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IT'S **MORE**
THAN A MEAL

Planning Healthful Meals & Snacks

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If you have read the previous sections, you have already learned about good nutrition and about older adults' special nutrition needs. Now you can learn how to apply this information to plan healthful meals for older adults.

This section will cover the following topics:

Using Food Labels to Make Healthful Food Choices

Which foods have food labels on them? What kind of health claims (such as *helps reduce the risk of high blood pressure*) and nutrient content claims (such as *low-fat* or *light*) can be listed on food labels? How can you use the Nutrition Facts panel and the ingredient lists on food labels as tools to select healthful foods to serve your participants?

Modifying Recipes and Menus

How can you reduce the amount of fat, *trans* fat, sodium, and sugar in recipes?
How can you add more fiber, fruits, and vegetables to recipes?

Preparing Healthful Snacks

What are the benefits of snacking? What are some tips to choose healthful snacks?

Keeping Foods Safe for Older Adults

What is foodborne illness, and how can you prevent it?

Frequently Asked Questions

Here are answers to some questions that you may have about serving meals and snacks.

Note: You may also have questions about how to choose foods and beverages that are reimbursable within CACFP guidelines. This topic will be addressed in the *Crediting Foods* section of this manual.

Using Food Labels to Make Healthful Food Choices

FOOD LABELS ARE A VALUABLE TOOL

You can use food labels as a tool to plan healthful meals and snacks that meet CACFP criteria and the Dietary Guidelines. Food labels provide key information to help you select foods to serve for meals and snacks. This information includes health claims, nutrient content claims, an ingredient list, and the Nutrition Facts panel.

WHICH FOODS HAVE FOOD LABELS?

Most packaged foods have food labels. The U.S. government is responsible for assuring that they contain truthful and accurate information. The Food and Drug Administration (FDA) oversees the labeling of most food products. However, the U.S. Department of Agriculture (USDA) oversees products that contain mainly fresh meat and poultry.

By law, every food label must provide:

- The common name of the product.
- The name and address of the manufacturer, packer, or distributor.
- The net content in terms of weight, measure, or count.
- The ingredients.
- Nutrition information.
- Serving size.

INGREDIENT LIST

By law, the ingredients on a food label must appear in a certain order by weight. The ingredient that contributes the most weight to the food appears first on the list. The one that contributes the least weight appears last.

You can use this information to fine-tune your purchasing decisions. For example, you can check the list of ingredients in a loaf of bread to see how much of the flour is made from whole grains. If a whole-grain flour appears first on the list, the bread has a high proportion of whole-grain flour. If wheat flour appears first on the list, and a whole-grain flour is listed second, the bread has a lower proportion of whole-grain flour.

THE NUTRITION FACTS PANEL*

The Nutrition Facts panel provides valuable details about food products (serving size, number of servings, calories, and nutrient information). The footnote on larger food packages shows recommended daily intakes of certain nutrients based on 2,000 and 2,500 calorie diets.

Sample Label for Macaroni & Cheese:

1. Serving size and number of servings

2. Calories

3. Limit these nutrients:
Total fat
Saturated fat
Trans fat
Cholesterol
Sodium

4. Get enough of these nutrients:
Dietary fiber
Vitamins A and C
Calcium
Iron

5. Footnote

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 250 Calories from Fat 110

% Daily Value*

Total Fat 12g	18%	
Saturated Fat 3g	15%	
<i>Trans</i> Fat 3g		
Cholesterol 30mg	10%	
Sodium 470mg	20%	
Total Carbohydrate 31g	10%	
Dietary Fiber 0g	0%	
Sugars 5g		
Protein 5g		
Vitamin A 4%	•	Vitamin C 2%
Calcium 20%	•	Iron 4%

*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	2,000	2,500
Total Fat	Less than		65g	80g
Sat Fat	Less than		20g	25g
Cholesterol	Less than		300mg	300mg
Sodium	Less than		2,400mg	2,400mg
Total Carbohydrate			300g	375g
Dietary Fiber			25g	30g

Calories per gram:

Fat 9	•	Carbohydrate 4	•	Protein 4
-------	---	----------------	---	-----------

6. % Daily Value
5% or less is low
20% or more is high

* The information about the Nutrition Facts Panel has been adapted from *How to Understand and Use the Nutrition Facts Label*, a pamphlet issued in June 2000 by the U.S. Food and Drug Administration Center for Food Safety and Applied Nutrition, and updated in July 2003 and November 2004.

1. SERVING SIZE AND NUMBER OF SERVINGS

Serving sizes help you to compare similar foods. They appear in familiar units (such as cups or pieces), followed by the weight in grams (g) or milligrams (mg).

The calories and amounts listed are for a particular size of a serving. **Pay attention to serving sizes, especially to how many servings are in a food package.** On the sample label below, 1 serving of macaroni and cheese equals 1 cup. If you ate the whole package, you would eat 2 cups. That doubles the calories and nutrients!

	Single Serving	% DV	Double Serving	% DV
Serving Size	1 cup (228 g)		2 cups (456 g)	
Calories	250		500	
Calories from Fat	110		220	
Total Fat	12 g	18%	24 g	36%
Trans Fat	1.5 g		3 g	
Saturated Fat	3 g	15%	6 g	30%
Cholesterol	30 mg	10%	60 mg	20%
Sodium	470 mg	20%	940 mg	40%
Total Carbohydrate	31 g	10%	62 g	20%
Dietary Fiber	0 g	0%	0 g	0%
Sugars	5 g		10 g	
Protein	5 g		10 g	
Vitamin A		4%		8%
Vitamin C		2%		4%
Calcium		20%		40%
Iron		4%		8%

Source: How to Understand and Use the Nutrition Facts Label. U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition. June 2000; Updated July 2003 and November 2004.

2. CALORIES (AND CALORIES FROM FAT)

Calories are a measure of how much energy you get from a serving of this food. The number of servings you consume determines the number of calories that you actually eat.

In the sample label, there are 250 calories in 1 serving of macaroni and cheese. Of these calories, 110 come from fat. Note that fat provides almost half the calories in 1 serving.

Amount Per Serving	
Calories 250	Calories from Fat 110

3. LIMIT THESE NUTRIENTS

Eating too much fat, saturated fat, *trans* fat, cholesterol, or sodium may increase the risk of heart disease, high blood pressure, or some cancers. Health experts recommend keeping intake of these nutrients as low as possible.

Total Fat 12g	18%
Saturated Fat 3g	15%
<i>Trans</i> Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%

4. NUTRIENTS TO CONSUME IN ADEQUATE AMOUNTS

Eating enough dietary fiber, vitamin A, vitamin C, calcium, and iron can improve health and help reduce the risk of some conditions. For example, calcium may reduce the risk of osteoporosis. Dietary fiber promotes healthy bowel function. A diet rich in fruits, vegetables, and whole grain products that is low in saturated fat and cholesterol may reduce the risk of heart disease.

Dietary Fiber 0g	0%
------------------	-----------

Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

5. FOOTNOTE

The * after the % Daily Value refers to the Footnote at the bottom, which tells you % DVs are based on a 2,000 calorie diet. This statement must appear on all food labels. The rest of the footnote may not appear if the label size is too small. The full footnote is consistent on products, and shows recommended dietary advice for all Americans. It is not about a specific food product.

*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		2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

6. DAILY VALUES AND PERCENT OF DAILY VALUES

The circled amounts are the Daily Values (DVs) for each nutrient listed based on health experts' advice. DVs are recommended levels of intakes based on a 2,000 or 2,500 calorie diet. Note how the DVs for some nutrients change, while others (cholesterol and sodium) remain the same for both calorie amounts. Each nutrient listed has a Daily Value, a % DV, and a recommended dietary goal, based on a 2,000 calorie diet. The goal for some nutrients is to eat less than a certain amount. The goal for other nutrients is to eat at least a certain amount.

IT'S **MORE** THAN A MEAL

DV and % DV Based on a 2,000 Calorie Diet			
Nutrient	DV	=	% DV Goal
Total Fat	65 g	=	100% DV Less than 65 mg
Saturated Fat	20 g	=	100% DV Less than 20 mg
Cholesterol	300 mg	=	100% DV Less than 300 mg
Sodium	2,400 mg	=	100% DV Less than 2,400 mg
Total Carbohydrate	300 g	=	100% DV At least 300 mg
Dietary Fiber	25 g	=	100% DV At least 25 g

Source: *How to Understand and Use the Nutrition Facts Label*. U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition. June 2000; Updated July 2003 and November 2004.

