Chapter 2
Planning a Healthy Diet
Objectives: Planning a Healthy Diet

After completing Chapter 2, the student will be able to:

2.1 Explain how the diet-planning principles can be used to plan a healthy diet.
   a. List and apply the six principles of diet-planning.
   b. Use the USDA Food Patterns to develop a meal plan within a specified energy allowance.

2.3 Compare and contrast the information on food labels to make selections that meet specific dietary and health goals.
   a. Identify the information required on the food label.
   b. Identify the information required on the Nutrition Facts panel.
   c. Recognize reliable health claims on food labels.
Principles and Guidelines
Diet Planning Principles

- **Adequacy**
  - Sufficient energy
  - Adequate nutrients for healthy people

- **Balance**
  - Enough, but not too much of, different types of food

- **kCalorie (energy) control**
  - Energy in = energy out
  - High nutrient density foods
### Estimated Energy Needs for Sedentary Adults

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Energy (kcal/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women 19-30 years old</td>
<td>2000</td>
</tr>
<tr>
<td>Women 31-50 years old</td>
<td>1800</td>
</tr>
<tr>
<td>Women 51+ years old</td>
<td>1600</td>
</tr>
<tr>
<td>Men 19-30 years old</td>
<td>2400</td>
</tr>
<tr>
<td>Men 31-50 years old</td>
<td>2200</td>
</tr>
<tr>
<td>Men 51+ years old</td>
<td>2000</td>
</tr>
</tbody>
</table>
Principles and Guidelines

- **Nutrient density**
  - The most nutrients for the least amount of kcalories
  - Low-nutrient density foods
    - Empty kcalorie foods
Nutrient Density of Two Breakfast Options Compared
Principles and Guidelines

- **Moderation**
  - Food selections – low in fat & added sugars

- **Variety**
  - Among and within food groups
  - Benefits of a varied diet
Principles and Guidelines

- Dietary Guidelines for Americans
  - Evidence-based advice
    - Attain and maintain a healthy weight
    - Reduce risk of chronic disease
    - Promote overall health
  - Reviewed and revised every five years
Dietary Guidelines for Americans

- The 2015–2020 Dietary Guidelines-
  - designed to help Americans eat a healthier diet.
  - outlines how people can improve their overall eating patterns

- Follow a healthy eating pattern across the lifespan.
- Focus on variety, nutrient density, 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.
- [www.health.gov/dietaryguidelines](http://www.health.gov/dietaryguidelines)
Dietary Guidelines 2015 -
Key Recommendations

- Consume a healthy eating pattern that accounts for all foods and beverages within an appropriate calorie level.

- A healthy eating pattern includes:
  - A variety of vegetables from all of the subgroups—dark green, red and orange, legumes (beans and peas), starchy, and other
  - Fruits, especially whole fruits
  - Grains, at least half of which are whole grains
  - Fat-free or low-fat dairy, including milk, yogurt, cheese, and/or fortified soy beverages
  - A variety of protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and soy products
  - Oils
Dietary Guidelines 2015 - Key Recommendations

- A healthy eating pattern limits:
  - Saturated fats and trans fats, added sugars, and sodium
  - Added sugars: Consume less than 10 percent of calories per day from
  - Saturated fats: Consume less than 10 percent of calories per day
  - Sodium: Consume less than 2,300 milligrams (mg) per day of sodium
  - If alcohol is consumed, it should be consumed in moderation—up to one drink per day for women and up to two drinks per day for men—and only by adults of legal drinking age.[6]
Diet-Planning Guides

- USDA Food Patterns
  - Tool used for diet planning
  - Five major food groups
    - Fruit, Vegetables, Grains, Meats and Legumes, Milk
  - Recommended daily amounts for each group
  - Notable nutrients
  - Serving equivalents
  - Nutrient density
Diet-Planning Guides

- **USDA Food Patterns**
  - Notable nutrients
    - Key nutrients of each food group
    - Allows for flexibility in diet plan
    - Greater encouragement of some food groups
  - Serving equivalents
    - Fruits, vegetables, milk = cups
    - Grains and meats = ounces
### Fruits

1 c fruit =
- 1 c fresh, frozen, or canned fruit
- ½ c dried fruit
- 1 c 100% fruit juice

**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, aides, and fruit drinks with added sugars; fried plantains

### Vegetables

1 c vegetables =
- 1 c cut-up raw or cooked vegetables
- 1 c cooked legumes
- 1 c vegetable juice
- 2 c raw, leafy greens

**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.**

- 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
### Grains

Contribute folate, niacin, riboflavin, thiamin, iron, magnesium, selenium, and fiber.

