Community Based Nutrition Services: Policy to Practice

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HCBS National Home & Community Based Services Conference

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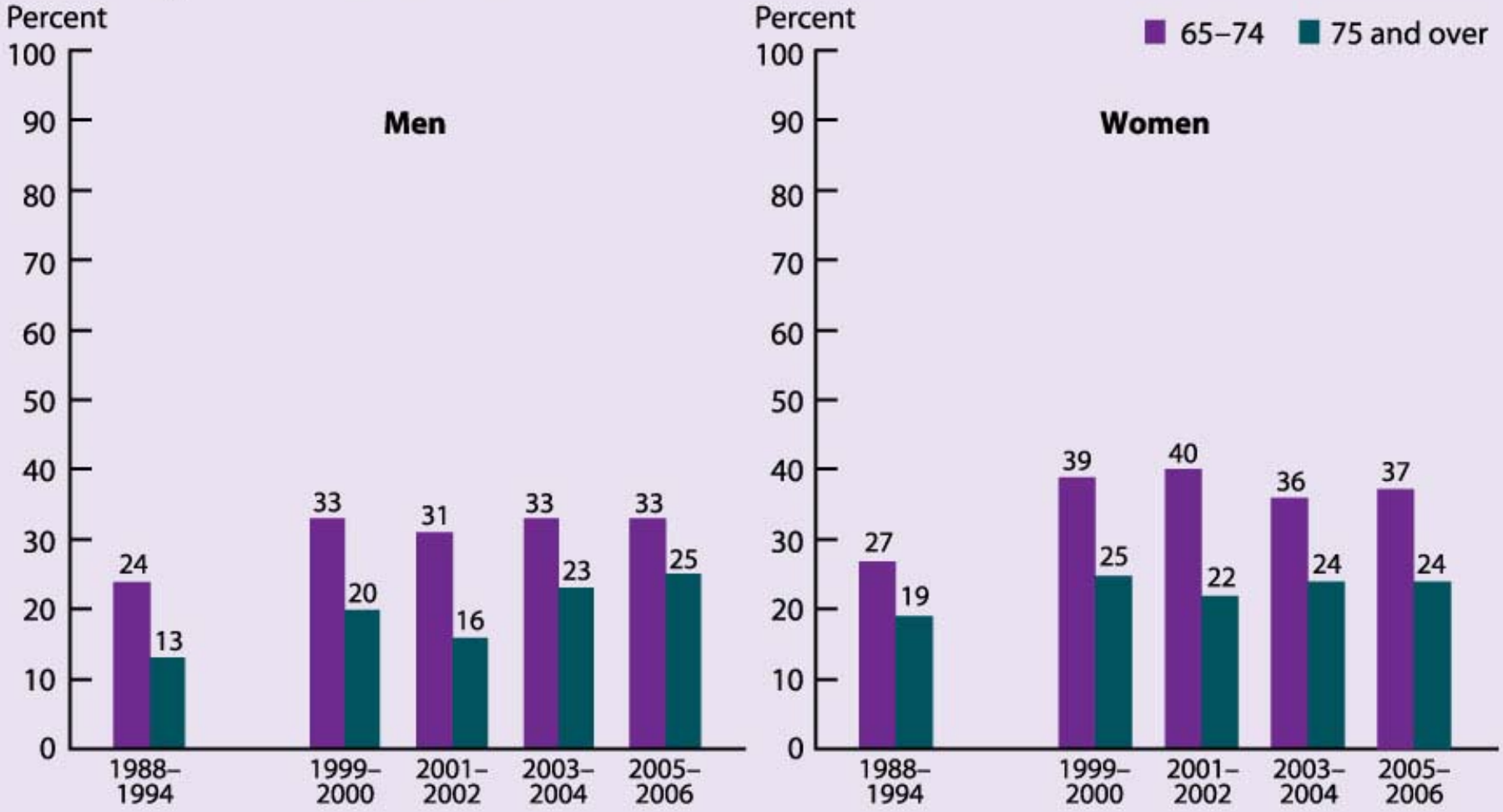
Overview

- Nutrition, health & functionality
- Federal nutrition policy
- Identifying nutrition need
- Nutrition interventions

Nutrition, Health & Functionality

Obesity Rates Have Significantly Increased & Doubled for 75+

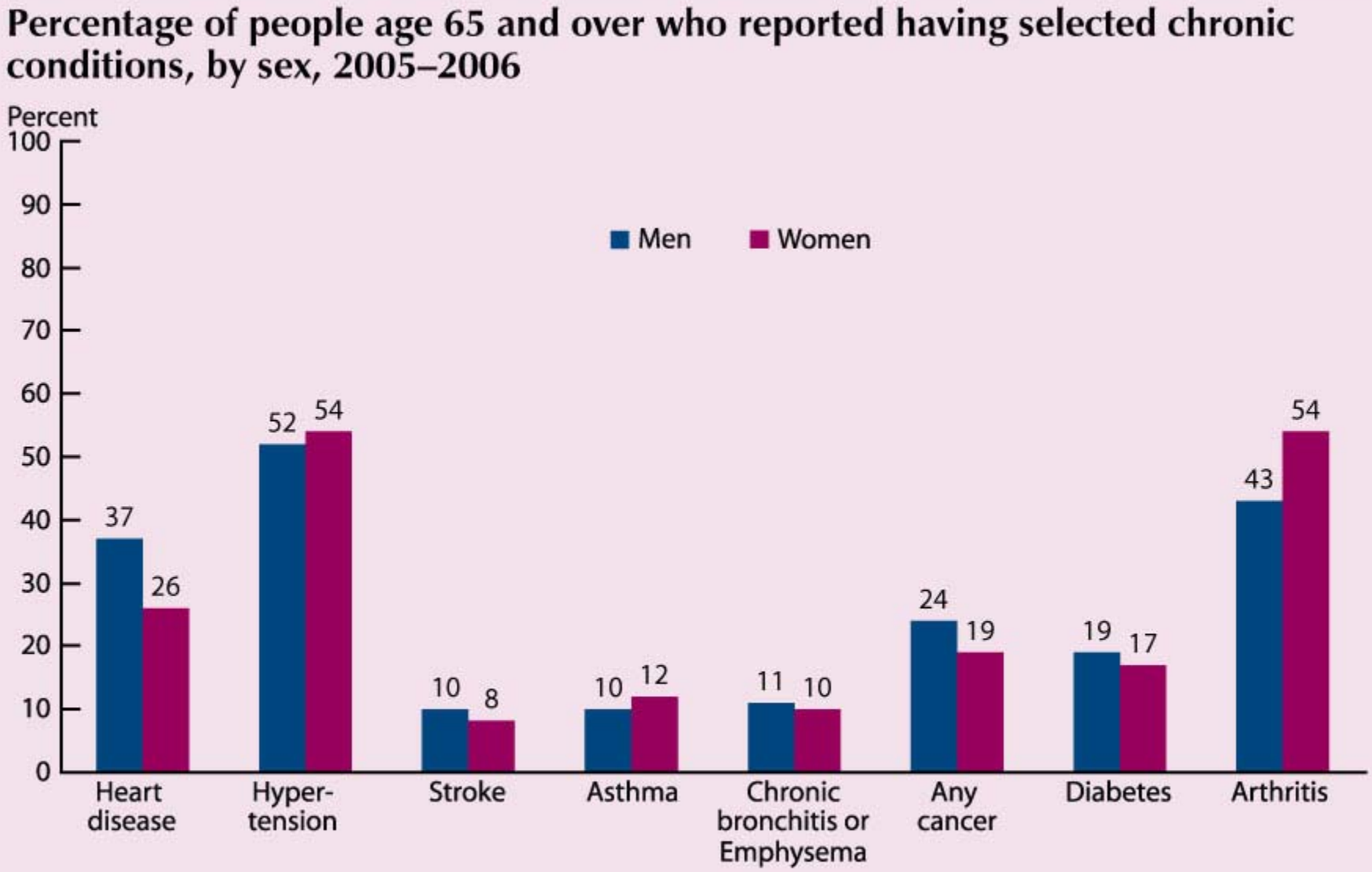
Percentage of people age 65 and over who are obese, by sex and age group, selected years 1988–2006



Reference population: These data refer to the civilian noninstitutionalized population.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey.

Men & Women have Different Rates of Chronic Health Conditions; 7 of 8 Conditions are Nutrition Related



Note: Data are based on a 2-year average from 2005–2006.

Reference population: These data refer to the civilian noninstitutionalized population.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.

Healthy Eating and Physical Activity Prevent, Decrease Risk of and Manage Chronic Diseases Even in Older Adults

- Increase longevity
  - Even with cancer, heart disease
- Diabetes prevention
- Manage hypertension
- Best evidence for
  - Fruits, vegetables
  - Whole grains
  - Less salt, more postassium
  - Less saturated fat (animal fat)
  - Vitamin D, calcium supplements

http://www.never2early.org/images/photo_vegi-basket.jpg

High Fruits and Vegetables, Low Saturated Fat Increases Longevity

Baltimore Longitudinal Study of Aging

- Mean age 60 at start, 501 men, studied 18 yrs
  - 5 or more daily servings fruits and vegetables and < 12% calories from saturated fat
    - 31% decrease in death from any cause
    - 76% decrease in coronary heart disease heart disease (CHD)
- Each daily serving of fruits or vegetables
  - 6% reduction in death from any cause
  - 21% reduction in CHD mortality
- Each additional gram of saturated fat
  - 7% increase in CHD mortality

Tucker et al., 2003, http://jn.nutrition.org/cgi/content/full/135/3/556

Low Sodium Works Well in Older Adults:

Dietary Approaches to Stop Hypertension Diet

- DASH diet rich in fruits, vegetables, whole grains, and low-fat dairy

	Decrease in SBP with sodium restriction (mm Hg)	
Age (yrs)	Typical diet	DASH diet more
23–41	–4.8	–1.0
42–47	–5.9	–1.8
48–54	–7.5	–4.3
55–76	–8.1	–6.0

