavy alcohol use

- Avoid heavy alcohol use
  - Defined as >21 units per week

Malnutrition Risk



Malnutrition in Older Adults

1 in 2

Up to **1 out of 2** older adults is either at risk of becoming or is malnourished[3]

$51.3B

Disease-associated malnutrition in older adults is estimated to cost **$51.3 billion annually**[4]

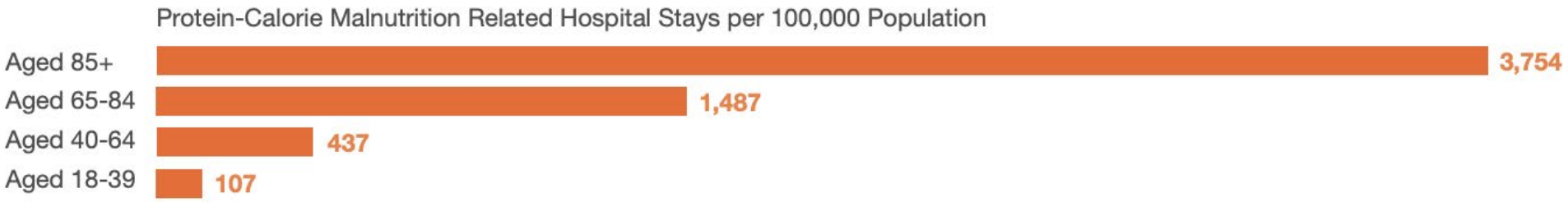
3x more likely

Protein-calorie malnutrition related hospital stays are **3x more likely** to result in death[5]

2x longer

Protein-calorie malnutrition related hospital stays are **2x longer**[5]

Malnutrition is Highest in Older Adults[5]

