

Registered Dietitian

Registered dietitians plan healthy meals and menus for individuals and restaurant or foodservice operations. Their educational route includes college, required internships, and often graduate programs in the biochemistry of food and human physiology. They must also pass a national registration exam, meet state licensure requirements, and complete 75 hours of continuing education training every five years to remain an RD.

Originally, they were employed by hospitals to help doctors feed patients with dietary restrictions. Their role has expanded into consumer information, preventive medicine, and professional menu planning to meet specific nutrition goals. In hospitals, they still treat nutrition-based disorders, especially since more illnesses seem to be tied to nutrition. Restaurateurs can find consulting dietitians who perform recipe analysis, menu planning, and nutrition guidance. This is especially important (and often required) for the food-services operations of nursing homes, retirement centers, colleges, and schools.

Local listings and the local chapter of the American Dietetic Association are excellent places to start looking for a licensed registered dietitian: www.eatright.org

Nutrition Labels

The Nutrition Facts panel can be a useful tool in selecting food for a healthy diet. In addition, learning how to read and use nutrition information can help people for a number of reasons:

- Avoid food allergens
- Plan special diets
- Limit fat, sodium, cholesterol, or calories
- Identify food items that are good sources of vitamins, minerals, and other nutrients such as fiber

Each nutrient on the panel is reported as a percentage of Daily Values (DV). The DVs are provided in percentages based on a 2,000-calorie diet. Providing percentages of DV on the panel helps people see how different types of food contribute to their overall daily diets. It is important to remember that because there is no bad food, people can use the nutritional information listed on food labels to make healthy diet choices. Figure 5.48 is an example of a nutrition facts label.

Nutrition Facts			
Serving Size 1 Cake (43g)			
Servings Per Container 5			
Amount Per Serving			
Calories 200 Calories from Fat 90			
		% Daily Value*	
Total Fat	10g		15%
Saturated Fat	5g		25%
Trans Fat	0g		
Cholesterol	0mg		0%
Sodium	100mg		4%
Total Carbohydrate	26g		9%
Dietary Fiber	0g		0%
Sugars	19g		
Protein 1g			
Vitamin A	0%	•	Vitamin C 0%
Calcium	0%	•	Iron 2%
*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

Figure 5.48: Nutrition facts label.

The FDA requires a nutrition facts panel to contain certain nutrient information because these nutrients address current health concerns. The order in which the nutrients must appear reflects the current priority of dietary recommendations. The mandatory components are as follows:

- **Serving size and servings per container:** The serving size is the basis for reporting each food's nutrient content and is defined as the amount of food customarily eaten at one time for each food category. The servings per container reflect how many servings are contained within the package. The size of the serving on the food package influences the number of calories and all the nutrient amounts listed on the top part of the label.
- **Total calories and calories from fat:** Caloric content of one serving, as well as the number of calories from fat in a single serving are listed.
- **Total fat and saturated fat:** Total grams of fat in one serving and the number of grams of saturated fat in one serving (included in grams of total fat per serving) are listed.
- **Trans fat:** All labels must list grams of trans fatty acid, also called trans fat, which has been shown to have a negative effect on cholesterol and heart health. Like the other fats, the amount of trans fat is listed as the number of grams in one serving.
- **Cholesterol:** Cholesterol is listed in milligrams, and the percentage of daily values is based not on calories, but on a daily recommendation of 300 milligrams or less.
- **Sodium:** Sodium is listed in milligrams with a percentage of daily values based on a daily recommendation of 2,400 milligrams or less. Figure 5.49 is an example of sodium percentages.
- **Total carbohydrate, dietary fiber, and sugars:** Dietary fiber and sugars are included in a food's total carbohydrate content. The percentage of dietary fiber is based on a daily recommendation of 25 grams. This has been associated with decreasing cholesterol and aiding in food transport through the digestive tract.
- **Protein:** The total grams of protein in one serving are listed.
- **Vitamin A, vitamin C, calcium, and iron:** The FDA requires the label to list vitamins A and C and the minerals calcium and