Bray et al., 2006, http://www.ncbi.nlm.nih.gov/sites/entrez

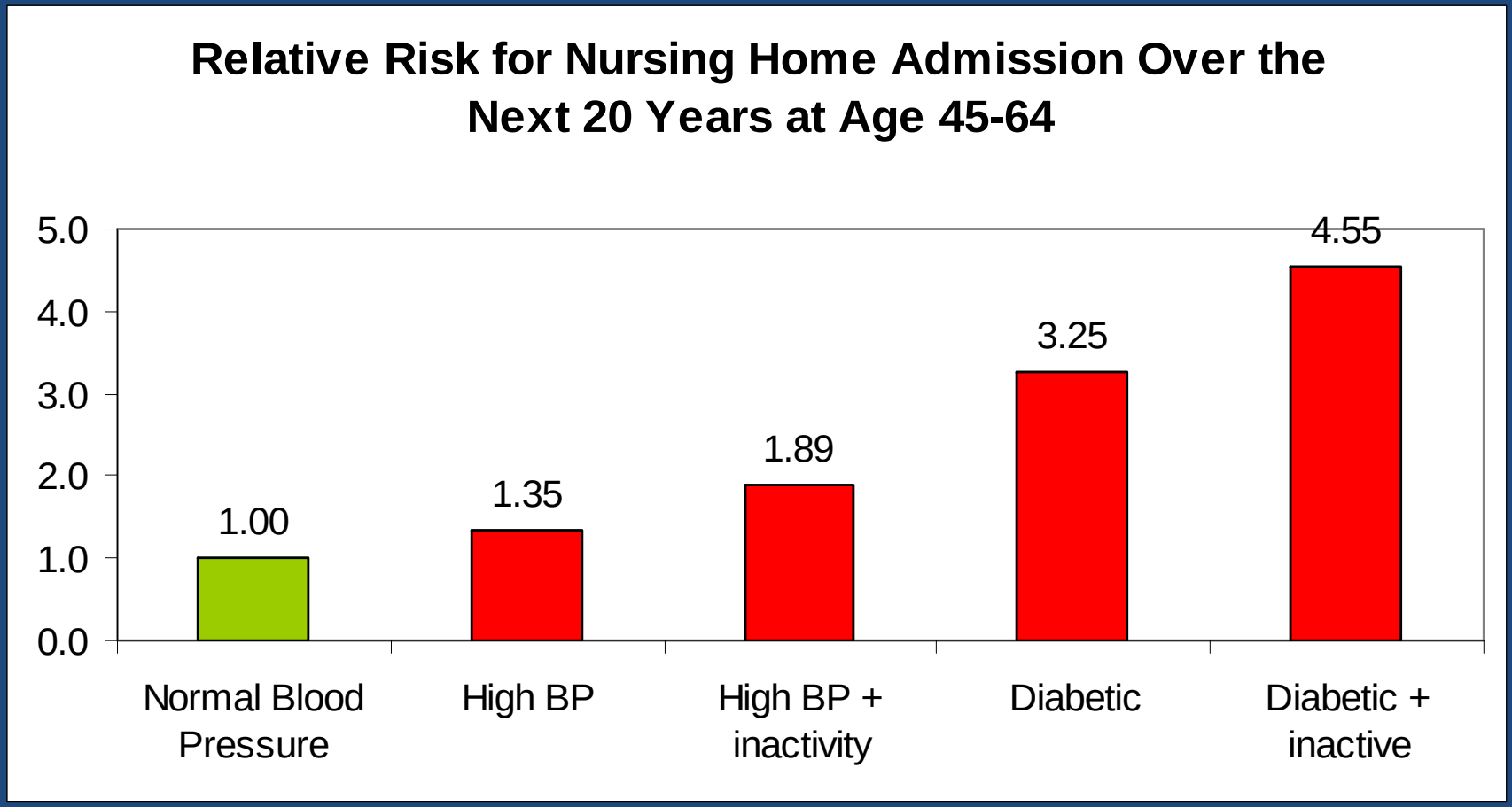
Healthy Lifestyle Helps Older Adults After Myocardial Infarction

- 70+ yrs, men, women, Europe
- 426 people followed 10 yrs after MI
- Deaths decreased by:
  - 38% in non-smokers
  - 31% in physically active
  - 23% moderate alcohol consumption
  - 25% Mediterranean-type diet
  - 40% with 3 or more healthy behaviors

http://www.gov.mb.ca/healthyliving/images/nutrition/guide2_4.jpg

Iestra et al., 2006, http://www.ncbi.nlm.nih.gov/sites/entrez

Diseases Affected by Diet & Future Nursing Home Use



Valiyeva E, et al. Lifestyle-Related Risk Factors & Risk of Future Nursing Home Admission. Archives of Internal Medicine. 2006; 166:985-90.

Body Mass Index, Waist Circumference & Associated Disease Risk

↑ Risk for Type 2 Diabetes, Hypertension, CVD

- **Women**
  - **Overweight: 35 in., ↑ risk**
  - **Obesity: > 35 in., high risk**
- **Men**
  - **Overweight: 40 in., ↑ risk**
  - **Obesity: > 40 in., high risk**

NHLBI. Clinical Guidelines on the Identification, Evaluation & Treatment of Overweight and Obesity. 1998. NIH

Body Mass Index, Abdominal Fat & Alzheimer's Disease Risk

- **Individuals with a parent or sibling with AD: 2 times risk of getting AD**
- **↑ BMI associated with ↑ risk of AD**
- **Overweight individuals with ↑ abdominal fat: 2.3 times risk of getting AD**
- **Obese individuals with ↑ abdominal fat: 3.6 times risk of getting AD**

Whitmer, et al. Central obesity and increased risk of dementia more than three decades later. *Neurology.* 2008 March.

PROTEIN ENERGY UNDERNUTRITON

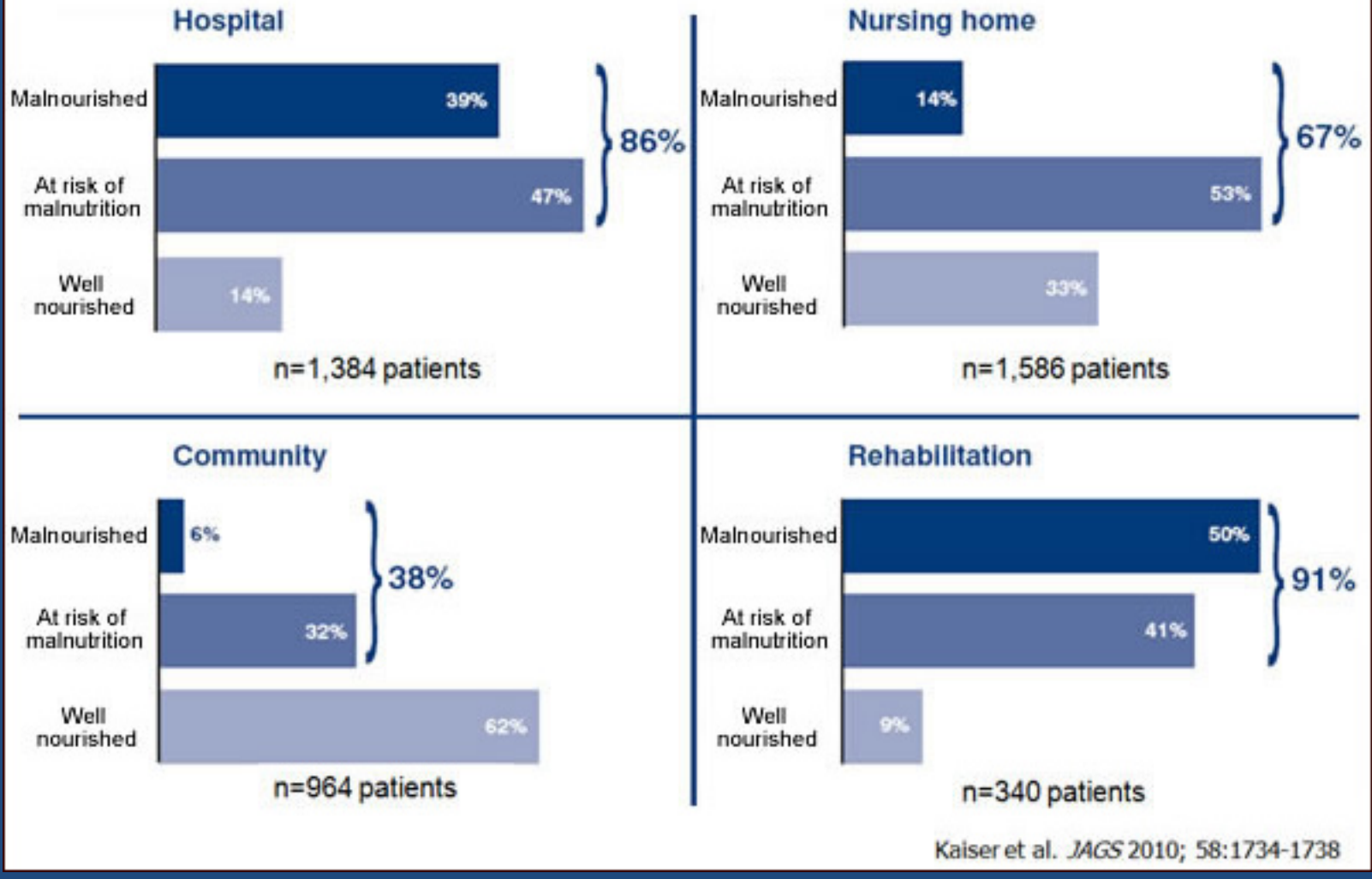
- **CLINICAL SIGNS**
  - **Wasting**
  - **Involuntary Weight Loss**
  - **↓ Body Mass Index**
  - **↓ Serum Albumin (protein)**
  - **Insufficient Nutrient Intake**
- **CONSEQUENCES**
  - **2-3 times ↑ Complications & Mortality**
  - **↑ 35-75% Hospital Care Costs**

IOM, Committee on Nutrition Services for Medicare Beneficiaries. *The Role of Nutrition in Maintaining Health in the Nation's Elderly.* 2000. National Academy Press