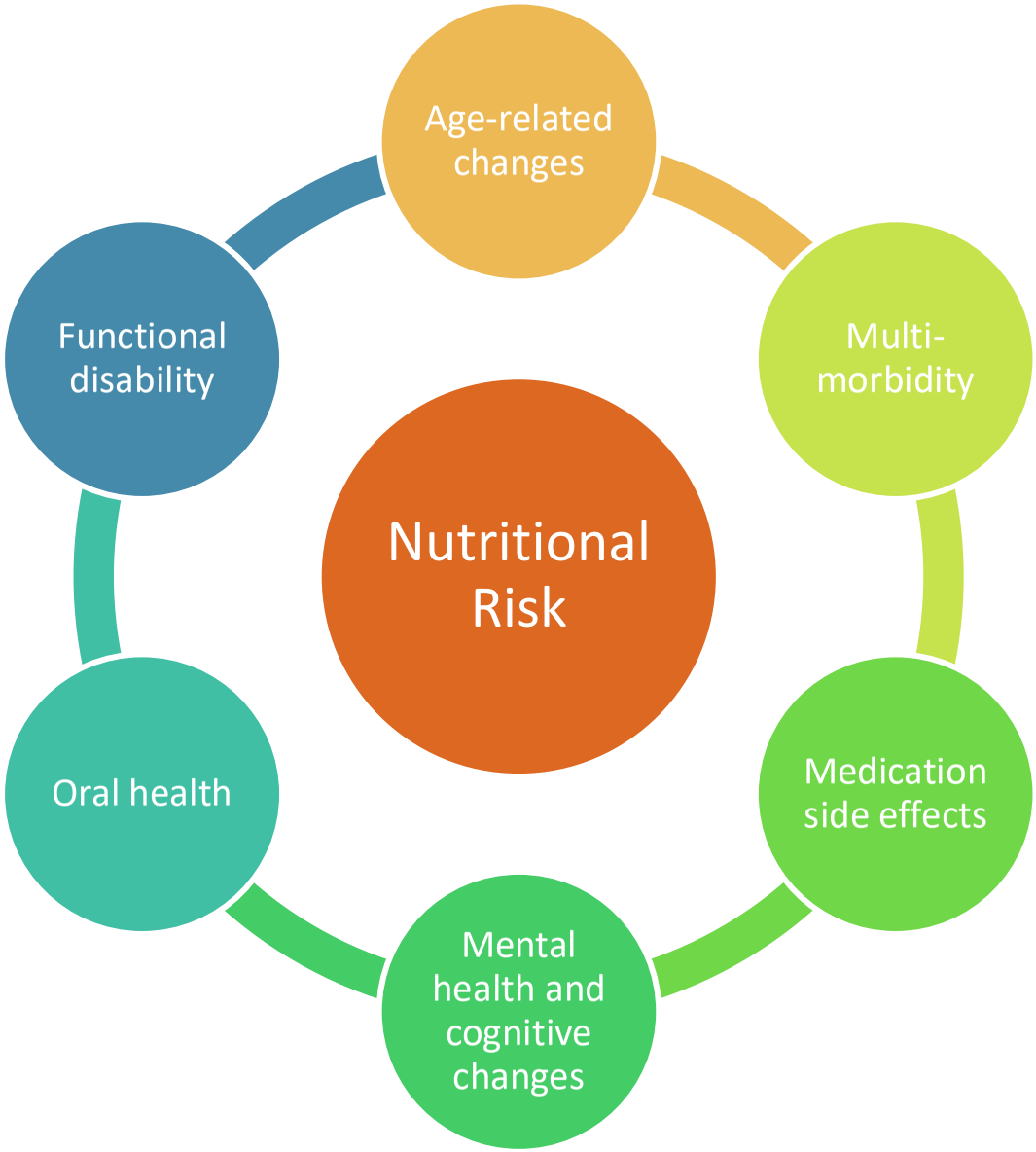


The Malnutrition Quality Collaborative. National Blueprint: Achieving Quality Malnutrition Care for Older Adults. 2020.