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

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

<table>
<thead>
<tr>
<th>Grains</th>
<th>1 oz grains =</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 slice bread</td>
<td></td>
</tr>
<tr>
<td>1/2 c cooked rice, pasta, or cereal</td>
<td></td>
</tr>
<tr>
<td>1 oz dry pasta or rice</td>
<td></td>
</tr>
<tr>
<td>1 c ready-to-eat cereal</td>
<td></td>
</tr>
<tr>
<td>3 c popped popcorn</td>
<td></td>
</tr>
</tbody>
</table>

### 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.**

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; refried beans; ground beef; hot dogs; luncheon meats; marbled steaks; poultry with skin; sausages; spare ribs

<table>
<thead>
<tr>
<th>Protein foods</th>
<th>1 oz protein foods =</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 oz cooked lean meat, poultry, or seafood</td>
<td></td>
</tr>
<tr>
<td>1 egg</td>
<td></td>
</tr>
<tr>
<td>1/4 c cooked legumes or tofu</td>
<td></td>
</tr>
<tr>
<td>1 tbs peanut butter</td>
<td></td>
</tr>
<tr>
<td>1/2 oz nuts or seeds</td>
<td></td>
</tr>
</tbody>
</table>
### USDA Food Patterns: Milk and Milk Products, and Oils

#### 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 fat-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

#### 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

| 1 c milk or milk product = 1 c milk, yogurt, or fortified soy milk | 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 fat-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 |
| 1½ oz natural cheese 2 oz processed cheese | 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 |
| 1 tsp oil = 1 tsp vegetable oil 1 tsp soft margarine 1 tbs low-fat mayonnaise 2 tbs light salad dressing |
Serving Size Comparisons

- 1 cup cooked vegetables = a fist
- 1 medium fruit = a baseball
- ¼ cup dried fruit = a golf ball
- 3 oz meat = a deck of cards
- 2 tbsp peanut butter = a marshmallow
- 1 ½ oz cheese = 6 stacked dice
- ½ cup ice cream = a racquetball
- 4 small cookies = 4 poker chips
Serving Sizes

http://www.youtube.com/watch?v=LBko_3wT44Q
# USDA Food Patterns: Recommended Daily Amounts

<table>
<thead>
<tr>
<th></th>
<th>1600 kcal</th>
<th>1800 kcal</th>
<th>2000 kcal</th>
<th>2200 kcal</th>
<th>2400 kcal</th>
<th>2600 kcal</th>
<th>2800 kcal</th>
<th>3000 kcal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fruits</strong></td>
<td>1½ c</td>
<td>1½ c</td>
<td>2 c</td>
<td>2c</td>
<td>2c</td>
<td>2c</td>
<td>2½ c</td>
<td>2½ c</td>
</tr>
<tr>
<td><strong>Vegetables</strong></td>
<td>2c</td>
<td>2½ c</td>
<td>2½ c</td>
<td>3 c</td>
<td>3 c</td>
<td>3½ c</td>
<td>3½ c</td>
<td>4c</td>
</tr>
<tr>
<td><strong>Grains</strong></td>
<td>5 oz</td>
<td>6oz</td>
<td>6oz</td>
<td>7oz</td>
<td>8oz</td>
<td>9oz</td>
<td>10 oz</td>
<td>10 oz</td>
</tr>
<tr>
<td><strong>Protein foods</strong></td>
<td>5 oz</td>
<td>5 oz</td>
<td>5¼ oz</td>
<td>6oz</td>
<td>6½ oz</td>
<td>6½ oz</td>
<td>7oz</td>
<td>7oz</td>
</tr>
<tr>
<td><strong>Milk and milk products</strong></td>
<td>3c</td>
<td>3c</td>
<td>3 c</td>
<td>3c</td>
<td>3c</td>
<td>3c</td>
<td>3c</td>
<td>3c</td>
</tr>
<tr>
<td><strong>Oils</strong></td>
<td>5 tsp</td>
<td>5 tsp</td>
<td>6 tsp</td>
<td>6 tsp</td>
<td>7 tsp</td>
<td>8 tsp</td>
<td>8 tsp</td>
<td>10 tsp</td>
</tr>
<tr>
<td><strong>Discretionary kcalories</strong></td>
<td>121 kcal</td>
<td>161 kcal</td>
<td>258 kcal</td>
<td>266 kcal</td>
<td>330 kcal</td>
<td>362 kcal</td>
<td>395 kcal</td>
<td>459 kcal</td>
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</tbody>
</table>
Discretionary kcalorie allowance

