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Nutrition For You
Michigan State University
Cooperative Extension Service
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Anita Dean, Extension Specialist in Foods and Nutrition
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Nutrition For You

**Cooperative Extension Service
Michigan State University**



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Nutrition For You

By ANITA DEAN

Extension Specialist in Foods and Nutrition

Why Is It Important to Understand Nutrition?

IF YOU'RE LIKE MOST PEOPLE, you like food. You enjoy eating. It is a pleasant experience that leaves you satisfied. And you have some idea that it isn't only taste that leads to "three square meals a day."

Still, far too few people really know the essential role food plays in promoting and protecting health.

It is easy to understand why we like foods, and get to know them almost personally. Let's face it: we can't "like" proteins and minerals and vitamins as such. But we can get to know them, for they—not taste—are the raw materials of health.

Good nutrition is indispensable: infants and children need it for proper growth and development; young people and adults need it to maintain their physical well being. We score our eating habits on a lifetime basis. Wise food selection throughout our life span helps us reach our potential—physically, mentally, and socially.

Who Needs to Understand Nutrition?

THE HOMEMAKER

You bear the major responsibility for feeding your family. Although others share it with you—in shopping and preparing food—you control to a large extent what goes on your table. You want your family to eat foods they need for proper growth and body development. You want to protect your family's health. You accomplish these goals only when you understand your family's food needs and plan and prepare appetizing, nourishing meals.

THE BREADWINNER

Chances are that you "eat out" more often today than you once did. Do you know how to choose a balanced meal in a restaurant or cafeteria? Can you fit your choice to your day's total food needs? The more you know about foods and nutrition, the easier it will be to make such choices.

You will find daily foods guides such as the *Basic Four* or *Basic Seven* very adaptable to your needs. (These guides are outlined in detail on page seven.)

As your need for calories decreases, for example, you may choose lower calorie foods in each group to make meals varied and interesting.

YOUNG CHILDREN

"As the twig is bent, the tree inclines." Such proverbial wisdom applies to human beings too. Habits are formed early. Young children are more likely to develop good food habits for life when mother adjusts regular family foods to their special tastes and needs. Liking a variety of foods is a primary requirement in developing good eating habits.

TEENAGERS

Young people in their teens need basic foods. Many of their favorites—hamburgers, hot dogs, pizzas—are perfectly acceptable. But encourage them to supplement these with foods that supply other nutrients. You can teach almost any teenager to select a salad in place of, or along with French fries, milk in place of lunchtime soft drink, or a piece of fruit instead of a sweet dessert. Give them an adequate reason—one they readily understand—for making such a selection. They will learn quickly and soon the lesson will become a habit.

GRANDPARENTS AND OLDER ADULTS

All the foods of the *Basic Four* (see page 7) are essential for active good health in the later years. The form and type of food products may change, but foods from each group are still needed daily.

YOUNG ADULTS

You are on your own—studying, working, preparing for your future, enjoying life in general. You like to eat well, and you're inclined to take health for granted. You couldn't care less about nutrition. Remember—you are over the threshold into the longest span of your life. Good food is as important now as it ever was.

Food, Foods, and Still More Foods— An Advantage or Not?

If you wanted to, you could buy almost 8,000 individual items in today's supermarket. Twenty years ago, you could find only 1,000. Five years from now there will be some 12,000 to choose from—including many not even in our wildest dreams today.

Many of these products represent work that used to be done in the kitchen. The vast expansion of "convenience" foods will continue to slash the time the homemaker spends in her kitchen. Some of these foods cost less than the homemade product. Homemakers will like and buy convenience foods that meet their standards of nutrition and quality at prices they can afford.

Do you know the nutritive value of the convenience foods you buy? Do they taste as good as your homemade product? How much would it cost you to prepare this same food at home?

Our food is the best in the world. It is safe, nutritious, convenient, attractive, and available the year round in great variety and at economical prices. If you make a reasonable selection of foods when you shop or eat out, you will be sure of providing yourself all the nutrients you need.

What Is An Adequate Diet?

In today's terms, an adequate diet means a *scientifically* adequate diet. It is one that nutrition scientists recommend on the basis of their studies of human needs.

It includes:

- (a) kinds and amounts of FOODS
- (b) kinds and amounts of NUTRIENTS

As for foods, it includes various basic kinds—meat, fish, poultry, milk, eggs, fruits and vegetables, and whole grain and enriched cereals and breads.

As for nutrients, a variety of the above foods at each meal, eaten in proper amounts and selected in relation to each other—supplies all the nutrients needed for good health—vitamins, proteins, minerals, carbohydrates and fats.