WEIGHT LOSS CONSEQUENCES

- ↓ Body Strength; Ambulation
- ↓ Resistance to Infection
- ↓ Immune Function
- ↑ Hip Fractures
- ↑ Pressure Ulcers, Bed Sores
- ↓ Independence
- ↓ Quality of Life
- Earlier Institutionalization
- ↑ Mortality Rates

Malnutrition Across Settings



Kaiser et al. *JAGS* 2010; 58:1734-1738

MALNUTRITION

- **Progressive effects**
  - ↓ Muscle Mass
  - Weakness & Fatigue
  - ↓ Immune Response
  - Poor Wound Healing
  - Pressure Ulcers
  - ↓ Organ Function
  - ↑ Infection
  - ↑ Sepsis
  - Death (without nutrition intervention)

Challa S, Sharkey JR, Chen M, Phillips CD. Associaition of resident, facility, & geographic Characteristics with chronic undernutrition in a nationally represented sample of older residents in US nursing homes. *J Nutr Health Aging*. 2007 11:179-184

Nutrients & Diseases

- **B vitamins** – Blood Vessel Disease
- **Vitamin C, Carotenoids** – Eye Disease, immune function
- **Vitamin D, Calcium** – Osteoporosis
- **B Vitamins** – Brain Function, Nervous System
- **Fiber** – Type 2 Diabetes, Heart Disease, Constipation
- **Sodium, Potassium** – Blood Pressure

Otten, JJ, Hellwig, JP, Meyers, LD. Editors, Dietary Reference Intakes. Institute of Medicine. National Academy Press. WA, DC. 2006

INFECTION & WOUND HEALING

Vitamin A
700 mcg RAE, F
900 mcg RAE, M

- Beef liver, sweet potato, carrot, spinach, butternut squash, mango, cantaloupe, collard greens

Zinc
8 mg, F
11 mg, M

- Oysters, steak, crab, lamb, beef liver, yogurt, beans, spinach, milk, cheese

Vitamin C
75 mg, F
90 mg, M

- Orange juice, grapefruit juice
- Cantaloupe, strawberries, oranges, pink grapefruit, watermelon
- Broccoli, green/red peppers, collards, asparagus, tomato, cabbages, potatoes, spinach

AGE-RELATED MACULAR DEGENERATION

Vitamin E
15 mg

- Oils, fats, nuts, seeds, salad dressings, mayonnaise, margarine, leafy green vegetables, tomatoes, eggs, whole grains, wheat germ

Vitamin C
75 mg, F
90 mg, M

- Citrus including juices, cantaloupe, strawberries, watermelon, broccoli, green/red peppers, collards, asparagus, tomato, cabbages, potatoes, spinach

Carotenoids

- Dark yellow, orange fruits & veggies

Lutein
Zeaxanthin

- Green vegetables
- Eggs, citrus, corn

COGNITION & MENTAL HEALTH

Folate

400 mcg

- Legumes: black-eyed peas, beans
- Beef liver, nuts, seeds
- Fortified grain products: cereals, pastas, flour

Vitamin B_6

1.5 mg, F

1.7 mg, M

- Beef liver, potatoes, watermelon, bananas, spinach
- Trout, turkey, steak, pork, tuna, chicken
- Asparagus, cauliflower, broccoli, whole wheat bread, brown rice, oatmeal

MOBILITY, FALLS, FRACTURES

Calcium
1200 mg

- Dairy products: milk, yogurt, cheese
- Sardines, kale, collard greens, tofu, broccoli
- Fortified orange juice

Vitamin D
600 IU, 51-70yr
800 IU, >70 yr

- Eggs, liver, fish, butter
- Fortified milk, fortified margarine, fortified OJ

Vitamin K
90 mcg, F
120 mcg, M

- Liver, brussel sprouts, cabbage, spinach, broccoli, milk, eggs

Impact of Poor Diets on Health

Inadequate or Excess Nutrients & Calories

AGE-RELATED CONDITIONS / DISEASES

Hearing Loss
Macular Degeneration
Other Sensory Changes
Oral Health Problems
Joint Disease: Knees, Hips
↓ Muscle Mass: Sarcopenia
Cognition / Mental Health

CHRONIC DISEASES

Heart Disease
Hypertension
Diabetes
Osteoporosis
Some Cancers: Colon, Breast
Arthritis
Obstructive Pulmonary Disease
Renal Disease

ACUTE CONDITIONS

Dehydration
Pressure Ulcers
Infections
Pneumonia
Influenza
Fractures
Tooth Abscesses
Gum Disease

Without Adequate Healthy Safe Food & Nutrition Services:

Deafness, Blindness, Reduced Smell &Taste, Chewing & Swallowing Problems
Joint Destruction – Costly Replacements
Confusion, Forgetfulness, Memory Loss
Uncontrolled High Blood Pressure – Heart Attack, Stroke
Uncontrolled Diabetes – Amputations, Blindness, Nerve Disorders, Dialysis
Osteoporosis: Weakened Bones -- Decreased Mobility, Falls
Decreased Immune Response – Flu, Colds, Upper Respiratory Infections, HIV/AIDS
Decreased Organ Function & Organ Failure
Wasting – "Dwindles" & "Failure to Thrive"
Involuntary Weight Loss: ↓ Body Mass Index, ↓ Muscle Mass
Excessive Weight Gain -- Obesity
↓ Serum Albumin – Protein Malnutrition
Pressure Ulcers

Slower Recovery
Longer Hospital Stays
Hospital Re-Admissions
Premature Institutionalization
Increased Morbidity & Mortality
Poor Appetite
Depression & Anxiety
Sleep Disturbance
Low Stamina

Reduced Quality of Life **Lessened Independence** **Increased Healthcare Costs**

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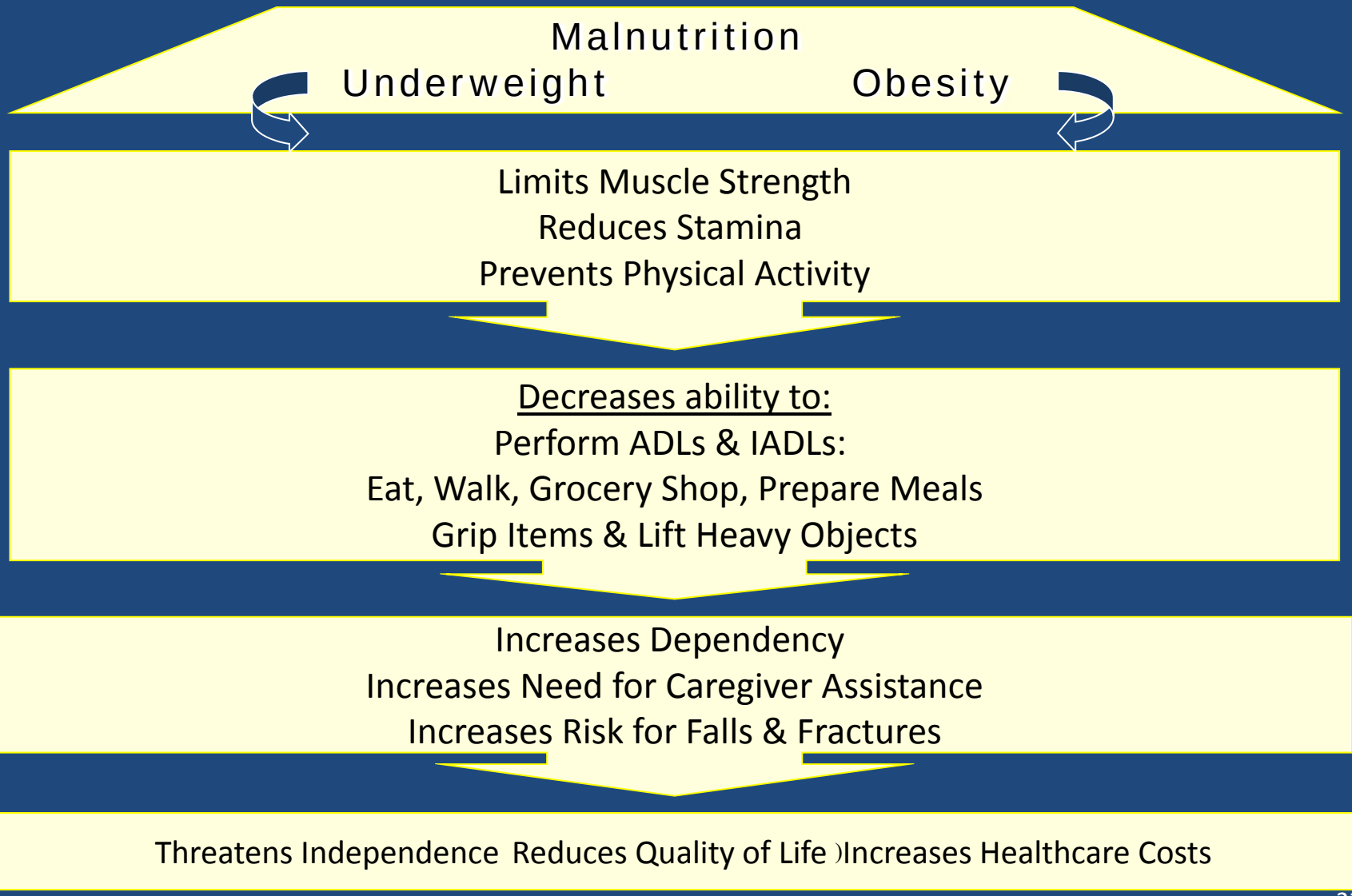
IMPACT OF MALNUTRITION ON FUNCTIONALITY



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Inter-related Factors Affecting the Nutritional Well-Being of Older Adults