- Difference between kcalories supplied and those needed
- Added sugars and fats
Diet-Planning Guides

- USDA Food Guide
  - Nutrient dense choices
  - Mixtures of foods
  - Vegetarians
    - Can still use USDA Food Guide
  - Ethnic food choices
## Ethnic Food Choices

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Grains</th>
<th>Vegetables</th>
<th>Fruits</th>
<th>Protein Foods</th>
<th>Milk and Milk Products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asian</strong></td>
<td>Rice, noodles, millet</td>
<td>Amaranth, baby corn, bamboo shoots, chayote, bok choy, mung bean sprouts, sugar peas, straw mushrooms, water chestnuts, kelp</td>
<td>Carambola, guava, kumquat, lychee, persimmon, melons, mandarin orange</td>
<td>Soybeans and soy products such as soy milk and tofu, squid, duck eggs, pork, poultry, fish and other seafood, peanuts, cashews</td>
<td>Usually excluded</td>
</tr>
<tr>
<td><strong>Mediterranean</strong></td>
<td>Pita pocket bread, pastas, rice, couscous, polenta, bulgur, focaccia, Italian bread</td>
<td>Eggplant, tomatoes, peppers, cucumbers, grape leaves</td>
<td>Olives, grapes, figs</td>
<td>Fish and other seafood, gyros, lamb, chicken, beef, pork, sausage, lentils, fava beans</td>
<td>Ricotta, provolone, parmesan, feta, mozzarella, and goat cheeses; yogurt</td>
</tr>
<tr>
<td><strong>Mexican</strong></td>
<td>Tortillas (corn or flour), taco shells, rice</td>
<td>Chayote, corn, jicama, tomato salsa, cactus, cassava, tomatoes, yams, chilies</td>
<td>Guava, mango, papaya, avocado, plantain, bananas, oranges</td>
<td>Refried beans, fish, chicken, chorizo, beef, eggs</td>
<td>Cheese, custard</td>
</tr>
</tbody>
</table>
Diet-Planning Guides

  - Educational tool
  - Combines USDA Food Patterns and Dietary Guidelines
  - Allows for personal planning
## Diet-Planning Using the 2000-kCalorie USDA Food Pattern

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Amounts</th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Snack</th>
<th>Dinner</th>
<th>Snack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits</td>
<td>2 c</td>
<td>½ c</td>
<td>½ c</td>
<td>1 c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>2½ c</td>
<td>1 c</td>
<td></td>
<td></td>
<td>1½ c</td>
<td></td>
</tr>
<tr>
<td>Grains</td>
<td>6 oz</td>
<td>1 oz</td>
<td>2 oz</td>
<td>½ oz</td>
<td>2 oz</td>
<td>½ oz</td>
</tr>
<tr>
<td>Protein foods</td>
<td>5½ oz</td>
<td>2 oz</td>
<td></td>
<td></td>
<td>3½ oz</td>
<td></td>
</tr>
<tr>
<td>Milk and milk products</td>
<td>3 c</td>
<td>1 c</td>
<td></td>
<td>1 c</td>
<td></td>
<td>1 c</td>
</tr>
<tr>
<td>Oils</td>
<td>6 tsp</td>
<td>1½ tsp</td>
<td></td>
<td></td>
<td>4 tsp</td>
<td></td>
</tr>
</tbody>
</table>
Sample Menu