To be used most efficiently, these foods should be prepared to conserve their nutrients; and they must be eaten in the quantities that will maintain desirable weight for the individual.

No one food is absolutely essential. Another may be substituted to furnish essential nutrients. It is the nutrients that we need for our health.

A lively concern for nutrition need never take the joy out of cooking and eating. You can retain family customs, habits, and preferences by serving nutritious foods in a variety of interesting combinations.

How Can You Measure the Nutritional Value of Foods?

Check Daily Food Guides

Two reliable food guides in use today are known as the *Basic Seven* and the *Basic Four*. Each guide classifies all the different kinds of foods into broad groups on the basis of their similarity in nutritive composition and value.

The chart (page 7) shows the similarity of the two guides and nutrients in each food group. Each person in the family needs the same basic foods. The amounts depend upon age, activity, and physical condition.

The easiest way to be sure your daily meals furnish adequate balanced nutrition is to follow the suggested servings from the food groups. The minimum number of daily servings suggested in the *Basic Four* provide most nutrients essential to good health and supply a limited number of calories (1,300 to 1,500 depending upon your choice of foods).

With such a variety of good foods available at such a low calorie cost, it is foolish to follow faddish reducing diets. Additional servings improve diet quality and add calories.

Follow Meal Patterns

Picture yourself as the chef of a famous restaurant. You offer a variety of tastes and flavors, colors and textures, treatments and styles—patterns and designs of food that people will buy and like. As a chef, you can combine the knowledge of a nutritionist with the skill of an artist. With foods and nutrients you create balanced patterns and designs for appetizing, nutritious, appealing meals.

So too at home. Be an artist with foods and nutrients. Serve a variety of foods in appealing combinations. Create your own patterns and designs for eating.

The foundation of a good diet is outlined on pages 8-9. Within that framework, you can create countless patterns. On page 10, the table shows various patterns for breakfast, lunch and dinner. At first these patterns may appear unimaginative. But creative interpretation of such terms as "bread and butter," "protein main dish," and "beverage" will result in interesting and nu-

tritious meals. The same luncheon pattern might be interpreted in two very different ways; for example,

Scrambled Eggs
Crisp Bacon
Buttered Toast
Jelly
Baked Apple
Coffee

Cheese Souffle
Fresh Fruit Salad
Bran Muffins Preserves
Tea

A man may interpret "protein food," "cereal" and "beverage" at breakfast as a small broiled steak on toast and coffee. His young son might choose a meat or cheese sandwich with a glass of milk. Either breakfast provides essential protein, vitamins and minerals.

These patterns illustrate how the same types of foods can be combined into quite different types of meals.

No particular pattern is best and right. In most cases, it isn't possible to follow a particular pattern rigidly. Each family has certain familiar and well liked foods and is inclined to prefer their pattern. Traditional dishes add interest to family and guest meals. Since there is no "one way" to eat for health, many different combinations of foods can give us the essentials of an adequate diet.

Think of patterns as flexible guides. You may prefer a "breakfast type" meal at the end of the day. Keep in mind that each meal should supply $\frac{1}{4}$ to $\frac{1}{2}$ of the calories and nutrients required daily. And include some good quality protein at each meal.

Don't judge single meals by themselves. Consider the entire day's intake whether eaten in regular meals, on-the-run or as snacks. Foods eaten under these circumstances can result in an adequate balance of nutrients if selected with care. For instance, a morning snack of an orange could replace the fruit that you overlooked at breakfast. Regular meals generally result in better nutrition.

Estimate the Nutrients in Foods

KNOW THE KEY NUTRIENTS

The Key nutrients and typical sources in foods are shown in the table on pages 8-9.

RECOMMENDED DAILY DIETARY ALLOWANCES AND MINIMUM DAILY REQUIREMENTS

The recommended daily dietary allowances (RDA) are published by the Foods and Nutrition Board of the National Academy of Sciences—National Research Council.

Leading scientists in foods and nutrition serve without pay on this advisory board promoting needed

research and interpreting nutritional science in the public interest.

The current table includes suggested calories and amounts of 9 nutrients for 18 categories of individuals according to age, sex and physical condition. These allowances are established on the basis of research studies and represent the judgment of qualified scientists.

They are designed as goals for planning diets and food supplies and are described as "adequate for the maintenance of good nutrition in essentially all the population in the United States." *In no sense do they represent minimum requirements.* They are liberal standards which offer a large margin of safety to cover differences in individual requirements.

Several other nutrients known to be essential are not included in this table because required amounts cannot be stated at this time or because the nutrient is amply provided by an ordinary mixed diet.

