

Dietary  
Guidelines  
Advisory  
Committee

Prepared for  
the Committee  
by the  
Human Nutrition  
Information Service

United States  
Department of  
Agriculture

# **Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 1990**

To the Secretary of Agriculture and the  
Secretary of Health and Human Services

**Report of the  
DIETARY GUIDELINES ADVISORY COMMITTEE  
on the Dietary Guidelines for Americans, 1990**

to the  
Secretary of Agriculture  
and the  
Secretary of Health and Human Services

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United States  
Department of  
Agriculture

Human Nutrition  
Information  
Service

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May 14, 1990

The Honorable Clayton Yeutter  
Secretary of U.S. Department  
of Agriculture  
Washington, D.C. 20250

The Honorable Louis W. Sullivan  
Secretary of U.S. Department  
of Health and Human Services  
Washington, D.C. 20201

Dear Mr. Secretary:

I am pleased to submit the report of the Dietary Guidelines Advisory Committee, established jointly by the U.S. Departments of Agriculture and of Health and Human Services in December 1988. With this report, the Committee completes its assignment to determine if revision of the Departments' bulletin, Nutrition and Your Health: Dietary Guidelines for Americans, Second Edition, is warranted and, if so, to make recommendations for such a revision in a report to the Secretaries of the two Departments.

The Committee determined that the basic messages of the Dietary Guidelines in the Second Edition remain sound and of priority importance to Americans in choosing healthful diets. Some modifications are proposed for a Third Edition. (See pages 5 to 13 in the report.) The proposed modifications reflect new scientific evidence and increased consensus among health authorities on certain diet and health issues and respond to public concerns and misunderstandings about the current edition.

The Committee recommends that the two Departments publish the Third Edition of the bulletin using the text proposed and promote and distribute the new bulletin extensively. (See report page 14.) The Committee also recommends that the bulletin be evaluated for understanding and usefulness to different groups within the population and that supplemental and specifically targeted materials be developed to help the public implement the guidelines.

The members of the Committee are pleased to have been asked to help develop this basic dietary guidance message for use in Federal policy and public education. We would appreciate the opportunity to review changes, if any, that the Departments plan to make to the Committee's proposed text prior to publication of the Third Edition.

Sincerely,

MALDEN C. NESHEIM, Ph.D.  
Chairman  
Dietary Guidelines Advisory Committee

Enclosure

**Report of the Dietary Guidelines  
Advisory Committee on the  
Dietary Guidelines for Americans,  
1990**

To the Secretary of Agriculture and the  
Secretary of Health and Human Services

June 1990

## DIETARY GUIDELINES ADVISORY COMMITTEE MEMBERSHIP

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U.S. Department of Health and  
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Washington, D.C.

## EXECUTIVE SUMMARY

The Dietary Guidelines Advisory Committee (DGAC) was established jointly by the U.S. Department of Agriculture and the U.S. Department of Health and Human Services. The Committee's assignment was to advise the Secretaries of the two Departments if revision of the bulletin, Nutrition and Your Health: Dietary Guidelines for Americans, Second Edition (1985), was warranted and, if so, to make recommendations for such a revision.

The Committee commends the excellence of earlier editions of the bulletin and the efforts of their originators. It recognizes that the existing Dietary Guidelines are well established as Federal nutrition policy and serve as the central dietary guidance message for healthy Americans. It is also aware of the importance of stability of the message in efforts to educate the public about nutrition and health issues.

The Committee believes that some revision of the Second Edition is warranted. Since the Second Edition was issued in 1985, new scientific evidence on associations between diet and health has been generated, and major reviews of this and earlier evidence have been conducted by the Public Health Service, the National Research Council, and other scientific groups. Also, better understanding exists about the use of the bulletin by government, health and education professionals, and the general public.

The Committee's proposed text for a Third Edition is presented in this report, pages 5 to 13. The audience for the guidelines in the Third Edition is specified as Americans 2 years of age and older.

The Committee concluded that the messages in the seven guidelines, as presented on the cover of the Second Edition, remain sound and of major importance in choosing food for a healthful diet. Some changes to the guidelines are proposed. The changes and the reasons for the changes are shown in the table.

Table. CHANGES PROPOSED TO FRONT COVER

<u>Second Edition</u>	<u>Proposed Third Edition</u>	<u>Reason to Change</u>
Eat a variety of foods	(same)	
Maintain desirable weight	Maintain healthy weight	Health-based definition used
Avoid too much fat, saturated fat, and cholesterol	Choose a diet low in fat, saturated fat, and cholesterol	Focus on total diet in more positive way
Eat foods with adequate starch and fiber	Choose a diet with plenty of vegetables, fruits, and grain products	Focus on foods in the total diet
Avoid too much sugar	Use sugars in moderation	Focus on targeted foods in more positive way
Avoid too much sodium	Use salt and sodium in moderation	Focus on both in more positive way
If you drink alcoholic beverages, do so in moderation	(same)	(same)

Changes to the text accompanying the guidelines are proposed. See Table 2, page 18 for a list of changes and pages 15 to 37 for discussion of the changes. Major text changes are as follows:

- A definition of "healthy" weight considers body-mass index, waist-to-hip ratio, and weight-related health problems.
- Numerical goals are suggested for total fat and saturated fatty acids in diets of adults.
- "Desirable" blood cholesterol for adults is defined, and advice to get blood cholesterol checked is given.
- Numbers of servings of vegetables, fruits, and grain products to eat daily are emphasized.
- All fermentable carbohydrates are noted as potentially cariogenic. Advice for healthy teeth focuses on avoiding excessive snacking on foods containing sugars and starches, fluoride intake, and dental hygiene.
- Advice to get blood pressure checked is added.
- Additional food selection guidance is provided.
- Moderate drinking is defined and certain groups, including women who are pregnant or trying to conceive, are cautioned not to drink at all.

In addition to the proposed text for the Third Edition, the Committee makes several recommendations about the promotion, use, interpretation, and implementation of the Dietary Guidelines by the two Departments. Also, it recommends that the Public Health Service develop a definition of healthy weight and that implementation of the Dietary Guidelines by the public be considered as new formats and regulations for food labeling are developed by the Departments.

## CHARGE TO COMMITTEE

The Dietary Guidelines Advisory Committee (DGAC) was established jointly by the U.S. Department of Agriculture (USDA) and the U.S. Department of Health and Human Services (DHHS) through USDA Departmental Regulation No. 1042-94, December 29, 1988. The Committee consists of nine nutrition scientists and physicians.

Based on its knowledge and study of current research related to dietary guidance issues, the Committee was charged with determining if revision of Nutrition and Your Health: Dietary Guidelines for Americans, Second Edition (1985) was warranted and, if so, making recommendations for revision. More specifically, the Committee was asked to review the content of the Second Edition of the bulletin for its appropriateness in the early 1990's for its dual purpose: (1) to serve as the basis for Federal nutrition policy and (2) to present to healthy Americans, in clear and easily understood terms, science-based guidance on what they should eat to stay healthy.

Major resources for the review identified by the two Departments were the National Research Council's report, Diet and Health: Implications for Chronic Disease Risk (1989) (NRC), and The Surgeon General's Report on Nutrition and Health (1988) (SG). Results of research on the use of the current Dietary Guidelines, written comments and data submitted by the public, and the additional resources and knowledge on dietary guidance issues the Committee members brought to their task also served as resources.

The Departments recognize that the provision of complete and detailed information to interpret the guidelines for special audiences and to help these audiences implement the guidelines is beyond the scope of this single short bulletin. It is understood that assistance in the interpretation and implementation of the Dietary Guidelines will continue to be provided through nutrition labeling programs administered by the DHHS's Food and Drug Administration and the USDA and by materials prepared by USDA's Human Nutrition Information Service and DHHS's Public Health Service, especially the National Heart, Lung, and Blood Institute and the National Cancer Institute, and by other public and private groups.

The Committee was asked to prepare a report to the Secretaries of USDA and DHHS stating its decision about the need for revision. If the Committee's review resulted in recommendation for revision of the bulletin, the report was to contain proposed text for the bulletin's Third Edition and rationale for suggested modifications to the Second Edition.

The Committee served without pay under the regulations for Federal advisory committees. Its meetings, announced in the Federal Register, were open to the public and held in accordance with the Federal Advisory Committee Act. The public was encouraged to provide written comments to the Committee through the two Executive Secretaries—one from USDA and one from DHHS.

The Committee is advisory; thus, the two Departments reserve the right to review and amend, if necessary, the text recommended by the Committee prior to its publication as the Third Edition of Nutrition and Your Health: Dietary Guidelines for Americans.

## COMMITTEE ACTIVITIES

The Committee held three meetings (April 5-6, 1989; August 10, 1989; and January 10, 1990) in Washington, D.C. Conference calls were used to clarify issues raised at the meetings. All meetings were open to the public and recorded in full.

At the first meeting, the Committee was provided with background information on the history of the guidelines and results of research conducted on their use (see Appendix I). Individual members summarized the scientific evidence relating to the guidelines assigned to them, drawing heavily on the SG and the NRC reports. At the close of this meeting, members agreed unanimously that some revision of the Second Edition should be recommended. They also agreed to draft portions of the revised bulletin to reflect issues raised in the Committee discussion and in public comments, which were forwarded to them by the Executive Secretaries (see Appendix II).

At the August meeting, drafts prepared by members were discussed. Drafters incorporated suggested modifications, taking into account additional public comment. The Executive Secretaries then edited the drafts for common style and format across the guidelines.

At the January meeting, the edited text and other parts of the Committee's report were discussed. The Committee's report to the Secretaries of USDA and DHHS was approved for publication by all Committee members.

## COMMITTEE RECOMMENDATIONS

In response to its charge, the DGAC recommends the text for the bulletin, Nutrition and Your Health: Dietary Guidelines for Americans, Third Edition, presented in this section. It also makes several recommendations concerning the use, interpretation, and implementation of the guidelines and the development of future editions.

### Recommended Content of the Third Edition

The text for the Third Edition, presented on pages 5 to 13, is recommended by the Committee as the central dietary guidance message for healthy Americans. It presents information the Committee believes to be of priority importance to healthy Americans in selecting diets that help promote health and prevent disease. The Committee believes this information is both scientifically supportable and of practical value to the public.

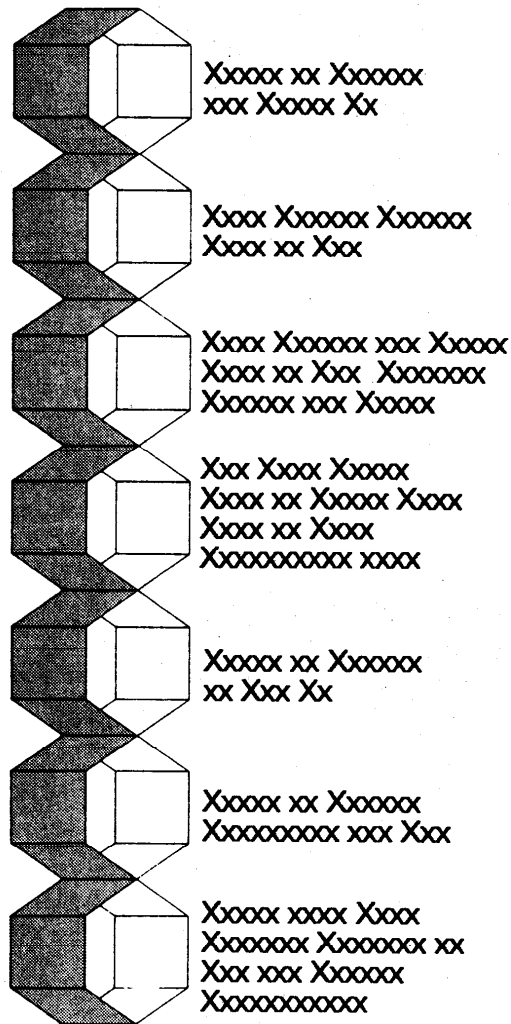
The science related to issues of diet and its association with health is ongoing. Proposed guidance in this bulletin is derived from well-established research findings and does not reflect findings that are extremely new and contradictory or controversial at this time. Some scientific controversies that now exist will probably be resolved prior to the next review of the bulletin's content. Thus, changes are expected.

In the interest of providing specific suggestions that are helpful to the public in this brief presentation of dietary guidance, some circumstantial and qualifying statements were not included. However, the Committee believes the guidance given is sound and that its use will be helpful to most people in the well population and will cause harm to none.

The Committee proposes that the content of the Third Edition of Nutrition and Your Health: Dietary Guidelines for Americans be as shown on the following pages.



# Dietary Guidelines for Americans



Third Edition, 1990  
U.S. Department of Agriculture  
U.S. Department of Health and Human Services

## NUTRITION AND YOUR HEALTH: Dietary Guidelines for Americans

What should Americans eat to stay healthy?

These guidelines help answer this question.

They offer advice for healthy Americans 2 years of age and over. They reflect recommendations of nutrition authorities who agree that enough is known about diet's effect on health to encourage certain dietary practices by Americans (see back cover).