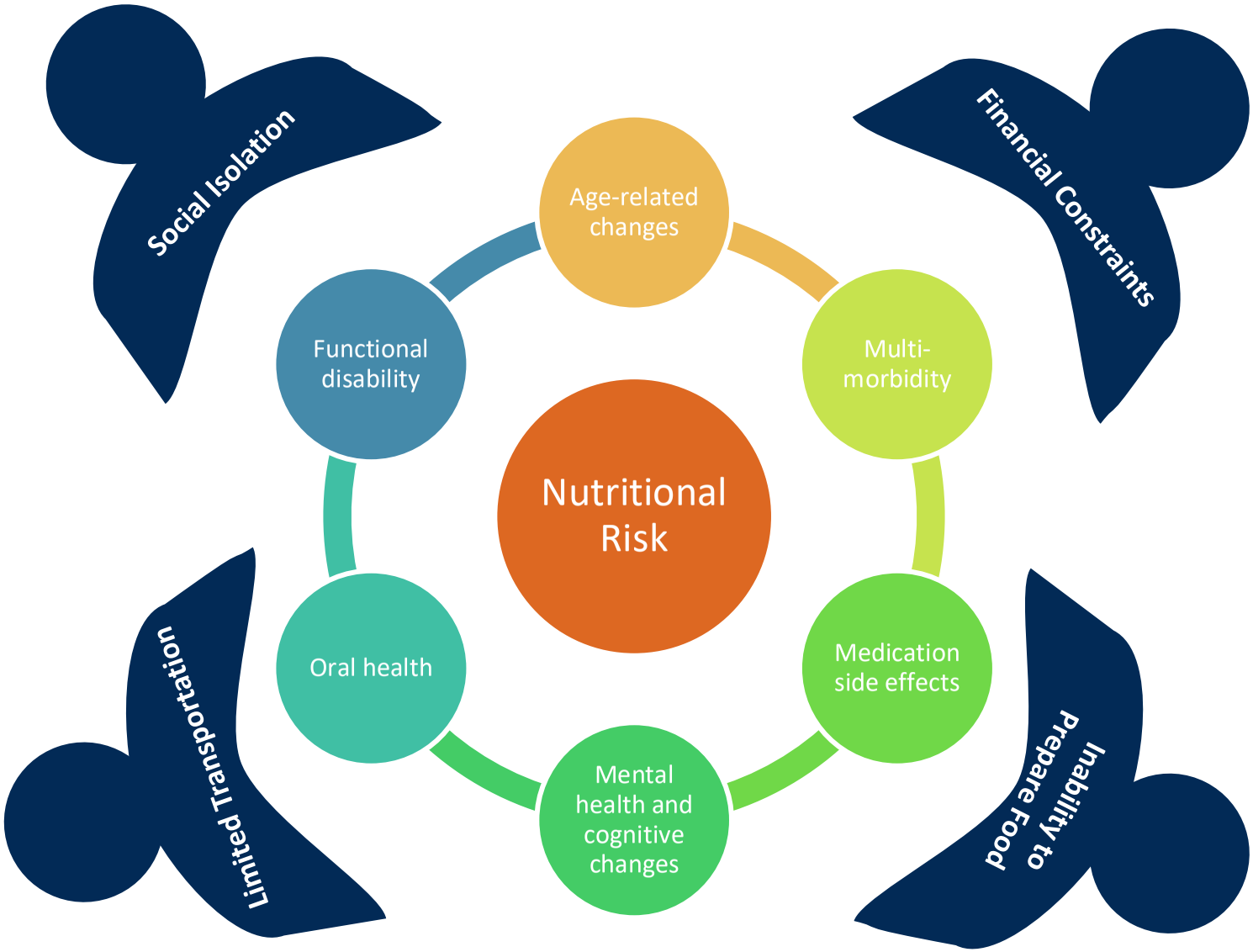
Consequences of Malnutrition

Loss of lean body muscle	• Reduced strength and endurance	Limits function Increases fall risk
Loss of fat tissue	• Reduced energy reserves	Increases duration of illness or injury
Reduced calcium and vitamin D	• Reduced bone density	Increases fracture risk
Impaired immune function	• Reduced production of acute phase reactants	Weakens immune response Delayed healing
Fluid accumulation	• Can be localized or generalized	Obscures identification of weight loss

Nutritional risk factors



Nutritional risk factors



Challenges for caregivers

- Strategies for nutrition and hydration challenges for dementia family caregivers
  - Taste preferences change
  - Difficulty swallowing
  - Not eating
  - Hydration

