

Food, the Builder

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FOOD, THE BUILDER

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A well-built body, buoyant health, and happy disposition are among our most prized possessions. They are attained only through careful following of daily health building practices, one of the most important of which is "Eating the Right Food" in the "Right Amounts."

When speaking of food in relation to health, food is frequently referred to as building material. In the body, food is used as building material—for growth and general physical development. Perhaps this idea of building health may be clarified by comparing it with the building of a house. When building a house, if one wants it to be a good house, he selects good building materials and has a good building plan and skilled workmanship. The result will be a strong, well-built house which will endure through the years, and will be a comfortable and enjoyable place in which to live.

On the other hand, if one uses poor quality materials, a poor plan, and poor workmanship, the result is likely to be a shell of a house—just thrown together—which will call for constant repair and will probably not ever be either a comfortable or pleasant place in which to live. Therefore, if we wish to possess strong, well-built bodies for ourselves and for our families and wish to enjoy good health, or even "buoyant" health over a long period of time, foods of good quality must be selected according to a standard nutrition guide. Furthermore, foods must be handled, prepared, and put together in pleasing and appetizing ways so that the greatest food value will be retained and so that foods will be enjoyed and eaten in sufficient quantities.

A poorly chosen diet, having too much of certain foods and not enough of others, year after year may take its toll in a number of different ways—stunted growth in children; a lack of vigor and vitality of both children and adults; lowered physical and mental efficiency and ability to do work; lowered resistance to disease; a shortened life span; suffering from many discomforts bordering on minor ills, and even definite serious ills in extreme cases.

Life could be so much more worthwhile, and enjoyed much more if "our daily food" is selected with care.

THE BASIC SEVEN**OUR NATIONAL NUTRITION GUIDE OR BLUEPRINT**

Eat foods from each of the following seven groups daily:

1. Green and yellow vegetables—some raw, some cooked, canned, or frozen.
2. Oranges, tomatoes, grapefruit, raw cabbage, or salad greens.
3. Potatoes and other vegetables and fruits—raw, dried, cooked, frozen, or canned.
4. Milk and milk products—fluid, evaporated, dried, or cheese.
5. Meat, poultry, fish or eggs—or, dried beans, peas, nuts, or peanut butter.
6. Bread, flour and cereals—natural whole grain or enriched or restored.
7. Butter and fortified margarine (with added vitamin A).

Someone has said, "Nutrition is common sense." Good, sound common sense, in this case, means including at least one generous serving daily from each of the seven food groups, and several servings from certain groups such as cereal foods, milk, fruits, and vegetables. If this is done, day after day, a good state of health, as far as food is a factor, should be experienced.

No doubt many would make a greater effort to have a carefully selected diet if they had a better understanding of what the essential food nutrients are, what is the definite contribution of each, what foods furnish the greatest amounts of each, and how much is needed daily for optimum health.

Food has three big jobs to do—to build and repair body tissues, such as muscles, glands, blood vessels, nerves, heart and other organs and bones and teeth; to furnish energy; to keep the body regulated and running smoothly.

The foods essential for these needs are classified as protein, vitamins, minerals, carbohydrates, and fats. Each furnishes a specific material which is needed in definite amounts. All are needed for best physical development.

Furthermore, as will be indicated a number of times in the following charts, these materials are interdependent one upon another for the best functioning of each.

The indicated daily requirement of each food element discussed (in the measured amount of cups, ounces, etc.) is the average amount needed for moderately active adults. The

amounts should be increased for adolescents, pregnant and nursing mothers, and adults doing heavy work, and should be decreased for children under 10 years, except for calcium, which is increased for all children.

A serving of lean meat is about 4 ounces ($\frac{1}{4}$ lb.).

A serving of cooked vegetable is usually $\frac{1}{2}$ cup.

A serving of cooked cereal is usually $\frac{2}{3}$ cup.

A practical practice would be to double servings of certain foods such as fruits and vegetables at times.

While the discussions which follow, suggest the average daily amounts required, a surplus of the various amounts is to be desired.

Protein

Two of the "Basic Seven" groups—group IV and V furnish the major part of protein. No. VI contributes some protein. Everyone needs protein daily. Children need more in proportion to their size than do adults.

A portion of each day's supply should be animal protein, including milk and eggs.

CHIEF FUNCTIONS: Builds new muscle tissue in growing children; repairs worn-out tissues in old and young; is needed for forming new red blood cells; important for vigor and physical stamina.

LACK OF IT: Stunted growth in children; reduced vigor and physical stamina in old and young; a factor in combating anemia.

IMPORTANT SOURCES: Milk, cheese, eggs, lean meats, legumes, nuts, and cereal foods.