Many American diets have too many calories and too much fat (especially saturated fat), cholesterol, and sodium, and are also low in complex carbohydrates and fiber. Such diets contribute to America's high rates of certain chronic diseases, such as heart disease, high blood pressure, strokes, diabetes, and some forms of cancer. The exact role of diet in some of these is still uncertain.

Diseases caused by vitamin and mineral deficiencies are rare in this country. But many people do not get recommended amounts of some of these nutrients, especially calcium and iron.

Food alone cannot make you healthy. Good health also depends on your family history of disease, your access to health care services, your environment and your lifestyle--how much you exercise and whether you smoke, drink to excess, or abuse drugs, for example. But a diet based on these guidelines can help you keep healthy and may improve your health.

## DIETARY GUIDELINES FOR AMERICANS

- Eat a variety of foods
- Maintain healthy weight
- Choose a diet low in fat, saturated fat, and cholesterol
- Choose a diet with plenty of vegetables, fruits, and grain products
- Use sugars in moderation
- Use salt and sodium in moderation
- If you drink alcoholic beverages, do so in moderation

The first two guidelines form the framework for the diet: "Eat a variety of foods" for the nutrients you need and calories (energy) to "Maintain a healthy weight." The next two guidelines emphasize the need for many Americans to change their diets to ones that are lower in fat and are higher in carbohydrates and fiber. Other guidelines suggest moderation in the use of sugars, salt, and, if used at all, alcoholic beverages.

These guidelines call for moderation--avoiding extremes in diet. Both excessive eating and excessive dieting can be harmful. Also, be cautious of diets based on the belief that a food or supplement alone can cure or prevent disease.

Your good health may depend on your learning more about yourself. Are you at your healthy weight? What is your blood pressure, your blood cholesterol level, and your blood sugar level? Some related problems may be correctable by diet or by medication your doctor prescribes. Generally, the sooner a problem is found, the easier it is to treat.

Foods Americans have to choose from are varied, plentiful, and safe to eat. Following these guidelines can help you choose a diet that is healthful and enjoyable.

Read on for more about each guideline--what it means, how it is important to health, brief "advice for today," and some tips on using the guideline. See the back cover for how to get more help.

## Eat a Variety of Foods

You need more than 40 different nutrients for good health. Essential nutrients include amino acids from protein, vitamins, minerals, certain fatty acids, and sources of calories (protein, carbohydrates, and fat).

These nutrients should come from a variety of foods, not from a few highly fortified foods or supplements. Any food that supplies calories and essential nutrients can be part of a nutritious diet. The nutrient content of the total diet is what counts.

Some foods are rich sources of several nutrients. For example, vegetables and fruits are important for vitamins A and C, folic acid, fiber, and minerals. Breads and cereals supply B vitamins, iron, protein, and fiber. Milk provides protein, B vitamins, vitamins A and D, calcium, and phosphorus. Meat provides protein, B vitamins, iron, and zinc.

No single food can supply all nutrients in the amounts you need. For example, milk supplies calcium but little iron; meat supplies iron but little calcium. To have a nutritious diet, you must eat a variety of foods.

A good way to assure variety--and with it, an enjoyable and nutritious diet--is to choose foods each day from five major food groups (see box).

### A DAILY FOOD GUIDE

Eat a variety of foods daily, choosing different foods from each group:

<u>Food group</u>	<u>Suggested servings</u>
Vegetables	3-5 servings (see p. )
Fruits	2-4 servings (see p. )
Breads, cereals, rice, and pasta	6-11 servings (see p. )
Milk, yogurt, and cheese	2-3 servings (see p. )
Meats, poultry, fish, dry beans and peas, eggs, and nuts	2-3 servings (see p. )

Follow the other guidelines as you choose foods for your diet.

Source: USDA's food guide (see back cover).

Almost everyone should have at least the lower number of servings from each food group shown. Many women, older children, and most teenagers and men need more because of their body size and activity level.

Some elderly people and people who are sedentary or trying to lose weight may eat relatively little food. They need to take special care to choose lower calorie foods from the five major food groups and to eat less of foods high in calories and low in essential nutrients, such as fats and oils, sugars and sweets, and alcoholic beverages.

Diets of some groups of people are notably low in some nutrients. Many women and adolescent girls need to eat more calcium-rich foods, such as milk and milk products, to get the calcium they need for healthy bones throughout life. Young children, teenage girls, and women of childbearing age must take care to eat enough iron-rich foods such as lean meats, dry beans, breads, and cereals.

Large-dose supplements of nutrients can be harmful. Vitamin and mineral supplements at or below the Recommended Dietary Allowances (RDA) are safe, but are rarely needed if you eat a variety of foods. Here are exceptions in which use of a supplement under a doctor's guidance may be considered:

- Women in their childbearing years may need an iron supplement to help replace iron lost in menstrual bleeding.
- Women, when they are pregnant or breast-feeding, require more of some nutrients.
- Elderly people who are very inactive and eat little food may need supplements.
- People, including the elderly, who take medicines that interact with nutrients may need supplements.
- Young children, under some circumstances, may need supplements, especially of iron.

Advice for today: Get the many nutrients your body needs by choosing different foods you enjoy eating from these five groups of foods daily: vegetables, fruits, grain products, milk and milk products, and meats and their alternates.

#### About the infant's diet

The guidelines in this bulletin are not intended for infants. Food and nutrient needs of infants are different from those of older children and adults.

- Mother's milk is the best food for nearly all infants. It contains the ideal balance of nutrients and other substances to promote growth. It also transfers immunity to some diseases from the mother to the infant.
- To help prevent tooth decay in newly growing teeth, infants should not use as pacifiers nursing bottles containing any beverage other than water.
- Babies are generally not given solid foods until they are 4 to 6 months old. Then foods are introduced gradually--no more than one new food each week. The doctor should advise on how to get adequate iron into the baby's diet.
- Salt and sugar should not be added to an infant's food; they are not needed as inducements to eat.

#### Maintain Healthy Weight

If you are too fat or too lean, your chances of developing health problems are increased.

Being too fat is linked with high blood pressure, heart disease, stroke, the most common type of diabetes, certain cancers, and other types of illness. Being too thin is a less common problem, but it is linked with osteoporosis in women and greater risk of early death in both women and men.

Whether your weight is "healthy" depends on how much of your weight is fat, where in your body your fat is located, and whether you have weight-related medical problems or a family history of such problems.

What is a healthy weight for you? There is no exact answer right now. Researchers are developing more precise ways to measure healthy weight. In the meantime, you can assess your weight this way:

See if yours is a weight believed to be in the acceptable range for persons of your age and height, as shown in the table. Weights above the range are linked to increased risk to health. Weights below the range may be healthy; but are sometimes linked to health problems, especially if sudden weight loss occurs.

Next, consider your body shape. Excess weight in the abdomen is believed to be of greater health risk than that in the hips and thighs. To check

your body shape, measure around your waist where it is smallest while you stand relaxed, not pulling in your stomach. Then, measure around your hips where they are largest. Divide the waist measurement by the hips measurement to get your waist-to-hip ratio. Ratios above 0.80 for women and 0.95 for men are linked to greater risk for several diseases.

If your weight is within the range in the table, if your waist-to-hip ratio is not high-risk, and if you have no medical problem for which your doctor recommends weight gain or loss, there appears to be no health advantage to changing your weight. If you do not meet all of these criteria, you may wish to discuss your weight and how it might affect your health with your doctor.

Heredity plays a role in body size and shape, as do exercise and what you eat. Some people can eat heartily and still not be too heavy. Others have difficulty achieving a good weight and shape even with dieting.

No one weight-loss plan is best for everyone. If you are sedentary, regular exercise may help you lose weight and keep it off. See box 1 for the calories expended in some activities. If you eat too much, decreasing your calorie intake as advised in box 2 may help. Long-term success usually depends upon new and better lifetime habits of both exercise and eating.

Do not try to lose weight too fast. A steady loss of 1/2 to 1 pound a week until you reach your goal is generally safe. Avoid crash diets that severely restrict the variety of foods or the calories allowed.

Getting enough of some needed nutrients is difficult in diets of 1,200 calories or less. The average recommended energy intake is 2,200 calories for women and 2,900 calories for men who are 50 years of age or less and whose activity is light to moderate. Your energy intake may need to be lower or higher than these averages. Older women and men usually need fewer calories.

Children need calories to develop and grow normally; low-calorie diets are not recommended for them. Overweight children may need special help in choosing nutritious diets with adequate but not excessive calories and physical activities they enjoy.

Do not try to lose weight by inducing vomiting or using laxatives. Frequent vomiting and purging can lead to irregular heartbeats and even death.

Amphetamines, thyroid medication, digitalis, and diuretics are dangerous when used for weight loss. Avoid these and other extreme measures of losing weight.

Most people do not need to reduce if their weight is below the recommended range in the table and if they are otherwise healthy. If you lose weight suddenly or for unknown reasons, see a doctor. Unexplained weight loss may be an early clue to an underlying disorder.

**Advice for today:** Check to see if you are at a healthy weight. If not, set realistic weight goals and strive for long-term success through better habits of eating and exercise. Have children's heights and weights checked regularly by a doctor.

**Table. Acceptable Weights for Men and Women**

Height*	Weight in pounds**	
	19 to 34 years	35 years and over
5'0"	97-128	108-138
5'1"	101-132	111-143
5'2"	104-137	115-148
5'3"	107-141	119-152
5'4"	111-146	122-157
5'5"	114-150	126-162
5'6"	118-155	130-167
5'7"	121-160	134-172
5'8"	125-164	138-178
5'9"	129-169	142-183
5'10"	132-174	146-188
5'11"	136-179	151-194
6' 0"	140-184	155-199
6' 1"	144-189	159-205
6' 2"	148-195	164-210

\* Without shoes.

\*\*Without clothes.

**TO INCREASE CALORIE EXPENDITURE--**  
be more physically active.

Activity	Calories expended per hour	
	Man*	Woman*
Lying quietly	80	60
Sitting quietly	100	75
Standing quietly	115	85
Light activity:	130	95
Cleaning house		
Office work		
Strolling		
Playing golf		
Moderate activity:	270	210
Walking briskly		
Farming		
Building construction		
Tennis		
Strenuous activity:	420	320
Jogging		
Playing soccer		
Logging		
Very strenuous activity:	550 or more	420 or more
Marathon running		
Competitive rowing		

\*Healthy man and woman of medium weight.

**TO DECREASE CALORIE INTAKE--**

Eat a variety of foods that are low in calories and high in nutrients:

- Eat less fat and fatty foods
- Eat more fruits, vegetables, and breads and cereals
- Eat less sugar and sweets
- Drink little or no alcoholic beverages

Eat smaller portions; avoid seconds.

**Choose A Diet Low in Fat, Saturated Fat, and Cholesterol**

Most health authorities recommend an American diet with less fat, saturated fatty acids, and cholesterol. Populations like ours with diets high in fat have more heart disease, certain types of cancer, and obesity.

Fat contains over twice the calories as an equal amount of carbohydrates or protein. A diet low in fat makes it easier for you to include the variety of foods you need for essential nutrients without exceeding your calorie needs.

A diet low in saturated fatty acids and cholesterol can help maintain a desirable level of blood cholesterol. For adults this level is below 200 milligrams of cholesterol per deciliter of blood. As blood cholesterol increases above this level, greater risk for heart disease occurs. Risk can also be increased by high blood pressure, cigarette smoking, diabetes, a family history of premature heart disease, and being a male.

The way diet affects blood cholesterol varies among individuals. However, blood cholesterol does increase in most people when they eat a diet high in saturated fatty acids and cholesterol and excessive in calories. Of these, dietary saturated fatty acids has the greatest effect; dietary cholesterol has less.

Suggested goals for fats in American diets are as follows:

In diets of adults, total fat in an amount that provides 30 percent or less of calories is suggested. Thus, the number of grams of fat you should have in your diet depends on the calories you need for healthy weight.

At 2,000 calories per day, your suggested upper limit for fat is 600 calories, or about 67 grams, of fat each day. (See box for the grams of fat in some foods.) If your calorie needs are lower, consume less fat. If you are more active and your calorie needs are higher, your diet can contain more fat.

This goal is not for children under 2 years, who need fat to get enough calories. Children 2 years and over can grow and develop normally when eating a nutritious diet containing 30 percent of calories as fat. However, flexibility may be needed to achieve diets that are acceptable to them and support their normal growth and development.

Saturated fatty acids in an amount that provides less than 10 percent of calories is suggested for adults. Most fats contain some saturated fatty acids. The fat in animal products is the main source in most diets, with tropical oils (coconut, palm kernel, and palm oils) and hydrogenated fats providing smaller amounts. Also, animal products are the source of all dietary cholesterol. So eating less fat from animal sources will help lower both saturated fatty acids and cholesterol in your diet.

These goals for fats apply to your diet over several days, not to a single meal or food. Some foods that contain fat, saturated fatty acids, and cholesterol, such as meats, milk, cheese, and eggs, also contain high-quality protein and are our best sources of certain vitamins and minerals. Well-trimmed lean meat and lowfat milk and cheeses are nutritious and lower in fat.