PERCENT OF DAILY VALUE (% DV):

% DV shows whether a serving of food is high or low in a nutrient, and how much it contributes to your daily allowance for this nutrient. % DVs are based on daily allowances for key nutrients for someone consuming 2,000 calories a day. For diets at other calorie levels, the % DV can still act as a general guide.

You don't need to calculate % DV. The label does the math for you. It puts the grams and milligrams on the same scale for the day (between 0 and 100% DV). The rows in the % DV column don't add up to 100%. Instead, the % DV for each nutrient is based on 100% of its daily allowance.

	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

Quick Guide to % DV:

5% DV or less is low

20% DV or more is high

USING THE % DV:

- **Comparisons:** The % DV makes it easy to compare similar products or brands. Make sure the serving sizes are similar, especially the weight of each product.
- **Nutrient Content Claims:** The % DV can help you examine nutrient content claims that companies put on their products, such as *reduced fat* or *light*. Compare the % DVs on food products to see which product is higher or lower in the nutrient.
- **Dietary Trade-Offs:** The % DV can help you make dietary trade-offs with other foods over the course of a day. You can balance a favorite high-fat food with lower fat foods at other times of the day. Pay attention so the **total** fat for the day stays below 100% DV.

NUTRIENTS WITH A % DV, BUT NO LISTED WEIGHT

Vitamins A, C, and D, iron, and calcium show a % DV, but not a weight.

Spotlight on Calcium

Use % DV for calcium to learn how much 1 serving contributes to the total amount needed per day. A food with 20% DV contributes a lot of calcium. A food with 5% DV contributes a little. The 100% DV for calcium is 1,000 mg based on a 2,000 calorie diet. Experts advise women after menopause to consume 1,200 mg calcium daily, which is 120% DV.

Quick Guide to Calcium

30% DV	=	300 mg calcium	=	1 cup milk, or equivalent
100% DV	=	1,000 mg calcium	=	3½ cups milk, or equivalent
120% DV	=	1,200 mg calcium	=	4 cups milk, or equivalent

NUTRIENTS WITHOUT A % DV

- **Protein:** If the food company makes a claim such as *high in protein*, it must list a % DV for that nutrient.
- **Sugars:** There is no DV for sugars. Sugars listed on the Nutrition Facts panel include those that occur naturally in foods such as fruits or milk, as well as sugars added to foods or drinks. Check the ingredient list for the names of any added sugars. Added sugars include brown sugar, cane sugar, corn sweetener, corn syrup, dextrose, fructose, glucose, high fructose corn syrup, honey, invert sugar, lactose, malt syrup, maltose, maple syrup, molasses, sucrose, and sugar syrup.

SAMPLE COMPARISON: TWO KINDS OF MILK

Compare the Nutrition Facts panels for 2% fat milk and non-fat chocolate milk. Each lists a serving size of 1 cup. Which milk has more calcium? Which has more calories and fat?

REDUCED FAT MILK: 2% Milkfat

Nutrition Facts	
Serving Size 1 cup (236ml)	
Servings Per Container 1	
Amount Per Serving	
Calories 120	Calories from Fat 45
% Daily Value*	
Total Fat 5g	8%
Saturated Fat 3g	15%
<i>Trans Fat</i> 0g	
Cholesterol 20mg	7%
Sodium 120mg	5%
Total Carbohydrate 11g	4%
Dietary Fiber 0g	0%
Sugars 11g	
Protein 9g	17%
Vitamin A 10%	• Vitamin C 4%
Calcium 30%	• Iron 25%

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

CHOCOLATE MILK: Non-fat

Nutrition Facts	
Serving Size 1 cup (236ml)	
Servings Per Container 1	
Amount Per Serving	
Calories 80	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
<i>Trans Fat</i> 0g	
Cholesterol Less than 5mg	0%
Sodium 120mg	5%
Total Carbohydrate 11g	4%
Dietary Fiber 0g	0%
Sugars 11g	
Protein 9g	17%
Vitamin A 10%	• Vitamin C 4%
Calcium 30%	• Iron 25%

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

Source: *How to Understand and Use the Nutrition Facts Label*. U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition. June 2000; Updated July 2003 and November 2004.

ANSWERS:

- Both kinds of milk have the same amount of calcium.
- One cup of 2% reduced fat milk has 40 more calories than 1 cup of chocolate non-fat milk.
- One cup of 2% reduced fat milk has 5 grams of total fat and 3 grams of saturated fat.
There is no fat in 1 cup of chocolate non-fat milk.

SAMPLE COMPARISON: TWO KINDS OF YOGURT

1. Compare the Nutrition Facts panels for the 2 sample yogurts. What is the serving size for each yogurt? How do they compare in terms of protein and sugar?

PLAIN YOGURT

Nutrition Facts			
Serving Size 1 container (226g)			
Amount Per Serving			
Calories 110	Calories from Fat 0		
	% Daily Value*		
Total Fat 0g			0%
Saturated Fat 0g			0%
<i>Trans</i> Fat 0g			
Cholesterol Less than 5mg			1%
Sodium 160mg			7%
Total Carbohydrate 15g			5%
Dietary Fiber 0g			0%
Sugars 10g			
Protein 13g			
Vitamin A 0%	•	Vitamin C 4%	
Calcium 45%	•	Iron 0%	

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

FRUIT YOGURT

Nutrition Facts			
Serving Size 1 container (227g)			
Amount Per Serving			
Calories 240	Calories from Fat 25		
	% Daily Value*		
Total Fat 3g			4%
Saturated Fat 1.5g			9%
<i>Trans</i> Fat 0g			
Cholesterol 15mg			5%
Sodium 140mg			6%
Total Carbohydrate 46g			15%
Dietary Fiber Less than 1g			3%
Sugars 44g			
Protein 9g			
Vitamin A 2%	•	Vitamin C 4%	
Calcium 35%	•	Iron 0%	

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

Source: *How to Understand and Use the Nutrition Facts Label*. U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition. June 2000; Updated July 2003 and November 2004.

ANSWERS:

1. The two yogurt containers have similar serving sizes (226 and 227 grams).
2. The fruit yogurt has less protein and more sugar than the plain yogurt.

IT'S **MORE** THAN A MEAL

2. Compare the ingredient lists of the two sample yogurts. Why does the plain yogurt have any sugar? What are the sources of sugar in the fruit yogurt?

ANSWERS:

1. The plain yogurt has a naturally-occurring sugar (lactose) found in milk.
2. The fruit yogurt has 3 sources of sugar: the lactose in the milk, the naturally-occurring sugar in apples, and an added sugar (high fructose corn syrup).

To limit added sugars, compare labels of similar products and choose the food with the lowest amount. Check ingredient lists to see if any added sugars are listed.

PLAIN YOGURT

Ingredients: Cultured Pasteurized Grade A nonfat milk, whey protein concentrate, pectin, carrageenin.

FRUIT YOGURT

Ingredients: Cultured Grade A reduced fat milk, apples, high fructose corn syrup, cinnamon, nutmeg, natural flavors, and pectin. Contains active yogurt and L. acidophilus cultures.

HEALTH CLAIMS ON FOOD LABELS

The Nutrition Labeling and Education Act of 1990 allows certain health claims about the relationship between nutrients and a reduced risk for certain diseases. Examples of currently allowed nutrients are listed below.

Chronic Disease	Health Claims Allowed on the Food Label	
	<i>Diets ADEQUATE in these foods or nutrients can help reduce the risk.</i>	<i>Diets LOW in these nutrients can help reduce the risk.</i>
Osteoporosis	Calcium	
Certain Cancers	Dietary Fiber Fruits and Vegetables Whole Grain Foods	Total Fat
Heart Disease	Dietary Fiber Fruits and Vegetables Whole Grain Foods	Saturated Fat Cholesterol
High Blood Pressure	Potassium	Sodium

Source: *A Food Labeling Guide*. Appendix C. U.S. Food and Drug Administration, September 1994. Editorial revisions June 1999.

NUTRIENT CONTENT CLAIMS

Government regulations state which terms may be used to describe the levels of nutrients in foods, and how they can be used.