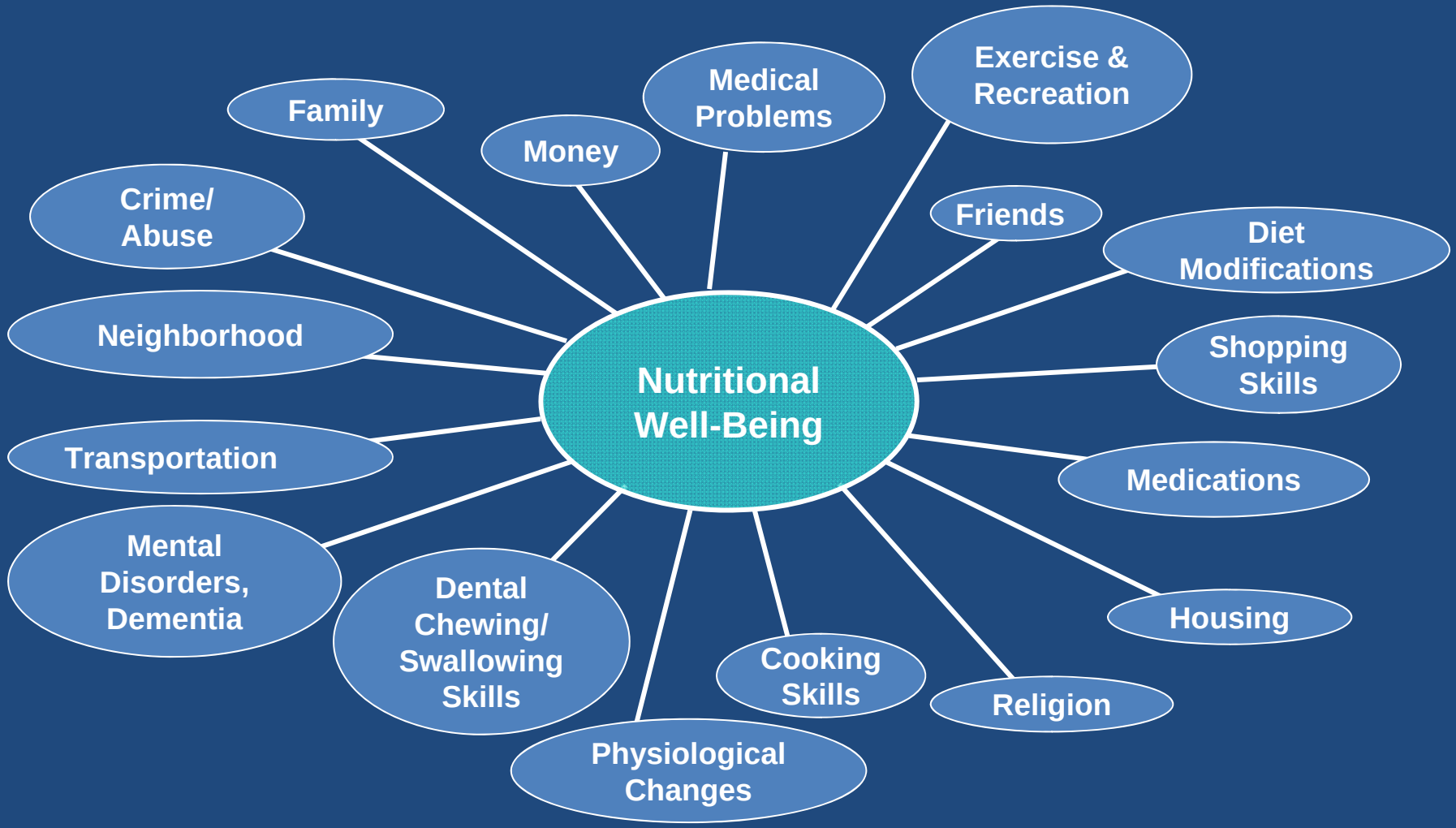

Fig. 2

Nutrition Risk Factors

- **Health/medical**
  - Medical history
  - Age-related, acute & chronic conditions
  - Polypharmacy
  - Hospital admissions/readmissions/recent discharges
  - Nursing home/rehabilitation admission/readmission
  - Biochemical values
  - Anthropometrics, especially ht/wt, obesity/underweight
  - Involuntary weight loss
  - Oral health, chewing/swallowing
  - Poor food intake, poor quality diet, limited quantity
  - Loss of appetite
  - Taste & smell changes, textual sensitivities

Nutrition Risk Factors

- **Economic/food security/food insecurity**
  - Low-income
  - Food access, food deserts
  - Availability of affordable food

Nutrition Risk Factors

- **Psychological**
  - Depression, emotional status
  - Cognitive status
  - Dementia, Alzheimer's Disease
  - Grief

Nutrition Risk Factors

- **Functionality**
  - Activities of daily living
    - Ability to feed oneself
  - Instrumental activities of daily living
    - Ability to shop
    - Ability to cook and prepare meals
  - Mobility
  - Physical activity/inactivity

Nutrition Risk Factors

- **Family/Community Resources**
  - Living arrangements
  - Kitchen facilities & equipment
  - Living alone
  - Marital status
  - Family caregiver
  - Neighbors/friends
  - Elder abuse, self-neglect

Food Security







- **Access by all members of a household to food sufficient for a healthy life, including at a minimum, the ready availability of nutritionally adequate and safe foods and the assured ability to acquire acceptable food in socially acceptable ways.**

Economic Research Service, USDA

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Food Insecurity Adversely Affects Health and Functionality

- **Food insecurity adversely affects the quantity and quality of food that people have to eat. Compared to the general US population, older adults who are food insecure:**
  - Have ↓ food intakes, poorer nutrient intakes for calories, vitamins & minerals necessary for health
  - Are more likely to be in poor or fair health
  - Have higher body mass index, a risk factor for ↑ heart disease, hypertension, cancer & diabetes
  - Experience higher rates of diagnosed diabetes & depression

Ziliak J, Gundersen C Haist. The Causes, Consequences & Future of Senior Hunger in the United States, March, 2008, http://www.mowaa.org/document.doc?id=13

Food Insecurity Adversely Affects Health and Functionality

- **Food insecurity adversely affects the quantity and quality of food that people have to eat. Compared to the general US population, older adults who are food insecure:**
  - Are more likely to be socially isolated
  - Are more likely to be hospitalized more often
  - Have more ADL impairments

Ziliak J, Gundersen C Haist. The Causes, Consequences & Future of Senior Hunger in the United States, March, 2008, http://www.mowaa.org/document.doc?id=13

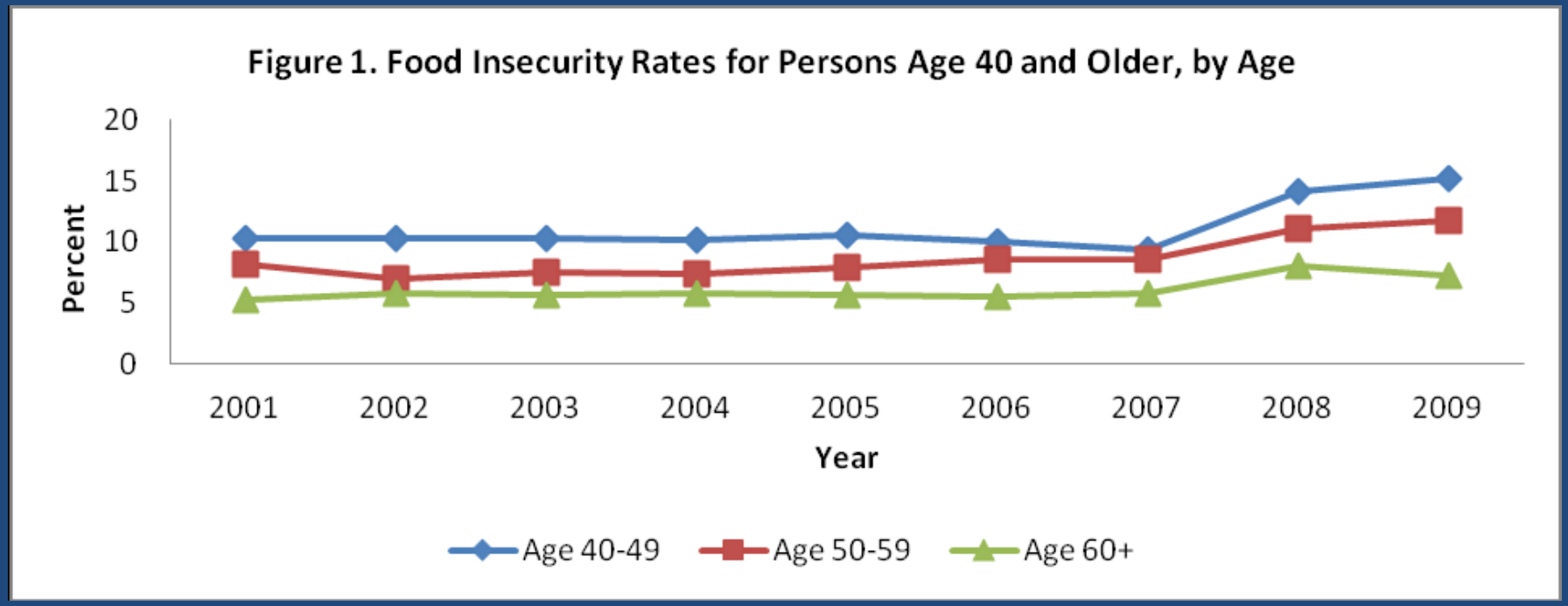
Food Insecurity Adversely Affects Health and Functionality

- **Researchers estimate that food insecure older adults are so functionally impaired it is as if they are chronologically 14 years older.**

- **A 65 year old food insecure older adult is like a 79 year old.**

Ziliak J, Gundersen C Haist. The Causes, Consequences & Future of Senior Hunger in the United States, March, 2008, http://www.mowaa.org/document.doc?id=13

Food Insecurity Rates Among Middle-Aged and Older Adults



Ziliak JP Gundersen C. Food Insecurity Among Older Adults: Policy Brief, August, 2011 AARP Foundation http://www.aarp.org/content/dam/aarp/aarp_foundation/pdf_2011/AARPFoundation_HungerPolicyBrief_2011.pdf