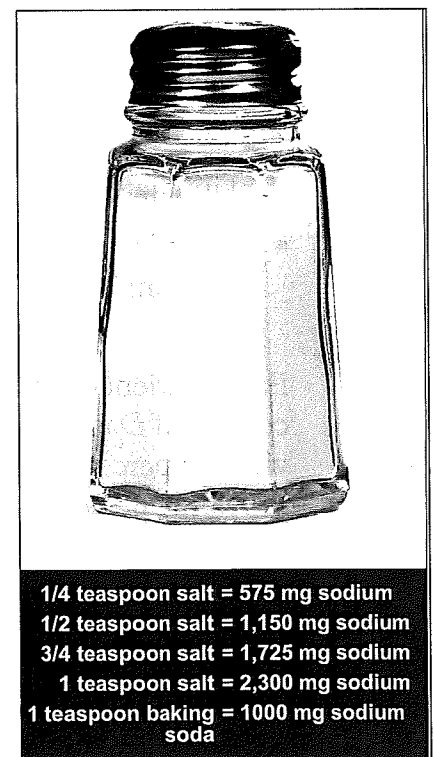


Figure 5.49: Sodium percentages.

iron because of their connection to health conditions like osteoporosis and anemia.

The Problem of Obesity

Overweight and obesity are health problems that individuals can overcome with an improved diet. A person who is overweight or **obese** has a weight that is greater than what is generally considered healthy. These terms also identify ranges of weight that have been shown to increase the likelihood of certain diseases and other health problems.

Teen and childhood obesity continues to grow at an alarming rate. According to the U.S. Centers for Disease Control and Prevention (CDC), about 16 percent of U.S. children and teens, aged 6 to 19, are obese.

Overweight and obesity ranges are determined by using weight and height to calculate a number called the body mass index (BMI). BMI is used because, for most people, it correlates with their amount of body fat. It is important to remember that although BMI correlates with the amount of body fat, it does not directly measure body fat. As a result, some people, such as athletes, may have a BMI that identifies them as overweight even though they do not have excess body fat. Figure 5.50 demonstrates how to compute BMI.

BMI can be calculated by:

$$\text{BMI} = \frac{\text{weight in pounds} \times 703}{\text{height in inches}^2}$$

Interpreting BMI:

Below 18.5...Underweight

18.5-24.9...Normal

25.0-29.9...Overweight

30 and above...Obese

BMI CALCULATOR

$$\text{BMI} = \frac{\text{weight in pounds} \times 703}{\text{height in inches}^2}$$

Below 18.5 - Underweight
18.5-24.9 - Normal
25.0-29.9 - Overweight
30 and above - Obese

Figure 5.50: How to calculate BMI.

According to the CDC, the following percentages of U.S. adults are overweight or obese:

- An estimated 65 percent of U.S. adults aged 20 years and older are either overweight or obese.
- An estimated 30 percent of U.S. adults aged 20 years and older, over 60 million people, are obese.

Several causes of obesity are known. It typically occurs because of a combination of these factors:

- **Poverty and food insecurity:** Psychological food issues may develop after any period of extreme hunger or starvation.
- **Family history:** Children of obese adults have a greater chance of becoming overweight or obese themselves. Reasons include genetics and family lifestyle.
- **Lack of physical activity:** Lack of physical activity in today's U.S. lifestyle also contributes to obesity because the excess calories consumed are not burned off. Today's activity levels have declined, but the human body's capabilities and needs have not changed.
- **Excessive caloric intake for their needs:** Some reasons for eating too much might include lack of nutrition knowledge, large portion sizes, emotional reasons, or enjoyment of food.

Obesity is the result of many connected factors. These factors must be managed so that the number of calories a person consumes matches the calories that person needs for his or her lifestyle. Generally, this means that people must reduce their caloric intake or increase their amount of physical activity, or both. Keeping these two balanced and part of a daily routine can help most individuals achieve weight control.

