CHAPTER 5

ADOPTING A HEALTHFUL DIET

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INTRODUCTION

Americans know much more—and seem to care much more—about having a healthy diet than ever before. A number of surveys have shown that we are cutting our consumption of high-fat meats and whole-milk dairy products, while increasing the amount of fish, chicken, pasta, grains, and fresh fruits and vegetables we eat. Food manufacturers are beginning to respond: the array of low-fat, or even non-fat, and low-sodium products has burgeoned; what's more, many have been reformulated as food science has become more sophisticated. So-called “healthy” foods now taste better than they did as recently as a year or two ago. Even fast-food restaurant chains have reacted, replacing animal fats with vegetable fats in some of their fried foods, cutting the percentage of fat in their hamburgers, offering grilled as well as deep-fried chicken, and opening salad bars.

As a result, the average amount of fat in the typical American diet has dropped from a high of 42 percent of calories in 1960 to its current level of about 37 percent. Animal products, which were the source of 70 percent of fat consumed in 1960, were only 57 percent in 1982, a reflection in part of the public’s switch to margarine in place of butter and the disappearance of lard in many commercial and homemade baked goods.

Even so, those who follow food trends note that sales of premium ice creams and high-fat cheeses have increased exponentially, as has consumption of soft drinks and sweets. Restaurateurs find that even those who conscientiously order fish and steamed vegetables for dinner “reward themselves by having the fudge pie for dessert. About half of all Americans are overweight. There are vast numbers of people who haven’t yet been persuaded to change their eating habits, and legions more who are confused by seemingly conflicting claims (“Oat bran lowers cholesterol” vs. “Oat bran is no better than other fibers”), or who want to change but don’t know how to begin. Average intake of saturated fat is at least 50 percent higher than most experts believe it should be, while cholesterol and sodium intake levels are twice the recommended levels.

THE TYPICAL AMERICAN DIET AS A RISK FACTOR

At the center of this concern about the foods we eat is strong evidence implicating diet in the development of coronary artery disease, high blood pressure, stroke, and other vascular diseases, with additional
evidence suggesting linkage to obesity, breast cancer, colon cancer, adult (Type II) diabetes, and diseases of the liver, kidneys, and gallbladder.

Of greatest concern are diseases of the heart and blood vessels, which together account for almost half of all deaths in this country. The common denominator for most of these diseases is atherosclerosis, which is caused by the buildup of plaque—deposits of fatty substances, cholesterol, fibrous tissue, and calcium—in the inner lining of the arteries. This buildup may be fueled by an excess of cholesterol and other fats circulating in the blood (serum cholesterol and triglycerides). The main contributor to this excess is a diet high in fat—especially saturated fat—as well as dietary cholesterol. This relationship is explained later in this chapter and in greater detail in Chapter 4, which also makes the case for decreasing serum cholesterol levels in order to lower the risk of coronary heart disease.

The risk of high blood pressure is also affected by diet. Chapter 12 explains how excess sodium may, in susceptible individuals, increase this risk and gives practical advice for decreasing sodium as a possible means of preventing or treating high blood pressure. Although the dietary recommendations in this chapter are not specifically meant for people with hypertension, the emphasis on fresh fruits, vegetables, and meats, rather than on canned or highly processed ones, automatically reduces the daily consumption of sodium. About one-third of sodium in the average diet comes from processing, while another third is added in cooking or at the table. The remaining third is found naturally in foods.

The total number of calories in the diet, as well as the proportion of those calories that comes from fat, has been associated with coronary artery disease. Caloric intake that exceeds the amount needed to fuel the body’s activities results in excess weight. An individual whose weight exceeds the desirable level by 20 percent or more is considered obese, and obesity is an independent risk factor for heart disease. In addition, it affects blood pressure and blood cholesterol and triglyceride levels and contributes to the development of diabetes.

For most adults, the body’s need for calories declines with age. Following the section on implementing the dietary recommendations in this chapter is a section designed to help people achieve and maintain a desirable weight.

Although the main concern here is to help readers lower their risk of heart disease and stroke, the prudent diet that is recommended is basically the same one endorsed not only by the American Heart Association and the National Heart, Lung, and Blood Institute but also by the American Academy of Pediatrics, American Dietetic Association, American Cancer Society, National Cancer Institute, American Diabetes Association, the Centers for Disease Control, and the U.S. Departments of Agriculture and Health and Social Services. The dietary recommendations are appropriate for all healthy Americans over the age of two. (See box, “Low-Fat Diets and Children.”)

These same dietary changes are appropriate for people who already have elevated blood cholesterol (above 200 mg/dl), coronary heart disease, or cerebrovascular disease. They are important as well for people who have had coronary artery bypass grafts, which are as subject to atherosclerosis as the arteries they replace. At Yale, our emphasis is on the gradual introduction of changes. (See box, “Magic Bullets.”)

In treating most heart disease patients we begin with

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**Low-Fat Diets and Children**

The American Academy of Pediatrics and the American Heart Association recommend the same low-fat diet for children overage 2 that is recommended for adults. Before age 2, children need a higher percentage of fat for proper growth and organ development. There have been disturbing cases of failure to thrive (slowed growth and development) in children of middle-class families in which having sufficient food to eat should not be a problem. Unfortunately, in their desire to protect their children against future disease, parents have sometimes gone overboard in restricting food intake.

Children need sufficient calories to fuel growth and provide energy for their daily activities. Because they cannot eat large quantities of food at any one time, they need a certain amount of food that is calorically dense—i.e., other words, fat. After children reach 24 months, parents can gradually introduce low-fat dairy products and make other sensible changes. A good place to curb fat intake is in snack food, by offering fruit, raw vegetables, rice cakes, and ginger snaps, for example, in place of potato chips and cream-filled cupcakes.

While it is important to guard against obesity, children need to develop a healthy attitude toward food. It is better to encourage regular exercise in place of watching television than to make dieting an obsession.

A parent who is considering making changes in a child’s diet should consult the child’s pediatrician to be sure that the changes are appropriate and will still provide sufficient fat and calories to promote proper growth.
diet and other life-style measures. If the diet recommended in this chapter does not produce significant reductions in levels of serum cholesterol in six to nine months, medical intervention may be necessary. This should be individualized for each patient and done in consultation with a physician and a registered dietitian. It may take the form of further reductions in dietary cholesterol and saturated fat, and it may include simultaneous introduction of drug therapy.

This chapter provides practical guidelines for shifting diet in a healthier direction: eating more whole, or unprocessed, grains, cereals, legumes, fruits, and vegetables, for example. At the same time, the emphasis is on eating smaller portions, consuming fewer calories, and consuming less fat (especially saturated fat), cholesterol, sodium, and alcohol. To understand how to translate all these recommendations into everyday menus, it is helpful to have a brief introduction to the main elements of a balanced diet.

**DIETARY COMPONENTS**

The energy the body needs to carry out its basic functions comes from three sources: carbohydrates, proteins, and fats. Most foods are a mixture of more than one energy source. Meat and cheese, for example, are considered protein foods, but they can have large amounts of fat. Except for processed meats, such as luncheon meats, these animal products have no carbohydrates. (Milk is the only animal product that contains a significant amount of carbohydrates, in the form of lactose, a type of sugar.) Foods generally classified as carbohydrate foods, which are plant products, can have high amounts of protein, are usually very low in fat, and rarely contain saturated fats. Fats, while found in other foods, are most familiar in their pure forms, such as butter, margarine, and oil. When foods containing these three basic elements are combined in appropriate proportions and in a variety of

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**"Magic Bullets"**

Every few years another quick dietary fix seems to capture the attention of people who are looking for ways to have their cake, and eat it too. In the mid-1980s, reports of a lower incidence of coronary heart disease among Greenland Eskimos, who eat a diet high in oily varieties of fish, intrigued nutrition researchers. The key element seemed to be omega-3 fatty acids, a type of polyunsaturated oil found in these fish and to a lesser degree in other types of fish and in plants. Using concentrated sources of omega-3 in small, controlled clinical trials involving heart disease patients, the researchers confirmed that the oil could lower blood levels of very-low-density cholesterol and triglycerides. They also found that at certain doses the oil tended to thin the blood. In some patients, it actually caused gastrointestinal bleeding.