1. Choose the number of servings needed from each group.

2. Assign food groups to daily meals and snacks.

This sample menu provides about 1850 kcalories

<table>
<thead>
<tr>
<th></th>
<th>Amounts</th>
<th>Energy (kcal)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakfast</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 oz whole grains</td>
<td>1 c whole-grain cereal</td>
<td>108</td>
</tr>
<tr>
<td>1 c milk</td>
<td>1 c fat-free milk</td>
<td>83</td>
</tr>
<tr>
<td>½ c fruit</td>
<td>1 small banana (sliced)</td>
<td>105</td>
</tr>
</tbody>
</table>

|                  |         |               |
| **Lunch**        |         |               |
| 2 oz whole grains, 2 oz meats | 1 turkey sandwich on roll | 272 |
| 1½ tsp oils      | 1½ tbs low-fat mayonnaise | 75  |
| 1 c vegetables   | 1 c vegetable juice | 53  |

|                  |         |               |
| **Snack**        |         |               |
| ½ oz whole grains| 4 whole-wheat, reduced-fat crackers | 86  |
| 1 c milk         | 1½ oz low-fat cheddar cheese | 74  |
| ½ c fruit        | 1 small apple | 72  |

|                  |         |               |
| **Dinner**       |         |               |
| ½ c vegetables, 1 oz meats, 2 tsp oils | 1 c salad | 8  |
| ½ c vegetables, 2½ oz meats, 2 oz enriched grains 2 tsp oils | ¼ c garbanzo beans 2 lbs oil-based salad dressing and olives | 71  |
|                  |         |               |
| ½ c vegetables, 1 c salad | Spaghetti with meat sauce | 425 |
| 2 tsp oils       | ½ c green beans 2 tsp soft margarine | 22  |
| 1 c fruit        | 1 c strawberries | 67  |

|                  |         |               |
| **Snack**        |         |               |
| ½ oz whole grains| 3 graham crackers | 90  |
| 1 c milk         | 1 c fat-free milk | 83  |
Food Group Intake Comparisons

- **Grains**: At least half of the grain selections should be whole grains.
- **Protein foods**: On average, actual intakes of all protein foods is close to recommended levels, but actual intakes of the seafood subgroup is only 44 percent of recommended levels.
Diet-Planning Guides – Grocery Shopping

- Grains
  - Whole-grain products
  - Fortification & enrichment

- Vegetables
  - Fresh vs. canned or frozen

- Milk and milk products
  - Lowfat or skim

- Fruits
  - Colors
  - Fruit juices

- Protein foods
  - Lean cuts
  - Soy products
  - Portion sizes
  - Cooking techniques
From Guidelines to Groceries

- **Grains**
  - *Refined foods* lose nutrients during processing.
  - *Enriched foods* have nutrients added back that were lost during processing, including **iron**, **thiamin**, **riboflavin**, **niacin**, and **folate**.
  - *Whole-grain* products are not refined. Examples include brown rice and oatmeal.
  - *Fortified foods* have nutrients added that were not part of the original food.

- **Processed foods** -
  - have been treated to change their properties
  - may have lost nutrients and gained sugar, fat and salt
A Wheat Plant

The protective coating of **bran** around the kernel of grain is rich in nutrients and fiber.

The **endosperm** contains starch and proteins.

The **germ** is the seed that grows into a wheat plant, so it is especially rich in vitamins and minerals to support new life.

The outer **husk** (or **chaff**) is the inedible part of a grain.

Whole-grain products contain much of the germ and bran, as well as the endosperm; that is why they are so nutritious. Refined grain products contain only the endosperm. Even with nutrients added back, they are not as nutritious as whole-grain products, as the next figure shows.

Common types of flour:

- **Refined flour**: finely ground endosperm that is usually enriched with nutrients and bleached for whiteness; sometimes called *white flour*.
- **Wheat flour**: any flour made from the endosperm of the wheat kernel.
- **Whole-wheat flour**: any flour made from the entire wheat kernel.

The difference between *white flour* and *white wheat* is noteworthy. Typically, *white flour* refers to refined flour (as defined above). Most flour—whether refined, white, or whole wheat—is made from red wheat. Whole-grain products made from red wheat are typically brown and full flavored.

To capture the health benefits of whole grains for consumers who prefer white bread, manufacturers use an albino variety of wheat called *white wheat*. Whole-grain products made from white wheat provide the nutrients and fiber of a whole grain with a light color and natural sweetness. Read labels carefully—white bread is a whole-grain product only if it is made from whole white wheat.
Guidelines to Groceries

- **Examples of whole grains include:**
  - Barley, buckwheat, bulgur, corn, popcorn, couscous, oats and oatmeal, brown rice, whole wheat, whole rye

- **Ready to eat breakfast cereals** are the most highly fortified foods on the market

- **Grains are enriched with:**
  - Iron, Thiamin, Riboflavin, Niacin, Folate
From Guidelines to Groceries