Advice for today: Have your blood cholesterol level checked by a doctor. If it is high, follow the doctor's advice about diet or medication. If it is acceptable, help keep it that way with a diet low in fat, saturated fat, and cholesterol: Eat plenty of vegetables, fruits, and grain products; choose lean meats, fish, poultry without skin, and lowfat dairy products most of the time; and use fats and oils sparingly.

---

#### FOR A DIET LOW IN FATS

##### Fats and oils

- Use fats and oils sparingly in cooking and as salad dressing and spreads such as butter and margarine. (One tablespoon of these spreads provides 10 to 11 grams of fat.)
- Choose liquid vegetable oils, which are lower in saturated fatty acids, most often.

##### Meat, poultry, fish, dry beans, and eggs

- Have two or three servings, with a total of about 6 ounces, daily. (Three ounces of cooked lean beef, chicken without skin or broiled halibut--about the size of a deck of cards--provides about 6 grams of fat.)
- Trim fat from meat and take the skin off poultry.
- Have cooked dry beans and peas instead of meat occasionally. Count 1/2 cup as 1 ounce of lean meat.
- Try using two egg whites (which contain no

cholesterol) in place of a whole egg in baking. Count one egg as 1 ounce of lean meat.

##### Milk and milk products

- Have two or three servings daily. Count as a serving 1 cup of milk or yogurt or 1-1/2 ounces of cheese.
- Choose skim or lowfat milk and lowfat yogurt and cheese most of the time. (One cup of skim milk has only a trace of fat, 1 cup of 2 percent fat milk has 5 grams of fat, and 1 cup of whole milk has 8 grams of fat.)
- Use higher fat milk products, such as regular cheese and ice cream, in smaller servings and less often.

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#### Choose a Diet With Plenty of Vegetables, Fruits, and Grain Products

This guideline recommends that adults eat daily at least three servings of vegetables, two servings of fruits, and six servings of grain products. (See box for what to count as a serving.) Children should be encouraged to develop similar practices.

Vegetables, fruits, and grain products (such as breads, cereals, pasta, and rice) are parts of the varied diet suggested in the first guideline. They are emphasized here for their carbohydrate and dietary fiber content. By choosing suggested amounts of these foods, you will probably increase dietary fiber and carbohydrates and decrease fat in your diet, as health authorities suggest.

Carbohydrates in these foods are of two kinds--simple sugars and complex carbohydrates, such as starch. Fruits, which contain sugar naturally, also provide important nutrients. Many other foods that contain large amounts of sugar or other caloric sweeteners, such as soft drinks and candies, supply calories but few nutrients. Most foods high in complex carbohydrates, such as breads, cereals, pasta, rice, dry beans and peas, and potatoes, supply vitamins and minerals. Also, these foods and other vegetables and fruits add fiber to your diet.

Dietary fiber is a part of plant foods. Because foods differ in the kinds of fiber they contain, it's best to eat a variety of fiber-rich foods--whole-grain breads and cereals, vegetables, dry beans and peas, and fruits.

Eating foods with fiber is important for proper bowel function and can reduce symptoms of chronic constipation, diverticular disease, and some types of irritable bowel.

Populations like ours with diets low in complex carbohydrates and dietary fiber and high in fat tend to have more heart disease, obesity, and some cancers. Just how dietary fiber is involved is not yet clear. Some of the benefit from a higher fiber diet may be from the foods providing fiber, not from fiber alone. For this reason, it's best to get fiber from foods rather than supplements. Excessive use of fiber supplements is associated with greater risk for intestinal problems and lower absorption of some minerals.

Advice for today: Eat more vegetables, including dry beans and peas; fruits; and breads, cereals, pasta, and rice. Increase your fiber intake by eating more of a variety of foods that contain fiber naturally.

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#### EAT EACH DAY--

##### Three or more servings of various vegetables.

(count as a serving: 1 cup of raw leafy greens, 1/2 cup of other kinds)

- Have dark-green leafy and deep-yellow vegetables often.
- Use dry beans and peas often. They can count as vegetables or as alternates to meats.
- Also use starchy vegetables, such as potatoes and corn.

##### Two or more servings of various fruits.

(count as a serving: 1 medium apple, orange, banana; 1/2 cup of small or diced fruit; 3/4 cup of juice)

- Have citrus fruits or juices, melons, or berries regularly.
- Choose fruits as desserts and fruit juices as beverages.

##### Six or more servings of breads, cereals, pasta, and rice.

(count as a serving: 1 slice of bread; 1/2 bun, bagel, or English muffin; 1 ounce dry ready-to-eat cereal; 1/2 cup cooked cereal, rice, or pasta)

- Include products from a variety of grains, such as wheat, rice, oats, and corn.

- Have several servings of whole-grain breads and cereals daily.

Vegetables, fruits, and grain products are generally low in calories if fats and sugars are used sparingly in their preparation and at the table.

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#### Use Sugars in Moderation

Sugars (see box) provide calories and most people like their taste. Some sugars serve as natural preservatives, thickeners, and baking aids in foods. This guideline cautions about eating sugars in large amounts and about frequent snacks of foods containing sugars and starches.

Sugars and most foods that contain them in large amounts supply calories but are limited in essential nutrients. Thus, they should be used in moderation by most healthy people and sparingly by people with low calorie needs. For very active people with high energy needs, sugars can be a useful source of calories.

Both kinds of carbohydrates -- simple sugars and starches, which break down into sugars--can contribute to the development of tooth decay. The more often foods containing these carbohydrates are eaten and the longer they are in the mouth before teeth are brushed, the greater the risk. Sugars and starches are in most foods--milk, fruits, and some vegetables as well as breads, cereals, and other foods with sugars and starches as ingredients.

Regular brushing helps prevent tooth decay. Daily use of a fluoride toothpaste helps reduce tooth decay by getting fluoride into the mouth frequently. Fluoridated water or other sources of fluoride are especially important for children whose unerupted teeth are forming and growing.

Sugar substitutes (artificial sweeteners) such as sorbitol, saccharin, and aspartame are ingredients in many foods. Some supply calories; others do not. Artificial sweeteners are useful as sugar replacements for persons concerned about calorie intake. They have no known health advantages for healthy people.

Diets high in sugar have not been shown to cause diabetes. The most common type of diabetes occurs in overweight adults, and avoiding sugars alone will not correct overweight.

Advice for today: Use sugars in moderate amounts --sparingly if your calorie needs are low. Avoid excessive snacking and brush your teeth regularly.

#### WHAT IS MEANT BY "SUGARS"?

table sugar (sucrose)	honey
brown sugar	syrup
raw sugar	corn sweetener
glucose (dextrose)	high-fructose
fructose	corn syrup
maltose	molasses
lactose	fruit juice
	concentrate

Read food labels. A food is high in sugars if its ingredient list shows one of the above first or second or if it shows several of them.

#### FOR HEALTHIER TEETH--

- Moderate between-meal use of foods containing sugars and starches.
- Brush and floss teeth regularly.
- Use a fluoride toothpaste.
- Consult your dentist or doctor about the need for supplemental fluoride, especially by children.

#### Use Salt and Sodium in Moderation

Table salt contains sodium and chloride; both are essential in the diet. Salt provides most of the sodium in our diets. Some sodium is in preservatives and flavor enhancers added to foods. Most Americans eat more salt and sodium than they need.

In populations with diets low in salt, high blood pressure is less common than in populations with diets high in salt. In the United States, about one in three adults has high blood pressure. If these people restrict their salt and sodium, usually their blood pressure will fall.

Eating a diet with less salt and sodium may help some people reduce their risk of developing high blood pressure. At present there is no way to predict who might develop high blood pressure and who will benefit from restricting dietary salt and sodium. Other factors known to affect blood pressure are heredity, obesity, and excessive drinking of alcoholic beverages. If adults elect to drink alcoholic beverages, they should consume them in moderate amounts (see box).

Some people should not drink alcoholic beverages:

Advice for today: Have your blood pressure checked. If it is high, consult with a doctor about diet and medication. If it is normal, use salt and sodium in moderation.

#### TO MODERATE USE OF SALT AND SODIUM

- Use salt sparingly in cooking and at the table.
- Learn to enjoy the flavors of unsalted foods.
- Try flavoring foods with herbs, spices, and lemon juice.
- Use salted and high-sodium foods sparingly. Examples are salted chips, crackers, pretzels, nuts and seeds; pickles, olives, and condiments; some processed meats and cheeses; and many frozen meals and fast foods.
- Check ingredients on food labels. Some that contain sodium are baking powder, baking soda, monosodium glutamate, and others with "sodium" in their names.
- Compare the amounts of sodium in a serving of those foods showing it on nutrition labels. Choose those lower in sodium most of the time.

#### If You Drink Alcoholic Beverages, Do So In Moderation

Alcoholic beverages supply calories but little or no nutrients. Drinking them has no net health benefit, is linked with many health problems, is the cause of many accidents, and can lead to addiction. Their consumption is not recommended. If adults elect to drink alcoholic beverages, they should consume them in moderate amounts (see box).

Some people should not drink alcoholic beverages:

- Women who are pregnant or trying to conceive. Major birth defects have been attributed to heavy drinking by the mother while pregnant. It is wise for women who are pregnant or trying to conceive not to drink alcoholic beverages. However, there is no conclusive evidence that an occasional drink is harmful.



- Individuals who plan to drive or engage in other activities that require attention or skill. Most people retain some alcohol in the blood 3 to 5 hours after even moderate drinking.
- Individuals using medicines, even over-the-counter kinds. Alcohol may affect the benefits or toxicity of medicines. Also, some medicines may increase blood alcohol levels or increase alcohol's adverse effect on the brain.
- Individuals who cannot keep their drinking moderate. This is a special concern for recovering alcoholics and people whose family members have alcohol problems.

Heavy drinkers are often malnourished because of low food intake and poor absorption of nutrients by the body. Too much alcohol may cause cirrhosis of the liver, inflammation of the pancreas, damage to the brain and heart, and increased risk for many cancers.

Some studies have suggested that moderate drinking is linked to lower risk for heart attacks. However, drinking is also linked to higher risk for hypertension and hemorrhagic stroke.

Advice for today: If you drink alcoholic beverages, do so in moderation; and don't drive.

#### WHAT'S MODERATE DRINKING?

Women: No more than 1 drink a day

Men: No more than 2 drinks a day

Count as a drink:

- 12 ounces of regular beer
- 5 ounces of wine
- 1-1/2 ounces of distilled spirits (80 proof)

Acknowledgments: The U.S. Department of Agriculture and the U.S. Department of Health and Human Services acknowledge the recommendations of the Dietary Guidelines Advisory Committee--the basis for this edition. The Committee consisted of Malden C. Nesheim, Ph.D. (chairman); Lewis A. Barnes, M.D.; Peggy R. Borum, Ph.D.; C. Wayne Callaway, M.D.; John C. LaRosa, M.D.; Charles S. Lieber, M.D.; John A. Milner, Ph.D.; Rebecca M. Mullis, Ph.D., and Barbara O. Schneeman, Ph.D.

#### Some of the scientific basis for these guidelines:

- The Surgeon General's Report on Nutrition and Health. 1988. Public Health Service, U.S. Department of Health and Human Services.
- Diet and Health: Implications for Reducing Chronic Disease Risk. 1989. National Research Council, National Academy of Sciences.
- Recommended Dietary Allowances. Tenth Edition, 1989. National Research Council, National Academy of Sciences.

#### Information on how to put the guidelines into practice:

- Contact the Human Nutrition Information Service, USDA, Room 325-A, Federal Building, Hyattsville, MD 20782, for how to order:
- The USDA Food Guide in "Preparing Foods and Planning Menus Using the Dietary Guidelines." HG-232-8, 1989.
- "Dietary Guidelines and Your Diet." HG-232-1 through -11, 1986 and 1989. Bulletins on eating right the Dietary Guidelines way.
- "Nutritive Value of Foods", HG-72. 1985.
- Contact the National Institutes of Health, Room 10 A 24, Building 31, Bethesda, MD 20892, for this and other bulletins:
- "Eating for Life." NIH Publication No. 88-3000, 1988.
- Contact your county extension home economist (Cooperative Extension System) or a nutrition professional in your local Public Health Department, hospital, American Red Cross, Dietetic Association, Diabetes Association, Heart Association, or Cancer Society.