AMOUNTS OF A SINGLE FOOD FURNISHING THE DAILY REQUIREMENT:

Milk	10 cups
Cheese	10 ounces
Eggs	10-11
Meat (lean)—3 servings	14 ounces
Soybeans, 7 servings	$\frac{1}{2}$ cup each
Navy beans, 10 servings	$\frac{1}{2}$ cup each

Bread, 12 servings	2 slices each
Rollod oats, 17 servings	$\frac{2}{3}$ cup each
Peanut Butter	18 tablespoons

SUMMARY: It is far better to get our daily requirement of protein from a number of foods rather than from a single food. For example: A pint of milk for adults and a quart for children, plus an egg, plus a serving of meat or beans, plus a serving of oatmeal, plus bread for the day will give a good daily supply of protein. To exceed the daily requirement is better than to fall short of it.

VITAMINS

Vitamins are organic food substances. They are absolutely essential for growth and for normal action or functioning of the body. Man must have vitamins, and should depend upon natural foods to furnish them. Plants build them and are the principal sources. This explains why the vitamin content of milk, cream, butter, and eggs is greater in the summer time when animals are getting a lot of green food. Proper feeding of animals, at any season, improves the vitamin content of animal foods. Likewise, the vitamin content of plants is in proportion to the quality of the soil which produces them and the conditions under which they are produced, such as sunlight. In addition, processing and cooking methods influence the vitamin content of foods—heat, water, and air take their toll.

Listed below are only those vitamins for which daily requirements are known.

Vitamin A

FUNCTIONS: Necessary for growth, for health of the skin, for protection against frequent colds, and for the ability to see in dim light.

LACK OF IT: Causes night blindness, sensitivity of eyes to bright light, dryness and scaliness of skin, "goose pimple" skin, ingrown hair.

IMPORTANT SOURCES: Liver, egg yolk, butter, cream, whole milk, fortified margarine, yellow fruits and vegetables, green and leafy vegetables, and tomatoes.

AMOUNTS OF A SINGLE FOOD FURNISHING DAILY REQUIREMENTS:

Liver, 1 small serving	$\frac{1}{8}$ lb. 2 oz.
Egg yolks, 5-10 servings	10 eggs
Butter	12 tbsp.
Cream	2 cups
Milk	12 cups
Carrots	1 medium
Sweet potato	1 medium
Squash, yellow, 1 serving	$\frac{3}{4}$ cup each
Apricots (dried), 3 servings	4 halves each
Peaches, yellow, fresh, 5 servings	1 large each
Cantaloupe, yellow, 5 servings	$\frac{1}{2}$ + each
Spinach and other greens (cooked), 1 serving	$\frac{1}{3}$ cup each
Tomatoes, red, 3 servings	1 medium each
Tomatoes, canned, $5\frac{1}{2}$ servings	$\frac{1}{2}$ cup each

SUMMARY: A single serving of several of the listed foods (liver, carrot, sweet potato, and cooked greens) meets the minimum daily requirement of Vitamin A, while several servings of the other foods listed will be required.

Thiamin

B₁

FUNCTIONS: Necessary for growth, for the utilization of starches and sugar, for the health and stability of nerves, and for maintenance of a good appetite.

LACK OF IT: Poor appetite, constipation, tiredness, low capacity to do work, nervousness, sleeplessness, neuralgia.

IMPORTANT SOURCES: Pork (lean); muscle meats; organ meats such as heart, liver, and kidney; fish; eggs; milk; whole grain products; wheat germ; enriched flour and bread; legumes; and all *fresh* vegetables.

AMOUNTS OF CERTAIN SINGLE FOODS FURNISHING DAILY REQUIREMENTS:

Pork (cooked), 2 servings	4 to 5 oz. each
Ham (fried), 1 serving	$\frac{1}{4}$ lb. each
Beef (cooked), 12 servings	$\frac{1}{4}$ lb. each
Eggs	27

Milk	13 cups
Whole wheat bread (100%), 12 servings	2 slices each
Enriched bread, 13 servings	2 slices each
Oatmeal, 8 servings	$\frac{2}{3}$ cup each
Cooked soybeans, 4 $\frac{1}{2}$ servings	$\frac{1}{2}$ cup each
Cooked navy beans, 7 servings	$\frac{1}{2}$ cup each
Fresh limas, 6 servings	$\frac{1}{2}$ cup each
Green peas, 7 servings	$\frac{1}{2}$ cup each
Potato, 9 servings	1 medium each
Tomato (fresh), 17 servings	1 medium each

SUMMARY: The average person is likely to be short on this vitamin unless he is careful to include in his diet foods rich in B₁.