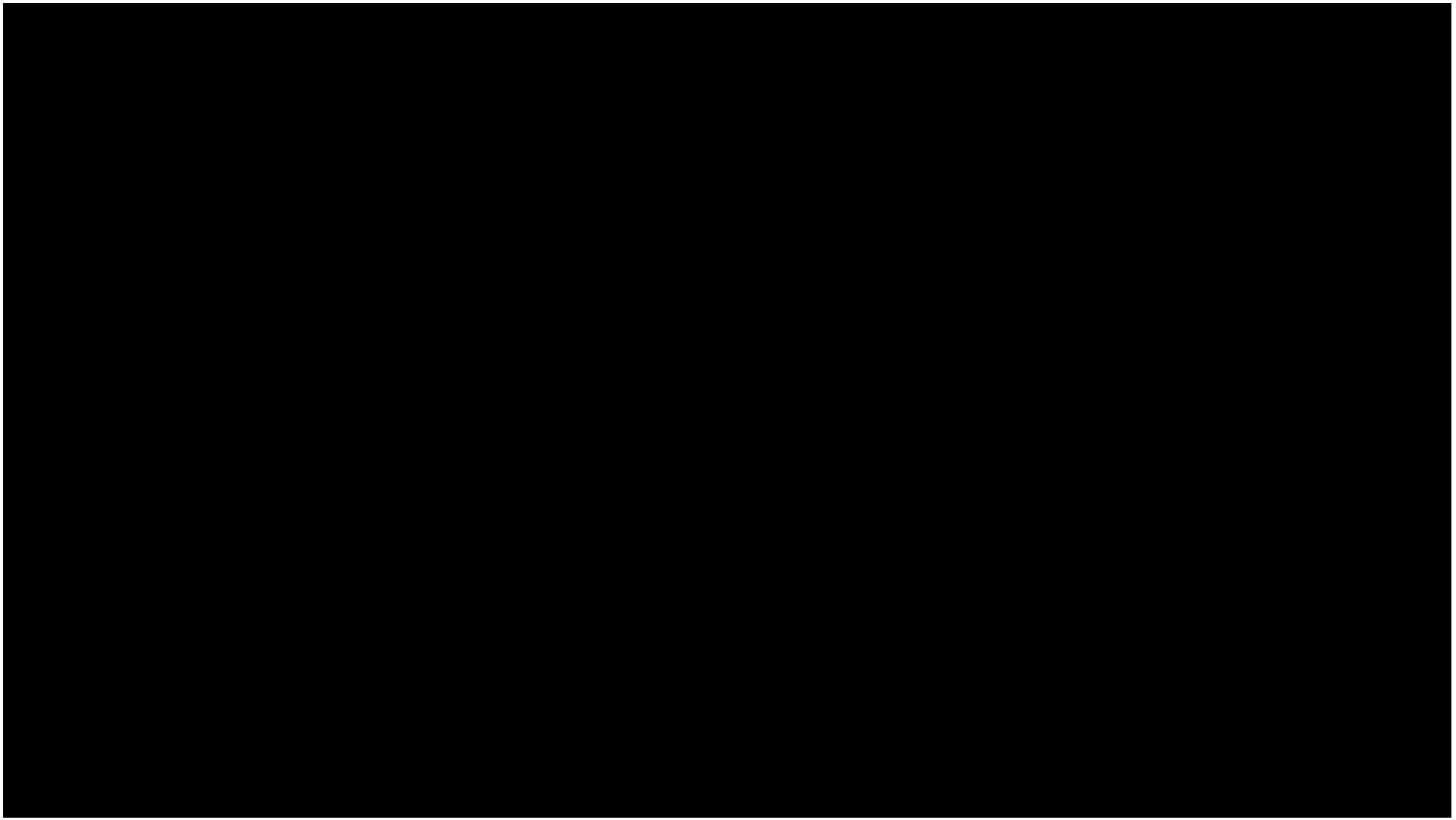
Mealtime considerations

- Environmental cues
- Food preparation
- Adaptive equipment

Who else can help?