### Other Recommendations

In addition to the recommendation for the content of Nutrition and Your Health: Dietary Guidelines for Americans, Third Edition, the Dietary Guidelines Advisory Committee recommends the following to the Departments of Agriculture and of Health and Human Services:

1. Publish the Third Edition and promote and distribute it extensively. The Committee believes the health of people in every household in the country would probably be improved if they followed the advice this bulletin presents. Therefore, broad free distribution of the bulletin is encouraged, as is communication of the bulletin's messages through health professionals, educators, and the media.
2. Use the Dietary Guidelines as the policy basis for nutrition education and information programs of both Departments.
3. Promote food labeling policies and regulations that will help consumers to use the information on food labels to implement these guidelines.
4. Encourage the Public Health Service to develop an easy-to-understand definition of healthful weight, for use by individuals, that takes into account emerging research on the amount and location of body fat relative to mortality and morbidity.
5. Conduct research to assess the understanding and use of the Third Edition by groups of consumers with different demographic and socioeconomic characteristics and by the nutrition educators and health professionals who serve them.
6. Develop and publish materials to help people of different economic and education levels, backgrounds, and interests to implement the guidelines and to counteract misunderstandings identified by research in item 5.
7. Explore the need for additional guidance for special age groups, especially infants, children, and elderly persons.
8. Convene an advisory committee of nationally recognized nutrition and health authorities in 1994 to review the Third Edition for its scientific accuracy and relevance to consumer and policy needs.

## DISCUSSION OF CHANGES PROPOSED

The Dietary Guidelines Advisory Committee finds that some revision of Nutrition and Your Health: Dietary Guidelines for Americans, Second Edition, is warranted for two main reasons.

First, some modifications are appropriate to reflect the current state of knowledge of the relationship of diet to chronic disease risk. Two major reviews, The Surgeon General's Report on Nutrition and Health (1) and the National Research Council's Diet and Health: Implications for Chronic Disease Risk (2), provide a solid scientific basis upon which to review the bulletin. These reports and several other more disease-specific documents, such as the Report of the Expert Panel on Population Strategies for Blood Cholesterol Reduction of the National Heart, Lung, and Blood Institute's National Cholesterol Education Program (3) indicate that general agreement now exists on certain primary recommendations for improvement in American diets.

Second, some modifications in the bulletin are warranted to reflect new understanding about the use and limitation on use of the bulletin by the Federal government, by health and education professionals, and by the general public. This better understanding comes from research conducted on the use and usefulness of the bulletin by the University of Wisconsin and The Pennsylvania State University (see Appendix I) and from public comments directed to the Committee (see Appendix II).

Additionally, Committee members believe that this widely distributed bulletin offers a unique opportunity to provide sound information to American consumers who are increasingly interested in the role of diet in health. They want to respond to certain needs for change recognized from their own experiences with the guidelines and the issues they address, most of which are consistent with results from research on the uses of the guidelines. Some such needs, discussed at the DGAC's first meeting, are as follows:

- Give attention to special guidance for groups within the population such as infants, children, and elderly persons.
- Focus on total diet. Counteract misinterpretations of information in the bulletin that some foods are "good" and others are "bad" and that certain "bad" foods should be eliminated from the diet.
- Emphasize the potential benefits to persons who follow the guidelines as opposed to problems that occur if they do not.
- Provide additional and specific guidance on food selection as space permits.
- Counteract the belief that overweight is a result of overeating only; emphasize need for physical activity.
- If broad scientific consensus exists on a numerical goal for a dietary component, present the goal to provide a target for those in the population who wish to assess their diets and to make it clear that a goal of "0" is not intended.

The Committee recognizes that the existing Dietary Guidelines for Americans are well established as the basis for Federal nutrition policy and as a central dietary guidance message for the public. They appreciate the excellence of the

earlier editions of the guidelines and the efforts of their originators. They also recognize efforts of the two Departments and others who have promoted the use of the guidelines.

The changes proposed are in no way critical of the interpretation of the science or the selection of priority issues for presentation in the earlier editions of the bulletin. Rather, the changes proposed here are intended to enhance the soundness and the usefulness of the guidance in the 1990's, based on information generally not available to earlier drafters.

The Committee is aware of the importance of the stability of the message in efforts to educate the public about nutrition and health and the potential for confusion that change in the message can cause. The Committee restricted its changes to issues where it believes change is clearly indicated. The text was also edited for consistency in style and presentation from one guideline to another.

#### **The cover of the bulletin**

The basic messages in the seven guidelines, as presented on the cover of the Second Edition, remain sound and of major importance in making food choices. The DGAC recommends some modification in wording (see Table 1).

- "Desirable weight" is changed to "healthy weight" to reflect the more health-oriented definition proposed in the text.
- The guidance on fats is reworded to make it clear on the bulletin's cover that fat in the total diet is the focus and to state the guideline more positively.
- The adequacy of the food components, starch and fiber, in the diet is assured through guidance on selection of foods containing these components. This reflects current scientific evidence on the need to consume more of these foods and on research that found guidance on food selection to be more useful to the public than guidance on food components.
- The term "sugar" is replaced by the term "sugars," which more accurately defines the group of foods of concern, sugar and other caloric sweeteners, referred to and listed in the text.
- Salt and sodium are used in the guideline previously referring only to sodium because salt provides most of the sodium in diets and is a better understood term.
- The phrase "Avoid too much" is replaced by "Use ... in moderation" in an attempt to be more positive and to remove possible misunderstanding that all caloric sweeteners, and salt and sodium, are to be eliminated from the diet.

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**Table 1. CHANGES PROPOSED TO FRONT COVER**

<u>Second Edition</u>	<u>Proposed Third Edition</u>
Eat a variety of foods	(same)
Maintain desirable weight	Maintain healthy weight
Avoid too much fat, saturated fat, and cholesterol	Choose a diet low in fat, saturated fat, and cholesterol
Eat foods with adequate starch and fiber	Choose a diet with plenty of vegetables, fruits, and grain products
Avoid too much sugar	Use sugars in moderation
Avoid too much sodium	Use salt and sodium in moderation
If you drink alcoholic beverages, do so in moderation	(same)

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**The text of the bulletin**

The proposed text to accompany the guidelines has been modified somewhat to reflect the greater consensus on some nutrition issues since the early 1980's. The content and organization of information about the guidelines are modified for more consistency. "Advice for today" and "boxes" containing tips on implementation are included for each guideline. Also, the concerns of the DGAC noted on page 15 and the recommendations based on research on the use and usefulness of the current guidelines were taken into account where possible.

Some statements in the text of the Second Edition have been deleted. This does not necessarily mean that the DGAC considers the deleted statement to be untrue or irrelevant. Deletion may have been necessary to allow space for inclusion of information the Committee believes to be of greater current significance to the reader in selecting a healthful diet. For example, more space is needed for new material about the guidelines on weight; fats; vegetables, fruits, and grain products; and alcoholic beverages.

In the rest of this section, the reasons for the modifications recommended to the text of the bulletin are discussed. Principal changes are listed in Table 2.

**Table 2. LIST OF CHANGES TO TEXT OF SECOND EDITION**

<b>Introduction:</b>	<p>State purpose and basis of guidelines; specify audience.</p> <p>Emphasize consensus by authorities.</p> <p>Emphasize guidelines to reduce fats and to increase carbohydrate and fiber.</p> <p>Define moderation as avoidance of dietary extremes.</p> <p>Advise Americans to "know their numbers" for blood cholesterol, blood pressure, blood sugar, etc.</p> <p>State that the food supply is safe.</p> <p>Present guidelines diet as healthful and enjoyable.</p>
<b>Eat a Variety of Foods:</b>	<p>Identify for potential inclusion in an adequate diet any food that supplies calories and essential nutrients.</p> <p>Add suggested servings of food groups and reference USDA's Food Guide.</p> <p>Emphasize the need to follow other guidelines while choosing a varied diet.</p> <p>Advise some groups to eat more calcium- and iron-rich foods.</p> <p>Advise use of low-calorie foods from food groups, especially for some elderly persons and persons who are sedentary and trying to lose weight.</p> <p>Identify people who may need supplements.</p> <p>Present general guidance about infant feeding.</p>
<b>Maintain Healthy Weight:</b>	<p>Add "too lean" as a health problem.</p> <p>Define healthy weight considering body mass index, waist-to-hip ratio, and presence of weight-related disease.</p> <p>Stress need for different weight reduction strategies.</p> <p>Revise information on energy expended in various activities.</p> <p>Define reasonable weight reduction as 1/2 to 1 pound, rather than 1 to 2 pounds per week.</p> <p>Caution against use of drugs and other extreme means of reducing weight.</p> <p>Introduce advice about children.</p>
<b>Choose a Diet Low in Fat, Saturated Fat, and Cholesterol:</b>	<p>Emphasize need for Americans to eat such a diet.</p> <p>Give numerical goals for fat and saturated fatty acids for adults.</p> <p>Emphasize that goals are not for children under 2 years of age. Advise flexibility for older children.</p>

	<p>State desirable level of blood cholesterol for adults.</p> <p>Suggest blood cholesterol check.</p> <p>Give implementation tips by food group.</p>
<p><b>Choose a Diet With Plenty of Vegetables, Fruits, and Grain Products:</b></p>	<p>Emphasize foods for increasing carbohydrate and fiber.</p> <p>Link this advice to lowering fat in the diet.</p> <p>Make advice on dietary fiber consistent with SG and NRC reports.</p> <p>Give advice on selection of vegetables, fruits, and grain products.</p>
<p><b>Use Sugars in Moderation:</b></p>	<p>Define "sugars."</p> <p>Advise that sugars be used sparingly by people with low-calorie needs, but identify them as a useful source of energy for active people with high-calorie needs.</p> <p>Delete reference to "sticky" foods.</p> <p>Suggest avoiding excessive snacking and brushing teeth regularly to minimize time food is in mouth.</p> <p>Promote fluoride.</p> <p>Discuss sugar substitutes.</p> <p>Direct information in "box" to healthy teeth.</p>
<p><b>Use Salt and Sodium in Moderation:</b></p>	<p>Use salt, as well as sodium, in guideline.</p> <p>Add heredity and excessive drinking as factors related to high blood pressure.</p> <p>Suggest blood pressure check.</p> <p>Refer to sodium labeling.</p>
<p><b>If You Drink Alcoholic Beverages, Do So in Moderation:</b></p>	<p>Make clear that alcohol has no net benefit to health.</p> <p>Define moderate drinking.</p> <p>Identify people who should not drink.</p> <p>Add inflammation of pancreas and damage to heart and brain as complications of drinking.</p> <p>Refer to studies that link alcohol to lower risk for heart attacks and offsetting higher risk for hypertension and hemorrhagic stroke.</p>

## Introduction

Purpose and basis of guidelines. The Committee added a brief statement of the purpose and basis of these guidelines. This statement is especially useful at this time, because several sets of dietary recommendations or guidelines for different purposes and audiences have been developed by various groups and released through the media and other means. The statement sets the guidelines in this bulletin apart as guidelines healthy Americans can use, knowing they are the agreed-upon nutrition education message of the USDA and DHHS based on recommendations of experts outside government.

Audience. Children under 2 years of age are specifically excluded as users of these guidelines because their nutritional needs and dietary patterns differ from those of older children and adults.

Consensus recognized. Consensus among health authorities regarding the health advantages of certain changes in the dietary patterns of Americans is increasingly apparent. This is especially true with regard to recommendations to decrease fat and increase complex carbohydrate and fiber in diets in The Surgeon General's Report on Nutrition and Health (SG), the National Research Council's (NRC) report, Diet and Health: Implications for Chronic Disease Risk, and other recent scientific reviews. The Committee highlighted consensus rather than the difference of opinion and uncertainty deemed appropriate at the time the Second Edition was prepared. Lack of understanding of the exact role of the diet in certain diseases remains, however, and this is noted.

Emphasis on decreasing fat and increasing carbohydrate and fiber. The introduction gives additional emphasis to the guidelines on fat and foods providing complex carbohydrate and fiber. This reflects the emphasis on these recommendations in the SG and NRC reports.

Moderation. The importance of moderation in dietary matters is emphasized to help combat the tendency toward dietary extremes brought on by misinterpretation of dietary information by consumers and misrepresentation of information by promoters. The Committee sees this tendency toward extremes to be of increasing concern as more Americans become interested in nutrition and look to diet as a way to prevent or cure disease, frequently based on incomplete or inaccurate information.

"Knowing your numbers." The importance of knowing about major risk factors for chronic diseases is noted by the Committee. The suggestions that attention be given to body weight and that levels of blood lipids, blood pressure, and blood sugar be checked are added. Blood cholesterol and blood pressure checks are again encouraged in the text accompanying the guidelines on fat and on salt and sodium, respectively. Specification of the group to be screened--adults, adults and children, etc.--was left vague intentionally, recognizing the uncertainty at this time about the need for screening children. Adults, the most likely readers of the bulletin, are expected to use the advice. Its use by children would not be harmful.

Safety of food supply. A statement that the food supply is safe is added to help respond to increasing public concern about food safety. The Committee believes a varied diet such as the guidelines suggest, in addition to safe food handling practices, is a good strategy for people concerned about food safety. The NRC report recognizes the shortage of data on the complete range of nonnutritive toxic substances



but concludes that exposure to them individually in the minute quantities normally present in the average varied diet is unlikely to make a contribution to overall health risk in the United States.

Healthful diets that are enjoyable. In formulating these guidelines and advice about their implementation, the Committee recognized the importance of enjoyment of eating through emphasis on variety and moderation rather than dietary restriction.