CLAIM	DEFINITION
Free	The reference amount contains none of the nutrient claimed, or less than 5 calories, 5 mg sodium, 0.5 g total fat. 0.5 g saturated fat, 2 mg cholesterol, or 0.5 g sugar.
Low	The reference amount has no more than 40 calories, 140 mg sodium, 3 g total fat, 1 g saturated fat, or 20 mg cholesterol.
Lean	The reference amount of meat, poultry, or seafood contains less than 10 g total fat, 4.5 g saturated fat, and 95 mg cholesterol.
Extra Lean	The reference amount of meat, poultry, or seafood contains less than 5 g total fat, 2 g saturated fat, and 95 mg cholesterol.
High	The reference amount contains 20% or more of the Daily Value (DV) for a particular nutrient.
Good Source	The reference amount contains 10-19% of the Daily Value (DV) for a particular nutrient.
Reduced or Less	The reference amount of an altered food has 25% less calories, total fat, saturated fat, cholesterol, sodium, or sugars than a reference food. <i>Reduced</i> cannot be used if the reference food already meets the requirement for a <i>low</i> claim.
Light or Lite	An altered food has at least 1/3 less calories or less than half the fat found in a reference food. If at least half the calories come from fat, the food must have at least 50% less fat per reference amount. If less than half the calories come from fat, the food must have at least 50% less fat or 1/3 less calories. or The sodium in a low-calorie, low-fat food is reduced by 50%. or <i>Light</i> can describe properties such as texture and color, as long as the label explains the intent (for example, <i>light and fluffy</i>).
More	One serving has at least 10% more of the Daily Value (DV) of a nutrient than a reference food. May only be used for vitamins, minerals, protein, dietary fiber, and potassium.
% Fat Free	A product must be low-fat or fat-free. The claim must reflect the amount of fat in 100 g of a food. A "95% fat-free" food has 5 g fat in 100 grams of food.
No Added Sugars	No sugar or sugar-containing ingredient is added during processing.
Healthy	A food that is low in fat and saturated fat, and contains minimal amounts of sodium and cholesterol. One serving has no more than 360 mg sodium for an individual food, 480 mg sodium for a meal, and no more than 60mg cholesterol. In addition, a single-item food must provide at least 10% of the DV of 1 or more of vitamins A or C, iron, calcium, protein, or fiber. A meal-type product such as a frozen entree must provide 10% of 2 or 3 of these vitamins, minerals, protein, or fiber.
Fresh	A raw food that has not been frozen, heat processed, or otherwise preserved.
Fresh Frozen	A food that has been quickly frozen while still fresh.

Source: *A Food Labeling Guide*. Appendix A and B. U.S. Food and Drug Administration, September 1994. Editorial revisions June 1999.

Modifying Recipes and Menus

Planning menus means more than thinking of foods that taste good together. You must also consider their nutritional value. Be aware that the Dietary Guidelines apply to the overall balance of the daily or weekly diet, rather than to a single meal or food. An occasional high-fat, sugary or salty food can fit into a menu if balanced with other low-fat, low-sugar or low-salt foods. So consider the overall pattern of many meals when determining whether your menus are following the Dietary Guidelines.

This section offers tips to reduce the fat, sodium, and sugar and increase the fiber in foods. It also provides tips to alter menus for people with swallowing difficulties.

When buying foods, compare the Nutrition Facts and ingredient lists on the labels of several brands. Choose brands with the least amount of fat, sodium, and sugar, and the greatest amount of fiber.

When modifying a recipe, start by making just one change at a time. At first, alter an ingredient by a small amount to see how this change affects the quality and taste of the food. Later, you may want to alter the recipe further.

Baked products require more careful adjustments than casseroles or soups. For example, drastically cutting the sugar in a cake or the fat in biscuits may result in unsatisfactory products. If you reduce fat or sugar, you may need to add more liquid to compensate.

HOW TO USE LESS FAT

Meat, Poultry, and Fish

- ✓ Choose ground beef that is at least 80% lean (less than 20% fat).
- ✓ Use lean ground turkey in place of all or part of ground beef in recipes.
- ✓ Use lean meat instead of frankfurters, bologna, or other processed meat.
- ✓ Bake, broil, or roast meat rather than frying.
- ✓ Trim off all visible fat from meats.
- ✓ Drain all fat from cooked meats.
- ✓ Remove skin from poultry. Trim off the fat.
- ✓ Garnish fish with lemon juice rather than tartar sauce.
- ✓ Buy water-packed tuna rather than oil-packed tuna.

Milk Products

- ✓ Replace whole-milk cheeses with low-fat and part-skim cheeses.
- ✓ Use low-fat yogurt instead of sour cream.
- ✓ Use skim milk instead of whole milk.
- ✓ Use evaporated skim milk instead of cream.
- ✓ Use ricotta cheese instead of cream cheese.

Oils, Toppings, and Condiments

- ✓ To sauté or brown foods, use half the amount of oil listed in the recipe, or use a non-fat cooking spray.
- ✓ Use low-fat mayonnaise in place of regular mayonnaise.
- ✓ Skip the gravy on meat and potatoes.
- ✓ If you do use gravy, chill it, and then skim off hardened fat before reheating.
- ✓ Top vegetables with spices, herbs, or lemon juice in place of butter.

Soups and Stews

- ✓ Chill soups and stews, and skim off hardened fat before reheating.
- ✓ Limit the use of creamed condensed soups.
- ✓ If you make condensed soups, use skim milk instead of whole milk.

Breads/Grain Products

- ✓ For cookies or cakes, replace half of the butter or margarine with applesauce.
- ✓ Limit the use of high-fat breads such as croissants and some muffins.
- ✓ Replace high-fat crackers with lower-fat crackers.

AMOUNTS OF TOTAL FAT IN COMMON INGREDIENTS	
	Fat
1 Tablespoon of:	(grams)
Vegetable oil (corn)	14
Vegetable shortening	13
Butter	11
Margarine	11
Reduced-calorie margarine	5
Mayonnaise	11
Reduced-calorie mayonnaise	3
White sugar	0
Honey	0
1 Cup of:	
Whole milk	8
Low-fat milk	5
Skim milk	Trace amount
Half-and-half	28
Evaporated skim milk	1
Cream, heavy whipping	88
Sour cream	48
Plain low-fat yogurt	4
Plain nonfat yogurt	0
Eggs and Egg Whites:	
1 whole egg	5
2 egg whites	0

* Values are approximate. Check product labels for nutritional values of specific brands.

Adapted From: *Updating Food Preparation to Promote Health*, by P. Kendall, Colorado State University Cooperative Extension. Publication number 9.316, 3/00. Reviewed 1/03.

HOW TO USE LESS *TRANS* FAT

- ✓ Margarine (in stick form) and vegetable shortening are often high in *trans* fat. They have been *partially hydrogenated*, a commercial process that makes liquid oils more solid. Margarine in tub or liquid form tends to be lower in *trans* fat.
- ✓ Read the Nutrition Facts panel on food labels. Choose products with 0 grams of *trans* fat.
- ✓ Read the ingredient list on margarine packages. Look for soft margarines (tub or liquid) that do not contain *hydrogenated* or *partially hydrogenated* oils.
- ✓ When using a recipe, experiment with replacing the stick margarine or shortening with soft margarines or vegetable oils (except coconut and palm kernel oils). Be aware that this may change the texture or taste of the food you are preparing.

HOW TO USE LESS SODIUM

Table Salt and Other Salt Products

- ✓ Omit table salt in recipes, or use $\frac{1}{2}$ the amount listed in the recipe.
- ✓ Avoid seasoned salts such as celery, garlic, or onion salt. Instead, use unsalted powders such as garlic or onion powder.
- ✓ Use low-sodium soy sauce instead of regular soy sauce.
- ✓ Use low-sodium Worcestershire sauce instead of regular Worcestershire sauce.
- ✓ Use low-sodium bouillon instead of regular bouillon.
- ✓ Avoid using monosodium glutamate (MSG).

Food Products

- ✓ Buy fresh or frozen foods rather than canned foods.
- ✓ If you buy canned foods, choose lower sodium versions. For example, choose low-sodium soups and broths, soy sauce, canned vegetables, and tomato products.
- ✓ Buy processed meats only occasionally.

Soup Stock

- ✓ Make soup stock from turkey, chicken or beef bones.
- ✓ Use low-sodium bullion cubes or powder.

