Nutrition for Health

Osher Lifelong Learning Institute
Stacey Snelling, Ph.D, RD
Professor of Nutrition
Department of Health Studies at American University
Agenda

• Course introduction
• Participant introductions
• Review of the syllabus and proposed outline
• Lecture 1:
  • Federal Guidelines for healthful eating
  • Relationship between food and chronic conditions
  • What factors influence our food choices?
  • Chapters 12, 13, 14
Federal Guidelines for Healthful Eating

• Food Groups
• Dietary Guidelines for Americans
• Dietary Reference Intakes (DRI) formerly the RDA
• Food Label
Diet Planning with the USDA Food Patterns

- Food group plan
  - Specifies portions
  - Foods sorted by nutrient density
- Variable groups depending on graphic
- Variety
  - Among the food groups and within each group
**Fruits** contribute folate, vitamin A, vitamin C, potassium, and fiber.

Consume a variety of fruits, and choose whole or cut-up fruits more often than fruit juice.

Apples, apricots, avocados, bananas, blueberries, cantaloupe, cherries, grapefruit, grapes, guava, honeydew, kiwi, mango, nectarines, oranges, papaya, peaches, pears, pineapples, plums, raspberries, strawberries, tangerines, watermelon; dried fruit (dates, figs, prunes, raisins); 100% fruit juices

Limit these fruits that contain solid fats and/or added sugars:
Canned or frozen fruit in syrup, juices, punches, ades, and fruit drinks with added sugars; fried plantains

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**Grains** contribute folate, niacin, riboflavin, thiamin, iron, magnesium, selenium, and fiber.

Make most (at least half) of the grain selections whole grains.

**Grains subgroups:**
Whole grains: amaranth, barley, brown rice, buckwheat, bulgur, cornmeal, millet, oats, quinoa, rye, wheat, wild rice and whole-grain products such as breads, cereals, crackers, and pastas; popcorn
Enriched refined products: bagels, breads, cereals, pastas (couscous, macaroni, spaghetti), pretzels, white rice, rolls, tortillas

Limit these grains that contain solid fats and/or added sugars:
Biscuits, cakes, cookies, cornbread, crackers, croissants, doughnuts, fried rice, granola, muffins, pastries, pies, presweetened cereals, taco shells
Vegetables contribute folate, vitamin A, vitamin C, vitamin K, vitamin E, magnesium, potassium, and fiber.

Consume a variety of vegetables each day, and choose from all five subgroups several times a week.

**Vegetables subgroups:**
- Dark-green vegetables: Broccoli and leafy greens such as arugula, beet greens, bok choy, collard greens, kale, mustard greens, romaine lettuce, spinach, turnip greens, watercress
- Red and orange vegetables: Carrots, carrot juice, pumpkin, red bell peppers, sweet potatoes, tomatoes, tomato juice, vegetable juice, winter squash (acorn, butternut)
- Legumes: Black beans, black-eyed peas, garbanzo beans (chickpeas), kidney beans, lentils, navy beans, pinto beans, soybeans and soy products such as tofu, split peas, white beans
- Starchy vegetables: Cassava, corn, green peas, hominy, lima beans, potatoes
- Other vegetables: Artichokes, asparagus, bamboo shoots, bean sprouts, beets, brussels sprouts, cabbages, cactus, cauliflower, celery, cucumbers, eggplant, green beans, green bell peppers, iceberg lettuce, mushrooms, okra, onions, seaweed, snow peas, zucchini

**Limit these vegetables that contain solid fats and/or added sugars:**
- Baked beans, candied sweet potatoes, coleslaw, french fries, potato salad, refried beans, scalloped potatoes, tempura vegetables
Protein foods contribute protein, essential fatty acids, niacin, thiamin, vitamin B6, vitamin B12, iron, magnesium, potassium, and zinc.

Choose a variety of protein foods from the three subgroups, including seafood in place of meat or poultry twice a week.

Protein foods subgroups:
- Seafood: Fish (catfish, cod, flounder, haddock, halibut, herring, mackerel, pollock, salmon, sardines, sea bass, snapper, trout, tuna), shellfish (clams, crab, lobster, mussels, oysters, scallops, shrimp)
- Meats, poultry, eggs: Lean or low-fat meats (fat-trimmed beef, game, ham, lamb, pork, veal), poultry (no skin), eggs
- Nuts, seeds, soy products: Unsalted nuts (almonds, cashews, filberts, pecans, pistachios, walnuts), seeds (flaxseeds, pumpkin seeds, sesame seeds, sunflower seeds), legumes, soy products (textured vegetable protein, tofu, tempeh), peanut butter, peanuts

Limit these protein foods that contain solid fats and/or added sugars:
- Bacon, baked beans; fried meat, seafood, poultry, eggs, or tofu; refined beans; ground beef; hot dogs; luncheon meats; marbled steaks; poultry with skin; sausages, spare ribs

Milk and milk products contribute protein, riboflavin, vitamin B12, calcium, potassium, and, when fortified, vitamin A and vitamin D.

Make fat-free or low-fat choices. Choose other calcium-rich foods if you don’t consume milk.