Unfortunately, this did not deter some manufacturers from marketing fish-oil capsules to people looking for a magic bullet. The American Heart Association and others recommend that the public get fish oil from fish rather than from capsules. In the late 1980s, oat bran replaced fish oil as a painless way to lower serum cholesterol without resorting to more major dietary changes. Within months, supermarket shelves were stocked with everything from oat bran beer to oat bran potato chips. What was ignored was research indicating that the oat bran was effective in conjunction with a low-fat diet. Just as quickly as oat bran was embraced, it was discarded after the publication in the New England Journal of Medicine of research—later criticized as poorly designed—showing that oat bran is not effective. Many members of the public missed the point on both counts: Oat bran alone—or in high-fat products such as potato chips—is not the answer, but as part of a low-fat diet it can be another way to help control serum cholesterol. Oat bran is still available as it was before—plain, in rolled oats, and in some oat-based cold cereals (those with no more than 1 to 2 grams of fat per serving are best).

What will be the magic bullet of the 1990s? Some nutrition watchers think garlic—touted as a cure for everything from constipation to the common cold—may be next in line. Epidemiologic studies show that populations that eat large amounts of garlic have a lower incidence of coronary heart disease. These populations, it should be noted, also eat large quantities of onions, which confounds the data. Although some researchers feel there may be a place for garlic as there is for oat bran, it is far too early to make recommendations. Further research is under way to document preliminary studies from Germany showing a 10 to 12 percent reduction in serum cholesterol attributed to garlic intake.

The point of all this is that decisions about diet, either positive or negative, are complex and should never be made on the basis of one study. There are no magic bullets! Dietary change is a gradual process that requires thought and effort.
forms, they make up a balanced diet that provides the body with all the vitamins and minerals it needs and a sufficient amount of energy to function.

**CARBOHYDRATES**

Carbohydrates are the body’s major energy source, fueling the activities of the brain, central nervous system, and muscles. What the body doesn’t use immediately as glucose, it converts and stores as glycogen and fat. Glycogen, which is stored in the liver and the muscles, can be broken down quickly to restore blood glucose levels rapidly when they drop or to provide fuel for exercise. The amount of glycogen that can be stored is limited; the amount of fat, unfortunately, is not.

There are three main types of carbohydrates: starches (also called complex carbohydrates), which are found primarily in cereals, grains, and starchy vegetables; sugars (also called simple carbohydrates), which occur naturally in fruits, berries, and some vegetables, and are also found in refined form as table sugar and syrup and in processed foods; and fibers, which are found in whole grains, beans, legumes, fruits, and vegetables.

Sugar is best obtained from fruits and certain vegetables, because they provide vitamins, minerals, and fiber, rather than from foods high in refined sugars (such as commercial baked goods), which add nothing but calories and may also be high in fat. While there is no evidence that too much sugar, refined or otherwise, will lead to high blood sugar (hyperglycemia), glucose intolerance, or diabetes, it may contribute to obesity, which is a risk factor for diabetes and heart disease.

Starches, having suffered for many years from an image problem, are finally being recognized as mainstays of a healthy diet. No longer considered lowly peasant food (or worse, fattening!), they now appear in the trendiest restaurants in innovative dishes drawn from a multitude of cuisines. The public is coming to recognize that potatoes, breads, beans, rice dishes, and pastas are actually relatively low in calories for the amount of satiety (the feeling of fullness) they offer. Their poor reputation has come from the fact that we have traditionally prepared and eaten them with butter, cream sauces, and cheese.

Complex carbohydrates should be represented in the diet in more servings per day—6 to 9—than any other category of food. Fortunately, they come in great variety and tend to be delicate in taste, so they lend themselves to the addition of herbs, spices, and other ingredients that heighten flavor and texture.

Fiber, or roughage, is a type of carbohydrate that is not broken down by the body during digestion. It can be divided into two types, soluble and insoluble, and a healthy diet should have some of each. (See box, “Sources of Dietary Fiber.”) Soluble fibers—such as pectin, guar (a common thickening agent), and the fibers found in barley, oat bran, legumes, and dried beans—are those that mix with water to become a gummy gel. (Oatmeal is a good example of a soluble fiber.) Research suggests that soluble fiber may help lower the level of cholesterol, especially low-density-lipoprotein (LDL) cholesterol, in the blood. A diet that is high in complex carbohydrates and fiber and in which about one-third of the fiber is soluble has been shown in several studies to lower insulin requirements and improve blood-sugar control in some diabetics.

Insoluble fibers are the parts of plants that do not dissolve in water, but pass through the digestive system essentially intact. In fact, they absorb water and thus produce a soft, bulky stool. These fibers (cellulose is the most common kind) are found in most grains and seeds and in the skins of fruits and vegetables. High-fiber foods typically are low in calories and fat and thus beneficial to people trying to control their weight or their blood cholesterol levels.

Noting that populations that eat a diet high in insoluble fiber have low rates of colon cancer, some scientists believe that insoluble fiber may play a role in reducing the risk of this type of cancer. Although there is no consensus on this, there is agreement that

<table>
<thead>
<tr>
<th>Sources of Dietary Fiber</th>
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<tbody>
<tr>
<td><strong>High in soluble fiber</strong></td>
</tr>
<tr>
<td>Apples</td>
</tr>
<tr>
<td>Barley</td>
</tr>
<tr>
<td>Beans</td>
</tr>
<tr>
<td>Broccoli</td>
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<tr>
<td>Cabbage</td>
</tr>
<tr>
<td>Carrots</td>
</tr>
<tr>
<td>Corn</td>
</tr>
<tr>
<td>Oat bran</td>
</tr>
<tr>
<td>Oats</td>
</tr>
<tr>
<td>Peas</td>
</tr>
<tr>
<td>Plums</td>
</tr>
<tr>
<td>Potatoes</td>
</tr>
<tr>
<td>Psyllium</td>
</tr>
</tbody>
</table>
insoluble fiber helps prevent constipation and, by promoting a feeling of fullness, may aid in weight control.

PROTEIN

Protein is the key element in the body’s metabolic processes. It is vital to the growth and maintenance of tissues that makeup the brain, muscles, connective tissue, skin, hair, blood, and organs, and to the production of infection-fighting cells and antibodies.

Because protein is so essential to life, the body has developed a unique system for recycling it. The proteins in the body are constantly being turned over and broken down, and the end products excreted. When protein is consumed in the proper amounts it is broken down by the body to provide new building blocks, called amino acids, for the body’s own proteins. However, when more protein is eaten than is necessary for this replacement process, the excess amino acids are used as fuel or stored as fat.

There are 20 kinds of amino acids, and the body can produce 11 of them. The remaining nine, known as the “essential” amino acids, must be obtained from food. Most of the protein from animal sources—meat, poultry, fish, and diary products—is “complete”—that is, it contains all nine essential amino acids in the proper proportions. In contrast, vegetable sources of protein are incomplete—they lack certain essential amino acids. Strict vegetarians can nevertheless get the full complement of amino acids by combining legumes with grains, nuts, or seeds. Rice with beans and pasta with peas are good combinations.

It was once assumed that because protein is so vital to supporting the maintenance of the body, the higher the protein content, the better the diet. Now, however, it is recognized that excess protein is not risk-free. A high-protein diet makes the kidney work harder to excrete urea, the end product of protein-amino-acid breakdown. The kidneys work at full capacity after a high-protein meal, which a normal kidney can handle without difficulty. People with diabetes mellitus, especially insulin-dependent diabetics, are prone to kidney disease, and the progression of this disease may be slowed by a diet very low in protein.

FAT

Although fats have taken on a villainous role in the minds of many people, they are essential in small amounts to promote growth in children, for energy reserves, to carry vitamins A, D, E, and K in the bloodstream, and to manufacture prostaglandins, sex hormones, and cell membranes. They also keep skin from getting too dry, and in food they add flavor, texture, and aroma. They help promote a feeling of fullness (although the reason for this is not clearly understood) and keep the feeling of hunger from returning as quickly as it does after protein and carbohydrate meals.

Fats are part of the broad category of lipids, which includes fatty acids, triglycerides, sterols, cholesterol, and other substances not soluble in water. Dietary fats, as well as oils (which are a form of fat), can be classified as saturated, nonsaturated, or polyunsaturated. Most fat-containing foods, even those such as oil that are 100 percent fat, contain a mixture of these three types.

Saturated fat interferes with the removal of cholesterol from the blood and thus has the effect of raising the levels of serum cholesterol—the cholesterol circulating in the bloodstream. This happens because saturated fat appears to curtail the entry of the cholesterol-carrying low-density lipoproteins (LDLs) into the cells. When they do not get enough LDL cholesterol, the cells (especially those in the liver) make their own. The excess production is returned to the bloodstream, raising serum cholesterol levels.