## **Eat a Variety of Foods**

Guideline. The Federal Government has recommended a varied diet to Americans for over 100 years. The Committee agrees that this advice remains sound. Although the SG and NRC reports focus primarily on diet as it relates to prevention of chronic diseases, both reports recognize the need for diets to be made up of foods that together provide recommended amounts of essential nutrients. In the proposed Third Edition, the 1989 Recommended Dietary Allowances (4) is referenced on the back cover.

Total diet focus. The Committee's concern that certain foods are increasingly perceived as "bad" and unfit for inclusion in the diet is addressed. Any food that supplies calories and essential nutrients is recognized as potentially useful in a nutritious diet.

Numbers of servings from food groups. Research conducted on the use of the Second Edition by The Pennsylvania State University found users of the bulletin to be interested in more guidance about food selection. Thus, the Committee included suggested numbers of servings of foods from the major food groups with the variety guideline. Also, suggested quantities of food groups with food selection tips accompany the fat and vegetable, fruit, and grain products guidelines. USDA's Food Guide is referenced. Bulletins presenting the Food Guide (5, 9), one in preparation and the other published, specify the numbers of servings from five food groups to provide needed nutrients at different energy levels, while considering the other guidelines as well. Publications presenting the research basis for the guide are available from USDA's Human Nutrition Information Service (5, 6, 7, 8, 9).

Relation to other guidelines. The Committee recognizes that consuming a variety of foods from the five food groups will not automatically insure food selections that make up a healthful diet. Thus, it includes a statement emphasizing the need to follow the other guidelines in the bulletin when selecting a varied diet. Such a statement is consistent with the SG conclusion that existing scientific evidence on diet's association with disease supports the recommendation to consume a variety of foods, provided that foods selected make up a diet that is low in fat, saturated fat, cholesterol, and sodium and provides an appropriate level of energy.

Calcium and iron intakes. The need for certain groups in the population to increase consumption of calcium- and iron-rich foods is introduced. This need is stated specifically in the SG report. Both the SG and NRC reviews found a lack of precise relationship of dietary calcium to osteoporosis but recognized that higher intakes by women, especially during adolescence and early adulthood, can increase bone mass and delay the onset of fractures later in life.

Low-calorie diets. Persons who eat little food are at special risk of low intake of essential nutrients. Therefore, they must be more careful to select lower calorie foods from the food groups than persons with high calorie needs. Some elderly persons, persons who are sedentary, and those trying to lose weight are recognized in the text as persons needing especially to select such foods.

Supplements. The Third Edition, like the Second, advises against large dose supplements, suggests that supplements are rarely needed if you eat a variety of foods, and notes some situations in which supplements may be recommended by a physician. The Third Edition also notes that supplements at or below RDA levels are safe. The NRC report cautions that supplements in excess of the RDA in any 1 day be avoided and advises the public to obtain recommended levels of nutrients by eating a variety of foods. The NRC and SG reports note the need for supplements by some people, such as infants, pregnant women, and some elderly persons.

Infants. The Committee specifically excluded children under 2 years of age in developing these guidelines because their nutritional needs and eating patterns differ from those of older children and adults. However, the Committee wanted to include some dietary advice for this important part of the population. The text for the variety guideline seemed the best place for the advice. It appears near the front of the bulletin and earlier editions included some advice about diets of infants here. Also, the concepts in this guideline--meeting nutritional needs and consuming a variety of foods--are the main factors that distinguish the infant's diet from diets of older people.

The brief advice on infants' diets included is consistent with advice from the American Academy of Pediatrics and the American Academy of Pediatric Dentistry (AAPD). A caution about using bottles as pacifiers was added because of the increased risk for tooth decay. Infants who use nursing bottles containing milk, formula, or juice as pacifiers and who breast feed on demand at times other than normal feedings and throughout the evening often develop early, multiple caries lesions (10). The AAPD believes that a meaningful portion of the caries observed in young children (12-24 months of age) is traceable to such practices. The infant's need for adequate iron from food and possibly a supplement as advised by a physician is emphasized.

Elderly persons. Evidence available at this time supports application of all of the proposed guidelines by elderly people; therefore, healthy people from this group as a whole do not require special guidance. Surveys indicate that average food intake by elderly people is less than that by younger adults. Thus, those elderly people who eat little food, as well as people who are sedentary or trying to lose weight, are advised to choose low-calorie foods from the five food groups and to eat sparingly of high-calorie foods that provide little or no essential nutrients. Elderly persons who are very inactive and eat little food and those who take medications that may interact with nutrients are among those listed as possibly needing supplements under the advice of a doctor.

The Committee recognizes that many elderly persons have impaired mobility, poor appetites, and other problems that affect their implementation of the guidelines. It suggests that the Departments explore the need for special guidance that considers these problems of elderly persons.

## Maintain Healthy Weight

The Committee agrees that certain aspects of the science and its application relative to body weight have advanced sufficiently since 1985 to recommend changes in this guideline and its explanatory text. It found the SG and NRC reports to be excellent and complementary summaries of the current knowledge.

Guideline. The guideline itself is changed from "desirable" to "healthy," a less ambiguous term that can now be more adequately defined than when earlier editions were developed. The science on how body fat and its location in the body relate to health problems and mortality is advancing. More precise definitions than proposed here should be available by the next review of the guidelines. Their development by experts in body weight under the auspices of the Public Health Service is recommended.

Excessive leanness. Recognition is given to excessive "leanness" as a danger. Although "fatness" is a concern to more Americans, excessive leanness is also associated with health problems and premature death and deserves attention in this document.

Healthy weight defined. Under the leadership of Dr. Callaway, an interim definition of healthy weight was proposed. The advice of Dr. George Bray, Dr. M.R.C. Greenwood, and Dr. Judith Stern is also acknowledged.

The definition proposed is intended as one that individuals can use to assess their weight for health. It suggests that the individual consider three criteria: (1) Weight falls within weight ranges for given heights based on body mass index (BMI) standards, (2) waist-to-hip ratio is not at a level associated with high risk for morbidity and mortality, and (3) no medical problems requiring weight gain or loss exist.

Dr. Callaway presented such a definition at a National Institutes of Health workshop on weight's effect on morbidity and mortality in November 1989. Participants supported the need for improved procedures for use by both professionals and individuals in assessing weight. They agreed that both BMI and waist-to-hip ratio, as well as existence of weight-related health problems, are important considerations in deciding whether an individual should undertake weight modification for reasons of health. Specific criteria for such a definition were not established at the workshop.

The Committee cautions that this newly presented definition of healthy weight is interim and will need careful review by the next DGAC with regard both to new research and to its understanding by and usefulness to professionals and the public. The Committee expects that this widely distributed bulletin will be helpful in introducing the public and many professionals to the relatively new concepts in this definition.

Height-weight table. The table of acceptable weight ranges reflects BMI ranges defined by experts on body weight's effect on health and mortality and published in the NRC report. BMI (body weight in kilograms divided by height in meters squared) is correlated with body fat and frequently used in developing height-weight tables. Its use by physicians in evaluating the health of patients was recommended in the conference report on the Health Implications of Obesity (11).

The Committee sought a table of weights associated with a long and healthy life, presented in a simple and useful format. Several alternative standards were reviewed; none met the criteria in full.

The 1959 and 1983 Metropolitan tables were based on nonrepresentative populations—people who applied for life insurance. Acceptable weights defined by the 15th and 85th percentiles on distributions of BMI's for a representative sample of men and women 20 to 29 years of age from the Second National Health and Nutrition Examination Survey (1976-80) are normative, rather than related to health and mortality (12). They also assume that optimal weights remain constant at different ages, an assumption that may not be justified. Canadian standards, published in 1988 (13) are based on health and mortality effects of weight but do not reflect some of the more recent studies reviewed for the NRC report of 1989. The NRC report covers the most recent research on the body weight's effect on health and mortality, including some showing that people can be somewhat heavier as they grow older without risk to health.

The BMI ranges defined as acceptable in the NRC report, table 21-1, are the same for men and women and are shown for 10-year age categories. For simplification, the Committee proposes two age categories (19 to 34 years and 35 years and over). The BMI's used are 19 to 25 for persons 19 to 34 years and 21 to 27 for persons 35 years and over. These BMI's are consistent with those in the NRC report with one exception. The BMI for the upper limit for the older group is set at 27, the upper limit for acceptable weight in the Canadian standards. The NRC report's highest BMI of 29 was not used because of age categories presented and of newer research that indicates that men may be less able than women to gain weight as they grow older without risk to health.

Waist-to-hip ratio. The location of body fat is a factor in health risk. Women more often than men have fat located in the hip region and in subcutaneous areas. Men more often have fat in the abdominal region and fat in this region has been shown to be an independent marker of higher risk for several chronic diseases. The waist-to-hip ratio is used for considering this factor in the proposed definition of healthy weight.

Waist-to-hip ratios associated with high risk of obesity-related conditions such as diabetes, gall bladder disease, hypertension, hypercholesterolemia, and cardiovascular disease for men and women are approximated from the NRC report, Figure 21-3, and from discussions at the NIH workshop. They are 0.95 or above for men and 0.80 or above for women. These reference values for high-risk waist-to-hip ratios sacrifice some of the precision of the standards presented in the NRC report to allow for the simplicity of presentation the Committee believes necessary for this bulletin at this time. More detailed information may be given in supplementary materials.

The suggested procedure for determining waist-to-hip ratio is in a manner recommended by expert panels on weight standards convened by the World Health Organization. Measurements of waist circumference are taken at a point midway between the lower rib margin and the iliac crest and hip circumference at the largest point over the buttock. Circumference measures are easier to obtain than anthropometric measures and they are more reproducible by a sizable margin.

Weight-related health problems. The third of the criteria recognizes that some people who meet the body weight and body shape criteria may not have a healthy weight because they have special health problems for which a physician recommends weight loss or weight gain.

Treatment of overweight. The heterogeneity of the origin of overweight, including heredity and eating and activity patterns, is emphasized. The need for different forms of treatment is noted, without recommending any one. Some general guidance is given without prescribing diets for weight loss.

Increasing regular exercise is recommended for sedentary people, and information on energy expended in some common activities is given in a box. The energy expenditure data in the box were developed by Dr. Robert E. Johnson, Visiting Professor, University of Vermont School of Medicine. It gives, in general terms, a caloric expenditure for typical activities by a typical American man and woman. Energy expenditures were calculated using the median body weights for U.S. healthy men and women (4) and results from indirect calorimetry and time-motion studies (14, 15). Values are for men, age 35 years, weight 79 kilograms, and for women, age 35 years, weight 63 kilograms, performing in a comfortable environment. Expenditures shown sacrifice some accuracy for simplicity in presentation in that they do not consider certain variables that affect energy expenditure, such as terrains and altitude, age of the person, and training (14, 15, 16, 17).

Calorie reduction and modification of eating behavior are proposed for overeaters. Advice is presented in a box. Most evidence suggests that diet alone, without behavior modification, is not successful in the long term and that chronic dieters derive increasingly little effect from caloric restriction. Change in both exercise and eating behavior is recommended for long-term success in reducing and maintaining weight.

Reasonable weight loss. Reasonable weight loss is defined as "1/2 to 1 pound" a week until the goal is reached, not "1 to 2 pounds" as previously stated. A 2-pound loss theoretically represents a 1,000 calorie deficit per day--an excessive and possibly dangerous deficit for small women. The Committee believes the "1/2 to 1 pound" loss is more practical and sustainable. Over a year, it should amount to a loss of about 26 to 52 pounds. Also, a statement is added about the difficulty of sustaining a nutritious diet at energy levels of 1,200 calories or less, and average energy intakes are given for men and women 50 years of age or less whose activity is light to moderate (4).

Extreme weight loss measures. Information on the hazards of extreme measures of losing weight is expanded. A caution is added about the danger of using certain drugs for weight loss, which the Committee believes to be increasingly promoted. The next DGAC will need to review the drugs listed. It is possible that some safe drugs that are useful in weight loss may be developed and approved within the next few years.

Children's weight. The need to address some of the root causes, increased prevalence, and potential harm of extreme dieting to lose weight among adolescents and children is recognized. Lack of acceptance of the child's body shape and size by parents, peers, and the child contribute to the adoption of extreme diets that can adversely and dangerously affect the child's growth and development (18). For that reason, special attention is called to the need to help children select diets with adequate but not excessive calories and to increase physical activity, as well as to support a positive self image. Also, advice to have children's heights and weights checked regularly by a physician is added.

**Choose a Diet Low in  
Fat, Saturated Fat,  
and Cholesterol**

Several professional health organizations have concluded that a major health concern for adult Americans is the disproportionate consumption of foods high in fat. They recommend reduced consumption of fat, saturated fat, and cholesterol. Included are recommendations of the SG, the NRC, and the Expert Panel on Population Strategies for Blood Cholesterol Reduction of the National Cholesterol Education Program (NCEP).

Guideline. In presenting this recommendation to the public, the Committee proposes that the wording of the guideline as shown in the Second Edition be changed to make clear that the fat content of the total diet, not just some foods, is of concern. The objective is to keep the fat content of the diet low, not to eliminate fat from the diet.