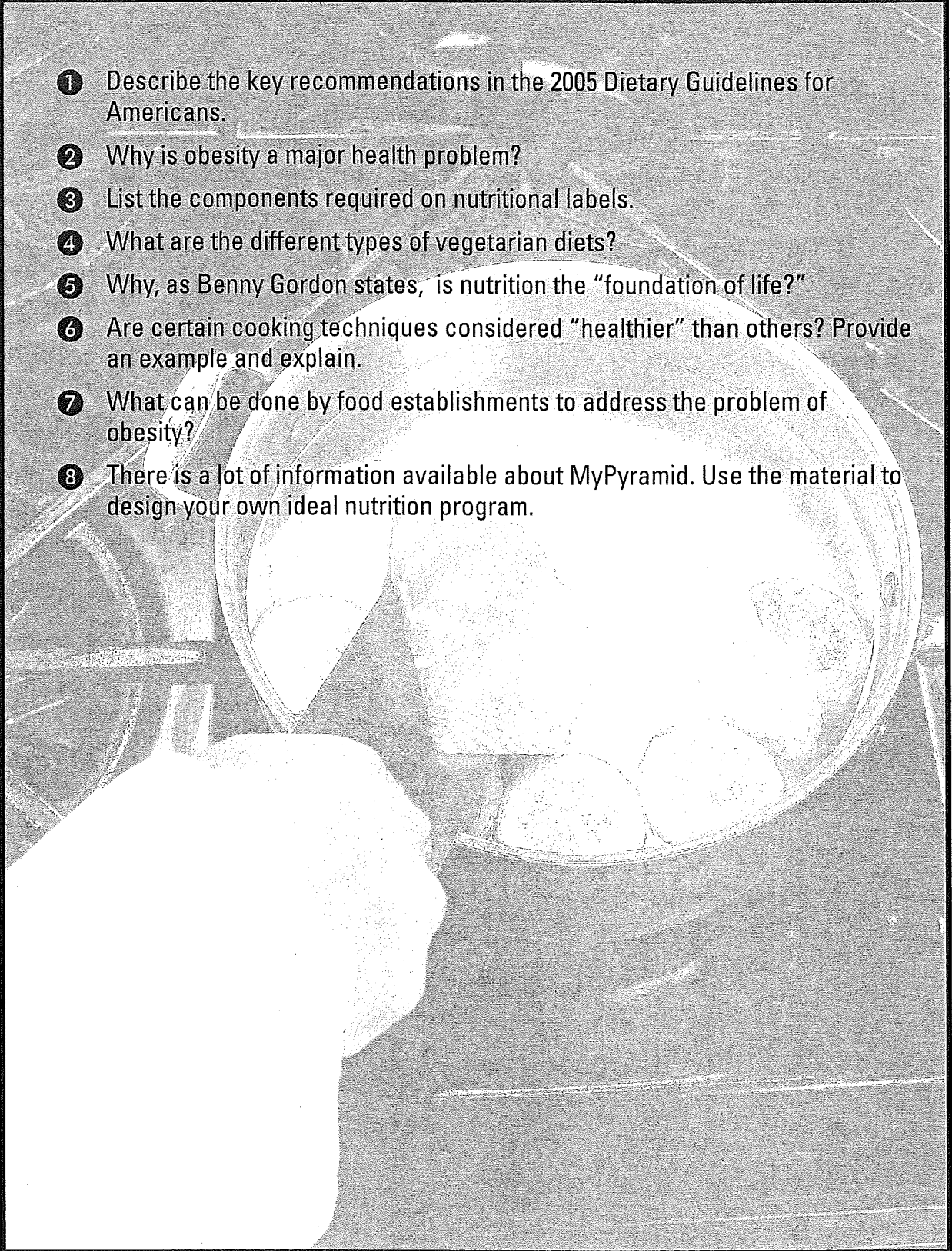
Summary

In this section, you learned the following:

- A healthy diet emphasizes fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products. It includes lean meats, poultry, fish, beans, eggs, and nuts. And it is low in saturated fats, trans fats, cholesterol, salt, and added sugars.
- The Dietary Guidelines for Americans offer advice for healthy people over the age of two about food choices to promote health and reduce risk for major chronic diseases.
- MyPyramid teaches people how to eat a balanced diet from a variety of food groups without counting calories, how to include physical activity in their daily lives, and how to adjust food intake for the amount of activity.
- A nutritional label is useful in selecting food for a healthy diet. Nutrition labels are required to have serving size, servings per container, and total calories. They also list calories from fat, total fat and saturated fat, trans fat, cholesterol, sodium, total carbohydrates, total dietary fiber, total sugar, protein, vitamin A, vitamin C, calcium, and iron.
- Obesity is considered a major health problem. It can be prevented by eating a healthy diet, exercising, and eating fewer calories.

Section 5.4 Review Questions

- 1 Describe the key recommendations in the 2005 Dietary Guidelines for Americans.
- 2 Why is obesity a major health problem?
- 3 List the components required on nutritional labels.
- 4 What are the different types of vegetarian diets?
- 5 Why, as Benny Gordon states, is nutrition the “foundation of life?”
- 6 Are certain cooking techniques considered “healthier” than others? Provide an example and explain.
- 7 What can be done by food establishments to address the problem of obesity?
- 8 There is a lot of information available about MyPyramid. Use the material to design your own ideal nutrition program.



Section 5.4 Activities

1. Study Skills/Group Activity: Vegetarian Menu

Work with two other students to develop a vegetarian menu that provides adequate protein and iron. Choose lacto-vegetarian, ovo-vegetarian, lacto-ovo-vegetarian, or vegan.