Alternative Flavors

- ✓ Replace most of the salt in a recipe with herbs, spices, seasonings, and vegetables.
Try these ideas:
 - **Cucumbers** with chives, dill, garlic, or vinegar
 - **Green beans** with lemon juice or sautéed onions
 - **Potatoes** topped with parsley
 - **Beef** with bay leaf, fresh mushrooms, onion, or thyme
 - **Poultry** with lemon juice, marjoram, paprika, parsley, sage, or thyme
 - **Fish** with bay leaf, curry powder, lemon juice, or paprika
- ✓ Try the following low-sodium seasoning blend recipes.

SODIUM LEVELS IN COMMON INGREDIENTS

1 Tablespoon of:	Sodium (milligrams)
Salt	2,130 mg
Garlic salt	1,900 mg
Onion salt	1,700 mg
Baking soda	1,260 mg
Baking powder	490 mg
Monosodium glutamate (MSG)	490 mg
Soy sauce	340 mg
Garlic powder	1 mg
Onion powder	1 mg

Source: *Revitalize Your Recipes for Better Health*. FN-432 (Revised), 2004, Division of Nutritional Sciences, Cornell University.

Recipes for Low-Sodium Seasoning Blends

ALL-PURPOSE SEASONING

All-purpose seasoning for meats, vegetables, and tomato-based foods

2 Tbsp. dry mustard	2 tsp. black or white pepper
2 Tbsp. onion powder	2 tsp. thyme
2 Tbsp. paprika	½ tsp. ground basil
2 Tbsp. garlic powder	

Blend spices thoroughly. Store in a tightly covered container.

Yield: about ½ cup

ITALIAN SEASONING

For pasta sauces or Italian dishes

4 Tbsp. dried parsley, crushed	1 tsp. ground thyme or marjoram
4 tsp. dried minced onion	2 tsp. celery seed
1 tsp. ground oregano	1 tsp. garlic powder
2 tsp. dried basil, crushed	¼ tsp. black pepper

Blend spices thoroughly. Store in a tightly covered container.

Yield: about ½ cup

Source of Recipes: U.S. Department of Agriculture, Midwest Region. *What's in a Meal? A Resource Manual for Providing Nutritious Meals in the Child and Adult Food Care Program*, Fourth Edition, 2003. Reproduced by the National Food Service Management Institute.

HOW TO USE LESS SUGAR

Fruits

- ✓ Use frozen fruit that is unsweetened, without added sugars.
- ✓ Use fruit canned in juice or water, rather than in syrup.
- ✓ Use fresh fruit, which has no added sugars.

Fruit Juices

- ✓ Serve full-strength (100%) fruit juice. This is pure juice without added water, sweeteners, spices, or flavorings. Examples are apple, grape, grapefruit, orange, pineapple, prune, tangerine, and any combination of full-strength juices.
- ✓ Avoid serving fruit drink or punch. These are made from juice with added water. They may also contain added sweeteners (such as corn syrup), spices, flavorings, or other ingredients. Examples are nectars, lemonade, or cranberry juice cocktail. These contain less than 50% full-strength juice.

Snacks

- ✓ Serve plain yogurt combined with fresh fruit, rather than commercially packaged fruit yogurt that contains added sugars (such as corn syrup).

Condiments

- ✓ Limit the use of jams, jellies, or flavored gelatins.

Baked Goods and Desserts

- ✓ Use up to $\frac{1}{2}$ less sugar in traditional recipes for cookies, muffins, quick breads, puddings, and pie fillings. This includes sugar, brown sugar, corn syrup, honey, and molasses. Do not cut back on sugar in plain yeast breads because it provides food for the yeast and promotes rising.
- ✓ Serve quick breads rather than high-sugar cakes or cookies. Try banana, carrot, cranberry, pumpkin, or zucchini bread.
- ✓ Add more cinnamon or vanilla to enhance the impression of sweetness.
- ✓ Serve seasonal fresh fruits for dessert.

Added Sugars

- ✓ Limit the amount of added sugars used in other recipes and products. These include brown sugar, cane sugar, corn sweetener, corn syrup, high fructose corn syrup, dextrose, fructose, glucose, honey, invert sugar, lactose, malt syrup, maltose, maple syrup, molasses, and sucrose.

Non-sugar Sweeteners

- ✓ Non-sugar sweeteners can be used in moderation. However, some of these sweeteners don't work well in cooked or baked foods. Others may leave a bitter aftertaste. Choose recipes already tested for use with non-sugar sweeteners. Or you can simply use less sugar in your traditional recipes, without needing to substitute non-sugar sweeteners.

HOW TO ADD MORE FIBER

Meals

- ✓ Use oatmeal or whole grain bread crumbs in meatloaf or meatballs.
- ✓ Add vegetables to quiche and casseroles.
- ✓ Prepare potatoes with skins, rather than peeled.
- ✓ Use whole grains such as barley or brown rice.
- ✓ Use rolled oats as breading for baked chicken or fish.

Soups, Salads, and Side Dishes

- ✓ Make soups with dried beans, split peas, or lentils.
- ✓ Use brown rice instead of white rice.
- ✓ Add cooked vegetables to spaghetti sauce.
- ✓ Add extra fruits and vegetables to dishes.

Snacks

- ✓ Make smoothies by blending milk or yogurt with fruits.
- ✓ Top cereals with sliced bananas or peaches.
- ✓ Serve fresh fruits or vegetables as a snack.

Breads and other Baked Goods

- ✓ Buy whole grain breads, such as whole wheat bread.
- ✓ Replace half of the white flour in recipes with whole-wheat or oat flour.
- ✓ Add raisins or chopped prunes to recipes.

AMOUNT OF FIBER IN FOODS

Source of Data: U.S. Department of Agriculture, National Nutrient Database for Standard Reference, Release 18.

Dried Beans	Serving	Fiber (grams)	Fruits	Serving	Fiber (grams)
Black beans, cooked	½ cup	7 g	Apple, raw, with skin	1 apple	3 g
Kidney beans, cooked	½ cup	6 g	Banana, raw	1 banana	3 g
Baked beans, canned, with pork and sauce	½ cup	5 g	Orange, raw	1 orange	3 g
Vegetables	Serving	Fiber (grams)	Cereals, Grains & Breads	Serving	Fiber (grams)
Potato, baked with skin	1 potato	4 g	Cereal, raisin bran	1 cup	5 g
Broccoli, chopped, frozen, cooked	½ cup	2 g	Cereal, oatmeal, cooked	1 cup	4 g
Carrots, frozen, cooked	½ cup	2 g	Bread, whole wheat	1 slice	2 g
Green beans, cooked	½ cup	2 g	Cereal, shredded mini-wheats	1 cup	2 g
			Rice, brown, long grain, cooked	½ cup	2 g

HOW TO ADD MORE FRUITS

Tips for Choosing Fruits

- ✓ Buy fruits that are fresh, dried, frozen, or canned (in water or juice).
- ✓ Fresh fruits in season may be less costly and at their peak flavor.
- ✓ Buy pre-cut packages of fruit for a healthy snack in seconds.

For the Best Nutritional Value

- ✓ Vary your fruit choices. Fruits differ in nutrient content.
- ✓ Select fruit canned in 100% fruit juice or water rather than in syrup.
- ✓ Choose fruit rather than juice, for the benefit of fiber.

Fruits at Meals

- ✓ Top cereal with fresh fruit, or add blueberries to pancakes.
- ✓ Add oranges or grapes to a tossed salad.
- ✓ Try meat dishes with fruit, such as chicken with apricots.
- ✓ For dessert, serve baked apples, pears, or a fruit salad.

Fruits as Snacks

- ✓ Serve cut-up fruit as a snack.
- ✓ Mix fruit with low-fat yogurt.
- ✓ Top frozen yogurt with berries.
- ✓ Try frozen juice bars (100% juice) as a low-fat snack.

- ✓ Make a fruit smoothie. Blend milk or yogurt with fresh or frozen fruits.

HOW TO ADD MORE VEGETABLES

For the Best Nutritional Value

- ✓ Vary your vegetable choices. Vegetables differ in nutrient content.
- ✓ Reduce sodium intake by choosing fresh or frozen vegetables, or by buying canned vegetables labeled “no salt added.”
- ✓ Watch out for sauces or seasonings that can add calories, fat, and sodium.