Periodically, the recommended allowances are re-evaluated and as new information warrants it, revisions are made. The latest revision (1963) is presented on page 6.

These allowances should not be confused with the Minimum Daily Requirements. The latter (see Table 2, page 11) were established in 1941 by the Food and Drug Administration as standards for labeling foods and pharmaceutical preparations for special dietary uses. They provide a basis for setting forth label information which will be informative to consumers.

The standards are based on the minimum amounts necessary to prevent nutritional disease. The minimum requirements incorporate a smaller margin of safety than the National Research Council requirements in Table 1. These standards are modified as new research and knowledge develops.

See Recommended Dietary Allowances, page 6

Minimum Daily Requirements, page 11

Estimating Nutrients, page 12

Calories Do Count, page 13

Food and Nutrition Board, National Academy of Sciences—National Research Council Recommended Daily Dietary Allowances¹, Revised 1968

Designed for the maintenance of good nutrition of practically all healthy people in the U.S.A.

Age ² Years From Up to					Weight Kg (lbs)	Height cm (in)	Kcalories	Protein gm	Fat Soluble Vitamins				Water Soluble Vitamins						Minerals				
									Vitamin A I. U. Activity	Vitamin D I. U. Activity	Vitamin E I. U. Activity	Ascorbic Acid mg	Folate ¹ mg	Niacin ⁵ mg equiv.	Riboflavin mg	Thiamine mg	Vitamin B ₆ mg	Vitamin B ₁₂ μg	Calcium gm	Phosphorus gm	Iodine μg	Iron mg	Magnesium mg
Infants	0 - 1/6	4	9	55	22	kg x 2.2 ³			1500	400	5	35	0.05	5	0.4	0.2	0.2	1.0	0.4	0.2	25	6	40
	1/6 - 1/2	7	15	63	25	kg x 2.0 ³			1500	400	5	35	0.05	7	0.5	0.4	0.3	1.5	0.5	0.4	40	10	60
	1/2 - 1	9	20	72	28	kg x 1.8 ³			1500	400	5	35	0.1	8	0.6	0.5	0.4	2.0	0.6	0.5	45	15	70
Children	1 - 2	12	26	81	32	1100	25		2000	400	10	40	0.1	8	0.6	0.6	0.5	2.0	0.7	0.7	55	15	100
	2 - 3	14	31	91	36	1250	25		2000	400	10	40	0.2	8	0.7	0.6	0.6	2.5	0.8	0.8	60	15	150
	3 - 4	16	35	100	39	1400	30		2500	400	10	40	0.2	9	0.8	0.7	0.7	3	0.8	0.8	70	10	200
	4 - 6	19	42	110	43	1600	30		2500	400	10	40	0.2	11	0.9	0.8	0.9	4	0.8	0.8	80	10	200
	6 - 8	23	51	121	48	2000	35		3500	400	15	40	0.2	13	1.1	1.0	1.0	4	0.9	0.9	100	10	250
	8 - 10	28	62	131	52	2200	40		3500	400	15	40	0.3	15	1.2	1.1	1.2	5	1.0	1.0	110	10	250
	10 - 12	35	77	140	55	2500	45		4500	400	20	40	0.4	17	1.3	1.3	1.4	5	1.2	1.2	125	10	300
	12 - 14	43	95	151	59	2700	50		5000	400	20	45	0.4	18	1.4	1.4	1.6	5	1.4	1.4	135	18	350
	14 - 18	59	130	170	67	3000	60		5000	400	25	55	0.4	20	1.5	1.5	1.8	5	1.4	1.4	150	18	400
	18 - 22	67	147	175	69	2800	60		5000	400	30	60	0.4	18	1.6	1.4	2.0	5	0.8	0.8	140	10	400
Males	22 - 35	70	154	175	69	2800	65		5000	—	30	60	0.4	18	1.7	1.4	2.0	5	0.8	0.8	140	10	350
	35 - 55	70	154	173	68	2600	65		5000	—	30	60	0.4	17	1.7	1.3	2.0	5	0.8	0.8	125	10	350
	55 - 75+	70	154	171	67	2400	65		5000	—	30	60	0.4	14	1.7	1.2	2.0	6	0.8	0.8	110	10	350
	10 - 12	35	77	142	56	2250	50		4500	400	20	40	0.4	15	1.3	1.1	1.4	5	1.2	1.2	110	18	300
	12 - 14	44	97	154	61	2300	50		5000	400	20	45	0.4	15	1.4	1.2	1.6	5	1.3	1.3	115	18	350
	14 - 16	52	114	157	62	2400	55		5000	400	25	50	0.4	16	1.4	1.2	1.8	5	1.3	1.3	120	18	350
	16 - 18	54	119	160	63	2300	55		5000	400	25	50	0.4	15	1.5	1.2	2.0	5	1.3	1.3	115	18	350
	18 - 22	58	128	163	64	2000	55		5000	400	25	55	0.4	13	1.5	1.0	2.0	5	0.8	0.8	100	18	350
	22 - 35	58	128	163	64	2000	55		5000	—	25	55	0.4	13	1.5	1.0	2.0	5	0.8	0.8	100	18	300
	35 - 55	58	128	160	63	1850	55		5000	—	25	55	0.4	13	1.5	1.0	2.0	5	0.8	0.8	90	18	300
Pregnancy	55 - 75+	58	128	157	62	1700	55		5000	—	25	55	0.4	13	1.5	1.0	2.0	6	0.8	0.8	80	10	300
						+200	65		6000	400	30	60	0.8	15	1.8	+0.1	2.5	8	+0.4	+0.4	125	18	450
Lactation						+1000	75		8000	400	30	60	0.5	20	2.0	+0.5	2.5	6	+0.5	+0.5	150	18	450