Evidence for fat reduction. Strong justification for reduction in the consumption of fat (especially saturated fat) and cholesterol is presented in the SG, NRC, and NCEP reports. High intake of total dietary fat is associated with increased risk for obesity and some types of cancer. Strong and consistent evidence exists for the relationships of intake of saturated fatty acids, high blood cholesterol, and increased risk for coronary heart disease. Dietary cholesterol raises blood cholesterol levels, but the effect is less pronounced than that of dietary saturated fatty acids. Focus on reduction of the consumption of foods containing saturated fatty acids is expected to reduce dietary cholesterol intake.

Relation to other guidelines. A related justification for the consumption of diets low in fat concerns the high-calorie content of fat relative to protein and carbohydrate. With a high intake of fat, it is difficult for many people to consume a variety of foods that meets their nutrient needs without consuming excess calories. Thus, the moderation of energy intake from fat will facilitate meeting three of the other guidelines: Eat a variety of foods; choose a diet with plenty of vegetables, fruits, and grain products; and maintain healthy weight.

Numerical goals. The scientific soundness of numerical goals, their usefulness to the public, and the appropriateness of this bulletin for presenting them were discussed at length by the Committee. Numerical goals for fat, fatty acids, and cholesterol in diets of adults are recommended by the NRC, the NCEP, and others, but not by the SG. Groups that have presented these numerical goals have recognized that interpretation by professionals is necessary to make the goals useful to the public. Other numerical goals, such as the Recommended Dietary Allowances, also require such interpretation.

Committee members acknowledge the value of numerical goals for fats to professionals and to other persons with sufficient interest and information to evaluate their diets for lipids content. They believe also that numerical goals may help counteract the incorrect assumption by some people that fat should be eliminated from the diet.

In the discussion about numerical goals, concern was expressed that the relationships between dietary factors, serum cholesterol levels, and risk of coronary heart disease have been studied predominately in adult males. However, population data used to support this recommendation are more widely based. Concern was expressed about potential misuse of the numerical goals and poor understanding about how to use them. Questions were also raised about whether this goal is appropriate for the total population or for only individuals at risk for heart disease.

Goals proposed. The Committee concluded that the benefits, in terms of distribution of calories in the diet and in reducing disease risk, were sufficient to support the recommendation of numerical goals for all healthy adults. They chose the numerical goals suggested by several health authorities for the two food components currently believed to be of most significance to the health of Americans--total fat and saturated fatty acids--and specified them for use by adults. Adopted for use in the bulletin are the goals recommended by the NRC, NCEP, and others of 30 percent or less of energy from fat and less than 10 percent from saturated fatty acids.

These specific recommendations are based on scientific evidence, but the exact numerical values reflect both science and pragmatism (3). For example, a recommendation that less than 10 percent of calories be derived from saturated fatty acids is based on epidemiologic evidence that populations with such intakes have low coronary heart disease rates and on a large body of evidence from many kinds of studies that reducing saturated fatty acids intake will lower the level of blood cholesterol and thus lower coronary risk. There is virtually unanimous agreement that saturated fatty acid intake should be reduced and most agree that less than 10 percent of calories is an appropriate level. However, the precise level that is best remains unclear. Less than 10 percent of calories was chosen for the sake of practicality, consistency, and comprehensibility.

A similar process led to the recommendation for total fat, from which several beneficial effects can be expected. Reduction of total fat facilitates reduction of saturated fatty acids. Reduction of total fat may also help prevent obesity and is an important factor in control of high blood cholesterol and some forms of cancer (2).

Goals for diet for several days. These goals are specified for application to diets over several days (3), not for a meal or a food. Thus, foods and meals should not be evaluated exclusively by fat content expressed as a percent of calories. Some foods with relatively high percentages are important sources of essential nutrients, and some with no fat are of little value nutritionally. Meals and snacks for several days must be evaluated together for their content of fats, essential nutrients, and energy level.

Interpretation of the goal. The Committee wanted this goal for fat to be understandable and useful in conjunction with information on the fat content of foods on labels (which is in grams of fat per serving). Therefore, the number of grams of fat represented by 30 percent of a 2,000-calorie diet is given as an example. Also given (in the box) is the fat content of a few commonly used foods. Additional help in understanding and using these goals to evaluate and improve diets with respect to fat will be required on labels and in supplemental materials. Some such materials are available and others are in development (5, 9).

Use of goal by children. The Committee notes that this guideline is not for children under 2 years, recognizing that a few over-zealous parents have severely limited their infants' intakes of fat, thus causing them to fail to thrive. The American Academy of Pediatrics' Committee on Nutrition recommends against fat reduction for children under 2 years of age.

Evidence available to the DGAC indicates that children 2 years and over can grow and develop normally when consuming diets that contain 30 percent of energy as fat (3). The most recent statement from the American Academy of Pediatrics on this matter (1986) recommends that fat intake by children be 30 to 40 percent. The NRC report recommends 30 percent or less. The SG report makes no recommendation for children because of lack of data from prospective studies that show benefits of

feeding cholesterol-lowering diets to children. A fat intake for children of over 40 percent of calories from fat, however, is considered excessive (19).

From this body of evidence, the Committee concluded that health advantages would probably occur by increasing the awareness of fat intake among children through guidance for low-fat dietary patterns without being unduly restrictive. Thus, the Committee recommends flexibility in applying the numerical goal in diets of children, recognizing the priority importance of a diet that will promote normal growth and development and recognizing that the acceptability of a lower fat diet by children may need to be developed.

The Expert Panel on Blood Cholesterol Levels in Children and Adolescents, convened by the National Heart, Lung, and Blood Institute in April 1989, is expected to make its recommendations for use by professionals in a report in 1990. This report will be a useful resource for the next DGAC. Also related to this issue is new legislation requiring the USDA, with DHHS, to develop a publication, "Nutrition Guidance for Child Nutrition Programs," prior to 1992 and to apply this guidance in Child Nutrition Programs.

Blood cholesterol check. The NCEP focus on getting blood cholesterol levels checked by a physician is highlighted, and the desirable level of blood cholesterol of less than 200 milligrams per deciliter for adults is presented.

Food selection. "Advice for today" suggests which foods to include in a low-fat diet, rather than which not to include. Specific tips on selecting a diet low in fat, saturated fat, and cholesterol are given by food group in response to the call for such information by users of the bulletin and to emphasize the need for making food selections from all of the five major food groups.

**Choose a Diet With  
Plenty of Vegetables,  
Fruits, and Grain  
Products**

Guideline. The revised wording of the guideline focuses attention on specific categories of foods that contain starch and fiber. This change responds to the difficulty users have had with the current guideline to eat foods with adequate starch and fiber, which they found vague. Also, the current guideline covers both starch, perceived as undesirable, and fiber, perceived as desirable. The new wording is supported by the recommendation made in the NRC report which specifies the number of servings from these food categories on a daily basis. Likewise, the SG report defines the types of foods to be included daily for complex carbohydrate and fiber. In addition, this wording supports the need for a diet containing more than one type of fiber-containing food, noted by both the SG and NRC reports.

Suggested servings. The minimum numbers of servings from these categories of foods that adults should eat are given; children are encouraged to develop similar practices. The numbers of servings are similar to those specified by the NRC and are based on those developed and used by USDA in its Food Guidance System to help people follow the Dietary Guidelines (6, 7, 8, 9).

Relation to fat guideline. The concept of a dietary pattern that replaces calories from fat with calories from carbohydrate, highlighted in both the NRC and SG reports, is introduced. Also, the importance of fruits, which contain sugar naturally and provide essential nutrients and fiber, is clarified.

Dietary fiber and disease. Discussion of how dietary fiber relates to disease is revised to be more consistent with the SG and NRC reports and a 1987 report on dietary fiber prepared by the Life Sciences Research Office (20). Highlighted is the importance



## Use Sugars in Moderation

of fiber in proper gastrointestinal function and in reducing illnesses such as constipation, diverticular disease, and irritable bowel disorder. Dietary patterns high in fats and low in complex carbohydrate and fiber have been associated with high incidence of health problems, such as heart disease, obesity, and cancers. Just how dietary fiber relates to specific diseases is still under study.

Food sources of fiber. Getting fiber from a variety of foods, rather than supplements, is recommended. Researchers have noted that protective effects in some studies may be from foods that contain fiber, not fiber alone. Also, the use of isolated fiber supplements is not recommended because of the association of their use in large amounts with greater risk of reduced mineral availability and of intestinal problems.

Food selection. The advice on the selection of vegetables, fruits, and grain products is expanded and more specific than advice on obtaining adequate starch and fiber presented in the Second Edition. The advice is consistent with information on selection of these foods in USDA's Food Guidance System.

The Committee debated whether a "sugar" guideline should be retained in light of the lack of evidence linking sugars to diseases other than tooth decay (21). It concluded that the public health effect of issues related to tooth decay and to nutritional qualities of sugars were sufficiently strong to warrant retention of this guideline.

Importance of guideline. The need to moderate or avoid excessive use of caloric sweeteners, including sugar, is noted in both the SG and NRC reports. The importance of a guideline on the use of sugars was stressed in written comments to the Committee from numerous groups, such as the American Academy of Pediatric Dentistry (AAPD) and other dentistry and dental research groups, and from many nutrition educators (see Appendix II).

Guideline. In the guideline, the term "sugars" replaces "sugar" to describe caloric sweetening agents of all kinds, not just sucrose. What is meant by "sugars" is shown in a highlighted box. This decision to use "sugars" was made after consideration by the Committee of many alternative terms--sugar, sweets, sweeteners, caloric sweeteners, and sweetening agents--alone and in combinations. The most correct description of foods of concern is probably "sugars and other caloric sweeteners," which the Committee found unacceptably long and technical. "Sweeteners" was deemed unacceptable because it is perceived by many as referring to noncaloric or artificial sweeteners only. "Sweets" appears to mean different foods to different people. "Sugars" indicates that foods other than table sugar are involved and the foods covered by the term are identified prominently. The caution to "Use sugars in moderation" replaces "Avoid too much--" to help make it clear that some amount of sugars in the diet is acceptable, but excessive and frequent use are discouraged.

Contributions of sugars. The uses of sugars as sources of energy, their attractive taste, and their usefulness in food processing are noted (22).

Sugars as sources of energy. An important reason for moderating the use of sugars is that, although they provide calories for people who need them, they and foods that contain them in large amounts provide no or relatively small amounts of essential nutrients. This is recognized in the NRC and SG reports and was cited as an important reason for retaining this guideline by many nutrition educators who commented to the Committee. Nutrition educators observe their clients using their

calorie allowances for foods containing large amounts of sugars instead of foods that provide more essential nutrients. They count on this guideline as an educational guidepost in reversing this situation. The problem is significant for people whose energy needs are low. For people who are active and have high calorie needs, sugars are recognized as useful sources of energy.

Advances in dental science. Dental science has made great strides in the past two decades. Dental caries are now known to be symptoms of a multifactorial and complex disease to which individual susceptibility varies widely. All fermentable carbohydrate, not just sucrose, is potentially cariogenic (10, 23). The frequency of carbohydrate intake and the time of retention in the mouth are risk factors for both children and adults, subjecting their teeth to prolonged acid attack and loss of mineral. Classical studies correlating sugar intake and caries activity remain valid and have not been refuted by recent studies (24).

In the proposed Third Edition, starches are identified, along with sugars, as a key predisposing cause of caries. Dental research has shown that foods containing cooked starch are transformed into sugars in the mouth and clear slowly. As most foods contain sugar or starch, the National Institute of Dental Research, the Princeton Dental Resource Center, the American Academy of Pediatric Dentistry, and other professional dentistry groups recognize the importance of encouraging consumers to focus on snacking in moderation to hinder the formation of acid in the mouth. This is especially important for persons not regularly exposed to fluoride and comprehensive dental care (10).

Fluoride. Both the NRC and SG reports stress the usefulness of fluoride in prevention of dental caries. Fluoride is generally considered to be the most important protective factor in the dramatic improvement of dental health, with large proportions of children now having no caries. This is despite no discernible decrease in sugar consumption. Fluoride is increasingly available through water supplies, toothpastes, mouth rinses, supplements, and application by dentists. Use of a fluoride toothpaste is especially helpful because it can be a regular and frequent source of fluoride in the mouth. The AAPD suggests that, in areas where an optimal amount of fluoride is not provided through public water supplies, supplements (drops or tablets) should be used from birth through age fourteen. In addition, daily use of appropriate amounts of a fluoride dentifrice and other forms of topically applied fluoride are recommended for infants, children, teenagers, and young adults.

"Sticky" foods. Advice to avoid excessive snacking and to brush regularly with a fluoride toothpaste is now recognized to be preferable to the advice to avoid ill-defined "sticky" foods. "Sticky" and "chewy" are perceptions that do not appear to correlate well with a food's speed in clearance from the mouth. Some foods commonly thought of as "sticky," such as caramels, clear faster than others not considered to be sticky -- crackers, breakfast cereals, potato chips, dried fruit, and bread (25).

Sugar substitutes. The use of sugar substitutes, or artificial sweeteners, continues to increase. The Committee found evidence for the value of noncaloric sweeteners in weight reduction to be inconsistent (26, 27). They found no conclusive evidence of health advantage from use of sugar substitutes and adverse effects from heavy use of some.