- **Vegetables**
  - Choose fresh vegetables often.
  - Dark green leafy and yellow-orange vegetables are important.
  - Good sources of vitamins, minerals, and fiber.
  - Be careful to control added fat and salt.
- **Legumes**
  - Variety is important
  - Economical
  - Low-fat, nutrient-rich and fiber-rich
From Guidelines to Groceries

Fruit

- Choose citrus and yellow-orange fruits.
- Processed fruits are acceptable alternatives to fresh.
- Provides vitamins, minerals, fibers and phytochemicals
- Fruit juices lack fiber but are healthy beverages.
- Watch energy intakes and fruit “drinks.”
From Guidelines to Groceries

- **Meat, fish and poultry**
  - Provides minerals, protein and B vitamins
  - Choose lean cuts.
  - **Textured vegetable protein** is a processed soybean protein and can be used in recipes.
  - Weighing can be used to determine portion sizes.
  - Use low-fat cooking methods, and trim and drain fat to reduce fat intake.
From Guidelines to Groceries

**Milk**
- Dairy foods are often fortified with vitamins A and D.
- Imitation foods that resemble other foods are nutritionally inferior.
- Food substitutes are designed to replace other foods.
- Many lower fat dairy products are available including fat-free, non-fat, skim, zero-fat, no-fat, low-fat, reduced-fat, and less-fat milk.
New Food Labels

- [Link](http://wowzahttp.cengage.com/digital-production/nutrition/217068_w400573_feb272014_v01_nutrition_labels.mp4)
Understanding Food Labels

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: ⅛ cup (28 g)
Servings per container: 14

<table>
<thead>
<tr>
<th>Amount per serving</th>
<th>% Daily Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 110</td>
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</tr>
<tr>
<td>Calorie from fat 9</td>
<td></td>
</tr>
<tr>
<td>Total Fat 1 g</td>
<td>2%</td>
</tr>
<tr>
<td>Saturated Fat 0 g</td>
<td>0%</td>
</tr>
<tr>
<td>Trans Fat 0 g</td>
<td></td>
</tr>
<tr>
<td>Cholesterol 0 mg</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium 250 mg</td>
<td>10%</td>
</tr>
<tr>
<td>Total Carbohydrate 23 g</td>
<td>8%</td>
</tr>
<tr>
<td>Dietary Fiber 1.5 g</td>
<td>6%</td>
</tr>
<tr>
<td>Sugars 10 g</td>
<td></td>
</tr>
<tr>
<td>Protein 3 g</td>
<td></td>
</tr>
</tbody>
</table>

*Percent Daily Values are based on a 2000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Daily Values reminder for selected nutrients for a 2000- and a 2500-kcalorie diet

kCalorie per gram reminder

The ingredients in descending order of predominance by weight

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Food Labels

- **Ingredient list**
  - Listing of all ingredients
  - Descending order of predominance by weight

- **Serving sizes**
  - Standards are established by Food and Drug Administration (FDA)
  - Adjust calculations according to amount consumed
  - Sizes listed vs. USDA Food Pattern sizes
Food Labels

○ Nutrition Facts
  ○ Serving sizes and Daily Values
  ○ Required information
    ○ Total food energy (kcalories)
    ○ Kcalories from fat
    ○ Total fat; saturated fat; trans fat; cholesterol
    ○ Sodium
    ○ Total carbohydrate; dietary fiber; sugars
    ○ Protein
    ○ Vitamins A & C; iron; calcium
Food Labels

**Nutrition Facts**
- Listed by quantity and percentage standards per serving, called **Daily Values**
- kCalories listed as total kcalories and kcalories from fat
- Fat listed by total fat, saturated fat, and trans fat
- Cholesterol
- Sodium
- Carbohydrate listed by total carbohydrate, starch, sugars, and fiber
- Protein
- Vitamin A, vitamin C, iron, and calcium are listed in % DV only.
Daily Values for Food Labels

- Based on a 2000 kcalorie diet
- Ballpark estimate of how a food contributes to the total diet