Saturated fats, which can also serve as a precursor to cholesterol, have a greater effect on raising serum cholesterol than dietary cholesterol itself. In contrast, monounsaturated and polyunsaturated fats help lower the amount of total cholesterol in the blood by lowering LDL-cholesterol, although polyunsaturates also seem to lower HDL (the good cholesterol).

With the exception of the tropical oils—palm, palm kernel, and coconut—saturated fats come from animal sources and tend to be solid at room temperature. The most familiar sources are butter, cheese, and the fat found in red meats. Monounsaturated oils are liquid at room temperature, although they may become solid in the refrigerator. Major sources of monounsaturates include canola, olive, peanut and cashew oils, as well as olives, cashews, peanuts, and peanut products. Polyunsaturated oils, which are liquid even at cold temperatures, include cottonseed, safflower, sunflower, soybean, and corn oil, as well as the oils found in almonds, filberts, and pecans. (See box, “Sources of Fats and Oils.”)

Hydrogenation, commonly used in the manufacture of margarine, is a chemical process used to make liquid fats more solid. In doing so, it makes them more saturated. For this reason, scientists once believed that margarine containing large amounts of hydrogenated oils were not as beneficial as softer margar-
HOW TO LOWER YOUR RISK OF HEART DISEASE

Sources of Fats and Oils

<table>
<thead>
<tr>
<th>Saturated</th>
<th>Mono-unsaturated</th>
<th>Poly-unsaturated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter</td>
<td>Avocado</td>
<td>Almonds</td>
</tr>
<tr>
<td>Cheese</td>
<td>Canola oil</td>
<td>Corn oil</td>
</tr>
<tr>
<td>Chocolate</td>
<td>Cashews</td>
<td>Cottonseed oil</td>
</tr>
<tr>
<td>Cocoa butter</td>
<td>Olives</td>
<td>Flibert nuts</td>
</tr>
<tr>
<td>Coconut</td>
<td>Olive oil</td>
<td>Fish</td>
</tr>
<tr>
<td>Coconut oil</td>
<td>Peanuts</td>
<td>Margarine (most)</td>
</tr>
<tr>
<td>Cream</td>
<td>Peanut oil</td>
<td>Mayonnaise (commercially made)</td>
</tr>
<tr>
<td>Egg yolk</td>
<td>Peanut butter</td>
<td>Pecans</td>
</tr>
<tr>
<td>Hydrogenated oil</td>
<td></td>
<td>Safflower oil</td>
</tr>
<tr>
<td>Lard</td>
<td></td>
<td>Salad dressing</td>
</tr>
<tr>
<td>Meat</td>
<td></td>
<td>Soybean oil</td>
</tr>
<tr>
<td>Milk</td>
<td></td>
<td>Sunflower oil</td>
</tr>
<tr>
<td>Palm oil</td>
<td></td>
<td>Walnuts</td>
</tr>
<tr>
<td>Poultry</td>
<td></td>
<td></td>
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<tr>
<td>Vegetable shortening</td>
<td></td>
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</tr>
</tbody>
</table>
In addition:

- Cholesterol intake should be no more than 250 milligrams a day.
- Sodium intake should be 1,000 to 3,000 milligrams a day.

**IMPLEMENTING THE DIET**

**DETERMINING CALORIE NEEDS**

Implementing the diet requires doing some calculations. Although this may seem a complex process, it only has to be done once. Once the daily fat grams are determined, it’s only a matter of keeping track of these. And after a short while on a low-fat diet, as an individual begins to develop a sense of how many grams are in various foods, even counting the grams becomes unnecessary.

Since the recommendations listed above are based on total calorie intake, the first task is to figure out how many calories are needed daily. This number depends on height, weight, gender, age, activity level, and whether the goal is to maintain or lose weight. The first task is to calculate ideal body weight using Table 5.1 or part A of the box “Calculate Your Calorie Quota.” The reason for the gender difference is that men tend to have a lower percentage of body fat (up to 20 percent is considered acceptable) than women (up to 25 percent is acceptable) and so have a greater percentage of muscle. Since muscle weighs more than fat, men tend to weigh more, inch for inch.

Once a desirable weight level is determined, calorie needs can be figured by calculating the basal metabolic rate (the amount of energy needed just to breathe and carry out bodily functions such as digestion) and then adding calories according to a daily activity level. An easier way is to use the formula in part C of the box “Calculate Your Calorie Quota.” Individuals who need to lose or gain weight should also use part D. (Additional information on weight loss appears at the end of this section.)

**Table 5.1**  
**Ideal (Desirable) Weight**

<table>
<thead>
<tr>
<th>Height(^1)</th>
<th>Weight (lb)(^1)</th>
<th>Men</th>
<th></th>
<th>Women</th>
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<tbody>
<tr>
<td>Feet</td>
<td>Inches</td>
<td>Average</td>
<td>Acceptable weight</td>
<td>Average</td>
<td>Acceptable weight</td>
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<td>1</td>
<td>173</td>
<td>164</td>
<td>204</td>
<td>152</td>
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</table>


Height without shoes, weight without clothes.
HOW TO LOWER YOUR RISK OF HEART DISEASE

FIGURING FAT GRAMS

Once caloric intake has been determined, the next step is to figure the appropriate number of grams of fat to average per day. Fats, as well as proteins and carbohydrates, are usually listed in grams on packaged foods (there are about 28 grams to 1 ounce). There are about 4 calories in every gram of protein or carbohydrate, 7 in each gram of alcohol, and 9 in each gram of fat. So gram for gram, fats have more than twice the calories of carbohydrates or proteins.

The percentage figures in the dietary recommendations are based solely on the caloric contributions of various foods, not their weight or volume. To understand the difference, consider a certain type of ham that claims to be 95 percent fat-free and has 128 calories in a serving of 100 grams (3.5 ounces). That means that in 100 grams it has 5 grams of fat and 95 grams of other ingredients (water, protein, carbohydrates). Thus the claim is true-only 5 percent of the weight comes from fat. But since each gram of fat is 9 calories, 45 of the 128 calories—or 35 percent—comes from fat. Table 5.2 shows how many total grams of fat and grams of saturated fat are appropriate for a given calorie level. Alternatively, take the number of daily calories, drop the final zero, and divide by 3 to get total fat grams; divide by 3 again to get saturated fat.

RECOMMENDED SERVINGS AND PORTION SIZES

Although ultimately individuals will need to consider their average fat-gram allowance in choosing what to eat, most people find it difficult to make the leap from fat grams to menus. An easier way to develop an eating plan is to think in terms of servings per day. Generally, to follow a low-fat, high-carbohydrate diet and still get sufficient calories and nutrients (vitamins
Table 5.2
Maximum Daily Fat Intake by Calorie Level

<table>
<thead>
<tr>
<th>Total calorie level [calories/day]</th>
<th>Maximum total fat (grams/day)</th>
<th>Maximum saturated fat (grams/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>33</td>
<td>11</td>
</tr>
<tr>
<td>1,200</td>
<td>40</td>
<td>13</td>
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<td>1,400</td>
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<td>1,600</td>
<td>53</td>
<td>17</td>
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<tr>
<td>1,800</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>2,000</td>
<td>67</td>
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</tr>
<tr>
<td>2,200</td>
<td>73</td>
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<td>93</td>
<td>30</td>
</tr>
<tr>
<td>3,000</td>
<td>100</td>
<td>32</td>
</tr>
</tbody>
</table>

ADAPTING A HEALTHFUL DIET

The following are exceptions:

- Egg whites are unlimited; egg yolks should be limited to three or four a week, including those used in cooking and baking.
- Shrimp and lobster are low in fat, but somewhat higher in cholesterol than other fish and shellfish, and should be limited to one serving a week.
- Organ meats are high in cholesterol and should be eaten only occasionally. Liver, however, is an excellent source of vitamins and iron (especially important for premenopausal women) and is recommended about once a month.

The spread in the number of servings accounts for a difference in total caloric intake. Thus, while everyone should have at least six servings from the bread and cereal group, 11 servings may only be appropriate for a 6-foot male in his 20s who is not obese. Some people, once they recognize that fish and chicken are more healthful than fatty red meat and that olive oil is better than butter, go overboard and begin to eat the “good” foods in unlimited quantities. Paying attention to the number of servings and portion sizes is crucial to having a healthful diet.