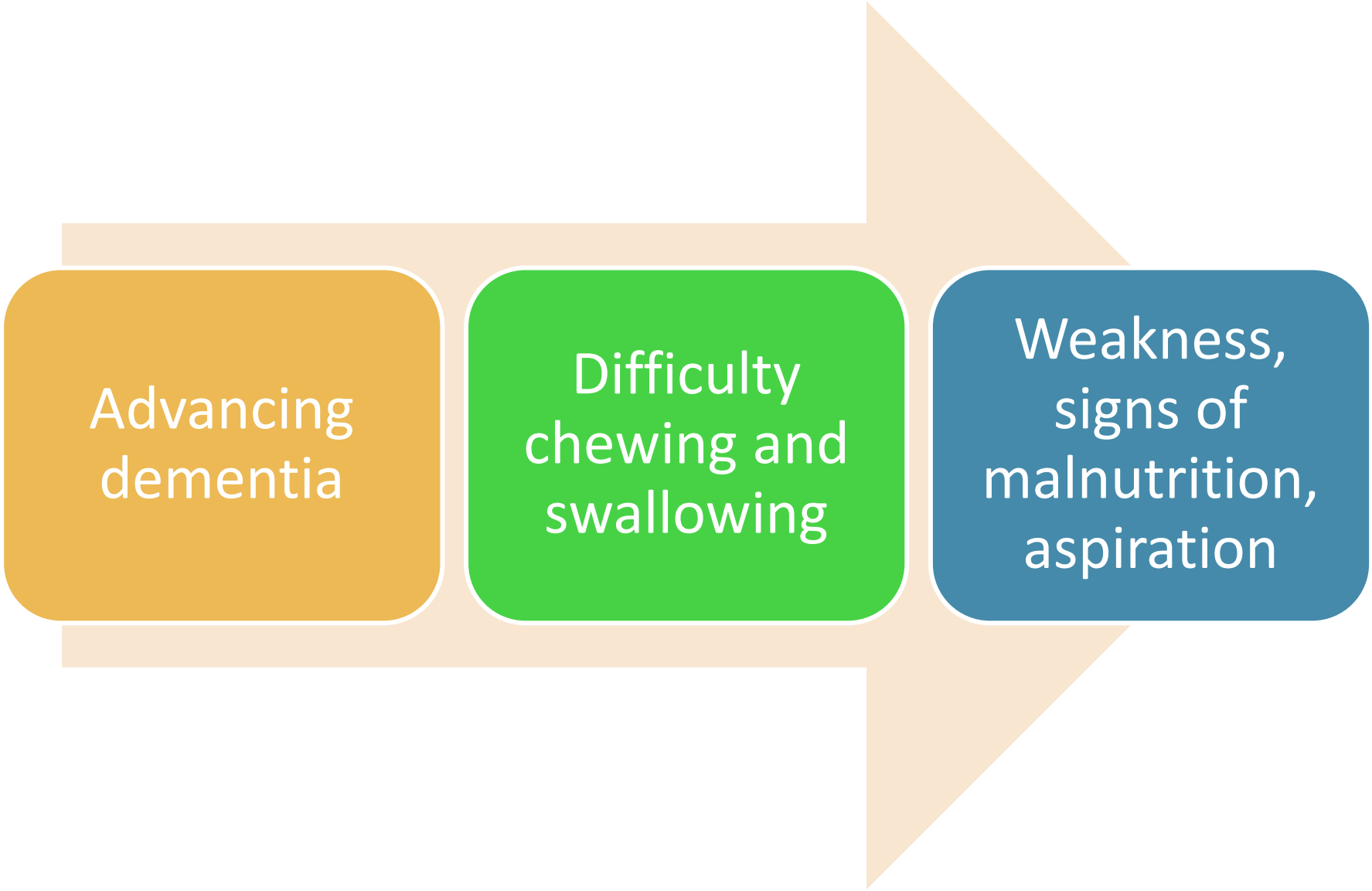
Occupational therapist	• Adaptive equipment • Tray set-up
Registered dietitian	• Nutrition / malnutrition evaluation • Individualized assessment and recommendations
Speech language pathologist	• Environmental cues • Hand feeding techniques • Swallowing evaluation and recommendations

Hand-assisted feeding



https://www.youtube.com/watch?v=eN_PMpqmtt0

Dysphagia in dementia



https://www.choosingwisely.org/patient-resources/feeding-tubes-for-people-with-alzheimers/

Feeding tubes for PLWD

Choosing Wisely®
An initiative of the ABIM Foundation

AGS Geriatrics Healthcare Professionals
Leading Change. Improving Care for Older Adults.

Feeding tubes

- No increased length of life
- No increased quality of life
- Complications: infection, pulling, aspiration

Careful hand feeding

- Human contact
- Pleasure of tasting foods

https://www.choosingwisely.org/patient-resources/feeding-tubes-for-people-with-alzheimers/

Person-centered decision-making

- Consider **personal goals and preferences** and **quality of life** when thinking about:
  - Foods to include in someone's diet
  - Consistency and textures of food
  - Priority of what goes into their stomach
    - Too many pills?
    - Favorite things to eat and drink

