Nutrition to Promote Healthy Aging

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What We Will Cover

• General principles about aging and nutrition
• Mediterranean, DASH, and MIND diets
  – Observational
  – Clinical Trial
• Nutritional supplements
  – Observational
  – Clinical Trial
• Some questions for the field
General Principles

- Older people are more heterogeneous
- Risks associated with malnutrition differ
- Barriers to good nutrition differ
  - Functional impairment
  - Oral health
  - Chronic diseases with dietary restrictions
  - Medications
More General Principles

• Nutritional health and problems vary by sub-population
  – Younger and healthier
  – Chronic disease
  – Frail, multiple chronic diseases, limited life expectancy
  – Setting (community, ALF, nursing home)
Mediterranean, DASH, and MIND diets
DASH

**High**
- Grains
- Vegetables
- Fruits
- *Low fat dairy*
- Nuts, seeds & legumes

**Low**
- Meat, poultry, and *fish*
- Total and saturated fat
- Sweets
- Sodium

Mediterranean

**High**
- Grains
- Vegetables
- Fruits
- Potatoes
- Nuts, seeds & legumes
- *Fish*
- Olive oil

**Low**
- Red meat and poultry
- Full-fat *dairy*
- Alcohol
Mediterranean and DASH Diets-Observational Data

- Reductions in:
  - Cardiovascular disease (9%)
  - Cancer (6-10%)
    - Colorectal (14%)
    - Prostate (4%)
    - Pharyngeal/esophageal (56%)
  - Overall mortality (9%)
  - Parkinson and Alzheimer diseases (13%)
  - CKD (16-51%)
MIND Diet
Observational Data

• MIND diet score (Med + DASH)
  – Less decline global; episodic, semantic, and working memory, perceptual speed and perceptual organization at 4.7 years
  – Less likely to develop Alzheimer’s at 4.5 years
Mediterranean and DASH Diets - Clinical Trial Data

- PREDIMED study (age 55-80)
- Mediterranean diet + Extra Virgin Olive Oil
- Mediterranean diet + mixed nuts
- Regular diet (reduced dietary fat)

• Outcome (MI, stroke, CVD deaths) 4.8 y
• Reduction in outcome by 28-30%
• Same effect size for <70 y and ≥ 70 y
• DASH diet
  - Lower BP and cholesterol
Diets and Cognition - Clinical Trial Data

• Mediterranean supplemented with either extra-virgin olive oil or mixed nuts
  – Higher MMSE and CDT scores at 6.5 years

• DASH diet
  – Greater psychomotor skills at 4 months
Nutritional supplements
Vitamins and Minerals

• Vitamin D and calcium supplementation
  – No recommendation (USPSTF)
  – 800 IU D3 if > 71; 1200 mg Ca if > 71 (IOM)

• Vitamin, mineral, or multivitamin supplements to prevent CHD
  – No recommendation (USPSTF)

• Do not take beta carotene or Vitamin E (USPSTF)
Calcium Supplement Controversies

• CV disease: lots of conflicting data
  – WHI: Ca + D: MI HR 1.05; stroke RR 0.95
  – Meta-analyses: MI Ca RR 1.27; Ca ± D RR 1.24
  – May differ by whether dietary versus supplement

• Dementia: small observational study
  – dementia: OR 2.10
  – stroke-related dementia: OR 4.40
  – dementia if a history of stroke: OR 6.77
Multivitamin Supplements - Observational Data

- Observational data in postmenopausal women (WHI) indicate no effect of multivitamins on breast, colorectal, endometrial, lung, or ovarian cancers, MI, stroke, VTE, or mortality.
Multivitamin Supplements: Clinical Trial Data

- In middle-aged men, multivitamins have not been shown to decrease CVD disease or mortality, but there is a small reduction in total cancer risk.
- No benefit of multivitamins in reducing infections in outpatient and nursing home settings.
Nutritional Supplements - Clinical Trial Data

- No benefit (AREDS2) of:
  - Fatty acids (docosahexaenoic acid [DHA]/eicosapentaenoic acid [EPA])
  - Antioxidants (lutein/zeaxanthin)
  - Zinc supplements
on cognitive decline
Some Questions for the Field

• How can US Dietary Guidelines for Americans (DGAs) that apply to older persons be promoted and included in prevention and health care settings?

• How can the unique barriers to good nutrition that affect older persons be overcome?
More Questions

- Is the evidence for Mediterranean/DASH diets compelling enough that these should be implemented widely and, if so, what would be the best strategy?
- What can we recommend for people who would not be appropriate for these diets (e.g., frail and nursing home)?
More Questions

- What is the appropriate stance on MVIs and other nutritional supplements that do not have evidence?
- When, if ever, is it reasonable to stop preventive nutritional measures?
- What more do we need to know?