FOOTNOTES TO TABLES OF RECOMMENDED DAILY DIETARY ALLOWANCES

- The allowance levels are intended to cover individual variations among most normal persons as they live in the United States under usual environmental stresses. The recommended allowances can be attained with a variety of common foods, providing other nutrients for which human requirements have been less well defined. See text for more detailed discussion of allowances and of nutrients not tabulated.
- Entries on lines for age range 22-35 years represent the reference man and woman at age 22. All other entries represent allowances for the midpoint of the specified age range.
- Assumes protein equivalent to human milk. For proteins not 100 percent utilized factors should be increased proportionately.
- The folacin allowances refer to dietary sources as determined by *Lactobacillus casei* assay. Pure forms of folacin may be effective in doses less than 1/4 of the RDA.
- Niacin equivalents include dietary sources of the vitamin itself plus 1 mg equivalent for each 60 mg of dietary tryptophan.

Comparison of FOOD GUIDES

BASIC 7

BASIC 4

FOOD GROUPS	COMMON ESSENTIAL FOODS	IMPORTANT NUTRIENTS SUPPLIED	FOOD GROUPS
1 2 or more servings daily	Beef, veal, pork, lamb, game, poultry, fish, cheese, and eggs, (dried beans, peas, peanut butter and nuts as alternates)	Protein, iron, B vitamins (niacin, thiamine, riboflavin), plus other minerals and vitamins	1 2 or more servings daily
2 1 or more servings daily	Citrus fruits or juice, cantaloupe, fresh strawberries, or vegetables such as tomatoes, cabbage, broccoli, greens, peppers, and potatoes.	Ascorbic acid or Vitamin C, plus other vitamins and minerals	2 4 or more servings daily
3 1 or more servings daily	Dark green or deep yellow vegetables and fruits	Carotene which body converts to Vitamin A, plus other vitamins and minerals	
4 2 or more servings daily	Other vegetables and fruits including potatoes	Vitamins and minerals	
5 2 cups or more daily	Milk or equivalent in cheese and ice cream	Calcium, phosphorus, riboflavin, Vitamin A, and protein	3 2 cups or more daily
6 4 servings daily	Bread and cereal, whole grain, enriched, or restored	Thiamine, iron, niacin, protein, vitamins, and minerals	4 4 servings daily
7 No. of servings vary according to energy needs	Sugar, syrup, jelly, jam, honey, and candy Butter, margarine, cooking fats, and oils, fish liver oils, salad oils, bacon, meat fat, cream, peanut butter, nuts, and avocado	Carbohydrate Fats, Vitamin A*, and essential fatty acids* (* Amount varies with fat)	To balance energy needs

The minimum number of servings of these basic foods furnishes about 1400 calories. To balance your energy needs, select additional servings among the groups above. Keep in mind that fats are necessary for health but also furnish over twice as many calories as proteins and carbohydrates.

Average Serving: one half cup of fruit, vegetable or juice; one ounce of cereal; one slice of bread; three ounces of cooked lean meat.