The sizes of standard portions—particularly the meat servings—may come as a surprise to some people. Three ounces (cooked weight) of meat is about the size of one’s palm or a deck of playing cards, a good deal smaller than the T-bone steaks some restaurants routinely serve. On the other hand, some individuals may be daunted by the idea of three to five servings of vegetables. These add up quickly, however, as most people serve more than half a cup of an individual vegetable. The book Sample Heart-Healthy Menus gives examples of daily menus ranging from approximately 1,100 to 1,800 calories.

FOODS TO EMPHASIZE

The recommended diet emphasizes complex carbohydrates, fruits, and vegetables, which are rich in vitamins and minerals and high in fiber. Complex carbohydrates come in great variety and include starchy vegetables (potatoes, corn, and green peas), legumes, grains, and nuts and seeds. Legumes, in turn, consist of beans (black, cranberry, fava, kidney, lima, pinto, mung, navy, pea, and soy, among others), peas (black-eyed, chick, cow, field, and split), peanuts, and lentils. Grains include barley, corn, oats, rice, rye, wheat (including bulgur, wheat germ, and sprouts), as well as...
## Sample Heart-Healthy Menus

### DAY 1

#### Breakfast
- 4 oz fresh squeezed orange juice
- 1 banana
- 1 cup 40% bran flakes
- 4 oz 1% milk
- Coffee

#### Lunch
- 1 cup vegetable medley soup
- 3 oz lean hamburger on whole wheat bun with lettuce, tomato, Bermuda onion slices and ketchup
- 1 medium baked apple with cinnamon
- 8 oz sparkling water with slice of lime

#### Snack
- 3 vanilla wafers
- Club soda with lemon

#### Dinner
- ½ cup fresh garden salad with 1 tablespoon Dijon vinaigrette dressing
- 3 oz chicken piccata
- 1 medium baked potato with fresh chives and 1 tsp margarine
- ½ cup steamed fresh green beans with dill
- 1 peach half with 2 tbsp raspberries

#### Day's total:
- Calories: 1521
- Carbohydrates: 222 gm
- Protein: 74 gm
- Fat: 44 gm

### DAY 2

#### Breakfast
- 4 oz fresh apple juice
- 1 cup raisin bran cereal
- 8 oz 1% milk
- Herbal tea with 1 tbsp honey

#### Lunch
- 2 oz tuna fish salad
- 2 slices whole grain bread
- 4 carrot sticks
- 4 celery sticks
- 2 tbsp herb-vegetable yogurt dip
- 3 fig bars
- 1 cup 1% milk

#### Snack
- 1 oz pretzel sticks
- 8 oz lemon/lime seltzer

#### Dinner
- ¾ cup linguine
- 3 shrimp Fra Diavolo
- 1 slice Italian bread
- ½ cup steamed broccoli with lemon
- Poached pear half with orange sauce

#### Day's total:
- Calories: 1720
- Carbohydrates: 278 gm
- Protein: 67 gm
- Fat: 42 gm

### DAY 3

#### Breakfast
- 1 cup cereal
- 1 tbsp raisins
- 1 tbsp brown sugar
- ¼ whole grain English muffin
- 1 tbsp raspberry preserves
- 1 cup 1% milk
- Coffee

#### Lunch
- 1 cup hearty minestrone soup
- 2 oz honey roasted turkey
- 1 slice rye bread
- 2 tsp mayonnaise
- ¼ cup bean sprouts
- 4 celery sticks
- ¼ cup orange sherbet
- Iced tea with lemon

#### Dinner
- 3 oz poached salmon with lemon and dill marinade
- ¼ cup brown rice
- ¼ cup baked Hubbard squash
- 1 tsp brown sugar
- 2 tsp margarine
- ½ cup fresh huckleberry and rhubarb compote
- 1 cup 1% milk

#### Day's total:
- Calories: 1843
- Carbohydrates: 271 gm
- Protein: 77 gm
- Fat: 55 gm

### DAY 4 (Weekend)

#### Brunch
- 8 oz fresh squeezed orange juice
- 1 Belgian waffle
- 2 tbsp boysenberry syrup
- 1 poached egg
- 1 cup fresh fruit medley
- Coffee with 1% milk

#### Snack
- 3 oat-bran graham crackers
- 1 medium fresh peach
- 8 oz sparkling water with lime

#### Dinner
- 2 oz chicken stir-fried with
- 1¼ cup carrots, broccoli, snow peas, water chestnuts, and scallions
- ¾ cup whole wheat angel hair pasta
- 1 cup watercress and cherry tomato salad
- 1 tbsp herbed vinaigrette dressing
- ½ cup mandarin orange sections
- Iced tea with lemon

#### Day's total:
- Calories: 1137
- Carbohydrates: 168 gm
- Protein: 48 gm
- Fat: 35 gm
flours and cereals made from these grains. Nuts (almonds, Brazil nuts, cashews, filberts, pecans, and walnuts, among others) and seeds (pumpkin, sunflower, and sesame) are carbohydrates that, like legumes and grains, are high in protein. Because they contain more fat, nuts and seeds should be used in smaller quantities than the other complex carbohydrates.

Combining any of the legumes with any of the grains, nuts, or seeds produces the complete array of essential amino acids and thus provides all the protein necessary for a healthy diet. Alternatively, grains can be combined with nuts or seeds. Adding a small amount of a nonfat or low-fat dairy product (such as milk, cheese, or yogurt) to legumes, grains, nuts, or seeds will also satisfy protein requirements.

Other good, relatively low-fat sources of protein include fish, poultry (except duck and goose) without its skin and fat, lean red meat (beef, veal, lamb, and pork), and low-fat or nonfat dairy products. Fish, poultry, or meatless meals should be substituted for meat several times a week. The growing consumer market for fish has made it possible to find fresh or flash-frozen fish thousands of miles from their source. If possible, a variety of fish should be chosen. The more fatty fish, such as salmon, mackerel, herring, rainbow trout, whitefish, and striped bass, are high in omega-3 fatty acids, a form of polyunsaturated fat that is chemically different from the omega-6 fatty acids predominant in vegetable oils. Omega-3 fatty acids may lower blood levels of triglycerides and very-low density lipoproteins (VLDLs). Less oily, milder-tasting fish such as flounder, haddock, cod, and sole are much lower in omega-3 fatty acids, but they are still beneficial, because they are low in fat and cholesterol. Like oily fish, they are also high in protein, zinc, and B vitamins, especially niacin and B.

Shellfish, while somewhat higher in cholesterol and very-low-density lipoproteins (VLDLs) than fish (less oily, milder-tasting fish such as flounder, haddock, cod, and sole are much lower in omega-3 fatty acids, but they are still beneficial, because they are low in fat and cholesterol. Like oily fish, they are also high in protein, zinc, and B vitamins, especially niacin and B. Shellfish, while somewhat higher in cholesterol than fish, are still moderate in cholesterol and low in fat and can be eaten once a week.

Although there are other arguments for eliminating meat from the diet, it is not necessary to give up red meat completely to maintain a low-fat eating plan. It is particularly important for children, teenagers, and women of child-bearing age to consume foods that are good sources of iron. These include fish, leafy green vegetables, and iron-enriched breads and cereals, but the most concentrated source is still lean red meat. It is possible, although it sometimes requires the use of supplements, to get sufficient iron without red meat, but even a few ounces of meat a week provide enough to meet iron requirements for these groups.

For those who want to continue eating meat, the best way to use it is as a side dish, rather than as the main component of a meal. For example, dinner might be mussels (a soft-shell seafood always available in the shell) tossed with herbs, carrots, broccoli, zucchini, and mushroom and some julienned strips of lean beef.

Lean cuts of beef include round tip, top loin, top round, eye of round, tenderloin, top sirloin, rump, and flank (trimmed). Lean pork cuts include tenderloin, sirloin roast, and loin chops. The leg is the leanest cut of lamb, and all cuts of veal are low in fat except the breast.

Skim or 1 percent fat milk, buttermilk, skim milk cheeses and yogurt, and margarine should be used in place of whole milk, high-fat cheeses, cream, and butter. The number of new nonfat products—cottage cheese, yogurt, frozen yogurt, mock sour cream, and mozzarella and ricotta cheeses, among others—seems to grow by the month. These dairy products are also high in calcium, which is important for children, teenagers, pregnant and nursing women, and premenopausal women in general (to help prevent the bone-thinning disease osteoporosis).