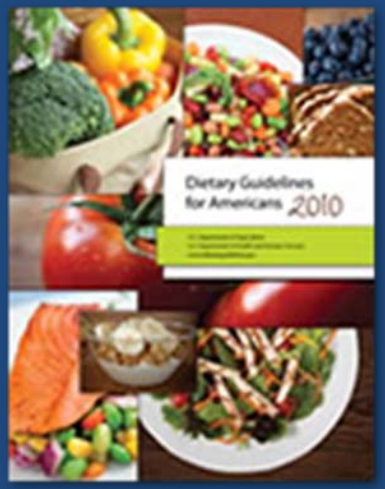
Food Insecurity

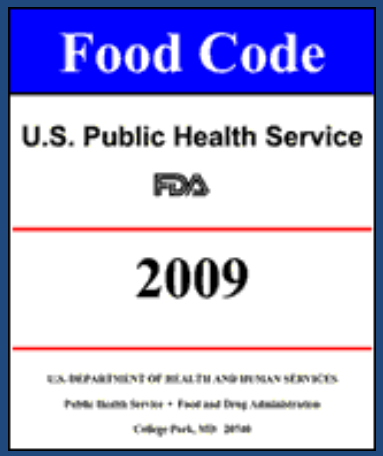
Ziliiak & Gundersen, August 2011

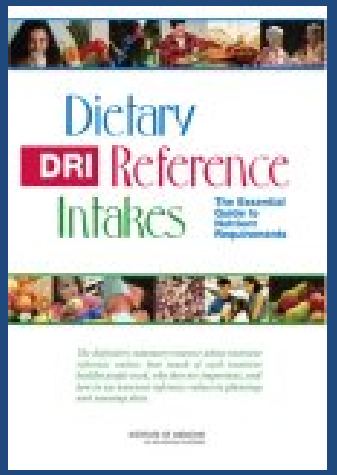
- **Food insecurity was stable from 2001-2007, but compared to 2001, food insecurity:**
  - ↑ 63% for 40-49 year olds
  - ↑ 37% for 50-59 year olds
  - ↑ 26% for 60+
- **Food insecurity has negative health outcomes at all ages**
  - ↑ ADL impairment, depression, diabetes, and poor health among younger food insecure groups

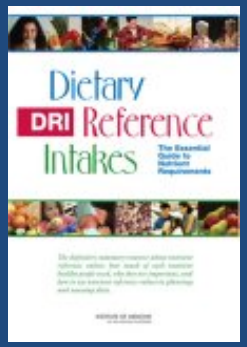
Federal Food Policy

- Dietary Reference Intakes
- 2010 *Dietary Guidelines for Americans*
- Food Safety Code
- Older Americans Act



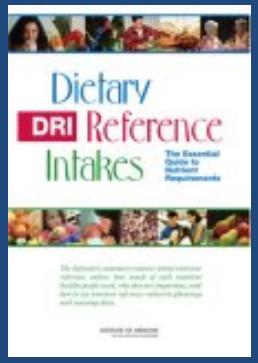






Dietary Reference Intakes

- **Established by the Food & Nutrition Board of the Institute of Medicine of the National Academy of Sciences**
- **Funded by Federal Governments of the US & Canada**
- **Purposes:**
  - Reduce nutritional inadequacy
  - Promote health
  - Reduce risk of chronic disease
  - Provide basis for nutrient management of nutrition-related chronic disease
  - Provide basis for assessing & planning diets for groups & individuals

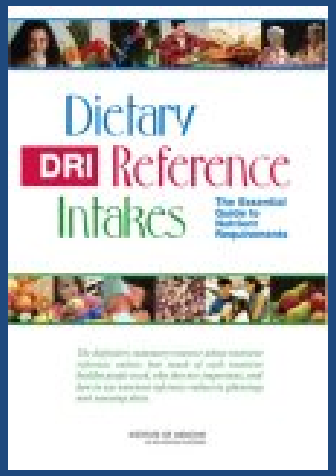


Dietary Reference Intakes

- **Establishes quantitative reference values for men, women, various age groups, & conditions**
- **Reference values:**
  - Estimated Average Requirement (EAR)
  - Recommended Dietary Allowances (RDA)
  - Adequate Intake (AI)
  - Upper Tolerable Limit (UL)
  - Acceptable Macronutrient Distribution (AMDR)

Dietary Reference Intakes

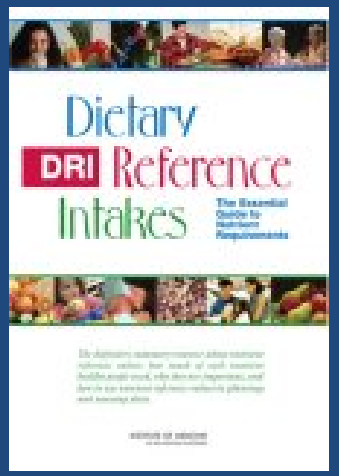
- **Establishes reference values for**
  - Vitamins
  - Minerals
  - Energy, total calories
  - Carbohydrate
  - Fat
  - Protein
  - Fiber
  - Water, electrolytes



- **For older adults**
  - Ages 51-70, men & women
  - Ages 71+, men & women

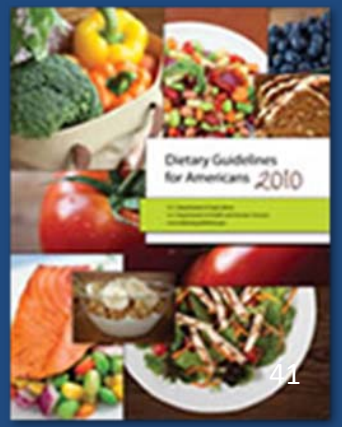
Dietary Reference Intakes

- **Uses:**
  - Healthcare
  - Individual assessment & intervention
  - Group assessment
    - Food supply
    - Water supply
    - Contamination
  - Food labeling
  - Public health
  - Military applications
  - Meals in settings such as schools, nursing homes, congregate & home delivered meals, prisons, etc.



2010 Dietary Guidelines for Americans

- Science and evidence based
- Promote health/reduce chronic disease
- Basis for US Federal nutrition programs & health care
- Basis for individual healthy eating decisions for general public
- Updated every 5 years
- Published by HHS & USDA



HHS/USDA *Dietary Guidelines* Development Process

Phase 1: Dietary Guidelines Advisory Committee (DGAC)

- 13 member scientific advisory committee
- Systematic evidence-based review methodology, evidence-based library
- 6 public meetings/ comments throughout
- 445 page advisory report

Phase 2: Review and comment on DGAC Report

- Public, 1159 comments; 50 organizations
- USDA and HHS agencies

Phase 3: Drafting and review of Dietary Guidelines

- Writing team: USDA and HHS nutritionists
- Independent review and Departmental clearance of Policy document

Science: Evidence Based Library

130 Research Questions

- **Quality**
- **Quantity**
- **Objectivity**
- **Consistency**
- **Rigor**
- **Integrity**
- **Impact**
- **Transparency**
- **Generalizability**
- **Evidence grades**
  - **Strong**
  - **Moderate**
  - Limited
  - Expert opinion
  - Grade not assignable

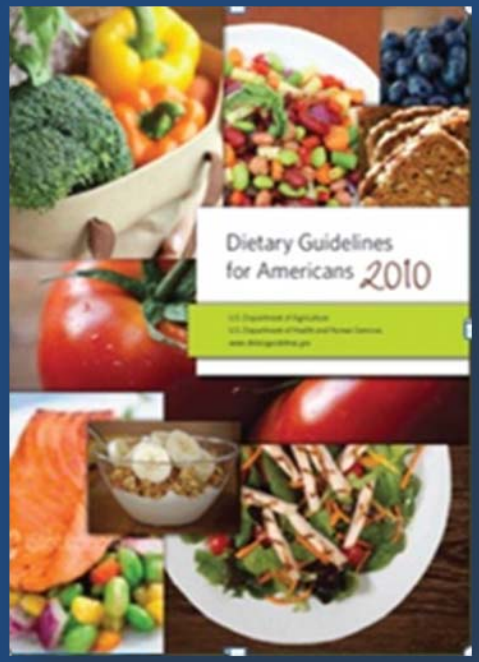
Science & Evidence Basis For *2010 Dietary Guidelines for Americans*

- **Dietary Reference Intakes**
- **Food Pattern Modeling Analysis (USDA Pyramid System)**
- **Consumption Data Analysis**

Dietary Guidelines for Americans, 2010

Diet-Related Chronic Diseases and Conditions

- **Obesity**
- **Cardiovascular disease**
- **Hypertension**
- **Diabetes**
- **Cancer**
- **Osteoporosis**



OAA Nutrition Program Serves People with Nutrition Related Chronic Disease

Question	Home Delivered Meals % of Respondents	Congregate Meals % of Respondents
Heart Disease	48 (32% nationally)	32 (32% nationally)
Hypertension	73 (48% nationally)	68 (48% nationally)
Diabetes	35 (18% nationally)	26 (18% nationally)
Cancer	19 (22% nationally)	15 (22% nationally)
Osteoporosis	30	21

2009 AoA Survey of OAA Participants, January, 2010

Dietary Guidelines for Americans, 2010

Overarching Concepts

- **Maintain calorie balance over time to achieve and sustain a healthy weight.**
- **Focus on consuming nutrient-dense foods and beverages.**
- **Modify behaviors at all ages to accomplish goal.**

Overview

Control total caloric intake

Increase physical activity

Maintain appropriate caloric balance

Foods and Food Components to Reduce

- **Reduce daily sodium intake to less than 2300 mg/day**

- **Further reduce to 1500 mg/day if**
  - Age 51+
  - African American
  - Have hypertension, diabetes, chronic kidney disease

- **1500 mg recommendation applies to about ½ of the US population, including children**

Sodium Sources

- **Order the following items from highest to lowest for the amount of sodium**
  - 10 French fries, frozen, oven roasted
  - ½ cup prepared chocolate pudding
  - ½ cup sweetened applesauce
  - 1 slice whole wheat bread
  - 1 slice rye bread
  - ½ cup 1% fat cottage cheese
  - ½ cup tuna salad
  - 1 cup 1% milk

Sodium Sources

Goal: 500 mg/meal Per DGA Recommendations

- **Order the following items from highest to lowest for the amount of sodium**

1.	½ cup 1% fat cottage cheese	459 mg
2.	½ cup tuna salad	412 mg
3.	1 slice rye bread	211 mg
4.	10 French fries, frozen, oven roasted	194 mg
5.	½ cup prepared chocolate pudding	172 mg
6.	1 slice whole wheat bread	132 mg
7.	1 cup 1% milk	107 mg
8.	½ cup sweetened applesauce	2.5 mg

USDA Handbook 23, http://www.nal.usda.gov/fnic/foodcomp/search/

Foods and Food Components to Reduce

- **Consume less than 10 percent of calories from saturated fatty acids by replacing them with monounsaturated and polyunsaturated fatty acids.**

- **Consume less than 300 mg per day of dietary cholesterol.**
  - Up to 1 egg yolk/day
  - Small effect compared to saturated and *trans* fats

Advice to Reduce Sodium Intake

- Read the Nutrition Facts label , choose lower sodium foods
- Consume more fresh foods and fewer processed foods high in sodium
- Eat more foods prepared at home without salt
- When eating at restaurants, ask that salt not be added to your food
- Season with herbs/spices

Decrease

- Reduce sodium intake to 1500 mg per day
- Less than 10% of calories from saturated fat
- Cholesterol less than 300 mg/day
- Trans fat as low as possible
- Solid Fats
- Added Sugars
- Refined Grains
- Alcohol

Foods and Nutrients to Increase

Individuals should meet the following recommendations as part of a healthy eating pattern while staying within their calorie needs.