Fat-free or 1% low-fat milk and milk-free or 1% low-fat milk products such as buttermilk, cheeses, cottage cheese, yogurt; fat-free fortified soy milk

Limit these milk products that contain solid fats and/or added sugars:
- 2% reduced-fat milk and whole milk; 2% reduced-fat and whole milk products such as cheeses, cottage cheese, and yogurt; flavored milk with added sugars such as chocolate milk, custard, frozen yogurt, ice cream, milk shakes, pudding, sherbet; fortified soy milk
USDA Food Patterns – Food Groups & Subgroups

**Oils** are not a food group, but are featured here because they contribute vitamin E and essential fatty acids.

**Use oils instead of solid fats, when possible.**

Liquid vegetable oils such as canola, corn, flaxseed, nut, olive, peanut, safflower, sesame, soybean, sunflower oils; mayonnaise, oil-based salad dressing, soft trans-free margarine; unsaturated oils that occur naturally in foods such as avocados, fatty fish, nuts, olives, seeds (flaxseeds, sesame seeds), shellfish

**Limit these solid fats:**
Butter, animal fats, stick margarine, shortening
MyPlate Educational Tool

• Online educational tool
  • www.choosemyplate.gov
• Guides users through diet planning
• Flexibility of the USDA Food Patterns
  • National and cultural foods
  • Vegans & Vegetarians
Dietary Guidelines for Americans

- Science-based advice
  - Promote health
  - Guidance to reduce risk of major chronic diseases
  - Maintain healthy body weight
- Apply to most people age 2 and older
Dietary Guidelines for Americans

• Four major topic areas
  • Balance calories to manage weight
  • Increase nutrient-dense foods
  • Reduce intakes of certain foods
  • Build a healthy eating pattern
Dietary Guidelines for Americans 2015

- Five major topic areas
  - Follow a healthy eating pattern across the lifespan. Eating patterns are the combination of foods and drinks that a person eats over time.
  - Focus on variety, nutrient-dense foods, and amount
  - Limit calories from added sugars and saturated fats, and reduce sodium intake
  - Shift to healthier food and beverage choices
  - Support healthy eating patterns for all
Dietary Guidelines for Americans 2015 – Key Recommendations

- Less than 10 percent of calories per day from added sugars.
  - This does not include naturally occurring sugars such as those consumed as part of milk and fruits.

- Less than 10 percent of calories per day from saturated fats.

- Less than 2,300 milligrams (mg) per day of sodium for people over the age of 14 years and less for those younger.
• Americans need to choose more:
• Americans need to choose fewer:
• Joys of eating
Nutrient Recommendations

• Dietary Reference Intake (DRI)
  • Adequate Intakes (AI)
  • Tolerable Upper Intake Levels (UL)
  • Estimated Average Requirements (EAR)
Nutrient Recommendations

• RDA and AI:
  • RDA: meets needs of healthy people
    • Experimental evidence
  • AI
    • Scientific evidence and educated guesswork
Nutrient Recommendations

- **EAR:** Nutrition research and policy
  - Assess nutrient intake of populations
  - Requirements for life stage and gender
  - Forms basis of RDA’s

- **UL:** Safety
  - Supplement use
    - Toxicity
The Accurate View of Optimal Nutrient Intakes

- **Naïve view**
  - Safety
  - Danger

- **Accurate view**
  - Tolerable Upper Intake Level (UL)
  - DRI Recommended Intakes
  - Safety
  - Marginal
  - Danger of deficiency
  - Danger of toxicity
How the Committee Establishes DRI Values – An RDA Example

Vitamins and Minerals

Number of people

Daily requirement for nutrient X (units/day)

EAR\textsuperscript{a} 

Recommended intake (RDA)

\textsuperscript{a}Estimated Average Requirement
Nutrition Facts Panel

- Serving size
- Servings per container
- Calories/calories from fat
- Nutrient amounts and percentages of DVs
- Vitamins and minerals
  - Vitamin A, vitamin C, calcium, and iron
What’s on a Food Label?

- The name and address of the manufacturer, packer, or distributor
- The common or usual product name
- Approved nutrient claims if the product meets specified criteria
- The net contents in weight, measure, or count
- Approved health claims stated in terms of the total diet

Nutrition Facts

- Serving size: 1/4 cup (28 g)

Amount per serving

<table>
<thead>
<tr>
<th></th>
<th>Calories</th>
<th>Total Fat</th>
<th>Saturated Fat</th>
<th>Trans Fat</th>
<th>Cholesterol</th>
<th>Sodium</th>
<th>Total Carbohydrate</th>
<th>Dietary Fiber</th>
<th>Sugars</th>
<th>Protein</th>
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<tbody>
<tr>
<td></td>
<td>110</td>
<td>1 g</td>
<td>0 g</td>
<td>0 g</td>
<td>0 mg</td>
<td>250 mg</td>
<td>73 g</td>
<td>1 g</td>
<td>10 g</td>
<td>3 g</td>
</tr>
</tbody>
</table>

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Calories per gram
- Fat: 9
- Carbohydrate: 4
- Protein: 4

The ingredients in descending order of predominance by weight

The serving size and number of servings per container

Calorie information and quantities of nutrients per serving, in grams (g) and milligrams (mg)

Quantities of nutrients as % Daily Values based on a 2,000-calorie energy intake

Daily Values reminder for selected nutrients for a 2,000- and a 2,500-calorie diet

Calorie per gram reminder
Chapters 12, 13, 14

• Chapter 12: Food groups; components of a healthy diet including: seasonality, fresh, tasty, variety, moderation, and balance.

• Chapter 13: The Ideal Diet: discusses dietary guidance, suggests a meal pattern, and amounts of nutrients.

• Chapter 14: Seasonal Menu: applied chapter on food cleaning, preparation, storage and some recipes.
Factors influencing food choices