Add Vegetables to Meals

- ✓ Plan some meals around a vegetable main dish such as a stir-fry or soup.
- ✓ Try a main dish salad for lunch. Use a low-fat salad dressing.
- ✓ Add shredded carrots or zucchini to meatloaf, casseroles, and quick breads.
- ✓ Include chopped vegetables in pasta sauce or lasagna.
- ✓ Use cooked potatoes to thicken stews, soups and gravies.

Make Vegetables More Appealing

- ✓ Many vegetables taste great with a low-fat dip or dressing.
- ✓ Add color to salads by adding carrots, red cabbage, or spinach leaves.
- ✓ Include cooked dry beans or peas in flavorful mixed dishes and soups.

MODIFYING MENUS TO MAKE THEM MORE HEALTHFUL

A few simple changes can make a lunch or dinner more healthful. Here is an example.

Note: Servings listed on this menu may not be equal to servings of food used for crediting purposes. See the *Crediting Foods* section for CACFP Meal Pattern Requirements.

Menu	Calories	Grams of Fat
Chicken breast, boneless, fried, with skin (½ breast = equivalent of 3 oz. chicken)	220	9
French fries, deep fried (1 small serving)	225	12
Tomato catsup (1 Tbsp)	15	0
Italian bread (1 slice)	80	1
Stick margarine (1 tsp)	35	4
Peaches in heavy syrup (¼ cup)	95	0
Whole milk (1 cup)	145	8
Total	815	34 g fat *

* 38% of the calories in this meal are from fat

Menu Make-Over	Calories	Grams of Fat
Chicken breast, boneless, baked, no skin (½ breast = 3 oz. chicken)	140	3
Baked potato (medium)	160	0
Sour cream, reduced fat (1 Tbsp)	20	2
Whole wheat bread (1 slice)	70	1
Margarine spread – 60% fat (1 tsp)	25	3
Peaches, canned in juice (½ cup)	55	0
Skim milk (1 cup)	85	0
Total	555	9 g fat *

* 15% of the calories in this meal are from fat

Source: Examples of foods in the menus are adapted from U.S. Department of Agriculture, Midwest Region. *What's in a Meal? A Resource Manual for Providing Nutritious Meals in the Child and Adult Food Care Program* Fourth Edition, 2003. Reproduced by the National Food Service Management Institute. Foods have been analyzed for their nutrient content using the USDA *National Nutrient Database for Standard Reference*, Release 18. Calories have been rounded to the nearest multiple of 5. Grams of fat have been rounded to the nearest whole number.

ADAPTING MENUS FOR PEOPLE WITH SWALLOWING DIFFICULTIES

- Chop foods into small pieces.
- Avoid dry, chunky foods. Choose foods with a smooth texture.
- Add broth, gravy, milk, or oil to foods to moisten them and make them easier to swallow.
- To minimize the risk of choking, avoid hard-cooked eggs, chunks of meat, nuts, whole grapes, orange halves, popcorn, and hard candy. Remove any pits, peels, or bones from foods.
Dilute peanut butter with applesauce.

SAMPLE MENU FOR REGULAR AND MODIFIED DIETS

(Low Salt, Low Fat/Cholesterol, and Swallowing Difficulties)*

Below is a sample 5-day lunch menu. The menu includes possible modifications for a low sodium diet, a low-fat diet, a low-cholesterol diet, or a diet for people with swallowing difficulties.

* The items in the last column are based on general recommendations for modified diets.

Please see your consultant dietitian for specific instructions for modifying his or her diet.

Note: Servings listed on this menu may not be equal to servings of food used for crediting purposes. See the *Crediting Foods* section for CACFP Meal Pattern Requirements.

Day 1

Portion Size	Foods for a Regular Diet	Low Salt (2 g Sodium)	Low Fat and Cholesterol	Modifications for Swallowing Difficulties
1 cup	Spaghetti, cooked			
½ cup	Meat sauce	Low sodium		No chunks
1 ounce	Parmesan cheese	Omit		Omit
½ cup	Peas		Plain	Blend
1 slice	French bread			Blend with a small amount of milk
1 tsp	Margarine/butter		Liquid margarine	
½ cup	Mandarin oranges			Blend
1 cup	Milk, whole		Milk, skim	

Day 2

Portion Size	Foods for a Regular Diet	Low Salt (2 g Sodium)	Low Fat and Cholesterol	Modifications for Swallowing Difficulties
3 ounces	Chicken thigh			Grind
2 ounces	Gravy			
½ cup	Whipped potatoes			
½ cup	Asparagus		Plain	Blend
1	Dinner roll			Blend with a small amount of milk
1 tsp	Margarine/butter		Liquid margarine	
½ cup	Crushed pineapple			Blend
1 cup	Milk, whole		Milk, skim	

IT'S **MORE** THAN A MEAL

Day 3

Portion Size	Foods for a Regular Diet	Low Salt (2 g Sodium)	Low Fat and Cholesterol	Modifications for Swallowing Difficulties
3 ounces	Fish nuggets	Baked fish	Baked fish	Baked fish
4 ounces	Tater tots	Whipped potatoes	Whipped potatoes	Whipped potatoes
½ cup	Spinach		Plain	Blend
1 slice	Wheat bread			Blend with a small amount of milk
1 tsp	Margarine/butter		Liquid margarine	
½ cup	Apricots			Blend
1 cup	Milk, whole		Milk, skim	

Day 4

Portion Size	Foods for a Regular Diet	Low Salt (2 g Sodium)	Low Fat and Cholesterol	Modifications for Swallowing Difficulties
1 cup	Turkey noodle soup	Low-sodium soup		Blend with bread
1 pkg.	Crackers	Salt-free		Omit
2 ounces	Sliced ham		Baked chicken	Grind
2 slices	Rye bread			Remove crust Blend with soup
½ cup	Mixed vegetables		Plain	Blend
½ cup	Fresh fruit			Blend, or use banana
1 cup	Milk, whole		Milk, skim	

Day 5

Portion Size	Foods for a Regular Diet	Low Salt (2 g Sodium)	Low Fat and Cholesterol	Modifications for Swallowing Difficulties
3 ounces	Hamburger meat			Grind with gravy
1	Bun			Blend with vegetable
½ cup	Potato salad	Use less salt	Potato salad with fat-free mayonnaise	Blend the potato salad
½ cup	Cole slaw	Use less salt	Cole slaw with fat-free mayonnaise	Replace with blended peas
1	Sundae cup		Fat-free ice cream	
1 cup	Milk, whole		Milk, skim	

Preparing Healthful Snacks

BENEFITS OF SNACKING

Snacks can be a healthful addition to your program’s daily meal plan, if they are chosen carefully for their nutritional value. Nutrient-dense snacks that are low to moderate in calories and low in fats and added sugars are ideal for older adults. They can satisfy hunger, provide fuel, and help supplement the nutrient needs of older adults, particularly those who eat small portions at mealtimes. In addition, snacks that are high in water content (such as fruits, 100% fruit or vegetable juices, or soups) can help older adults to meet their fluid needs.

TIPS FOR CHOOSING HEALTHFUL SNACKS

1. Use food labels as a tool to control portion sizes and select healthful snacks.

Look for products with the nutrient claims *fat free, low fat, light, low sodium, lightly salted, reduced calorie, reduced fat, or reduced sodium* on the front of the package. These claims are descriptive terms that must meet strict government criteria to be placed on food packages. Be aware, though, that fat-free is not calorie-free. A food can be low in fat but high in calories. Also, fat-free or low-fat versions of snack foods may contain more added sugars or sodium to compensate for the loss of flavor that occurs when fat is removed.

Check the Nutrition Facts panel for the serving size and number of servings in a package to tell whether a snack food is high in total fat, saturated fat, *trans* fat or sodium in each serving. Serving sizes are listed in both household and metric units – for example, 14 chips (28 g) – and are standard across product lines to help you compare similar products, such as baked potato chips and fried potato chips.

Check the Nutrition Facts panel for the amount of fat and other nutrients as a

percent of the Daily Value of the diet.

Check the ingredient list for added sugars.

Go easy on snacks that list any added sugars as the first ingredient.

2. Limit snack foods that are high in calories, saturated fat, *trans* fat, total fat, sodium, or added sugars.

These types of snack foods tend to be low in nutrient density, and can increase the risk for heart disease or high blood pressure. Avoid snack foods with lard, beef tallow, palm, palm kernel or coconut oils; these are high in saturated fat.