Foods and Beverages to Use in Moderation

Caffeine-containing beverages, especially coffee, have been the object of much study, and the results have been conflicting and confusing. Some of the studies showing that coffee drinking increases the risk of heart disease have turned out to be poorly designed (they didn’t consider the effects of tobacco in coffee drinkers who also smoke, for example, or they used boiled coffee, not generally drunk by Americans). A careful, large-scale study of more than 45,500 men reported in the New England Journal of Medicine in 1990 now seems to have satisfied the critics. It found that coffee drinking, even at levels of 6 or more cups a day, was not associated with an increased risk of heart disease or stroke. In fact, the only increased risk seemed to be with 4 or more cups a day of decaffeinated coffee. In any case, most experts feel that the key for healthy adults without symptoms is still moderation—no more than 5 cups a day. For those in whom caffeine increases anxiety, exacerbates arrhythmias, or produces other undesirable symptoms, even 1 or 2 cups maybe too many.

Moderation is also the watchword for adults who drink alcoholic beverages. While light drinking may raise protective HDL cholesterol levels, excessive alcohol consumption can raise blood pressure and triglyceride levels. It can also cause a type of heart
disease known as alcoholic cardiomyopathy. The generally accepted recommendation for those who drink is no more than 1 to 2 ounces of ethanol a day. This translates into about 2 glasses of beer or wine or 2 ounces of hard liquor. (For additional information, see Chapter 6.)

The other important reason to limit alcohol consumption is weight control. Each gram of alcohol has 7 calories (there are about 200 calories in an ounce), compared to 4 in carbohydrates or protein. More important, calories from alcohol are considered “empty calories,” since they add no nutritive value to the diet. When alcohol is served in a mixed drink, such as a Manhattan or a whiskey sour, the calorie count is even higher.

Foods to useless frequently are those high in cholesterol, such as egg yolks and organ meats, and those high in saturated fat. The list of high-saturated-fat foods is long, but several categories stand out fried foods, luncheon meats (bologna, salami, liverwurst, etc.), rich, creamy desserts, and many commercial baked goods. Careful shoppers can now find some of the more traditional luncheon meats such as pastrami that are made with turkey instead of pork or beef, but some of these substitutes and virtually all of the originals are high in sodium. (See box, “Smart Substitutions.”) Also available are nonfat coffee cakes, nonfat frozen yogurts and low-fat versions of other creamy desserts, and cookies made with unsaturated oils. Many manufacturers have responded to public demand by dropping tropical oils, such as coconut and palm, from their desserts. Food labels that merely say “vegetable oils,” however, are suspect, since this broad category includes tropical oils.

### Smart Substitutions

<table>
<thead>
<tr>
<th>Instead of</th>
<th>Try</th>
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<tbody>
<tr>
<td><strong>Breakfast</strong></td>
<td></td>
</tr>
<tr>
<td>Two scrambled eggs</td>
<td>Egg substitute or one whole egg scrambled with one egg white</td>
</tr>
<tr>
<td>Croissant</td>
<td>Bagel</td>
</tr>
<tr>
<td>White toast with butter</td>
<td>Whole-grain toast with margarine or jelly</td>
</tr>
<tr>
<td>Danish pastry</td>
<td>Small bran or blueberry muffin</td>
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<tr>
<td>Turkey roll sandwich</td>
<td>Fresh turkey breast sandwich</td>
</tr>
<tr>
<td>Pastrami sandwich</td>
<td>Turkey pastrami or lean roast beef sandwich</td>
</tr>
<tr>
<td>Pepperoni pizza</td>
<td>Plain or vegetable (except eggplant parmesan) pizza</td>
</tr>
<tr>
<td>Oil-packed tuna</td>
<td>Water-packed tuna</td>
</tr>
<tr>
<td>New England clam chowder</td>
<td>Manhattan clam chowder</td>
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<tr>
<td><strong>Lunch</strong></td>
<td></td>
</tr>
<tr>
<td>Deep-fried chicken</td>
<td>Oven-crisped chicken</td>
</tr>
<tr>
<td>Roast duck</td>
<td>Roast turkey</td>
</tr>
<tr>
<td>French fries</td>
<td>Baked or boiled potato or rice</td>
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<tr>
<td>Garlic bread</td>
<td>Bread sticks</td>
</tr>
<tr>
<td><strong>Dinner</strong></td>
<td></td>
</tr>
<tr>
<td>Whole milk</td>
<td>Skim or 1% milk</td>
</tr>
<tr>
<td>Soft drinks</td>
<td>Seltzer or sparkling water with fruit juice</td>
</tr>
<tr>
<td>Chocolate malted</td>
<td>Chocolate milk shake with skim milk</td>
</tr>
<tr>
<td><strong>Snacks</strong></td>
<td></td>
</tr>
<tr>
<td>Potato chips</td>
<td>Pretzels</td>
</tr>
<tr>
<td>Oil-popped popcorn</td>
<td>Air-popped popcorn</td>
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<tr>
<td>Molasses cookies</td>
<td>Ginger snaps</td>
</tr>
<tr>
<td><strong>Dessert</strong></td>
<td></td>
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<tr>
<td>Devil’s food cake</td>
<td>Angel food cake</td>
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<tr>
<td>Ice cream pop</td>
<td>Fudge pop</td>
</tr>
<tr>
<td>Ice cream</td>
<td>Ice milk</td>
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<tr>
<td>Frozen yogurt</td>
<td>Frozen nonfat yogurt</td>
</tr>
<tr>
<td>Sherbet</td>
<td>Fruit ice or sorbet</td>
</tr>
<tr>
<td>Apple pie</td>
<td>Baked apple</td>
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MAINTAINING DESIRABLE WEIGHT

According to the 1988 Report of the Surgeon General, the more overweight a person is (up to 19 percent above desirable weight), the greater the risk of premature death. Obesity (20 percent or more above ideal weight for a year or more) is a significant risk factor for coronary artery disease. It also raises the risk of a variety of other health problems, including diabetes, hypertension, and even arthritis and back pain. Table 5.1 can be used as a guide for determining whether a person’s weight is within, above, or below the desirable range for his or her height. This will help insetting individually tailored weight goals. Particularly for those with known heart disease or any other serious medical problem, it is a good idea to consult a doctor and registered dietitian before beginning a weight loss program.

When weight control experts talk about overweight, they are really talking about “overfat.” Because muscle weighs more than fat, a physically fit person who has a greater percentage of body weight as muscle than a sedentary person does can actually weigh more but not be overweight. For this reason, weight tables, while convenient, are not as accurate an indication of whether a person is at his or her ideal weight as are other methods. The simplest of these is the mirror test—if the person looks flabby and fat, chances are he or she is overweight. More elaborate tests include skinfold thickness (measuring body fat with calipers) and underwater weighing.

Individuals can get a general sense of whether they are carrying excess body fat by measuring the fat on the upper arm. Hold the arm out at shoulder level, bend the elbow, and use the thumb and finger of the other hand to gently pinch the flesh on the underside of the upper arm midway between the shoulder and elbow. Remove finger and thumb, keeping them the same distance apart, and measure; anything more than an inch between them is too much.

How excess fat is distributed may also affect the risk of coronary heart disease and other obesity-related diseases. The risk seems to be higher among those who have what is referred to as a male fat-distribution pattern, or an apple, rather than a pear, shape. Apple-shaped people (primarily men and postmenopausal women) tend to carry their excess weight around their waist (the potbelly), while pear-shaped people (primarily premenopausal women) carry their excess weight on the hips, buttocks, and thighs. One explanation for this may be that fat in the abdomen is metabolically more active than fat in other parts of the body. Fatty acids released into the bloodstream when abdominal fat is metabolized find their way into the nearby portal vein, through which they are transported directly to the liver. This in turn stimulates increased cholesterol output.

Hormones seem to control fat distribution, although the tendency toward one pattern or the other is inherited. When estrogen production declines after menopause, women tend to accumulate more abdominal fat and their risk of heart disease rises. A man is at increased risk of heart disease if his waist size exceeds his hip size; for a woman, risk increases if her waist measurement is more than 80 percent of her hip measurement. For example, a woman who has 40-inch hips should not have a waist measurement of more than 32 inches in order to be in the low-risk category. Although nothing can be done to change the inherited fat-distribution pattern, the weight itself can be lost through diet and exercise.