KEY NUTRIENTS:

NUTRIENT	SOURCE	FUNCTION
PROTEINS	Animal proteins: meat, fish, poultry, eggs, milk, cheese Vegetable proteins: peas and beans, breads, cereals, other grain products, nuts, peanut butter	Build and repair all body tissues Help build blood and form antibodies to fight infection Supply food energy
FATS	Butter, cream, margarine Salad oils, oil dressings, lard, hydrogenated fats, vegetable oils Fats in meat (especially bacon), milk, eggs, nuts, fruit	Supply a large amount of energy in a small amount of food Supply essential fatty acids such as linoleic acid needed for body's proper use and storage of fat
CARBOHYDRATES (Starches and Sugars)	Breads, cereals, flours, cornmeal, rice, macaroni, spaghetti, noodles Potatoes, sweet potatoes, corn Dried fruits, sweetened fruits, bananas Sugar, syrups, jelly, jam, honey	Supply energy Help body use other nutrients
CALCIUM	Milk, cheese (especially cheddar), ice cream Greens, such as kale, broccoli, collards, turnip, mustard Peas and beans	Help build bones and teeth Help blood to clot Help muscles and nerves react normally
IRON	Meat (especially liver, heart, kidney) Poultry, egg yolk Shellfish Dark green, leafy vegetables Peas and beans Enriched whole grain breads and cereals Dried apricots and prunes, raisins Molasses	Combines with protein to make hemoglobin, the red substance in the blood that carries oxygen to the cells (especially important for women)
IODINE	Shell fish, salmon All salt water fish Iodized salt	Is an essential component of thyroxine and the other iodine-containing compounds of the thyroid gland Prevent endemic goiter
PHOSPHORUS	Liver, meat, fish Milk, cheese, ice cream Eggs Beans Whole grain cereals	Promote healthy bones and teeth Help regulate muscular and nerve action Vital to the fundamental processes of metabolism in the body
VITAMIN A and Carotene	Dark green, leafy vegetables Deep yellow vegetables such as carrots, pumpkin, sweet potatoes, winter squash Tomatoes Yellow fruits such as apricots, cantaloup, peaches	Help keep the skin and mucous membrane linings healthy and resistant to infection Protect against night blindness

Where they come from

What they do

NUTRIENT	SOURCE	FUNCTION
VITAMIN A (Continued from first column)	Liver Egg yolk Butter, cream, whole milk, cheese from cream or whole milk, forti- fied margarine Fish liver oils	
VITAMIN B ₁ (Thiamine)	Whole grain or enriched breads and cereals Meat (especially pork, liver, heart, kidney) Poultry, eggs Milk Peas and beans Nuts	Help promote normal appetite and digestion Help keep the nervous system healthy Help body release energy from food
VITAMIN B ₂ (Riboflavin)	Milk, cheese, ice cream Meat (especially liver) Poultry and eggs Fish Dark green leafy vegetables Enriched breads and cereals	Help cells use oxygen Help keep vision clear Help keep skin, tongue and lips healthy
VITAMIN B ₆	Meats (especially liver) Vegetables Whole grain cereals	Work with enzymes to aid the body in its use of food, as in the con- version of the amino acid, trypto- phan, to the vitamin, niacin
VITAMIN B ₁₂ (Cobalamin)	Milk Deep sea fish, oysters, clams Lean meat, liver, kidney, animal pro- tein foods in general	Necessary for formation of blood cells Help prevent certain forms of anemia
NIACIN	Meat, liver, poultry, fish Peas and beans Nuts (especially peanuts) Whole grain or enriched cereals and breads	Help keep nervous system healthy Help keep skin, mouth, tongue and digestive tract healthy Help cells use other nutrients
VITAMIN C (Ascorbic Acid)	All citrus fruits and juices Strawberries, cantaloup Tomatoes and tomato juice Green and red peppers, raw cabbage Dark green vegetables Potatoes (especially new potatoes and sweet potatoes) cooked in jackets	Help make cementing substance that holds body cells together Make walls of blood vessels firm Help in healing
VITAMIN D	Milk with Vitamin D added; butter Eggs Sardines, salmon, tuna Fish-liver oils Sunshine and ultraviolet irradiation	Help the body absorb calcium Help build strong bones and teeth

MEAL PATTERNS

	LIGHT	MEDIUM	HEAVY
BREAKFAST	Fruit or juice Cereal and milk, or Egg Bread and butter Beverage	Fruit or juice Cereal and milk, or bread and butter Protein main dish Bread and butter Beverage	Fruit or juice Cereal Protein main dish Potatoes Bread and butter Beverage
LUNCH	Cheese or egg dish Bread and butter Beverage Fresh fruit or Clear soup Protein salad Bread and butter Beverage or Protein sandwich Vegetable salad Beverage Light dessert	Vegetable plate with egg or cheese Bread and butter Beverage Light dessert or Cream soup Protein sandwich Fruit or vegetable salad Beverage or Protein salad Bread and butter Beverage Substantial dessert	Main dish Green salad Bread and butter Beverage Substantial dessert or Meat or fish Potatoes Vegetable salad Bread and butter Beverage Light dessert
DINNER	Protein main dish Potatoes or other starchy food Green vegetables Beverage Light dessert	Light appetizer Protein main dish Potatoes or other starchy food Green vegetable Beverage Substantial dessert or Protein main dish 1 or 2 vegetables Salad Bread and butter Beverage Light dessert	Cream soup Protein main dish Potatoes 1 or 2 vegetables Bread and butter Beverage Light dessert or Light appetizer Protein main dish 1 or 2 vegetables Salad Bread and butter Beverage Substantial dessert