3. Replace regular snack foods with similar foods that are lower in calories, total fat, saturated fat, *trans* fats, sodium, or added sugars; or that are higher in fiber.

For example, more healthful alternatives to many kinds of crackers now appear on grocery stores next to the original products. Or canned fruits that are packed in their own juices appear on shelves next to fruits canned in heavy syrups. Often these alternatives taste quite similar to the original products.

TIPS FOR CHOOSING HEALTHFUL SNACKS (CONTINUED)

4. Replace regular snack foods with different foods that are more healthful.

Instead of...	Try...
Ice cream	Nonfat frozen yogurt
Ice cream bar	Frozen juice bar
Milkshake	Shake made with fruit and low-fat milk
Potato chips	Low-salt pretzels
Doughnut	Whole wheat bagel
Frosted chocolate cake	Angel food cake with fruit
Cheddar cheese and crackers	Reduced-fat cheese and whole-grain crackers
Candy	Fruit

5. Choose snack foods that are nutrient-dense.

Nutrient-dense foods provide vitamins, minerals, or fiber and a low to moderate amount of calories. These include fruits, vegetables, whole grain breads and cereals, low-fat dairy products, and low-fat meats and meat alternates.

6. Choose snack foods that can be credited within the CACFP program.

Check the Crediting Foods section and select snacks that qualify for reimbursement. This can help your program save money on snacks.

7. Choose appropriate snack foods for older adults who find it hard to chew or swallow foods.

Offer foods that are soft and easy to chew, with a smooth texture. Avoid serving dry, chunky foods to these adults.

- Cooked cereals
- Soft protein foods: milk, cottage cheese, yogurt
- Fresh soft fruits and vegetables with peels removed
- Canned fruits
- 100% fruit or vegetable juices

8. Combine foods from different food groups in appealing ways.

- Melt low-fat cheddar cheese on a whole wheat tortilla.
- Combine low-fat or non-fat yogurt with a small amount of orange juice or lemonade concentrate. Chill and serve as a dip with fruit chunks.
- Top a low-sugar cereal with fresh fruit, and add low-fat milk.
- Create a non-fat milk shake with skim milk, fruit, and vanilla in a blender.
- Create a fruit smoothie by combining plain non-fat yogurt with fruit.
- Create a cottage cheese dip and serve it with slices of soft raw vegetables. For each cup of non-fat cottage cheese, add 2 to 4 tablespoons of skim milk, and dill weed or chives to taste.

9. Use snacks as an opportunity to promote fluids.

You can serve water, other beverages, or other foods that are high in water. Try these flavorful tips:

- | | |
|--|-------------------------|
| • 100% fruit juice | • Fruits and vegetables |
| • 100% vegetable juice, low-sodium | • Milk, low-fat |
| • Fruit juice with seltzer water | • Milk shake, low-fat |
| • Fruit smoothie | • Yogurt, low-fat |
| • Frozen fruit bars (100% fruit juice) | |

Keeping Foods Safe for Older Adults

In spite of the overall safety of the U.S. food supply, each year millions of people get sick from the food they eat. The symptoms of foodborne illness include diarrhea, vomiting, and sometimes fever. These conditions can be disabling for some people, but are more likely to be devastating and even deadly for vulnerable populations.

In general, people over 65 and people with chronic illnesses are more likely to suffer severe consequences of foodborne diseases. Several factors contribute to this increased risk:

- A weakened or compromised immune system due to:
 - ✓ Aging
 - ✓ Existing chronic diseases such as diabetes and kidney disease
 - ✓ Major surgery or some cancer treatments.
- Decreased stomach acidity creating a more neutral environment in which harmful bacteria can survive and increasing the likelihood of foodborne illness.
- Slowing down of the digestive process allowing time for more rapid growth of pathogens in the gut.
- Malnutrition increasing the risk of infections.

The onset of symptoms can vary from as short as one hour after consuming the contaminated food to as long as a few days.

If you suspect that a participant has foodborne illness, treat these symptoms much like you would treat the flu. If the person has a chronic illness or has very severe symptoms, contact a health care provider as soon as possible.

HOW FOODBORNE ILLNESS OCCURS

Foodborne illness can happen when food becomes contaminated and/or when microbial growth is allowed to occur in food. Any food or beverage can become contaminated.

However, certain foods are considered to be more risky because they support the growth of pathogens or have been involved in foodborne illness outbreaks.

Foods Associated with Foodborne Illness

- **Ready-to-eat foods** are foods that are usually eaten without cooking or additional preparation. They include:
 - ✓ raw, washed, cut fruits and vegetables
 - ✓ whole raw fruits and vegetables that can be eaten without peeling
 - ✓ meat, dairy products or other high protein foods that have already been cooked or other foods that can be eaten without washing or cooking.

These foods may carry microorganisms or other contaminants that can make people sick.

IT'S **MORE** THAN A MEAL

- **Potentially Hazardous Foods (PHFs)** are often moist foods with high protein or carbohydrate content and a neutral or slightly acid pH. These components support the rapid growth of microorganisms. According to the 2005 Food Code (www.cfsan.fda.gov/~dms/fc05-toc.html) these foods are also designated as time/temperature control for safety (TCS) because they require time/temperature control to limit the

From a regulatory perspective, participants in adult day health programs are considered to be a “highly susceptible” population. Therefore, your program must adhere to special requirements in food service to protect program participants. The following foods are not allowed to be served:

- Unpasteurized juice
- Raw shell eggs, or foods made from raw or undercooked eggs including eggnog, soft cooked eggs, hollandaise sauce or meringue
- Raw or undercooked animal foods such as raw fish or shellfish, lightly cooked fish, and rare meat
- Raw sprouts

Additional safeguards prohibit re-serving foods. For more information about these restrictions, check with your local health inspector or contact the state Department of Public Health.

growth of pathogenic microorganisms or toxin formation. These foods include:

- ✓ animal foods such as meat, poultry, fish, shellfish, tofu, milk, or cheese
- ✓ plant foods that are heat-treated – such as cooked rice, pasta and cereal grains, cooked vegetables
- ✓ raw seed sprouts, cut melons, or garlic-in-oil mixtures.

FOODBORNE CONTAMINATION

Contamination occurs when something harmful gets into the food. Bacteria or other harmful substances can travel to food by hands, equipment or utensils used to prepare food.

There are three different types of contamination:

1. **Physical contaminants** are things that can be seen or felt. They include dirt, broken glass or plastic flatware, toothpick, hair, fingernail, or bandage.
2. **Chemical contaminants** are found in some of the materials that are used to clean, store or protect foods. They include:
 - **Cleaning chemicals, sanitizing agents**
Chemicals used to clean and sanitize pots, pans or dishes can be a source of chemical contamination if proper cleaning procedures are not followed. If too strong a concentration of sanitizer is used, consumers can get sick from the residue left on the food contact surface.

- **Toxic metals** are poisonous compounds that form when high acid foods like citrus or tomato products are left in metal cans or containers.
- **Pesticides** that are not used properly can leave residues on foods or food contact surfaces.

To keep food safe, read labels and follow the directions on any chemicals or pesticides.

3. **Biological contamination** comes from microorganisms that occur naturally in some foods or are introduced through cross-contamination with other foods or food contact surfaces. While chemical and physical contaminants can make people sick, it is most often microorganisms that cause foodborne illness.

Most foodborne pathogens fall into four categories:

- **Molds and yeasts** usually cause food to spoil. However, molds can be dangerous because they may produce toxins that can make elderly and other susceptible populations ill. These poisons are not removed when mold is cut off foods like cheese, fruit or breads.
- **Parasites** have been found in foods produced or processed with contaminated water or handled by people who do not practice good personal hygiene.
- **Viruses** are a major cause of foodborne illness. Most of these viruses are carried to people by foods that have been touched by people who are ill with the virus.

- **Bacteria** cause most cases of foodborne illness. The FDA “Bad Bug Book” (www.cfsan.fda.gov/~mow/intro.html) provides basic information about dozens of microorganisms and the illnesses they cause. While bacteria and other microorganisms are common in the environment, in people, and in or on food, most of them are not pathogenic. However, when they are allowed to grow to harmful levels, or if they are from virulent strains, older adults can become sick.

MICROBIAL GROWTH

Food becomes unsafe when bacteria and other pathogens grow to harmful levels. With the right components (protein and moisture) and warm enough temperatures, bacteria can multiply in relatively short periods of time.