Sugar and other diseases. The NRC report and others conclude that sugar consumption by those with an adequate diet has not been established as a risk factor

for any chronic disease other than dental caries in humans (28, 29). This was also the conclusion of a 1986 study on sugar conducted by a Food and Drug Administration Sugar's Task Force (30). With respect to the association of sugars to behavior disorders in children, the SG report found the evidence to be weak and contradictory.

#### **Use Salt and Sodium in Moderation**

Guideline. As for the sugars guideline, "Use --- in moderation" replaces "Avoid too much--" in this guideline to help make it clear that some salt and sodium in diets is acceptable but excessive use is discouraged for people with normal blood pressure, as well as hypertensives. Both salt and sodium are mentioned because salt is a better understood substance and is the main dietary source of sodium.

Other recommendations. Reduction of sodium and/or salt in diets is recommended in both the SG and NRC reports. The NRC suggests consuming less than 6 grams of salt per day and the SG presents no numerical goal. The NRC's Tenth Edition of the RDA gives 500 milligrams of sodium per day as a safe minimum intake but does not restate the 3,300 milligrams as an upper limit for adults, as suggested in the Ninth Edition.

Scientific evidence. Scientific review was based on the NRC and SG reports and an NIH workshop of experts on November 1-2, 1989. Both the NRC and the SG reached the conclusion that the evidence, taken as a whole, is persuasive in showing a link between habitual sodium intake and blood pressure. The NRC recommendation is in terms of salt, not sodium, because salt is familiar to all, the predominant anion accompanying sodium in human diets is chloride (over 90 percent of sodium intake), and there is evidence that both sodium and chloride may be important in raising blood pressure. In future research, the importance of chloride may become more clear.

There is general agreement favoring sodium restriction for persons with hypertension. This was documented by the National High Blood Pressure Education Program's Joint National Committee Report of May 1988 and the SG report.

Results reported in 1988 from the InterSalt Study involving 52 centers around the world suggested that the higher the intake of sodium, the higher the blood pressure (31). In general, the study found the rate of increase in blood pressure with age to be significantly related to sodium intake as measured by sodium excretion, with greater consistency within than between centers.

Debate continues among scientists on the association between salt and/or sodium intake and risk for high blood pressure in nonhypertensives as further analysis of the InterSalt Study proceeds and researchers continue to search for ways to predict who will develop high blood pressure and which individuals are sensitive to salt and sodium restriction. Lack of consensus, especially as it relates to guidance for nonhypertensives, was apparent at the workshop of sodium/hypertension experts convened by NIH on November 1-2, 1989.

Information for assessing intakes. Information needed by the public to understand and use numerical goals for sodium and salt is not now generally available. The sodium content of foods is shown only on labels of some processed foods. The salt content of foods is not available to the public or to professionals either on labels or in food composition tables.

Committee recommendations. Recognizing the lack of consensus among scientists on the most appropriate recommendation for the public and the fact that salt and sodium levels in the United States are well above the safe minimum intake of 500 milligrams per day, the DGAC proposes that the guideline suggest moderation in the use of sodium and its main food source, salt, but not introduce numerical goals. This recommendation that most Americans consider reducing their dietary salt and sodium intakes takes into account the predominance of salt as a source of sodium in American diets, the better understanding of the term "salt" than the term "sodium" by the public, the availability of sodium content on labels of many foods, the potential benefit of lower intakes to people whose blood pressure rises with higher sodium/salt intake, the lack of practical biological markers for identifying sodium-sensitive individuals, and the lack of known harm from moderate salt and sodium restriction.

Other dietary factors. Studies of the relationship of substances other than salt and sodium to high blood pressure were discussed by the Committee. No links were considered to be sufficiently conclusive or of enough practical value in food selection strategies to be included in the bulletin at this time.

Blood pressure check. Advice is added to get blood pressure checked and, if it is high, to consult a physician about appropriate diet or medication. The Committee considered this advice important because of the high incidence of high blood pressure among Americans and the probability that many more have high blood pressure but are not aware of it. Medical supervision is needed in establishing and monitoring dietary and other treatment because of the potential variation among individuals in sensitivity to dietary salt and sodium and to medications.

Food labeling. Guidance for moderating salt/sodium in the diet includes the suggestion to look at nutrition labels for the sodium content of foods. This suggestion was not relevant in 1985 when the Second Edition was published because sodium labeling was relatively new.

**If You Drink  
Alcoholic Beverages,  
Do So In Moderation**

Guidelines. The wording of this guideline was discussed at length by the Committee, with some members supporting a stronger caution: "Alcoholic beverages was not recommended. If you drink at all, do so in moderation." Reasons were that consuming alcoholic beverages has no net benefit to health and can be addictive. Also, excessive alcohol intake is a prominent contributor to three of the ten leading causes of death in the United States--cirrhosis of the liver, motor vehicle and other accidents, and suicide. All members agree that these are serious consequences of drinking. However, concerns by the majority of members about this stronger alternative were that it may appear to be overly judgemental and restrictive considering habits in the United States. Also it would require considerable space on the bulletin's cover, drawing undue attention to this single guideline.

Limiting drinking to moderate levels, if you drink at all, is consistent with recommendations of the SG and NRC reports. The NRC statement is the stronger: "The committee does not recommend alcohol consumption. For those who drink alcoholic beverages, the committee recommends limiting consumption to less than 1 ounce of pure alcohol in a single day." The SG recommendation includes cautions

about when to avoid drinking--before and while driving, operating machinery, or engaging in any other activity requiring judgement or while taking medications. Both the NRC and SG reports recommend avoidance of drinking while pregnant and while trying to conceive.

The DGAC proposes retaining the current guideline. However, the Committee would be agreeable to the longer and stronger guideline if the Departments prefer it.

Based on the SG and NRC reviews and recommendations and on his extensive research in the area, Dr. Lieber, a member of the DGAC, drafted the revised text for this guideline.

Moderate drinking. "Moderate" drinking is defined for normal healthy women as no more than one drink per day and for normal healthy men as no more than two drinks per day. Women are generally able to tolerate less alcohol than men because they tend to be smaller and appear to absorb more of the ethanol than men. Lighter people, because their fluid volume is less, are more susceptible to the effects of alcohol than larger, heavier people. For a given body weight, however, the volume of body water is less for females than males; therefore, a given dosage of alcohol can be expected to produce higher blood concentrations in women. Furthermore, recent research has verified that women absorb more of the ethanol than men (32).

Who should not drink. Several groups are cautioned not to drink at all--women who are pregnant or trying to conceive, people who plan to drive or engage in other activities that require a high level of attention or skill, people using medication, and people who cannot keep their drinking moderate.

Risk to fetus. The SG report concludes that the risk for fetal abnormalities increases with increased alcohol intake by the mother during pregnancy. However, studies in pregnant women have been unable to identify a threshold level of safety for alcohol intake during pregnancy. Therefore, pregnant women and women planning to become pregnant should avoid drinking alcohol. Advice for the mother to abstain while lactating was not included, although there has been at least one recent study suggesting that motor development of the baby may be adversely affected by alcoholic beverages ingested by the mother who is breast-feeding the baby (33).

Elimination of alcohol from the blood. A caution about the slow elimination of alcohol from the blood after even moderate drinking is added. On the basis of data on alcohol elimination, alcohol may remain in the blood 3 to 5 hours after drinking at moderate levels as defined. It has been established that approximately 0.4 fluid ounce of 70-proof distilled spirits is eliminated from the body per 100 pounds of body weight per hour (34). This means that it takes a 150-pound individual, on the average, 3 hours to totally eliminate one drink. For a two-drink intake (which is within the definition of moderate drinking for men), 3 to 5 hours is required for total elimination of alcohol from the blood.

Involvement of medication. As a general rule, many toxic side effects of medication will be potentiated if alcohol is consumed along with it (35). The SG report presents examples of serious consequences of consuming alcohol with medications.

Medical effects of drinking. Medical complications, in addition to cirrhosis of the liver and certain cancers that may be caused by drinking above moderate levels, are proposed for inclusion: Inflammation of the pancreas and damage to the brain and heart (36, 37). These additions are supported by the SG and NRC.

Alcohol is not recommended as a means of preventing coronary heart disease because it has not been shown to be effective and because of the numerous potentially harmful effects of alcohol intake, including higher risk for hypertension and hemorrhagic stroke (2, 3).

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**Brief History of the Dietary Guidelines**

Nutritionists in government have provided advice to Americans about what to eat for over a century (1, 2). More recently, a number of national professional and health organizations have published dietary guidance for healthy Americans that considers diet as it relates to the risk of certain chronic diseases as well as the promotion of health (3). Nutrition and Your Health: Dietary Guidelines for Americans, first published by USDA and DHHS in 1980 and slightly revised as a Second Edition in 1985, is an example of such guidance.

**Recent Federal dietary guidelines**

In 1977, the Senate Select Committee on Nutrition and Human Needs published Dietary Goals for the United States (4). Substantial discussion was generated in the scientific community and the media about the appropriateness and utility of these Dietary Goals. As a Federal response, the DHHS asked the American Society for Clinical Nutrition (ASCN) to form a panel to study the relationship between dietary practices and health outcomes (5). The panel's findings were presented in 1979 and were reflected in Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention (6).

Together, USDA and DHHS began to develop a set of simple guidelines that would provide help for people as they made daily food choices. Such guidelines, based in part on the ASCN findings, were published in 1980 as the first edition of Nutrition and Your Health: Dietary Guidelines for Americans (7). These nonquantitative guidelines evoked considerable discussion by some nutrition scientists (8), consumer groups, commodity groups, the food industry, and others.

Later that year, the Senate Agriculture Appropriations Committee called for USDA to undertake a review of the Dietary Guidelines (9). Thus, a first Dietary Guidelines Advisory Committee (DGAC) of nine nutrition scientists was convened in 1983 to review and make recommendations to USDA and DHHS about the guidelines. Their recommendations for minor change in the original guidelines were published in the Committee's report (10); the revised text they proposed was reviewed and slightly revised by USDA and DHHS, and the Second Edition of the guidelines was published in 1985 (11). This Second Edition was even more widely accepted and used by scientific, consumer, commodity, and industry groups.

**Views of past Dietary Guidelines Advisory Committee**

In 1987, 2 years after the 1983-85 DGAC made its recommendations, Committee members were asked to respond to questions about the guidelines preparation process. Questions concerned the Committee membership, organization, staff support, meeting location and frequency; communication among members, with Federal scientists and administrators, and with the public; information needs of the Committee; and adequacy of the Committee report and of the Second Edition of the bulletin published by USDA and DHHS in 1985.

Responses were used by the Departments in planning for the DGAC established in 1988. Reaction by the 1983-85 DGAC to the Second Edition as published was generally favorable. Members agreed the bulletin had been kept attractive, simple, and easy to understand. Two members wished the word "avoid" could have been avoided. Committee members were divided on the issue of whether or not quantification should be introduced in the Third Edition. Some members suggested

that the Committee be asked to comment on any changes made to their proposed text prior to publication of the bulletin by the Departments.

Committee members also noted the need for a science-based backup document for the guidelines and more information about the use of the guidelines. The first need was satisfied by The Surgeon General's Report on Nutrition and Health (12). The second need was satisfied, at least in part, by a University of Wisconsin review of the guidelines' penetration and use and a Pennsylvania State University evaluation of the bulletin by users summarized in this Appendix.

#### **Recent scientific reviews**

The Surgeon General's Report on Nutrition and Health released in 1988 reaffirmed and offered documentation of the scientific basis for the Second Edition of the Dietary Guidelines (12). Another comprehensive review of the scientific evidence linking diet with chronic diseases was conducted by the National Research Council's Food and Nutrition Board and released in 1989 (13). It proposed quantitative goals for some dietary components, such as fat, fatty acids, cholesterol, and salt, and for daily servings of vegetables and fruits and grain products. These two major research reviews, along with the Food and Nutrition Board's Tenth Edition of the Recommended Dietary Allowances released in 1989 (14), and the report of the Expert Panel on Population Strategies for Blood Cholesterol Reduction for the National Cholesterol Education Program (15) were used by the 1989-90 DGAC in its deliberations.

#### **Criteria used in developing the Dietary Guidelines**

Three major criteria were basic to development of both the 1980 and the 1985 guidelines: faithfulness to the science base, utility to the general public, and consistency with Federal agencies' policy. These criteria were again used by the current DGAC in its review and recommendations for the Third Edition of the bulletin.

#### **Penetration and Use of the Dietary Guidelines**

In preparation for the development of the Third Edition of Nutrition and Your Health: Dietary Guidelines for Americans, USDA's Human Nutrition Information Service and Extension Service contracted for a two-phase study in 1988 to determine the extent of the penetration and use of the bulletin. The Department of Continuing and Vocational Education, University of Wisconsin-Madison conducted this study.