TABLE 2. MINIMUM DAILY REQUIREMENTS

<i>Vitamins and Minerals</i>	<i>Infant</i>	<i>Child under 6</i>	<i>Child under 12</i>	<i>Adult</i>
Vitamin A	1,500 USP	3,000 USP	3,000	4,000 USP
Thiamin (B ₁)	0.25 mg.	0.5 mg.	0.75 mg.	1 mg.
Ascorbic acid (C)	10 mg.	20 mg.	20 mg.	30 mg.
Vitamin D	400 USP	400 USP	400 USP	400 USP
Riboflavin (B ₂)	0.6 mg.	0.9 mg.	0.9 mg.	1.2 mg.
Niacin	5 mg.	5 mg.	7.5 mg.	10 mg.
Calcium	750 mg.	750 mg.	750 mg.	750 mg.
Phosphorus	750 mg.	750 mg.	750 mg.	750 mg.
Iron	7.5 mg.	7.5 mg.	10 mg.	10 mg.
Iodine	0.1 mg.	0.1 mg.	0.1 mg.	0.1 mg.

The following nutrients are also considered essential: Vitamin E, Vitamin K, Folic Acid, Pantothenic Acid, Linoleic Acid, Copper, Magnesium, Manganese, Zinc, Sodium, and Potassium. There is no evidence, however, that the ordinary diet needs

to be supplemented with these nutrients. Symptoms caused by lack of these nutrients have been produced only in laboratory experiments with animals.

Refer to this table when you are reading and interpreting food label information.

Estimate the Nutrients in Foods (continued)

ESTIMATE OF PROTEIN IN FOODS

Recommended daily protein allowance: Adult woman, 55 grams;
Adult man 65 grams; Teenagers, larger amounts*

Foods	Average Serving	Grams
Meat, fish, poultry (fat free, lean)	4 ounces raw or 3 ounces cooked	21
Cottage cheese, creamed	4 ounces or ½ cup	17
Dry beans, peas	1 cup cooked	15
Peanuts, roasted	1 ounce	8
Milk	1 8-ounce glass	8
Cheese: brick, swiss cheddar	1 ounce	7
Egg	1	6
Frankfurter	1	7
Luncheon meats	1 ounce (2 slices)	3
Peas and beans (immature seeds)	½ cup (2-3 ounces)	4
Peanut butter	1 tablespoon or ½ ounce	4
Nuts (except peanuts and pecans)	1 ounce	4-5
Milk puddings	½ cup	4
Muffin	1	4
Cake	1 average piece	4
Wheat and oat cereals— to cook	1 ounce dry weight	4
Corn and rice cereals to cook	1 ounce dry weight	2
Prepared breakfast cereals	1 ounce	2
Bread, rolls, biscuits, doughnuts, pancakes	1 each	2
Pecan halves	1 ounce	3
Ice Cream	½ cup	3
Bacon	2 slices	3
Gelatine, flavored	½ cup	2
Vegetables (not legumes)	½ cup	1
Fruits	½ cup or 1 medium fruit	1
Crackers and cookies	2 2-inch	1
Pastry, single crust	1/7 of 9 inch pie	1

*See National Research Council recommended daily allowances
on page 6.

Foods in These Amounts Are Approximately Equal in Protein

Each supplies about 21 grams of protein

Lean, cooked meat, fish, poultry	3 ounces
Cooked dry beans or peas	1¼ cup
Peanut butter	5 tablespoons
American type cheese	3 ounces
Cottage cheese	¾ cup
Eggs	3

FOODS RICH IN CALCIUM

One cup of milk furnishes 1/3 of an adult's daily allowance
for calcium (285 milligrams of calcium).