A close study of the above list of foods indicates that Thiamin, B₁, is found in quite a wide variety of foods, and it also reveals that many servings of these foods are needed, in many instances. An adult can secure his daily thiamin requirement from a pint of milk, one egg, 5 slices of whole wheat or enriched bread, one pork chop, two servings of vegetables, and a serving of oatmeal. Increasing the milk to one quart will meet the needs of the growing child.

To obtain maximum values of Thiamin, avoid over-cooking, utilize cooking liquids and juices, and serve immediately after cooking. It is also important that bread and cereal foods be whole grain or enriched.

Riboflavin
B₂

FUNCTIONS: Necessary for growth, for utilization of starch and sugar, for health of glands of the skin, and to prevent lips cracking at corners.

LACK OF IT: Eyes burn, itch, tire easily, and are sensitive to bright light; pink tinge surrounding iris of eye; oily skin; tiny blood vessels visible on face; sore lips with cracks at corners; purplish color of tongue; decreased resistance to infections.

IMPORTANT SOURCES: Milk, liver, kidney, heart, sweet breads, muscle meats, eggs, green leafy vegetables, legumes, and string beans.

AMOUNTS OF A SINGLE FOOD FURNISHING DAILY REQUIREMENT:

Liver, 1+ serving	-----	1/4+ lb. each
Ham (boiled), 9 servings	-----	1/4 lb. each
Beef, 9 servings	-----	1/4 lb each
Milk	-----	6 cups
Eggs	-----	12
Broccoli, 8 servings	-----	2 stalks each
Spinach (cooked), 13 servings	-----	1/2 cup each
Turnip greens, 7 servings	-----	1/2 cup each
Green peas, 13 servings	-----	1/2 cup each
Cooked dried limas, 9 servings	-----	1/2 cup each
Whole wheat bread (100%), 50 servings	-----	2 slices each
Enriched bread, 30 servings	-----	2 slices each

SUMMARY: Check the diet carefully daily for riboflavin. Authorities feel that this is one of the most prevalent deficiencies of our national diet at the present time. We look to milk as our number one riboflavin food, since it is universally used. One and a half quarts of milk will furnish the total daily requirement. Likewise, a serving of liver, but few people use it. The day's need may be met by consuming a pint of milk, an egg, a serving of meat, 2 servings green leafy vegetables, such as spinach or broccoli or a green salad plus a serving of dried beans or peas, plus enriched bread.

**Niacin,
Nicotinic
Acid**

FUNCTION: Necessary for growth, for utilization of starches and sugars, for emotional stability, for healthy skin and digestive tract and is important in treatment of pellagra.

LACK OF IT: Sore mouth and tongue, burning of throat, alternate constipation and diarrhea, pain in region of breast bone, rough skin, easily upset emotionally, hysteria, sleeplessness.

IMPORTANT SOURCES: Organ and muscle meats, milk, eggs, fish, green leafy vegetables.

AMOUNTS OF A SINGLE FOOD FURNISHING DAILY REQUIREMENT:

Since the foods which are richest in niacin are the same as those rich in riboflavin and thiamin it seems unnecessary to repeat quantity of each to be used since the needs for these will take care of the daily need for niacin.

<p>Ascorbic Acid, Vitamin C</p>
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FUNCTIONS: Necessary for growth, for healing wounds, for development of bones and teeth, and for keeping blood capillaries strong.

LACK OF IT: Tiredness; decreased capacity to do work; laziness; skin hemorrhages; spongy, bleeding gums; poor healing of cuts and wounds; lowered resistance to disease; and poor calcification of bones and teeth.

IMPORTANT SOURCES: Oranges, grapefruit, tomatoes, strawberries, cantaloupe, potatoes (white and sweet), and fresh, raw vegetables, green and leafy, and raw fruits.

AMOUNTS OF A SINGLE FOOD FURNISHING DAILY REQUIREMENT:

Orange	1 medium
Orange juice, 1 serving	$\frac{1}{2}$ + cup
Grapefruit, 1 serving	1 small
Tomato (red), 2 servings	1 large each
Tomato juice, 2 servings	$\frac{1}{2}$ + cup each
Cantaloupe, 1 serving	$\frac{3}{4}$ each
Strawberries, 2 servings	$\frac{2}{3}$ cup each
Broccoli (cooked), 1 serving	2 stalks each
Spinach and other greens (cooked), 3 servings	$\frac{1}{2}$ cup each
Green peppers, raw	1 large
Cabbage (new and raw), 3 servings	$\frac{2}{3}$ cup each
Potatoes (baked), 6 servings	1 large each

SUMMARY: This is another building block which may be weak and faulty unless we manage daily for its inclusion in the diet. Tomatoes and citrus fruits are our most dependable sources of "C" day after day.