- **Temperatures** between 41°F and 140°F are considered the “Danger Zone” because bacteria will grow well in this range, with the most rapid growth between 70°F and 110°F. When foods are left in the Danger Zone for more than 2 hours, the number of bacteria can increase to harmful levels.

Neither refrigerator nor freezer temperatures kill bacteria – they just slow down the rate of growth. Bacteria remain alive and viable in the freezer (0-32°F). In the refrigerator (41°F or below) bacteria survive and grow slowly. Some bacteria such as *Listeria* and certain types of *E. coli* grow well even in the refrigerator.

Only temperatures above 140°F will kill bacteria.

HOW YOU CAN PREVENT FOODBORNE ILLNESS

To prevent foodborne illness, food handlers must follow these two basic rules:

- 1) Prevent Contamination
- 2) Control Microbial Growth

Prevent Contamination

Habits as simple as washing hands and keeping things clean will help keep pathogens and other contaminants from spreading to food.

Practice Good Health and Hygiene: Humans are the source of many microorganisms that cause foodborne disease. Some bacteria are found naturally on our skin, hair, nose and throat. Many others live or survive in our intestines. These bacteria can easily be spread from one person to another by hands touching foods, food contact surfaces and other household objects like faucets or tables.

- **Be in Good Health**

Foodborne illness can be spread when a person who is ill prepares or serves food. If a food worker or server is ill with any of the following symptoms, they should not make or serve food:

- ✓ fever
- ✓ sore throat
- ✓ diarrhea
- ✓ vomiting
- ✓ jaundice (yellow skin and eyes)

- **Wash Your Hands**

Improper or inadequate handwashing is a major cause of foodborne illness. Washing hands can remove bacteria and other pathogens.

Before touching food follow these 4 steps:



- ✓ **Wet hands** with warm, running water.



- ✓ **Add soap** and rub hands to make a lather. Wash fronts and backs of hands, between fingers and under nails for 20 seconds.



- ✓ **Rinse hands** well under warm running water. Let water run into sink, not down the elbows.



- ✓ **Dry hands** thoroughly with a clean (paper) towel.

Keep Food Contact Surfaces Clean: Cross-contamination occurs when bacteria spread from one food to another. Prevent cross-contamination by keeping foods – especially raw PHFs – away from ready-to-eat foods.

Food contact surfaces are any items that touch food such as cutting boards, can openers, dishes, kitchen utensils and counter tops. When they are

washed the “soil” (dried gravy, sauces and food) is removed. Sanitizing adds another step to reduce bacteria to levels where they are no longer harmful.

Approved methods for sanitizing include heat or hot water, and chemicals such as chlorine bleach or quaternary ammonium compounds (quats).

To sanitize follow these 4 steps:



- ✓ Wash
- ✓ Rinse
- ✓ Sanitize
- ✓ Air Dry

For chlorine bleach (5.25% sodium hypochlorite), use this recipe:

**1 teaspoon of bleach
to 1 gallon of warm water**

The concentration of this solution will yield 50-100 ppm (parts per million). The maximum amount of chlorine allowed to sanitize food contact surfaces is 200 ppm; 50 ppm (less than a

teaspoon per gallon) is the minimum concentration recommended. If more than the 200 ppm is used, a chlorine residue will be left as a potential source of chemical contamination.

To prevent chemical contamination, use a test strip for the sanitizer to check the concentration of the sanitizing solution.

Keep food safe from contamination at all steps in handling.

- Use reputable, licensed suppliers.
- Establish policies for staff or volunteers to:
 - ✓ Report illnesses or symptoms like diarrhea or nausea before they work with food.
 - ✓ Cover any cuts, burns, sores or skin infections completely with a bandage if they prepare or serve food.
 - ✓ Wash hands before handling food or touching clean dishes.

Establish policies and procedures for practices listed below.

- When you receive or shop for foods:
 - ✓ Keep raw meat, poultry and seafood away from other foods.
 - ✓ Check packages for tears or leaks.
 - ✓ Make sure cans are free from dents and bulges.
- When you store foods:
 - ✓ Store food away from cleaning supplies and other chemicals.
 - ✓ Keep all foods covered.

IT'S **MORE** THAN A MEAL

- ✓ Wrap raw meats and poultry or put in containers or dishes. Place *below* other foods – on the bottom shelf or drawer of the refrigerator.
- ✓ Keep the refrigerator clean.
- ✓ Store food only in containers designed for food. *Do not store poison or cleaning chemicals in food containers.*
- ✓ Throw away moldy cheese, bread or fruit, fermented juices.
- When you prepare foods:
 - ✓ Always wash hands.
 - ✓ Use disposable gloves, mixing spoons and serving utensils to make and serve food instead of using your hands.
 - ✓ Wash fruits and vegetables before you serve them.
 - ✓ Wash, rinse and wipe tops of cans before opening.
 - ✓ Use different cutting boards for raw meats and ready-to-eat foods.
 - ✓ If you can't use separate utensils after they come in contact with raw meat, poultry or fish, then wash and sanitize them.
 - ✓ Put cooked meat, poultry or seafood on a clean or different plate than you used for the uncooked foods.
 - ✓ Use a clean spoon if you taste foods as you prepare them.
 - ✓ Don't mix (or store) old and new batches of the same food.

Control Pests

Insects and rodents are also sources of contamination. It is important to keep flies, cockroaches, mice and rats away from the food preparation and storage areas.

- Keep pests out. Put screens on doors and windows. Keep trash cans covered.
- Keep the kitchen and eating area clean. Clean food crumbs and wipe up even small spills.
- Use pesticides only if they are absolutely necessary. Store these like any other chemicals away from food in a locked cabinet. Follow the manufacturer's directions for use.

To control these pests: Throw out any food that shows signs of pest infestation, or has contacted a surface that was contaminated with pesticide.

Control Microbial Growth

Time and temperature play important roles in the growth of bacteria. By controlling the temperature of foods, and limiting the amount of time foods spend in the Danger Zone, you can help prevent bacteria from growing to harmful levels and producing toxins.

To control temperature:

- Use a food thermometer to check internal temperatures of foods.

PLANNING HEALTHFUL MEALS AND SNACKS

- Insert the tip of the thermometer into the thickest part or middle of the food. Wait for the temperature reading to be steady (at least 15 seconds).
- Sanitize the thermometer between uses to prevent cross-contamination.
- Calibrate the thermometer regularly to insure its accuracy.

Keep cold foods cold (41°F or below)

at all steps in handling.

- When you receive or shop for food:
 - ✓ Buy cold or frozen items last. Check to make sure frozen foods are frozen and cold foods have been kept at 41°F or below.
 - ✓ If you shop for food, pack cold foods in insulated containers when the weather is warm.
- When you store foods:
 - ✓ Set your refrigerator no higher than 41°F and your freezer at 0°F.
 - ✓ Place a refrigerator thermometer in the middle of the refrigerator or freezer. Check the temperature of your refrigerator each day.
 - ✓ Put away potentially hazardous foods into the refrigerator or freezer first.
 - ✓ Put raw PHFs in the back of the refrigerator where it is coldest. Use the refrigerator door for condiments and other foods such as jams and juices.

- ✓ Store eggs in their original carton in the refrigerator – not on the door.
- ✓ Make sure the vents in these appliances are not blocked so that cold air can circulate. Don't overstuff the refrigerator.

- When you prepare foods:

- ✓ Thaw foods properly.

In the refrigerator: Place frozen meat or other PHFs in a pan or tray below ready-to-eat foods.

Plan for enough time for the size of the item. For example, one pound of ground beef or a thin chicken breast may take less than a day to thaw while a 10 pound turkey may take 4-5 days.

After thawing, use or cook meats within 1-2 days.

In cold running water: Make sure that the food is sealed in a package or bag.

One pound of ground meat will take about one hour. For a whole turkey, plan on 30 minutes per pound. It is best to use this method if the food item can be thawed within 2 hours. Foods thawed using this method must be cooked immediately.

In the microwave: Always cover the food to prevent juices from contaminating the parts of the microwave oven. Follow the directions for the microwave, rotating the food several times to make sure it thaws evenly. Foods thawed this way must be cooked immediately.

IT'S **MORE** THAN A MEAL

Some frozen foods like frozen vegetables and thin foods such as hamburger patties, fish portions and shaved steak, can also be thawed as part of cooking.