2. Activity: Database Research

Pick three foods. Research online databases to determine the nutrient content of these foods, including the amount of protein a person would receive and the number of calories from fat.

3. Critical Thinking: WHO?

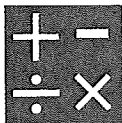
What is the role of the World Health Organization (WHO) in nutrition? What are its services? How does it deliver its services?

Case Study Follow-Up ***Working in the Kitchen***

At the beginning of the chapter, Alex was beginning his training on kitchen equipment and cooking techniques.

1. Why did Chef Jean train Alex on professionalism before teaching him about kitchen equipment and cooking techniques?
2. Alex is working as a prep cook, and the kitchen employs skilled stewards and dishwashers. Why is it important for him to know how to care for and maintain kitchen equipment?
3. How will Alex's slowly improving math skills be used in his daily *mise en place*?
4. How much responsibility should a young cook like Alex be given in a professional kitchen?

Apply Your Learning



Crack Some Eggs

Crack six eggs, separating the whites from the yolks. Measure the volume and weight of the six whites and the six yolks. What is the ratio between the volume of the whites and the yolks? What about the weight?

Then whip the whites, first to soft peaks, then to medium peaks, and then to stiff peaks. At each stage, measure the volume of the whipped whites. By what percentage has the volume increased at each stage? Next, whip the yolks until they are pale yellow and fluffy. Measure the volume. By what percentage has this increased over the original unwhipped volume? What is the ratio between the soft-peak whites and the whipped yolks; between the medium-peak whites and the yolks; and the stiff-peak whites and the yolks?



Time Line for Making a Reuben Panini

A popular menu item at your casual-dining restaurant is a Reuben panini: house-cured pastrami sliced thinly and piled onto rye bread, and then topped with Swiss cheese, house-made sauerkraut, and

Russian dressing, before being pressed in a panini machine and served hot with freshly fried potato chips. What components of this dish can be made ahead?

Write a time line for making this dish, along with lists of the ingredients and equipment you will need.



Maillard Reaction

Think about a steaming chunk of chicken in your favorite soup recipe. Now think about a piece of grilled chicken with perfect crosshatching. Both are delicious, but the flavors are very different. Why?

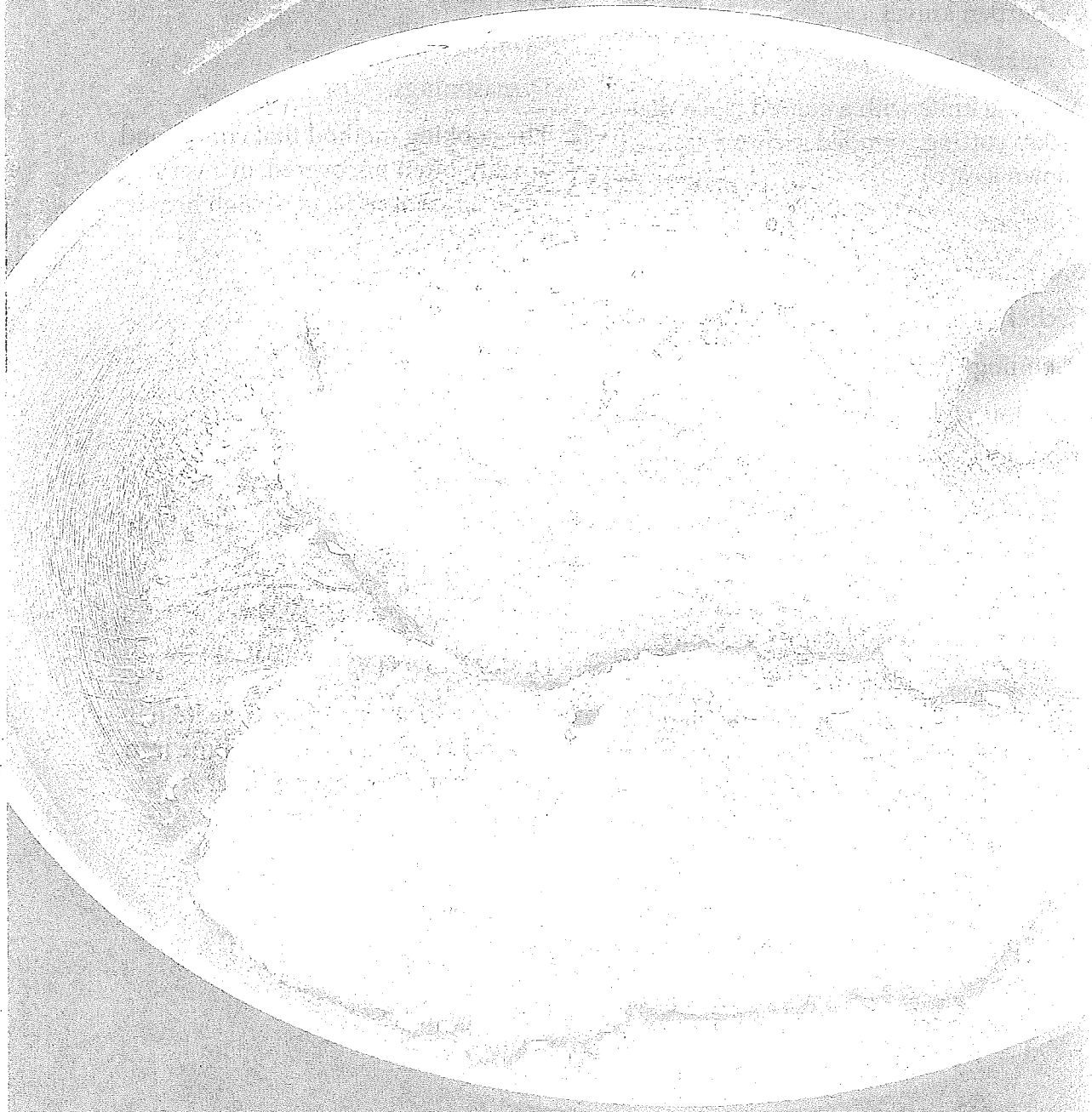
When certain foods containing both amino acids and sugars are cooked with dry-heat methods, a browning reaction occurs, resulting in savory, complex flavors and aromas. This is known as the Maillard reaction. The grilled chicken is affected by the Maillard reaction, but the chicken in the soup is not (unless, of course, the chicken was treated to a dry-heat cooking method before being added to the soup).