An orange, $\frac{1}{2}$ grapefruit (large), or a tomato will supply the day's need. When they are not available, we must turn to *fresh, raw* cabbage or salad greens. A daily use of both would be excellent.

Avoid overcooking and the use of soda in cooking vegetables, and store cooked foods covered in a cold place.

MINERALS

Minerals have two important functions: They are body builders and also body regulators. They are needed in the building of bones and teeth, blood, muscles, organs, and other tissues. As regulators, they aid the heart, nerves, muscles, and other tissues in performing their various duties to best advantage. They also aid in maintaining the mineral balance of the fluids of the body.

Calcium, phosphorus, and iron are those minerals usually mentioned because they are particularly important and are needed in the greatest amounts. If one makes sure of plenty of these three, it is almost certain that one will get enough of the others. They are found in the same foods that supply calcium, phosphorus, and iron.

The mineral content of the soil influences, materially, the mineral content of food.

Calcium	Phosphorus	Vitamin D
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FUNCTIONS: These three "building blocks" are discussed together because the chief function of each is building bones and teeth and maintaining them in a healthy condition. Calcium also aids in muscle contraction and relaxation.

LACK OF THEM: Causes poor bone and teeth development and poor calcification of bones and teeth—a common symptom of rickets.

IMPORTANT SOURCES:

Calcium: Milk and cheese are the best and surest sources of calcium. While many vegetables contain small amounts of calcium, such large amounts are needed daily that they should be considered just supplementary sources. Evidence also seems to show that man is unable to use the calcium from vegetables efficiently.

Phosphorus: Eggs; liver; milk; muscle meats; legumes; green, leafy vegetables; and whole grain products. It is possible that man is not able to use phosphorus from whole grain products as efficiently as from other sources.

AMOUNTS FURNISHING DAILY REQUIREMENT:

Eggs	8
Liver, 1 serving	$\frac{1}{4}$ + lb. each
Beef (lean), 4 servings	$\frac{1}{4}$ + lb. each
Ham (medium lean), 5 $\frac{1}{2}$ servings	$\frac{1}{4}$ lb. each
Molasses	12 tbsp.
Lima beans (dried), 6 servings	$\frac{1}{2}$ cup each
Beet or turnip greens, 5 servings	$\frac{1}{2}$ cup each
Green peas, 9 servings	$\frac{1}{2}$ cup each
Raisins (cooked), 5 servings	1 $\frac{1}{2}$ T. each
Apricots (dried), 5 servings	4 halves each
Prunes (dried), 6 servings	5 each
Whole wheat bread (100%), 8 servings	2 slices each
Enriched bread, 12 servings	2 slices each
Oatmeal, 8 servings	$\frac{2}{3}$ cup each
Potatoes (baked), 10 servings	1 medium each

SUMMARY: A day's supply of iron may be supplied from 1 egg, a serving of lean meat, $\frac{1}{2}$ cup of green leafy vegetables, 1 potato, and 4 or 5 slices of whole wheat or enriched bread, plus a serving of fruit.

ENERGY FOODS

Starches	Sweets	Fats
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All foods furnish some energy, but much of our heat and energy is derived from carbohydrates (starches and sugar) and fats. Weight for weight fat has many more units of heat and energy than do the carbohydrates. Certain fats, such as cream and butter, are also valued for their vitamin content as indicated above.

In addition to the heat and energy furnished for doing work, carbohydrates are needed for the best utilization of fats.

The sources of each of these groups or blocks are so well known that they will not be listed. The daily requirement is variable. Activity, age, and climate are determining factors. Weight is a fair means of indicating whether we are getting enough of carbohydrates and fats. If the diet contains too little, you will lose weight. If you gain too rapidly, you are getting too much. If children gain normally, they probably are getting enough. Some of the leading nutritionists suggest that one make sure of enough protein and foods rich in minerals and vitamins, then let the appetite take care of the rest.

SUMMARY

After a careful study of the above detailed information, you no doubt will agree with the following conclusions:

1. That food makes a difference—poor health, fairly good health, good health, or buoyant health may be the result.
2. That all of the Food Building Blocks, in adequate amounts, are required for building and maintaining “buoyant” health.
3. That the “Basic Seven” our National Nutrition guide, is an “over-all” guide which homemakers may follow without being concerned that something important is being left out.

It is highly important, however, that adequate amounts from each of the “seven” groups be consumed daily. In short, this means a generous serving from each group and several servings from groups 3, 4, and 6.

4. That all foods should be used in their natural state as far as possible. This will assure getting the **unknown** as well as the **known** elements.
5. That care should be exercised in the handling of fresh foods as well as in processing and cooking them.

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