- **Increase vegetable and fruit intake.**

- **Eat a variety of vegetables, especially dark-green and red and orange vegetables and beans and peas.**

Foods and Nutrients to Increase

- **Increase the amount and variety of seafood consumed by choosing seafood in place of some meat and poultry.**

- **Replace protein foods that are higher in solid fats with choices that are lower in solid fats and calories and/ or are sources of oils.**

Foods and Nutrients to Increase

- **Use oils to replace solid fats where possible.**

- **Choose foods that provide more potassium, dietary fiber, calcium, and vitamin D, which are nutrients of concern in American diets. These foods include vegetables, fruits, whole grains, and milk and milk products.**

Individuals 50+

- Consume foods fortified with vitamin B12, such as fortified cereals, or dietary supplements.

- Be food safe, older adults, and individuals with weakened immune systems (such as those living with HIV infection, cancer treatment, organ transplant, or liver disease) are more susceptible to foodborne illness

- Reduce intake to 1,500 mg sodium among persons who are 51 and older and those of any age who are African American, or have hypertension, diabetes, or chronic kidney disease.

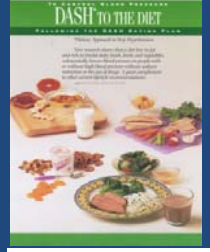
Increase

- Vegetables & fruits
- Variety of vegetables
- Whole grain products
- Fat free, low-fat dairy
- Variety of protein foods

Recommended Eating Pattern

Dietary Approaches to Stop Hypertension - DASH

- Based on random controlled, clinical trials by the National Heart, Lung, Blood Institute of the National Institute of Health, also researched internationally
- Various studies: original DASH, DASH-Sodium, DASH-Low fat
- Emphasis: vegetables, fruits, low-fat & fat-free milk & dairy products, whole grains, poultry, seafood, nuts
- Reduced hypertension, reduced cardiovascular disease, lowered mortality



DASH Eating Plan

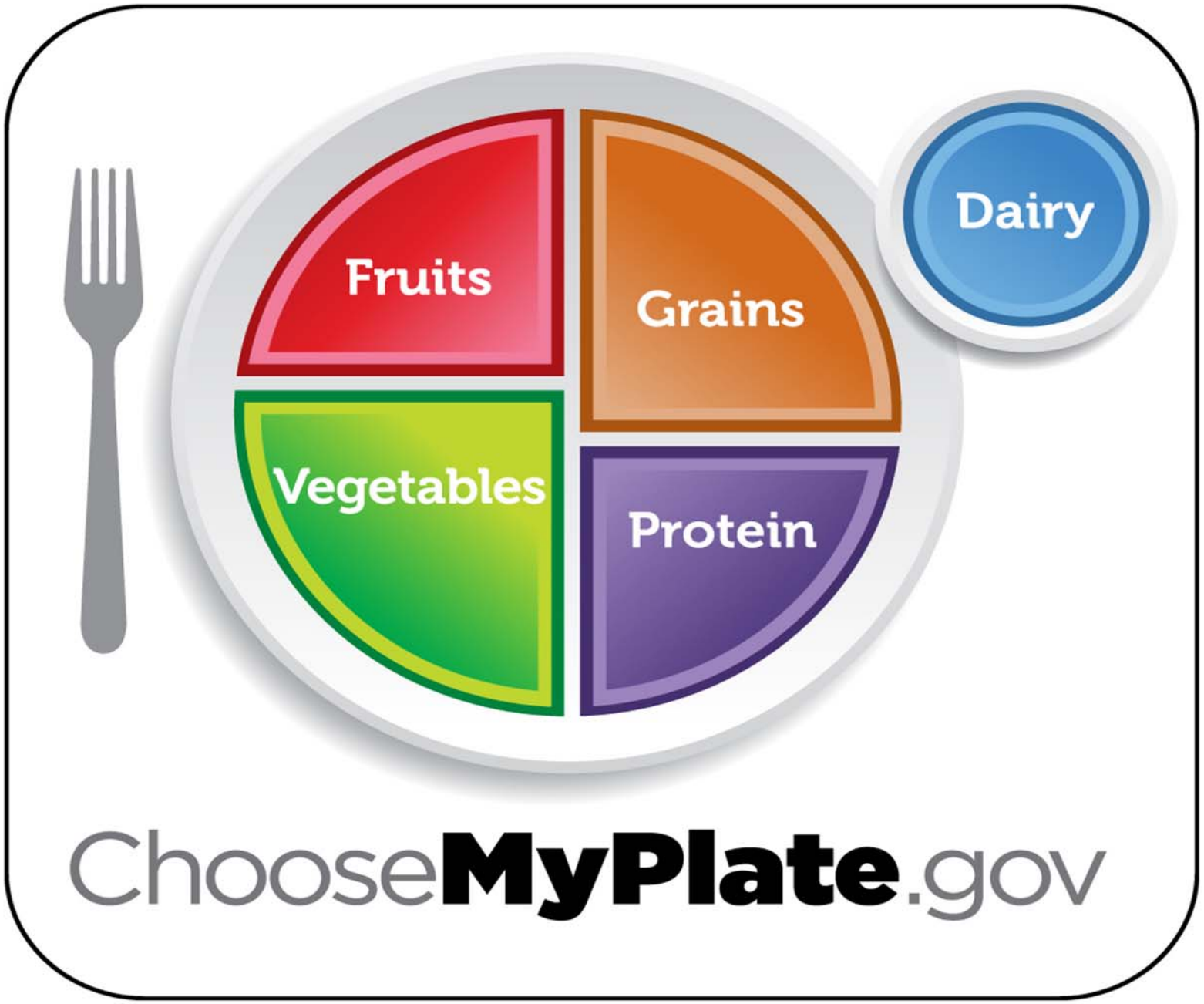
Per Day

Food Group	1600 Calories	2000 Calories
Grains	6 servings	6-8 servings
Vegetables	3-4 servings	4-5 servings
Fruits	4 servings	4-5 servings
Low-fat dairy	2-3 servings	2-3 servings
Lean meat, poultry, fish	3-4 servings or less	6 servings or less
Seeds, nuts, legumes	3-4/week	4-5/week
Fats & oils	2 servings	2-3 servings
Sweets	3 or less/week	5 or less/week

USDA Food Pattern

Per Day

Food Group	1600 Calories	2000 Calories
Fruits	1½ cups	2 cups
Vegetables	2 cups	2 1/2 cups
Grains	5 oz equiv.	2 oz equivalent
Protein foods	5 oz equivalent	5 1/2 oz equivalent
Dairy	3 cups	3 cups
Oils	22 grams	27 grams
Maximum SoFAS Empty Calories	121 calories	258 calories


Fruits
Grains
Dairy
Vegetables
Protein
ChooseMyPlate.gov

Healthy Diet

- **Food Components**
  - Fruit, vegetables
  - Whole grains
  - Low fat, fat free dairy
  - Low fat meat, poultry, fish
  - Lower saturated fat, added sugar & salt
- **Low income households must spend more time and money to consume palatable, nutritious meals***

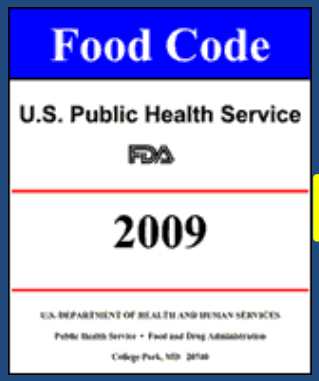
*http://www.ers.usda.gov/AmberWaves/November08/Features/AffordHealthyDiet.htm

Consumer Messages

- Enjoy your food, but eat less.
- Avoid oversized portions.
- Make half your plate fruits and vegetables.
- Switch to fat-free or low-fat (1%) milk
- Compare sodium in foods like soup, bread, and frozen meals—and choose the foods with lower numbers.
- Read food labels
- Drink water instead of sugary drinks.