<table>
<thead>
<tr>
<th>Food Component</th>
<th>Daily Value</th>
<th>Calculation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>65 g</td>
<td>30% of kcalories</td>
</tr>
<tr>
<td>Saturated fat</td>
<td>20 g</td>
<td>10% of kcalories</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>300 mg</td>
<td>—</td>
</tr>
<tr>
<td>Carbohydrate (total)</td>
<td>300 g</td>
<td>60% of kcalories</td>
</tr>
<tr>
<td>Fiber</td>
<td>25 g</td>
<td>11.5 g per 1000 kcalories</td>
</tr>
<tr>
<td>Protein</td>
<td>50 g</td>
<td>10% of kcalories</td>
</tr>
<tr>
<td>Sodium</td>
<td>2400 mg</td>
<td>—</td>
</tr>
<tr>
<td>Potassium</td>
<td>3500 mg</td>
<td>—</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>60 mg</td>
<td>—</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>1500 μg</td>
<td>—</td>
</tr>
<tr>
<td>Calcium</td>
<td>1000 mg</td>
<td>—</td>
</tr>
<tr>
<td>Iron</td>
<td>18 mg</td>
<td>—</td>
</tr>
</tbody>
</table>

NOTE: Daily Values were established for adults and children more than 4 years old. The values for energy-yielding nutrients are based on 2000 kcalories a day. For fiber, the Daily Value was rounded up from 23.
Nutrient and Health Claims

Low fat  Low calorie

Oatmeal helps reduce cholesterol

Rich in calcium  Good source of fiber

Helps promote a healthy heart
Label Claims

**Nutrient claims** characterize the level of a nutrient in the food—for example, “fat free” or “less sodium.”

**Health claims** characterize the relationship of a food or food component to a disease or health-related condition—for example, “soluble fiber from oatmeal daily in a diet low in saturated fat and cholesterol may reduce the risk of heart disease” or “a diet low in total fat may reduce the risk of some cancers.”

**Structure/function claims** describe the effect that a substance has on the structure or function of the body and do not make reference to a disease—for example, “supports immunity and digestive health” or “calcium builds strong bones.”
Food Label Terms

- **Fat/Sodium**
  - **Fat Free** = Less than 0.5 gm of fat per serving
  - **Low Fat** = 3 gm or less fat/serving
  - **Less Fat** = 25% or less fat than the comparison food
  - **Low Cholesterol** = 20 mg or less Cholesterol
  - **Low Sodium** = 140 mg or less per serving
  - **Very Low Sodium** = 35 mg or less per serving
  - **Lite or Light** - 50% or less of the fat or sodium than the comparison food
Food Label Terms

- **Kcalories**
- **Kcal Free** = Less than 5 kcal/Serving
- **Light** = One third fewer Kcal than the comparison food
- **Low Calorie** = 40 Kcal or less per serving
- **Reduced Calorie** = At least 25% fewer Kcal per serving than the comparison food

- **Fiber**
- **High Fiber** = 5 grams or more of fiber per serving
Example Test Questions

Which food group is typically consumed in amounts greater than recommended by the USDA?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>dairy</td>
</tr>
<tr>
<td>b.</td>
<td>fruits</td>
</tr>
<tr>
<td>c.</td>
<td>vegetables</td>
</tr>
<tr>
<td>d.</td>
<td>protein foods</td>
</tr>
<tr>
<td>e.</td>
<td>whole grains</td>
</tr>
</tbody>
</table>

. Refined grain products contain only the _____.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>bran</td>
</tr>
<tr>
<td>b.</td>
<td>husk</td>
</tr>
<tr>
<td>c.</td>
<td>germ</td>
</tr>
<tr>
<td>d.</td>
<td>endosperm</td>
</tr>
<tr>
<td>e.</td>
<td>chaff</td>
</tr>
</tbody>
</table>

**ANSWER:** c

. What is a feature of the Daily Values found on food labels?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>They are updated every two years as mandated by the USDA.</td>
</tr>
<tr>
<td>b.</td>
<td>They are expressed on a &quot;per 1000-kcalorie intake&quot; basis.</td>
</tr>
<tr>
<td>c.</td>
<td>They assist people in determining whether a food contains a little or a lot of a nutrient.</td>
</tr>
<tr>
<td>d.</td>
<td>They define a food as an excellent source of a nutrient if it contributes at least 50% of the dietary recommended intake.</td>
</tr>
<tr>
<td>e.</td>
<td>They assign grades of A, B, C, D, or F to foods.</td>
</tr>
</tbody>
</table>
Vegetarian Diets
Vegetarian Diets

- Health Benefits of Vegetarian Diets - Lifestyle practices are often different from omnivores
  - Healthy body weights are common due to high intakes of fiber and low intakes of fat.
  - Blood pressure is often lower due to lower body weights, low-fat and high-fiber diets, and plenty of fruits and vegetables.
  - Lower incidence of heart disease due to high-fiber diets, eating monounsaturated and polyunsaturated fats, and low intakes of dietary cholesterol
    - Inclusion of soy products like tofu and tempeh
  - Lower incidence of cancer due to high intakes of fruits and vegetables
  - Other diseases
My Vegetarian Food Pyramid

Consult your dietitian or physician to determine the amount of water, iodized salt, calcium, vitamin D, and B12 to add to your daily diet.