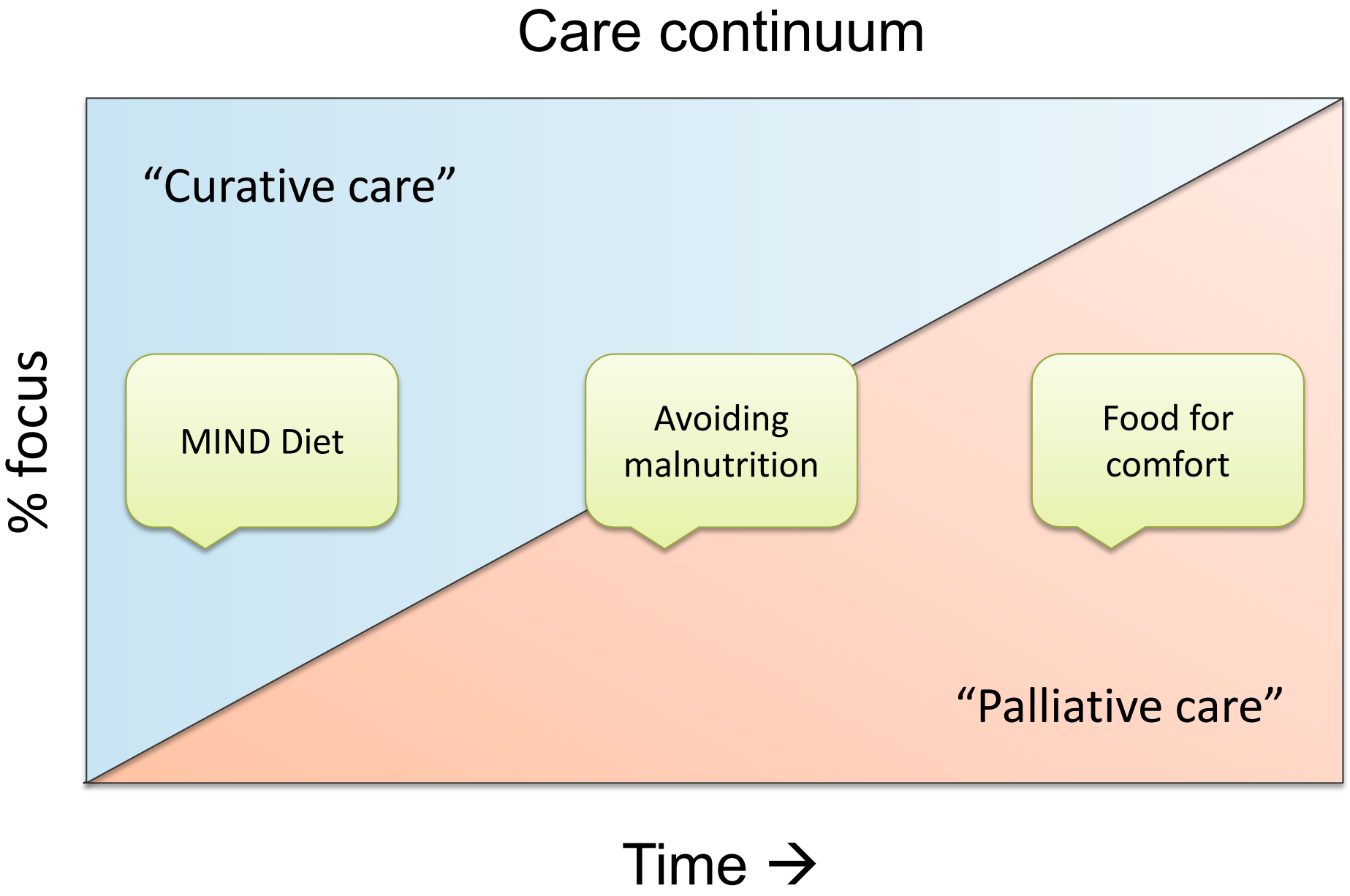
Reconsider therapeutic diets

- Diet recommendations accompany many disease management strategies – including the MIND diet!

- Position from the academy of nutrition and dietetics:
  - "An individual's diet should be determined with the person and in accordance with his/her informed choices, goals and preferences, rather than exclusively by diagnosis."

Individualized Nutrition Approaches for Older Adults: Long-Term Care, Post Acute Care, and Other Settings. *J Acad Nutr Diet*. 2018;118:724-35.

Person-centered decision-making



Take-home points

- MIND diet may be helpful to prevent or slow cognitive decline
- Heavy alcohol is not good for brain health
- Addressing malnutrition risk factors can prevent unwanted outcomes
- Feeding tubes are unlikely to benefit people who can’t eat because of advancing dementia
- As dementia progresses, our focus shifts: food can be a way to enhance social interaction and pleasure

Questions?

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Thank you for joining us today!

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