2009 Food Code

- Produced by the U S Public Health Service, Food & Drug Administration
- Model code updated on a regular basis
- Adopted by State Health Departments
- Defined "highly susceptible" populations who are at greater risk of foodborne illness
- Included individuals in hospitals, assisted living, nursing homes, adult day care, & "nutritional or socialization services such as senior centers"



2009 Food Code
Dietary Guidelines for Americans
Food Safety Principles

- **Clean**
  - Hands
  - Surfaces
  - Foods: Fruits & Vegetables; Seafood, meat & poultry
- **Separate**
  - Separate foods when shopping
  - Separate foods when preparing & serving foods
- **Cook and Chill**
  - Keep foods at safe temperatures (hot & cold)

2009 Food Code
Dietary Guidelines for Americans
Food Safety Principles

- **Risky Eating Behaviors**
  - Raw or undercooked foods (runny eggs, raw ground beef)
  - Unpasteurized milk & milk products (cheese)
  - Raw seafood
- **Specific Populations at Increased Risk**
  - Older adults, young children, individuals with weakened systems

OAA Nutrition Program

Purpose: Section 330

- **Reduce** hunger & food insecurity
- **Promote** socialization of older individuals

OAA Nutrition Program

Purpose: Section 330

- **Promote** the health & well-being of older individuals by assisting individual gain access to nutrition and other disease prevention and health promotion services to delay the onset of advanced health conditions resulting from poor nutrition health or sedentary behavior

US OAA 2009 State Program Report

Demographic	Home Delivered Meals	Congregate Meals
Total People Served	880,135	1,686,093
In Poverty	44% (9.7% census)	34% (9.7% census)
Minority	29% (19% census)	28% (19% census)
Rural	37% (19.6% census)	41%(19.6% census)
High Nutritional Risk	52% of all HDM participants	19% of all Cong. participants

US OAA 2009 State Program Report

Demographic	Home Delivered Meals	Congregate Meals
Live Alone	54%	44%
% Female	66%	65%
% 60 - 74 years	30%	45%
% 75 – 84 years	36%	36%
% 85 years or older	34%	19%
% Nursing Home eligible (3 or more ADLs)	39%	N/A
% with 3+ IADLs	76%	N/A

US OAA 2009 Participant Survey

Question	Home Delivered Meals % of Respondents	Congregate Meals % of Respondents
Single Meal Provided ½ or more of total food for day	63	58
Don't always have enough $ or Food Stamps to buy food	24	13
Choose between food & medication	17	NA
Choose between food & rent or utility	15	NA
Receive food stamps	15	7

2009 AoA Survey of OAA Participants, January 2010

US OAA 2009 Participant Survey

Question	Home Delivered Meals % of Respondents	Congregate Meals % of Respondents
Fair or Poor Health	56	29
Stayed overnight in hospital in past year	40	20
Stayed overnight in nursing home in past year	12	4
Alzheimer's Disease	12	5
Diabetes	35 (16% nationally)	26 (16% nationally)
Hypertension	73 (48% nationally)	68 (48% nationally)
Heart Disease	48 (32% nationally)	32 (32% nationally)

US OAA 2009 Participant Survey

Question	Home Delivered Meals % of Respondents	Congregate Meals % of Respondents
Meal enabled living at home	93	62
Eat healthier foods as result of the program	86	78
Eating meals improves health	87	80
Meals help feel better	91	87
See friends more often	NA	87
Recommend to a friend	96	97

Indentifying Nutrition Need

Indentifying Nutrition Need

- Food security/insecurity
- Nutrition screening & assessment, clinical process
- ADL/IADL impairments
- Home and community based care assessments

Food Security

http://www.ers.usda.gov/Briefing/FoodSecurity/

- **Food security is updated yearly by USDA based on the Current Population Survey done by Census Bureau**
- **Tools – The Guide**
  - U S Household Food Security Module
  - US Adult Food Security Module
  - Six Item Short Form of the Food Security Survey Module
  - Self-Administer Food Security Survey Module for Youth Ages 12 and older

Food Security Measurement Tool
6 Question Module

30 Day Time Period

- **Questions 1 & 2:**
  - During the last 30 days, how often was this statement true:
    - The food that we bought just didn't last, and we didn't have money to get more.
    - We couldn't afford to eat balanced meals.
  - Response categories:
    - Often
    - Sometimes
    - Never

Food Security Measurement Tool
6 Question Module

30 Day Time Period

- **Questions 3 & 4:**
  - During the last 30 days, did you or other adults in your household ever
    - Cut the size of your meals because there wasn't enough money for food?
    - Skip meals because there wasn't enough money for food?
  - Response categories:
    - Yes, on 3 or more days
    - Yes, on 1 or 2 days
    - No

Food Security Measurement Tool
6 Question Module
30 Day Time Period

- **Questions 5 & 6:**
  - In the last 30 days,
    - Did you ever eat less than you felt you should because three wasn't enough money to buy food?
    - Were you ever hungry but didn't eat because you couldn't afford enough food?
  - Response categories:
    - Yes
    - No

Food Security Status Assessment

- **Food security status is assigned as follows:**
  - Raw score 0-1 High or marginal food security
  - Raw score 2-4 Low food security
  - Raw score 5-6 Very low food security

Nutrition Screening
Nutrition Assessment

- **Nutrition Screening**
  - Process of identifying individuals at risk for poor nutritional status
  - Short process, limited prioritized questions
  - Performed by non healthcare professional
- **Nutrition assessment**
  - Process of determining an individuals' nutritional status
  - Long process, includes medical history, diet history, physical examination, anthropometric parameters, biochemical values, economic, food access, IADL/ADL impairments, individual /family information
  - Performed by a healthcare professional e.g. dietitian

Nutrition Care Process

- Screen for nutrition risk
- Assess for nutrition status
- Perform nutrition diagnosis
- Determine & implement nutrition intervention
- Perform nutrition monitoring & evaluation
- Usually done in a clinical setting, hospital, nursing home, limited use in HCBS

International Dietetics & Nutrition Terminology IIDNT) Reference Manual Standardized Language for the Nutrition Care Process. American Dietetic Association. 3rd edition

Expected Outcomes of Nutrition Screening & Assessment

- **Screening**
  - Determination of need
  - Prioritizing of individuals based on need
  - Research informed
- **Assessment**
  - Individualized nutrition care plan
  - Determination & implementation of appropriate interventions
  - Research informed
  - Interventions based on nutrition diagnosis

Nutrition Screening & Assessment Tools

- Nutrition Screening Initiative (NSI)
  - DETERMINE Your Nutritional Risk Checklist
  - Level 1, Level 2
- Mini-Nutritional Assessment (MNA)
- Malnutrition Screening Tool (MST)

Nutrition Screening Initiative Checklist (NSI)

- Public Awareness Purpose: to increase awareness of nutrition risk factors by community dwelling older adults
- Not designed as a clinical tool, not designed to measure malnutrition
- Level 1 Screen – to be used by social service professionals in community programs to determine nutrition risk & community interventions
- Level 2 Screen – to be used as an assessment tool by health care professionals in clinical settings

Nutrition Screening Initiative Checklist (NSI)

- Developed by the NSI, an collaborative group of the American Dietetic Association, the American Academy of Family Medicine, and the National Council on Aging
- Tools available at http://www.jblearning.com/samples/0763730629/Frank_Appendix10D.pdf
- Funded by Abbott Laboratories

Nutrition Screening Initiative Checklist (NSI)

- **10 Questions**
  - I have an illness or condition that made me change the kind and/or amount of food I eat (2)
  - I eat fewer than 2 meals/day (3)
  - I eat few fruits or vegetables, or milk products (2).
  - I have 3 or more drinks of beer, liquor or wine almost every day (2)
  - I have tooth or moth problems that make it hard for me to eat (2)

Nutrition Screening Initiative Checklist (NSI)

- **10 Questions**
  - I don't always have enough money to buy the food I need (4)
  - I eat alone most of the time (1)
  - I take 3 or more different prescribed or over-the-counter drugs a day (1)
  - Without wanting to, I have lost or gained 10 pounds in the last 6 months (2)
  - I am not always physically able to shop, cook and/or feed myself (2)

NSI Scoring

- 0-2 = Good; recheck nutrition score in 6 months
- 3-5= You are at moderate risk; see what can be done to improve your eating habits & lifestyle
- 6 or more= You are at high nutritional risk; bring this checklist the next time you see your doctor, dietitian, or other qualified health or social service professional. Talk with them about any problems you have.

Mini-Nutritional Assessment (MNA)

- Purpose: To screen for malnutrition or risk of malnutrition
- Reliable, valid, sensitive clinical tool
- Recommended for clinical use as part of a Comprehensive Geriatric Assessment (CGA)
- Tools available at http://www.mna-elderly.com/
- Developed & funded by Nestles

Mini-Nutritional Assessment (MNA)

- Tools for Use in the CGA
  - Cognitive status (Mini Mental Exam)
  - Affective status (Yesavage Geriatric Depression Scale)
  - Mobility – Gait & Balance (Tineti Performance Oriented Mobility)
  - Functional Status – Activities of Daily Living (Katz Scales)
  - Functional Status- Instrumental Activities of Daily Living (Lawton Scales)
  - Nutritional Adequacy (MNA)

Mini-Nutritional Assessment (MNA)

- **Q A** Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?
  - 0= severe decrease in food intake
  - 1= moderate decrease in food intake
  - 2= no decrease in food intake

- **Q B** Weight loss during the last 3 months
  - 1= does not know
  - 2= weight loss between 1 & 3 kg (2.2-6.6 lbs)
  - 3= no weight loss

Mini-Nutritional Assessment (MNA)

- **Q C** Mobility 0 = bed or chair bound
  - 0 = bed or chair bound
  - 1 = able to get out of bed / chair but does not go out
  - *2= goes out*

- **Q D** Has suffered psychological stress or acute disease in the past 3 months?
  - 0= yes
  - 2= no

Mini-Nutritional Assessment (MNA)

- **Q E** Neuropsychological problems
  - 0=severe dementia or depression
  - 1=mild dementia
  - 2=no psychological problems

Mini-Nutritional Assessment (MNA)

- **Q F1** Body Mass Index (BMI) (weight in kg) / (height in m2)
  - 0=BMI less than 19
  - 1=BMI 19 to less than 21
  - 2=BMI 21 to less than 23
  - 3= BMI 23 or greater
- **If BMI is not available, place question with F2**
- **Q F 2** Calf circumference (CC) in cm
  - 0= cc less than 31
  - 3= cc 31 or greater

MNA Scoring

- Screening score (max. 14 points)
- 12-14 points: Normal nutritional status
- 8-11 points: At risk of malnutrition
- 0-7 points: Malnourished

Subjective Global Assessment (SGA)
Australia, Canada

- Medical History
  - Weight change
  - Dietary intake change
  - Gastrointestinal symptoms (2 weeks +)
  - Functional capacity
- Physical Examination
  - Loss of subcutaneous fat
  - Muscle wasting
  - Ankle/sacral edema
  - Ascites

Malnutrition Screening Tool (MST)

- **Developed in Australia**
- Combination of nutrition screening questions with high sensitivity & specificity of Subjective Global Assessment (SGA)
- **Tool available at**
  - http://www.health.qld.gov.au/nutrition/resources/hphe_scrn_tools.pdf
  - http://www.ncbi.nlm.nih.gov/pubmed/10378201
- **2 questions**
  - Q1 Have lost weight recently without trying?
  - Q2 Have you been eating poorly because of a decreased appetite?