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Vegetarian Diet Planning

- Specific information for planning a vegetarian diet can be found at myplate.gov

- **Protein**
  - Lacto-ovo-vegetarians consume animal-derived products and thus high-quality protein.
  - Meat replacements and textured vegetable protein can be used.

- **Iron** - Iron-rich vegetables and fortified grain products consumed with foods that are high in vitamin C can help vegetarians meet iron needs.

- **Zinc** - Consuming legumes, whole grains, and nuts can provide zinc to those who do not consume meat.
Vegetarian Diet Planning

- Calcium
  - Calcium is not an issue for the lactovegetarian.
  - Calcium-rich foods should be consumed.
- Vitamin B$_{12}$$\n  - Vegans may not receive enough B12 from the diet.
  - Consumption of fortified products or supplementation may be necessary.
- Vitamin D can come from sunlight exposure or fortified foods.
- Omega-3 Fatty Acids - Food sources include flaxseed, walnuts, soybeans, and their oils.
### Good Vegetarian Sources of Key Nutrients

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Grains</th>
<th>Vegetables</th>
<th>Fruits</th>
<th>Protein Foods</th>
<th>Milk</th>
<th>Oils</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protein</strong></td>
<td>Whole grains¹</td>
<td></td>
<td></td>
<td>Legumes, seeds, nuts, soy products (tempeh, tofu, veggie burgers)¹</td>
<td>Milk, cheese, yogurt (for lacto-vegetarians)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eggs (for ovo-vegetarians)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Iron</strong></td>
<td>Fortified cereals,</td>
<td>Dark green leafy vegetables (spinach, turnip</td>
<td>Dried fruits (apricots, prunes, raisins)</td>
<td>Legumes (black-eyed peas, kidney beans, lentils)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>enriched and whole</td>
<td>greens)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>grains</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Zinc</strong></td>
<td>Fortified cereals,</td>
<td>Dark green leafy vegetables (bok choy, broccoli,</td>
<td>Dried fruits (apricots, prunes, raisins)</td>
<td>Legumes (garbanzo beans, kidney beans, navy beans, nuts, seeds (pumpkin seeds)</td>
<td>Milk, cheese, yogurt (for lacto-vegetarians)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>whole grains</td>
<td>kale, mustard greens, turnip greens, watercress)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Calcium</strong></td>
<td>Fortified cereals</td>
<td>Dark green leafy vegetables (bok choy, broccoli,</td>
<td>Fortified juices, figs</td>
<td>Fortified soy products, nuts (almonds), seeds (sesame seeds)</td>
<td>Milk, cheese, yogurt (for lacto-vegetarians)</td>
<td>Fortified soy milk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kale, mustard greens, turnip greens, watercress)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin B₁₂</strong></td>
<td>Fortified cereals</td>
<td></td>
<td>Eggs (for ovo-vegetarians)</td>
<td></td>
<td>Milk, cheese, yogurt (for lacto-vegetarians)</td>
<td>Fortified soy milk</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fortified soy products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin D</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Milk, cheese, yogurt (for lacto-vegetarians)</td>
<td>Fortified soy milk</td>
</tr>
<tr>
<td><strong>Omega-3 fatty acids</strong></td>
<td>Flaxseed, walnuts, soybeans</td>
<td></td>
<td></td>
<td></td>
<td>Flaxseed oil, walnut oil, soybean oil</td>
<td></td>
</tr>
</tbody>
</table>

¹As Chapter 6 explains, many plant proteins do not contain all the essential amino acids in the amounts and proportions needed by human beings. To improve protein quality, vegetarians can eat grains and legumes together, for example, although it is not necessary if protein intake is varied and energy intake is sufficient.
Healthy Food Choices

- A variety of food is the key to adequacy. Be careful of macrobiotic diets.
- Meal patterns are changed.
- Diet and other lifestyle habits need to be healthy.