Body weight is governed by a simple equation: The excess calories in the food eaten, minus the calories burned during exercise, equal the extra weight that the body will accumulate. (See box, “The Caloric Equation.”) It is best to tackle both sides of the equation at the same time, eating the same varied, healthful diet advocated in the previous section, but using smaller portions, while exercising with more regularity and vigor. Exercise not only consumes calories in and of itself, it also revs up the body’s metabolic rate so that calories are expended (“burned”) at a higher rate, even at rest. This helps reverse the slowdown in the body’s metabolic “burn rate” that can result from eating less. Not only does exercise aid in losing extra pounds and maintaining ideal weight, it also may be an independent protective factor against coronary artery disease. (See Chapter 7.)

People who are overweight despite eating a healthful, low-fat diet can achieve and maintain an appropriate weight level simply by exercising more and eating less of each food group, without eliminating anything. They can continue to eat the variety of foods they favored all along, but in smaller amounts. The majority of people who are overweight, however, are still eating a diet with excess fat—especially saturated fat. Simply by concentrating on eating less fat, they will consume fewer total calories.

Losing weight is easier than keeping the weight off. All too often, people resort to their old behavior (overeating and inactivity) and gain back their weight—and then some—after “dieting.” The regained weight tends to represent excess body fat rather than muscle. When people allow their weight
HOW TO LOWER YOUR RISK OF HEART DISEASE

The Caloric Equation

You gain one pound of body fat if you consume 3,500 calories more than you expend. If you eat all of the following, you will consume 3,500 calories: a Big Mac, large order of French fries, a small Coca-Cola, 1 cup Häagen-Dazs ice cream, 1 cup honey-roasted cashews and peanuts, and 3 beers.

Conversely, you can lose a pound of body fat by walking 5 miles each day for a week, provided you do not increase your food intake.

to go up and down like a yo-yo, they end up flabbier than when they started. Even people who are not chronic dieters may fall victim to this yo-yo syndrome, as winter inactivity and overeating often cause yearly weight cycling: up in the fall, down in the spring.

To lose weight and maintain an ideal level, individuals have to concentrate on the long haul. The most important factor in effecting a permanent change is changing behavior with respect to food as well as activity. Favorite foods do not have to be eliminated entirely, even if they are high in fat. In fact, cutting out these foods entirely leads to cravings and often results in binges. Instead, the goal is to learn to enjoy them sparingly—for instance, savoring one chocolate chip cookie instead of devouring an entire jar of them at one sitting.

Although all the information needed for successful weight loss is contained here, some people find they do better in a structured program where they get peer support or are accountable to a health professional or group leader. In choosing such a program there are two red flags to watch for. One is a diet program that does not emphasize the crucial role of regular exercise in weight control. The other is any regimen that seems monotonous and does not allow a variety of foods. Drastic, formula-type or short-term diets that are restricted to a narrow range of foods may produce immediate weight loss, but they are rarely successful in long-term weight management. In addition, such regimens promote the breakdown of lean muscle tissue, including heart muscle, at least far the first few days of the diet. This happens because it takes the body longer to mobilize its fat stores for energy than it does to cannibalize its own protein.

In addition, the body tries to compensate for a starvation diet by lowering its metabolic rate. Thus, after a low-calorie diet, the body can get by on fewer calories than before. For example, a person who previously needed 1,800 calories a day to maintain normal weight may now need only 1,500 calories after a short-term drastic diet. Consequently, this person will gain weight even if he or she consumes only 1,800 calories.

These low-calorie diets also provoke a feeling of deprivation, and for that reason they almost invariably backfire. Even if people manage to take off their unwanted weight using such diets, they often reward themselves after the diet is over by overindulging in the formerly forbidden foods and regaining the shed pounds. Furthermore, many of these diets are so low in calories (below 1,200) that they cannot be nutritionally complete.

A slow, steady weight loss—no more than 1 or 2 pounds a week—is easiest to maintain. In fact, we feel so strongly about this that when participants in our diet groups consistently lose more than 2 pounds a week, they are dropped from the program because they are merely perpetuating unproductive behavior.

The best diet, then, for losing weight and maintaining the loss is one that can be enjoyed indefinitely. Like a successful exercise program, a healthier diet should be built into each individual’s daily routine. The following section gives tips for translating the dietary recommendations into a daily routine.

PRACTICAL TIPS

SHOPPING FOR FOOD

It remains generally true that people can achieve a healthier diet by buying fresh food, preparing it themselves, and avoiding prepackaged foods. However, by shopping carefully and especially by reading labels, consumers can find healthful prepared foods. While some manufacturers have responded to public demand with excellent low-fat, nonfat, and low-salt products, others have attempted to exploit consumer interest with deceptive labeling practices. One common ploy, for example, is used by producers of some vegetable oils and peanut butters who proclaim that the products contain no cholesterol. The claim ignores the fact that cholesterol is found only in animal foods, not in vegetable products. The unwise consumer may be led to believe that cholesterol has been specially eliminated from these particular products. The problem is that health claims have become so
ADOPTING A HEALTHFUL DIET

widespread on product packaging that the uninformed consumer can easily be confused.

New regulations from the Food and Drug Administration (FDA), which take effect in 1993, should end many of these practices. Nutrition labeling will be required for most foods under the jurisdiction of the FDA, although not for foods, notably meat and poultry, that come under the jurisdiction of the U.S. Department of Agriculture. At present the FDA is still developing exact definitions for certain descriptive phrases such as “light” or “lite” (see box, “Food Label Definitions”), setting standards for how nutrition information will be visually interpreted (such as in a bar graph or a pie chart), and making decisions on other issues such as state and federal overlap of regulations.

There are certain standards that manufacturers must follow even now. All canned, frozen, and packaged products (except fresh foods) must list ingredients in descending order according to volume. The only exceptions are certain standardized products, such as ketchup, that meet “standards of identity” set by the FDA. All products containing fat must list the kind of animal or vegetable fat used. Finally, all enriched or fortified foods and those for which the manufacturer makes nutritional claims must carry a nutrition label containing certain facts about the product. These include serving size, number of servings per container, and the amount of carbohydrates, protein, fat, calories, and sodium per serving. In addition, the label must give the percentage of the U.S. Recommended Daily Allowance (more general than the Recommended Dietary Allowance) for protein, vitamin A, vitamin C, thiamin, niacin, riboflavin, calcium, and iron contained in one serving. Saturated fat, polyunsaturated fat, cholesterol, and other items are optional unless the manufacturer makes a specific claim about them (such as that a product is low in cholesterol). Beginning in 1993, saturated fat, cholesterol, sodium, total carbohydrates, complex carbohydrates and sugar, total protein, and dietary fiber must also appear on the food labels. The serving size must be expressed in common household terms (such as ½ cup).

The key items to pay attention to are the serving size, calories, and grams of fat. Some serving sizes listed on labels are unrealistically small in order to make the fat or calories appear low; most are correct, but some are smaller than many people are used to eating (2 teaspoons of peanut butter, for example). Consumers need to keep the serving size in mind when eating, but the purchase decision can be made on the basis of a simple rule of thumb: 3 grams of fat