MST Questions

- **Q1 Have you lost weight recently without trying?**
  - **No=0**
  - Unsure=2
  - If yes, how much weight have you lost?
  - Determine weight loss score
    - 2-13 #=1
    - 14-23#=2
    - 24-33#=3
    - Greater than 33#=4
    - Unsure=2

MST Questions

- Q2 **Have you been eating poorly because of a decreased appetite?**
  - No=0
  - Yes=1
- Total Score 0-5
- MST score equal or greater than 2: At Risk of Malnutrition

Determination of IADL/ADL Functioning

- Instrumental Activities of Daily Living (Lawton Scales)
  - The inability to perform 1 or more of the following 8 IADLs without personal assistance, stand by assistance, supervision or cues:
    - Preparing meals
    - Shopping
    - Medication management
    - Managing money
    - Using the telephone
    - Doing heavy housework
    - Doing light housework
    - Transportation ability

Determination of IADL/ADL Functioning

- Activities of Daily Living (Katz Scales)
  - The inability to perform 1 or more of the following 6 ADLs without personal assistance, stand by assistance, supervision or cues:
    - Eating
    - Dressing
    - Bathing
    - Toileting
    - Transferring in & out of bed
    - Walking

State HCBS Uniform Assessments
Purpose: Determine Eligibility & Need for Services

Domains

- Demographic characteristics
- Living arrangements
- Financial resources
- Safety
- Health

Domains

- Medical history/conditions
- IADL/ADL impairments
- Health insurance
- Caregiver support
- Receipt of other programs/services
- Consumer direction

Common Nutrition Interventions
Based on Nutrition Care Process

- Food and/or Nutrient Delivery
- Nutrition Education
- Nutrition Counseling
- Nutrition Coordination of Care

Food and/or Nutrient Delivery

- **An individualized approach** for food/nutrient provision including **meals & snack, enteral/parental feeding & supplements**
- **Services available under the OAA**
  - Required congregate & home delivered meals
  - Meet Dietary Reference Intakes; *Dietary Guidelines for Americans;* local & state food code
- **Services available under Medicaid Waivers, optional**
  - In some states, home delivered meals
  - In some states, meals in adult day care
  - Nutrient requirements for meals vary by state, may/may not meet the same requirements as evidenced based OAA requirements
  - In some states, liquid nutrition supplements

Nutrition Education

- A formal process **to instruct or train a client and/or caregiver in skill or knowledge** to help manage or modify food choices and eating behavior to **maintain or improve health**
- **Services available under the OAA**
  - Required service under Title III C, may also be provided under Title III B, D or E
  - Service may be provided by a nutrition professional or overseen by a nutrition professional
- **Services available under Medicaid Waiver, optional**
  - Difficult to determine

Nutrition Counseling

- A supportive process, characterized by a collaborative counselor-client relationship to set priorities, establish goals, & create an **individualized action plan to treat existing conditions & promote health**
- **Service available under the OAA**
  - Required under Title III C, may be provided under Titles III B & D
  - Limited utilization
- **Service available under the Medicare Waiver , optional**
  - Difficult to determine

Medical Nutrition Therapy

- **Medicare Benefit**
- Federal legislation, 2001: “nutritional diagnostic therapy, and counseling services for the purpose of disease management, which are furnished by a registered dietitian or nutrition professional”*
- Ordered by a physician
- Current coverage: diabetes, pre-dialysis renal disease
- Preferred practitioner, registered dietitian or for diabetes, certified diabetes educator

*Final rule subpart G-Medical Nutrition Therapy 66 Federal Register 55331 (2001) Codified at 42 DFR 405, 410, 411, 414, & 415

Coordination of Nutrition Care

- **Consultation with, referral to or coordination of nutrition care** with other health care providers, institutions, agencies or social and/or food assistance programs that can assist in treating, managing nutrition-related problems & concerns
- **Services available under the OAA**
  - Most often the realm of case /care management, might be part of benefits counseling, options counseling, ADRC activities, consumer directed service
- **Services available under the Medicaid Waiver, optional**
  - Difficult to tell, but probably within the realm of the case/care manager

Meal Considerations for Care Plans

- **Nutrient content**
  - Provides 1/3 of the DRI
  - Meets the 2010 DGAs
  - Meets state/local food code
- **Frequency of service**
  - 5 or 7 days/week
  - 1 or 2 times/day
- **Special Requirements**
  - Therapeutic needs
  - Cultural/ethnic needs
  - Religious needs, Kosher, Halal, vegetarian for Buddhists

Meal Considerations for Care Plans

- **Modifications**
  - Content for specified health conditions
  - Texture or specific types of food for specified health conditions
- **Storage capacity/reheating equipment availability**
  - Oven, microwave, refrigerator, freezer
- **Ability to reheat meals**, IADL/ADL impairments or availability of caregiver
- **Choice , flexibility**
- **Delivery**
  - Hot
  - Cold
  - Frozen

Accommodating Choice/Consumer Direction

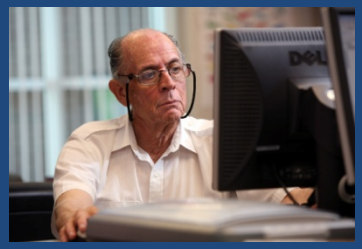
- **Choice categorized by**
  - Time/days of service
  - Service location or place
  - Restaurant voucher programs
  - Café style service
  - Menu/meal choice
  - Food item choice
  - Food source, local versus food distribution company
  - More than 1 meal/day
  - Fee for service/private pay options, using fair market value versus cost reimbursement methodology
  - Customer service emphasis

Nutrition Supplements

- **Multi-vitamin/mineral supplements**
  - Drug/nutrient interactions
  - Medical conditions, prescriptions
  - Physician approval
- **Liquid Supplement Products**
  - Acceptance
  - Supplement or replacement, perhaps offer conventional food snack
  - Taste fatigue
  - Taste sensitivities
  - Timing
- **Need for follow-up, weigh/measure, anthropometrics**
- **Supplements cannot take the place of conventional food**

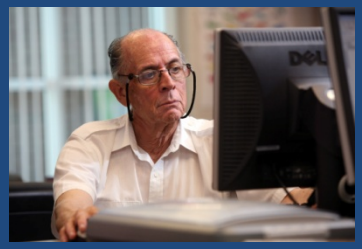
USDA Food Assistance Programs for Older Adults

- Supplemental Nutrition Assistance Program (SNAP)
  http://www.fns.usda.gov/snap/
- Child & Adult Care Feeding Program (CACFP)
  http://www.fns.usda.gov/cnd/Care/Default.htm
- Commodity Supplemental Food Program (CSFP)
  http://www.fns.usda.gov/fdd/programs/csfp/default.htm
- The Emergency Food Assistance Program (TEFAP)
  http://www.fns.usda.gov/fdd/programs/tefap/
- Seniors Farmers' Market Nutrition Program (SFMNP)
  http://www.fns.usda.gov/wic/SeniorFMNP/SeniorFMNPoverview.htm



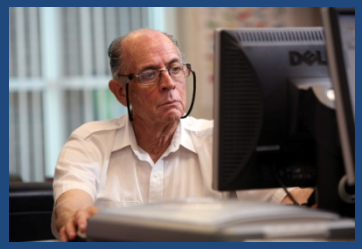
2010 Dietary Guidelines for Americans Resources

- www.health.gov/dietaryguidelines
- www.healthfinder.gov
- www.dietary guidelines.gov
- www.nutritionevidencelibrary.gov
- w ww.choosemyplate.gov
- www.myfoodapedia.gov



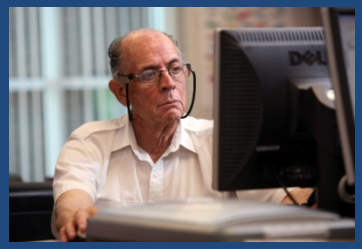
Resources

- www.aoa.gov
- www.agingstats.gov
- www.agidnet.org
- www.nutrition.gov
- www.cnpp.usda.gov
- http://fnic.nal.usda.gov National Agricultural Library
- http://odphp.osophs/dhhs.gov
  Office of Disease Prevention and Health Promotion



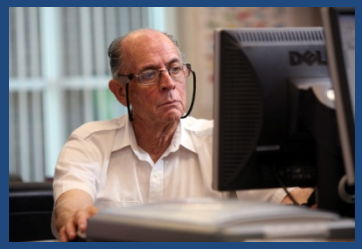
Resources

- www.fda.gov Food & Drug Administration
- www.foodsafety.gov Federal gateway to information
- www.cdc.gov Centers for Disease Control & Prevention
- www.nih.gov National Institutes of Health
- www.nhlbi.nih.gov National Heart, Lung, Blood Institute of the NIH, DASH diet information
- http://ods.nih.gov Office of Dietary Supplements
- www.iom.edu Institute of Medicine



Resources

- **Food Security Briefing Room, Food insecurity tools**
  http://www.ers.usda.gov/Briefing/FoodSecurity/
- **Nutrition Screening Initiative Tools**
  http://www.jblearning.com/samples/0763730629/Frank_Appendix10D.pdf
- **Mini Nutritional Assessment**
  http://www.mna-elderly.com/



Resources

- **Malnutrition Screening Tool**

  http://www.ncbi.nlm.nih.gov/pubmed/10378201

  http://www.health.vic.gov.au/older/toolkit/05Nutrition/docs/Malnutrition%20Screening%20Tool%20(MST).pdf

Questions/Discussion

Thank You

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