Phase 1 of the study involved 300 national and state nutrition education professionals in 8 categories--State Directors in the Nutrition Education and Training Program (NET), Cooperative Extension Nutrition Specialists, Public Health Nutrition Education Directors, organizations of nutrition professionals, journalists, commodity and trade groups, food service industries, and public relation firms. Phase 2 involved 178 practitioners--teachers, dietitians, nurses, Extension Agents--in 16 local communities.

Findings and conclusions of the study were reported to the DGAC at its first meeting by the study's principal investigator, Dr. Sara M. Steele. The study found that--

- Government agencies and individuals and groups who work closely with those agencies agree with this short list of dietary priorities for helping Americans improve their health.

- Most professionals who relay information on the guidelines from the Federal Government source to the local nutrition and health professionals and the public have accepted and actively promoted these priorities.
- The guidelines as presented in the bulletin are well received by professionals who find the bulletin a handy and effective means of focusing the attention of literate Americans on the priorities.
- Many individuals and groups have cooperated in getting the message out in various forms in addition to the bulletin.
- After 8 years, the guidelines have reached most professionals who work at local levels, who frequently use information sources other than the bulletin itself in presenting the guidelines. Supplementary materials prepared by HNIS to help the public implement the guidelines have not reached many practitioners but are given high marks by those who have used them.

The study indicated that more needs to be done to get the message to the public as follows:

- Keep the bulletin up-to-date to assure continued support by nutrition, health, and home economics professionals.
- Keep the guidelines before the public through new presentations.
- Develop audio and video messages to reach less literate Americans and reinforce messages now in print.
- Give more attention to messages which will influence people to change eating practices.
- Develop well-designed messages adapted to different ages and cultures. The bulletin is currently viewed as relevant to all but is more effective with middle-income, well-educated adults.
- Coordinate planning whereby educators, business, and government work together to develop high-quality video and print materials designed for similar specific audiences. Although much creativity exists among state and local professionals, time and money are limited; coordination could make best use of these.

For more information about this study, "Progress in Sharing the Dietary Guidelines for Americans" by S.M. Steele and M.A. Appel, contact the Human Nutrition Information Service, USDA, Federal Building, Room 325-A, Hyattsville, Maryland 20782.

## Usefulness of the Second Edition to Consumers

An evaluation of the acceptability to household food managers of the Second Edition of the bulletin was conducted by the Human Nutrition Department of The Pennsylvania State University. Dr. Cheryl Achterberg, the principal investigator, provided results from this evaluation to the DGAC. Respondents in six focus groups were recruited through Cooperative Extension newsletters from three counties in Pennsylvania. All participants had a high school education, at least one child at home, and no family members following medically prescribed diets. A summary of representative responses about the bulletin's content and format and some comments of one or more panelists follow:

### **General:**

Positive: All respondents said they liked the bulletin. It is one source for good information needed; you can get answers needed quickly; it is easy to read, the right length, and well organized with page numbers on the cover. The centerfold graphic is a good summary, but the order of guidelines in the graphic is confusing. The blue boxes are especially useful.

Negative: Some terms are vague, such as "too much" and "eat adequate." Information on how to follow guidelines and how to read labels is needed.

### **Eat a variety of foods:**

Positive: It emphasizes moderation.

Negative: It should read "Eat a variety of healthy foods"; not enough specifics are given; emphasis on dark-green leafy vegetables is needed; servings of food groups to eat should be given.

### **Maintain desirable weight:**

Positive: Approves of "desirable" weight--the weight at which one looks and feels good--like charts, behavior tips, concept of moderation.

Negative: Charts are out of date; ranges in weight are too large; more exercise information and weight tables for different ages are needed.

### **Avoid too much fat, saturated fat, and cholesterol:**

Positive: Information is consistent with what already had been heard.

Negative: Guideline is too wordy; advice is hard to use; and terms need to be defined.

### **Eat foods with adequate starch and fiber:**

Negative: Reader was tired of hearing about fiber, found text confusing because starch is fattening and fiber is good. What is "adequate?"

### **Avoid too much sugar:**

Negative: More information on different names of sugar is needed. Information is too general.

### **Avoid too much sodium:**

Positive: It is similar to what reader was already doing, glad no number goal is given.

Negative: Doubt if reduction is necessary unless person is hypertensive, no information given on sodium in foods, chart is needed.

**If you drink alcoholic beverages, do so in moderation:**

Negative: Most did not feel guideline was important to them.

When asked if the first two guidelines alone would suffice, responses were negative: Wouldn't be interested if that was all that was discussed; the disease association is of interest. Some thought a water guideline should be added.

**Recommendations by researchers:**

Based on the responses, researchers suggested--

- Provide more specific food-related guidance.
- Add more highlighted boxes and revise content of current ones to contain more specific advice.
- Consider whether the guideline on fats might cover only total fat.
- Include tips on behavior change strategies--keep track of what you eat, set goals, prioritize changes to be made.
- Consider adding sample menus.
- Define technical terms.
- Give information on where more specific information can be obtained.

Additional information on this study may be obtained from the Human Nutrition Information Service, USDA, Federal Building, Room 325A, Hyattsville, MD 20782.

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## APPENDIX II: PUBLIC COMMENTS

The public was invited to submit written comments and data related to dietary guideline issues for use by the DGAC by June 16, 1989. Additional comments were solicited at the time of the August 10, 1989, and January 10, 1990, meetings. These comments, sent to the executive secretaries, were forwarded to the DGAC members, who used the comments along with other resources in developing their recommendations. Over 80 comments were received.

Nineteen comments were received prior to June 16, 1989, and were available for use by the Committee members as they developed their first drafts of revised text for the bulletin. Thirteen of these represented views of groups: American Academy of Pediatric Dentistry, American Heart Association, American Meat Institute, American Society of Animal Science, Chocolate Manufacturer's Association, Council for Responsible Nutrition, International Life-Science Institute--Nutrition Foundation, National Cattlemen's Association, National Dairy Council, Oil Research Institute, The Salt Institute, the Sugar Association, and the United Egg Producers. Six were from individuals: Cheryl Achterberg, The Pennsylvania State University; R.P. Abernathy, Purdue University; Stephen Barrett, Consumer Advocate; F.M. Clydesdale, University of Massachusetts; Thomas H. Jukes, University of California, Berkeley; and Fredrick J. Stare, Harvard University.

Most of these 19 commented on the importance of the Dietary Guidelines. Some endorsed the guidelines as presented in the Second Edition and stressed the need for consistency. Others cautioned against being bound by determinations of the earlier DGAC.

Priorities. Two commenters supported the concept that the first two guidelines (variety and weight) form the framework of a good diet. Two believed the sugar guideline does not deserve the same emphasis as guidelines on fat and sodium.

Audience. Five commenters dealt with audience for the guidelines. Two believed they should be for adults and two, for all Americans. One believed the current guidelines correctly imply that not everyone has the same dietary needs.

Food supply. One commenter wanted continued emphasis on the food supply as bountiful and suggested that its safety be emphasized. Two wanted pleasure of eating emphasized.

Quantification. One commenter called for quantification as a help to health professionals. Six wanted the guidelines to continue to be qualitative.

Good/bad foods. Five commenters believed that consumers must be encouraged to think about good and bad diets, not good and bad foods.

Avoid. Four comments opposed the use of "avoid too much" because it is negative, suggests elimination of foods, and does not tell how much is too much.

Need for specifics. The six comments on specifics differed. One wanted more attention to food preparation. Three wanted general, easy-to-follow guidelines for consumers with professionals or support publications giving detailed advice. Based on her research, Achterberg called for food or food-group-specific information with each guideline, more highlighted boxes, menu suggestions, and information about nutrition labeling.

New guidelines. Three commenters wanted a calcium guideline; one wanted a fluoride guideline.

Some of the comments referred to specific sections:

Introduction. One commenter called for a concise definition of the guidelines, their purpose, and the target audience. Two saw genetics as a factor for emphasis.

Eat a variety of foods. Eight commented favorably on this guideline. One wanted more emphasis on nutrient-dense foods, two wanted variety within food groups stressed, one saw suggested servings of food groups as helpful, and one wanted some of the nutrients mentioned. Two commented on the use of supplements--one for greater emphasis on foods as the preferred source of nutrients and one for presenting use of supplements in a more positive way.

Maintain desirable weight. Eight commented on this guideline. Three wanted more emphasis on physical activity. One believed the doctor should determine appropriate weight, that even calorie levels above 800 may be hazardous, and that children should grow into their weight. One wanted more emphasis on the dangers of underweight. One questioned the accuracy of the height-weight table and the timeliness of the "scrubbing floor" activity.

Avoid too much fat,... Eleven commented on this guideline. One asked that goals be quantified. Two believed that the way to improve lipid profiles is weight control. Two objected to "limiting" of any foods. One wanted to counteract the idea that fat needs to be eliminated from the diet, believes there is a window of desirable serum cholesterol, and wants studies recognized that show lower serum cholesterol as associated with increased mortality from cerebral hemorrhage and stroke. Two were concerned with the problem of growth retardation in children on low-calorie diets. One believed the emphasis should be on "Know your blood cholesterol." Two noted that not all saturated fats raise blood cholesterol, that tropical oils are not poisons, and that polyunsaturated fats should also be consumed in moderation. One cautioned that terms such as saturated fats must be defined. One suggested listing foods that are low in fat, saturated fat, and cholesterol.

Eat foods with adequate starch and fiber. Five commented on this guideline. One wanted a goal quantified at 50 to 55 percent of kilocalories and addition of carbohydrate definitions. One was concerned with the "magic" associated with fiber. One pointed out that proteins are also a major source of energy, that starch itself contains no vitamins or minerals, and that some starchy foods--pasta and white bread--are low in fiber. One said consumers do not understand a guideline on starch and fiber together. One reminded the DGAC that the last Committee was opposed to any mention of diet and cancer for lack of firm science.

Avoid too much sugar. Eight commented on this guideline prior to the first deadline for comments. (Many more commented after the August 10 meeting.) Two believed that a separate guideline was unnecessary because sugar is already consumed in moderation and prevalence of tooth decay is declining; and if included, the terms "sweeteners" and "moderation" are preferred. Also, dental caries information should focus on fluoridation and all fermentable carbohydrates, not just sugar. On the other hand, two believed that the guideline should be retained because tooth decay has not been eradicated and sugars are a factor. One advised against the overuse and frequency of use of sugars and the use of nursing bottles as pacifiers and recommended daily use of fluoride dentifrice and other fluoride for infants, children, teenagers, and young adults. Some consumers studied were found to believe that sugar causes diabetes, obesity, and heart disease.

Avoid too much sodium. Six commented on this guideline. One found the guideline unsuitable and suggested that the National Heart, Lung, and Blood Institute assess the recent InterSalt Study as basis for action on this guideline. One believed evidence does not support a guideline for salt instead of sodium. Another disagreed and suggested a guideline, "Keep salt consumption low." Another suggested, "Be prudent in sodium (salt) intake." One suggested that palatability would be improved by adding sugar to low-sodium diets.

If you drink alcoholic beverages, do so in moderation. Four commented on this guideline. One supported the guideline because of excess alcohol consumption's association with high blood pressure, stroke, some types of cancer, liver disease, and disorders of the heart muscle and suggested it define moderate as 1-2 drinks per day. One was against telling people how much they can drink but believed the case against alcohol as it relates to fetal alcohol syndrome should be made more strongly. To the contrary, another felt strongly that there is no evidence that a drink a day is harmful to the mother or the fetus.

After the August 10 meeting, about 50 comments were received and forwarded to the Committee for use in revising drafts. Working drafts of the proposed guidelines and discussion at the meeting were the focus of the comments. Most were about the guideline, "Avoid too much sugar," and discussion at the meeting of options to replace it with a guideline on fluoride or change it to "Eat sweeteners in moderation." Most of these comments appeared to have resulted from an item in Nutrition Action suggesting that people write if they wanted the guideline on sugar retained.

Ten groups commented: American Cocoa Research Institute, American Zyrofin, Inc., Aspartame Technical Committee of the International Life-Sciences Institute--Nutrition Foundation (ILSI), Connecticut Department of Health Service, Forsyth Dental Center, Oral Health Committee, Princeton Dental Resource Center, the Salt Institute, the Sugar Association, and the United Egg Producers. Topics of comments were as follows: One gave data in opposition to quantification of goals for lipids, one provided research-based advice on salt and sodium, two provided evidence that the guideline on sugar should be deleted or deemphasized, two documented attributes of sugar substitutes, and the remaining four favored a guideline on sugars, suggested content, and provided supporting data.

In addition, 25 nutrition and health professionals and 11 consumers commented, all in support of a sugar guideline. The main concern expressed related to the high caloric density of sweeteners and their use in diets to the exclusion of foods containing more essential nutrients.

Comments after the January 10 meeting focused on discussions at the meeting about the sugar and alcohol guidelines. A DGAC option to suggest using sugars and sweets in moderation was opposed by some because the definition of the term "sweets" is unclear. An option discussed and tabled at the meeting, "Alcoholic beverages are not part of a healthful diet," was opposed by some as unduly restrictive and without scientific basis. Comments were forwarded to DGAC members before their recommendations were finalized.

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