<table>
<thead>
<tr>
<th>Food Label Definitions</th>
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<tbody>
<tr>
<td><strong>reduced-calorie</strong> Must be one-third lower in calories than the nonmodified food product that it resembles (e.g., reduced-calorie vanilla pudding, 85 calories, versus regular vanilla pudding, 177 calories).</td>
</tr>
<tr>
<td><strong>low-calorie</strong> One serving supplies no more than 40 calories and contains no more than 4 calories per gram (e.g., low-calorie French dressing, 22 calories, versus regular French dressing, 67 calories).</td>
</tr>
<tr>
<td><strong>less or lower cholesterol</strong> Cholesterol reduced, but by less than 75 percent (e.g., Butter Blend, 10 mg cholesterol, versus butter, 33 mg cholesterol).</td>
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<tr>
<td><strong>low-cholesterol</strong> Less than 20 mg per serving (low-cholesterol gravy, 1 mg cholesterol, versus gravy, 5 mg cholesterol).</td>
</tr>
<tr>
<td><strong>no cholesterol</strong> Less than 2 mg per serving (egg substitute, 0 mg cholesterol, versus one egg, 274 mg cholesterol).</td>
</tr>
<tr>
<td><strong>leaner</strong> At least 25 percent less fat than the standard product (e.g., leaner sausage, 12 gm fat, versus regular sausage, 23 gm fat).</td>
</tr>
<tr>
<td><strong>extra-lean</strong> No more than 5 percent fat (e.g., extra-lean ham, 116 calories, versus regular ham, 192 calories).</td>
</tr>
<tr>
<td><strong>light or lite</strong> No standardized definition. May refer to color, calories, fat, sodium, or density (light-batter fish fillet, 310 calories, versus crispy fish fillets, 290 calories). Exceptions include light cream, which must contain between 18 and 30 percent fat; fruit canned in light syrup, which is lower in sugar; lite beer, which generally has about ½ fewer calories than the regular version of the same brand; and lite salt, which is made with potassium rather than sodium.</td>
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<tr>
<td><strong>natural</strong> A food that has been altered as little as possible from the original farm-grown state.</td>
</tr>
<tr>
<td><strong>low-sodium</strong> Containing 140 mg sodium or less per serving (low-sodium soup, 85 mg, versus regular soup, 920 mg).</td>
</tr>
<tr>
<td><strong>very-low-sodium</strong> Containing 35 mg sodium or less per serving (e.g., Diet Sprite, 35 mg, versus Diet Pepsi, 67 mg).</td>
</tr>
<tr>
<td><strong>sugarless/sugar-free</strong> Food does not contain sucrose, but may contain other sugars such as corn syrup, dextrose, levulose, sorbitol, mannitol, maltitol, xylitol, or natural sweeteners (e.g., sugar-free cookies, 25 calories, versus regular cookies, 50 calories).</td>
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</tbody>
</table>
per 100 calories a serving. At 9 calories a gram, 3 grams would be about 27 calories, or 27 percent of the 100 calories, within the guidelines for total fat. The guidelines are for the entire diet, not each individual food. Nevertheless, it is easy to see that a ½ cup serving of a premium ice cream that can contain 24 grams of fat (depending on brand and flavor) will have to be offset by a lot of steamed vegetables and other low-calorie foods.

When reading labels it may also be helpful to visualize the fat. For example, 5 grams of fat is approximately equal to a pat of butter or margarine or a teaspoon of oil.

PREPARING FOOD

Filling the cupboards and refrigerator with low-fat, low-cholesterol foods is half the battle. The other half is getting them on the table without adding too much fat, while still presenting them in a way the family will enjoy. The first step is to trim any excess fat before cooking. Even lean cuts of meat have exterior fat that can easily be trimmed. With poultry, removing the skin and the fat attached to it cuts the amount of fat to a little less than half. This is fine for most chicken and turkey dishes, but not practical for roasting, as the result is much too dry. In this case, removing the skin before eating is sufficient.

Fat that can’t be eliminated before cooking can be drained off afterward. Be sure to drain the excess fat off ground meat before adding other ingredients. Refrigerate soups and stews until the fat congeals on top to make the removal of fat easy before reheating. If time does not allow preparing ahead, use a paper towel to soak up the surface oil or a skimmer to pour it off. A gravy separator (a pitcher with a spout that comes from the bottom) is another handy gadget for removing excess fat.

The second major way to control fat is via the method of cooking. Deep-frying, sautéing, breading and frying, basting with oil, and, with some exceptions, cooking in a casserole are methods that add unnecessary fat. Instead, try broiling, roasting, baking, steaming, poaching, and stir-frying. With stir-frying, use only a little oil and be sure it is very hot, since foods soak up more oil when it is only warm. Blanched vegetables first cuts frying time and thus the amount of oil absorbed. Sauteing is acceptable if a nonstick pan or nonstick vegetable spray is used.

Steaming isn’t only for vegetables. Fish lends itself to steaming (a wok with a plate balanced above water level on overturned coffee cups makes an inexpensive fish steamer). Chicken or fish can be baked in a foil package in the oven, which produces the same effect as steaming. For example, place pieces of chicken breast, seasoned with herbs and spices, in foil along with a selection of vegetables such as onions, mushrooms and zucchini, and perhaps a little white wine, and steam-bake for 20 minutes at 375° F.

Although many cooks like to experiment from time to time, most find that they develop a repertoire of 10 to 20 dishes that are repeated over and over. Perhaps the best way to ease gradually into low-fat eating is to work with family favorites and learn how to modify these recipes rather than to learn a whole new way of cooking.

The three main principles of adapting recipes are reduction, substitution, and modification. Below are some tips for accomplishing this in some American standbys, but any recipe can be modified with a little analysis of its ingredients. Learn to determine why an ingredient is included in a recipe, and it will be easier to find an appropriate substitution or to decide whether it can be reduced or even eliminated. An ingredient may be there primarily to add flavor, or for bulk, texture, moisture, or eye appeal. Crunchy nuts, for example, could be replaced by crunchy celery, jicama, or water chestnuts. Parmesan cheese topping on a casserole gives a flavorful browned appearance, but it can be mixed half and half with nonfat bread crumbs for the same effect. Or eliminate it entirely and mix the bread crumbs with herbs. (Homemade breadcrumbs made in seconds in the blender or food processor are better than commercial ones, which sometimes have fat and sodium added.) Here are some other modifications and cooking tips:

- Steam vegetables with herbs, such as green beans with dill or carrots with basil, rather than adding butter.
- Use pureed potatoes or other vegetables instead of cream to thicken soups and stews. Barley, rice, and orzo can also add thickness to soup. In cream soups, use nonfat dry milk or evaporated skim milk instead of cream.
- Although its primary contribution is flavor, fat is sometimes added for moisture. In this case, fruit or vegetable juice, low-sodium broth, vinegar, wine, or beer can be used instead, depending on the dish.
- Tenderize lean meat by marinating it in herbs mixed with something acidic: tomato juice, citrus juice, vinegar, yogurt, or wine.
- Sugar can be reduced by at least one-third in
ADOPTING A HEALTHFUL DIET

baked goods without affecting the final product. Experiment to see if more can be removed.

- Dishes other than baked goods can be sweetened with undiluted frozen apple juice or pureed bananas or pears. Spices such as cinnamon add a sweet taste without calories. Although honey has a few more calories than sugar, it is much sweeter, so less is needed.

- Make mashed potatoes with skim milk or whip them with butter-substitute granules or some of the water in which they were cooked.

- Substitute ground turkey for ground beef and turkey or chicken cutlets for veal.

- Use 3 tablespoons of cocoa powder and 1 tablespoon of polyunsaturated oil in place of each ounce of baking chocolate.

- Try whipping very cold or partially frozen evaporated skim milk in place of heavy cream. (Chili the beaters and bowl in the freezer first.)

- Experiment with nonfat yogurt and light sour cream in place of traditional sour cream. In hot dishes, add 1 teaspoon of cornstarch for every cup of yogurt to keep it from separating on heating. Another sour cream substitute can be made from 1 cup of low-fat cottage cheese beaten with 1 tablespoon of lemon juice and 2 tablespoons of skim milk.

- Use one whole egg plus one white in place of two whole eggs, or use ¼ cup of egg substitute. In some recipes, two egg whites can substitute for a whole egg.

- Cut the amount of meat and increase the amount and variety of vegetables in stews.

- Salt can be eliminated from virtually any dish except yeast breads, in which it is needed to control rising. Since salt is an acquired taste, by gradually restricting it in the diet, it is possible to get used to tasting less and less of it. Herbs, spices, garlic, onions, citrus juices, and vinegars such as fruit or rice vinegars can be used instead to enhance the flavor of many foods. (See Chapter 12 for additional tips.)

- Instead of using a ham bone to add a smoky flavor to pea soup, add a sweet red pepper that has been roasted, slightly charred, and peeled.

For those looking for inspiration, there are a number of good low-fat cookbooks on the market. Ethnic cookbooks, particularly the dozen or so cuisines of the Mediterranean area, offer some excellent choices as well. (See box, “Recommended Cookbooks.”)

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**Recommended Cookbooks**

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<thead>
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<th>Title</th>
<th>Author(s)</th>
<th>Publisher</th>
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**EATING AWAY FROM HOME**

For more than a decade, Americans have been eating one out of three meals away from home—in restaurants, school or company cafeterias, and fast food outlets. With more and more women joining the work force, this trend can only grow stronger. Those for whom dining out still means a special occasion generally can celebrate without concern about diet. Those who find themselves regularly relying on someone else’s menus will need to devise a strategy to stay in control of what they eat.