Milk (whole or skimmed)	Foods about equal in calcium
1 cup	¼ cup non fat dry milk solids
1 cup	½ cup evaporated milk
2/3 cup	1 ounce American cheese (1 slice or 1 inch cube)
1/3 cup	½ cup cottage cheese
¼ cup	½ cup ice cream
1 tablespoon	2 tablespoons cream cheese

FOODS RICH IN VITAMIN A OR CAROTENE

Recommended daily Vitamin A allowances: adults and teen-
agers—5000 International units¹

Excellent Sources	Good Sources
1 serving (½ cup) furnishes entire day's adult require- ment	1 serving (½ cup) furnishes significant amounts
MEAT: Liver**	VEGETABLES: Broccoli Pumpkin* Kale*
GREEN AND YELLOW VEGETABLES: Carrots** Sweet potatoes, yellow Squash, winter, yellow**	Peppers, sweet, red, raw Tomatoes, raw, cooked or juice
LEAFY VEGETABLES: Greens: beet, turnip,** mustard, dandelion** Spinach** Kale* Collards** Chard, leaves** Lettuce: dark green forms such as escarole and chicory	YELLOW FRUITS: Apricots, raw or cooked* Peaches, fresh or canned
FRUIT Cantaloup**	DAIRY PRODUCTS: Whole milk Cream Butter Cheese made from whole milk or cream Ice Cream Margarine enriched with Vitamin A Eggs
	MEAT AND POULTRY: Kidney Poultry, dark meat Fish, certain varieties

*Furnishes at least one-half adult daily requirement

**Furnishes more than adult daily requirement

FOODS RICH IN VITAMIN C

An average serving unless otherwise stated, is ½ cup.

Recommended daily Vitamin C allowance: Adult man (60) and woman (55) milligrams; teenagers, larger amounts.

	milli-grams		milli-grams		milli-grams
<i>Excellent Sources</i>		<i>Good Sources</i>		<i>Fair Sources</i>	
Orange, 1 medium	75	Sweet potato, baked and peeled		Asparagus, canned (5 spears)	15
Orange juice, fresh	63	after cooking, 1 medium	22	Turnips, cooked diced	14
Cantaloupe, ½ medium	63	Potato, boiled or baked,		Spinach, canned	13
Broccoli	55	1 medium	20-22	Sauerkraut	12
Grapefruit, ½ medium	50	Asparagus, cooked fresh	20	Peas, fresh	12
Orange juice, canned		Tomato, canned or juice	20	Lima beans, fresh	12
or frozen concentrate	50	Lemon, ½ medium	19	Summer squash, fresh	11
Grapefruit juice, fresh	46	Sweet potato, boiled, peeled		Pineapple (canned or juice)	11
Strawberries, fresh	43	after cooking, 1 medium	17	Peas, canned	11
Turnip greens, cooked fresh	43	Cauliflower, cook fresh	17	Blueberries, fresh	10
Grapefruit juice, canned	42	Pineapple, fresh	16	Lima beans, canned	9
Green pepper, ½ medium	39			Snap green beans, fresh	9
Raw tomato, 1 medium	35				
Brussels sprouts	30				
Kale, cook fresh	28				
Spinach, cooked fresh	27				
Cabbage, cooked	26				
Cabbage, raw	25				

Refer to Table 1, Recommended Daily Dietary Allowances, on page 6, when studying these tables.

Calories DO count!

Food produces energy for the body—energy which is needed to live, to breathe, to work—in fact, for everything we do. Children and youth need energy for growth. This energy is measured in heat units called *calories*.

Only three kinds of substances in food can supply us with energy or calories. Their chemical names are carbohydrates, proteins and fats. These substances contain the elements carbon, hydrogen, and oxygen. Proteins contain nitrogen, too, which gives them special importance in the body. You will note in the chart below that fats contribute more than twice as many calories as carbohydrates and proteins. The number of calories in food depends on how much protein, fat and carbohydrates it contains.

Calories furnished by certain nutrients when oxidized or burned in the body:

	per ounce	per gram
Proteins and carbohydrates furnish	115	4
Fats furnish	255	9

When foods eaten provide more energy than the body needs, the extra energy is stored as fat. If you eat too much, you will gain weight. If you do not eat enough to provide the energy the body needs, your body will be forced to use stored fat and you will lose weight. If all reserve fatty tissues are used up and you continue to give the body a short supply of food, the body uses its other tissues for energy.

One out of five adults in the United States is overweight. Underweight is apparently less prevalent among adults. It has been suggested that one's *desirable* weight at age 25 should be maintained throughout life.

Food and Your Weight is the title of an excellent

publication designed to help persons maintain normal weight. To order it, ask for *Home and Garden Bulletin No. 74*, Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.—price 15 cents.