Always cook thawed foods thoroughly before refreezing.

Do not thaw foods at room temperature.

The outside of the food may reach temperatures above 41°F while the inside is still icy.

Bacteria on the surface may grow to harmful levels.

- ✓ Chill ingredients before mixing. Refrigerate ingredients such as mayonnaise, tuna or other ingredients for salads before mixing. Marinate meats in covered containers in the refrigerator.
- When you serve foods:
 - ✓ Keep foods refrigerated at 41°F or below until just before serving.
 - ✓ Check the temperature of the foods to be 41°F every 2 hours.
 - ✓ Throw away any food that has been above 41°F for more than 2 hours.
 - ✓ Use ice and insulated containers to transport foods when taking a trip or outing.

- When you cool foods:
 - ✓ Use a food thermometer to check that hot foods have been cooled according to these recommended methods:

Two-stage method: from 140°F to 70°F within 2 hours and 70°F to 41°F or below within 2 additional hours

OR

One-stage method: from 140°F to 41°F or below within 4 hours

- ✓ Cool foods quickly.
 - Divide large amounts of leftovers into small, shallow containers.
 - Set large pots of soup, stew or sauce in an ice bath.
 - Don't pack the refrigerator. Make sure there is room for cool air to circulate and keep foods at a safe temperature.

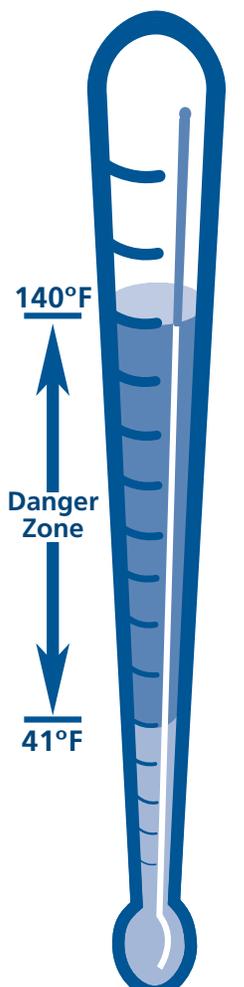
Keep hot foods hot at all steps in handling.

Use a food thermometer to check the temperature of foods to make sure that they are cooked thoroughly and held at the proper temperatures. Be careful not to hit fat or bone in meats.

- When you receive hot foods:
 - ✓ Check the temperature of the foods to be 140 °F or above.
 - ✓ Refuse foods that are below this temperature.

- When you cook foods:
 - ✓ Do not interrupt cooking times.
Partial cooking can raise temperatures to Danger Zone levels without being hot enough to kill bacteria.
 - ✓ Follow the minimum internal cooking temperatures recommended in the Food Code.
- When you serve hot foods:
 - ✓ Check the temperature of the foods to be 140°F or above every 2 hours.
 - ✓ Throw away any food that has been below 140°F for more than 2 hours.
- When you reheat leftovers:
 - ✓ Bring gravies, soups and sauces to a boil when reheating.
 - ✓ Heat other leftovers to 165°F for 15 seconds.

Control Time and Temperature



The diagram shows a thermometer with a scale. Key temperature points are marked: 140°F at the top, 41°F at the bottom, and a 'Danger Zone' between them. To the right of the thermometer, a list of food safety guidelines is provided for each temperature range.

Temperature Range	Action	Examples
165°F	REHEAT all foods	
165°F	COOK (for 15 seconds)	<ul style="list-style-type: none"> • Poultry, stuffed meats, stuffed fish, and stuffed pasta • Stuffing containing meat, poultry, or fish • Ground poultry or turkey • Any animal food cooked in a microwave
155°F	COOK (for 15 seconds)	<ul style="list-style-type: none"> • Ground meats (beef and pork) • Injected meats, comminuted fish and meats
145°F	COOK (for 15 seconds)	<ul style="list-style-type: none"> • Fish, seafood • Pork, beef (cubes, slices, etc.), veal, lamb, mutton
145°F	COOK (for 3 minutes)	<ul style="list-style-type: none"> • Whole roast beef, whole pork roasts and corned beef roasts
140°F	HOLD	<ul style="list-style-type: none"> • All hot foods
140°F to 70°F	COOL all foods	<ul style="list-style-type: none"> • within 2 hours
70°F to 41°F		<ul style="list-style-type: none"> • within 4 hours

From FDA Food Code, 1999.

FOOD SAFETY EDUCATION AND CERTIFICATION

For programs that prepare and serve meals and snacks for participants, some states, such as Massachusetts, require that there be at least one person who can demonstrate knowledge of foodborne illness. This regulation often requires that this person has successfully completed a food manager certification exam. Check with your local health inspector to see if this requirement applies to your program.

Food safety is everyone's responsibility. All staff and volunteers should have the opportunity to learn about the risks of foodborne illness and what they can do to prevent it. Materials and training resources are listed the Resources section of this manual. Share this information with caregivers as well.

Regulations for food safety and sanitation may change to reflect new food safety issues, scientific evidence and technologies. For information about any changes or new developments, check with your local health inspector or contact the state Department of Public Health.

Frequently Asked Questions

1. Since cheese is high in fat and cholesterol, should we serve it to adults?

Cheese is a good source of protein, calcium and riboflavin. Serve low-fat cheeses such as part-skim mozzarella, part-skim ricotta, reduced-fat American or Cheddar cheese, or reduced-fat cottage cheese.

2. What is the difference between ice cream and frozen yogurt?

Frozen yogurt typically has less fat and more protein than ice cream. Ice cream has 10% to 18% fat or more by weight. Frozen yogurt and low-fat ice cream are other alternatives to regular ice cream. However, frozen yogurt and low-fat ice cream are not necessarily lower in calories than regular ice cream. These frozen dairy products do not count in the Child and Adult Care Food Program meal pattern.

3. What is the difference between butter and margarine?

Both margarine and butter get 100% of their calories from fat. Butter is a fat made from milk. Margarine is made from vegetable oil. It is made solid by the process of hydrogenation. Both butter and margarine supply the same

number of calories per serving. Margarine may be in liquid, soft, or stick. Different kinds of margarine may vary in the amount of saturated, monounsaturated, polyunsaturated, and *trans* fats that they contain.

4. What types of desserts should we serve? How often should we serve desserts?

Only certain types of desserts are creditable in the Child and Adult Care Food Program. You can serve fruits as often as desired for dessert. Grain-based desserts such as cakes and cookies are not creditable in the CACFP as a dessert at lunch or supper. However, you may serve grain-based desserts as a component of snacks. Do not serve cookies and other baked products for snacks more than 2 times per week. Some desserts are high in sugar and fat, and should only be eaten in moderation.

5. How many calories do older adults need?

The average daily caloric need of older adults range between 1,600 to 2,200 calories per day. The number of calories needed depends on several factors, including the amount of physical activity, amount of lean body mass, and existence of any chronic health conditions that can affect calorie needs.

6. How often can we serve eggs to older adults?

To limit cholesterol intake, aim for no more than 3 whole eggs each week. This includes eggs served plain and those used in baked or cooked products. There is no limit on egg whites, because they have no cholesterol.

7. Can we serve water as the beverage at snack time?

Yes, you can and should offer water as a beverage in addition to the required 2 snack components. Older adults need to be offered water throughout the day. Other fluids such as fruit juice and milk count towards the fluid requirements.

8. Are there good and bad foods?

The nutritional quality of a diet is not defined by any single food, but rather the diet eaten over time.

9. What advice can we give older adults who request a vegetarian diet?

You should caution older adults that unless the vegetarian diet is carefully planned, essential nutrients may not be supplied in the amounts needed.

10. How many servings of the grains group do older adults need each day?

Depending on how many calories they need, most older adults need to consume the equivalent of 5 to 8 ounces from this food group each day. In general, 1 slice of bread, 1 cup of ready-to-eat cereal, or ½ cup of cooked rice or pasta count as 1 ounce.

11. Can a diet high in fruits and vegetables help with vision problems?

Yes, a diet high in fruits and vegetables will increase intake of beta-carotene, which can help with vision problems such as age-related macular degeneration. Studies have shown that consuming dietary antioxidants found in fruits and vegetables (such as beta-carotene, lutein, and zeaxanthin) can help reduce vision problems.