The strategy starts with choosing a restaurant. It will be easier to find low-fat entrees in a seafood restaurant than in one that specializes in continental cuisine (read heavily sauced). Restauranters who pride themselves on offering “family-style service,” “overstuffed sandwiches,” “he-man portions,” or “all you can eat” are less likely to be concerned about nutritional balance. Generally speaking, restaurants that offer mostly freshly prepared dishes rather than mass-precooked, flash-frozen portions can be more flexible. These restaurants are often recognizable by their limited menus. Even if their cuisine tends
toward butter and sauces, they are usually willing to offer plain broiled fish, chicken, or lean steak with the sauce served on the side or not at all. If the choice of restaurants is limited by budget, convenience, or dining companions, it is still possible to put together an acceptable meal. The box “Heart-Healthy Selections from Restaurant Menus” suggests dishes to choose and avoid. These tips may also be helpful:

- Do not arrive at the restaurant famished, or virtually everything on the menu will be appealing, making it easy to overorder. Have a small salad, a piece of fruit, soda crackers, or bouillon first.
- It is also a good idea not to arrive early, which increases the temptation to have a drink or a snack while waiting for companions.
- Those who drink alcohol should decide beforehand to skip it, limit it to one drink (perhaps a white wine spritzer or light beer), or have an after-dinner drink in place of dessert. Besides adding empty calories, alcohol may increase appetite or affect the resolve to use moderation in the rest of the meal. Sipping a spicy Bloody Mary mix without the vodka, a fruit juice spritzer, nonalcoholic beer, or sparkling water with a slice of lime will still provide the opportunity to relax and ease into the meal.
- If nuts or chips are provided with cocktails, ask the waiter or waitress to stand by, remove one or two, and then have the dish taken away.
- If possible, decide what to order before arriving at the restaurant. When this is not possible—or for diners who prefer to remain flexible—a la carte choices are best. Complete dinners and fixed-price offerings usually have more courses than are necessary.
- Be the first in the group to order to avoid the temptation to be influenced by the choices of others.
- Skip the appetizer or look for fruit or vegetable juice, clear soup or consommé, or fruit. (Vegetable juice, broth, bouillon, and consomme are somewhat high in sodium, which may be a problem for some people with heart failure or uncontrolled high blood pressure.) If fruit isn’t offered as an appetizer, check the dessert column.
- Do not make assumptions about unfamiliar dishes, but ask how they are made. Fish stew may conjure up a picture of bouillabaisse in a tomato-flecked broth, but turn out to be more like lobster Newburg, with a thick creamy sauce.
- Be creative with the menu categories. In place of an entree, have two appetizers, or an appetizer, soup, and salad, or an appetizer and a side dish, or soup and a half order (pasta is often available in half orders), or have an appetizer and split an entrée.
- Do not be afraid to ask for a special order. Many restaurants are happy to honor requests such as to broil rather than fry, to serve the sauce on the side, and to use margarine rather than butter. Even better, ask what the chef can do for someone who prefers a low-fat dinner. Often there are some excellent choices that don’t appear on the menu, and some chefs take it as a challenge to come up with something appetizing and nutritious. Nevertheless, find out what the “something” is, because chefs do not necessarily know about nutrition.
- The endless bread basket (or more specifically, the butter dish) is a common problem. If the bread is robust and crusty, learn to savor its flavor alone. If it is cottony and tasteless, it is better skipped than slathered with butter. In any case, have the basket removed when everyone has been served.
- Ask to have a sprinkle of lemon juice on the salad or bottles of vinegar and oil put on the table. If the house dressing is really tempting, order it on the side. Then try this trick: Dip the fork in the dressing, then spear the lettuce.
- Learn to eyeball appropriate portion sizes and do not feel obliged to finish everything. The palm of the hand or a deck of playing cards approximates 3 ounces of meat. If the portion is too large, share it, leave half of it, or ask for the rest in a doggy bag. (Put the leftovers in the freezer at home immediately to avoid the temptation to snack later.)
- To slowdown eating, choose foods that require work—unfilleted fish, crab legs, artichokes. If chopsticks are available, use them.
- If a rich dessert is an absolute must, split it with a companion or plan for it by keeping the rest of the meal light.
- Relax and savor every bite of the food—its sight, smell, texture, and taste.
# ADOPTING A HEALTHFUL DIET

## Heart-Healthy Selections from Restaurant Menus

### CHINESE

**Choose** | **Limit**  
---|---  
Steamed dumplings | Spare ribs  
Hot and sour soup | Egg rolls  
Wonton soup | Fried noodles or wonton  
Stir-fried seafood, chicken, or bean curd with vegetables | Lobster sauce (contains egg yolk)  
Steamed whole fish | Sweet and sour pork  
Moo goo gai pan (chicken) | Egg foo yung  
Coffee, tea, or diet drinks | Cold noodles in sesame sauce  

**FAST FOOD**

**Choose** | **Limit**  
---|---  
Regular single hamburger | Double hamburgers, cheeseburgers  
Rare roast beef | Fried fish  
Grilled chicken sandwich | Chicken nuggets  
Baked potato (1 T. topping) | Fried chicken  
Hot cakes or waffle (syrup, no butter) | Ham and egg sandwich  
Coffee, tea, or diet drinks | Thick shakes  

### ITALIAN

**Choose** | **Limit**  
---|---  
Minestrone<sup>1</sup> | Fettucine Alfredo or Carbonara  
Escarole soup<sup>1</sup> | Tuna in oil  
Linguine with red clam sauce | Veal scallopine  
Pasta primavera | Veal parmigiana  
Veal marsala | Zabaglione  
Chicken or fish in wine or tomato sauce | Cream-filled desserts  

### FRENCH

**Choose** | **Limit**  
---|---  
Bouillabaisse | Pate  
Coq au vin | Béchamel sauce  
Steamed mussels | Béarnaise sauce  
Fish en papillote | Au gratin dishes  
Ratatouille |  

### JAPANESE

**Choose** | **Limit**  
---|---  
Tempura |  

### GREEK

**Choose** | **Limit**  
---|---  
Tzatziki (cucumbers and yogurt) | Taramasalata  
Greek salad<sup>1</sup> | Lamb (unless made from the leg)  
Plaki (fish with tomatoes, onions, and garlic) | Dishes made with phyllo dough  
Shish kebab |  

### MEXICAN

**Choose** | **Limit**  
---|---  
Salsa | Flour tortillas (made with lard)  
Guacamole (without sour cream) | Refried beans (usually made with lard)  
Black bean soup | Nachos topped with cheese  
Beef, seafood, or chicken | Tacos, chimichangas, and other fried tortillas  
Tostados or fajitas | Nachos topped with cheese  

### MIDDLE EASTERN

**Choose** | **Limit**  
---|---  
Mussels or grape leaves stuffed with rice | Fatty lamb or beef casserole  
Couscous with chicken or vegetables |  
Hot bulgur or tabouli |  
Shish kebab |  
Imam bayildi (eggplant and tomato casserole) |  

<sup>1</sup>Moderate to high in sodium.
HOW TO LOWER YOUR RISK OF HEART DISEASE

<table>
<thead>
<tr>
<th>Choose</th>
<th>Limit</th>
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<tbody>
<tr>
<td>SMORGASBORD (BUFFET)</td>
<td></td>
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<tr>
<td>Tossed salad (dressing on side)</td>
<td>Mayonnaise-based salads</td>
</tr>
<tr>
<td>Fruit salad</td>
<td>Cheese, platter</td>
</tr>
<tr>
<td>Vinegar-based coleslaw</td>
<td>Potatoes au gratin</td>
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<tr>
<td>Pickled fish*</td>
<td>Casseroles</td>
</tr>
<tr>
<td>Roast turkey breast</td>
<td>Stews</td>
</tr>
<tr>
<td>Lean roast beef</td>
<td>Pies and pastries</td>
</tr>
<tr>
<td>Baked or boiled potato</td>
<td></td>
</tr>
<tr>
<td>Steamed vegetables</td>
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</tbody>
</table>

| STEAKHOUSES                                  |                                            |
| Choose                                      | Limit                                      |
| Steamed or broiled fish, if available        | T-bone steak                               |
| London broil                                | Surf and turf                             |
| Filet mignon                                | Porterhouse steak                         |
| Baked potato (limit butter)                 | Fried potatoes                            |
|                                             | Onion rings                               |

*Moderate to high in sodium.