Research the Maillard reaction, and then cook two chicken breasts, one by a dry-heat method and one by a moist-heat method. What have you learned? Write three paragraphs on your findings.

Critical Thinking

Cooking Method for Your Restaurant

Your 100-seat casual restaurant will open later this year. What is your theme, and how will your menu choices reflect that theme? Select three cooking methods discussed in this chapter, and develop an entrée recipe based on each one. Plan how each plate will be designed, including all other components (vegetables, starch, sauce). Write up your plan, providing diagrams of your plate presentations.



Exam Prep Questions

- ① A mandoline is used to
 - A. hone knives.
 - B. slice precisely.
 - C. sharpen knives.
 - D. make a turned cut.
- ② A paring knife with a curved blade that makes cutting rounded surfaces easier is known as a(n)
 - A. tourné.
 - B. scimitar.
 - C. chef's knife.
 - D. boning knife.
- ③ A sautoir is a pan with
 - A. straight sides and a long handle.
 - B. high, sloped sides and no handle.
 - C. the shape of a stockpot, but no handles.
 - D. a wide, shallow bottom and a long handle.
- ④ What is the meaning of the French term *mise en place*?
 - A. To work smart
 - B. To put in place
 - C. To listen carefully
 - D. To place on a dish or plate
- ⑤ The leaves, stems, or flowers of an aromatic plant are
 - A. spices.
 - B. herbs.
 - C. flavors.
 - D. seasonings.
- ⑥ The cooking method that cooks food quickly, often uncovered, in a very small amount of fat over high heat is
 - A. stewing.
 - B. sautéing.
 - C. pan-frying.
 - D. simmering.
- ⑦ Poaching requires a cooking temperature of
 - A. 200°F–210°F.
 - B. 160°F–180°F.
 - C. 250°F–260°F.
 - D. 300°F–310°F.
- ⑧ The transfer of heat from one item to another when the items come into direct contact with each other is known as
 - A. radiation.
 - B. *sous vide*.
 - C. convection.
 - D. conduction.

- 9 Which cooking method requires longer cooking times and is most often used with large cuts of meat or poultry?
- A. Grilling
 - B. Roasting
 - C. Poaching
 - D. Pan-frying
- 10 A braised dish usually made with red meat and vegetables that includes red wine and seasoning is called
- A. daube.
 - B. *sous vide*.
 - C. *estouffade*.
 - D. pot roasting.