VEGETABLES GROUPED ACCORDING TO CALORIES

1. Vegetables that provide little carbohydrates, protein and fat in amounts ordinarily used:

Asparagus	Greens*	Mushrooms
Broccoli*	Beets	Okra
Brussels sprouts	Chard	Pepper*
Cabbage	Collards	Radishes
Cauliflower	Dandelion	Sauerkraut
Celery	Kale	String beans,
Chicory*	Mustard	young
Cucumbers	Spinach	Summer squash
Escarole*	Turnips	Tomatoes*
Eggplant	Lettuce	Watercress*

2. Vegetables that provide about 35 calories (7 grams of carbohydrate and 2 grams of protein) per half cup serving:

Beets	Peas, green	Squash, winter*
Carrots*	Pumpkin	Turnip
Onions	Rutabagas	

3. Vegetables which are equal in calorie value to 1 slice of bread (70 calories) include the following:

Lima beans, immature	Corn
Dried peas, or beans	Potatoes, white or sweet
	Parsnips

See chart on pages 8-9 for size of servings.

*Rich in Vitamin A

FRUITS ABOUT EQUAL IN CALORIES

Fruits in the amounts listed furnish about 40 calories and 10grams of carbohydrate.

Amount	Amount	Amount
Apple (2-inch diameter) 1 small	Dates 2	Orange juice* ½ cup
Applesauce ½ cup	Figs, fresh 2 large	Papaya 1/3 medium
Apricots, fresh 2 medium	Figs, dried 1 small	Peach 1 medium
Apricots, dried 4 halves	Grapefruit* ½ small	Pear 1 small
Banana ½ small	Grapefruit juice* ½ cup	Pineapple ½ cup
Blackberries 1 cup	Grapes 12	Pineapple, juice 1/3 cup
Raspberries 1 cup	Grape juice ¼ cup	Plums 2 medium
Strawberries* 1 cup	Honeydew melon, medium ½	Prunes, dried 2 medium
Blueberries 2/3 cup	Mango ½ small	Raisins 2 tablespoons
Cantaloupe, medium* ¼ medium	Orange* 1 small	Tangerine* 1 large
Cherries 10 large		Watermelon 1 cup

*Rich in Vitamin C

SOME FOODS HIGH IN CARBOHYDRATES

QUANTITIES ABOUT EQUAL IN CALORIES

Foods in these amounts furnish about 70 calories, and 15 grams of carbohydrates.

Bread, ½ inch thick	1 slice
Biscuit, roll (2-inches diameter)	1
Muffin (2-inches diameter)	1
Corn bread (1½-inch cube)	1
Flour	2½ level tablespoons
Cereal	
cooked	½ cup
dry (flake and puffed)	¾ cup
rice and grits, cooked	½ cup
Spaghetti, macaroni, and noodles, cooked	½ cup
Crackers	
graham (2½-inches square)	2
oysterettes (½ cup)	20
saltines (2-inches square)	5
soda (2½-inches square)	3
round, thin (1½-inch diameter)	6 to 8
Vegetables (prepared without sugar or additional fat)	
beans and peas, dried, cooked (Lima, navy, split, cowpeas)	½ cup
lima, fresh	½ cup
corn, sweet	1/3 cup
popcorn	1 cup
parsnips	2/3 cup
Potatoes	
white (baked or boiled, 2-inch diameter)	1
white, mashed	½ cup
sweet or yams	¼ cup

FATS AND HIGH-FAT FOODS ABOUT EQUAL IN CALORIES

Foods in these amounts furnish about 45 calories and 5 grams of fat.

Avocado (4" diameter)	¾
Butter or margarine	1 teaspoon
Bacon, crisp	1 slice
Cream, light	2 tablespoons
Cream, heavy	1 tablespoon
Cream cheese	1 tablespoon
French dressing	1 tablespoon
Mayonnaise	1 teaspoon
Nuts	6 small
Oil or cooking fat	1 teaspoon
Olives	5 small
Peanut butter	1 teaspoon

SUGGESTED READINGS

- Food, The Yearbook of Agriculture 1959.* U.S. Department of Agriculture, Washington, D. C.
- Food Becomes You.* Ruth M. Leverton, Iowa State University Press, Ames, Iowa.
- Food and You.* Edmund Sigurd Nasset, Barnes and Noble, Inc., New York Paperback edition, 1959.
- Modern Diet and Nutrition.* Dr. Henrietta Fleck and Dr. Elizabeth Munves, Dell Publishing Co., Inc., 261 Fifth Avenue, New York 16, N. Y., Paperback 1955.
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- Essentials of an Adequate Diet.* Home Economics Research Report No. 3, Agricultural Research Service, U.S. Department of Agriculture, Washington, D. C.

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